

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT MODIFICATION

In the Matter of an
Application for Permit Amendment by:

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

Permit Modification No. PSD-FL-105(B)
Metals Recovery and Pollution Control Project
Broward County

Enclosed is the Final Permit Modification Number PSD-FL-105 (B). This permit modification is to: install a selective catalytic reduction system for nitrogen oxides control; add metals recovery operations; revise the existing PSD permit conditions to reflect the requirements of 40CFR60 Subpart Cb; clarify and define the permitted wastes and fuels; and revise some existing specific conditions of the permit. This facility is located at 4400 South State Road 7, Ft Lauderdale, Florida 33314. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.


C.H. Fancy, P.E., Chief
Bureau of Air Regulation

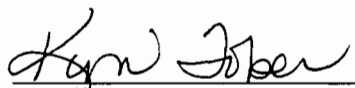
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT MODIFICATION (including the FINAL permit Modification) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 9-28-99 to the person(s) listed:

Thomas D. Kirk, WSBI*
Ken Kosky, P.E., Golder
Gregg Worley, EPA
Isidore Goldman, P.E, DEP SED
Daniela Banu, Director, BCDNRP
Buck Oven, P.E, DEP PPSO

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


(Clerk)*

9-28-99
(Date)

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- The Return Receipt will show to whom the article was delivered and the date delivered.

2. Restricted Delivery
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3. Article Addressed to:
Thomas D. Kirk
Wheelabrator South Broward
4400 S. State Rd 7
St. Lauderdale, FL
33314

4a. Article Number
P 265 659 308

4b. Service Type
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7. Date of Delivery
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5. Received By: (Print Name)
C. Kirk

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PS Form 3800

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P 265 659 308

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Postage	\$
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	<i>PSD-FI-105(0)</i>

PS Form 3800, April 1995

FINAL DETERMINATION

Wheelabrator North and South Broward Refuse-to-Energy Facilities
Broward County, Florida
PSD-FL-112(B) and 105(B)

The Department distributed public notice packages on May 21, 1999 with the following changes to Wheelabrator's (EPA-issued) PSD permits:

- Inclusion of a requirement for selective non-catalytic reduction system for NO_x control in compliance with 40CFR60 Subpart Cb, "Emissions Guidelines and Compliance Schedules for Municipal Waste Combustors."
- Changes in conditions to reflect all of the Subpart Cb control, emissions, testing, and reporting requirements.
- Installation of metals recovery operations
- Clarification and definition of the permitted wastes and other fuels that may be used.

The South Broward Resource Recovery Facility is located at 4440 South State Road 7, Ft. Lauderdale. The North Broward Resource Recovery Facility is located at 2600 N.W. 48th Street, Pompano Beach. The two Public Notices of Intent to Issue were published in the Sun Sentinel on August 13, 1999.

The Department received no comments from EPA, the public or the National Park Service pursuant to the Notice.

Wheelabrator filed a request to extend the time requirement for filing petitions for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The request expired on July 31.

Comments on the draft permit were received from Golder Associates on behalf of the County by letter dated June 24, 1999. Golder's comments and the Department's responses follow.

Specific Condition 1.a.:

Comments

The heat inputs authorized in the existing PSD permits are 323.6 and 302.5 mmBtu/hr for the South and North facilities, respectively. Incorporation of the Subpart Cb requirements and clarifying the definition of acceptable fuels will not change the nominal or maximum capacity of the boiler in terms of heat input or fuel throughput. Additionally there has never been a limit related to any nominal capacity rating and consequently establishing such new limitations is not appropriate. This can be added as a permitting note, which we have suggested.

The emission table has been clarified to indicate which are "emission standards" and which are "equivalent emissions". Footnotes were added to define each. The appropriate Subpart Cb emission standards are the appropriate limitations for determining compliance. Specifying other emission unit designations without clarification will only

create confusion in determining compliance. It is appropriate to list "equivalent emissions" for the purpose of determining potential to emit for the facility.

Some of the numbers listed as potential emissions were adjusted based on a calculation check. These were minor adjustments.

The emission limitations for fluoride are proposed to be deleted. The initial compliance tests and the annual tests have continued to demonstrate compliance with these limits. The addition of the SNCR will not affect emissions of fluoride nor will the clarification on fuel definition since the scrubber/fabric filter will effectively control fluoride emissions.

Response

The Department believes that the original EPA-issued PSD permit should have had enforceable pound per hour limitations. However, the purpose of the present revision is to replace the old concentration-based or emissions per unit of heat input-based limits of the PSD permit with the generally stricter conditions of Subpart Cb. Therefore enforceable pound per hour, ton per year, and pound per million Btu heat input limits will not be added. They will be shown as equivalent emissions for recordkeeping. The changes requested by the applicant were made except that the fluoride limits will not be deleted. The fluoride emission limit is a BACT requirement of the original EPA-issued PSD permit.

Specific Condition 1.a.(2) and 1.a.(4) :

Comment:

Language has been added to Condition 1.a.(2) to make it consistent with the Subpart Cb requirements. The first sentence in Condition 1.a.(2) can be deleted since it is redundant and not as specific as the rest of the language in Condition 1.a.(2). Compliance with the Condition 1.a.(4) work practices should reference Condition 1.a.(2).

Response

This condition was revised as requested. The language proposed is consistent with Subpart Cb requirements.

Specific Condition 1.c.(1):

Comment:

The references to limitations on nominal rates should be eliminated. See comment for Specific Condition 1.a.

Response

This condition was revised as requested. The original permit did not have this requirement and this project is not increasing capacity or steam flow.

Specific Condition 1.c.(2):

Comment:

This condition can be deleted since the new conditions on load level and compliance with load requirements are more restrictive. In addition, the requirements cited as 40 CFR 62.53(a) are for Subpart E which only require daily charging rates and hours of operation which are less stringent than the 40 CFR Subpart Cb load level monitoring requirements.

Response

This condition was not deleted. Monitoring the daily charging rate in accordance with 40 CFR Subpart E, is an applicable requirement.

Specific Condition 1.d.(1):

Comment:

We have proposed deleting these old compliance test conditions since these are being replaced by the requirements of 40 CFR Subpart Cb as identified in Specific Condition d.(2).

Response

This request was acceptable. Some of the existing conditions were considered obsolete and were deleted. This facility is subject to all applicable requirements of 40 CFR60, Subpart Cb.

Specific Condition 1.d.(2):

Comment:

The facility will be required to demonstrate compliance with all of 40 CFR Subpart Cb emission requirements after completion of the retrofit in accordance with the Subpart Cb implementation schedule and 40 CFR 60.38b. Consequently, we have proposed adding the specific requirement to conduct the initial performance test 60 days after the boiler reaches maximum load or 180 days after startup of the SNCR system.

As indicated above, the testing for fluoride is proposed to be deleted.

The testing requirements for mercury were clarified to be consistent with Rule 62-296.416. Upstream and downstream mercury testing is only required if the percent reduction limit will be used to determine compliance with the alternative 85 % mercury removal limit [see added footnote (4)].

Response

This condition was changed as requested. It should be noted that final compliance with the requirements on 40CFR60, Subpart Cb is 36 months after EPA approval of the State Plan (November 13, 2000) or by December 19, 2000; whichever comes first.

Regarding mercury, the testing requirements for this pollutant shall be consistent with Rule 62-296.416 F.A.C.

Specific Condition 1.d.(3):

Comment:

The requirement for continuous compliance with operational parameters including: oxygen, steam pressure and temperature, carbon injection, combustion zone temperature, slake lime utilization and power generation is not appropriate and should be deleted. There are no proposed limits for these operational parameters, nor are they necessary to determine compliance with the Subpart Cb requirements.

Response

This condition was modified as requested since some of the proposed parameters in the proposed new condition are not regulated in Subpart Cb.

Specific Conditions 2, 3 and 6:

Comment:

The deletion of these conditions is recommended since these are being replaced by either more stringent and appropriate requirements or are no longer applicable.

Response

These conditions were deleted as requested. They are obsolete. This facility is subject to all applicable requirements of Subpart Cb and this includes measurements of the steam flow.

Specific Condition 7.f.(6):

Comment:

It is proposed that the exclusion of polyethylene and polyurethane vinyl floor coverings be deleted. We know of no regulatory basis for excluding this material.

Response

This condition was modified to read vinyl floor coverings.

Specific Condition 7.h.(1):

Comment:

We propose adding "non-combustible" before construction and demolition debris, since such debris could include wood (wood forms, building lumber, posts, etc.) that are combustible.

Response

This condition was not modified as requested. There is no need to add the "non-combustible" language for this segregated load.

Specific Condition 9.a.(1):

Comment:

The requirement for measuring CO₂ can be deleted since the O₂ is used as the diluent gas for SO₂, CO and NO_x monitoring.

Response

This condition is revised as requested.

Specific Condition 10 (South) and 11 (North):

Comment:

The requirement to submit copies of materials to EPA Region IV has been deleted since the Department now has this authority.

Response

This condition was modified to include only DEP.

Specific Condition 13:

Comment:

This condition is not applicable since there will be no physical or operation change that is related to the proposed clarification of acceptable fuels definition and the addition of the SNCR NO_x control system that would increase emissions and is therefore not a "modification" pursuant to Rule 62-210.200(188). As noted in the correspondence dated April 9, 1999, there will be a decrease in the allowable emissions of nearly all pollutants for which there is a current emission limit. The only apparent increase is for potential CO emissions (actual emission will not increase) and is a result of using the more appropriate Subpart Cb limit, since there will be no change in operation. The worst case increase in "potential" CO emissions is still below the PSD threshold.

Response

This new condition was deleted. EPA has clarified that these RRF or MSW units although they produce steam and electricity, there are not considered electric utility steam generating units.

Specific Condition 15:

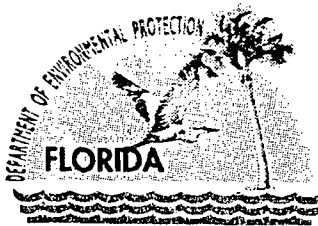
Comment:

This condition is redundant to Rule 62-297.310(5), which is an applicable requirement for the facility. Moreover, the wording of the proposed condition is not consistent with either that rule or Rule 62-4.070(3). Clearly, the Subpart Cb testing and monitoring requirements provide direct confirmation of proper operation of each emission unit. Any new conditions to be included in the operating permit would be extraneous and not necessary to confirm operation. EPA has stated that the monitoring requirements incorporated in Subpart Cb meet the periodic monitoring and CAM requirements for Title V permits, if this what this condition was intended to address.

Response

This new condition was deleted. This permitting action does not need to include all applicable requirements that a unit may be subject to.

The final action of the Department will be to issue the permit with the changes noted above.



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

PERMITTEE:

Wheelabrator South Broward, Inc
Resource Recovery Facility
4440 South State Road 7
Ft. Lauderdale, Florida 33314

FID No.	0112119
PSD No.	PSD-FL-105 (B)
SIC No.	4953
PPS No.	PA 85-21
Expires:	December 30, 2000

Authorized Representative:
Thomas D. Kirk
Plant Manager

PROJECT AND LOCATION:

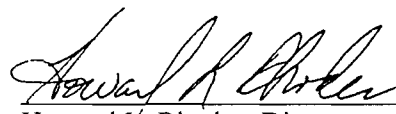
Permit modification to include the requirement for selective non-catalytic reduction systems to control NOx emissions and to revise existing conditions to comply with the requirements of 40CFR60, Subpart Cb - Emission Guideline and Compliance Times for Municipal Waste Combustors That Are Constructed on or Before December 19, 1995. This permit modification also defines wastes which can be combusted and allows the installation of a metal recovery operation. The facility is located at 4440 South State Road 7, Ft. Lauderdale, Broward County, Florida 33314. UTM coordinates are Zone 17; 579.5 km E ; 2883.34 km N.

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendix is part of this permit:

Appendix GC Construction Permit General Conditions


Howard L. Rhodes, Director
Division of Air Resources
Management

**FINAL PSD PERMIT MODIFICATION
PSD-FL-105 (B)**

WHEELABRATOR SOUTH BROWARD INC.

SPECIFIC CONDITIONS

PSD-FL-105 originally issued May 17, 1987 by EPA Region IV, is hereby amended as follows:

1. Emission Limitations

- a. Stack emissions from each unit shall not exceed the following:

Particulate: 0.0150-gr/dscf dry volume corrected to 12% CO₂.

Sulfur Dioxide: (1) 0.140 lb/MMBtu heat input and 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂); or

- (2) 65% reduction of uncontrolled SO₂ emissions.* In no case shall the SO₂ emissions exceed 0.310 lb/MMBtu heat input and 124 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂).

The 124 ppm limit above shall be modified to reflect a new emission limit (in ppm) from the control device at 65% control efficiency. Within 18 months of start-up of operation, the County shall submit compliance tests that will be used to determine the new SO₂ emission limit (in ppm). The limit will be determined by observed average emission rate (\bar{x}) from the submitted compliance tests and will be statistically analyzed using the one-tailed student T test ($t_{.05} = (\bar{x} - u) n/s$) at the 95% confidence level to derive a mean emission rate (u), where s is the standard deviation of observed values n . The final operating SO₂ emission limit (in ppm) shall be this mean emission rate (u). This value shall be restricted to no more than 124 ppm or less than 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂).

Nitrogen Oxides: .560 lb/MMBtu heat input and 350 ppm (3-hr rolling average, dry volume corrected to 12% CO₂).

Carbon Monoxide: .090 lb/MMBtu heat input; 400 ppm (1-hr rolling average, dry volume, corrected to 12% CO₂); and 88 ppm (4-day rolling average, dry volume, corrected to 12% CO₂).

Lead: .00056 lb/MMBtu

Fluorides: .0040 lb/MMBtu

Beryllium: 9.30×10^{-7} lb/MMBtu

Mercury: 7.50×10^{-4} lb/MMBtu

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- 1.a The following emissions standards apply to the following emissions units after improvements to comply with 40 CFR Subpart Cb are completed and the initial performance tests are completed. [Rule 62-204.800(8)(b), 40 CFR 60 Subpart Cb]

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION
001	323.6 MMBtu/hr (<u>maximum</u>) Municipal Waste Combustor & Auxiliary Burners - Unit No.1
002	323.6 MMBtu/hr (<u>maximum</u>) Municipal Waste Combustor & Auxiliary Burners - Unit No.2
003	323.6 MMBtu/hr (<u>maximum</u>) Municipal Waste Combustor & Auxiliary Burners - Unit No.3

{Permitting Note: Each of the three municipal waste combustor (MWCs) has a *nominal* design rate capacity of 750 tons MSW per day and 281 MMBtu heat input (with MSW having a heating value of 4,500 Btu per pound). A maximum capacity of 863 tons per day and 323.6 MMBtu per hour heat input (115% rated capacity) is allowed. Short-term capacity is limited by limiting steam production (maximum of 192,000 lb/hr), which effectively limits heat input.

POLLUTANT	EMISSIONS STANDARDS ¹	EQUIVALENT EMISSIONS ²		
		lb/mm Btu	lb/hr	TPY
PM ³ Particulate Matter	27 mg/dscm or 0.012 gr/dscf corrected to 7% O ₂	0.0243	7.85	34.4
VE Visible Emissions	10% (6 min. block avg.)			
Cd Cadmium	0.040 mg/dscm corrected to 7% O ₂	3.7 E-05	0.012	0.051
Be ⁴ Beryllium	0.001 mg/dscm corrected to 7 % O ₂	9.3E-07	0.0003	0.0013
Pb Lead	0.44 mg/dscm corrected to 7% O ₂	4.4E-04	0.142	0.62
Hg Mercury	70 ug/dscm or 85% reduction by weight or volume corrected to 7% O ₂ (whichever is less stringent)	6.2 E-05	0.02	0.09
SO ₂ Sulfur Dioxide	29 ppmdv or 75% reduction by weight or volume corrected to 7% O ₂ (whichever is less stringent)	0.11	35.1	153.7
HCl Hydrochloric Acid	29 ppmdv or 95% reduction corrected to 7% O ₂ (whichever is less stringent)	0.04	12.6	55
Dioxins/Furans	30 ng/dscm corrected to 7% O ₂	2.7 E-08	8.7E-06	3.8E-05
NO _x Nitrogen Oxides	205 ppmdv corrected to 7% O ₂	0.352	114	499
CO Carbon Monoxide	100 ppmdv corrected to 7% O ₂	0.105	33.9	148.5
F Fluorides	Not to exceed 0.0040 lb/MMBtu (BACT limit from original permit)	0.0040	1.29	5.66

1. These maximum allowable emission standards are applicable to each MWC combustor unit and shall be used in demonstrating compliance with the compliance procedures specified in specific conditions d.3. [Rules 62-4.070, and 62-296.416, F.A.C., 40 CFR 60.33b and 40 CFR 60.34b]
2. Permitting note: These equivalent emissions are listed for the purposes of providing information on the potential to emit for each MWC and not in determining compliance with applicable emission standards.
3. This limit for PM is more restrictive than the emission limit for PM in 40 CFR 60.43b
4. Beryllium: PSD original permit limit. Not to exceed applicable NESHAP, 40 CFR 61.32 (a)(Subpart C).

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Basis: Equivalent emissions calculations (lb/hr and ton/yr) are based on the maximum heat input rate of 323.6 MMBtu/hr [115 % rated capacity] per unit and 8760 hours of operation. Short-term capacity is limited by limiting steam production (maximum of 192,000 lb steam/hr) which effectively limits heat input.

Averaging Times

SO₂: 24-hour daily block geometric mean (midnight to midnight)
NO_x: 24-hour daily block arithmetic mean (midnight to midnight)
CO: 4-hour block arithmetic mean beginning at midnight
Opacity: 6 minutes block arithmetic mean

Abbreviations

ug/dscm: Micrograms per dry standard cubic meter
mg/dscm: Milligrams per dry standard cubic meter
ppmdv: Part per million dry volume
ng/dscm: Nanograms per dry standard cubic meter
Dioxins/ furans: Total tetra through octa-chlorinated dibenzo-p dioxins and dibenzofurans
F: Fluorides as hydrogen fluoride

Temperature: 17° C above maximum demonstrated PM control device inlet

~~Visible Emissions: Opacity of stack emissions shall not be greater than 15% opacity.~~

- 1.a.(1) Excess Emissions: Excess opacity resulting from startup or shutdown shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess opacity shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by ~~EPA~~ the Department for longer duration.

Emission standards apply at all times except during periods of startup/shutdown and malfunction as stated in 40 CFR 60.58b(a).

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up or shutdown shall be prohibited.

- 1.a.(2) Fugitive Ash Emissions From Ash Conveying Systems (New Condition): No owner or operator of this facility shall cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 % of the observation period (i.e., 9 minutes per 3-hour period) as determined by EPA Reference Method 22. The 5 percent visible ash emission limit does not cover visible ash emissions discharged inside a building or ash conveying systems, but the visible emission limit does cover visible emissions discharged to the atmosphere from buildings of enclosures of ash conveying systems (including conveyor transfer points).
[Rule 62-204.800(8)(b), F.A.C., 40 CFR 60.36b; 60.55b and 62-4-070(3) F.A.C.]

~~The units are subject to 40 CFR 60 Subpart E, and Subpart Db, New Source Performance Standards (NSPS), except that where requirements in this permit are more restrictive, the requirements in this permit shall apply.~~

- 1.a.(3) Applicable Requirements: These units are subject to all applicable requirements of 40 CFR 60 Subpart Cb, Emissions Control Guidelines and Compliance Schedules for Municipal Solid Waste Combustors, Subpart E, NSPS for Incinerators, Subpart Db NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40CFR61 Subpart C, NESHAP for Beryllium and Rule 62-296.416 F.A.C., Waste-to-Energy Facilities, except that where requirements in this permit are more restrictive, the requirements in this permit shall apply.
[PSD-FL-105, 40CFR60 Subparts Cb, E, Db and 40CFR61 Subpart C]

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~~There shall be no greater than 10% opacity for emissions from the refuse bunker and the ash handling and loadout. The potential for dust generation by ash handling activities will be mitigated by quenching the ash prior to loading in ash transport trucks. Additionally, all portions of the proposed facility including the ash handling facilities which have the potential for fugitive emissions shall be enclosed. Also, those areas which have to be open for operational purposes (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure.~~

- 1.a.(4) Ash Handling Facilities: The potential for dust generation by ash handling activities will be mitigated by quenching or conditioning the ash prior to loading in ash transport trucks. Ash handling facilities shall be enclosed (including the proposed future metal recovery area). Unprocessed refuse storage areas which must be open for operational purposes (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure. Residue from the grates, and grate siftings shall be discharged into the bottom ash quenching system, and ash from the combustor/boiler and fabric filter hoppers shall be discharged into the fly ash conditioning system during normal operations to minimize visible dust generation. The ash/residue in the Ash Handling Building shall remain sufficiently moist to minimize dust during storage and handling operations. Compliance with this condition shall be determined in accordance with Condition a.(2).

[Rule 62-204.800(8)(b), F.A.C., 40 CFR 60.36b; 60.55b and 62-4-070(3) F.A.C.]

- 1.b Only distillate fuel oil or natural gas shall be used in startup burners. The annual capacity factor for use of natural gas and oil, as determined by 40 CFR 60.43b(d), shall be less than 10%. If the annual capacity factor of natural gas is greater than 10%, then the facility shall be subject to §60.44b.

- 1.c ~~None of the three individual municipal waste incinerators shall be charged in excess of 323.6 mmBtu/hr and 863 tons per day MSW (115% rated capacity) nor produce 192,000 lb/hr steam (3-hr rolling average). Operating Requirements.~~

- 1.c.(1) Operating Rates: The maximum individual MWC throughput shall not exceed 863 tons MSW per day (2589 tons per day entire facility) and 323.6 MMBtu per hour (115% rated capacity) nor produce in excess of 192,000 pounds steam per hour based on a 4-hour block arithmetic average. (Compliance per new Specific Conditions c.(2) listed below).

[Rule 62-204.800(8)(b), F. A. C., 40 CFR 60.31b; 60.38b; 60.51b, and 60.58b(j)]
[PSD-FL-105/PA 85-21 and Rule 62-4.030(3), F.A.C.]

- 1.c.(2) Continuous Charging Rate (New Condition): The daily solid waste charging rate and hours of operation shall be determined and recorded for each MWC unit. The daily charging rate shall be determined each month on an average daily basis for each MWC unit using the Facility's truck scale weight data, refuse pit inventory, and MWC operating data for the preceding calendar month. Monthly truck scale weight records on the weight of solid waste received and processed at the Facility and refuse pit inventory shall be used to determine the amount of solid waste charged during the preceding calendar month on an average daily basis. The MWC load level measurements or other operating data shall be used to determine the number of operating hours per MWC unit for each day during the preceding calendar month. [Rule 62-204.800(8)(b), F.A.C., and 40 CFR 60.53(a)]

FINAL PSD PERMIT MODIFICATION PSD-FL-105 (B)

- 1.c.(3) Unit load (New Condition): means the steam load of the municipal waste combustor (MWC) measured as specified in 40 CFR 60.58b(i)(6). Each MWC unit shall not operate at a load level greater than 110 percent of the unit's "maximum demonstrated unit load." The maximum demonstrated unit load is the highest 4-hour arithmetic averaged MWC unit load achieved during four consecutive hours during the most recent dioxin/furan performance stack test in which compliance with the dioxin/furan emission limit was achieved. Higher loads are allowed for testing purposes as specified at 40 CFR 60.53b(b). **[Rule 62-204.800(8)(b), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b; 60.53b(b); and 60.58b(i)(8)]**
- 1.c.(4) Load Level Requirements (New Condition): The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam (or feedwater) flow in kilograms per hour (or pounds per hour) on a continuous basis; and record the output of the monitor (in accordance with the ASME method described in 40 CFR 60.58b(i)(6). Steam (or feedwater) flow shall be calculated in 4-hour block arithmetic averages. Higher loads are allowed for testing purposes as specified at 40 CFR 60.53b(b). **[Rule 62-204.800(8)(b), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b; 60.53b(b); and 60.58b(i)(6)]**

1.d Compliance Tests

- ~~1.d.(1)a Annual compliance tests for particulate matter, lead, SO₂, nitrogen oxides, CO, fluorides, mercury, and beryllium shall be conducted in accordance with 40 CFR 60.8 (a) (b), (d), (e), and (f).~~
- ~~1.d.(1)b Compliance with the opacity standard for the incinerator stack emissions in condition 1.a. of this part shall be determined in accordance with 60.11(b) and (f).~~
- ~~1.d.(1)c Compliance with the emission limitations for 65% control of total sulfur dioxide emissions shall be determined by using the test methods in condition 1.d.(2) and sampling for SO₂ emissions before and after the acid gas control device. Continuous emissions data shall also be used to demonstrate compliance with the SO₂ concentration limits in condition 1.a above.~~
- 1.d.(1) Initial compliance tests for each combustion unit shall be conducted within 60 days after achieving maximum boiler operating capacity, but not later than 180 days after startup of the Selective Non-Catalytic Reduction (SNCR) system. Compliance tests shall be performed according to 40 CFR 60.38b. Annual tests shall be conducted within one year after the initial tests, unless otherwise allowed by the Department. A test protocol shall be submitted for approval to the Department's Southeast District office (DEPSED) and the Broward County Department of Planning and Environmental Protection (BCDPEP) at least 45 days prior to initial testing.
[40CFR 60.8, 40CFR60.11, Rule 62-204.800(8)(b), and Chapter 62-297, F.A.C.]
- 1.d.(2) The following test methods and procedures for 40 CFR 60 and 61 shall be used for compliance testing:
- a. Method 1 for selection of sample site and sample traverses

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- b. Method 2 for determining stack gas flow rate when converting concentrations to or from mass emission limits.
- c. Method 3 for analysis for calculation of percent O₂ and CO₂.
- d. Method 4 for determining stack gas moisture content to convert the flow rate from actual standard cubic feet to dry standard cubic feet for use in converting concentrations in dry gases to or from mass emission limits.
- e. Method 5, ~~for concentrations of particulate matter and associated moisture content. One sample shall constitute one test run.~~ Determination of Particulate Matter Emissions (front half catch only) from Stationary Sources (I) and (A). Pursuant to 40 CFR 60.58b(c)(3) EPA Reference Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160 ± 14 °C. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.
- f. Method 9, ~~for visible determination of the opacity of emissions.~~ Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).
- g. Method 6 ~~for concentration of SO₂. Two samples, taken at approximately 30 minute intervals, shall constitute one test run.~~
- h. Method 7 ~~for concentration of nitrogen oxides. Four samples, taken at approximately 15 minutes intervals, shall constitute one run.~~
- i. Method 10 ~~for determination of CO concentrations. One sample constitutes one run.~~
- j. Method 12 ~~for determination of lead concentration and associated moisture content. One sample constitutes one test run.~~
- k. Method 13B or 13A, ~~for determination of fluoride emission rate and associated moisture content. One sample shall constitute one run.~~ Determination of Total Fluoride Emissions from Stationary Sources (I) and (A).
- l. Method 101A ~~for determination of mercury emission rate and associated moisture content. One sample shall constitute one test run.~~
- m. Method 104 ~~for determination of beryllium emission rate and associated moisture content. One sample shall constitute one test run.~~
- n. Method 23, Determination of Dioxin/Furan Concentration from Stationary Sources (I) and (A). Dioxin/Furan emission limit shall be expressed as the total mass of tetra-through octa chlorinated dibenzo-p-dioxins and dibenzofurans. The facility may perform less frequent testing for dioxin/furan emissions, as allowed by 40 CFR 60.38b(b) and with prior notice to the Department, if the emission unit's dioxin/furan emissions do not exceed 15 ug/dscm corrected to 7% O₂ or less.
- o. Method 26 or 26A, Determination of HCl Emissions (I) and (A). HCl stack tests upstream and downstream of the control device (s) shall be conducted to calculate percent control to demonstrate compliance with the alternate removal limit .

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- p. Method 29, Determination of Metals Emissions from Stationary Sources (I) and (A). Mercury emissions testing shall be conducted semiannually. Mercury stack tests shall be performed downstream of control devices or upstream and downstream of the control devices when determining compliance with the alternative removal requirement.

1.d.(3) Continuous Compliance with Emission Limits: (New Condition)

Continuous compliance with the emission limits for opacity, carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂) listed above and the operational parameters: steam production (lb/hr) or feedwater flowrate (lb/hr), and fabric filter inlet flue gas temperature) shall be demonstrated by continuous emission monitoring systems (CEMS) operated in accordance with 40 CFR 60.58b and 60.59b(f). SO₂ monitors shall be located both upstream of the scrubber and downstream of the baghouse, in order to calculate percent removal efficiency.

[Rule 62-204.800(8)(b), F.A.C. and 40 CFR 60.38 (40 CFR 60.58b) and 62-4.070 F.A.C.]

2. ~~Compliance with emission limitations specified in lb/mmBtu in conditions 1.a and 1.c. of this part shall be determined by calculation an "F" factor in dsef/mmBtu corrected to 12% CO₂ using the boilers' efficiency (as determined by the calorimeter method contained in Attachment A during acceptance testing) and measured steam production. Data obtained from test methods required in condition 1.d. of this part for compliance testing shall be used for the calculation of the "F" factor required by this condition.~~
3. ~~Devices shall be installed to continuously monitor and record steam production. These devices shall be adequately maintained and operating during all periods of steam production.~~
4. The height of each boiler exhaust stack shall not be less than 59.4 meters above ground level at the base of the stack.
5. Each incinerator boiler shall have a metal name plate affixed in a conspicuous place on the shell showing manufacturer, model number, type waste, rated capacity, and certification number.
6. ~~The permittee must submit to EPA and DER, within fifteen (15) days after it becomes available to the County, copies of the technical data pertaining to the incinerator boiler design, acid gas control equipment design, particulate control equipment design, and the fuel mix that will be used to evaluate compliance of the facility with the preceding emission limitations.~~
7. Fuel

~~The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit, screenings or sewage sludge.~~

The primary fuel for this facility is municipal solid waste (MSW), including the items and materials that fit within the definition of MSW contained in either 40CFR60.51b or Section 403.706 (5), F.A.C., Florida Statutes (1998).

- 7.a Subject to the limitations contained in this permit, the authorized fuels for the facility also include the other solid wastes that are not MSW which are described below. However, the facility shall not burn:

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- (1) those materials that are prohibited by state or federal law;
- (2) those materials that are prohibited by this permit;
- (3) those materials that are not authorized by this permit;
- (4) lead acid batteries;
- (5) hazardous waste;
- (6) nuclear waste;
- (7) radioactive waste;
- (8) sewage sludge;
- (9) explosives; and
- (10) asbestos containing materials.

7.b. The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the facility intends to use an authorized fuel that is segregated non-MSW material, the fuel shall be either:

- (1) well mixed with MSW in the refuse pit; or
- (2) alternately charged with MSW in the hopper.

7.c. The facility owner/operator shall prepare and maintain records concerning the description and quantities of all segregated loads of non-MSW material which are received and used as fuel at the facility, and subject to a percentage weight limitation, below (7.g and 7.h.). For the purposes of this permit, a segregated load is defined to mean a container or truck that is almost completely or exclusively filled with a single item or homogenous composition of waste material, as determined by visual inspection.

7.d. To ensure that the facility's fuel does not adversely affect the facility's combustion process or emissions, the facility operator shall:

- (1) comply with good combustion operating practices in accordance with 40 CFR 60.53b;
- (2) install, operate and maintain continuous emissions monitors (CEMS) for oxygen, carbon monoxide, sulfur dioxide, oxides of nitrogen and particulate control device inlet temperature in accordance with 40 CFR 60.58b; and
- (3) record and maintain the CEMS data in accordance with 40 CFR 60.59b.

These steps shall be used to ensure and verify continuous compliance with the emissions limitations in this permit.

7.e. Natural gas may be used as fuel during warm-up, startup, shutdown, and malfunction periods, and at other times when necessary and consistent with good combustion practices.

7.f. Subject to the conditions and limitations contained in this permit, the following other solid waste may be used as fuel at the facility:

- (1) Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons, credit cards, magnetic tape and microfilm);
- (2) Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;
- (3) Wood pallets, clean wood, and land clearing debris.
- (4) Packaging materials and containers;

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- (5) Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; and
- (6) Rugs, carpets, and floor coverings.

7.g Subject to the conditions and limitations contained in this permit waste tires may be used as fuel at the facility. The total quantity of waste tires received as segregated loads and burned at the facility shall not exceed 3%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined by using a rolling 30 day average in accordance with specific condition No. 7.i. below.

7.h. Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the facility (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned at the facility shall not exceed 5%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined by using a rolling 30 day average in accordance with specific condition No. 7.i. below.

- (1) Construction and demolition debris.
- (2) Oil spill debris from aquatic, coastal, estuarine or river environments. Such items or materials include but are not limited to rags, wipes, and absorbents.
- (3) Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf-life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.
- (4) Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.
- (5) Waste materials that:
 - (i) are generated in the manufacture of items in categories (7.h.3) or (7.h.4), above and are functionally or commercially useless (expired, rejected or spent); or
 - (ii) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.
- (6) Waste materials that contain oil from:
 - (i) the routine cleanup of industrial or commercial establishments and machinery; or
 - (ii) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.
- (7) Used oil and used oil filters. Used oil containing a PCB concentration equal or greater than 50 ppm shall not be burned, pursuant to the limitations of 40 CFR 761.20(e).
- (8) Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW, subject to prior approval of the Department.

7.i. Segregated Solid Waste Record Keeping:

The following records shall be made and kept to demonstrate compliance with the segregated non-MSW percentage limitations of specific condition 7:

- (1) Each segregated load of non-MSW materials, that is subject to the percentage weight limitation of specific conditions 7.g. and 7.h., which is received for processing shall be

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documented as to waste description and weight. The weight of all waste materials received for processing shall be measured using the facility truck scale and recorded.

- (2) Each day the total weight of segregated tires received shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of tires shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 3% limitation.
- (3) Each day the total weight of segregated non-MSW materials received that are subject to the 5% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of segregated non-MSW materials shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 5% limitation.

8. Air Pollution Control Equipment

The permittee shall install, continuously operate, and maintain the following air pollution controls to minimize emissions. Controls listed shall be fully operational upon startup of the proposed equipment.

- 8.a. Each boiler ~~shall be~~ is equipped with a particulate emission control device for the control of particulates.
- 8.b. Each boiler ~~shall be~~ is equipped with an acid gas control device designed to remove at least 90% of the acid gases.
- 8.c. New Condition. Each boiler shall be equipped with a selective non-catalytic reduction system to control nitrogen oxides emissions.
- 8.d. New Condition. Mercury is controlled by source separation techniques pursuant to Rule 62-296.416 F.A.C.

9. Continuous Emission Monitoring

9.a Prior to the date of startup and thereafter, the County shall install, maintain, and operate the following continuous monitoring systems for each boiler exhaust stack:

- (1) Continuous emission monitoring (CEM) systems to measure stack gas opacity and SO₂, NO_x, CO, CO₂ and O₂ concentrations for each unit. Continuous monitors for SO₂ shall be installed after the acid gas control device for each unit. The systems shall meet the EPA Monitoring performance specifications of 40 CFR 60.13 and 40 CFR 60, Appendix B, during initial compliance testing and annually thereafter. Additionally CEM's shall meet the quality control requirements of 40 CFR 60, Appendix F. ~~(Attachment B)~~.
- (2) CEM data recorded during periods of startup, shutdown, and malfunction shall be reported but excluded from compliance averaging periods for CO, NO_x, and opacity.
- (3) a. CEM data recorded during periods of startup and shutdown shall be excluded from compliance averaging periods for SO₂.
b. CEM data recorded during periods of acid gas control device malfunctions shall be excluded from compliance averaging periods for SO₂ provided that the preceeding thirty day period which ends on the last day of malfunction period meets and average SO₂ emission limit equal to the SO₂ limit specified in conditions 1.a. CEM data must be available for 90% of the operating time for this exemption to apply. A malfunction as used in this permit means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in

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part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

- 9.b An excess emissions report shall be submitted to EPA for every calendar quarter. The report shall include the following:
- (1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each period of excess emissions (60.7(c)(1)).
 - (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the furnace/boiler system. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported (60.7(c)(2)).
 - (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks, and the nature of the system repairs or adjustments (60.7(c)(3)).
 - (4) When no excess emissions have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information shall be stated in the report (60.7(c)(4)).
 - (5) County shall maintain a file of all measurements, including continuous monitoring systems performance evaluations; all continuous monitoring systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this permit recorded in a permanent form suitable for inspection (60.7(d)).
 - (6) Excess emissions shall be defined as any applicable period during which the average emissions of CO, NO_x and/or SO₂, as measured by the continuous monitoring system, exceeds the CO, NO_x and/or SO₂ maximum emission limit (in ppm) set for each pollutant in condition 1.a. above.
- 9.c Excess emissions indicated by the CEM systems shall be considered violations of the applicable opacity limit or operating emission limits (in ppm) for the purposes of this permit provided the data represents accurate emission levels and the CEM's do not exceed the calibration drift (as specified in the respective performance specification tests) on the day when initial and subsequent compliance is determined. The burden of proof to demonstrate that the data does not reflect accurate emission readings shall be the responsibility of the permittee.

10. Reporting

- 10.a. A copy of the results of the compliance tests shall be submitted within forty-five days of testing to the DEP Bureau of Air Regulation, New Source Review Section, MS5505, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, the DEP Southeast District Office, 400 North Congress Avenue, West Palm Beach, Florida 33416-5425, and Broward County Department of Natural Resources Protection Air Quality Division, 218 Southwest First Avenue, Ft. Lauderdale, Florida 33301. ~~and EPA Region IV.~~
- 10.b. Continuous emissions monitoring data shall be reported to the DEP Southeast District, Broward County offices and EPA Region IV on a quarterly basis in accordance with Rule 62-204.800(8) F.A.C., and 40 CFR 60.7.

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10.c. EPA address for submitting report is:

Chief, Air Radiation Technology Branch
U.S. EPA – Region IV
61 Forsyth Street
Atlanta, Georgia 30303

11. Compliance with the PM Control Device Temperature (New Condition)

Each MWC unit is required to continuously monitor and record the flue gas temperature at the inlet to the PM control device in accordance with the requirements at 40 CFR 60.58b(i)(7). The PM control device temperature shall be calculated in 4-hour block arithmetic averages. Each MWC unit shall be allowed to operate up to 17°C (30° F) above the unit's maximum demonstrated PM control device temperature. The maximum demonstrated PM control device temperature is the highest 4-hour arithmetic block-averaged measurement of temperature at the inlet to the PM control device recorded for 4 consecutive hours during the most recent dioxin/furan performance test which complied with the limits given above. The PM control device inlet temperature and the steam (or feedwater) flow for each unit during the stack test shall be continuously monitored and recorded in accordance with 40 CFR 60, Subpart Cb. Higher temperatures are allowed for testing purposes, as specified at 40 CFR 60.53b(c).

This condition will replace a maximum 300°F control equipment temperature requirement and an 1800°F final combustion chamber temperature requirement listed in the separate State Conditions of Certification (PA 85-21)

[Rule 62-204.800(8)(b), F.A.C. and 40 CFR 60.38b, 40 CFR 60.53b(c) and 60.58b(i)(7) and (9)]

12. Metal Recovery Facility (New Condition)

The proposed future metal recovery area will be enclosed in a building adjacent to the existing ash loadout area. All ash is currently quenched with water after leaving each boiler. The bottom ash will be moisturized and will not generate fugitive dust.

13. Schedule of Compliance with 40 CFR 60 Subpart Cb (New Condition)

[Rule 62-204.800(8)(b) F.A.C. and EPA-Approved Florida Compliance Plan]

13.a. Submittal of a final control plan: January 13, 1998

13.b. Awarding of contracts for emission control system or for process modification, or issuance of orders for the purchase of components parts to accomplish emission control or process modification: July 13, 1998.

13.c. Initiation of on-site construction or installation of emission control equipment or process change: November 13, 1999.

13.d. Completion of on-site construction or installation of emission control equipment or process change: September 13, 2000.

13.e. Final compliance: November 13, 2000.

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology issued by EPA in 1987(x);
 - (b) Determination of Prevention of Significant Deterioration issued by EPA in 1987(x); and
 - (c) Compliance with New Source Performance Standards (x).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.



William B. Roberts
General Manager

WHEELABRATOR NORTH & SOUTH BROWARD INC.
A WASTE MANAGEMENT COMPANY

4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

August 18, 1999

Certified #Z 126 756 862
Return Receipt Requested

Mr. C. H. Fancy, P.E. Chief
Bureau of Air Regulations
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

AUG 23 1999

BUREAU OF AIR REGULATION

Re: Draft Permit Amendment No: PSD-FL-105(B) and
PSD-FL-112(B)

Dear Mr. Fancy:

Please find enclosed Wheelabrator North and South Broward's proof of publication of the
"Public Notice of Intent to Issue PSD Permit Modification."

If there are any questions, please contact this office at 954-971-8701.

Sincerely,

William B. Roberts
General Manager

Enclosures

990818.WBR.cjh

cc: Chuck Faller
Tom Henderson
Matt Killeen
Rick Mulhorn
Tim Porter
Mark Santella

cc: J. Newton, BAR
B. Owen, PPS
EPA
SEO
Broward Co.

SUN - SENTINEL
PUBLISHED DAILY
FORT LAUDERDALE, BROWARD COUNTY, FLORIDA
BOCA RATON, PALM BEACH COUNTY, FLORIDA
MIAMI, DADE COUNTY, FLORIDA

STATE OF FLORIDA
COUNTY OF BROWARD/PALM BEACH/DADE
BEFORE THE UNDERSIGNED AUTHORITY PERSONALLY APPEARED

..... WHO ON OATH SAYS THAT HE/SHE IS A DULY AUTHORIZED REPRESENTATIVE OF THE CLASSIFIED DEPARTMENT OF THE SUN-SENTINEL, DAILY NEWSPAPER PUBLISHED IN BROWARD/PALM BEACH/DADE COUNTY, FLORIDA THAT THE ATTACHED COPY OF ADVERTISEMENT,

NOTICE

IN THE MATTER OF

PSD-FL-105(B)

IN THE CIRCUIT COURT, WAS PUBLISHED IN SAID NEWSPAPER THE ISSUES OF
C, 08/13, 1 X

AFFIANT FURTHER SAYS THAT THE SAID SUN-SENTINEL NEWSPAPER PUBLISHED IN SAID BROWARD/PALM BEACH/DADE COUNTY, FLORIDA, AND THAT THE SAID NEWSPAPER HAS BEEN CONTINUOUSLY PUBLISHED IN SAID BROWARD/PALM BEACH COUNTY, FLORIDA, EACH DAY, AND HAS BEEN ENTERED A CLASS MATTER AT THE POST OFFICE IN FORT LAUDERDALE BROWARD COUNTY, FLORIDA, FOR A PERIOD OF ONE YEAR PRECEDING THE FIRST PUBLICATION OF THE ATTACHED COPY OF ADVERTISEMENT; AND AFFIANT FURTHER SAYS THAT HE/SHE NEITHER PAID NOR PROMISED ANY PERSON, FIRM OR CORPORATION ANY DISCOUNT, REBATE, COMMISSION OR REFUND FOR THE COST OF SECURING THIS ADVERTISEMENT FOR PUBLICATION IN SAID NEWSPAPER.

.....
(SIGNATURE OF AFFIANT)

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 13 DAY OF AUGUST
A.D. 1999

.....
(SIGNATURE OF NOTARY PUBLIC)



Tara L. Bezak
MY COMMISSION # CC638935 EXPIRES
July 20, 2001
BONDED THRU TROY FAIN INSURANCE, INC.

.....
(NAME OF NOTARY TYPED, PRINTED OR STAMPED)

PERSONALLY KNOWN OR

PRODUCED IDENTIFICATION

**PUBLIC NOTICE OF INTENT
TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT Permit No. PSD-FL-105(B)
Wheelabrator South Broward, Inc.
Broward County**

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Wheelabrator South Broward, Inc. to improve the air pollution control system; specify which materials can be burned; install a metals recovery facility; and make a number of monitoring changes at its resource recovery facility. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are Wheelabrator South Broward, Inc. 4400 South State Road 7, Ft. Lauderdale, 33314, Broward County.

The purpose of the air pollution control project is to comply with 40 CFR 60, Subpart Cb - Emission Guideline and Compliance Times for Municipal Waste Combustors That are Constructed on or Before December 19, 1995. The Emission Guideline was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. These requirements are incorporated in Department Rule 62-204.800 (8), F.A.C. The facility consists of three nominal 750 ton per day (TPD) mass burn furnaces, waterwall boilers, ash discharge systems, air pollution control equipment, and a steam turbine with a 68 megawatt electrical generator. The existing air pollution control system for each unit consists of spray dryer absorbers and fabric filters. The system will be improved by installation of a selective non-catalytic reduction system for the control of nitrogen oxides and by incorporation of combustion controls to minimize formation of dioxins and furans, volatile organic compounds, and carbon monoxide.

The original PSD permit contained limits in accordance with the existing regulations in 1987. Specific limits, in compliance with current Subpart Cb, and testing requirements are proposed for all previously mentioned pollutants. Continuous emissions monitors will be installed for sulfur dioxide, nitrogen oxides, oxygen, carbon monoxide, and temperature at key points.

The units were originally permitted to utilize "refuse such as garbage and trash" as defined in the Department's solid waste rules. The modified permit will specify the wastes as: solid waste including municipal solid waste (MSW) as defined at 40 CFR 60.51b and Section 403.706(5), F.S.; segregated wastes such as records and documents, non-hazardous contraband, clean wood and land clearing debris, packaging materials, clothing and fabric remnants and certain types of floor covering; segregated waste tires (not to exceed 3 percent of the total wastes received); other segregated wastes (not to exceed 5 percent of the total wastes received) such as construction and demolition debris, oil spill debris, expired or off-spec packaged or unpackaged consumable goods (e.g. pharmaceuticals), consumer products, waste materials containing oil, used oil and filters and certain other wastes similar to MSW. The precise nature of the waste is detailed in the draft permit package. By limiting the amount of segregated materials combusted at the facility, the Department has reasonable assurance that the overall composition of the wastes burned will be within the typical characteristics of MSW in terms of heating value, moisture, ash and emissions characteristics.

Additional requested revisions to the permit are to replace the 300 degree F temperature limit at the acid control device (fabric filter outlet) with the Subpart Cb particulate control device inlet temperature and to eliminate the furnace temperature requirements by incorporation of the good combustion practices specified in Subpart Cb. Wheelabrator is also planning to install equipment and facilities to expand the removal of recoverable metals from the bottom ash generated by the facility.

The Department will issue the FINAL Permit Modification, in accordance with the conditions of the DRAFT Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit Modification issuance action for a period of 30 (thirty) days from the date of publication of the Notice. Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit

SUN - SENTINEL
PUBLISHED DAILY
FORT LAUDERDALE, BROWARD COUNTY, FLORIDA
BOCA RATON, PALM BEACH COUNTY, FLORIDA
MIAMI, DADE COUNTY, FLORIDA

**PUBLIC NOTICE OF INTENT
TO ISSUE PSD PERMIT MODIFICATION**
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. PSD-FL-112(B)
Wheelabrator North Broward, Inc.
Broward County

STATE OF FLORIDA
COUNTY OF BROWARD/PALM BEACH/DADE
BEFORE THE UNDERSIGNED AUTHORITY PERSONALLY APPEAR:

..... WHO ON OATH SAYS THAT
HE/SHE IS A DULY AUTHORIZED REPRESENTATIVE OF THE
CLASSIFIED DEPARTMENT OF THE SUN-SENTINEL, DAILY
NEWSPAPER PUBLISHED IN BROWARD/PALM BEACH/DADE COUNTY,
FLORIDA THAT THE ATTACHED COPY OF ADVERTISEMENT, BEING

PUBLIC NOTICE OF

IN THE MATTER OF

PSD-FL-112(B)

IN THE CIRCUIT COURT, WAS PUBLISHED IN SAID NEWSPAPER
THE ISSUES OF

C , 08/13, 1 X

AFFIANT FURTHER SAYS THAT THE SAID SUN-SENTINEL IS A
NEWSPAPER PUBLISHED IN SAID BROWARD/PALM BEACH/DADE
COUNTY, FLORIDA, AND THAT THE SAID NEWSPAPER HAS HERE
BEEN CONTINUOUSLY PUBLISHED IN SAID BROWARD/PALM BEACH
COUNTY, FLORIDA, EACH DAY, AND HAS BEEN ENTERED AS SE
CLASS MATTER AT THE POST OFFICE IN FORT LAUDERDALE, I
BROWARD COUNTY, FLORIDA, FOR A PERIOD OF ONE YEAR NEX
PRECEDING THE FIRST PUBLICATION OF THE ATTACHED COPY
ADVERTISEMENT; AND AFFIANT FURTHER SAYS THAT HE/SHE H
NEITHER PAID NOR PROMISED ANY PERSON, FIRM OR CORPORAT
ANY DISCOUNT, REBATE, COMMISSION OR REFUND FOR THE PU
OF SECURING THIS ADVERTISEMENT FOR PUBLICATION IN SAI
NEWSPAPER.

[Signature]
.....
(SIGNATURE OF AFFIANT)

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 13 DAY OF AUGUST
A.D. 1999

[Signature]
.....
(SIGNATURE OF NOTARY PUBLIC)

Tara L. Bezak
MY COMMISSION # CC638935 EXPIRES
July 20, 2001
BONDED THRU TROY FARM INSURANCE, INC.

.....
(NAME OF NOTARY TYPED, PRINTED OR STAMPED)

PERSONALLY KNOWN OR
PRODUCED IDENTIFICATION

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Wheelabrator North Broward, Inc. to improve the air pollution control system; specify which materials can be burned; install a metals recovery facility; and make a number of monitoring changes at its resource recovery facility. A Best Available Control Technology determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are Wheelabrator North Broward, Inc. 2600 NW 48th Street Pompano Beach, Florida 33073.

The purpose of the air pollution control project is to comply with 40 CFR 60, Subpart Cb - Emission Guidelines and Compliance Times for Municipal Waste Combustors That are Constructed on or Before December 19, 1995. The Emission Guideline was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. These requirements are incorporated in Department Rule 62-204 800 (8), F.A.C.

The facility consists of three nominal 747 ton per day (TPD) mass burn furnaces, waterwall boilers, ash discharge systems, air pollution control equipment, and a steam turbine with a 68 megawatt electrical generator. The existing air pollution control system for each unit consists of spray dryer absorbers and fabric filters. The system will be improved by installation of a selective non-catalytic reduction system for the control of nitrogen oxides and by incorporation of combustion controls to minimize formation of dioxins and furans, volatile organic compounds, and carbon monoxide.

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The Department will issue the FINAL Permit Modification, in accordance with the conditions of the DRAFT Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed DRAFT Permit Modification issuance action for a period of 30 (thirty) days from the date of publication of the Notice. Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Modification, the Department shall issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

The Department will issue FINAL Permit Modification with the conditions of the DRAFT Permit Modification unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370, fax: 850/487-4938. Petitions must be filed within fourteen days

permit.
 Write "Return Receipt Requested" on the mailpiece below the article number.
 The Return Receipt will show to whom the article was delivered and the date delivered.

1. Addressee's Address
 2. Restricted Delivery
 Consult postmaster for fee.

3. Article Addressed to:
 Thomas D. Kirk, PM 9911
 Wheelabrator South Burnard
 4400 South State Rd 7000
 Ft. Lauderdale, FL 33314

4a. Article Number
 Z 333 618 151

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

5. Received By: (Print Name)
 X [Signature]

6. Signature (Addressee or Agent)
 X [Signature]

7. Date of Delivery
 3/24

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994 102595-97-B-0179 Domestic Return Receipt

Is your RETURN ADDRESS completed on the r

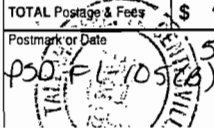
Thank you for using Return Receipt Service.

Z 333 618 151

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	Thomas Kirk
Street & Number	Wheelabrator South
Post Office, State, & ZIP Code	Ft. Lauderdale, FL
Postage	\$ 1.65
Certified Fee	1.40
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	1-25
TOTAL Postage & Fees	\$ 4.30
Postmark or Date	5-21-99

PS Form 3800, April 1995





William B. Roberts
General Manager

WHEELABRATOR NORTH & SOUTH BROWARD INC.
A WASTE MANAGEMENT COMPANY

4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

August 18, 1999

Certified #Z 126 756 862
Return Receipt Requested

Mr. C. H. Fancy, P.E. Chief
Bureau of Air Regulations
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED *Proof*

AUG 23 1999

BUREAU OF AIR REGULATION

Re: Draft Permit Amendment No: PSD-FL-105(B) and
PSD-FL-112(B)

Dear Mr. Fancy:

Please find enclosed Wheelabrator North and South Broward's proof of publication of the
"Public Notice of Intent to Issue PSD Permit Modification."

If there are any questions, please contact this office at 954-971-8701.

Sincerely,

William B. Roberts

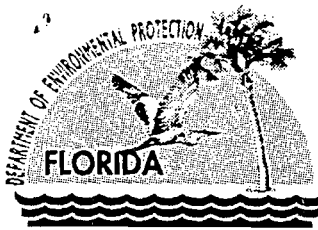
William B. Roberts
General Manager

Enclosures

990818.WBR.cjh

cc: Chuck Faller
Tom Henderson
Matt Killeen
Rick Mulhorn
Tim Porter
Mark Santella

Application Completed April 12, 99 day 1
Intent issued May 20, 99 day 40
Extension of Time received June 2, 99
until July 30, 99
Published August 13, 99
Received proof August 23, 99
Click Postcard Sept 6, 99 day 41
Today is Sept 23, 1999 day 58
cc: J. Heron, BAR
B. Owen, PPS
EPA
SEO
Broward Co.



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

May 20, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Thomas D. Kirk
Plant Manager
Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, Florida 33314

Re: Draft Permit Amendment No. PSD-FL-105(B)

Dear Mr. Kirk:

Enclosed is one copy of the Draft Amendment to the Permit for the Prevention of Significant Deterioration of Air Quality (PSD Permit) for the Wheelabrator South Broward, Inc. facility located at 4400 South State Road 7, Ft. Lauderdale, Broward County, Florida 33314. The Technical Evaluation and Preliminary Determination, the Department's Intent to Issue PSD Permit Modification and the Public Notice of Intent to Issue PSD Permit Modification are also included.

The "Public Notice of Intent to Issue PSD Permit Modification" must be published one time only, as soon as possible, the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements of Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Ms. Teresa Heron at 850/921-9529 or Mr. Linero at 850/921-9523.

Sincerely,

C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/th

Enclosures

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT Permit Amendment No. PSD-FL-105(B)
Wheelabrator South Broward, Inc.
Broward County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Wheelabrator South Broward Inc. to improve the air pollution control system; specify which materials can be burned; install a metals recovery facility; and make a number of monitoring changes at its resource recovery facility. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are Wheelabrator South Broward, Inc. for Wheelabrator South Broward, Inc. located at 4400 South State Road 7, Ft. Lauderdale 33314, Broward, County.

The purpose of the air pollution control project is to comply with 40 CFR 60, Subpart Cb - Emission Guideline and Compliance Times for Municipal Waste Combustors That Are Constructed on or Before December 19, 1995. The Emission Guideline was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. These requirements are incorporated in Department Rule 62-204.800(8), F.A.C.

The facility consists of three nominal 750 ton per day (TPD) mass burn furnaces, waterwall boilers, ash discharge systems, air pollution control equipment, and a steam turbine with a 68 megawatt electrical generator. The existing air pollution control system for each unit consists of spray dryer absorbers and fabric filters. The system will be improved by installation of a selective non-catalytic reduction system for the control of nitrogen oxides and by incorporation of combustion controls to minimize formation of dioxins and furans, volatile organic compounds, and carbon monoxide.

The original PSD permit contained permit limits in accordance with the existing regulations in 1987. Specific limits, in compliance with current Subpart Cb, and testing requirements are proposed for all previously mentioned pollutants. Continuous emission monitors will be installed for sulfur dioxide, nitrogen oxides, oxygen, carbon monoxide, and temperature at key points.

The units were originally permitted to utilize "refuse such as garbage and trash" as defined in the Department's solid waste rules. The modified permit will specify the wastes as: solid waste including municipal solid waste (MSW) as defined at 40 CFR 60.51b and Section 403.706(5), F.S.; segregated wastes such as records and documents, non-hazardous contraband, clean wood and land clearing debris, packaging materials, clothing and fabric remnants and certain types of floor covering; segregated waste tires (not to exceed 3 percent of the total wastes received); other segregated wastes (not to exceed 5 percent of the total wastes received) such as construction and demolition debris, oil spill debris, expired or off-spec packaged or unpackaged consumable goods (e.g. pharmaceuticals), consumer products, waste materials containing oil, used oil and filters and certain other wastes similar to MSW. The precise nature of the wastes is detailed in the draft permit package. By limiting the amount of segregated materials combusted at the facility, the Department has reasonable assurance that the overall composition of the wastes burned will be within the typical characteristics of MSW in terms of heating value, moisture, ash, and emissions characteristics.

Additional requested revisions to the permit are to replace the 300 degree F temperature limit at the acid control device (fabric filter outlet) with the Subpart Cb particulate control device inlet temperature and to eliminate the furnace temperature requirements by incorporation of the good combustion practices specified in Subpart Cb. Wheelabrator is also planning to install equipment and facilities to expand the removal of recoverable metals from the bottom ash generated by the facility.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the DRAFT Permit Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit Modification issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Modification, the Department shall issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

The Department will issue FINAL Permit Modification with the conditions of the DRAFT Permit Modification unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental
Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Department of Environmental
Protection
Southeast District Office
400 North Congress Avenue
West Palm Beach, Florida 33416-5425
Telephone: (561) 681-6600
Fax: : (561) 681-6755

Broward County Department of
Natural Resource Protection
Air Quality Division
218 Southwest First Avenue
Ft. Lauderdale, Florida 33301
Telephone: (954) 519-1220
Fax: : (954) 519-1495

The complete project file includes the Draft Permit Modification, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

In the Matter of an
Application for Permit Amendment by:

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

DRAFT Permit Amendment No. PSD-FL-105(B)
Wheelabrator South Broward, Inc.
Broward

INTENT TO ISSUE PSD PERMIT AMENDMENT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment (copy of DRAFT Permit amendment attached) for the proposed project, as detailed in the application specified above, for the reasons stated below.

The applicant, Wheelabrator South Broward, Inc., applied on December 7, 1997, to the Department for an air construction permit amendment for its Wheelabrator South Broward, Inc. facility located at 4400 South State Road 7, Ft. Lauderdale, Broward County. Wheelabrator South Broward, Inc. requested to revise their existing PSD permit for clarification of the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility, and to install a selective non-catalytic reduction system for NOx control. Additional requested revisions to the permit are to replace the 300 °F temperature limit at the acid control device (fabric filter outlet) with the Subpart Cb particulate control device inlet temperature and to eliminate the furnace temperature requirements by incorporation of the good combustion practices (GCP) specified in Subpart Cb. Wheelabrator is also planning to install equipment and facilities to expand the removal of recoverable metals from the botton ash generated by the facility.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD Permit Modification is required to include the fuels requested by the facility.

The Department intends to issue this PSD permit modification based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION". The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the FINAL Permit Modification, in accordance with the conditions of the enclosed DRAFT Permit Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit Amendment issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION." Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

The Department will issue the permit amendment with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9730, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying

Is your RETURN ADDRESS completed on the reverse side?

- Complete this form
- Print your name and address on the reverse of this form so that we can return the card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

- 1. Addressee's Address
 - 2. Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:
 Thomas D. Kirk, Plant Mgr
 Wheelabrator South
 4400 South State Road 7
 Ft. Lauderdale, FL
 33314

4a. Article Number
 P 265 659 296

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery
 2/18

5. Received By: (Print Name)
 C. Hanson

6. Signature: (Addressee or Agent)
 [Signature]

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 296

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	Thomas Kirk
Street & Number	Wheelabrator South
Post Office, State, & ZIP Code	Ft. Lauderdale
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	PSD-FL 056A 2-16-98

PS Form 3800, April 1995

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

South Broward Resource Recovery Facility

Wheelabrator South Broward, Inc.
Ft Lauderdale, Florida
Broward, County

DEP FILES: PSD-FL-105(B) and PA 85-21

Facility ID No.: 0112119

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

May 20, 1999

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1.0 APPLICATION INFORMATION

1.1 *Applicant Name and Address*

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

Authorized Representative

Mr. Thomas D. Kirk, Plant Manager

1.2 *Reviewing and Process Schedule*

12-07-99: Date of Receipt of Application
04-12-99: Application deemed complete, FDEP Bureau of Air Quality Regulation
05-20-99: Issued Intent

2. FACILITY INFORMATION

2.1 *Facility Location*

The Wheelabrator South Broward, Inc. facility is located at Wheelabrator South Broward, Inc. 4400 South State Road 7, Ft Lauderdale, Broward County. The UTM coordinates of this facility are Zone 17; 579.5 km E ; 2,883.34 km N.

2.2 *Standard Industrial Classification Code (SIC)*

Major Group No.	49	Electric, Gas, and Sanitary Services
Group No.	495	Sanitary Services
Industry No.	4953	Refuse Systems

2.3 *Facility Category*

This facility produces electricity by combusting solid waste, recovering the heat as steam, and expanding the steam in an electrical generator. The solid waste burned is typically characterized as "refuse such as garbage and trash" or as municipal solid waste (MSW). Each of the three incinerators at the facility is permitted to combust up to 836 tons per day (115% of rated capacity) of municipal solid waste (MSW). Certain segregated wastes consisting of materials typically found in MSW are mixed into the waste while maintaining the overall characteristics of the waste within the typical ranges of heat and moisture content as well as emission characteristics. The electricity produced is sold to the local utility. The generator name plate rating is 67.6 MW for the facility.

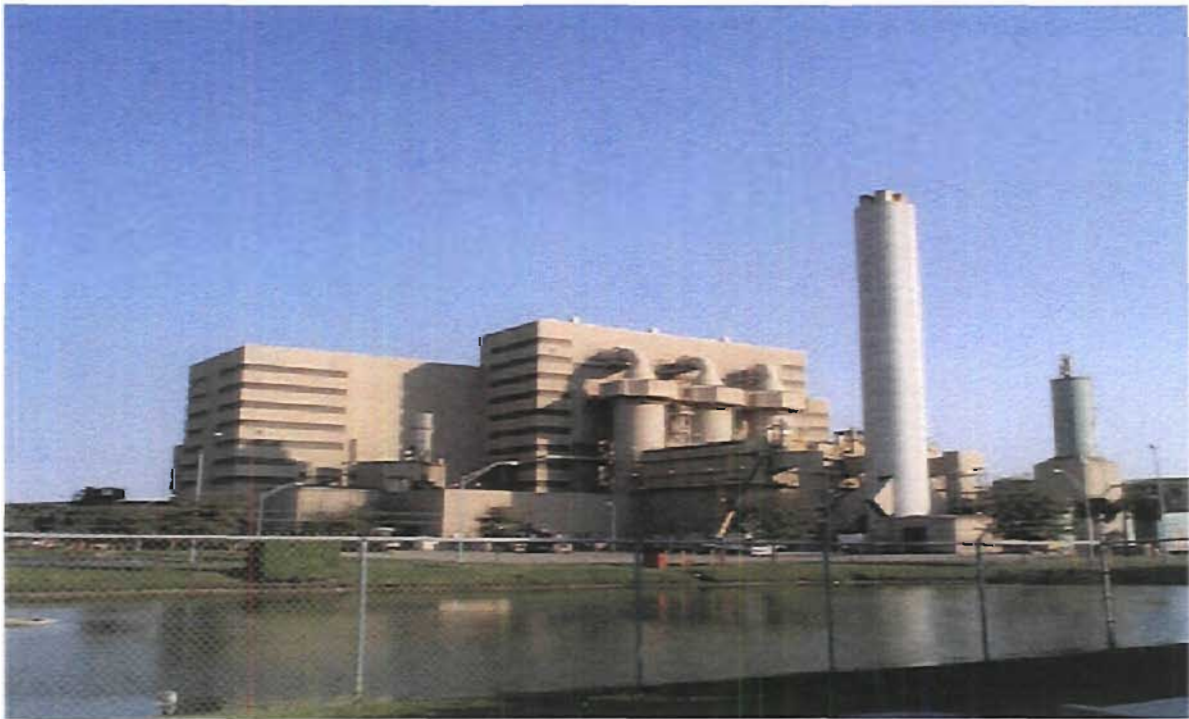
TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The facility is classified as a major, or Title V, source of air pollution because emissions of at least one regulated air pollutant exceed 100 tons per year. Air pollutant emissions are over 100 TPY for sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon monoxide (CO). It is also a major source because emissions of hazardous air pollutants exceed 10 tons per year individually or 25 tons per year in the aggregate.

This facility is on the list of the 28 Major Facility Categories, Table 62-212.400-1, F.A.C. Because emissions are greater than 100 tons per year for at least one criteria pollutant, the facility is also a major facility with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD).

The facility was issued a PSD permit, including a determination of Best Available Control Technology (BACT), by the United States Environmental Protection Agency (EPA) on May 15, 1987.

This facility is similar to the North Broward facility shown below:



3. PROJECT DESCRIPTION

3.1 *This permit addresses the following emissions units:*

EMISSION UNIT No.	SYSTEM	EMISSION UNIT DESCRIPTION
-001	Unit #1	863 Tons per Day (maximum) MSW Incinerator
-002	Unit #2	863 Tons per Day (maximum) MSW Incinerator
-003	Unit #3	863 Tons per Day (maximum) MSW Incinerator

Project: Compliance with Subpart Cb
Wheelabrator South Broward, Inc.

Facility I.D. No. 0112119
PSD- FL-105B and PA 85-21

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

On December 7, 1998, Wheelabrator South Broward, Inc requested a revision to their existing PSD permit for clarification of the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility. The permit currently allows for the combustion of "refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge." Although the applicant states that in the site certification application, the waste was identified as "all forms of garbage, commercial waste, rubbish, leaves and brush, paper and cardboard, plastics, wood and lumber, rags, carpeting, a limited amount of tires, wood furniture, mattresses, stumps, wood pallets, timber, tree limbs, ties, and logs, not separated and recycled at the source of generation, and minor amounts of pathological and biological wastes", the PSD permit and the PPSC document as written did not specify all these wastes. This permitting action will explicitly specify which materials can be burned.

In addition to the above request, Wheelabrator is also requesting:

- The addition of a Metal Recovery Facility
- The addition of Selective Non-Catalytic Reduction (SNCR) required to meet 40 Code of federal regulations (CFR) Part 60, Subpart Cb as adopted by reference in Rule 62-204(7)(b) Florida Administrative Code (F.A.C)
- A new permit condition for the fabric filter temperature in accordance with Cb Emission Guideline Requirements
- Elimination of Furnace Temperature limits
- Incorporate Good Combustion Practice (GCP) requirements of Subpart Cb.
- To eliminate emission limits for VOC, SAM, HF and As.

The existing boilers are already equipped with the spray dryer absorber and fabric filters. Wheelabrator uses the mercury separation program to reduce mercury emissions. Reduction of NO_x in the combustion gases will be accomplished by the proposed new SNCR system that involves injection of liquid ammonia (NH₃) or urea.

The following details the applicant's request and the Department determination:

3.2 *Waste fuels*

The units were originally permitted to utilize "refuse such as garbage and trash" as defined in the Department's solid waste rules. The applicant requests that the modified permit specify the wastes and certain segregated wastes as solid waste including municipal solid waste (MSW) as defined at 40CFR60.51b and Section 403.706 (5), F.A.C., Florida Statutes (1995). The applicant proposed the following wording:

- 3.2.1. Subject to the limitations contained in this permit, the authorized fuels for the facility also include the other solid wastes that are not MSW which are described below. However, the facility shall not burn:
- (a) those materials that are prohibited by state or federal law;
 - (b) those materials that are prohibited by this permit;
 - (c) those materials that are not authorized by this permit;
 - (c) lead acid batteries;

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

- (d) hazardous waste;
- (e) nuclear waste;
- (f) radioactive waste;
- (g) sewage sludge;
- (h) explosives.

3.2.2 The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the facility intends to use an authorized fuel that is segregated non-MSW material, the fuel shall be either:

- (a) well mixed with MSW in the refuse pit; or
- (b) alternately charged with MSW in the hopper.

3.2.3 The facility owner/operator shall prepare and maintain records concerning the description and quantities of all segregated loads of non-MSW material which are received and used as fuel at the facility, and subject to a percentage weight limitation, below (3.2.6. and 3.2.7). For the purposes of this permit, a segregated load is defined to mean a container or truck that is almost completely or exclusively filled with a single item or homogenous composition of waste material, as determined by visual inspection.

3.2.4 To ensure that the facility's fuel does not adversely affect the facility's combustion process or emissions, the facility operator shall:

- (a) comply with good combustion operating practices in accordance with 40 CFR 60.53b;
- (b) install, operate and maintain continuous emissions monitors (CEMS) for oxygen, carbon monoxide, sulfur dioxide, oxides of nitrogen and *particulate control device inlet* temperature in accordance with 40 CFR 60.58b; and
- (c) record and maintain the CEMS data in accordance with 40 CFR 60.59b.

These steps shall be used to ensure and verify continuous compliance with the emissions limitations in this permit.

Natural gas may be used as fuel during warm-up, startup, shutdown, and malfunction periods, and at other times when necessary and consistent with good combustion practices.

3.2.5 Subject to the conditions and limitations contained in this permit, the following other solid waste may be used as fuel at the facility:

- (a) Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons, *credit cards*, *magnetic tape* and microfilm);
- (b) Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;
- (c) Wood pallets, clean wood, and land clearing debris;
- (d) Packaging materials and containers;

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

- (e) Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or
 - (f) Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings.
- 3.2.6 Subject to the conditions and limitations contained in this permit waste tires may be used as fuel at the facility. The total quantity of waste tires received as segregated loads and burned at the facility shall not exceed 3%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined by using a rolling 30-day average in accordance with specific condition No. 3.2.8 below.
- 3.2.7 Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the facility (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned at the facility shall not exceed 5%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined by using a rolling 30 day average in accordance with specific condition No.3.2.8 below.
- (a) Construction and demolition debris.
 - (b) Oil spill debris from aquatic, coastal, estuarine or river environments. Such items or materials include but are not limited to rags, wipes, and absorbents.
 - (c) Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf-life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.
 - (d) Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.
 - (e) Waste materials that:
 - (i) are generated in the manufacture of items in categories (c) or (d), above and are functionally or commercially useless (expired, rejected or spent); or
 - (ii) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.
 - (f) Waste materials that contain oil from:
 - (i) the routine cleanup of industrial or commercial establishments and machinery; or
 - (ii) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.
 - (g) Used oil and used oil filters. Used oil containing a PCB concentration equal or greater than 50 ppm shall not be burned, pursuant to the limitations of 40 CFR 761.20(e).
 - (h) Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW, subject to prior approval of the Department.

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3.2.8. Segregated Solid Waste Record Keeping:

The following records shall be made and kept to demonstrate compliance with the segregated non-MSW percentage limitations of specific condition 3.2.

Each segregated load of non-MSW materials, that is subject to the percentage weight limitation of specific conditions 3.2.6 and 3.2.7, which is received for processing shall be documented as to waste description and weight. The weight of all waste materials received for processing shall be measured using the facility truck scale and recorded.

Each day the total weight of segregated tires received shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of tires shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 3% limitation.

Each day the total weight of segregated non-MSW materials received that are subject to the 5% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of segregated non-MSW materials shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 5% limitation.

3.3. *Emission Limits*

- The applicant proposes that the following emissions limits currently in the PSD/PPSC be deleted:
- Emission limits for sulfuric acid mist and fluorides (as HF) be deleted since the facility has continuously demonstrated compliance with these limits.
- CO limit to be replaced with the Subpart Cb Good Combustion Practice (GCP) requirements.
- To eliminate the VOCs emission limit since the CO limit would provide assurance that emissions of VOCs remain low.
- To eliminate the arsenic emissions limit since this pollutant is not longer considered a PSD pollutant.

The Department's Bureau of Air Regulation has determined that a CO limit pursuant to 40CFR 60 Subpart Cb shall be part of the permit. The CO limit requirement is one of the rationales to demonstrate continuous compliance with GCP stated in the EPA Municipal Waste Combustion: Background Document mentioned below and is also a part of the applicable Subpart Cb emissions standards.

Regarding, hydrogen fluoride (HF), the Department would need a history of test results for a minimum of 5 consecutive years of burning the proposed fuels to determine if limits for these pollutants could be removed since these limits were part of the original BACT-PSD permit.

Regarding arsenic (As), the PSD permit does not include an emission limit for this pollutant. No new limit for this pollutant would be imposed as a result of this permitting action.

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For VOCs and sulfuric acid mist ($H_2SO_{4\text{ mist}}$) emissions limits, is the Department intention to remove them from the Power Plant Site Certification (PPSCC). The Department believes that since 40CFR60 Subpart Cb does not include emission standards for these pollutants, compliance with the CO and SO₂ emissions limits are sufficient to determine compliance with the VOCs and sulfuric acid mist ($H_2SO_{4\text{ mist}}$) emissions limits imposed in the original PPSCC.

3.4. *Removal of 300 OF SDA/FF outlet Temperature Limit*

The applicant proposed that the existing 300°F PPSC temperature limit at the acid gas control device exit (fabric filter outlet) be replaced with the Subpart Cb particulate control device inlet temperature limit.

The applicant contends that the Subpart Cb temperature limit is determined during annual compliance testing and therefore it is directly tied to actual emissions performance of the boiler and air pollution control equipment. They state that the current, PPSC limit of 300°F at the exit of the acid gas control device was primarily intended to ensure that the acid gas control device would achieve at least 90 percent removal of acid gases and secondarily to ensure that trace metals and semivolatile organics such as dioxins would be condensed onto particulate and therefore collected in the particulate control device.

The applicant adds that the 90 percent removal of acid gases design requirement in the PPSC presumably referred to hydrogen chloride (HCl) since SO₂ had a specific limit of 0.14 lb/mmBtu or 65 percent removal. Subpart Cb incorporates emission limits for MWC acid gases (HCl and SO₂). The HCl limit of 29 ppm at 7 percent O₂ or 95 percent removal is based on annual stack testing. The Subpart Cb, HCl limit can be continuously achieved by SDA/FF air pollution control equipment irrespective of a 300°F temperature limit. They affirm that, the Subpart Cb temperature limit derived directly from annual compliance tests ensures that control of trace metals and dioxins or other organics will be continuously achieved. The regulated metals, including cadmium, lead, and beryllium, condense onto particulate at temperatures well above 300°F in the convective sections of the boiler. Consequently, maintaining a 300°F baghouse outlet temperature provides no additional control for these metals. Mercury control will increase at lower fabric filter temperatures but test data has shown little difference in mercury removal at temperatures less than 350°F. The fact that the applicant uses waste separation for mercury control further supports its position.

Based on the above, the applicant believes that the substitution of the Subpart Cb particulate control device inlet temperature limit for the existing 300°F limit will ensure that high removal levels of all metals and semivolatile organics will be continuously achieved. Operating at a higher temperature will also reduce baghouse maintenance due to higher corrosion levels attributed to operating at a lower temperature.

The Department's Bureau of Air Regulation concurs with the applicant and its proposal. The outlet temperature requirement is deleted from the permit and replaced by the inlet temperature to the control device as required by 40 CFR60 Subpart Cb.

As explained in the EPA's Background Information Document to the Subpart Cb Emissions Guidelines, EPA decided to select the inlet temperature to the control device as the control

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parameter. EPA explanation to how to determine the maximum PM control device inlet temperature is to “take the highest average PM control device inlet temperature measured during any one of three successful performance run for dioxin/furans and to add 17°C (30°F). The averaging time for the PM control device inlet temperature limit must be consistent with the averaging time for a single dioxin/furan performance test (approximately 4 hours). If an 8-hour averaging time was allowed for the inlet temperature, then a unit could theoretically operate for 4 hours at temperatures above those shown to be safe by the dioxin/furan performance test. The PM control device inlet temperature requirements help ensure that conditions for high dioxin/furan formation rates do not occur. The temperature limit also controls partitioning of dioxin/furan between the solid and vapor phase. At lower temperatures, dioxins/furans remain absorbed on PM and are disposed with the collected fly ash. There is no evidence that dioxin/furans absorbed on fly ash can be volatilized at ambient temperatures nor leached in landfills. EPA adds that the temperature at which low dioxin/furan emissions is achieved may defer between MWC units, and that the requirements take that into consideration”¹.

3.5 *Furnace Temperature Requirements*

The PPSC and the PSD permit require that the furnace temperature be monitored and maintained above 1,800°F.

The applicant proposes that based on continuing compliance with the Subpart Cb good combustion practice (GCP) operational requirements, the furnace temperature limit and monitoring requirements can be eliminated from the permit and PPSC. They affirm that the GCP requirements will ensure that optimum boiler combustion and fabric filter operating conditions are continuously achieved minimizing emissions of dioxins and organics, the original intent of the PPSC furnace temperature limit.

According to the applicant, the original objective of furnace temperature requirements was to assure combustion conditions were sufficient for maximum destruction of organics in the combustion zone. US EPA, in the development of the MWC standards and Emissions Guidelines under Subpart Eb and Cb, was concerned that imposing furnace temperature requirements could be counter productive since air/fuel mixing would be adversely impacted. To maintain furnace temperature at full boiler load generally requires a decrease in total boiler excess air, which is accomplished by decreasing the relative amount of overfire air. With decreasing overfire air, overfire air penetration into the secondary combustion zone will be reduced. Consequently, air/fuel mixing will be reduced, which results in reduced oxidation/destruction potential for organics. The applicant states that a furnace temperature requirement does not address the secondary formation of dioxins on flyash or particulate matter in the low temperature sections of the boiler and particulate control equipment. This secondary formation of dioxins has the largest potential impact on boiler dioxin emissions and is directly addressed by limiting carryover of particulate matter/flyash and minimizing operating temperature of the particulate control equipment, which compliance with Subpart Cb GCP requirements ensure.

The applicant adds that complying with the Subpart Cb CO limit ensures that both optimum furnace/temperature conditions and good air/fuel mixing are being maintained. Limiting boiler steam flow to the average steamflow achieved during annual compliance tests minimizes

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particulate carryover to the cooler section of the boiler and PM control device reducing potential for low temperature dioxin formation. Finally, minimizing particulate control device operating temperature to within 30°F of that achieved during compliance tests ensures that low temperature post-combustion dioxin formation is minimized.

The applicant cites the USEPA conclusion that the three major components of the GCP standard under NSPS Subparts Ea, Eb, and Cb are the most effective mechanisms for ensuring optimum combustion conditions, maximizing organic destruction, and minimizing the potential for post-combustion zone formation of organics. The three components of GCP include: 1) a short term CO emission limit, 2) restricting maximum boiler operating conditions using a steam flow limit and 3) restricting operating temperatures in the particulate control equipment.

The Department's Bureau of Air Regulation concurs with the applicant and this requirement is deleted and replaced with the good combustion practices (GCP) outlined in the 40 CFR 60, Subpart Cb.

In fact, the EPA spent a substantial amount of resources investigating, developing, and documenting GCS. The EPA's first effort resulted in a report on the combustion control of organics (Municipal Waste Combustion Study: Combustion Control of Organics, EPA/530-SW-87-021c, June 1987). In reviewing these recommendations, EPA decided that only three parameters would be required to demonstrate continuous compliance with GCP. These include a "CO emission limit to insure operation at combustion conditions which are indicative of the furnace destruction of organics, a load limit which is to control the amounts of PM which are carried out of the combustor with flue gases, and a temperature limit at the inlet of each PM control device to control formation of CDD/CDF within each control device"¹.

3.6. *Metal Recovery Facility*

The applicant is proposing to install equipment and facilities, pursuant to Rule 62-701.700 F.A.C, to expand the removal of recoverable metals from the bottom ash generated by the facility. The proposed metal recovery system involves a series of conveyors and mechanical devices that will separate the ferrous and non-ferrous metals from the bottom ash of the MSW fired boilers. The processing will occur in a new enclosed building to be located adjacent to the existing ash loadout area. All bottom ash is currently quenched with water after leaving each boiler. The resulting bottom ash will be about 20 to 30 percent moisture and will not generate fugitive dust.

The Department's Bureau of Air Regulation concurs with the applicant and allows the construction of this facility since no fugitive dust emissions are expected.

3.7 *Selective Non Catalytic Reduction (SNCR) System*

To comply with the NOx emission limits specified in Subpart Cb, the applicant is proposing to install a selective non-catalytic reduction (SNCR) system. The following is the applicant's description of the proposed system:

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The proposed retrofit will store, convey, and inject aqueous urea into the furnace of each boiler immediately above the over fire air zone. The SNCR system will use urea, instead of ammonia, to provide the reducing reaction with NO_x forming nitrogen and water. The reaction occurs across a wider temperature range than ammonia and reduces the potential health and safety risks associated with the release of ammonia during handling or storage. Ammonia slip is generally controlled to less than 50 ppmvd at 7 percent O₂.

The SNCR unit will be designed to allow the concentrated reagent to be delivered to the facility in a heated, self-unloading tanker truck and transferred to a heated fiberglass reinforced plastic tank for on site storage. The tank will provide approximately one-two weeks of storage capacity under normal operating conditions.

A common circulation module transfers the chemical from the storage tank to the individual boiler metering modules. A recirculation pump and a supplemental electric heater, both located on the circulation module, provide agitation and heating capability. Flow and pressure control of the urea and dilution water fluids used in the SNCR process is performed with the metering modules. Metering of the concentrated reagent, dilution of the reagent with water and mixing of the resulting solution is also accomplished at these modules. The diluted reagent is pumped to the distribution modules where the individual distribution panels are located. The panel regulates the compressed air and diluted reagent flows to the individual fluid injection nozzles.

The Department's Bureau of Air Regulation allows the installation of the SNCR system to reduce NO_x emissions to comply with the 40CFR Subpart Cb NO_x standard.

4. PROCESS DESCRIPTION

4.1 *General Information*

The facility is a waste-to-energy installation employing mass burning of solid waste, heat recovery as superheated steam, and power generation in a steam electric cycle. Other than landfilling, this is the most common method of solid waste disposal in the United States. There are twelve such facilities in the State of Florida. The following is a general description of the process.

Waste is received via transfer, roll-off, or collection vehicles. All waste is taken to the Refuse Receiving Building, where it is deposited onto the tipping floor or into the Refuse Storage Pit. The refuse is stored at this location until needed to charge the combustion units.

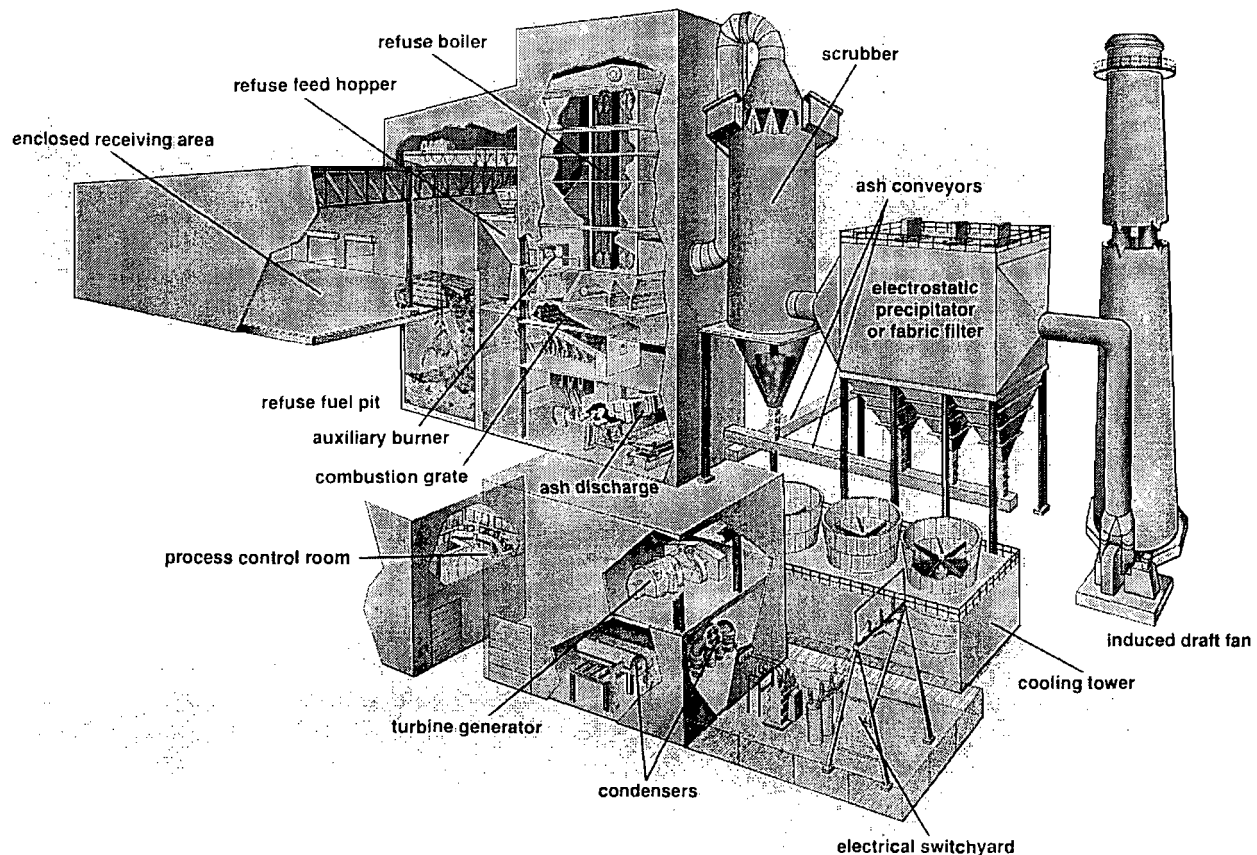
Charging of the combustion units is accomplished using overhead cranes equipped with "orange peel" grapples. These stack, mix, and relocate waste within the pit and transfer it into the feed hoppers serving each unit. The waste enters the three refuse-fired steam generators, each of which consists of an integrated mass-burn furnace and boiler.

Combustion air is drawn from the refuse tipping area (assisting in odor control) and conveyed through the gas side of the air preheater and into the refuse-fired generators where the waste is combusted. Exhaust gases from the refuse-fired generators pass through an economizer units and are ducted to the air pollution control systems which consists of spray dryer adsorbers and fabric filter bag houses. Treated gases are exhausted to the atmosphere through three individual flues within a single 195 foot stack. Bottom ash from the furnaces is removed, quenched and processed for metal recovery and disposal.

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The superheated steam from each boiler enters a turbine where it is expanded. The turbine powers a 67.6 megawatt electric power generator. The electric power is introduced into the electrical grid and is purchased by the local utility.

A diagram of the Waste-to-Energy System follows:



4.2 Operating Window

Wheelabrator operates the plant within a so-called 115 percent “operating window,” or 863 tons per day normalized around the previous nominal capacity of 750 tons per day at a waste heat content of 4,500 Btu per pound (Btu/lb). Because of the wide range in waste heat content, Wheelabrator wants to continue with sufficient flexibility to burn more waste to achieve the desired steam production (192,000 lb/hr), particularly when waste heat content is low. This is a common and recognized industrial and regulatory practice. This permitting action will not revise the allowed operating window but will clarify maximum rated capacities of the units in terms of waste throughput, heat input and steam flow consistent with the above operating window {refer to the permitting note of the revised permit PSD-FL-105 (B)}.

It is expected that Wheelabrator will provide the Department with an updated engineering assessment of the maximum rated capacities of the units in terms of waste throughput, heat input and steam flow consistent with the allowable steam flow of 192,000 lb/hr of steam before the issuance of this final permit modification.

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5. RULE APPLICABILITY

This facility is located in Broward County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C.

Because the project, as proposed, is expected to reduce NO_x air emissions it would not normally be considered a modification under Chapters 62-210 and 62-212 of the Florida Administrative Code (F.A.C.). However the applicant plans to burn a more varied slate of wastes, thus creating at least the potential for an emission increase of at least one air pollutant. Therefore the project must be assessed for permitting requirements and preconstruction review requirements. Because some of these changes, including the proposed emission limits and requested deletion of the VOC, SAM, HF BACT limits affect existing PSD permit conditions, a permit modification is required whether or not the project constitutes a facility or source modification.

The proposed project is not subject to review under Chapter 62-212, specifically Rule 62-212.400 F.A.C., Prevention of Significant Deterioration (PSD), because the potential emission increases for each pollutant do not exceed the significance emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C. The professional engineer's certification states that there is not a net emissions increase (no change in actual emissions), as defined in Rule 62-212.400(e), F.A.C for any pollutant from the proposed revision to PSD-FL-105 (Golder Associates's letter of April 9, 1999). In the case of NO_x, the only pollutant affected by this PCP, there would be an emissions reduction due to the addition of the Selective Non-Catalytic Reduction System (SNCR).

Despite the burning of more varied waste slate requested concurrently with the existing pollution control system, actual emissions of all pollutants will probably decrease or remain the same. Emissions of NO_x will be reduced with the installation of SNCR system.

A pollution control project (PCP), as is the installation of the SNCR system to control NO_x emissions, that is added, replaced, or used at an existing electric utility steam generating unit and that meets the requirements of 40 CFR 52.21 (b) (2)(iii)(h) is not subject to the preconstruction review requirements of this rule.

Pursuant to 40 CFR 52.21 (b)(2)(iii)(h), "a physical change or change in the method of operation shall not include the addition, replacement or use of a pollution control project at an existing electric utility steam generating unit, unless the Administrator determines that such addition, replacement, or use renders the unit less environmentally beneficial, or except: (1) When the Administrator has reason to believe that the pollution control project would result in a significant net increase in *representative actual annual emissions* of any criteria pollutant over levels used for that source in the most recent air quality impact analysis in the area conducted for the purpose of Title 1, if any, and (2) The Administrator determines that the increase will cause or contribute to a violation of any national ambient air quality standard or PSD increment, or visibility limitation".

Because each combustor and each turbine and generator comprise an *electric utility steam generating unit* with a capacity greater than 25 megawatts, the Department can alternatively review PSD applicability by comparing past actual emissions with *representative future actual annual emissions*.

The main rules applicable to this project are 40CFR60, Subpart Cb - Emission Guideline and Compliance Times for Municipal Waste Combustors That Are Constructed on or Before December 19, 1995 (the Emission Guideline) and Rule 62-296.416, F.A.C., Waste-to-Energy Facilities.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Physical or operational changes made to an existing unit primarily for the purpose of compliance with the Emission Guideline are not considered in determining whether the unit is a modified or reconstructed facility under 40CFR60, Subparts Ea or Eb. The latter subparts are Standards of Performance for MWCs on which construction commenced after December 20, 1989 and September 20, 1994, respectively. The Emission Guideline and the other Subparts are all adopted by reference in Rule 62-204.800(7) and (8), F.A.C.

This facility is not subject to the Maximum Achievable Control Technology (MACT) for Hazardous Air Pollutants (HAPs) requirements pursuant to Section 112(g) of the Clean Air Act since the addition of the SNCR to comply with the NO_x standard does not constitute reconstruction of a major source. The Emission Guideline under Subpart Cb, with which the facility will comply, was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. It requires and achieves the same objectives as MACT for existing facilities.

This facility shall comply with all applicable provisions of the following regulations:

- 40 CFR 60 Subpart Cb Emissions Guidelines and Compliance Times for Existing Municipal Waste Combustors Constructed on or Before December 19, 1995.
- 40 CFR 51 Subpart P Protection of Visibility.
- 40 CFR 60, Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.
- 40 CFR 60, Subpart E Standards of Performance for Incinerators.
- 40 CFR 60, Subpart A General Provisions
- 40 CFR 61, Subpart C National Emission Standard for Beryllium
- 40 CFR 64 Compliance Assurance Monitoring Rule
- 40 CFR 50 National Primary and Secondary Ambient Air Quality Standards

This facility is also subject to the applicable requirements related to used fuels and wastes given in 40CFR279, 40CFR273 and 40CFR261 (July 1998 version), which are adopted by reference in Chapters 62-710, 62-737 and Chapter 62-730, F.A.C.

The emission units affected by this revision shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

Chapter 62-17	Electric Power Siting
Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.360	Designation of Prevention of Significant Deterioration Areas
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Chapter 62-214	Requirements For Sources Subject To The Federal Acid Rain Program
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-296.410(3)	Specific Emission Limiting and Performance Standards Requirements for Incinerators
Rule 62-296.416	Waste to Energy Facilities
Chapter 62-256	Open Burning and Frost Protection Fires
Rule 62-297.570	Test Reports
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

6. PROJECTED EMISSIONS

6.1 *Emission Limitations*

Emission limits

The maximum allowable short-term emission limits for the facility before and after implementation of the requested changes are as follows:

POLLUTANT	PERMITTED LIMIT	PROPOSED LIMIT
Sulfur Dioxide (SO ₂) ¹	129.8 ppm @ 7% O ₂	29 ppmdv @ 7% O ₂ or 75% removal
Sulfur Dioxide (SO ₂) ²	58.6 ppm @ 7% O ₂	
Volatile Organic Compounds (VOC) ^(c)	0.013 lb/MMBtu	none - CO is surrogate
Particulate Matter (PM) ^{3(a)(b)}	34.9 mg/dscm @ 7% O ₂	27 mg/dscm @ 7% O ₂ ⁽⁹⁾
Particulate Matter (PM) ⁴	111.3 mg/dscm @ 7% O ₂	
Particulate Matter (PM) ⁵	186.0 mg/dscm @ 7% O ₂	
Nitrogen Oxides (NO _x) ^{6(a)(b)}	325.9 @ 7% O ₂	205 ppmdv @ 7% O ₂ (24-hr) ⁽⁹⁾
Carbon Monoxide (CO) ^{7(a)(b)}	406.4 ppm @ 12% CO ₂	100 ppmdv @ 7% O ₂ (4-hr) ⁽¹⁰⁾
Carbon Monoxide (CO) ^{7(a)(b)}	86.9 ppm @ 7% O ₂	87 ppmdv @ 7% O ₂ (4-day rolling average) ⁽¹⁰⁾
Total Fluoride (F) ^{(a)(b)}	0.004 lb/MMBtu	none
Sulfuric Acid Mist (H ₂ SO ₄ or SAM) ^(c)	0.047 lb/MMBtu	none
Hydrogen Chloride (HCl)	None	29 ppmdv @ 7% O ₂ or 95% removal
Beryllium (Be) ^{(a)(c)}	9.30 E-07 lb/MMBtu	none
Lead (Pb) ^{(a)(b)}	1.67 mg/dscm @ 7% O ₂	440 ug/dscm @ 7% O ₂ ⁽⁹⁾
Mercury (Hg) ^{(a)(c)}	0.84 mg/dscm @ 7% O ₂	70 ug/dscm @ 7% O ₂ or 85% removal ⁽⁹⁾
Dioxins/Furans	None	30 ng/dscm @ 7% O ₂ ⁽⁹⁾
Cadmium (Cd)	None	40 ug/dscm @ 7% O ₂ ⁽⁹⁾
VE10		10% ⁽¹¹⁾
VE15 ^{(a)(b)}		NA
VE20 ^(a)		NA

Basis: Table 4-2 Wheelabrator - South Broward Waste to Energy Facility Emission Limits submitted on December 7, 1998.

1. And 124 ppm at 12% CO₂-dry not to exceed: 3-hour rolling average
2. And 60 ppm at 12% CO₂-dry: or 65% removal: 3-hour rolling average
3. Corrected to 12% CO₂-dry (MCC)
4. 40 CFR 60.43b(d)
5. @ 50% air- 296.401(3)(a)
6. And 350 ppm at 12% CO₂; 3-hour rolling average
7. And 400 ppm at 12% CO₂-dry: 1-hour rolling average
88 ppm at 12% CO₂- dry: 4-day rolling average
8. Rule 62-296.320(4)(b) (1)

Project: Compliance with Subpart Cb
Wheelabrator South Broward, Inc.

Facility I.D. No. 0112119
PSD- FL-105B and PA 85-21

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

- 9. Corrected to 7% O₂ (dry); FDEP limit
- 10. Corrected to 7% O₂ (dry); 4-hour block average
- 11. 6 min block average
 - a. PSD-FL-105 Part 1,1.a
 - b. Final Order Modifying Conditions of Certification No. 85-21; (4/17/91)
 - c. Original PA-85-21

6.2 Recent Stack Test Results

The following is a summary of recent stack test results (converted using EPA Method 19) from each combustor and the comparison with the limits of 40 CFR 60 Subpart Cb. As the table shows, except for the NO_x standard, all the standards are well below the applicable Subpart Cb limits. It is expected pursuant to 40 CFR 52.21 (b)(2)(iii)(h), that this project as proposed would not have significant increase in representative actual emissions of any pollutant. A selective non-catalytic system (SNCR) will be installed for the control of NO_x.

POLLUTANT	UNITS	EMISSIONS 001	EMISSIONS 002	EMISSIONS 003	SUBPART Cb
SO ₂	ppm @ 7% O ₂	11.76	13.35	18.59	29
NO _x	ppm @ 7% O ₂	272.98	283.45	266.57	205
CO	ppm @ 7% O ₂	15.29	12.43	10.52	100
PM	mg/dscm @ 7% O ₂	14.47	4.01	2.23	27
Pb	mg/dscm @ 7% O ₂	0.085	0.010	0.012	0.49
Hg	ug/dscm @ 7% O ₂	14.2	18.1	24.1	70
Dioxins/Furans	ng/dscm @ 7% O ₂	NC	NC	NC	30
Opacity	Percent	0%	0%	0%	10%

Source:

Table 4-3 Summary of Recent Stack Test Results (3/98) as compared to Limits of 40 CFR 60 Subpart Cb South Broward Resource Recovery Facility. Wheelabrator's data dated November 1998.

6.3 Control Technology Review

There will be no change to the existing emissions control systems for acid gases and particulate matter. Each unit is equipped with a spray dryer adsorber and a fabric filter baghouse system. New proposed selective non catalytic reduction (SNCR) system will be installed to control NO_x emissions. This facility chose to control mercury emissions by implementation of a mercury waste separation program.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.4 Emissions Summary

[EMISSION UNIT Nos. -001, -002 or -003]

Pollutants	Current Allowable		New Allowable		Net Increase or Decrease ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	
PM/PM ₁₀	10.1	44.5	7.85	34.4	-10.11
SO ₂	70.9	310.6	35.1	153.7	-156.9
NOx	181.2	793.3	114	499.0	-294.3
CO	29.1	127.6	33.9	148.5	20.9
Mercury	0.24	1.08	0.02	0.09	-1.0
Beryllium	3.01E-04	1.32E-03	3.01E-04	1.32E-03	0
HCL	None	None	12.55	55	0
Dioxins	None	None	8.7E-06	3.80E-05	0
Cadmium	None	None	0.012	0.051	0
Lead	0.48	2.11	0.142	0.62	-1.5

Source: Table 1. Allowable Emissions for South Broward Resource Recovery Facility. Golder Associates Inc's letter dated April 9, 1999.

6.5 Air Quality Analysis

6.5.1 Introduction

An air quality analysis was not required for this project.

7. CONCLUSION

Based on the foregoing technical evaluation of the application submitted by Wheelabrator South Broward, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided certain conditions are met. The Specific Conditions are listed in the attached draft permit amendment.

NSR Administrator: A.A. Linero, P.E.

Permit Engineer: Teresa M. Heron

REFERENCES

¹ EPA-453/R-95-0136 Municipal Waste Combustion, Background Information Document for Promulgated Standards and Guidelines- Public comments and Responses. October 1995.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT MODIFICATION

In the Matter of an
Application for PSD Permit Modification
In the Matter of an
Application for Permit Amendment by:

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

DRAFT Permit Amendment No. PSD-FL-105(B)
Wheelabrator South Broward, Inc.
Broward

Enclosed is the PSD Permit Modification Number PSD-FI-105 (B). This modification is to revise the existing PSD permit for clarification of the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility, and to install a selective non-catalytic reduction system for NOx control. Additional requested revisions to the permit are to replace the 300 °F temperature limit at the acid control device (fabric filter outlet) with the Subpart Cb particulate control device inlet temperature and to eliminate the furnace temperature requirements by incorporation of the good combustion practices (GCP) specified in Subpart Cb. This modification will also allow Wheelabrator to install equipment and facilities to expand the removal of recoverable metals from the bottom ash generated by the facility. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT MODIFICATION (including the PSD permit Modification) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on _____ to the person(s) listed:

Thomas D. Kirk, Plant Manager, Wheelabrator South Broward, Inc. *
Ken Kosky, P.E
Gregg Worley, EPA
Isidore Goldman, P.E, FDEP SED
Daniela Banu, Director, BCDNRP
Buck Oven, P.E, DEP/PPSC

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED. on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk)

(Date)

**PSD PERMIT MODIFICATION
PSD-FL-105 (B)**

SPECIFIC CONDITIONS

PSD-FL-105 is hereby amended as follows:

1. Emission Limitations

a. Stack emissions from each unit shall not exceed the following:

Particulate: _____ 0.0150 gr/dscf dry volume corrected to 12% CO₂.

Sulfur Dioxide: _____ (1) _____ 0.140 lb/MMBtu heat input and 60 ppm (3-hr rolling
_____ average, dry volume, corrected to 12% CO₂); or

_____ (2) _____ 65% reduction of uncontrolled SO₂ emissions.* In no case
_____ shall the SO₂ emissions exceed 0.310 lb/MMBtu heat input
_____ and 124 ppm (3-hr rolling average, dry volume, corrected
_____ to 12% CO₂).

The 124 ppm limit above shall be modified to reflect a new emission limit (in ppm) from the control device at 65% control efficiency. Within 18 months of start up of operation, the County shall submit compliance tests that will be used to determine the new SO₂ emission limit (in ppm). The limit will be determined by observed average emission rate (x) from the submitted compliance tests and will be statistically analyzed using the one-tailed student T test ($t_{.05} = (x - u) / (s / \sqrt{n})$) at the 95% confidence level to derive a mean emission rate (u), where s is the standard deviation of observed values n. The final operating SO₂ emission limit (in ppm) shall be this mean emission rate (u). This value shall be restricted to no more than 124 ppm or less than 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂).

Nitrogen Oxides: _____ .560 lb/MMBtu heat input and 350 ppm (3-hr rolling
_____ average, dry volume corrected to 12% CO₂).

Carbon Monoxide: _____ .090 lb/MMBtu heat input: 400 ppm (1-hr rolling average,
_____ dry volume, corrected to 12% CO₂); and 88 ppm (4-day
_____ rolling average, dry volume, corrected to 12% CO₂).

Lead: _____ .00056 lb/MMBtu

Fluorides: _____ .0040 lb/MMBtu

Beryllium: _____ 9.30×10^{-7} lb/MMBtu

Mercury: _____ 7.50×10^{-4} lb/MMBtu

1. EMISSIONS LIMITATIONS

a. The following emissions standards apply to the following emissions units after improvements to comply with 40 CFR Subpart Cb are completed.

PSD PERMIT MODIFICATION
PSD-FL-105 (B)

EMISSIONS UNIT NO.	EMISSIONS UNITS DESCRIPTION
001	281 MMBtu/hr (nominal) Municipal Waste Combustor & Auxiliary Burners - Unit No.1
002	281 MMBtu/hr (nominal) Municipal Waste Combustor & Auxiliary Burners - Unit No.2
003	281 MMBtu/hr (nominal) Municipal Waste Combustor & Auxiliary Burners - Unit No.3

{Permitting Note: Each of the three municipal waste combustor (MWCs) shall have a *nominal* design rate capacity of 750 tons MSW per day (a maximum of 863 tons per day), 281 MMBtu per hour with MSW having a heating value of 4,500 Btu per pound. The "operating window" of 115 percent (%) over the nominal design rate of 281 MMBtu heat input corresponds to 323.6 MMBtu/hr heat input and a maximum of 192,000 lb steam/ hour (5,600 BTU/lb heating value). Short-term capacity is limited by limiting steam production (maximum of 192,000 lb/hr), which effectively limits heat input.

POLLUTANT	EMISSIONS STANDARDS	EQUIVALENT EMISSIONS		
		LB/MMBtu	LB/HR	TON/YR
PM⁽¹⁾ Particulate Matter	27 mg/dscm or 0.012 gr/dscf corrected to 7% O ₂	0.024	7.85	34.4
VE Visible Emissions	10% (6 min. block avg.)			
Cd Cadmium	0.040 mg/dscm corrected to 7% O ₂	3.6E-05	0.012	0.051
Be⁽²⁾ Beryllium	0.001 mg/dscm corrected to 7% O ₂	9.3E-07	0.0003	0.0013
Pb Lead	0.44 mg/dscm corrected to 7% O ₂	4.4E-04	0.142	0.62
Hg Mercury	70 ug/dscm or 85% reduction by weight or volume corrected to 7% O ₂ (whichever is less stringent).	6.3E-05	0.02	0.09
SO₂ Sulfur Dioxide	29 ppmv or 75% reduction by weight or volume corrected to 7% O ₂ (whichever is less stringent)	0.108 or 75% reduction @ 7% O ₂	35.1 or 75% reduction @ 7% O ₂	153.7
HCl Hydrochloric Acid	29 ppmv or 95% reduction corrected to 7% O ₂ (whichever is less stringent)	0.042 or 95% reduction @ 7% O ₂	12.6 or 95% reduction @ 7% O ₂	55
Dioxins/Furans	30 ng/dscm corrected to 7% O ₂	2.7 E-08	8.7E-06	3.8E-05
CO Carbon Monoxide	100 ppmv corrected to 7% O ₂	0.105	33.9	148.7
NOx⁽²⁾ Nitrogen Oxides	205 ppmv corrected to 7% O ₂	0.352	114	499

These maximum allowable emission rates are applicable to each MWC combustor unit. [Rules 62-4.070, and 62-296.416, F.A.C., 40 CFR 60.33b and 40 CFR 60.34b]

For fluoride, the permittee shall conduct initial performance test to demonstrate that the burning of the requested fuels do not exceed the BACT original permitted emission level. No annual testing is required.

F Fluorides	To be demonstrated initially Not to exceed 0.0040 lb/MMBtu	0.0040	1.29	5.66
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Notes:

- (1) This limit for PM is more restrictive than the emission limit for PM in 40 CFR 60.43b
- (2) Beryllium: PSD original permit limit. Not to exceed applicable NESHAP. 40 CFR 61.32 (a)(Subpart C).

Basis: Equivalent emissions calculations (lb/hr and ton/yr) are based on the maximum heat input rate of 326.6 MMBtu/hr and 192,000 lb steam/hr [115 % rated capacity] per unit and 8760 hours of operation. Nominal rated capacity of each boiler is 750 tons waste per day. Nominal heat input capacity is 281 MMBtu/hr. Short-term capacity is limited by limiting steam production (192,000 lb steam/hr) which effectively limits heat input.

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Averaging Times

SO₂: 24-hour daily block geometric mean (midnight to midnight)
NO_x: 24-hour daily block arithmetic mean (midnight to midnight)
CO: 4-hour block arithmetic mean beginning at midnight
Opacity: 6 minutes block arithmetic mean

Abbreviations

ug/dscm: Micrograms per dry standard cubic meter
mg/dscm: Milligrams per dry standard cubic meter
ppmdv: Part per million dry volume
ng/dscm: Nanograms per dry standard cubic meter
Dioxins/ furans: Total tetra through octa-chlorinated dibenzo-p dioxins and dibenzofurans
F: Fluorides as hydrogen fluoride

Temperature: 17° C above maximum demonstrated PM control device inlet

~~Visible Emissions: Opacity of stack emissions shall not be greater than 15% opacity. Excess opacity resulting from startup or shutdown shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess opacity shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by EPA for longer duration.~~

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonable be prevented during start-up or shutdown shall be prohibited.

a.(2) Visible Emissions:

No owner or operator of this facility shall cause to be discharge to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 % of the observation period (i.e., 9 minutes per 3-hour period) as determined by EPA Reference Method 22.

[Rule 62-204.800(8), F.A.C., 40 CFR 60.36b; 60.55b and 62-4-070(3) F.A.C.]

~~The units are subject to 40 CFR 60 Subpart E, and Subpart Db, New Source Performance Standards (NSPS), except that where requirements in this permit are more restrictive, the requirements in this permit shall apply.~~

a. (3) Applicable Requirements:

These units are subject to all applicable requirements of 40 CFR 60 Subpart Cb, Emissions Control Guidelines and Compliance Schedules for Municipal Solid Waste Combustors, Subpart E, NSPS for Incinerators, Subpart Db NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40CFR61 Subpart C, NESHAP for Beryllium and Rule 62-296.416 F.A.C., Waste-to-Energy Facilities, except that where requirements in this permit are more restrictive, the requirements in this permit shall apply.

[PSD-FL-112, 40CFR60 Subparts Cb, E, Db and 40CFR61 Subpart C]

~~There shall be no greater than 10% opacity for emissions from the refuse bunker and the ash handling and loadout. The potential for dust generation by ash handling activities will be mitigated by quenching the ash prior to loading in ash transport trucks. Additionally, all portions of the proposed facility including the ash handling facilities which have the potential for fugitive emissions shall be enclosed. Also, those areas which have to be open for operational purposes (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure.~~

a.(4) Ash Handling Facilities:

There shall be no greater than 5% opacity for emissions from the refuse bunker and the ash handling and loadout. The potential for dust generation by ash handling activities will be mitigated by quenching the ash prior to loading in ash transport trucks. The ash handling

**PSD PERMIT MODIFICATION
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facilities shall be enclosed (*including the metal recovery area*). Unprocessed refuse storage areas which must be open for operational purposes (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure. Residue from the grates, grate siftings, and ash from the combustor/boiler and fabric filter hoppers during normal operations shall be discharged into the ash quenching system to minimize visible dust. The ash/residue in the Ash Handling Building shall remain sufficiently moist to prevent dust during storage and handling operations.

[Rule 62-204.800(8), F.A.C., 40 CFR 60.36b; 60.55b and 62-4-070(3) F.A.C.]

b. No change

c. ~~None of the three individual municipal waste incinerators shall be charged in excess of 323.6 mMBtu/hr and 863 tons per day MSW (115% rated capacity) nor produce 192,000 lb/hr steam (3 hr rolling average).~~

c.(1) Operating Rates:

The maximum individual MWC throughput shall not exceed 863 tons MSW per day (2589 tons per day entire facility), 323.6 MMBtu per hour and 192,000 pounds steam per hour (115 % of the nominal design rate) based on a 4-hour block arithmetic average. The incinerators/boilers shall not be loaded in excess of their maximum operating capacity of 36 tons MSW per hour each, equivalent to 2589 tons MSW per day total, but no more than 2250 tons MSW per day on an annual (52 week rolling average) average basis for the entire facility. (Compliance per new Specific Conditions c.(2) listed below)

[Rule 62-204.800(8), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b, and 60.58b(j)]
[PSD-FL-105/PA 85-21 and Rule 62-4.030(3), F.A.C.]

New Specific Condition c.(2) Compliance with the Continuous Charging Rate:

The daily solid waste charging rate and hours of operation shall be determined and recorded for each MWC unit. The daily charging rate shall be determined each month on an average daily basis for each MWC unit using the Facility's truck scale weight data, refuse pit inventory, and MWC operating data for the preceding calendar month. Monthly truck scale weight records on the weight of solid waste received and processed at the Facility and refuse pit inventory shall be used to determine the amount of solid waste charged during the preceding calendar month on an average daily basis. The MWC load level measurements or other operating data shall be used to determine the number of operating hours per MWC unit for each day during the preceding calendar month. [Rule 62-204.800(8), F.A.C., and 40 CFR 60.53(a)]

New Specific Condition c.(3) Load Level :

Unit load means the steam load of the municipal waste combustor (MWC) measured as specified in 40 CFR 60.58b(i)(6). Each MWC unit shall not operate at a load level greater than 110 percent of the unit's "maximum demonstrated unit load." The maximum demonstrated unit load is the highest 4-hour arithmetic averaged MWC unit load achieved during four consecutive hours during the most recent dioxin/furan performance stack test in which compliance with the dioxin/furan emission limit was achieved. Higher loads are allowed for testing purposes as specified at 40 CFR 60.53b(b). [Rule 62-204.800(8), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b; 60.53b(b); and 60.58b(i)(8)]

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New Specific Condition c.(4) Compliance With Load Level Requirements:

The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam (or feedwater) flow in kilograms per hour (or pounds per hour) on a continuous basis; and record the output of the monitor (in accordance with the ASME method described in 40 CFR 60.58b(i)(6)). Steam (or feedwater) flow shall be calculated in 4-hour block arithmetic averages. Higher loads are allowed for testing purposes as specified at 40 CFR 60.53b(b). [Rule 62-204.800(8), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b; 60.53b(b); and 60.58b(i)(6)]

d. Compliance Tests

- (1)
 - a. No change. *This condition would be updated in the Title V permit for this facility.*
 - b. No change. *This condition would be updated in the Title V permit for this facility.*
 - c. ~~Compliance with the emission limitations for 65% control of total sulfur dioxide emissions shall be determined by using the test methods in condition 1.d.(2) and sampling for SO₂ emissions before and after the acid gas control device. Continuous emissions data shall also be used to demonstrate compliance with the SO₂ concentration limits in condition 1.a above.~~
- (2) The following test methods and procedures for 40 CFR 60 and 61 shall be used for compliance testing:
 - a. Method 1 for selection of sample site and sample traverses
 - b. Method for determining stack gas flow rate when converting concentrations to or from mass emission limits.
 - c. Method 3 for analysis for calculation of percent O₂ and CO₂
 - d. Method 4 for determining stack gas moisture content to convert the flow rate from actual standard cubic feet to dry standard cubic feet for use in converting concentrations in dry gases to or from mass emission limits.
 - e. ~~Method 5 for concentrations of particulate matter and associated moisture content. One sample shall constitute one test run.~~
 - f. ~~Method 9 for visible determination of the opacity of emissions.~~
 - g. ~~Method 6 for concentration of SO₂. Two samples, taken at approximately 30 minute intervals, shall constitute one test run.~~
 - h. ~~Method 7 for concentration of nitrogen oxides. Four samples, taken at approximately 15 minutes intervals, shall constitute one run.~~
 - i. ~~Method 10 for determination of CO concentrations. One sample constitutes one run.~~
 - j. ~~Method 12 for determination of lead concentration and associated moisture content. One sample constitutes one test run.~~
 - k. ~~Method 13B for determination of mercury emission rate and associated moisture content. One sample shall constitute one run.~~
 - l. ~~Method 101A for determination of mercury emission rate and associated moisture content. One sample shall constitute one test run.~~
 - m. ~~Method 104 for determination of beryllium emission rate and associated moisture content. One sample shall constitute one test run.~~

PSD PERMIT MODIFICATION
PSD-FL-105 (B)

d.(2) Stack Tests and Stack Test Methods:

Initial compliance tests for each combustion unit shall be conducted within 60 days after achieving maximum operating capacity, but not later than 180 days after startup. Annual tests shall be conducted within one year after the initial tests, unless otherwise allowed by the Department. A test protocol shall be submitted for approval to the Department's Southeast District office (DEPSED) and the Broward County Department of Natural Resources Protection (BCDNRP) at least 45 days prior to initial testing.

[Rule 62-204.800(8), F.A.C. and Chapter 62-297, F.A.C.]

Method 5 ⁽¹⁾	Determination of Particulate Matter Emissions (front half catch only) from Stationary Sources (I) and (A).
Method 9	Visual Determination of the Opacity of Emissions from Stationary Sources (I) and (A).
Method 13A or 13 B	Determination of Total Fluoride Emissions from Stationary Sources (I) and (A).
Method 23 ⁽²⁾	Determination of Dioxin/furan concentration from Stationary Sources (I) and (A).
Method 26 ⁽³⁾ or 26A	Determination of HCl emissions (I) and (A).
Method 29 ⁽³⁾	Determination of Metals Emissions from Stationary Sources (I) and (A). Mercury emissions testing shall be conducted semiannually.

⁽¹⁾ Pursuant to 40 CFR 60.58b(c)(3) EPA Reference Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160 ± 14 °C. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

⁽²⁾ Dioxin/Furan emission limit expressed as the total mass of tetra- through octa chlorinated dibenzo-p-dioxins and dibenzofurans. The facility may perform less frequent testing for dioxin/furan emissions, as allowed by 40 CFR 60.38b(b) and with prior notice to the Department, if the emission unit's dioxin/furan emissions do not exceed 15 ug/dscm corrected to 7% O₂ or less.

⁽³⁾ HCl and mercury stack tests upstream and downstream of the control device (s) shall be conducted to calculate percent control.

New Condition d.(3) Continuous Compliance with Emission Limits:

Continuous compliance with the emission limits for opacity, carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂) listed above and the operational parameters (including but not limited to: oxygen measurements, steam production [lb/hr, pressure, and temperature] or feedwater flowrate [lb/hr], device to measure temperature of flue gas at the fabric filter inlet, carbon injection system operating parameters, temperature of the combustion zone, slake lime utilization, power generation, etc) shall be demonstrated by continuous emission monitoring systems (CEMS) operated in accordance with 40 CFR 60.58b and 60.59b(f). SO₂ monitors shall be located both upstream of the scrubber and downstream of the baghouse, in order to calculate percent removal efficiency. [Rule 62-204.800(8), F.A.C. and 40 CFR 60.38 (40 CFR 60.58b) and 62-4.070 F.A.C.]

PSD PERMIT MODIFICATION
PSD-FL-105 (B)

SPECIFIC CONDITION 7.

Fuel

~~The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, seum, grit, screenings or sewage sludge.~~

7. The primary fuel for this facility is municipal solid waste (MSW), including the items and materials that fit within the definition of MSW contained in either 40CFR60.51b or Section 403.706 (5), F.A.C., Florida Statutes (1998).
- 7.a Subject to the limitations contained in this permit, the authorized fuels for the facility also include the other solid wastes that are not MSW which are described below. However, the facility shall not burn:
 - (1) those materials that are prohibited by state or federal law;
 - (2) those materials that are prohibited by this permit;
 - (3) those materials that are not authorized by this permit;
 - (4) lead acid batteries;
 - (5) hazardous waste;
 - (6) nuclear waste;
 - (8) radioactive waste;
 - (9) sewage sludge;
 - (10) explosives.
- 7.b The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the facility intends to use an authorized fuel that is segregated non-MSW material, the fuel shall be either:
 - (1) well mixed with MSW in the refuse pit; or
 - (2) alternately charged with MSW in the hopper.
- 7.c The facility owner/operator shall prepare and maintain records concerning the description and quantities of all segregated loads of non-MSW material which are received and used as fuel at the facility, and subject to a percentage weight limitation, below (7.g and 7.h.). For the purposes of this permit, a segregated load is defined to mean a container or truck that is almost completely or exclusively filled with a single item or homogenous composition of waste material, as determined by visual inspection.
- 7.d To ensure that the facility's fuel does not adversely affect the facility's combustion process or emissions, the facility operator shall:
 - (1) comply with good combustion operating practices in accordance with 40 CFR 60.53b;
 - (2) install, operate and maintain continuous emissions monitors (CEMS) for oxygen, carbon monoxide, sulfur dioxide, oxides of nitrogen and *particulate control device inlet* temperature in accordance with 40 CFR 60.58b; and
 - (3) record and maintain the CEMS data in accordance with 40 CFR 60.59b.

These steps shall be used to ensure and verify continuous compliance with the emissions limitations in this permit.

PSD PERMIT MODIFICATION
PSD-FL-105 (B)

Natural gas may be used as fuel during warm-up, startup, shutdown, and malfunction periods, and at other times when necessary and consistent with good combustion practices.

7.f. Subject to the conditions and limitations contained in this permit, the following other solid waste may be used as fuel at the facility:

- (1) Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons, *credit cards*, *magnetic tape* and microfilm);
- (2) Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;
- (3) Wood pallets, clean wood, and land clearing debris and
- (4) Packaging materials and containers;
- (5) Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or
- (6) Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings.

7.g. Subject to the conditions and limitations contained in this permit waste tires may be used as fuel at the facility. The total quantity of waste tires received as segregated loads and burned at the facility shall not exceed 3%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined by using a rolling 30 day average in accordance with specific condition No. 7.i. below.

7.h. Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the facility (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned at the facility shall not exceed 5%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined by using a rolling 30 day average in accordance with specific condition No. 7.i. below.

- (1) Construction and demolition debris.
- (2) Oil spill debris from aquatic, coastal, estuarine or river environments. Such items or materials include but are not limited to rags, wipes, and absorbents.
- (3) Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf-life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.
- (4) Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.
- (5) Waste materials that:
 - (i) are generated in the manufacture of items in categories (c) or (d), above and are functionally or commercially useless (expired, rejected or spent); or

PSD PERMIT MODIFICATION
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- (ii) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.
- (f) Waste materials that contain oil from:
 - (i) the routine cleanup of industrial or commercial establishments and machinery; or
 - (ii) spills of virgin or used petroleum products. Such items or materials include but are not limited to rags, wipes, and absorbents.
- (6) Used oil and used oil filters. Used oil containing a PCB concentration equal or greater than 50 ppm shall not be burned, pursuant to the limitations of 40 CFR 761.20(e).
- (7) Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW, subject to prior approval of the Department.

7.i. Segregated Solid Waste Record Keeping:

The following records shall be made and kept to demonstrate compliance with the segregated non-MSW percentage limitations of specific condition 7.

Each segregated load of non-MSW materials, that is subject to the percentage weight limitation of specific conditions 7.g. and 7.h., which is received for processing shall be documented as to waste description and weight. The weight of all waste materials received for processing shall be measured using the facility truck scale and recorded.

Each day the total weight of segregated tires received shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of tires shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 3% limitation.

Each day the total weight of segregated non-MSW materials received that are subject to the 5% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous 29 days. The resultant 30 day total weight of segregated non-MSW materials shall be divided by the total weight of all waste materials received in the same 30 day period, and the resultant number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 5% limitation.

CONDITIONS of CERTIFICATION:

~~FROM: The temperature of flue gases exiting the acid gas control equipment shall not exceed 300°F.~~

TO: Compliance with the PM Control Device Temperature:

Each MWC unit is required to continuously monitor and record the flue gas temperature at the inlet to the PM control device in accordance with the requirements at 40 CFR 60.58b(i)(7). The PM control device temperature shall be calculated in 4-hour block arithmetic averages. Each MWC unit shall be allowed to operate up to 17°C (30° F) above the unit's maximum demonstrated PM control device temperature. The maximum demonstrated PM control device temperature is the highest 4-hour arithmetic block-averaged measurement of temperature at the inlet to the PM control device recorded for 4 consecutive hours during the most recent dioxin/furan performance test which complied with the limits given above. The PM control

PSD PERMIT MODIFICATION PSD-FL-105 (B)

device inlet temperature and the steam (or feedwater) flow for each unit during the stack test shall be continuously monitored and recorded in accordance with 40 CFR 60, Subpart Cb. Higher temperatures are allowed for testing purposes, as specified at 40 CFR 60.53b(c). [Rule 62-204.800(8), F.A.C. and 40 CFR 60.38b, 40 CFR 60.53b(c) and 60.58b(i)(7) and (9)]

FROM: ~~The temperature of the flue gas exiting the final combustion chamber of the incinerator shall not be less than 1800°F.~~

TO: *This condition is deleted. The rationale is explained in the Technical Evaluation and Preliminary Determination dated May 20, 1999. A new specific condition, as stated below, will use this c.(2) numeration*

NEW SPECIFIC CONDITIONS 12, 13, 14 and 15

12. METAL RECOVERY FACILITY

The metal recovery area will be enclosed in a building adjacent to the existing ash loadout area. All bottom ash is currently quenched with water after leaving each boiler. The resulting bottom ash will be about 20 to 30 percent moisture and will not generate fugitive dust.

13. ELECTRIC UTILITY STEAM GENERATING UNIT ACTUAL EMISSIONS

The permittee shall provide the Department within the period not longer than 10 years following the change, information demonstrating that the physical or operational change did not result in a "representative actual annual emissions" increase in accordance with Rule 62-210.200 (12)(d), F.A.C., and Rule 62-212.400, F.A.C.

[40 CFR 52.21(b)(33), Rule 62-4.070 (3), Rule 62-212.400, and Rule 62-210.200, F.A.C.]

14. SCHEDULE OF COMPLIANCE

The compliance schedule for each unit is provided below.

Increment 1: 2 months after EPA approval of the Florida State Plan

Increment 2: 8 months after EPA approval of the Florida State Plan

Increment 3: 24 months after EPA approval of the Florida State Plan

Increment 4: 34 months after EPA approval of the Florida State Plan

Increment 5: 36 months after EPA approval of the Florida State Plan or by December 19, 2000

The five increments of progress are:

Increment 1: Submittal of a final control plan for the designated facility to the appropriate air pollution control agency.

Increment 2: Awarding of contracts for emission control system or for process modification, or issuance of orders for the purchase of components parts to accomplish emission control or process modification.

Increment 3: Initiation of on-site construction or installation of emission control equipment or process change.

Increment 4: Completion of on-site construction or installation of emission control equipment or process change.

Increment 5: Final compliance.

15. DETERMINATION OF PROCESS VARIABLES

Any other operating parameters (including but not limited to control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit [Rule 62-297.310 (5), F.A.C. and 62-4.070(3), F.A.C.]

A copy of this letter shall be filed with the PSD-FL-105 permit and shall become part of the permit.



RECEIVED

MAR 27 2000

BUREAU OF AIR REGULATION

WHEELABRATOR NORTH BROWARD, INC.
A WASTE MANAGEMENT COMPANY

2600 N.W. 48th Street
Pompano Beach, FL 33073
(954) 971-8701
(954) 971-8703 Fax

March 21, 2000

Certified Mail #Z 239 398 009

Mr. C. H. Fancy, P. E.
Chief Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator North Broward
Ash Handling System Construction Permits

Dear Mr. Fancy:

As per your letter dated February 8, 2000, please find enclosed Wheelabrator North Broward's request to delete the ash handling system requirements from the air construction permit, permit No. AC06-186997. Also enclosed are the professional engineer and responsible official certifications, as well as the Air Construction Permit processing fee of \$250.00.

If there are any questions, or if additional information is required, please contact me at (954) 971-8701.

Sincerely,

William Roberts
Regional Manager

cc: Chuck Faller (with)
Matt Killeen (without)
Tim Porter (without)
Scott Shannon (without)
Jeff Turpin (without)
Wendy Alexander - FDEP - Tallahassee (without)
File: 3.7.3
5.1.3.2

s:000321



RECEIVED

MAR 27 2000

WHEELABRATOR SOUTH BROWARD INC.
A WASTE MANAGEMENT COMPANY

4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

March 22, 2000

BUREAU OF AIR REGULATION

Certified #Z 126 728 254
Return Receipt Requested

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator South Broward
Ash Handling System Air Construction Permits

Dear Mr. Fancy:

As per your letter dated February 8, 2000, please find enclosed Wheelabrator South Broward's request to delete the ash handling system requirements from the air construction permit, permit No. AC06-187001. Also enclosed is the professional engineer and responsible official certifications, as well as the Air Construction Permit processing fee of \$250.00.

If there are any questions, or if additional information is required, please contact me at (954) 581-6606.

Sincerely,

Mark Santella
Plant Manager

Enclosures

000322.MS.ch

cc: Wendy Alexander – FDEP – Tallahassee (without)
Jairaj Gosine (with)
Matt Killeen (without)
Tim Porter (without)
Scott Shannon (without)
Jeff Turpin (without)
File: 3.7.3
5.1.3.2



1/25 0616-15007
CP: AZ 3 J, m

WHEELABRATOR SOUTH BROWARD INC.
A WASTE MANAGEMENT COMPANY

4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

January 19, 2000

Certified #Z 126 756 900
Return Receipt Requested

Mr. C. H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

JAN 24 2000

BUREAU OF AIR REGULATION

Re: Wheelabator South Broward
Ash Handling System Minor Source Permit

Dear Mr. Fancy:

This letter is to clarify the actions taken by Wheelabator South Broward with regard to the dismantling of the permitted ash handling system baghouse minor air pollution source. The source was constructed under permit AC 06-187001 and was issued operating permit AO 06-208864. The baghouse was not needed to control potential ash handling system emissions since ash handling system enclosures and ash conditioning proved to be effective. In June of 1997 Chuck Faller of this office contacted the Southeast District Office to inquire as to what actions this facility need take to dismantle the source. It was Mr. Faller's understanding that a Notice of Asbestos Removal Project form need be completed and notice given to the Department at least ten (10) days prior to dismantling.

The Notice of Asbestos Removal Project was completed on June 24, 1997 and submitted to the FDEP in Tallahassee on March 4, 1999. A copy of that submittal is attached for your reference. The source was dismantled on March 25, 1999. The ash handling building has been sealed at the point of the old baghouse and no emissions are generated at this point.

It should be noted that the ash handling system is regulated under the facility PSD permit. The PSD permit was recently revised to incorporate additional ash handling system emission limits and compliance tests as specified under 40 CFR 60.36b Subpart Cb MWC Emission Guidelines. The dismantled baghouse is not required to comply with these requirements. Given the inclusion of the ash handling system in the PSD permit without a baghouse, we believed that dismantling of the baghouse was tacitly approved. Because of this we commented on the draft Title V permit that the proposed permit conditions for the baghouse had become obsolete and did not need to be incorporated into the final Title V permit.

Mr. C. H. Fancy, P.E., Chief
Page 2 of 2

With the submittal of our comments to the draft Title V permit, Wendy Alexander from the FDEP's Title V section indicated that a modification to the ash handling system baghouse construction permit may have been required prior to dismantling.

Wheelabrator is submitting this letter to request what additional action or information may be required by the Department to expeditiously resolve the ash handling system baghouse issue.

After your review of this letter, please contact me at your earliest convenience at (954) 581-6606 to discuss the appropriate course of action. Thank you for your cooperation in this matter.

Sincerely,



Mark Santella
Plant Manager

000119.MS.ch

Attachments

cc: Jairaj Gosine
 Matt Killeen
 Tim Porter
 Tom Tittle – FDEP – West Palm Beach



Wheelabrator South Broward Inc.

A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954 581 6606
Fax 954 581 6705

Thomas D. Kirk
General Manager

March 19, 1999

**Certified #Z 126 756 819
Return Receipt Requested**

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator South Broward
Demolition Notice

Dear Sirs:

Due to a typographical error, the demolition of the South Broward system will be conducted on March 25, 1999, instead of March 24, 1999, as previously reported.

Very truly yours,

Thomas D. Kirk
General Manager

990319.TDK.ch

cc: ~~Chuck Faller~~
Bill Hagne - DNRP
Matt Killeen
Terri Long
Tim Porter



Wheelabrator South Broward Inc.

A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954 581 6606
Fax 954 581 6705

Thomas D. Kirk
General Manager

March 4, 1999

Certified #Z 126 756 815
Return Receipt Requested

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator South Broward
Demolition Notice

Dear Sirs:

Please find attached the Notice of Asbestos Removal Project form for the removal of the ash system vent fabric filter baghouse at the South Broward facility. This minor source is presently permitted under permit no. A006208864. Also included is a report from Becky White, CIH, indicating the lack of asbestos in the source to be demolished.

If there are any questions, or if further information is required, please contact this office at (954) 581-6606, extension 210.

Very truly yours,

Thomas D. Kirk
General Manager

Enclosures

Cc: **Chuck Faller** (with)
Bill Hagne - DNRP (with)
Matt Killeen (without)
Terri Long (without)
Tim Porter (without)



Florida Department of Environmental Protection
 Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

NOTICE OF ASBESTOS REMOVAL PROJECT

TYPE OF NOTICE: Original Revised Cancelled

I. Facility Name WHEELABRATOR SOUTH BROWARD
 Address 4400 SOUTH STATE ROAD 7
 City FT. LAUDERDALE State FLORIDA Zip 33314
 Site ASH SYSTEM FABRIC FILTER BAGHOUSE Surveyed by BECKY WHITE
 Building Size _____ (Square Feet) # of Floors N/A Age in Years 8 Prior Use N/A

II. Fee Receipt Will Be Sent to Address in Block Below: (Print or Type)

<u>N/A</u>	OWNER PROJECT NUMBER
	Fee Check Number <u>N/A</u>
	Other <u>N/A</u>

III. Facility Owner WHEELABRATOR SOUTH BROWARD Phone (954) 581-6606
 Address 4400 S. ST. RD 7
 City Ft. Lauderdale State FL. Zip 33314
 _____ Fold Line _____

IV. Contractor's Name WHEELABRATOR SOUTH BROWARD
 Address 4400 S. ST. RD 7
 City Ft. Lauderdale State FL. Zip 33314
 Phone (954) 97 581-6606 Florida License No.: N/A

V. Demolition Removal Demolition with no ACM Emergency Annual

Removal: Start Date	Finish Date	Demolition: Start Date <u>3/24/99</u>	Finish Date <u>3/24/99</u>
---------------------	-------------	---------------------------------------	----------------------------

VI. REMOVAL/DEMOLITION PROCEDURES TO BE USED

<input checked="" type="checkbox"/> Strip & Removal	<input type="checkbox"/> Glove Bag	<input type="checkbox"/> Bulldozer	<input type="checkbox"/> Wrecking Ball
<input type="checkbox"/> Wet Method	<input type="checkbox"/> *Dry Method	<input type="checkbox"/> Explode	<input type="checkbox"/> Burn Down

*MUST OBTAIN PRIOR DEP APPROVAL BEFORE USING A DRY METHOD!

VII. Waste Disposal Site Name N/A Class _____
 Address _____ City _____ State _____

VIII. Fee Calculation & Type of RACM in Renovations or ACM in Demolitions

RACM?
 (circle Yes or No)

_____ Square Feet Surfacing Material _____ Yes _____ No _____
 _____ Linear Feet Pipe _____ Yes _____ No _____
 _____ Square Feet Cementitious Material _____ Yes _____ No _____
 _____ Square Feet Resilient Flooring _____ Yes _____ No _____
 _____ Square Feet Asphalt Roofing _____ Yes _____ No _____
 _____ Total RACM (square + linear feet)

IX. Asbestos Waste Transporter	
Name	<u>N/A</u>
Phone (____)	_____

X. Procedures for Unexpected RACM	
<u>N/A</u>	

\$ N/A Enclosed (See Fee Schedule) Check if Demolition Only

I certify that the above information is correct.

[Signature] (Signature of Owner/Operator) 3/4/99 (Date)

DEP USE ONLY		
Postmark	NESHAP ... Yes ... No ...	Deposit No.
Fee Received \$	APIS #	Date Received

GRW Consulting Co.

Industrial Hygiene/Safety

July 8, 1997

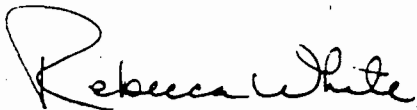
Mr. Chuck Faller
Director, Environmental Health and Safety
Wheelabrator South Broward, Incorporated
4400 South State Road 7
Ft. Lauderdale, Florida 33314

Dear Mr. Faller,

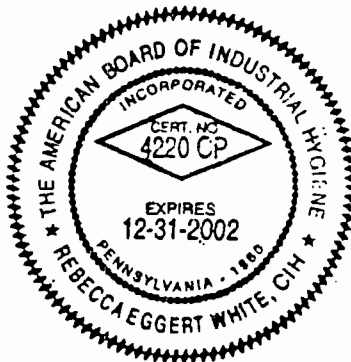
On June 24, 1997, I visually inspected the ash handling dust collector located above the ash conditioner room. Based upon the visual inspection, date of construction (1989), review of the construction specifications and the MSDS' of the insulation and gasket materials, it is felt, with reasonable certainty, that asbestos-containing materials (ACM) are not present in, or on, any part of the dust collector.

I have enclosed the signed copy of the Florida Department of Environmental Protection's Notice of Asbestos Removal Project.

Sincerely,



Rebecca White, CIH, CSP



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT MODIFICATION

In the Matter of an
Application for Permit Modification

Mr. Thomas D. Kirk, Plant Manager
Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, Florida 33314

DEP File No. PSD-FL-105 ^A
South Broward Resource Recovery Facility

Enclosed is a letter that modifies Permit Number PSD-FL-105 to allow the use of EPA Method 29 in lieu of Method 101A for Mercury, Method 12 for lead, and Method 104 for beryllium for annual compliance stack testing. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.



C.H. Fancy, P.E., Chief
Bureau of Air Regulation


CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT MODIFICATION (including the FINAL permit Modification) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-22-97 to the person(s) listed:

Mr. Thomas D. Kirk, Wheelabrator South Broward Inc.*
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Ms. Terri Hillard, SED
Ms. Daniela Banu, Broward County

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

 5-22-97
(Clerk) (Date)



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

May 19, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Thomas D. Kirk
Plant Manager
Wheelabrator South Broward Inc.
4400 South State Road 7
Fort Lauderdale, Florida 33314

Re: Modification of Final Determination - PSD-FL-105
South Broward Resource Recovery Facility

Dear Mr. Kirk:

The Department is in receipt of your letter dated February 24, 1997 requesting to use EPA Method 29 in lieu of Method 101A for Mercury, Method 12 for lead, and Method 104 for beryllium for annual compliance stack testing. The Department hereby amends the Specific Conditions related to methods of compliance in the subject Final Determination (dated May 15, 1987) pursuant to 40 CFR 52.21 - Prevention of Significant Deterioration (PSD Permit). The PSD permit is modified as follows:

Specific Condition: 1.d.(2)

FROM:

- j. Method 12 for determination of lead concentration and associated moisture content. One sample constitutes one test run.
- l. Method 101A for determination of mercury emission rate and associated moisture content. One sample shall constitute one test run.
- m. Method 104 for determination of beryllium emission rate and associated moisture content. One sample shall constitute one test run.

TO:

- j. EPA Method 29, Determination of Metals Emissions from Stationary Sources, shall be used for determining compliance with the beryllium, mercury, and lead emission rates and their respective moisture contents. For each pollutant one sample shall constitute one test run.
- l. Deleted.
- m. Deleted.

A copy of this letter shall be filed with the referenced permit and shall become part of Permit PSD-FL-105.

Sincerely,



Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/th

**Wheelabrator South Broward Inc.**

A Wheelabrator Technologies Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954.581.6606
Fax 954.581.6705

Thomas D. Kirk
Plant Manager

February 24, 1997

Certified #P 399 931 003
Return Receipt Requested

Mr. Al Linero
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator South Broward
Use of EPA Method 29

105

Dear Mr. Linero:

Wheelabrator South Broward is requesting to utilize EPA method 29 in lieu of Method 101A for mercury, Method 12 for lead, and Method 104 for beryllium during the upcoming annual compliance stack testing. At present, stack testing is scheduled for March 17-21, 1997.

EPA method 29 has been approved by the EPA and is incorporated in 40 CFR subpart I(b).

If the Department finds the use of method 29 acceptable, please contact me at (954) 581-6606, extension, 210, or in my absence, Chuck Faller at extension 250.

Very truly yours,

Thomas D. Kirk
Plant manager

970224a.TDK.ch

cc: Chuck Faller
Frank Ferraro
Terri Hilliard, FDEP, West Palm Beach

Certified #P 399 931 004 Return Receipt Requested

Don Markley
Tim Porter

Page 944 Read note

PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et. seq., and the regulations promulgated thereunder at 40 CFR §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

South Broward County Resource Recovery Facility

is, as of the effective date of this permit (PSD-FL-105) authorized to construct a resource recovery facility consisting of three 863 ton per day (maximum capacity) mass burn, municipal solid waste incinerators and appurtenances at the following location:

On a 248 acre tract at the southeast intersection of State Road 84 and U.S. Route 441 in Broward County, Florida.

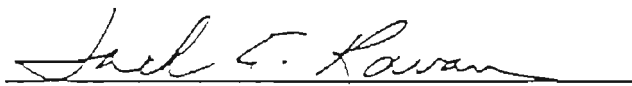
Upon completion of authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Part I.-Specific Conditions and Part II.-General Conditions.

This permit is hereby issued on MAY 17 1987 and shall become effective thirty (30) days after receipt hereof unless a petition for administrative review is filed with the Administrator during that time. If a petition is filed any applicable effective date shall be determined in accordance with 40 CFR §124.19(f)(1).

If construction does not commence within 18 months after the effective date of this permit, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and local law.

May 15, 1987
Date Signed



Jack E. Ravan
Regional Administrator

PART I. - Specific Conditions

1. Emission Limitations

a. Stack emissions from each unit shall not exceed the following:

- Particulate: 0.0150 gr/dscf dry volume corrected to 12% CO₂.
- Sulfur Dioxide: (1) 0.140 lb/mmBtu heat input and 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂); or
- (2) 65% reduction of uncontrolled SO₂ emissions.* In no case shall the SO₂ emissions exceed 0.310 lb/mmBtu heat input and 124 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂).

The 124 ppm limit above shall be modified to reflect a new emission limit (in ppm) from the control device at 65% control efficiency. Within 18 months of start-up of operation, the County shall submit compliance tests that will be used to determine the new SO₂ emission limit (in ppm). The limit will be determined by observed average emission rate (\bar{x}) from the submitted compliance tests and will be statistically analyzed using the one tailed student T test ($t_{.05} = (\bar{x} - u) \sqrt{n}/s$) at the 95% confidence level to derive a mean emission rate (u), where s is the standard deviation of observed values n. The final operating SO₂ emission limit (in ppm) shall be this mean emission rate (u). This value shall be restricted to no more than 124 ppm or less than 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂).

Nitrogen Oxides: .560 lb/mmBtu heat input and 350 ppm (3-hr rolling average, dry volume, corrected to 12% CO₂).

Carbon Monoxide: .090 lb/mmBtu heat input; 400 ppm (1-hr rolling average, dry volume, corrected to 12% CO₂); and 88 ppm (4-day rolling average, dry volume, corrected to 12% CO₂).

Lead: .00150 lb/mmBtu

Fluorides: .0040 lb/mmBtu

Beryllium: 9.30×10^{-7} lb/mmBtu

Mercury: 7.50×10^{-4} lb/mmBtu

* Uncontrolled SO₂ emissions will be measured at the inlet to the acid gas control device.

Visible Emissions: Opacity of stack emissions shall not be greater than 15% opacity. Excess opacity resulting from startup or shutdown shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess opacity shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by EPA for longer duration.

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up or shutdown shall be prohibited.

The units are subject to 40 CFR Part 60, Subpart E and Subpart Db, New Source Performance Standards (NSPS), except that where requirements in this permit are more restrictive, the requirements in this permit shall apply.

There shall be no greater than 10% opacity for emissions from the refuse bunker and the ash handling and loadout. The potential for dust generation by ash handling activities will be mitigated by quenching the ash prior to loading in ash transport trucks. Additionally, all portions of the proposed facility, including the ash handling facility, which have the potential for fugitive emissions will be enclosed. Also, those areas which have to be open for operational purposes, (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure.

- b. Only distillate fuel oil or natural gas shall be used in startup burners. The annual capacity factor for use of natural gas and oil, as determined by 40 CFR 60.43b(d), shall be less than 10%. If the annual capacity factor of natural gas is greater than 10%, then the facility shall be subject to §60.44b.
- c. None of the three individual municipal solid waste incinerators shall be charged in excess of 323.6 mmBtu/hr and 863 tons per day MSW (115% rated capacity) nor produce in excess of 192,000 lbs/hr of steam (3-hr rolling average).
- d. Compliance Tests
 - (1) a. Annual compliance tests for particulate matter, lead, SO₂, nitrogen oxides, CO, fluorides, mercury, and beryllium shall be conducted in accordance with 40 CFR 60.8 (a), (b), (d), (e), and (f).
 - b. Compliance with the opacity standard for the incinerator stack emissions in condition 1.a. of this part shall be determined in accordance with 40 CFR 60.11 (b) and (e).

- c. Compliance with the emission limitation for 65% control of total sulfur dioxide emissions shall be determined by using the test methods in condition 1.d.(2) and sampling for SO₂ emissions before and after the acid gas control device. Continuous emissions data shall also be used to demonstrate compliance with the SO₂ concentration limits in condition 1.a. above.
- (2) The following test methods and procedures for 40 CFR Parts 60 and 61 shall be used for compliance testing:
- a. Method 1 for selection of sample site and sample traverses.
 - b. Method 2 for determining stack gas flow rate when converting concentrations to or from mass emission limits.
 - c. Method 3 for gas analysis for calculation of percent O₂ and CO₂.
 - d. Method 4 for determining stack gas moisture content to convert the flow rate from actual standard cubic feet to dry standard cubic feet for use in converting concentrations in dry gases to or from mass emission limits.
 - e. Method 5 for concentration of particulate matter and associated moisture content. One sample shall constitute one test run.
 - f. Method 9 for visible determination of the opacity of emissions.
 - g. Method 6 for concentration of SO₂. Two samples, taken at approximately 30 minute intervals, shall constitute one test run.
 - h. Method 7 for concentration of nitrogen oxides. Four samples, taken at approximately 15 minute intervals, shall constitute one test run.
 - i. Method 10 for determination of CO concentrations. One sample constitutes one test run.
 - j. Method 12 for determination of lead concentration and associated moisture content. One sample constitutes one test run.
 - k. Method 13B for determination of fluoride concentrations and associated moisture content. One sample shall constitute one test run.
 - l. Method 101A for determination of mercury emission rate and associated moisture content. One sample shall constitute one test run.
 - m. Method 104 for determination of beryllium emission rate and associated moisture content. One sample shall constitute one test run.

2. Compliance with emission limitations specified in lb/mmBtu in conditions 1.a. and 1.c. of this part shall be determined by calculating an "F" factor in dscf/mmBtu corrected to 12% CO₂ using the boilers' efficiency (as determined by the calorimeter method contained in Attachment A during acceptance testing) and the measured steam production. Data obtained from test methods required in condition 1.d. of this part for compliance testing shall be used for the calculation of the "F" factor required by this condition.
3. Devices shall be installed to continuously monitor and record steam production. These devices shall be adequately maintained and operating during all periods of steam production.
4. The height of each boiler exhaust stack shall not be less than 59.4 meters above ground level at the base of the stack.
5. Each incinerator boiler shall have a metal name plate affixed in a conspicuous place on the shell showing manufacturer, model number, type waste, rated capacity, and certification number.
6. The permittee must submit to EPA and DER, within fifteen (15) days after it becomes available to the County, copies of technical data pertaining to the incinerator boiler design, acid gas control equipment design, particulate control equipment design, and the fuel mix that will be used to evaluate compliance of the facility with the preceding emission limitations.

7. Fuel

The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge.

8. Air Pollution Control Equipment

The permittee shall install, continuously operate, and maintain the following air pollution controls to minimize emissions. Controls listed shall be fully operational upon startup of the proposed equipment.

- a. Each boiler shall be equipped with a particulate emission control device for the control of particulates.
- b. Each boiler shall be equipped with an acid gas control device designed to remove at least 90% of the acid gases.

9. Continuous Emission Monitoring

- a. Prior to the date of startup and thereafter, the County shall install, maintain, and operate the following continuous monitoring systems for each boiler exhaust stack:

- (1) Continuous emission monitoring (CEM) systems to measure stack gas opacity and SO₂, NO_x, CO, CO₂, and O₂ concentrations for each unit.

Continuous monitors for SO₂ shall be installed after the acid gas control device for each unit. The systems shall meet the EPA monitoring performance specifications of 40 CFR 60.13 and 40 CFR 60, Appendix B, during initial compliance testing and annually thereafter. Additionally, CEM's shall meet the quality control requirements of 40 CFR 60, Appendix F (Attachment B).

- (2) CEM data recorded during periods of startup, shutdown, and malfunction shall be reported but excluded from compliance averaging periods for CO, NO_x, and opacity.
- (3) a. CEM data recorded during periods of startup and shutdown shall be excluded from compliance averaging periods for SO₂.
b. CEM data recorded during periods of acid gas control device malfunctions shall be excluded from compliance averaging periods for SO₂ provided that the preceeding thirty day period which ends on the last day of the malfunction period meets an average SO₂ emission limit equal to the SO₂ limit specified in condition 1.a. CEM data must be available for 90% of the operating time for this exemption to apply. A malfunction as used in this permit means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.
- b. An excess emissions report shall be submitted to EPA for every calendar quarter. The report shall include the following:
 - (1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each period of excess emissions (60.7(c)(1)).
 - (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the furnace/boiler system. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported (60.7(c)(2)).
 - (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks, and the nature of the system repairs or adjustments (60.7(c)(3)).
 - (4) When no excess emissions have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information shall be stated in the report (60.7(c)(4)).

- (5) County shall maintain a file of all measurements, including continuous monitoring systems performance evaluations; all continuous monitoring systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this permit recorded in a permanent form suitable for inspection (60.7(d)).
 - (6) Excess emissions shall be defined as any applicable period during which the average emissions of CO, NO_x, and/or SO₂, as measured by the continuous monitoring system, exceeds the CO, NO_x, and/or SO₂ maximum emission limit (in ppm) set for each pollutant in condition 1.a. above.
- c. Excess emissions indicated by the CEM systems shall be considered violations of the applicable opacity limit or operating emission limits (in ppm) for the purposes of this permit provided the data represents accurate emission levels and the CEM's do not exceed the calibration drift (as specified in the respective performance specification tests) on the day when initial and subsequent compliance is determined. The burden of proof to demonstrate that the data does not reflect accurate emission readings shall be the responsibility of the permittee.

10. Reporting

- a. A copy of the results of the compliance tests shall be submitted within forty-five days of testing to the DER Bureau of Air Quality Management, the DER Southeast Florida District Office, Broward County, and EPA Region IV.
- b. Continuous emissions monitoring data shall be reported to the DER Southeast District Office and EPA Region IV on a quarterly basis in accordance with Section 17-2.710, FAC, and 40 CFR 60.7.
- c. Addresses for submitting reports are:

EPA Region IV

Chief, Air Compliance Branch
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Florida Department of Environmental Regulation (DER)

Deputy Chief, Compliance and Ambient Monitoring
Bureau of Air Quality Management
Florida Department of Environmental
Regulation (DER)
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Southeast District Office of DER

District Manager
Department of Environmental Regulation
3301 Gun Club Road
P.O. Box 3858
West Palm Beach, Florida 33402

Broward County

Broward County Environmental Quality
Control Board
500 Southwest 14th Court
Ft. Lauderdale, Florida 33315



Wheelabrator South Broward Inc.

A Wheelabrator Technologies Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954.581.6606
Fax 954.581.6705

RECEIVED

FEB 28 1997

BUREAU OF
AIR REGULATION

Thomas D. Kirk
Plant Manager

February 24, 1997

Certified #P 399 931 003
Return Receipt Requested

Mr. Al Linero
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator South Broward
Use of EPA Method 29

Dear Mr. Linero:

Wheelabrator South Broward is requesting to utilize EPA method 29 in lieu of Method 101A for mercury, Method 12 for lead, and Method 104 for beryllium during the upcoming annual compliance stack testing. At present, stack testing is scheduled for March 17-21, 1997.

EPA method 29 has been approved by the EPA and is incorporated in 40 CFR subpart Eb.

If the Department finds the use of method 29 acceptable, please contact me at (954) 581-6606, extension, 210, or in my absence, Chuck Faller at extension 250.

Very truly yours,

Thomas D. Kirk
Plant manager

970224a.TDK.ch

cc: Chuck Faller
Frank Ferraro
Terri Hilliard, FDEP, West Palm Beach

Certified #P 399 931 004 Return Receipt Requested

Don Markley
Tim Porter



Copy: C. Fancy

Department of Environmental Protection

Lawton Chiles
Governor

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

Virginia B. Wetherell
Secretary

November 25, 1996

Mr. Thomas D. Kirk
South Broward Resource Recovery Facility
4400 South State Road 7
Ft. Lauderdale, Florida 33314

RECEIVED

DEC 2 1996

BUREAU OF
AIR REGULATION

RE: Informational Notice: Fuel Evaluation of Automobile Shredder Residue

Dear Mr. Kirk:

This letter is in follow up to your notification letter dated November 1, 1996 and subsequent phone conversation on November 15, 1996.

The proposed test burn using a percentage mixture of automobile shredder residue with municipal solid waste is not, at this time, a permitted function. At present, your municipal waste combustor is permitted to burn municipal solid waste (MSW). The definition of MSW under the Code of Federal Regulations, Part 60, Subpart Ea (60.51) excludes motor vehicle parts or vehicle fluff.

If your facility wishes to pursue possible testing opportunities in the future, please be advised permit modification and/or prior approval must be obtained from the Department.

If you have any questions, please contact Terri Hilliard at telephone number (561) 681-6625.

Sincerely,

Tom Tittle
Air Compliance/Enforcement Supervisor

ATT: SBRRF Nov 1, 1996 letter

cc: Hamilton Oven, FDEP Tallahassee
Al Linereo, FDEP Tallahassee
FDEP WPB Air Permitting

Wheelabrator South Broward Inc.

A Wheelabrator Technologies Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954.581.6606
Fax 954.581.6705

Thomas D. Kirk
Plant Manager

November 1, 1996

Ms. Terry Hilliard
Florida Department of Environmental Protection
P.O. Box 15425
West Palm Beach, FL 33416-5425

Subject: Fuel Evaluation, American Plastics Council, Auto
Shredder Residue, Informational Notice

RECEIVED
NOV 8 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH

Dear Terry:

I am writing to invite you and any other FDEP personnel to observe a week long project Wheelabrator is undertaking with the American Plastics Council.

Wheelabrator South Broward is working with the American Plastics Council to demonstrate the energy recovery of plastics is a economically and environmentally sound proposition. To that end, we are participating in a project that will monitor the emissions and residue from the combustion of a mixture of 10 - 15% Automobile Shredder residue with MSW.

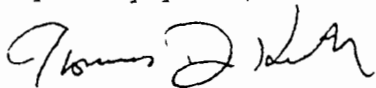
Auto Shredder residue is not typically received at Wheelabrator South Broward. This is due to the lower cost alternatives available to generators. For the purposes of this project, however, Auto Shredder residue will be locally procured and delivered to the facility. Auto Shredder residue is an acceptable waste under our operating permits.

Should you or other FDEP personnel be interested in observing any of this test, the tentative schedule is as follows:

November 21 - 27	Baseline Emissions and Residue Sampling
December 2 - 13	Fuel Evaluation and Testing

I will be sure to provide you with a copy of the test report for your information and file. Should you have any questions regarding this project, please give me a call.

Very truly yours,



Thomas D. Kirk
Plant Manager

961101b.TDK.ch

MAILING CHECKLIST

DOCUMENTS NEEDED FOR AN AIR CONSTRUCTION PERMIT MODIFICATION:

Company Name/Permit Number: Wheelabrator
South Broward CO. RRF PA 85-21
PSD-FE-105

DRAFT:

Blank Filename	Your Filename
Memo from Permit Engineer (through Al) to Clair	Clair1.doc
Cover letter addressed to Company	Cvrltr03.doc
Intent to Issue / Certificate of Service	Intent03.doc
Public Notice of the Intent to Issue	Pnotice03.doc
Technical Evaluation and Preliminary Determination [if applicable]	Tepdfmt.doc
Permit with General Conditions [if applicable]	Permnew.doc
BACT / LAER / MACT Determination [if applicable]	Bactform.doc
Appendix CSC: Common Specific Conditions	Appdxesc.doc
Appendix GC: General conditions	Gencond.doc
Letter to Company explaining the Department Action and Modification [if Permit and associated documents are not applicable]	Modltr.doc
Seal of Approval on page with Al's signature and seal [if applicable]	Pseal.doc

FINAL

Memo from Permit Engineer (through Al and Clair) to Howard	Howard1.doc
Transmittal letter addressed to Company (Notice of Permit)	Finlnot3.doc
Certificate of Service	"
Final Determination / Letter of Explanation	Findet3.doc
Permit with General Conditions [if applicable]	Permnew.doc
BACT / LAER / MACT Determination [if applicable]	Bactform.doc
Appendix CSC: Common Specific Conditions	Appdxesc.doc
Appendix GC: General conditions	Gencond.doc

NO, PPSC _____ Logged into ARMS ?
 _____ Data/application entered into ARMS (or EARS) ?
 _____ Events Entered into ARMS ?
 _____ Emission Unit created / Linked ?



Wheelabrator South Broward Inc.

A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954.581.6606
Fax 954.581.6705

April 1, 1998

RECEIVED

APR 13 1998

BUREAU OF AIR REGULATION
Thomas D. Kirk
General Manager

Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

**CERTIFIED #P 427 396 811
RETURN RECEIPT REQUESTED**

Dear Mr. Fancy:

Thank you for your letter of February 12, 1998 which included a Draft Amendment to the PSD Permit for the Wheelabrator South Broward facility as well as a Public Notice of Intent to Issue. This Draft Amendment responds to Wheelabrator's request for clarification regarding its permitted fuels, which request was set forth in detail in a letter dated September 17, 1997. For the reasons set forth below, at this time Wheelabrator is withdrawing its September 17 request for clarification of permitted fuels. It is our intention to submit a new application in the immediate future.

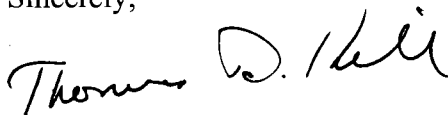
Early in 1997, we initiated a series of meetings with the Department in response to a letter we received from Tom Tittle, Air Compliance, Enforcement Supervisor of the Southeast District, which stated that "at present, your municipal waste combustor is permitted to burn municipal solid waste ("MSW")". Contrary to Mr. Tittle's assertion, both Wheelabrator North Broward, Inc. and Wheelabrator South Broward, Inc. are permitted to burn "refuse, such as garbage and trash." In our meetings with you and others at the DEP, we have discussed at length the fact that there are no definitions of "refuse" in any of the relevant state or federal statutes or regulations. In all of these discussions, we have consistently maintained our position that "refuse" is broader than MSW and includes, among other things, segregated loads of items that are otherwise in the MSW waste stream. While you and others at the DEP have certainly argued for a more narrow interpretation of "refuse," in the absence of a statutory or regulating definition, it is unclear precisely what "refuse" means. Indeed, I believe that we simply agreed to disagree about the precise meaning of "refuse" and worked instead to address the lack of precision in our permits by clarifying specific fuels that are permitted at our facilities. Our letter of September 17, 1997 was written with that goal in mind.

Clair H. Fancy, P.E., Chief
April 1, 1998
Page 2

The Draft Amendment, which clarifies that segregated loads of pharmaceutical wastes, tires, and oil filters are permitted fuels, also significantly changes our existing permits by replacing the term "refuse such as garbage and trash" with the term municipal solid waste as defined in 40 C.F.R. 60.51a and 51b. Although your decision to replace "refuse" with "MSW" implicitly acknowledges that refuse is a broader term, we never requested -- nor can we accept -- such a change. Given the history of our discussions on this issue, we believe that we can best resolve this matter by submitting a new application. Accordingly, at this time, we are withdrawing our September 17, 1997 request for clarification.

It is our intention to submit a new application in the immediate future. Our hope is that by modeling our request after other recent applications received by the Department, we can avoid protracted discussions and further delays. We look forward to working with you to resolve this issue.

Sincerely,



Thomas Kirk
General Manager

980407b.TDK

cc: E. Juec, BAR
J. Little, SED
D. Barne, Bronard Co.

BEST AVAILABLE COPY



Wheelabrator South Broward Inc.

A Wheelabrator Technologies Company
4400 South State Road 7
Ft Lauderdale, FL 33314

Phone 954 581 6008
Fax 954 531 6705



FACSIMILE TRANSMITTAL

DATE:

12/4/97

TO:

Cecilia Janney al

FROM:

Tom Kirk

SENDER:

NUMBER OF PAGES

2

INCLUDING COVER SHEET.

MESSAGE:

Please disregard previous fap.

PLEASE NOTE: If any problems should be present with the material received, please notify us at (954) 581-6606.





Wheeler Laboratories South Broward Inc.

A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954.581.6806
Fax 954.581.6705

Thomas D. Kirk
General Manager

December 4, 1997

VIA FAX 904-922-6979

Mr. Clair H. Fancy
Bureau Chief
Bureau of Air Regulation
Division of Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 34399-2400

Subject: Request For Clarification of Permitted Fuels at the
North Broward & South Broward Resource Recovery Facilities

Dear Mr. Fancy:

This letter serves as a cover letter to our September 17, 1997 submittal addressing the above captioned topic. The referenced submittal is our formal application for a revision to our existing permit. As stated in the application, please note that the changes proposed will not increase our annual throughput nor create an increase in our current emissions.

Should you have any questions or require any additional information relating to the application, please contact Carol Eaton, Senior Environmental Engineer in our Corporate Offices at 800-682-0026. We appreciate your cooperation in this matter.

Very truly yours,

Thomas D. Kirk
General Manager

971204.TDK.ch



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

February 12, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Thomas D. Kirk
Plant Manager
Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, Florida 33314

Re: Draft Permit Amendment No. PSD-FL-105(A)

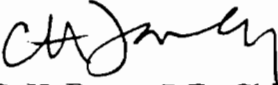
Dear Mr. Kirk:

Enclosed is one copy of the Draft Amendment to the Permit for the Prevention of Significant Deterioration of Air Quality (PSD Permit) for the Wheelabrator South Broward, Inc. facility located at 4400 South State Road 7, Ft. Lauderdale, Broward County, Florida 33314. The Department's Intent to Issue Air Construction Permit Amendment, the DRAFT Permit Amendment, Technical Evaluation and Preliminary Determination, and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Mr. Edward J. Svec or Mr. Linero at 850/488-1344.

Sincerely,


C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/ejs

Enclosures

In the Matter of an
Application for Permit Amendment by:

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

DRAFT Permit Amendment No. PSD-FL-105(A)
Wheelabrator South Broward, Inc.
Broward

INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment (copy of DRAFT Permit amendment attached) for the proposed project, as detailed in the application specified above, for the reasons stated below.

The applicant, Wheelabrator South Broward, Inc., applied on December 4, 1997, to the Department for an air construction permit amendment for its Wheelabrator South Broward, Inc. facility located at 4400 South State Road 7, Ft. Lauderdale, Broward County. Wheelabrator South Broward, Inc. requested a revision to their existing PSD permit for clarification of the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility. The permit currently allows for the combustion of "refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge." Specifically, the request seeks approval to also combust pharmaceutical wastes, used oil filters and tires in addition to municipal solid waste. In addition to this request, the Department will replace the term "refuse such as garbage or trash (as defined in Chapter 17-7, FAC)" with the terms municipal solid waste or municipal-type waste or MSW as they are defined in both 40 CFR 60.51a and 51b.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit amendment is required to include the fuels requested by the facility.

The Department intends to issue this air construction permit amendment based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-1344; Fax 850/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit amendment pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the enclosed DRAFT Permit Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit Amendment issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT." Any written comments should be provided to the

Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

The Department will issue the permit amendment with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9730, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

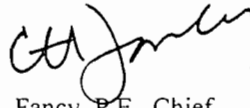
In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



C. H. Fancy, P.E., Chief
Bureau of Air Regulation

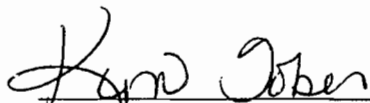
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT (including the PUBLIC NOTICE, and DRAFT permit amendment) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 2-16-98 to the person(s) listed:

- Mr. Thomas D. Kirk, Plant Manager, Wheelabrator South Broward, Inc. *
- Mr. Stephen Smallwood, PE, ERM South
- Mr. Brian Beals, EPA
- Mr. Isidore Goldman, PE, FDEP SED
- Ms. Daniela Banu, Director, BCDNRP

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


(Clerk) 2-16-98
(Date)

**NOTICE TO BE PUBLISHED
IN THE NEWSPAPER**

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit Amendment No. PSD-FL-105(A)
Wheelabrator South Broward, Inc.
Broward County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Wheelabrator South Broward, Inc., for Wheelabrator South Broward, Inc. located at 4400 South State Road 7, Ft. Lauderdale, Broward, County. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The amendment will not result in an increase in any emissions from the facility, and will not cause a violation of any state or federal ambient air quality standards or increments. The applicant's name and address are:

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

On December 4, 1997, Wheelabrator South Broward, Inc. requested a revision to their existing PSD permit for clarification of the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility. The permit currently allows for the combustion of "refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge." Specifically, the request seeks approval to also combust pharmaceutical wastes, used oil filters and tires in addition to municipal solid waste. In addition to this request, the Department will replace the term "refuse such as garbage or trash (as defined in Chapter 17-7, FAC)" with the terms municipal solid waste or municipal-type waste or MSW as they are defined in both 40 CFR 60.51a and 51b.

The proposed fuels allowed to be combusted at the emissions units are:

A. Municipal Solid Waste or Municipal-Type Waste or MSW Municipal solid waste or municipal-type waste or MSW means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes includes yard waste and refuse-derived fuel.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

B. Used Oil Filters

C. Tires Tires (whole or shredded) may be processed/fed to this emissions unit(s) up to three (3) percent by weight of the permitted capacity of the emissions unit(s).

D. Pharmaceutical Wastes Pharmaceutical wastes include the following:

- (1) Expired pharmaceuticals (Rx);
- (2) Over the counter medicines, treatments, and supplements (OTC);
- (3) Health and beauty products (HB);
- (4) Off-specification, recalled or out of date Rx, OTC and HB;
- (5) Small amounts of bulk containers of Rx, OTC and HB;
- (6) Packaging material including glass, plastic, and paper for Rx, OTC and HB; and
- (7) Controlled substances confiscated by law enforcement agencies.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the DRAFT Permit Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit Amendment issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

The Department will issue FINAL Permit Amendment with the conditions of the DRAFT Permit Amendment unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's

**NOTICE TO BE PUBLISHED
IN THE NEWSPAPER**

action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Department of Environmental Protection
Southeast District Office
400 North Congress Avenue
West Palm Beach, Florida 33416-5425
Telephone: (561) 681-6600
Fax: : (561) 681-6755

Broward County Department of Natural
Resource Protection
Air Quality Division
218 Southwest First Avenue
Ft. Lauderdale, Florida 33301
Telephone: (954) 519-1220
Fax: : (954) 519-1495

The complete project file includes the Draft Permit Amendment, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-1344, for additional information.

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Wheelabrator South Broward, Inc.

Wheelabrator South Broward, Inc.
Ft. Lauderdale, Florida
Broward, County

PSD-FL-105(A)
Facility ID No.: 0112119

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

February 12, 1998

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. APPLICATION INFORMATION

1.1 *Applicant Name and Address*

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

Authorized Representative
Mr. Thomas D. Kirk, Plant Manager

1.2 *Reviewing and Process Schedule*

12-04-97: Date of Receipt of Application
12-04-97: Application deemed complete/sufficient
02-12-97: Issued Intent

2. FACILITY INFORMATION

2.1 *Facility Location*

The Wheelabrator South Broward, Inc. facility is located 4400 South State Road 7, Ft. Lauderdale, Broward County. The UTM coordinates of this facility are Zone 17 ; 579.5 km E ; 2,883.3 km N.

2.2 *Standard Industrial Classification Code (SIC)*

Major Group No.	49	Electric, Gas, and Sanitary Services
Group No.	495	Sanitary Services
Industry No.	4953	Refuse Systems

2.3 *Facility Category*

This facility produces electricity by combusting solid waste, recovering the heat as steam, and expanding the steam in an electrical generator. The solid waste burned is typically characterized as "refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge." Each of the three incinerators at the facility is permitted to combust up to 863 tons per day (115% of rated capacity) of municipal solid waste (MSW). The electricity produced is sold to the local utility.

The facility is classified as a major, or Title V, source of air pollution because emissions of at least one regulated air pollutant exceed 100 tons per year. Air pollutant emissions

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

are over 100 TPY for sulfur dioxide (SO₂), nitrogen oxides (NO_x) and carbon monoxide (CO). It is also a major source because emissions of hazardous air pollutants exceed 10 tons per year individually or 25 tons per year in the aggregate.

This facility is on the list of the 28 Major Facility Categories, Table 62-212.400-1, F.A.C. Because emissions are greater than 100 tons per year for at least one criteria pollutant, the facility is also a major facility with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD).

The facility was issued a PSD permit, including a determination of Best Available Control Technology (BACT), by the United States Environmental Protection Agency (EPA) on May 15, 1987.

3. PROJECT DESCRIPTION

3.1 *This permit addresses the following emissions units:*

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
-001	Unit #1	863 Tons per Day MSW Incinerator
-002	Unit #2	863 Tons per Day MSW Incinerator
-003	Unit #3	863 Tons per Day MSW Incinerator

On December 4, 1997, Wheelabrator South Broward, Inc. requested a revision to their existing PSD permit for clarification of the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility. The permit currently allows for the combustion of "refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge." Specifically, the request seeks approval to also combust pharmaceutical wastes, used oil filters and tires in addition to municipal solid waste. In addition to this request, the Department will replace the term "refuse such as garbage or trash (as defined in Chapter 17-7, FAC)" with the terms municipal solid waste or municipal-type waste or MSW as they are defined in both 40 CFR 60.51a and 51b.

The proposed fuels allowed to be combusted at the emissions units are:

A. Municipal Solid Waste or Municipal-Type Waste or MSW Municipal solid waste or municipal-type waste or MSW means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores,

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes includes yard waste and refuse-derived fuel.

B. Used Oil Filters

C. Tires Tires (whole or shredded) may be processed/fed to this emissions unit(s) up to three (3) percent by weight of the permitted capacity of the emissions unit(s).

D. Pharmaceutical Wastes Pharmaceutical wastes include the following:

- (1) Expired pharmaceuticals (Rx);
- (2) Over the counter medicines, treatments, and supplements (OTC);
- (3) Health and beauty products (HB);
- (4) Off-specification, recalled or out of date Rx, OTC and HB;
- (5) Small amounts of bulk containers of Rx, OTC and HB;
- (6) Packaging material including glass, plastic, and paper for Rx, OTC and HB; and
- (7) Controlled substances confiscated by law enforcement agencies.

4. PROCESS DESCRIPTION

4.1 *General Information*

The facility is a waste-to-energy installation employing mass burning of solid waste, heat recovery as superheated steam, and power generation in a steam electric cycle. Other than landfilling, this is the most common method of solid waste disposal in the United States. There are twelve such facilities in the State of Florida. The following is a general description of the process:

Waste is received via transfer, roll-off, or collection vehicles. All waste is taken to the Refuse Receiving Building, where it is deposited onto the tipping floor or into the Refuse Storage Pit. The refuse is stored at this location until needed to charge the combustion units.

Charging of the combustion units is accomplished using overhead cranes equipped with "orange peel" grapples. These stack, mix, and relocate waste within the pit and transfer it

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

into the feed hoppers serving each unit. The waste enters the three refuse-fired steam generators, each of which consists of an integrated mass-burn furnace and boiler.

Combustion air is drawn from the refuse tipping area (assisting in odor control) and conveyed through the gas side of the air preheater and into the refuse-fired generators where the waste is combusted. Exhaust gases from the refuse-fired generators pass through an economizer units and are ducted to the air pollution control systems which consists of spray dryer adsorbers and fabric filter bag houses. Treated gases are exhausted to the atmosphere through three individual flues within a single 195 foot stack. Bottom ash from the furnaces is removed, quenched and processed for metal recovery and disposal.

The superheated steam from each boiler enters a turbine where it is expanded. Each turbine powers a 68.5 megawatt electric power generator. The electric power is introduced into the electrical grid and is purchased by the local utility.

5. RULE APPLICABILITY

The Department has determined that the proposed additional waste to be burned is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

This facility is located in Broward County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C. The professional engineer's certification states that the net emissions increase, as defined in Rule 62-212.400(e), F.A.C., for each pollutant from the proposed revision to PSD-FL-105 is zero. The proposed project is not subject to review under Rule 62-212.400., F.A.C., Prevention of Significant Deterioration (PSD), because the potential emission increases are zero for each pollutant and thereby do not exceed the significance emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C.

The emission units affected by this revision shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.360	Designation of Prevention of Significant Deterioration Areas
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

6. SOURCE IMPACT ANALYSIS

6.1 *Emission Limitations*

There will be no change to the emissions limits of permit PSD-FL-105.

6.2 *Emission Summary*

[EMISSION UNIT Nos. -001, -002 or -003]

Pollutants	Current Allowable		New Allowable		Net Increase	PSD Significant Level
	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr	ton/yr
PM	12.48	54.67	12.48	54.67	0	25
SO ₂	100.3	439.3	100.3	439.3	0	40
NO _x	181.2	793.7	181.2	793.7	0	40
CO	29.1	127.6	29.1	127.6	0	100
Fluorides	1.3	5.7	1.3	5.7	0	3
Mercury	0.043	0.19	0.043	0.19	0	0.1
Beryllium	3.01E-04	1.32E-03	3.01E-04	1.32E-03	0	0.0004
Lead	0.49	2.13	0.49	2.13	0	0.6

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.3 *Control Technology Review*

There will be no change to the existing emissions control systems. Each unit is equipped with a spray dryer adsorber and a fabric filter baghouse system.

6.4 *Air Quality Analysis*

6.4.1 *Introduction*

An air quality analysis was not required for this project.

7. CONCLUSION

Based on the foregoing technical evaluation of the application submitted by Wheelabrator South Broward, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided certain conditions are met. The Specific Conditions are listed in the attached draft permit amendment.

Permit Engineer: Edward J. Svec



Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

[Month day, year]

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Thomas D. Kirk
Plant Manager
Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, Florida 33314

Re: Permit Amendment No. PSD-FL-105(A)
Wheelabrator South Broward, Inc.
Dear Mr. Kirk:

The Department has reviewed Wheelabrator South Broward, Inc.'s December 4, 1997 letter requesting an amendment to its permit to revise their existing PSD permit to clarify the permitted fuels allowed to be combusted at the South Broward Resource Recovery Facility. The permit currently allows for the combustion of "refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge." Specifically, the request seeks approval to also combust pharmaceutical wastes, used oil filters and tires in addition to municipal solid waste. In addition to this request, the Department will replace the term "refuse such as garbage or trash (as defined in Chapter 17-7, FAC)" with the terms municipal solid waste or municipal-type waste or MSW as they are defined in both 40 CFR 60.51a and 51b.

This request is acceptable and the permit is hereby amended as follows:

From:

Part I. - Specific Conditions

7. Fuel

The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, F.A.C.) but not grease, scum, grit screenings, or sewage sludge.

To:

Part I. - Specific Conditions

7. Fuel

The Resource Recovery Facility shall utilize:

A. Municipal Solid Waste or Municipal-Type Waste or MSW Municipal solid waste or municipal-type waste or MSW means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent

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DRAFT

or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes includes yard waste and refuse-derived fuel.

B. Used Oil Filters

C. Tires Tires (whole or shredded) may be processed/fed to this emissions unit(s) up to three (3) percent by weight of the permitted capacity of the emissions unit(s).

D. Pharmaceutical Wastes Pharmaceutical wastes include the following:

- (1) Expired pharmaceuticals (Rx);
- (2) Over the counter medicines, treatments, and supplements (OTC);
- (3) Health and beauty products (HB);
- (4) Off-specification, recalled or out of date Rx, OTC and HB;
- (5) Small amounts of bulk containers of Rx, OTC and HB;
- (6) Packaging material including glass, plastic, and paper for Rx, OTC and HB; and
- (7) Controlled substances confiscated by law enforcement agencies.

The Resource Recovery Facility shall not utilize grease, scum, grit screenings, or sewage sludge.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Sincerely,

Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/ejs

Enclosures

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
 Mr. Thomas D. Kirk, Plant Mgr.
 Wheelabrator S. Boulevard, Inc.
 4400 South State Road 7
 Ft. Lauderdale, FL 33314

4a. Article Number
 P 265 659 220

4b. Service Type

<input type="checkbox"/> Registered	<input checked="" type="checkbox"/> Certified
<input type="checkbox"/> Express Mail	<input type="checkbox"/> Insured
<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> COD

7. Date of Delivery
 5/27

5. Received By: (Print Name)
 Sandy [Signature]

6. Signature: (Addressee or Agent)
 X [Signature]

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 265 659 220

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	Thomas Kirk
Street & Number	Wheelabrator South B.
Post Office, State, & ZIP Code	Ft. Lauderdale, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	5-22-97
	PSO-FI-105

PS Form 3800, April 1995



Wheelabrator South Broward Inc.

A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314

Phone 954.581.6606
Fax 954.581.6705

Thomas D. Kirk
General Manager

September 17, 1997

Clair H. Fancy
Bureau Chief
Bureau of Air Regulation
Division of Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 34399-2400

RECEIVED

SEP 19 1997

**BUREAU OF
AIR REGULATION**

RE: REQUEST FOR CLARIFICATION
OF PERMITTED FUELS AT THE
NORTH BROWARD and SOUTH BROWARD
RESOURCE RECOVERY FACILITIES

Dear Mr. Fancy:

As you will recall, when we met with you and other representatives of the Florida Department of Environmental Protection ("FDEP") on April 22, 1997, we agreed to submit a request for clarification of the permitted fuels at the Wheelabrator North Broward ("WNB") and Wheelabrator South Broward ("WSB") facilities (collectively, "Wheelabrator"). As promised, this request includes a description of the fuels about which we are seeking clarification -- specifically, pharmaceutical wastes, used oil filters, and tires -- as well as a discussion of the handling practices which will be utilized by the facilities to ensure that the processing of these fuels will have no adverse impact on the facilities' air emissions. As we explained at our April 22, 1997 meeting, it is our strong belief that pharmaceutical wastes, used oil filters and tires fall clearly within the meaning of "refuse" as used in the facilities' permits and, therefore, are currently permitted fuels at each facility. With this letter, we are simply seeking FDEP's concurrence that pharmaceutical wastes, used oil filters, and tires are acceptable fuels at WSB and WNB.

I. Background

Wheelabrator's North Broward and South Broward waste-to-energy plants were both licensed during the mid to late 1980s under the Florida Power Plant Siting Act and the U.S. EPA's Prevention of Significant Deterioration (PSD) preconstruction review air permitting program. During the late 1980s to early 1990s, the state's site certification was updated to reflect the requirements of the final EPA PSD air permits, which were issued after the state site certifications.

The two mass burn plants are approximately the same size and design. Each plant consists of three mass burn refuse fired boilers. Each of the units at WSB is permitted to burn up to 863 tons per day (115% rated capacity) with a maximum heat input of 323.6 mmBtu/hr. Each of the units at WNB is permitted to burn up to 806 tons per day (100% rated capacity) with a maximum heat input of 302.5 mmBtu/hr. The average heat input of the refuse burned in each boiler at each plant is assumed to be 4500 Btu/pound.

WSB and WNB were designed and constructed with state-of-the-art air pollution control equipment (APCE) in accordance with Best Available Control Technology. Acid gases (SO₂ and HCl), particulate matter, metals, and dioxin/furans are controlled by spray dryer absorbers followed by fabric filters. Both facilities operate Continuous Emissions Monitoring Systems (CEMS) to demonstrate compliance with the emissions limitations defined in their operating permits. Stack gas opacity, sulfur dioxide, nitrous oxides, carbon monoxide and oxygen concentrations are measured continuously. Detailed records are kept and the monitoring results are reported to regulatory agencies on a quarterly basis. Additional monitoring devices include devices which record final combustion chamber temperature, steam production and flue gas temperature at the exit of the acid gas removal system.

II. Permitted Fuels Identified in Facilities' Site Certifications and PSD Permits

Pursuant to the provisions in both the PSD permits and the site certifications, both plants are permitted to burn "refuse, such as garbage and trash, (as defined in 17-701, FAC)", but not "hazardous waste (as defined in 17-730, FAC)", nor grease, scum, grit screenings or sewage sludge. In addition, a limited amount of distillate fuel oil or natural gas, may be used in the startup burners.

There is no definition of "refuse" in the Florida statutes or regulations, nor is "refuse" a defined term under federal air regulations. In addition, the permits themselves do not specifically define "refuse." However, notwithstanding the lack of a definition of refuse, the general and specific conditions in the PSD permits and the site certifications do establish the following criteria to be used by the facilities in determining which types of material may be burned at WNB and WSB:

- (1) The plants may burn only materials that are refuse, but may not burn hazardous waste (as defined in 17-730, FAC), nor grease, scum, grit screenings or sewage sludge, without first obtaining a modification of the permits/certifications by the FDEP Bureau of Air Regulation ("BAR") to allow this type of refuse to be burned. It is significant to note that by specifically excluding these materials, FDEP implicitly acknowledged that "refuse" is a broad enough term to include materials such as these which are not typically considered garbage or trash.

- (2) The plants may not burn refuse at a rate that is greater than that specified in the permits/certifications, nor at a rate that would result in a heat release to any of the boilers that would be greater than the maximum Btu/hr heat input specified in the permits/certifications, without first obtaining a modification of the permits/certifications by the FDEP BAR to allow higher processing rates.
- (3) The plants may not burn any material of a quality and quantity that would cause a violation of the specific air pollutant emission limits included in the permits/certifications, without first obtaining a modification of the permits/certifications by the FDEP BAR to revise the affected emission limits to a level that would not be violated as a result of burning that type and amount of refuse.
- (4) The plants' owner may not make nonexempt physical or operational changes to any unit at either plant that would result in a significant net emissions increase of an EPA regulated air pollutant, without first obtaining a modification of the permits/certifications by the FDEP BAR to limit the net emissions increase of each EPA regulated air pollutant on a plant wide basis to a level that would be below the significant net emissions increase level, or obtain a new PSD permit including a new BACT determination for the affected unit(s), before making such physical or operational changes.

Thus, the PSD permits and site certifications do not detail precisely what fuels the facility can accept. Rather, they provide a framework for evaluating the various materials available to be processed. Within this framework, changes in the quality and quantity of the materials processed are allowed without the need for permit modifications or amendments, provided that: (a) such changes do not result in the facility burning materials that are not "refuse" or in burning any of the types of wastes that are specifically prohibited by the permits/ certifications; (b) the material is not burned in a way that results in exceeding the maximum materials throughput, heat input, or emission limits in the permits/certifications; and (c) the burning of such materials does not require any significant physical or operational changes to be made at the plant.

III. Clarification Sought Regarding Permitted Fuels

Given the framework identified above, it is clear that the WNB and WSB can accept pharmaceutical wastes, used oil filters and tires within the limits of the existing permits and certifications. Specifically, these wastes are all "refuse" and are not specifically prohibited by the permits/certifications. In addition, accepting such refuse will not result in an exceedance of the maximum materials throughput, heat input, or applicable emissions limits. Finally, acceptance of pharmaceutical wastes, used oil filters, and tires does not require any significant physical or operation changes to be made at the plants.

With this request for clarification, WNB and WSB seek FDEP's concurrence that

pharmaceutical wastes, used oil filters, and tires are acceptable fuels under the facilities' existing permits and certifications. Each of these fuels is discussed below. In addition, FDEP's authority to review and respond to this request is also addressed.

A. Agency's Authority

Pursuant to the general conditions of the EPA PSD permits, "any proposed changes in the quantity or quality of materials processed that would result in new or increased emissions or ambient air quality impacts must be reported to EPA. If appropriate, modifications to the permit may then be made by EPA to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations herein."

Because the Florida DEP currently has full delegation of the U.S. EPA's PSD preconstruction review air permitting program in Florida, such notice is to be provided to FDEP BAR. The determination of whether a particular change in the materials processed requires any kind of change to the permit or the air provisions of the site certification may be made by the BAR. If any changes to the conditions of the PSD permit or the site certification are needed, the BAR with the approval of the Secretary of the FDEP, may make such changes.

B. Used Oil Filters

Both WNB and WSB currently accept used oil filters. In its June 3, 1992 guidance memorandum, FDEP stated:

We feel that the technology and pollution control equipment at the waste-to-energy facility, coupled with the operator training for mixing the waste as it is fed into the combustors is enough to assure that a "slug" of any one type of waste is avoided, and gives us reasonable assurance that used oil filters will not present an environmental problem due to emissions in these facilities. In any event, incineration with metal recovery is preferable to landfilling.

We feel, as a 'rule of thumb,' that if the facility can reasonably certify or demonstrate that the amount of filters being accepted (or any other specific waste for that matter) is not over two to three times the normal average amount of that type of waste in the overall waste stream, then no permit or certification modifications need be made.

Because both facilities accept used oil filters well within the parameters of this guidance memo, no modifications to the permits or certifications are necessary.

C. Tires

Both WNB and WSB also currently accept tires. In its April 16, 1992 guidance memo, FDEP stated:

“Tires (shredded and whole) may be processed/fed to these units up to 3%, by weight, of the permitted capacity without any change in the existing permits.”

WNB and WSB accept tires well within this 3% by weight limit and, therefore, no modifications to the permits or certifications are necessary.

D. Pharmaceutical Wastes

Refuse identified in the category of pharmaceutical waste includes the following:

- expired pharmaceuticals (Rx)
- over the counter medicines, treatments, and supplements (OTC)
- health and beauty products (HB)
- off spec, recalled, or out of date Rx, OTC, and HB
- small amounts of bulk containers of Rx, OTC, and HB
- packaging material including glass, plastic, paper for Rx, OTC and HB
- controlled substances confiscated by law enforcement agencies

With the exception of the controlled substances, most of these types of pharmaceutical wastes are now part of the overall waste stream. In many cases, these pharmaceutical wastes are put into the trash pickup dumpsters, and collected and disposed of as trash. There is an increasing demand to handle these wastes differently, however, because of concerns about the ultimate disposal of this material. Specifically, many pharmaceutical manufacturers and wholesale distributors want this type of waste taken directly from their warehouse or store to an incinerator and destroyed, to prevent it from being stolen and sold on the black market.

These types of refuse are different than trash and garbage not in their physical natures, but usually in their point of origin and the means of delivering the waste material to the plants. Specifically, these materials are expected to be delivered in segregated loads and, in most cases, will originate at various pharmaceutical manufacturers and wholesale distributors.

The following table, which is based on the information provided in the site certification applications, provides an annual breakdown of the components of the refuse currently accepted at the facility. Please note that the overall breakdown of the trash and garbage, as reported in the applications, typically delivered to the plants is: Garbage (55-60%), Processable trash, as received (17-20%), Processable trash, requiring size reduction (4-7%), Non-processable trash (16-21%). The

amount of trash and garbage delivered to the plants on a monthly basis varies from about 80-110% of the annual average rate, and the weekly and daily variations are greater than that. The typical components that make up the trash and garbage vary by similar amounts. Indeed, it is not unusual for the amount of the major components to vary by 5%. The plant addresses this kind of variation in the quality and quantity of this material by handling it in a way that allows the material to be properly incinerated while staying within all of the permit limits.

TABLE 1
PHYSICAL COMPOSITION - GARBAGE AND
PROCESSABLE TRASH FRACTIONS
(As Received Basis)

Component	Percent by Weight		
	Garbage	Trash	Combined
Paper, Cardboard	39-47	9-11	27-36
Plastics	8-9	3-10	5-7
Rubber, Tires	--	0-9	0-3
Textiles, Rags, Carpeting, and Mattresses	2-3	1	2
Food Waste	9	NA	5-6
Garden Waste, Stumps, Leaves and Brush	17-21	36-45	22-24
Wood	2-3	28-35	8-13
Glass	7-12	--	5-7
Metals	6	--	4-5
Rock, Brick	--	--	0-15
Other	--	5-7	2
TOTAL	100	100	100

-- means no data available

NA - not applicable

The primary components of the pharmaceutical wastes that Wheelabrator plans to burn are

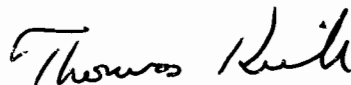
Clair H. Fancy
September 17, 1997
Page 7

paper, cardboard and plastics, which already represent 32-43% of the garbage and trash currently accepted at the facilities. In addition, the pharmaceutical wastes Wheelabrator plans to burn will be less than 5% of the total amount of material burned which is consistent with the typical 5% variation in the major components of the fuel as discussed above. Given the strong similarity between the components of the pharmaceutical wastes and the components of Wheelabrator's existing fuel, there will be no significant change in heat input to the boilers.

Finally, the addition of pharmaceutical wastes as a fuel at the WNB and WSB facilities will not impact the air emissions at either facility. As discussed in detail in Appendix A, the pharmaceutical waste will be introduced into the refuse fuel pit and managed to ensure appropriate fuel blending and complete and efficient combustion. Accordingly, neither facility will have any significant increases in emissions and both facilities will have no problem meeting their permitted emission limits.

Wheelabrator believes that the refuse described above -- used oil filters, tires, and pharmaceutical wastes -- are permitted fuels under the facilities' existing site certifications and PSD permits. As discussed above, the nature of these materials, as well as the handling practices that will be utilized by the facilities for all segregated refuse, ensure that processing these materials at WNB and WSB will have no adverse impact on the facilities' air emissions. Accordingly, we look forward to receiving FDEP's concurrence that used oil filters, tires and pharmaceutical wastes are permitted fuels at both facilities.

Sincerely,



Thomas Kirk
Plant Manager
Wheelabrator North Broward, Inc.
Wheelabrator South Broward, Inc.

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s:king\swk225.wpd

CC: Jack Chisolm, OGC
Doug Beason, OGC
Pat Comer, OGC
Jeff Brown, OGC
Chip Collette, OGC
Buck Owen, PPS
Mike Hewett, DARM

APPENDIX A

Addendum to Operation and Contingency Plans

APPENDIX A

1.0 RESOURCE RECOVERY FACILITY OPERATIONAL AND CONTINGENCY PLAN

- Page 16A -

1.12 Handling Procedure for Segregated Refuse

The South Broward Resource Recovery Facility, aka Wheelabrator South Broward, Inc., is permitted to "...utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) as its fuel." It is not permitted to accept hazardous waste, grease, scum, grit screenings or sewer sludge.

1.12.1 Requirements for Acceptance

Since Wheelabrator South Broward must ensure that safeguards are in place to identify and reject hazardous wastes and other refuse not permitted for acceptance, a procedure has been developed for handling loads of segregated refuse for which the facility requires the completion of a Waste Profile Form. The facility currently requires that a Waste Profile Form be completed for the following materials:

PHARMACEUTICAL WASTE

TIRES

USED OIL FILTERS

- * Generator Certifications: The generator of the load of segregated refuse must certify that the material to be burned is not hazardous. This certification is normally accomplished with the completion of a Waste Profile Form.
- * Waste Profile Form: This form is to be completed by the Generator to indicate the specific nature of the waste requiring disposal and to certify that the waste is non-hazardous. If deemed necessary by Wheelabrator management personnel, an MSDS and/or TCLP analysis may be required in addition to the Waste Profile Form. Once the Waste Profile Form has been completed and received by the facility, Wheelabrator South Broward shall make a determination to confirm that the waste is non-hazardous, that it is refuse allowed by facility permits and to determine that combustion of the waste will not impair the operations of the facility. This review may take several days, but less if the waste has been previously reviewed.

1.0 RESOURCE RECOVERY FACILITY OPERATIONAL AND CONTINGENCY PLAN

- Page 16B -

1.12.2 Operational Controls - Tipping Floor Disposal

At the scheduled time of delivery, the customer or its representative will stop at the facility scale house to be weighed and notify the scale house attendant of the load of segregated refuse. The scale house attendant will in turn notify the tipping floor attendant and the facility operations control room. The scale house attendant shall then direct the load of segregated refuse to the tipping floor. The customer will be responsible for unloading the waste onto the tipping floor under the direction of the tipping floor attendant.

The tipping floor attendant will perform a detailed inspection of the entire load. Any unacceptable waste will be re-loaded onto the customer's truck for removal off-site at the customer's sole expense. A Screening Report for Segregated Refuse form shall be completed for all segregated refuse. The decision to reject any waste will be made at the sole discretion of the facility's management.

Provided the waste has passed inspection, the tipping floor attendant shall notify the refuse crane operator that a load of segregated refuse is to be dumped and inspected and will convey any special mixing or handling instructions. The refuse crane operator shall in turn confirm acceptance with the control room, if the load is to be fed directly into a boiler and may affect the operation of the boiler.

The tipping floor attendant shall instruct the tipping floor loader operator to push the inspected load into the pit where it is mixed with other wastes by one of the two refuse cranes. Subsequently, the combined mixed waste is picked by one of two refuse cranes and deposited into the feed hopper of an on-line boiler. Material in the feed hopper is gravity fed into the furnace.

1.12.3 Operational Controls - Refuse Hopper Disposal

For segregated refuse that must be handled in a manner to assure destruction, such as controlled substances, the following procedures will be utilized by the facility.

At the scheduled time of delivery, the customer or its representative will stop at the facility scale house to be weighed and notify the scale house attendant of the assured destruction load. The scale house attendant in turn shall notify the Support Staff Supervisor, or his designee and the facility operations control room. The scale house attendant shall then direct the assured load to the plant elevator access.

1.0 RESOURCE RECOVERY FACILITY OPERATIONAL AND CONTINGENCY PLAN

- Page 16C -

The Support Staff Supervisor, or his designee, shall meet the truck at the plant elevator access. The customer shall be directed to, and be responsible for, unloading the assured destruction load under the supervision of the Support Staff Supervisor, or his designee. The Support Staff Supervisor, or his designee, shall perform an inspection of the entire load. Any unacceptable waste will be re-loaded onto the customer's truck for removal off-site at the customer's sole expense. A Screening Report for Segregated Refuse form shall be completed for all assured destruction loads. The decision to reject any waste will be made at the sole discretion of the facility's management.

The Support Staff Supervisor, or his designee, shall notify the crane operator and the shift supervisor that an assured destruction load is to be disposed of via the feed chute hoppers. Under the supervision of the Support Staff Supervisor, or his designee, the assured destruction load shall be taken, via plant elevator, to elevation 78 where the load shall be directly fed into an on-line boiler's refuse hopper.

1.12.4 Disposal

In the furnace, refuse is burned at a temperature exceeding 1800 deg F, to assure complete destruction of the waste and living organisms within the waste. The remaining ash no longer has the physical or chemical identity of the original product and represents complete destruction of the original product. The ash is landfilled at the ash monofill located adjacent to the facility.

1.0 RESOURCE RECOVERY FACILITY OPERATIONAL AND CONTINGENCY PLAN

- Page 16A -

1.12 Handling Procedure for Segregated Refuse

The North Broward Resource Recovery Facility, aka Wheelabrator North Broward, Inc., is permitted to "...utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) as its fuel." It is not permitted to accept hazardous waste, grease, scum, grit screenings or sewer sludge.

1.12.1 Requirements for Acceptance

Since Wheelabrator North Broward must ensure that safeguards are in place to identify and reject hazardous wastes and other refuse not permitted for acceptance, a procedure has been developed for handling loads of segregated refuse for which the facility requires the completion of a Waste Profile Form. The facility currently requires that a Waste Profile Form be completed for the following materials:

PHARMACEUTICAL WASTE
TIRES
USED OIL FILTERS

- * Generator Certifications: The generator of the load of segregated refuse must certify that the material to be burned is not hazardous. This certification is normally accomplished with the completion of a Waste Profile Form.
- * Waste Profile Form: This form is to be completed by the Generator to indicate the specific nature of the waste requiring disposal and to certify that the waste is non-hazardous. If deemed necessary by Wheelabrator management personnel, an MSDS and/or TCLP analysis may be required in addition to the Waste Profile Form. Once the Waste Profile Form has been completed and received by the facility, Wheelabrator North Broward shall make a determination to confirm that the waste is non-hazardous, that it is refuse allowed by facility permits and to determine that combustion of the waste will not impair the operations of the facility. This review may take several days, but less if the waste has been previously reviewed.

1.0 RESOURCE RECOVERY FACILITY OPERATIONAL AND CONTINGENCY PLAN

- Page 16B -

1.12.2 Operational Controls - Tipping Floor Disposal

At the scheduled time of delivery, the customer or its representative will stop at the facility scale house to be weighed and notify the scale house attendant of the load of segregated refuse. The scale house attendant will in turn notify the tipping floor attendant and the facility operations control room. The scale house attendant shall then direct the load of segregated refuse to the tipping floor. The customer will be responsible for unloading the waste onto the tipping floor under the direction of the tipping floor attendant.

The tipping floor attendant will perform a detailed inspection of the entire load. Any unacceptable waste will be re-loaded onto the customer's truck for removal off-site at the customer's sole expense. A Screening Report for Segregated Refuse form shall be completed for all segregated refuse. The decision to reject any waste will be made at the sole discretion of the facility's management.

Provided the waste has passed inspection, the tipping floor attendant shall notify the refuse crane operator that a load of segregated refuse is to be dumped and inspected and will convey any special mixing or handling instructions. The refuse crane operator shall in turn confirm acceptance with the control room, if the load is to be fed directly into a boiler and may affect the operation of the boiler.

The tipping floor attendant shall instruct the tipping floor loader operator to push the inspected load into the pit where it is mixed with other wastes by one of the two refuse cranes. Subsequently, the combined mixed waste is picked by one of two refuse cranes and deposited into the feed hopper of an on-line boiler. Material in the feed hopper is gravity fed into the furnace.

1.12.3 Operational Controls - Refuse Hopper Disposal

For segregated refuse that must be handled in a manner to assure destruction, such as controlled substances, the following procedures will be utilized by the facility.

At the scheduled time of delivery, the customer or its representative will stop at the facility scale house to be weighed and notify the scale house attendant of the assured destruction load. The scale house attendant in turn shall notify the Shift Supervisor, or his designee and the facility operations control room. The scale house attendant shall then direct the assured load to the plant elevator access.

1.0 RESOURCE RECOVERY FACILITY OPERATIONAL AND CONTINGENCY PLAN

- Page 16C -

The Shift Supervisor, or his designee, shall meet the truck at the plant elevator access. The customer shall be directed to, and be responsible for, unloading the assured destruction load under the supervision of the Shift Supervisor, or his designee. The Shift Supervisor, or his designee, shall perform an inspection of the entire load. Any unacceptable waste will be re-loaded onto the customer's truck for removal off-site at the customer's sole expense. A Screening Report for Segregated Refuse form shall be completed for all assured destruction loads. The decision to reject any waste will be made at the sole discretion of the facility's management.

The Shift Supervisor, or his designee, shall notify the crane operator and the shift supervisor that an assured destruction load is to be disposed of via the feed chute hoppers. Under the supervision of the Shift Supervisor, or his designee, the assured destruction load shall be taken, via plant elevator, to elevation 78 where the load shall be directly fed into an on-line boiler's refuse hopper.

1.12.4 Disposal

In the furnace, refuse is burned at a temperature exceeding 1800 deg F, to assure complete destruction of the waste and living organisms within the waste. The remaining ash no longer has the physical or chemical identity of the original product and represents complete destruction of the original product. The ash is landfilled at the ash monofill located adjacent to the facility.

WASTE PROFILE

PROFILE NO. _____

APPROVALS:	NAME	DATE
YES	NO	
RESCO		
YES	NO	
WESI LEGAL:		
YES	NO	
CWM		

GENERAL INFORMATION

1. GENERATOR NAME: _____ Generator USEPA ID: _____
2. Generator Address: _____ Billing Address: Same _____
3. Technical Contact/Phone: _____ Billing Contact/Phone: _____

PROPERTIES AND COMPOSITION

5. Process Generating Waste: _____
6. Waste Name: _____
- 7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes No
- B. Identify All USEPA listed and characteristic waste code numbers (D, F, K, P, U): _____
- State Waste Codes: _____
8. Physical State @ 70°F: A. Solid Liquid Both B. Single Layer Multilayer C. Free liquid range _____
- 9A. pH: Range _____ to _____ or Not applicable B. Strong Odor ; describe _____
10. Liquid Flash Point: <73°F 73-99°F 100-139°F 40-199°F ≥200°F N.A. Closed Cup Open Cup

11. CHEMICAL COMPOSITION: List ALL constituents (including halogenated organics) present in any concentration and forward available analysis.

Constituents	Range	Units	Constituents	Range	Units
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

TOTAL COMPOSITION MUST EQUAL OR EXCEED 100%

12. OTHER: PCBs if yes, concentration _____ ppm, PCBs regulated by 40 CFR 761 . Pyrophoric Explosive Radioactive Benzene if yes, concentration _____ ppm. Shock Sensitive Oxidizer Carcinogen Infectious Other _____
13. If the waste is subject to the land ban and meets the treatment standards, check here: _____, and supply analytical results where applicable. _____

SHIPPING INFORMATION

14. Packaging: Bulk Solid Bulk Liquid Drum Type/Size: _____ Other: _____
15. ANTICIPATED ANNUAL VOLUME: _____ Units: _____ Other: _____

SAMPLING INFORMATION

- 16a. Sample source (drum, lagoon, pond, tank, vat, ect.) _____
Date Sampled: _____ Sampler's Name/Company: _____
- 16b. Generator's Agent Supervising Sampling: _____ 17. No sample required (see instructions).

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261-Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature

Printed (or typed) name and title

Date

WHEELABRATOR BROWARD

Screening Report for Segregated Refuse

DATE: _____

TIME ARRIVED: _____

TIME DEPARTED: _____

INSPECTED BY: _____
(print)

TYPE OF SCREENING:

Floor _____

Hopper _____

TRUCK INSPECTED: Company _____

Driver _____

Truck Number _____
(if applicable)

ACCEPTED: _____

REJECTED: _____

TYPE OF MATERIAL OBSERVED:

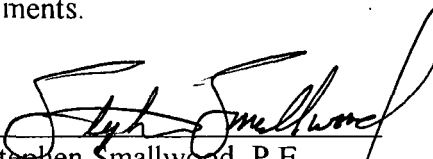
COMMENTS:

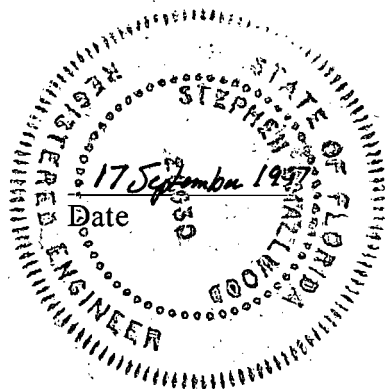
(SCREEN1)

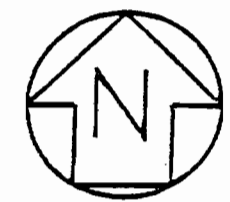
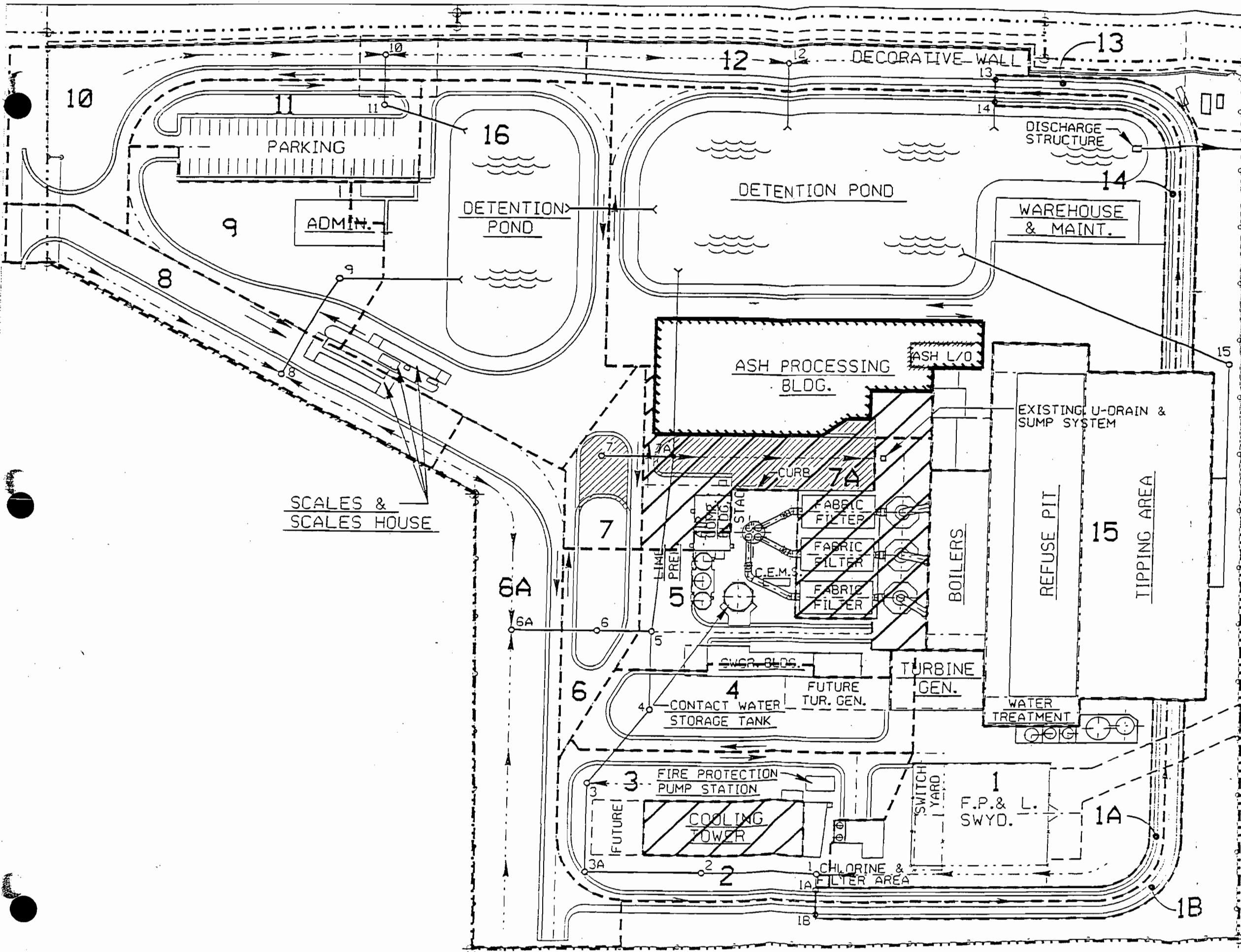
**PROFESSIONAL ENGINEER
CERTIFICATION**

I have reviewed the letter report to Clair H. Fancy, P.E., Chief, FDEP Bureau of Air Regulation, from Thomas Kirk, Plant Manager, Wheelabrator North Broward, Inc. and Wheelabrator South Broward, Inc., dated September 17, 1997, entitled REQUEST FOR CLARIFICATION OF PERMITTED FUELS AT THE NORTH BROWARD and SOUTH BROWARD RESOURCE RECOVERY FACILITIES.

After reasonable inquiry, I have concluded that: (a) the additional fuels proposed to be burned at the two facilities are "refuse", but they are not any of the types of wastes that are specifically prohibited by permits/certification; (b) the material would not be burned in a way that results in exceeding the maximum materials throughputs, heat inputs or emission limits; and (c) the burning of the materials proposed does not require any significant physical or operational changes to be made. Therefore, under the current permits, the materials proposed are allowed without the need for permit modifications or amendments.

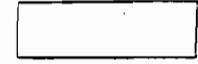


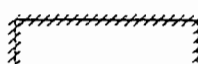
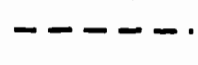
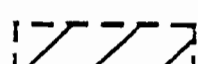




Stephen Smallwood, P.E.
Florida Registration No. 26630





PLANT
NORTH

LEGEND

-  EXIST. FACILITIES
-  NEW FACILITIES
-  NEW PAVED AREA
-  DEMOLITION
-  DRAINAGE AREA BOUNDARY
-  DRAINAGE AREA CONTAINED (EXCLUDED FROM STORM DRAINAGE)
-  DRAINAGE AREA
-  DRAINAGE STRUCTURE NO.
-  EXIST. CATCH BASIN CAPPED

Jack Franks
L. FL.P.E. No. 45496
4/6/94

RUST Rust Engineering Company
Birmingham, Alabama
Contract 21-4527L

DRAINAGE AREA MAP
NORTH BROWARD
RESOURCE RECOVERY FACILITY

DRAWING NO. 4527L-01
SCALE: 1"=100'
REVISED 4/6/94

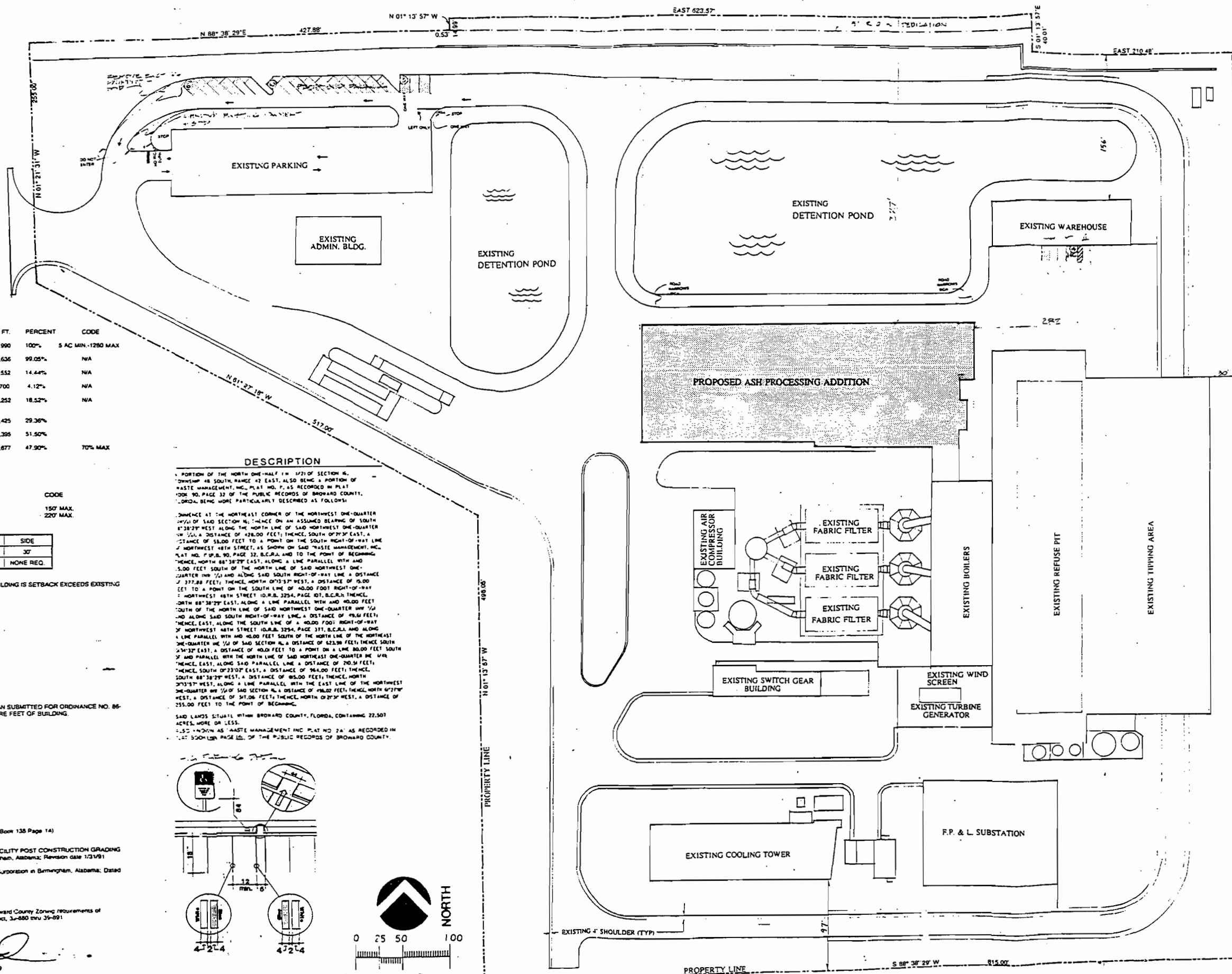
Wheelabrator
Copies

DATE	REVISIONS

DATE 3 25 24
 SCALE 1" = 50'-0"
 FIELD BK.
 DWNG. BY JYT
 CHECKED BY BR

NORTH BROWARD RESOURCE RECOVERY FACILITY
 BROWARD COUNTY FLORIDA
ASH PROCESSING ADDITION
SITE CONFORMANCE DIAGRAM

SHEET NO. 1
 OF 1 SHEETS
 PROJECT NO. 14756



ZONING:
 PUD SPECIAL COMPLEX DISTRICT
 BROWARD COUNTY ORDINANCE 86-20

AREA CALCULATIONS

	ACRES	SQ. FT.	PERCENT	CODE
GROSS ACRES	22.70	988,990	100%	5 AC MIN.-1280 MAX
NET ACRES	22.50	979,636	99.05%	N/A
EX. BLDG. AREA	3.27	142,552	14.44%	N/A
PROPOSED BLDG. AREA	.93	40,700	4.12%	N/A
TOTAL BLDG. AREA	4.21	183,252	18.52%	N/A
PAVED SURFACE	6.67	290,425	29.36%	
OPEN SPACE	11.69	509,395	51.50%	
PERVIOUS SPACE	10.87	473,677	47.90%	70% MAX

BUILDING

	PROPOSED	CODE
BUILDING HEIGHT	45'-5"	150' MAX.
STACK HEIGHT	70'-0"	220' MAX.

SETBACK	FRONT	REAR	SIDE
EXISTING	156'	97'	30'
REQUIRED	25'	NONE REQ.	NONE REQ.

NOTE: PROPOSED ASH PROCESSING BUILDING IS SETBACK EXCEEDS EXISTING BUILDINGS AND REQUIREMENTS.

PARKING

PARKING PROVIDED

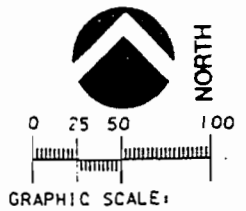
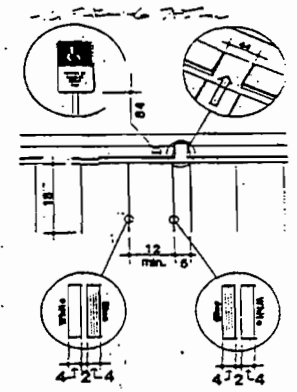
EXISTING	PROPOSED
REGULAR: 43	REGULAR: 21
HANDICAP: 2	HANDICAP: 1

NOTE: PARKING IS MODELED AFTER SITE PLAN SUBMITTED FOR ORDINANCE NO. 86-20 CALCULATED AT 1 SPACE PER 1900 SQUARE FEET OF BUILDING.

DESCRIPTION
 A PORTION OF THE NORTH ONE-HALF (1/2) OF SECTION 16, TOWNSHIP 48 SOUTH, RANGE 42 EAST, ALSO BEING A PORTION OF WASTE MANAGEMENT, INC. PLAT NO. 2, AS RECORDED IN PLAT BOOK 90, PAGE 32 OF THE PUBLIC RECORDS OF BROWARD COUNTY, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER (1/4) OF SAID SECTION 16; THENCE ON AN ASSUMED BEARING OF SOUTH 87°30'22" WEST ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) A DISTANCE OF 428.00 FEET; THENCE SOUTH 07°30'22" EAST, A DISTANCE OF 58.00 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF NORTHWEST 48TH STREET, AS SHOWN ON SAID WASTE MANAGEMENT, INC. PLAT NO. 2, P. 32, B.C.R.A. AND TO THE POINT OF BEGINNING; THENCE NORTH 88°38'29" EAST, ALONG A LINE PARALLEL WITH AND 5.00 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) AND ALONG SAID SOUTH RIGHT-OF-WAY LINE A DISTANCE OF 377.88 FEET; THENCE NORTH 07°30'22" WEST, A DISTANCE OF 58.00 FEET TO A POINT ON THE SOUTH LINE OF 40.00 FOOT RIGHT-OF-WAY OF NORTHWEST 48TH STREET (D.R.B. 3254, PAGE 107, B.C.R.A.) THENCE NORTH 88°38'29" EAST, ALONG A LINE PARALLEL WITH AND 40.00 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) AND ALONG SAID SOUTH RIGHT-OF-WAY LINE A DISTANCE OF 377.88 FEET; THENCE NORTH 07°30'22" WEST, A DISTANCE OF 58.00 FEET TO A POINT ON THE SOUTH LINE OF 40.00 FOOT RIGHT-OF-WAY OF NORTHWEST 48TH STREET (D.R.B. 3254, PAGE 111, B.C.R.A.) AND ALONG A LINE PARALLEL WITH AND 40.00 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) AND ALONG SAID SOUTH RIGHT-OF-WAY LINE A DISTANCE OF 377.88 FEET; THENCE SOUTH 07°30'22" EAST, A DISTANCE OF 58.00 FEET; THENCE SOUTH 88°38'29" WEST, A DISTANCE OF 85.00 FEET; THENCE NORTH 07°30'22" WEST, ALONG A LINE PARALLEL WITH THE EAST LINE OF THE NORTHWEST ONE-QUARTER (1/4) OF SAID SECTION 16 A DISTANCE OF 49.00 FEET; THENCE NORTH 07°30'22" WEST, A DISTANCE OF 51.00 FEET; THENCE NORTH 07°30'22" WEST, A DISTANCE OF 255.00 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE WITHIN BROWARD COUNTY, FLORIDA, CONTAINING 22.507 ACRES, MORE OR LESS.
 ALSO KNOWN AS WASTE MANAGEMENT INC. PLAT NO. 2, AS RECORDED IN PLAT BOOK 90, PAGE 32 OF THE PUBLIC RECORDS OF BROWARD COUNTY.



NOTE:
 The base information of this map is from:
 WASTE MANAGEMENT INC. PLAT NO. 2-A (Plat Book 138 Page 14)
 prepared by Keith and Schnars, P.A.
 NORTH BROWARD RESOURCE RECOVERY FACILITY POST CONSTRUCTION GRADING PLAN by Rust International Corporation in Birmingham, Alabama; Revision date 1/31/91
 PLANT LAYOUT prepared by Rust International Corporation in Birmingham, Alabama, Dated 12/29/93
 This site conformance diagram conforms with Broward County Zoning requirements of Article 151 Planned Unit Development (PUD) District, 3-680 thru 35-691
 Zoning Change Ordinance No. 86-20
 BRUCE REED, P.L.L.C.
 FLORIDA REGISTRATION NO. LA 0001479
 FOR THE FIRM



Wheelabrator North Broward Inc.

A Waste Management Company

2600 N.W. 48th Street
Pompano Beach, FL 33073
(954) 971-8701
(954) 971-8703 Fax

Tom

Sutt
6/20

June 21, 2002

CERTIFIED MAIL # 7099 3400 0000 6360 8

Mr. Scott M. Sheplak P.E.
Administrator, Title V Section
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

0112120-003-AC

0112120-536-AJ

Re: Wheelabrator North Broward (0112120-001-AV)
Title V and PSD Permit (PSD-FL-112(B)) Modification Request

Dear Mr. Sheplak:

In response to your letter to William Roberts dated June 5, 2002, please find enclosed four copies of a Title V permit modification request for the construction of one minor source wet scrubber at the Wheelabrator North Broward facility. When the original permit modification request was made in July, 2000, the facility anticipated the installation of two wet scrubber units. However, at his time Wheelabrator North Broward is requesting a construction permit for one scrubber only. If, and when, a second unit installation is anticipated, Wheelabrator will submit a second modification request at that time.

If there are any questions, or if further information is required, please contact myself or Chuck Faller (954) 971-8701.

Sincerely,

Paul Grego
Plant Manager

cc: Chuck Faller (with)
Tim Porter (with)
Matt Killeen (without)
File: 5.1.3.2 (without)

S:admin/recep/062102

RECEIVED

JUN 26 2002

BUREAU OF AIR REGULATION



Appendix H-1, Permit History/ID Number Changes

Wheelabrator North Broward, Inc.
North Broward Waste-to-Energy Facility

Facility ID No.: 0112120

Permit History (for tracking purposes):

<u>E.U. ID No.</u>	<u>Description</u>	<u>Permit No.</u>	<u>Issue Date</u>	<u>Expiration Date</u>	<u>ExtendedDate</u>	<u>Revised Date(s)</u>
001, 002, 003	Municipal Solid Waste Combustors	PSD-FL-112	07/28/87			02/09/89; 05/22/97; 09/28/99.
		PA 86-22	03/09/87			04/12/88; 02/01/89; 10/04/91; 11/30/92
004	Lime Silo	AC06-186998 AO06-208187 0112120-007-AC	03/12/91 05/14/92	02/28/92 02/28/96		
005	Ash Handling System	AC06-186997 AO06-208187 0112120-002-AC 0112120-003-AC	03/12/91 05/14/92 10/23/00 10/22/02	02/28/92 02/28/96 10/21/05 10/22/02		
All of the above		0112120-001-AV 0112120-002-AC 0112120-003-AC 0112120-004-AV 0112120-005-AV 0112120-006-AV 0112120-007-AC 0112120-008-AV	10/23/00 10/23/00 10/22/02 05/15/01 10/16/02 01/17/03	10/21/05 Initial Title V 10/21/05 To remove the ash handling system's baghouse 10/22/02 To allow the scrubber installation in the ash handling facility 10/21/05 To remove obsolete conditions in the Title V permit 10/21/05 To allow for 15 hours excess CO emissions 10/21/05 To allow the scrubber installation in the ash handling facility To increase the pebble lime filling rate to 50,000 lb/hr To increase the pebble lime filling rate to 50,000 lb/hr		

(if applicable) ID Number Changes (for tracking purposes):

From: Facility ID No.: 30BRO062120 To: Facility ID No.: 0112120

Appendix H-1: Permit History

Wheelabrator South Broward, Inc.
Wheelabrator South Broward

DRAFT Permit Revision No.: 0112119-008-AV
Facility ID No.: 0112119

E.U. ID No.	Description	Permit No.	Effective Date	Expiration Date	Project Type ¹
-001; -002; and, -003	Municipal Solid Waste Combustors	PSD-FL-105 PA 85-21 0112119-001-AC	05/15/87 05/22/97 09/28/99 06/03/86 04/17/91 03/25/96	 03/25/01	Construction (new) Construction (mod.) Construction (mod.) Construction (new) Construction (mod.) Construction (new)
-004	Lime Silo	AC06-187000 AO06-208864 0112119-007-AC	03/12/91 05/04/92	02/28/92 04/30/97	Construction (new) Operation Construction (mod.)
-005	Ash Handling System	AC06-187001 AO06-208864 0112119-003-AC	03/12/91 05/04/92 10/24/00	02/28/92 04/30/97 10/24/05	Construction (new) Operation Construction (mod.)
All	Municipal Solid Waste Facility	0112119-001-AC 0112119-002-AV 0112119-003-AC 0112119-004-AV 0112119-005-AV 0112119-006-AV 0112119-007-AC 0112119-008-AV	03/25/96 10/22/00 10/24/00 withdrawn 05/15/01 10/16/02	03/25/01 10/21/05 10/24/05 withdrawn 10/21/05 10/21/05 10/21/05	To allow alternate Nitrogen 7E Test Method Initial Title V To remove baghouse from ash handling system To install wet scrubbers To remove obsolete conditions in the Title V permit To allow 15 hours excess CO emissions To increase the pebble lime filling rate to 50,000 lb/hr To increase the pebble lime filling rate to 50,000 lb/hr

¹ Project Type (select one): Title V: Initial, Revision, Renewal, or Admin. Correction; Construction (new or mod.); or, Extension (AC only).



Wheelabrator South Broward Inc.

A Waste Management Company

4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

RECEIVED

JUN 21 2002

BUREAU OF AIR REGULATION

June 18, 2002

CERTIFIED MAIL #7001 1940 0006 1766 7065

Mr. Scott M. Sheplak P.E.
Administrator, Title V Section
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Wheelabrator South Broward
DEP File No: 0112119-004-AC
Request to formally Withdraw a Minor Modification to Permit No. PSD-FL-105B

Dear Mr. Sheplak:

The facility is requesting a formal withdrawal of its request for a minor modification to the facility PSD permit (PSD-FL-105 (B)), for the construction of two minor source wet scrubbers that were submitted to the department on July 24, 2000. This request is in response to your letter to the facility dated June 05, 2002.

If there are any questions, or if further information is required, please feel free to contact this office (954) 581-6606.

Sincerely,

William Roberts
General Manager

Enclosures:


Cc: Jairaj Gosine
Timothy Porter
Matt Killeen
File: 5.1.3.2



Florida Department of
Environmental Protection

Memorandum

PSD-FL-112

TO: Buck Oven
FROM: Clair H. Fancy 
DATE: July 25, 1994
SUBJ: North Broward County Resource Recovery Facility

Attached please find the conditions of certification for the ash reuse processing project at the North Broward County Resource Recovery Facility.

CHF/JR/pm

Attachment

Revised and Additional Conditions of Certification

North Broward Resource Recovery Facility
PA 86-22

1. ADDITIONAL AUTHORIZED FACILITIES:

Ash Handling System Particulate Control

Particulate emissions from the ash handling system shall be controlled by a baghouse having an outlet loading not to exceed 0.01 gr/dscf or 3.0 tons per year.

Lime Silo Particulate Control

Particulate emissions from the unloading of pebble lime into a storage silo shall be controlled by a baghouse having an outlet loading not to exceed 0.01 gr/dscf or 0.021 tons per year.

Ash Reuse Process Facility

Particulate emissions from the ash processing addition shall be controlled by a baghouse having an outlet loading not to exceed 0.0040 gr/dscf or 11.7 tons per year.

2. REVISED CONDITIONS OF CERTIFICATION:

Condition of Certification XIV., E.5., Solid/Hazardous Waste is revised to read as follows:

Ash, prior to transport to the landfill or processed into landfill daily cover or construction aggregate shall be stored in an enclosed building on an impervious surface or by another method approved by the Department. Final disposal of unprocessed ash shall be into a lined landfill or by another method approved by the Department. Any leachate generated within the building shall be collected and reused within the facility or disposed of by a method approved by the Department. The Department shall notify the SFWMD of the plans and specifications regarding the above referenced method.

Conditions XIV., E. Solid/Hazardous Waste, 8 is revised as follows:

8. The sampling analysis and reporting of results of municipal solid waste combustor ash residue shall be in accordance with F.A.C. Chapter 17-702.

9. Deleted.

10. Deleted.

Conditions XIV., E. Solid Hazardous Waste 12 is added to read as follows:

12. Chemical and physical properties of the processed ash shall be determined and reported in accordance with F.A.C. Chapter 17-702 and reported to the Department.

3. ADDITIONAL SPECIFIC CONDITIONS OF CERTIFICATION:

Condition XIV., A. Air, 6. is added to read as follows:

6. Ash Handling, Reuse Facility, Lime Silo

- a. Wheelabrator North Broward, Inc.'s fly ash handling system and the lime silo shall be allowed to operate continuously (i.e. 8,760 hrs/yr).
- b. Particulate emissions from the fly ash handling system, and lime silo baghouses shall not exceed 0.01 gr/dscf, or 3.0 tons/year and 0.021 tons/year, respectively.
- c. The ash reuse facility shall be allowed to operate up to 6,000 hrs/yr at a maximum process rate of 260,000 lbs/hr of ash residue.
- d. Particulate emissions from the ash reuse process facility shall not exceed 0.0040 gr/dscf or 3.91 lbs/hr or 11.7 tons/yr.
- e. Visible emissions from the fly ash handling system and the lime silo process facility shall not exceed 5% opacity.
- f. Visible emissions from the ash reuse facility baghouse shall not exceed 5% opacity.
- g. Compliance with the particulate and visible emissions tests shall be determined annually using EPA Methods 1, 2, 3, 4, 5 and 9 contained in F.A.C. Rule 17-297. The visible emissions test for the fly ash handling system and ash reuse facility conducted along with the particulate tests shall be for at least 60 minutes. The visible emissions tests for the lime silo shall be conducted for the entire truck unloading operation. The minimum requirements for stack sampling facilities, source sampling and reporting shall be in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A. A stack drawing showing sampling locations for the proposed ash processing facility baghouse shall be submitted to the Department at least 90 days prior to testing.

- h. The maximum allowable emission rate for particulate matter for the lime silo is 0.021 tons/year. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department, pursuant to the authority granted under F.A.C. Rule 17-2.700(3)(d), hereby waives the requirement for a stack test. The alternate standard set forth by this provision establishes a visible emission not to exceed an opacity of 5%. Any exceedance of 5% opacity as determined by a certified visual emissions observer is considered a violation.
- i. Should the Department have any reason to believe the particulate emission standard is not being met for the lime silo, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with F.A.C. Rule 17-297.
- j. No objectionable odors from this facility will be allowed.
- k. The DEP Southeast District Office shall be given written notice at least 15 days prior to compliance testing.
- l. All conveyor loading points, transfer points and all ash processing equipment shall be properly enclosed. The facility shall be operated by personnel properly trained for the equipment herein. The Department shall be notified in writing on how the facility will be staffed and trained.
- m. Reasonable precautions shall be taken during operation to prevent and control generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. Rule 17-2.610(3). Such reasonable precautions shall be: application of water or chemicals to control fugitive emissions from activities such as vehicular movement, loading, unloading, storage and handling.
- n. The permittee shall comply with all applicable provisions of Florida Administrative Code Chapters 17-4 and 17-210 through 297.
- o. Prior to the use of ash at this facility, the permittee shall submit to the Department the following information required by F.A.C. Rule 17-702.600(2) and obtain written confirmation from the Department that F.A.C. Rule 17-702.600(2) has been complied with.

- (1) Describe the chemical and physical properties of the finished product line, identify the quantity of ash residue used in a product, and identify quantity and quality of the product to be marketed or used.
- (2) Demonstrate that the proposed process will physically or chemically change the ash residue so that any leachates produced after processing will not cause a violation of surface or ground water quality standards contained in Chapters 17-3 and 17-550, F.A.C.
- (3) Demonstrate that processed ash residue or products using ash residue will not endanger human health or the environment. Exposure risks to be considered include, but are not limited to, inhalation, ingestion, skin contact, and migration to soil, surface and ground water.
- (4) Establish performance standards and operational criteria for the process that are designed to demonstrate reliable operation in compliance with Rules 17-702.600(2)(a) through (c), F.A.C.

TO: Power Plant Siting Review Committee ✓
FROM: Buck Oven
DATE: April 18, 1994
SUBJECT: Wheelabrator - North Broward Resource Recovery
Facility, PA 86-22, Module 8029

We received a request to modify the conditions of certification for the North Broward RRF to allow construction of an ash processing facility. The request also includes incorporation of existing minor air source permits in the conditions. I will be distributing the modification materials within the next few days. Copies are being sent to the SE District, SFWMD, Broward County, and the original parties by Wheelabrator. Please review for completeness and sufficiency. Your response by **May 18th** would be appreciated.

cc: Richard Donelan
Mary Williams
Raisa Neginsky

30 days for both completeness & sufficiency

I N T E R O F F I C E M E M O R A N D U M

Date: 18-Apr-1994 03:31pm EST
From: Hamilton Buck Oven TAL
OVEN H
Dept: Office of Secretary
Tel No: 904/487-0472
SUNCOM: Room 953-A

TO: See Below

Subject: Receipt of Modification

Copies of the Modification material are being distributed within the next few days.

Distribution:

TO: Raisa Neginsky WPB	(NEGINSKY_R @ A1 @ WPB1)
TO: Preston Lewis TAL	(LEWIS_P)
TO: Clair Fancy TAL	(FANCY_C)
TO: Al Rushanan TAL	(RUSHANAN_A)
TO: Trudie Bell TAL	(BELL_T)
TO: Mary Jean Yon TAL	(YON_MJ)
CC: Richard Donelan TAL	(DONELAN_R)

Is this a modification of existing
Permit needed? fac?
or just modif. of certification
agreement for Modif.?

- constr. of new air source - ASH REUSE PROCESSING FACILITY (Permit needed? fac?)
- several modifications since original certification order.
(but did any of those involve new construction with increased emissions?)
- recently issued air permit for lime silo / ash handling.
(WNB wants to incorporate that permit into certification:
Stated Reasons: ① Single unified authorization for project (is this req'd - single authorization?)

Modif not sufficient alone - still need op. permit. (therefore constr. permit since new facilities being erected.)

HOPPING BOYD GREEN & SAMS ✓

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 681-2964

July 11, 1994

KRISTIN M. CONROY
C. ALLEN CULP, JR.
CONNIE C. DURRENCE
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
DALANA W. JOHNSON
JONATHAN T. JOHNSON
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
GARY V. PERKO
KAREN M. PETERSON
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
SCOTT RUTH
JULIE ROME STEINMEYER

OF COUNSEL
W. ROBERT FOKES

RECEIVED

JUL 13 1994

Bureau of
Air Regulation

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DEROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

Greg Worley
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

Re: North Broward County Resource Recovery Facility; PSD-FL-112

Dear Mr. Worley:

To follow up our recent conversation, I wish to confirm your conclusion that no change or other revision to the above-referenced prevention of significant deterioration (PSD) permit is required for the addition of a new ash processing facility at the North Broward County Resource Recovery Facility, in Broward County, Florida. The new facility, along with other material handling facilities at the site, will result in a total of less than 15 tons per year of particulate (PM) emissions. This is less than the PSD significant emissions level and thus does not require inclusion of the emissions in the PSD permit.

In July, 1987, the U.S. Environmental Protection Agency issued a PSD permit for the Facility. In February, 1989, the PSD permit was modified to reflect that three and not four municipal waste incinerators were to be constructed as part of the project. Later, during construction, permits were obtained from the then-Florida Department of Environmental Regulation for an ash handling and load-out facility and for a lime storage silo as part of the project. The only projected emissions for those facilities were approximately 3 tons per year of particulate emissions total. No change or revision to the PSD permit was required at that time for construction of those minor sources of emissions.

The project owner now proposes to construct an enclosed ash processing facility on the site of the project. The facility would allow recycling of the ash for beneficial reuse. The ash processing facility will involve two new air emission points for control of particulate emissions generated during the ash recycling process. These will be two dust collectors mounted on the roof of the ash processing facility. Based on design and operational

Greg Worley
July 11, 1994
Page 2

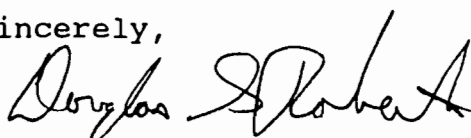
factors, the two dust collectors combined will have the potential to emit up to 11.7 tons per year of particulate emissions. In addition to the existing dust collectors for the ash handling system and lime storage silo, the total expected PM emissions from the Facility would be 14.7 tons per year.

For federally-issued PSD permits, a major modification requiring further PSD review is defined as "any physical change...of a major stationary source that would result in a significant net emissions increase of any pollutant." 40 CFR § 52.21(b)(2)(i). For particulate matter, "significant emissions" rates triggering PSD review are 25 tons per year for PM, or 15 tons per year of PM₁₀ emissions. 40 CFR § 52.21(b)(23). Since the proposed ash recycling facility will have particulate emissions less than 25 tons per year (and PM₁₀ emissions less than 15 TPY), it would not be subject to further PSD review by U.S. EPA, pursuant to 40 CFR § 52.21(i). You have concluded that based upon these facts that no further PSD review or revision of the PSD permit is required for this ash processing facility.

Of course, appropriate state permits and approvals will be obtained prior to construction and operation of the ash processing facility. Such requests are already pending before the Florida Department of Environmental Protection.

We appreciate your attention to this matter. If this letter does not conform to your position upon this matter, I would appreciate your calling this to our attention within the next ten days. Until being advised otherwise, we will proceed as outlined herein.

Sincerely,



Douglas S. Roberts

Attorney for North Broward
Resource Recovery Facility

DSR/gs

cc: Clair Fancy, FDEP
Hamilton S. Owen, FDEP

P. Lewis

J. Brooks, SEDist

D. Benu, BCNRP

HOPPING BOYD GREEN & SAMS ✓

ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314

(904) 222-7500
FAX (904) 224-8551
FAX (904) 681-2964

June 17, 1994

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
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OF COUNSEL
W. ROBERT FOKES

Hamilton S. Oven
Department of Environmental Protection
3900 Commonwealth Blvd.
Tallahassee, FL 32399

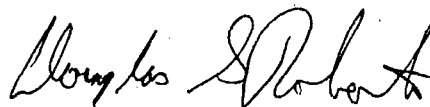
Re: North Broward Resource Recovery Project, PA 86-22
Request for Modification,
Responses to Agency Questions

Dear Mr. Oven:

Enclosed are responses to the questions raised in your May 27, 1993 letter (copy attached) concerning the requested modification of site certification for the North Broward Resource Recovery Project. The responses are numbered in order of the questions. Per your request, I am forwarding copies of this response to the individuals listed below.

Should there be any additional information you may desire, please let me know.

Sincerely,



Douglas S. Roberts

Enclosure

cc: Martha Nebelsiek, w/encls
Al Rushanan, Water Facilities, w/encls
Raisa Neginsky, SE Dist., w/encls
John Reynolds, Air Resources, w/encls.

RECEIVED

JUN 20 1994

Bureau of
Air Regulation

NORTH BROWARD RESOURCE RECOVERY PROJECT:
REQUEST FOR MODIFICATION OF SITE CERTIFICATION
PA86-22

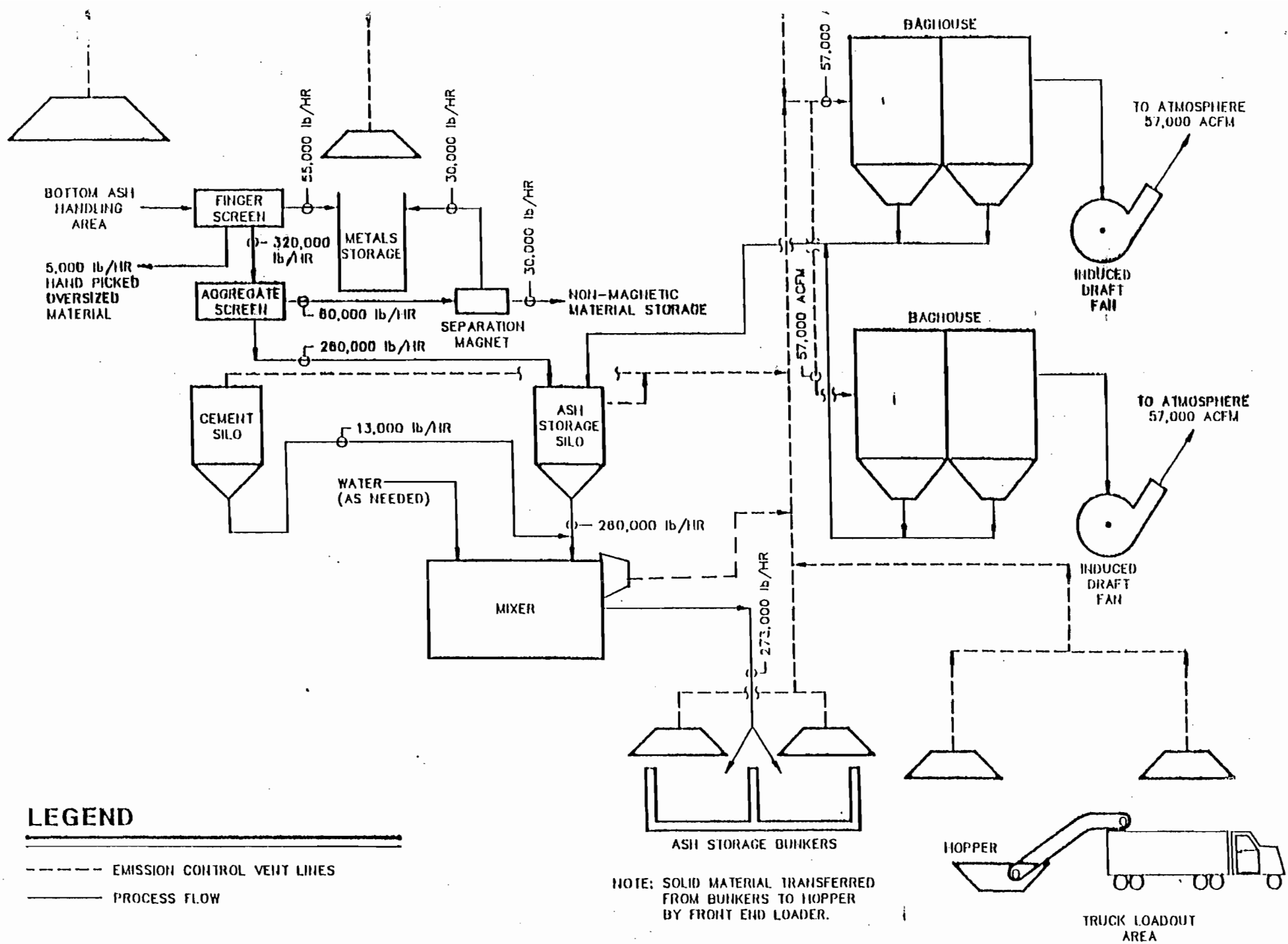
RESPONSES TO FDEP QUESTIONS

June 17, 1994

1. The intent of this process is to manufacture a combination of two products, landfill daily cover and/or a construction aggregate. In the production of landfill daily cover, combined ash will undergo both ferrous recovery and size gradation. In the production of a construction aggregate, we are proposing to process only the course fraction of the ash, which will ensure the final aggregate product will meet F.D.O.T and customer physical specifications. Ash fines may be processed into landfill daily cover or disposed of. Aggregate production as outlined in the process description on page 1 encompasses ferrous recovery, size gradation, reagent addition, curing and final additional sizing to meet customer demands. The construction aggregate is also suitable for landfill daily cover. Process flows for the production of landfill daily cover and construction aggregate are detailed in Figures 1 and 2 of the Request for Modification.
2. The last paragraph of the ferrous recovery portion of the process description should be amended to read as follows: The ash residue is conveyed to a finger screen where the stream is divided into plus 4" and minus 4" fractions. The plus 4" material is primarily ferrous metal, and is conveyed to a storage bunker. Prior to shipping, the ferrous fraction will be magnetically separated and loaded into trucks for shipment. The non magnetic fraction (ash and large bulk objects) will either be returned to the process or disposed of, as appropriate.
3. As a point of clarification, the "water storage tank and contact water recycle tank" are one in the same. As depicted in the attached facility water balance diagram (Figure No.1), during average daily conditions the facility's 200,000 gallon contact water recycle tank (Waste water storage, Figure No. 1) receives 38,000 gallons of plant wastewater per day. The primary uses of this recycled wastewater are ash quenching and flue gas cleaning which require 250,800 gallons per day, of which 224,160 gallons can originate from the contact water recycle tank. This results in the ability to utilize an additional 186,160 gallons per day of plant wastewater or tertiary effluent supplied by the North Broward Waste Water Treatment Plant. We feel that this capacity to utilize wastewater, and the 200,000 gallon equalization volume of the existing contact water recycle tank are sufficient to accommodate the increased wastewater burden, including that from truck wash down and captured storm water.
4. The requested water balance diagram has been provided as the attached Figure No. 1.
5. Wastewater will be contained within the ash processing building through the use of floors which will be sloped for collection of wastewater into a U-drain collection system. Building doorways will also be equipped with concrete berms as a secondary means of ensuring wastewater containment. "Blowdown" of the recycle water storage tank will not be

required, as the facility consumes at least one tank volume per day.

6. Cover material produced by the ash processing facility is intended for use as initial cover at lined landfills which met the Department's landfill design criteria at the time of permitting as outlined in F.A.C. 17-701. (Refer to Chris McGuire's letter of March 22, 1994 contained in Appendix C of the Request for Modification).
7. The downleg vent of the ash storage silo is identified incorrectly on the process flow diagram, the vent in question actually vents the mixer directly. A revised process flow diagram is attached.
8. All of the equipment identified on page B4 would be part of the ash processing addition, none of which is existing equipment.
9. The emissions estimates provided in the Request for Modification are based on both vendor guarantees and actual emission test data for a similar collection device currently operated at this facility. The October 1991 stack test (see attached calculation sheet) performed for the existing ash handling system fabric filter indicate average particulate emissions to be 0.000870 grains/ACF or 21.8% of the particulate loading of 0.004 grains/ACF used in the potential emissions analysis supplied by RUST Engineering, which are well below PSD threshold values.



LEGEND

- EMISSION CONTROL VENT LINES
- PROCESS FLOW

NOTE: SOLID MATERIAL TRANSFERRED FROM BUNKERS TO HOPPER BY FRONT END LOADER.

**ASH RECYCLING PROCESSING FACILITY
 FLOW DIAGRAM
 NO SCALE**



Lawton Chiles
Governor

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building ✓
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

May 27, 1994

Mr. Douglas S. Roberts
Hopping Boyd Green & Sams
Post Office Box 6526
Tallahassee, Florida 32314

Re: North Broward Resource Recovery Facility, Ash
Processing Facility Modification, PA 86-22

Dear Mr. Roberts:

The Department of Environmental Protection has reviewed the material filed with the requested modification of conditions of certification for the North Broward Resources Recovery Facility. Please have the appropriate personnel respond to the following requests for clarification:

1. Please provide an explanation why only bottom ash is mentioned in the process description, while schematics in appendix D show fly ash is combined with the bottom ash in the plant.
2. The process description also indicates that the plus 4" material is "primarily ferrous metal". Please address the potential for ash carry-over in this size fraction. Ash should not be removed with the recovered ferrous metals.
3. Page 3 of the project description indicates that truck washout water and a portion of the stormwater generated will be routed to the water storage tank and the contact water recycle tank respectively. Please provide verification that each of these units has adequate capacity to handle these wastestreams.
4. A water balance diagram showing inputs and outputs including the sources and uses for wastewater from each of the tanks would be helpful.
5. No mention is made of any containment of wastewater before sump collection or treatment before recycling. As a recycled fluid, is there any blow down required of the recycle water storage tank. If so, how is the blowdown treated/discharged?

6. On the use of recycled ash for landfill cover, it is not clear how the ash used for daily cover stays in place until closure. Also, it is not clear whether the daily cover reuse ash can be used on the ash monofill or is it only intended for raw waste landfills.
7. The flow diagram for the ash recycling processing facility (page B4) shows a baghouse vent coming from the downleg of the ash storage silo but does not show a separate mixer vent. Please indicate if the mixer is directly vented to the baghouses.
8. Please identify equipment shown on page B4 (if any) that is part of the existing ash handling/lime silo system.
9. The calculated baghouse inlet/outlet grain loadings of 3.0/0.004 gr/ACF may be considerably lower than actually experienced, potentially resulting in emissions approaching or exceeding PSD significance levels. Fairly recent BACT determinations for bulk processing of similar materials have been based on outlet grain loadings of about 0.010 gr/ACF. It is obvious that PSD applicability will enter the picture here at about 0.0085 gr/ACF. Consequently, the Department needs additional information to show that the emission estimates provided by Rust Engineering are based either on vendor guarantees or actual data which support the assumed grain loadings.

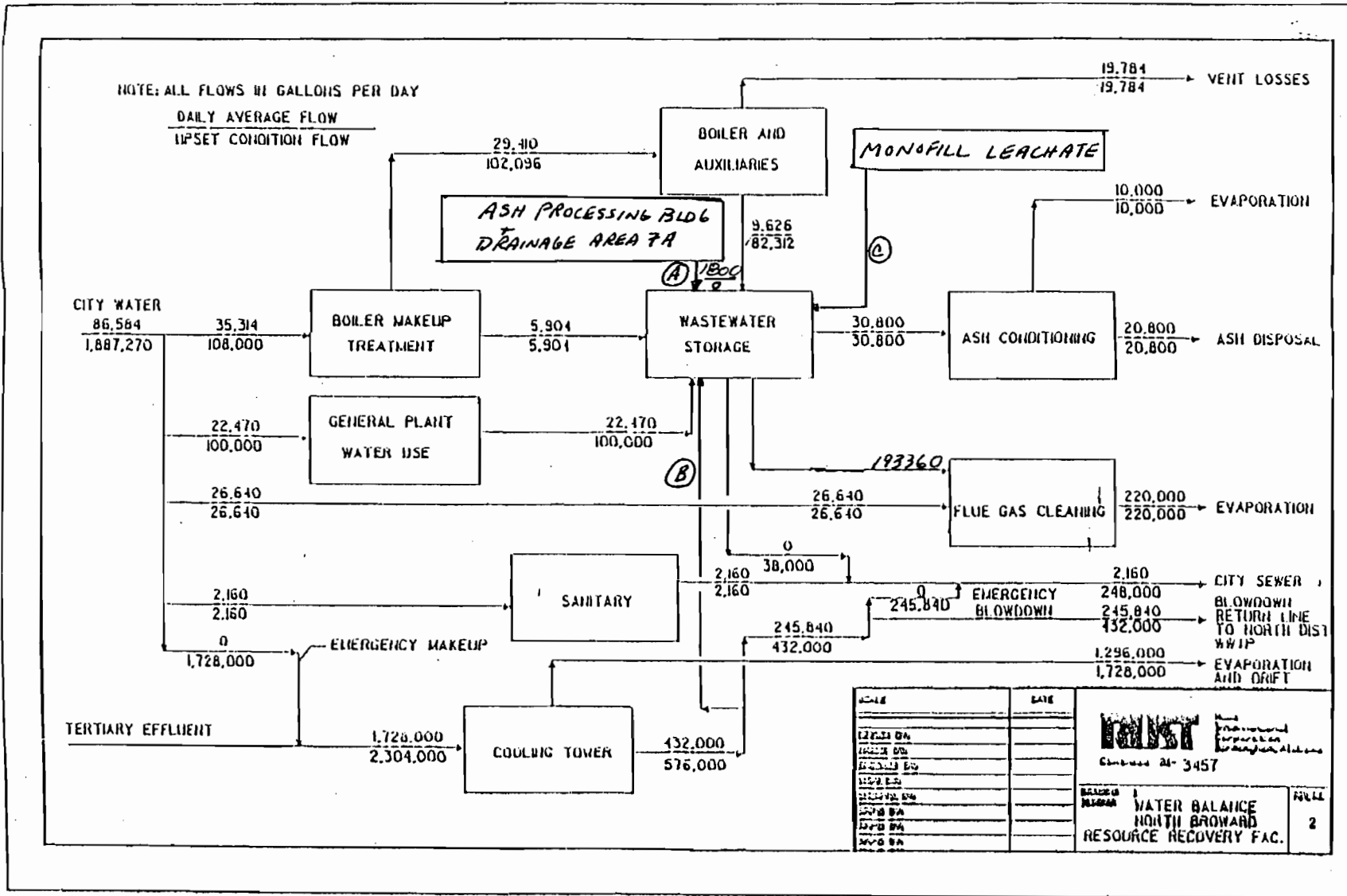
If you have any questions, I may be reached at (904) 487-0472.

Sincerely,

Hamilton S. Oven

Hamilton S. Oven, P.E.
Administrator, Siting
Coordination Office

cc: Martha Neblesiek
Al Rushanan
Raisa Neginsky
Tom Henderson



THE SUM OF STREAMS A,B, AND C WILL EQUATE TO 186,100 GALLONS PER DAY.

STREAM B, THE TERTIARY EFFLUENT SERVES AS AN ADDITIONAL SOURCE OF "MAKE UP" FOR WATER DEMAND BY THE FLUE GAS CLEANING SYSTEM.

FIGURE NO. 1

ENTROPY

ENVIRONMENTALISTS INC.

POST OFFICE BOX 12291
RESEARCH TRIANGLE PARK
NORTH CAROLINA 27709-2291
919-781-3550

STATIONARY SOURCE SAMPLING REPORT

REFERENCE NO. 10347C

WHEELABRATOR NORTH BROWARD, INC.

POMPANO BEACH, FLORIDA

PARTICULATE AND PLUME OPACITY EMISSIONS TESTING

ASH CONDITIONING AND LIME HANDLING SYSTEMS

PERFORMED FOR: WHEELABRATOR ENVIRONMENTAL SYSTEMS, INC.

OCTOBER 10, 1991

FIELD DATA AND RESULTS TABULATION

2

PLANT: Wheelabrator North Broward, Inc., Pompano Beach, FL

LOCATION: Ash Conditioning System FF Outlet

RUN #	DATE	OPERATOR	ACS-M5-1	ACS-M5-2	ACS-M5-3
ACS-M5-1	10/10/91	William E. Morgan			
ACS-M5-2	10/10/91	William E. Morgan			
ACS-M5-3	10/10/91	William E. Morgan			
	Run Start Time		1225	1800	1930
	Run Finish Time		1732	1908	2036
	Wet Traversing Points		16	16	16
Theta	Net Run Time, Minutes		64.00	64.00	64.00
Dia	Nozzle Diameter, Inches		0.179	0.181	0.179
Cp	Pitot Tube Coefficient		0.840	0.840	0.840
Y	Dry Gas Meter Calibration Factor		0.9903	0.9903	0.9903
Pbar	Barometric Pressure, Inches Hg		29.90	29.90	29.90
Delta-H	Avg. Pressure Differential of Orifice Meter, Inches H ₂ O		3.53	3.79	3.63
Vm	Volume Of Metered Gas Sample, Dry ACF		64.747	68.893	68.050
tm	Dry Gas Meter Temperature, Degrees F		86	99	101
Vmstd	Volume Of Metered Gas Sample, Dry SCF*		62.473	64.998	63.971
Vlc	Total Volume of Liquid Collected in Impingers & Silica Gel, ml		37.0	42.5	41.5
Vwstd	Volume of Water Vapor, SCF*		1.742	2.000	1.953
%H ₂ O	Moisture Content, Percent by Volume		2.7	3.0	3.0
Mfd	Dry Mole Fraction		0.973	0.970	0.970
Md	Gas Molecular Weight, lb/lb-Mole, Dry		28.84	28.84	28.84
Ms	Gas Molecular Weight, lb/lb-Mole, Wet		28.54	28.51	28.51
Pg	Flue Gas Static Pressure, Inches H ₂ O		-10.00	-10.00	-10.00
Ps	Absolute Flue Gas Pressure, Inches Hg		29.16	29.16	29.16
ts	Flue Gas Temperature, Degrees F		87	86	85
Delta-p	Average Velocity Head, Inches H ₂ O		3.2579	3.2438	3.2303
vs	Flue Gas Velocity, Feet/Second		105.07	104.79	104.48
A	Stack/Duct Area, Square Inches		346.4	346.4	346.4
Qsd	Volumetric Air Flow Rate, Dry SCFM*		13,881	13,833	13,818
Qmsd	Volumetric Air Flow Rate, Dry SCMM*		393	392	391
Qaw	Volumetric Air Flow Rate, Wet ACFM		15,163	15,123	15,079
%I	Isokinetic Sampling Rate, Percent		96.8	98.8	99.6

* 68° F (20° C) -- 29.92 Inches of Mercury (Hg)

(Continued next page)

Ash Handling System Grains /ACF Calculation

RUN #	ACF-DRY	SCF-DRY	SCF-H2O	mg Particulate	Grains
1	64.747	62.473	1.742	4	0.061728
2	68.893	64.998	2	3.4	0.052469
3	68.05	63.971	1.953	4.3	0.066358

RUN #	CORR FACTOR SCF to ACF	SCF-WET	ACF-WET	Grains/ACF-WET
1	1.0363997247	64.215	66.552408	0.000927
2	1.0599249208	66.998	71.012849	0.000738
3	1.0637632677	65.924	70.127529	0.000946
AVERAGE				0.000870

Data from ENTROPY Test Report October 10, 1991.

SCF-WET = SCF-DRY + SCF-H2O

SCF = STANDARD CUBIC FEET

ACF = ACTUAL CUBIC FEET

SCF-H2O = VOLUME OF WATER COLLECTED IN SCF

Memorandum

Florida Department of
Environmental Protection

TO: Buck Oven ✓
THRU: Clair Fancy *CFF*
John Brown *JTB*
Preston Lewis *PL 5/3/94*
FROM: John Reynolds *JR*
DATE: May 3, 1994
SUBJ: North Broward Resource Recovery Facility -
Request for Modification of Site Certification PA 86-22

Our completeness and sufficiency review indicates that the following additional information is needed for further processing of the subject request:

1. The flow diagram for the ash recycling processing facility (page B4) shows a baghouse vent coming from the downleg of the ash storage silo but does not show a separate mixer vent. Please indicate if the mixer is directly vented to the baghouses.
2. Please identify equipment shown on page B4 (if any) that is part of the existing ash handling/lime silo system.
3. The calculated baghouse inlet/outlet grain loadings of 3.0/0.004 gr/ACF may be considerably lower than actually experienced, potentially resulting in emissions approaching or exceeding PSD significance levels. Fairly recent BACT determinations for bulk processing of similar materials have been based on outlet grain loadings of about 0.010 gr/ACF. It is obvious that PSD applicability will enter the picture here at about 0.0085 gr/ACF. Consequently, the Department needs additional information to show that the emission estimates provided by Rust Engineering are based either on vendor guarantees or actual data which support the assumed grain loadings.

JR/bb

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 681-2964

CARLOS ALVAREZ
JAMES S. ALVES
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DOUGLAS S. ROBERTS
R. SCOTT RUTH
JULIE ROME STEINMEYER

OF COUNSEL
W. ROBERT FOKES

April 18, 1994

Mr. Hamilton S. Oven
Siting Coordinator
Florida Department of Environmental
Protection
3900 Commonwealth Blvd., Suite 953
Tallahassee, FL 32399

I have
2004 instead
of 94

Re: Wheelabrator North Broward Inc.;
North Broward County Resource Recovery Facility;
Request for Modification of Site Certification PA 86-22

Dear Mr. Oven:

Pursuant to Section 403.516(1)(b), Florida Statutes, I am submitting, on behalf of Wheelabrator North Broward Inc. (WNB), the enclosed Proposed Agreement to Modify the Site Certification for the North Broward County Resource Recovery Project. The cited provision of the Florida Electrical Power Plant Siting Act, Chapter 403, Part II, (PPSA) authorizes the Department of Environmental Protection (DEP) to modify the site certification, including the conditions of certification, when no objection to the proposed modification is raised by a party or by any person whose substantial interests will be affected by the proposed modification.

The Siting Board's original certification order authorizing construction and operation of the North Broward Resource Recovery Project (Project) was issued on March 9, 1987. Several subsequent modifications have been issued for the Project. By this Proposed Agreement, WNB requests approval of a modification of the certification to authorize WNB to construct and operate a new ash reuse processing facility on the Project site, as described in the attached document. WNB is also proposing to incorporate into the certification the terms and conditions of a recently-issued Department air permit for a lime silo and the ash handling system at the Project site. These permitted facilities are directly related to the original Project. Incorporation of that permit into the certification will establish a single unified authorization for the project.

NEW AIR SOURCE

AIR

If the Dept. req'd a separate permit for the lime silo and ash handling system, why not require another separate permit for this new project?

but not part of
i.e. not modifying existing facility.

Mr. Hamilton S. Oven
April 18, 1994
Page 2

WNB is also proposing an amended condition of certification for ash residue testing consistent with current Department solid waste rules.

③ SOLID WASTE

This ash reuse process facility, its location and expected impacts are discussed in greater detail in the attached modification submittal. No other changes to the existing facilities at the Project site or other new facilities will be required as a result of this modification. The location of the new ash reuse process facility is adjacent to the existing units at the Project site on a previously developed area of the site. The ash reuse process facility will utilize existing facilities on the site to the extent necessary.

Wheelabrator North Broward Inc., is requesting a modification of the certification, including additional conditions of certification, that will authorize the construction and operation of this new ash reuse process facility. Those proposed conditions are attached to the Proposed Agreement for Modification of Certification. These additional conditions of certification will allow the construction of the ash reuse facility to proceed following the Department's issuance of this modification request.

WNB requests that the Department issue an order pursuant to section 403.516(1)(b), F.S., modifying the terms and conditions of the certification for the North Broward Resource Recovery Project. The modification order should contain the attached conditions and any additional necessary or revised conditions proposed by agency parties and accepted by WNB.

In accordance with DEP's rules, we have forwarded copies of this Proposed Agreement by hand delivery or U.S. mail to those parties in the original certification proceedings, as indicated in the Certificate of Service to the attached Agreement for Modification of Certification. Copies of this Request are also being provided to the persons and agencies identified below.

An application fee in the amount of \$10,000 payable to the Department is being submitted with this proposed agreement. If you or any of the parties have questions or comments on this request, please contact either Eric Selya of WNB in Pompano Beach at 305/971-8701 or me at 904/222-7500.

Sincerely,



Douglas S. Roberts

Attachments

Mr. Hamilton S. Oven
April 18, 1994
Page 3

cc: Richard T. Donelan, DEP
Cindy S. Price, Asst. Gen. Counsel, FDOT
James Antista, Gen. Counsel, FG&FWFC

Chapter 17-702 F.A.C.
Solid Waste Combustor Ash Management

- 17-702.100 Intent.
- 17-702.200 Definitions.
- 17-702.300 Applicability.
- 17-702.400 Ash Residue Management Plan.
- 17-702.500 Ash Residue Storage Requirements.
- 17-702.530 Off-site Transportation Requirements for Ash Residue.
- 17-702.570 Ash Residue Disposal Requirements.
- 17-702.600 Recycling of Ash Residue.
- 17-702.700 Alternative Procedures and Requirements.

17-702.100 Intent. The purpose of this chapter is to provide for the safe handling, storage, transportation, disposal, or beneficial use of ash residue from the combustion of solid waste. This chapter implements the requirements of Section 403.7045(5), F.S.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.200 Definitions. The following words, phrases or terms used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

(1) "Ash residue" means all the solid residue and any entrained liquids resulting from the combustion of solid waste in a solid waste combustor, including bottom ash, fly ash and combined bottom and fly ash, but excluding recovered metals glass, and other recovered materials separated from the ash residue.

(a) "Bottom ash" means the solid material remaining after combustion of solid waste, which is discharged from the grates or stoker of a solid waste combustor.

(b) "Fly ash" means the residue from the combustion of solid waste, which is entrained in the gas stream of a solid waste combustor. Fly ash includes particulates, cinders, soot, and solid waste from air pollution control equipment.

(2) "Biological waste" means solid waste that causes or has the capability of causing disease or infection and includes, but is not limited to, biohazardous waste, diseased or dead animals, and other wastes capable of transmitting pathogens to humans or animals.

(3) "Co-disposal" means the disposal of two or more different types of waste in the same solid waste disposal unit.

17-702.100 - 17-702.200(3)

(4) "Combustion" means the treatment of solid waste in a device that uses heat as the primary means to change the chemical, physical, or biological character or composition of the waste. Combustion processes include incineration and pyrolysis.

(5) "Facility" means all contiguous land and structures, other appurtenances and improvements on the land used for solid waste management.

(6) "Fugitive emissions" means those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.

(7) "Hazardous waste" has the meaning given it in Chapter 17-730, F.A.C.

(8) "Monofill" means a waste pile, landfill or solid waste disposal unit into which only one type of solid waste is placed.

(9) "On-site" means the same or geographically contiguous property. It may be divided by public or private right-of-way.

(10) "Solid waste" means garbage, refuse, yard trash, clean debris, white goods, special waste, ashes, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.

(11) "Solid waste combustor" means an enclosed device that uses controlled combustion to thermally break down solid, liquid, or gaseous combustible solid wastes to an ash residue that contains little or no combustible material.

(12) "Solid waste disposal unit" means a discrete area of land used for the disposal of solid wastes.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.300 Applicability.

(1) This rule applies to the management of ash residue generated by solid waste combustors with a total facility burning capacity of 50 tons per day or more and that primarily receive and burn solid waste collected from residential, commercial and industrial sources. The solid waste shall not contain hazardous waste, but may contain biological waste.

(2) All other ash residue not specifically addressed in (1) above shall be disposed of in a permitted, lined landfill that meets the requirements of Chapter 17-701, F.A.C., or shall be recycled in accordance with Rule 17-702.600, F.A.C.

(3) All new solid waste combustors constructed after August 1, 1990, shall comply with the requirements of this rule. Existing combustors or facilities that have submitted a complete application or have a permit or certification on August 1, 1990 shall comply with the requirements of this rule by August 1, 1991.

17-702.200(4) - 17-702.300(3)

(4) Air curtain incinerators, trench burners or boilers which are restricted to burning only vegetative, agricultural, or silvicultural wastes or bagasse, or clean dry wood as defined in Rule 17-256.200(5), F.A.C., are excluded from the requirements of this rule.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.400 Ash Residue Management Plan.

(1) Applications for a permit to construct and operate solid waste combustors shall include an ash residue management plan. Existing, permitted or certified solid waste combustors shall submit an ash residue management plan to the Department by July 1, 1991. After Department review and approval, such plan shall be incorporated into the facility's existing permit, or into its certification pursuant to Section 403.511(5)(a), F.S.

(2) The plan shall describe the methods, equipment, and structures necessary to control the dispersion of ash residue during handling, processing, storage, loading, transportation, unloading and disposal, and shall consider potential pathways of human or environmental exposure, such as through inhalation, direct contact, ingestion, and the potential for soil, air, ground water and surface water contamination.

(3) The plan shall identify disposal sites which are intended to receive ash residue from the solid waste combustor for the life of the facility, beginning with the date the plan is submitted to the Department for approval.

(4) The plan shall include an estimate of the quantities of bottom and fly ash to be generated by the facility on an annual and a daily basis. The estimate shall identify and quantify those components of ash residue that can be segregated for recycling before disposal, and shall address the beneficial use of ash residue.

(5) The plan shall include a Quality Assurance/Quality Control plan which shall be developed, submitted to, and approved by the Department before the start of any sampling, analysis or characterization required by this rule.

(6) The plan shall include contractual requirements, notification and inspection procedures to assure that hazardous wastes are not received at or burned in the facility.

(7) The plan shall be updated as necessary to reflect changed conditions, but shall be reviewed and updated at least every five years.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.300(4) - 17-702.400(7)

17-702.500 Ash Residue Storage Requirements.

(1) The facility must have enough on-site capacity to ensure that ash residue is properly managed. Proper storage includes:

(a) Storage in leak-resistant containers located inside a building or structure; or

(b) Storage outside in leak-resistant containers which are covered to prevent rainwater infiltration and visible emissions. When containers are used, free liquid shall be collected and controlled during the storage or loading process; or

(c) Storage on-site in a waste pile which is located inside or under a structure that provides protection from precipitation and water that runs onto the property. Fugitive dust emissions shall be controlled. The pile shall be placed on a concrete pad or other low permeability base. A leachate management system shall be provided to collect and treat or otherwise control any leachate that may drain from the ash residue. Leachate may be returned to the quench water for reuse. Leachate collection and holding facilities shall be provided, maintained and be of sufficient size to prevent overflow.

(2) Ash residue shall not be stored for more than 90 days without prior written approval by the Department.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.530 Off-site Transportation Requirements for Ash Residue. Ash residue shall be drained of free liquid before being transported off-site. Containers or trucks used for transporting ash shall be designed to prevent leakage. The transport vehicle shall be enclosed or covered to prevent the escape of visible fugitive emissions.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.570 Ash Residue Disposal Requirements.

(1) Disposal of ash residue shall be in a landfill with a leachate collection and removal system and liner system which comply with the requirements of Rule 17-701.050, F.A.C. The applicability section of Rule 17-701.050(1), F.A.C., specifically applies to all existing ash disposal facilities.

(2) Ash residue shall be analyzed every three months by the operator of a solid waste combustor for priority pollutant metals. Representative composite samples shall be prepared for analysis by total digestion, using EPA Method 3050 Acid Digestion of Sediments, Sludges, and Soils, "Test Methods for Evaluating Solid Waste Physical/Chemical Methods," EPA Publication SW-846 (3rd edition as amended by Update I (December, 1987)). Samples shall be collected and analyzed by the methods listed in the Quality Assurance/Quality Control plan approved by the Department.

17-702.500 - 17-702.570(2)

(3) Leachate shall be analyzed every three months for priority pollutant metals.
 (4) The results of the ash and leachate analyses shall be submitted annually to the Department in a report which presents and summarizes the data. If the ash analyses indicate significantly elevated levels of metals concentrations compared to metals concentrations in ash at other facilities in the State, the facility, following notification by the Department, shall carry out an investigation to determine the source(s) of these metals in the waste stream. The facility shall submit the results of the investigation to the Department, along with a plan to reduce or eliminate the sources of the metals. If the metals concentrations in the leachate exceed the regulatory levels in 40 CFR 261.24, the facility shall report to the Department the steps it intends to take to reduce the metals concentration in the leachate. Leachate containing metals above the regulatory levels shall be treated on-site to reduce its metals content.

(5) Disposal facilities shall control fugitive dust emissions.

(6) Ash residue used for daily cover shall be sufficiently free of organics and other materials so as not to attract rodents, flies or other vermin. Ash residue shall not be used for cover material on outside slopes or roadways unless provisions are taken to prevent migration of the ash residue.

(7) Co-disposal facilities shall be operated to prevent the formation of impermeable layers in the landfill that interfere with the operation of the facility's stormwater and leachate management systems.

(8) Co-disposal landfills shall comply with the requirements of Chapter 17-701, F.A.C. Monofills for disposal of ash residue shall comply with the following requirements:

	Monofill
17-701.040 Prohibitions:	All
17-701.050 Sanitary Landfill Criteria:	
Applicability:	(1)
Location Requirements:	(3)(a) and (b), (c)2. and 4
Landfill design:	(4)(a), (b), (c), (d)2. and 3. and (e)
Landfill Performance and Design Standards:	(5)(a), (b), (c), (d), (e), (f), (g) and (h)
Operations:	(6), (a), (b)1., 2., 3., 4., 5., 6., 8., and 9., (c)1., 2. and 5., (g), (h), (k), (l) and (o)
17-701.070 Closure of Landfills:	(1)(e) and (2)
17-701.071 Closure Schedule:	(1)
17-701.072 Closure Permit Application Submittal:	All
17-701.073 Closure Plan Requirements:	(1), (2), (3), (5)(a), (b), (d) and (e), (6)(a), (b), (c), (d), (e), (g) and (h), (7) and (8)
17-701.074 Closure Procedures:	(1), (2), (3), (4), (5) and (6)
17-701.075 Long Term Care:	All
17-701.076 Financial Responsibility:	All
Specific Authority:	403.704, 403.7045, F.S.
Law Implemented:	403.7045, F.S.
History:	New: 7-19-90.

GENERATOR

*Date
to sign*

PROCESSOR

Time

- 17-702.600 Recycling of Ash Residue. Processed ash residue which is recycled shall comply with the following:
- (1) The generator shall, at least monthly, describe the chemical and physical properties of the ash residue which is to be recycled. The generator may request an alternate description schedule based upon the particular recycling process involved, the use of the recycled product, and the volume of ash residue recycled. The Department shall allow such an alternate description schedule if it determines that such schedule provides a substantially equivalent degree of protection for public health and the environment.
- (2) Prior to beginning operations, the processor of the ash residue shall demonstrate to the Department that the process and use of the ash residue will not cause discharges of pollutants to the environment. The processor shall:

17-702.570(B) - 17-702.600(2)

(a) Describe the chemical and physical properties of the finished product line, identify the quantity of ash residue used in a product, and identify quantity and quality of the product to be marketed or used;

(b) Demonstrate that the proposed process will physically or chemically change the ash residue so that any leachates produced after processing will not cause a violation of surface or ground water quality standards contained in Chapters 17-3 and 17-550, F.A.C.;

(c) Demonstrate that processed ash residue or products using ash residue will not endanger human health or the environment. Exposure risks to be considered include, but are not limited to, inhalation, ingestion, skin contact, and migration to soil, surface and ground water; and

(d) Establish performance standards and operational criteria for the process that are designed to demonstrate reliable operation in compliance with Rules 17-702.600(2Ka) through (c), F.A.C.

(3) The processor shall notify the Department of any changes in the process or ash residue which could affect the demonstrations made in (2) above.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

17-702.700 Alternative Procedures and Requirements.

(1) Any person subject to the provisions of Rules 17-702.300 through 17-702.600, F.A.C., may request in writing a determination by the Department that a procedure or requirement shall not apply, and shall request approval of alternate procedures or requirements:

(2) The request shall set forth the following information:

(a) The specific facility or site for which an exception is sought;

(b) The specific procedures or requirements of Rules 17-702.300 through 17-702.600, F.A.C., from which an exception is sought;

(c) The basis for the exception;

(d) The alternate procedure or requirement for which approval is sought and a demonstration that this alternate procedure or requirement provides an equal degree of protection for the public health and the environment; and

(e) A demonstration of the effectiveness of the proposed alternative procedure or requirement.

(3) The Secretary shall authorize by order each alternative procedure or requirement approved for an individual facility or site in accordance with this section or shall deny by order the request for such approval.

Specific Authority: 403.704, 403.7045, F.S.

Law Implemented: 403.7045, F.S.

History: New: 7-19-90.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE: SITE CERTIFICATION,)
 NORTH BROWARD COUNTY) DEP CASE NO. PA 86-22
 RESOURCE RECOVERY)
 PROJECT)
_____)

PROPOSED AGREEMENT FOR MODIFICATION
OF SITE CERTIFICATION, INCLUDING
ADDITIONAL CONDITIONS OF CERTIFICATION,
FOR ASH REUSE PROCESS FACILITY

4/18/94

I.

Wheelabrator North Broward Inc. (WNB), hereby requests a modification of the site certification, including conditions of certification, for the North Broward County Resource Recovery Project pursuant to Section 403.516.(1)(b), Florida Statutes (F.S.) and Rule 17-17.211, Florida Administrative Code (F.A.C.). Those provisions authorize the Department of Environmental Protection (DEP) to modify the certification after public notice and opportunity for review by the public and by the parties to the original certification proceeding and upon no objection to the proposed modification being raised by those persons. This agreement for modification would authorize the construction and operation of an ash reuse processing facility to be located within the certified Project site to facilitate the recycling of municipal

solid waste combustor ash residue. In addition, WNB proposes to incorporate into the certification the relevant conditions contained in Department Permit Number AO 06-208187 contained in Appendix B of this submittal, which was previously issued for an onsite lime silo and ash handling system. WNB also is proposing to include in the conditions of certification an additional condition addressing testing of ash residue as previously suggested by the Department of Environmental Protection. In support of this modification, WNB states:

II.

On March 9, 1987, a final Site Certification Order was issued by the Siting Board, pursuant to Chapter 403, Part II, F.S., authorizing the construction and operation of the North Broward Resource Recovery Project, subject to the provisions of the certification order and to the conditions of certification included in that order. Subsequent modifications of site certification were issued on April 12, 1988 and February 1, 1989 to revise the project site layout and the air emissions limits in conformance with the separate prevention of significant deterioration permit based upon the installation of acid gas scrubbers at the Project. That certification, as modified, authorized the construction and operation of a mass-burn resource recovery facility at a site in Broward County, Florida. The facility came on line in June of 1991. All tests demonstrating facility compliance were completed on October 10, 1991, and the facility has been operating in compliance with all operating permits since that time. The

Concerned
existing
equipment
vs.
new
equipment

facility converts up to 2419 tons per day of municipal solid waste to electricity.

WNB has identified several additional needed modifications to the certification including additional conditions of certification to allow construction and operation of a new ash processing facility within the certified site and to incorporate several recent regulatory authorizations for the Project.

this new facility is not part of the power generation process, i.e. not subject to certification per se?

On May 14, 1992, the Department of Environmental Protection issued to WNB an operation permit No. AO 06-208187 for a 236 ton lime storage silo and an ash handling system. Copies of that permit are contained in Appendix B of this Request for Modification of Certification. WNB requests that the non-procedural terms and conditions of that permit be incorporated into this permit, whereupon WNB would return the issued permit to the Department. Such consolidation of that permit authorization into the certification will place all of the relevant state-imposed limitations and conditions for the Project into a single authorization. The proposed conditions of certification attached hereto reflect the pertinent conditions from that existing permit.

The Department of Environmental Protection has recently indicated that the required testing of ash residue from the Project should be revised during the next certification modification to allow use of a revised test under Rule 17-702, FAC. A copy of that letter is included in Appendix C of the Modification Request.

Separate issue - NOT RELATED TO CONSTRUCTION OF A NEW FACILITY.

III.

The ash reuse processing facility will be constructed on a

less than one-acre parcel of the existing site, adjacent to the existing resource recovery units. The proposed enclosed facility will process ash from the existing units for use as landfill cover or, as markets develop, for use as a construction aggregate. Such uses have been approved by the Department of Environmental Protection as indicated in the attached appendix of this modification request. Such recycling of ash will reduce the amount of material currently being landfilled, extending the useful life of the landfill. Minimal offsite and onsite impacts will occur, principally due to the development and operation of the small project site. No changes to other onsite facilities will be required as a result of the project. The details of the project and its impacts are described in this Request for Modification of Site Certification.

NOT A PART OF THE POWER GENERATING PROCESS.

IV.

WNB proposes that additional and modified conditions of certification be imposed as part of the approval of this modification. A proposed set of revised and additional conditions of certification is appended to this request, which incorporates conditions from the previously issued Department air operation permit for the lime silo and ash handling system. These conditions address principally the air emissions of particulate matter from the existing ash handling system and the proposed new ash treatment facility. A condition to address the revised testing of ash residue is also proposed.

This could be issued as a modify to site certif.

Request For Relief

Accordingly, Wheelabrator North Broward, Inc. requests that

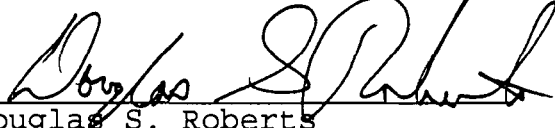
1. All parties to the original certification proceeding agree to, or otherwise do not object to, this proposed modification and the attached additional provisions of the certification and the conditions of certification within thirty (30) days of submittal of this proposed Agreement, as provided for in Section 403.516(1)(b), F.S.;

2. Upon no objection being raised by the parties as provided above or by a substantially affected person within forty-five (45) days of public notice of this proposed modification, the Department of Environmental Protection issue an order modifying the terms and conditions of the certification, pursuant to Section 403.516.(1)(b), F.S., and incorporating the proposed additional and modified conditions of certification; and

3. The Department of Environmental Protection grant such other relief as may be appropriate, including necessary additional conditions of certification proposed by agency parties.

Respectfully submitted this 18th day of April, 1994.

HOPPING BOYD GREEN & SAMS


Douglas S. Roberts
Fla. Bar No. 0559466
123 South Calhoun Street
Post Office Box 6526
Tallahassee, Florida 32314
(904) 222-7500

Attorney for Wheelabrator
North Broward, Inc.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing and attachment
have been furnished to the following on this 18th day of

April, 1994:

Cathy Carter
Agency Clerk
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Hamilton S. Oven, Jr., P.E.
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Richard T. Donelan
Assistant General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Karen Brodeen
Assistant General Counsel
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

Rob Vandiver
General Counsel
Michael Palecki
Florida Public Service Commission
101 East Gaines Street
Fletcher Building, Room 212
Tallahassee, FL 32399-0850

Elizabeth D. Ross, Esquire
South Florida Water Management District
3301 Gun Club Rd.
West Palm Beach Florida 32303

Susan Coughanour
South Florida Water Management District
3301 Gun Club Rd.
West Palm Beach Florida 32303

John Copeland
Office of General Counsel
Broward County
Governmental Center, Suite 423
115 South Andrews Ave.
Ft. Lauderdale, Fla. 33301

Cliff Schulman
Greenberg, Traurig, Hoffman, Lipoff, Rosen & Quentel
1401 S. Brickell Ave. PH-1
Miami, Fla. 33131

J. Allen Cox
105 West Fifth St.
Tallahassee, Fla. 32303


Attorney

Proposed Revised and Additional Conditions of Certification

**North Broward Resource Recovery Facility
PA 86-22**

1. **ADDITIONAL AUTHORIZED FACILITIES:**

Ash Handling System Particulate Control¹

Particulate emissions from the ash handling system are controlled by a baghouse with an outlet grain loading not to exceed 0.01 gr/dscf or 3 tons per year.

Lime Silo Particulate Control¹

Particulate emissions from the unloading of pebble lime into a storage silo are controlled with a baghouse having an outlet loading design not to exceed 0.021 tons/per year.

Ash Reuse Process Facility

Particulate emissions from the ash processing addition will be controlled using a baghouse system with a minimum removal efficiency of 99.9%.

2. **REVISED CONDITIONS OF CERTIFICATION:**

Condition of Certification XIV., E.5., Solid/Hazardous Waste is revised to read as follows:

Ash, prior to transport to the landfill or processed into landfill daily cover or construction aggregate shall be stored in an enclosed building on an impervious surface or by another method approved by the Southeast District Office. Final disposal of the unprocessed ash shall be into the a lined landfill or by another method approved by the Southeast District Office. Any leachate generated within the building shall be collected and reused within the facility or disposed of by a method approved by the Southeast District Office. The Southeast District Office shall notify the SFWMD of the plans and specifications regarding the above referenced method.

Conditions XIV., E. Solid/Hazardous Waste, 8 is revised to read as follows:

8. The sampling analysis and reporting of results of municipal solid waste combustor ash residue will be in accordance with F.A.C. Chapter 17-702.

¹ Previously permitted, constructed and placed in operation under DEP permit AO 06-208187. Permit contained in Appendix B of Modification Request

9. Deleted.

10. Deleted.

Conditions XIV., E. Solid/Hazardous Waste 12 is added to read as follows:

12. Chemical and physical properties of the processed ash shall be determined and reported in accordance with F.A.C. Chapter 17-702 and reported to the department.

3. ADDITIONAL SPECIFIC CONDITIONS OF CERTIFICATION:

Condition XIV., A. Air, 6. is added to read as follows:

6. Ash Handling, Reuse Facility, Lime Silo²

- a. Wheelabrator North Broward, Inc.'s fly ash handling system and the lime silo shall be allowed to operate continuously (i.e. 8,760 hrs./yr.).
- b. Particulate emissions from the fly ash handling system, and lime silo baghouses shall not exceed 0.01 gr./dscf, nor 3.0 tons/year and 0.021 tons/year, respectively.
- c. The ash reuse facility shall be allowed to operate up to 6000 hrs/yr at a maximum process rate of 260,000 lb/hr of ash residue.³
- d. Particulate emissions from the ash reuse process facility shall not exceed 0.01 gr./dscf. nor 11.7 tons/yr.³
- e. Visible emissions from the fly ash handling system and the ash reuse process facility shall not exceed 5% opacity.
- f. Visible emissions from the lime silo baghouse shall not exceed 5% opacity.
- g. Compliance with the particulate and visible emissions test shall be determined annually using EPA Methods 1, 2, 3, 4, 5 and 9 contained in F.A.C. Rule 17-297. The visible emissions test for the fly ash handling system and ash

² Unless otherwise indicated, these proposed specific conditions are consistent with the existing permit conditions in DEP permit AO 06-208187. Permit contained in Appendix B of Modification Request.

³ New specific condition not contained in DEP permit AO 06-208187. Permit can be found in Appendix B of Modification Request.

processing facility conducted along with the particulate tests shall be for at least 60 minutes. The visible emissions tests for the lime silo shall be conducted for the entire truck unloading operation. The minimum requirements for stack sampling facilities, source sampling and reporting shall be in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A. A stack drawing showing sampling locations for the proposed ash processing facility baghouse shall be submitted to the Department at least 90 days prior to testing.

- h. The maximum allowable emission rate for particulate matter for the lime silo is 0.021 tons/year. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department, pursuant to the authority granted under F.A.C. Rule 17-2.700(3)(d), hereby waives the requirement for a stack test. The alternate standard set forth by this provision establishes a visible emission not to exceed an opacity of 5%.
- i. Should the Department have any reason to believe the particulate emission standard is not being met for the lime silo, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with F.A.C. Rule 17-297.
- j. No objectionable odors from this facility will be allowed.
- k. The Southeast District Office of the DEP shall be given written notice at least 15 days prior to compliance testing.
- l. All conveyor loading points, transfer points and all ash processing equipment shall be properly enclosed. The facility shall be operated by personnel properly trained for the equipment herein. The Department shall be notified in writing on how the facility will be staffed and trained.
- m. Reasonable precautions shall be taken during operation to prevent and control generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. Rule 17-2.610(3). Such reasonable precautions shall be: application of water or chemicals to control fugitive emissions from activities such as vehicular movement, loading, unloading, storage and handling.
- n. The permittee shall comply with all applicable provisions of Florida Administrative Code Chapters 17-4 and 17-210 to 297.

NORTH BROWARD RESOURCE RECOVERY FACILITY
ASH PROCESSING ADDITION

4/6/94

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es#/520/ocr

NORTH BROWARD RESOURCE RECOVERY FACILITY ASH PROCESSING ADDITION

LIST OF APPENDICES

- Appendix A: Revised Storm Water Drainage Calculations
Appendix B: Potential Air Emissions Analysis/Existing Air Permits
Appendix C: Letter from John M. Ruddell
RE: Approval for Reuse of ash generated at Wheelabrator's McKay Bay Facility.

Letter from Chris McGuire
RE: Reuse of ash as a daily cover

Letter from Hamilton Oven
RE: Incorporation of ash testing Conditions pursuant to FAC 17-702.
Appendix D: Revised Ash Residue Management Plan including Standard Operating Procedures for performance standards and operational criteria and Comprehensive Quality Assurance Plan

LIST OF DRAWINGS & FIGURES

1. 07-27-0001 Revised Site Plan, Ash Reuse Process Addition
2. 07-27-0002 Plan View, Ash Reuse Process
3. 07-24-0001 North & South elevations Ash Reuse Process
4. Certified Site Conformance Diagram
5. Revised Surface Water Drainage Map

PROCESS FLOW DIAGRAMS

- Figure 1. Landfill Cover Production
Figure 2. Construction Aggregate Production

es#5/506/ocr

INTRODUCTION

Wheelabrator North Broward Inc. (WNB) seeks agency approval for a modification of site certification No. PA86-22.

The refuse fueled boilers at the North Broward County Resource Recovery Facility (RRF) convert Municipal Solid Waste (MSW) into electrical energy and reduce the volume of MSW by 90% through the combustion process. The remaining residue consists of two streams. Bottom Ash is the material remaining on the grates after combustion is complete. Fly Ash is the ash component in the flue gas and is collected in a scrubber/baghouse system. The bottom ash and fly ash are currently combined for disposal into the adjacent ash monofill.

The purpose of this modification is to construct appropriate equipment to sufficiently process the ash residue for beneficial reuse either as landfill daily cover or substitute aggregate material for construction applications. The Department of Environmental Protection has authorized such reuse application for Wheelabrator's McKay Bay Facility as indicated in Appendix C and is currently reviewing Wheelabrator's data submittal seeking a recovered materials determination for WNB.

PROCESS DESCRIPTION

The ash reuse process was developed for the purpose of manufacturing both landfill cover or a marketable aggregate product from the ash residue remaining from the combustion of municipal solid waste. The modification will allow for the processing of ash residue into recovered materials. These materials meet the criteria for landfill daily cover as described in F.A.C.17-701 and also qualify as a recycled material pursuant to F.A.C.17-702.

The process begins when the ash residue exits the facility. While the refuse processing in the Resource Recovery Facility is a continuous 24 hours per day operation, the ash reuse process is designed as a single shift operation. Therefore, the bottom ash which discharges from the combustion grates is conveyed to a storage bunker prior to processing.

The process is divided into four phases: initial ferrous recovery and processing; initial size gradation, reagent introduction and curing; final sizing; and shipping. A description of each phase of the process is provided below and is shown in Figure 1 and 2.

Ferrous Recovery

Recovery of ferrous metal from the ash residue stream is important for three reasons. Ferrous metal recovery avoids consumption of ash monofill volume and therefore extends its useful life. Recovered ferrous scrap is a valuable scrap metal product which enhances recycling efforts and is easily reused. Thirdly, removal of the ferrous metal, which varies in size from large bulky objects to small nails, screws, etc., enhances the ability to produce a homogeneous product.

The ash residue is conveyed to a finger screen where the stream is divided into plus 4" and minus 4" fractions. The plus 4" material is primarily ferrous metal and is conveyed to a bunker where it is stored prior to shipping.

Initial Size Gradation

The minus 4" fraction from the finger screen is conveyed to a sizing screen. The ferrous metal in this fraction is magnetically removed from the screen oversize stream. The screen undersize stream is then, through the following steps, either shipped as landfill daily cover or processed into a construction aggregate.

Reagent Introduction

The production of construction aggregate requires the addition of a portland cement based reagent blend to the remaining ash stream after ferrous metal recovery.

The discharge from the ash storage silo is weighed and reagents are proportioned into a mixer. After mixing is complete, the blend is discharged into an interim curing bunker.

Final Sizing and Shipping

After the curing period, the blend is removed from the interim storage bunker by a front end loader and introduced to another sizing screen. A final cleanup magnet removes any remaining ferrous metal. The cured aggregate product discharges into a truck and is shipped to the purchaser. The oversize material is crushed and returned to the final screen.

Process Results

The system is designed with the capability of processing all of the ash residue generated at the Wheelabrator North Broward Facility. Approximately 80% of the ash will be processed, while approximately 10% of the initial ash residue will be recovered as marketable ferrous metal. The processed aggregate will be sold as landfill cover or construction aggregate. Approximately 10% of the initial ash is expected to be process reject material and will be disposed of in accordance with F.A.C. 17-702.

This fully enclosed ash reuse process building will measure 125' x 350', and will be located adjacent to the existing ash residue handling and loading area. The equipment utilized in this process will be conveyors, loaders, screens, and mixers which are not unlike equipment already utilized at the Resource Recovery Facility.

The ash reuse processing building will be designed and constructed at an estimated cost of seven million dollars, and may require additional employees to operate and maintain the new facility.

IMPACTS

Site impacts for the North Broward Resource Recovery Facility were discussed in detail in the original siting application and in subsequent modifications. The addition of the ash reuse process building, whether producing landfill cover or construction aggregate, has little additional resource impact. Pertinent issues with regards to these impacts are as follows.

Air

The modification includes two new air emission points, all of which control particulate emissions generated by the production of recovered materials or the delivery of bulk reagents.

Two dust collectors will be mounted on the roof of the ash processing building. The dust collectors have several "pick up" points throughout the process. This dust collection system is designed to properly ventilate work areas and eliminate the possibility of fugitive dusting. Potential emissions from all points total less than 15 tons per year and actual emissions will be much lower. Emission estimates and air flow diagrams are included in Appendix B.

Water

The Ash Reuse Process Facility will generate approximately 1800 gallons of wastewater derived from washdown activities per day. This water will be supplied from the existing North Broward Resource Recovery Facility process water stream. The wastewater will enter the sump inside the ash reuse process building and will be pumped to the water storage tank at the Resource Recovery Plant for reuse on site.

Storm water shown in the cross hatched area in Drawing No. 5 will enter one of the sumps through a surface U-drain system. The runoff, will be pumped to the onsite contact water recycle tank. Manhole 7A will be capped to keep this runoff from entering the detention pond. The area from the new ash processing facility is presently an impervious area and construction of the proposed facility will not increase runoff volume from the area, as demonstrated in the storm water calculations provided in Appendix A.

Potable water will be used inside the building for working personnel and visitors. The sanitary sewers serving the new restroom facility within the ash reuse processing building will flow to the Facility's lift station which flow to the North Broward Waste Water Treatment Plant. The estimated daily usage of potable water is approximately 225 gallons.

Traffic

The ash reuse process will generate approximately 4500 tons per week of landfill daily cover or construction aggregate product. The product will be shipped six days per week and will be distributed as close to the production facility as possible.

The production of the ash reuse facility will be consumed at the adjacent landfill or other nearby markets as daily cover. The material will be transported via an existing internal road linking the resource recovery facility with the landfill. Since the processed ash products can be used in the landfill as daily cover, it will displace truck loads of purchased cover material that currently travels to the landfill from Powerline Road.

The balance of the processed aggregate will be utilized as a road construction aggregate. Markets are the three asphalt batch plants in the vicinity of 48th Street and Powerline Road. Trucks will exit the production facility and travel less than one mile to the consumers. The processed aggregate is a 100% substitute for natural aggregates; therefore, the batch plants in the vicinity will avoid delivery of aggregate that is currently delivered through the Sample Road and Powerline Road corridor. The processed aggregate will be delivered in covered trucks in accordance with Department of Transportation requirements.

The ash processing facility will require deliveries of reagents and supplies estimated to be 2-3 trucks per day in addition to existing normal deliveries to the project site. The ash reuse process will not impact normal refuse deliveries to the facility. We anticipate minimal impact to the facility staffing requirements.

In summary, the ash reuse process will result in a net reduction of vehicle traffic in the congested Sample Road and Powerline Road area. Truck deliveries of processed aggregate to local asphalt plants and the adjacent landfill will have a one for one offset of existing aggregate deliveries.

Noise

The North Broward Ash Processing Facility will be designed, procured, constructed and operated to meet all applicable noise ordinances (Sec 27-231-27) Broward County Ordinances.

The Facility will be designed to operate during the day shift with occasional second shift work when necessary due to equipment maintenance and plant outages.

Various noise abatement measures will be required and incorporated into the Ash Reuse Processing Facility design to reduce noise impact due to operation of the facility. Different forms of noise control measures include equipment enclosures, attenuating materials, barriers, mufflers, lagging, vibration damping and insulation.

CONSTRUCTION ENVIRONMENTAL CONTROL PLAN

The total duration of construction is expected to be 120 days from ground breaking to completion.

Piling will be required for support of various building and foundation loads. Pile driving activities will be restricted to the hours of 7:00 am to 7:00 pm and are anticipated to be completed within a two week time frame.

There is sufficient impervious surface on site to serve as a laydown area.

An environmental control program shall be established under the supervision of a qualified individual to assure that all construction activities conform to applicable environmental regulations and the applicable conditions of certification.

If harmful effects or irreversible environmental damage not anticipated by the application are detected during construction, the the Southeast District Office shall be notified.

APPENDIX A

REVISED STORM WATER DRAINAGE CALCULATIONS

RUST ENGINEERING COMPANY

RUST AND QUALITY--A Company and a Commitment sm

100 Corporate Parkway 35242
Post Office Box 101
Birmingham, Alabama 35201
Tel. (205) 995-7878

April 6, 1994

Mr. Paul Claerbout, Plant Manager
WHEELABRATOR NORTH BROWARD, Inc.
2600 N. W. 48th Street
Pompano Beach, FL 33073

SUBJECT: RUST Contract No. 21-4527L
Proposed Ash Processing Recycling Facility and
Required Revision to
STORM DRAINAGE CALCULATIONS
for the NORTH BROWARD COUNTY
RESOURCE RECOVERY FACILITY
Broward County, Florida

Dear Mr. Claerbout:

Reference is made to the following report entitled: STORM
DRAINAGE CALCULATIONS FOR THE NORTH BROWARD COUNTY RESOURCE
RECOVERY FACILITY, BROWARD COUNTY, FLORIDA;

Prepared by: RUST INTERNATIONAL CORPORATION
Birmingham, Alabama
Contract 21-3457
October 4, 1989

Also, reference power plant siting Certification No. PA86-22. The current project being proposed for this site consists of a 350 ft. long by 126 ft. wide Ash Processing Building to be constructed on the site in an area just south of the eastern Storm Water Detention Pond. This area is now mostly paved except for the eastern end which has the Ash Loadout Facility and a portion of the Conveyor Gallery. An area along the south side of the proposed building of approximately 235 ft. by 65 ft. will be paved to provide truck access to the doors of the proposed building along its south side. This proposed paved area is now pervious as considered in the referenced storm drainage calculations.

The attached calculations determine the impact on the existing storm drainage and Detention Ponds resulting from the construction of the proposed Ash Processing Facility. These calculations demonstrate that the stormwater management requirements of the South Florida Water Management District are still being met.


-A1-

Page Two
Mr. Paul Claerbout
April 6, 1994

The new calculations sheets presented here represent only those sheets of the original referenced report that are revised because of the proposed project. These calculations show that only minor changes will occur in the storm drainage runoff and the stage storage capacity of the two detention ponds. Drainage Areas 5, 7, and 7A will be impacted. The proposed Ash Processing Building is to be constructed within Drainage Area 7A and its roofed area will replace an area that is presently paved. The existing catch basin at 7A is to be covered over to exclude any surface storm drainage. The surface water coming from the existing and proposed paved areas is considered to have been in contact with ash. The storm drainage from this paved portion of Drainage Area 7A will be directed by a swale toward the east into an existing U-drain and sump system from which it will be pumped to the on site contact water recycle system. The storm drainage from the roof of the proposed Ash Processing Building will be directed to downspouts located along the north side of the new building which drain to the detention ponds. This will be achieved by having a relatively flat roof that slopes down from the south side to the north side of the building. An area of approximately 72 ft. by 45 ft. located just north of the stack will be transferred from drainage area 7A to drainage area 5. An area of new pavement approximately 70 ft. by 60 ft. is to be added inside drainage area 7. Also, the construction of the proposed building and the new paved area will reduce the available site stage storage above El. 18.0 by 0.30 Ac-Ft. This loss of site stage storage does not cause the results to fall outside of the requirements.

If additional information is required, please contact this office.

Sincerely,



Jack Franks
RUST Engineering Company
Civil Engineer
Florida PE NO. 45496

JF/er

Attachments: Revised pages of Referenced
STORM DRAINAGE CALCULATIONS

STORM DRAINAGE CALCULATIONS

for the

NORTH BROWARD COUNTY
RESOURCE RECOVERY FACILITY
Broward County, Florida

Prepared by

RUST INTERNATIONAL CORPORATION
Birmingham, Alabama

Contract 21-3457
October 4, 1989
Revised February 14, 1994
for Contract 21-4527L

Jack Frankel

FL. P.E. No. 45496
3-24-94

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REVISED PAGES

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REVISED PAGES

I. DETENTION CALCULATIONS

REVISED PAGES FOR CONTRACT 21-4527L
February 14, 1994

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVER FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

INPUT

ACREAGES (AC)		
* TOTAL AREA (AC)		22.72 AC
- LESS AREA OUT TO WASTE TREATMENT		1.31 AC
- NET SITE AREA		21.41 AC
* IMPERVIOUS (AC)		
- BUILDING (ROOF)		3.84 AC
- ROAD AND PARKING		6.64 AC
* WATER OR POND AREA		2.60 AC
* PERVIOUS AREA		8.33 AC
MINIMUM ELEVATIONS (FT-NGVD)		
* ROADS AND PARKING		16.80 FT
* FLOORS		19.00 FT
SITE STORAGE ELEVATIONS USED (FT-NGVD)		
* BEGIN SITE STORAGE AT ELEV.		15.80
* MAX. SITE STORAGE ELEVATION		19.00
ZONING		INDUSTRIAL
ALLOWABLE DISCHARGE-CSM		69.20 CSM
WATER LEVELS (FT-NGVD)		
* WET SEASON W. TABLE		10.00 FT
DESIGN STORM RAINFALL AMOUNTS (IN)		
* ROADS (10YR-24HR)		10.90 IN
* POND DESIGN (25YR-72HR)		18.10 IN
* FLOORS (100YR-72HR)		24.70 IN
PRETREATMENT? (YES=1, NO=0)		1.00

COMPUTATIONS

DETENTION REQUIREMENTS (AC FT)		
* STORAGE FOR FIRST 1" RUNOFF (AC-FT)	1*21.41/12	1.78 AC-FT
* STORAGE FOR 2.5" * IMPERV.		
- WATER + ROOF AREA	2.60 + 3.84	6.44 AC
- SITE AREA FOR W Q	21.41 - 6.44	14.97 AC
- IMPERV AREA FOR W Q	14.97 - 8.33	6.64 AC
- % IMPERVIOUS FOR W Q	6.64 * 100	44.36%
	14.97	
- 2.5 * % IMPERVIOUS	2.5 * 0.4436	1.11 IN

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVERY FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

VOL REQ'D FOR WATER 1.11*
 QUALITY DETENTION REQUIRED (AC-FT) $(21.41-2.60)/12 = 1.74$ AC-FT

* CONTROLLING DETENTION 1.78 vs. 1.74 1.78 AC-FT
 REQUIRED (AC-FT)

* 1/2" PRETREATMENT .5* 0.78 AC-FT
 REQUIRED (INCL. ROOF AREA) $(21.41-2.60)/12$

* REQUIRED LAKE VOL. (AC-FT) 0.75×1.78 1.34 AC-FT
 (Assumes dry det, no separate
 pre-trtmt system)

Lake Bottom Elevation = 11.00, 3:1 side slopes
 Assume all storage above elevation 17.00 as vertical

STAGE-STORAGE TABLE

<u>STAGE (FT)</u>	<u>LAKE (AC-FT)</u>	<u>SITE (AC-FT)</u>	<u>PROJECT (AC-FT)</u>
10.0	0.00	0.00	0.00
11.0	0.00	0.00	0.00
11.2	0.36	0.00	0.36
11.4	0.73	0.00	0.73
11.6	1.10	0.00	1.10
11.8	1.48	0.00	1.48
12.0	1.87	0.00	1.87
12.5	2.85	0.00	2.85
13.0	3.87	0.00	3.87
14.0	6.00	0.00	6.00
15.0	8.27	0.00	8.27
15.5	9.45	0.00	9.45
16.0	10.67	0.08	10.75
16.5	11.92	0.95	12.87
17.0	13.20	2.80	16.00
18.0	15.80	9.42	25.22
19.0	18.40	19.63	38.03

CONTROL STRUCTURE DETENTION DISCHARGE WEIR (BLEEDER)

MIN CONTROL ELEVATION (DWT) 10.00 FT
 MIN CONTROL ELEVATION (ROAD EL. - 2) 14.80 FT
 CONTROL ELEVATION USED (FT-NGVD) 10.00 FT
 MIN EL WEIR CREST (FT-NGVD) FOR WATER QUALITY
 DETENTION 11.74 FT
 WEIR CREST ELEVATION USED (FT-NGVD) 12.00 FT
 MAX DAILY DISCHARGE VOLUME (AC-FT) @ 1/2" PER DAY 0.81 AC-FT
 OR 0.41 CFS

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVERY FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

SIZE CONTROL STRUCTURE DETENTION DISCHARGE WEIR

USE COMBINATION 3" DIA. HOLE (INVERT AT CONTROL
 ELEVATION. 10.00) AND V-NOTCH OPENING (NOTCH
 ELEV. 11.40) FOR BLEEDER STRUCTURE:
 V-NOTCH ANGLE USED (DEGREES) 40.64 DEG
 WEIR LENGTH (FT) $(12.00-11.40)*2*\text{TAN}(40.64/2)$ 0.44 FT

SIZE ALLOWABLE PEAK DISCHARGE WEIR

ALLOW PEAK DISCH. FOR THIS PROJ
 $69.20*21.41/640$ 2.32 CFS

SOIL STORAGE:

* IMPERVIOUS (AC) 3.84 + 6.64 + 2.60 13.08
 * PERVIOUS (AC) 21.41 - 13.08 8.33 AC
 * AVERAGE PERV. AREA ELEVATION (NGVD) 18.00
 * DEPTH TO WATER TABLE (FT) 18.00 - 10.00 8.00 FT
 * SOIL (COMPACTED) MOIST. STOR. AVAIL. (IN.) 8.18 IN
 * COMPOS SOIL MOIST. STOR. (S) $8.33/21.41*8.18$ 3.18 IN

MAX 25YR-72HR ZERO DISCHARGE STAGE:

* TOTAL RAINFALL (P) 18.10 IN
 * TOTAL RUNOFF (Q) (IN) $((P-.2S)^2)/(P+.8S)$ 14.77 IN
 * TOTAL RUNOFF VOLUME (AC-FT) $14.77*21.41/12$ 26.35 AC-FT
 * ZERO DISCHARGE STAGE ELEV.
 (FROM STA-STO TABLE) 18.10 FT
 * DISCH. AT STAGE 18.10
 (FROM STA-STO DISCH TABLE) 2.27 CFS

PEAK DISCHARGE WEIR DIMENSIONS

FOR RECTANGULAR: (PLACE "1" HERE TO CALCULATE ---> 0
 PEAK DISCHARGE USING RECT. WEIR)

*
 *
 *

* FOR V-NOTCH: (A "1" HERE INDICATES PEAK ---> 1
 DISCHARGE USES THE BLEEDER WEIR)

DRY DETENTION STARTS AT STAGE 11.00 FT
 - TOTAL WET DETENTION 0.00 AC-FT
 - 25YR-72HR DRY DETENTION 26.35 AC-FT

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVERY FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

STAGE-STORAGE-DISCHARGE TABLE

STAGE (FT)	STORAGE (AC-FT)	3" DIA. ORIFICE	V-NOTCH	TOTAL
10.0	0.00	0.00	0.00	0.00
11.0	0.00	0.22	0.00	0.22
11.2	0.36	0.25	0.00	0.25
11.4	0.73	0.27	0.00	0.27
11.6	1.10	0.29	0.02	0.31
11.8	1.48	0.31	0.09	0.40
12.0	1.87	0.32	0.29	0.61
12.5	2.85	0.36	0.54	0.90
13.0	3.87	0.40	0.70	1.10
14.0	6.00	0.47	0.95	1.42
15.0	8.27	0.52	1.14	1.66
15.5	9.45	0.55	1.23	1.78
16.0	10.75	0.57	1.31	1.88
16.5	12.87	0.60	1.39	1.99
17.0	16.00	0.62	1.46	2.08
18.0	25.22	0.66	1.59	2.25
19.0	38.03	0.70	1.72	2.42

CHECK PROPOSED MIN BUILDING FLOOR ELEV

MAX 100YR-72HR ZERO DISCHARGE STAGE
 TOTAL RAINFALL (P) 24.70 IN
 TOTAL RUNOFF (Q) (IN) $((P-.2S)^2)/(P+.8S)$ 21.26 IN
 TOTAL RUNOFF VOLUME (AC-FT) $21.26*21.41/12$ 37.93 AC-FT
 ZERO DISCHARGE STAGE ELEV
 (FROM STA-STO TABLE) 19.00 FT, OK
 BUILDING FINISHED FLOORS EL. 19.00 ARE OK

CHECK PROPOSED MIN ROAD ELEV

MAX 10YR-24HR ZERO DISCHARGE STAGE
 TOTAL RAINFALL (P) 10.90 IN
 TOTAL RUNOFF (Q) (IN) $((P-.2S)^2)/(P+.8S)$ 7.84 IN
 TOTAL RUNOFF VOLUME (AC-FT) $7.84*21.41/12$ 13.99 AC-FT
 ZERO DISCHARGE STAGE ELEV (FROM STA-STO TABLE) 16.68 FT, OK
 ROAD CENTERLINE EL. 16.80 IS OK

S C S P R O G R A M

PROJECT NAME : NORTH BROWARD RRF (REV. 2-14-94)
 REVIEWER : L. E. CRIGLER
 PROJECT AREA : 21.45 ACRES
 GROUND STORAGE : 8.18 INCHES
 TERMINATION DISCHARGE : 1.00 CFS
 DISTRIBUTION TYPE . . . : SFWMD
 RETURN FREQUENCY . . . : 10.00 YEARS
 RAINFALL DURATION . . . : 1-DAY
 24-HOUR RAINFALL . . . : 10.90 INCHES
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
10.00	.00	.00
11.00	.00	.22
11.20	.36	.25
11.40	.73	.27
11.60	1.10	.31
11.80	1.48	.40
12.00	1.87	.61
12.50	2.85	.90
13.00	3.87	1.10
14.00	6.00	1.42
15.00	8.27	1.66
15.50	9.45	1.78
16.00	10.75	1.88
16.50	12.87	1.99
17.00	16.00	2.08
18.00	25.22	2.25
19.00	38.03	2.42

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	R E S E R V O I R				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
.00	.00	.00	.0	.0	.0	.0	.0	.0	10.00
4.00	.49	.00	.0	.0	.0	.0	.0	.0	10.00
8.00	1.49	.00	.0	.0	.0	.0	.0	.0	10.00
10.00	2.32	.05	1.4	.1	.1	.0	.2	.1	11.03
11.00	2.93	.18	3.6	.3	.3	.0	.2	.2	11.13
11.50	3.48	.34	7.4	.6	.6	.0	.3	.2	11.26
11.75	5.11	1.04	60.4	1.9	1.8	.1	.3	.3	11.64
12.00	7.15	2.22	102.4	4.0	3.9	.1	.9	.6	12.49
12.50	7.95	2.75	23.1	4.9	4.3	.1	1.2	1.1	13.32
13.00	8.36	3.03	12.4	5.4	5.3	.1	1.3	1.2	13.59
14.00	8.92	3.43	7.8	6.1	5.8	.3	1.4	1.3	13.83

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	R E S E R V O I R				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
6.00	9.69	3.92	5.2	7.0	6.5	.5	1.5	1.4	14.19
10.00	10.33	4.52	3.2	5.1	7.1	1.0	1.5	1.5	14.45
24.00	10.90	4.92	2.2	8.8	7.3	1.5	1.6	1.5	14.55
30.00	10.90	4.92	.0	8.8	6.5	2.3	1.5	1.5	14.23
36.00	10.90	4.92	.0	8.8	5.2	3.0	1.4	1.4	13.91
42.00	10.90	4.92	.0	8.8	5.1	3.7	1.3	1.3	13.60
48.00	10.90	4.92	.0	8.8	4.5	4.3	1.2	1.2	13.31
54.00	10.90	4.92	.0	8.8	4.0	4.8	1.1	1.2	13.04
60.00	10.90	4.92	.0	8.8	3.4	5.4	1.0	1.1	12.78
61.00	10.90	4.92	.0	8.8	3.3	5.5	1.0	1.0	12.74

SUMMARY INFORMATION

MAXIMUM STAGE WAS 14.55 FEET AT 24.00 HOURS
 MAXIMUM DISCHARGE WAS 1.6 CFS AT 24.00 HOURS

S O S P R O G R A M

2-14-94

PROJECT NAME : N. BROWARD RRF (REV. ~~7-27-84~~)
 REVIEWER : L. E. ORIGLER
 PROJECT AREA : 21.45 ACRES
 GROUND STORAGE : 8.18 INCHES
 TERMINATION DISCHARGE : 1.00 CFS
 DISTRIBUTION TYPE . . . : SFWMD
 RETURN FREQUENCY . . . : 25.00 YEARS
 RAINFALL DURATION . . . : 3-DAY
 24-HOUR RAINFALL . . . : 13.32 INCHES
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
10.00	.00	.00
11.00	.00	.22
11.20	.36	.25
11.40	.73	.27
11.60	1.10	.31
11.80	1.48	.40
12.00	1.87	.61
12.50	2.35	.90
13.00	3.87	1.10
14.00	6.00	1.42
15.00	8.27	1.66
15.50	9.45	1.73
16.00	10.75	1.88
16.50	12.87	1.99
17.00	16.00	2.08
18.00	25.22	2.25
19.00	38.03	2.42

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	R E S E R V O I R				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
.00	.00	.00	.0	.0	.0	.0	.0	.0	10.00
4.00	.32	.00	.0	.0	.0	.0	.0	.0	10.00
8.00	.65	.00	.0	.0	.0	.0	.0	.0	10.00
12.00	.97	.00	.0	.0	.0	.0	.0	.0	10.00
16.00	1.30	.00	.0	.0	.0	.0	.0	.0	10.00
20.00	1.62	.00	.0	.0	.0	.0	.0	.0	10.00
24.00	1.94	.01	.1	.0	.0	.0	.1	.1	10.55
28.00	2.42	.07	.4	.1	.0	.1	.2	.2	11.02
32.00	2.89	.17	.6	.3	.1	.2	.2	.2	11.07
36.00	3.36	.30	.8	.5	.3	.2	.2	.2	11.16
40.00	3.84	.47	1.0	.8	.5	.3	.3	.3	11.27

- - - - - R E S E R V O I R - - - - -

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	STAGE (FT)
4.00	4.31	.66	1.1	1.2	.8	.4	.3	.3	11.41
8.00	4.78	.87	1.2	1.6	1.1	.5	.3	.3	11.57
52.00	5.38	1.18	2.1	2.1	1.5	.6	.4	.3	11.79
56.00	6.61	1.88	5.3	3.4	2.5	.9	.8	.6	12.31
58.00	7.62	2.53	8.4	4.5	3.8	.9	1.0	.9	12.50
59.00	8.36	3.04	12.6	5.4	4.4	1.0	1.2	1.1	13.17
59.50	9.03	3.61	20.7	6.3	5.2	1.1	1.3	1.2	13.51
59.75	11.03	5.02	130.6	9.0	7.8	1.2	1.5	1.4	14.22
60.00	13.52	7.04	174.6	12.6	11.4	1.2	1.8	1.5	15.56
61.50	14.49	7.86	35.6	14.0	12.8	1.2	2.0	1.9	16.40
61.00	15.00	8.29	18.7	14.8	13.5	1.3	2.0	2.0	16.57
62.00	15.63	8.87	11.4	15.9	14.4	1.5	2.0	2.0	16.72
64.00	16.50	9.59	7.5	17.1	15.3	1.8	2.1	2.0	16.88
68.00	17.46	10.43	4.6	18.7	16.1	2.6	2.1	2.1	17.01
72.00	18.10	11.00	3.1	19.7	16.5	3.2	2.1	2.1	17.05
80.00	18.10	11.00	.0	19.7	15.1	4.6	2.1	2.1	15.85
88.00	18.10	11.00	.0	19.7	13.7	6.0	2.0	2.0	16.64
96.00	18.10	11.00	.0	19.7	12.4	7.3	2.0	2.0	16.39
104.00	18.10	11.00	.0	19.7	11.1	8.6	1.9	1.9	16.09
112.00	18.10	11.00	.0	19.7	9.9	9.8	1.8	1.9	15.68
120.00	18.10	11.00	.0	19.7	8.7	11.0	1.7	1.8	15.20
128.00	18.10	11.00	.0	19.7	7.7	12.0	1.6	1.7	14.73
136.00	18.10	11.00	.0	19.7	6.6	13.1	1.5	1.5	14.28
144.00	18.10	11.00	.0	19.7	5.7	14.0	1.4	1.4	13.85
152.00	18.10	11.00	.0	19.7	4.8	14.9	1.2	1.3	13.45
160.00	18.10	11.00	.0	19.7	4.0	15.7	1.1	1.2	13.06
167.75	18.10	11.00	.0	19.7	3.4	16.3	1.0	1.1	12.75

SUMMARY INFORMATION

MAXIMUM STAGE WAS 17.05 FEET AT 72.00 HOURS
 MAXIMUM DISCHARGE WAS 2.1 CFS AT 72.00 HOURS

S C S P R O G R A M

2-14-94

PROJECT NAME : N. BROWAPD RRF (REV ~~2-17-94~~)
 REVIEWER : L. E. CRIGLER
 PROJECT AREA : 21.45 ACRES
 GROUND STORAGE : 2.18 INCHES
 TERMINATION DISCHARGE : 1.00 CFS
 DISTRIBUTION TYPE . . . : SFWMD
 RETURN FREQUENCY . . . : 100.00 YEARS
 RAINFALL DURATION . . . : 3-DAY
 24-HOUR RAINFALL . . . : 18.18 INCHES
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
10.00	.00	.00
11.00	.00	.22
11.20	.36	.25
11.40	.73	.27
11.60	1.10	.31
11.80	1.48	.40
12.00	1.87	.61
12.50	2.85	.90
13.00	3.87	1.10
14.00	6.00	1.42
15.00	8.27	1.66
15.50	9.45	1.78
16.00	10.75	1.88
16.50	12.87	1.99
17.00	16.00	2.08
18.00	25.22	2.25
19.00	38.03	2.42

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	R E S E R V O I R				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
.00	.00	.00	.0	.0	.0	.0	.0	.0	10.00
4.00	.44	.00	.0	.0	.0	.0	.0	.0	10.00
8.00	.88	.00	.0	.0	.0	.0	.0	.0	10.00
12.00	1.33	.00	.0	.0	.0	.0	.0	.0	10.00
16.00	1.77	.00	.1	.0	.0	.0	.1	.0	10.31
20.00	2.21	.04	.3	.1	.0	.1	.2	.2	11.00
24.00	2.65	.11	.5	.2	.1	.1	.2	.2	11.03
28.00	3.30	.28	1.1	.5	.3	.2	.2	.2	11.16
32.00	3.95	.51	1.4	.9	.6	.3	.3	.3	11.33
36.00	4.59	.78	1.6	1.4	1.0	.4	.3	.3	11.55
40.00	5.24	1.10	1.8	2.0	1.5	.5	.4	.3	11.73

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	R E S E R V O I R				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
4.00	5.88	1.45	2.0	2.6	1.9	.7	.6	.5	12.02
8.00	6.53	1.83	2.1	3.3	2.4	.9	.8	.7	12.25
12.00	7.34	2.35	3.6	4.2	3.0	1.2	.9	.3	12.57
16.00	9.02	3.50	3.5	6.3	4.7	1.6	1.2	1.1	13.37
20.00	10.40	4.53	13.2	8.1	6.4	1.7	1.4	1.3	14.10
24.00									
28.00									
32.00									
36.00									
40.00									
44.00									
48.00									
52.00									
56.00									
60.00									
64.00									
68.00									
72.00									
76.00									
80.00									
84.00									
88.00									
92.00									
96.00									
100.00									
104.00									
108.00									
112.00									
116.00									
120.00									
124.00									
128.00									
132.00									
136.00									
140.00									
144.00									
148.00									
152.00									
156.00									
160.00									
164.00									
168.00									
172.00									
176.00									
180.00									
184.00									
188.00									
192.00									
196.00									
200.00									
204.00									
208.00									
212.00									
216.00									
220.00									
222.25									

SUMMARY INFORMATION

MAXIMUM STAGE WAS 18.07 FEET AT 72.00 HOURS
 MAXIMUM DISCHARGE WAS 2.3 CFS AT 72.00 HOURS

RUST, BIRMINGHAM, ALABAMA

PROPOSAL
OR JOB NO. 21-3457

FOR NORTH BROWARD RESOURCE RECOVERY FACILITY
 AT NORTH BROWARD COUNTY, FLORIDA
 DESCRIPTION DETENTION POND OUTLET CONTROL
 STRUCTURE

DATE 10-2-89

BY WJC CKD.

DWG.

REVISED 02-14-94
 BY: JACK FRANKS
 FOR CONTRACT 21-4527L

NORTH BROWARD RRF DETENTION
 POND OUTLET CONTROL STRUCTURE

EL. 18.10 — ZERO DISCHARGE STAGE FOR 25-YR., 3-DAY STORM
 DISCHARGE AT THIS STAGE IS $<$ ALLOWABLE
 PEAK DISCHARGE FOR THIS SITE ($2.27 < 2.32$)

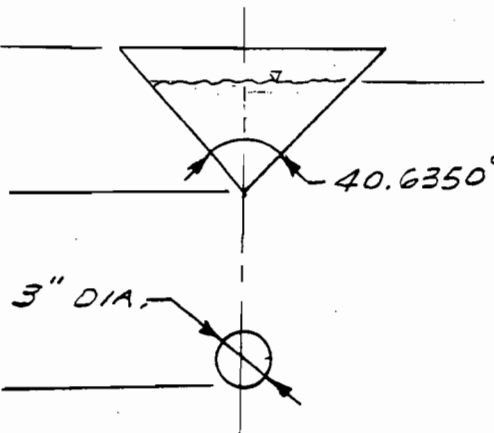
EL. 17.25 — TOP OF DIKE

EL. 17.10 — TOP OF STRUCTURE

EL. 12.00

EL. 11.40

EL. 10.00



EL. 11.74, STAGE @ REQUIRED
 1.37 AC-FT. OF DETENTION
 (VOLUME UP TO THIS STAGE
 CAN BE DISCHARGED NO
 FASTER THAN 0.81 AC-FT./DAY,
 OR 0.41 CFS, WHICH IS $\frac{1}{2}$ "
 OF SITE RUNOFF). ACTUAL
 DISCHARGE IS 0.37 CFS.

(ROUTED)

ACTUAL 25-YR., 3-DAY STAGE IS

→ 17.05 FEET WITH 2.1 CFS
 DISCHARGE (< 2.32 , O.K.)

(ROUTED)

ACTUAL 100-YR., 3-DAY STAGE IS

→ 18.07 FEET WITH 2.3 CFS DISCHARGE
 (< 2.32 , STILL O.K.) 100-YR., 3-DAY ZERO
 DISCHARGE STAGE = 19.00 (BLDG FLOORS) O.K.

10-YR., 1-DAY ZERO DISCHARGE STAGE IS

→ 16.68 FEET, FROM CALCULATED 13.99
 AC-FT. STORAGE.

→ 16.68 $<$ 16.80 (ROAD ELEV.) O.K.

II. STORM DRAINAGE CALCULATIONS

REVISED PAGES FOR CONTRACT 21-4527L
February 14, 1994

RUST, BIRMINGHAM, ALABAMA

PROPOSAL OR JOB NO. 21-3457

FOR NORTH BROWARD RRE
 AT NORTH BROWARD COUNTY, FLORIDA
 DESCRIPTION STORM SEWER SYSTEM CALCULATIONS
 - MAIN SYSTEM

DATE 9-28-89 REV. WJC 10-4-89
 BY WJC CKD.
 DWG. REV. 2-14-94
 BY: JACK FRANKS

ORIGINAL CALCULATIONS
9-28-89 E 10-4-89

INLET LOCATION		INLET STRUCT. NO.	OUTLET STRUCT. NO.	AREA, ACRES					Σ, C.A.		TIME TO CONC. MIN.	INTENS. L, IN/HR.	FLOW Q, CFS	VELOCITY V, FPS	FLOW TIME t, MIN.	PIPE LENGTH L, FT.	PIPE DIA. D, IN.	SLOPE S, %	ELEVATION		NOTES:
N	E			PAVED C=0.95	GRAVEL C=0.50	YARD C=0.40		INCREMENT	CUMULATIVE	INLET									OUTLET		
3385.78	2211.33	1B	1A	0.26				0.25	0.25	5	9.1	2.3	2.6	-	24.66	15	0.25	16.40	16.34		
3429.44	2211.33	1A	1	0.20				0.19	0.44	5	9.1	4.0	3.7	-	9.31	15	0.5	16.34	16.29		
3429.00	2211.33	1	2	1.06	0.37			2.2	2.64	5	9.1	24.0	5.0	0.39	116.08	30	0.4	15.62	15.16		
3429.00	2090.00	2	3A	0.07		0.19		0.14	2.78	5	9.1	25.3	5.4	0.38	123.43	30	0.45	15.16	14.60	ACTUAL TIME OF CONC. @ 1 M. H. NO. 1 = 3.36 MIN.	
3429.00	1961.32	3A	3					-	2.78	5	9.1	25.3	5.4	0.29	94.70	30	0.45	14.60	14.17		
3528.95	1961.32	3	4	0.18		0.53		0.38	3.16	^{4.82} 5	9.1	28.8	6.4	0.26	100.25	30	0.6	14.17	13.57		
3611.16	2024.03	4	5	0.23		0.45		0.40	3.56	^{4.96} 5	9.1	32.4	7.1	0.18	78.23	30	0.75	13.57	12.98		
3693.39	1892.07	6A	6	0.32		1.0		0.70	0.70	5	9.1	6.4	4.2	-	77.63	18	0.5	14.15	13.76		
3693.39	1971.03	6	5	0.19		0.14		0.24	0.94	5	9.1	8.6	5.2	-	49.67	18	0.8	13.76	13.36		
3693.39	2024.03	5	7A	0.36		0.36		0.49	4.99	^{4.86} 5	9.1	45.4	6.8	0.46	183.81	36	0.55	12.64	11.63		
3880.00	1971.03	7	7A	0.19		0.14		0.24	0.24	5	9.1	2.2	3.3	-	70.64	18	0.5	12.70	12.35		
3880.00	2045.00	7A	POND	0.66		0.40		0.79	6.02	5.3	9.0	54.2	8.3	-	203.58	36	0.8	11.63	10.00		
4085.58	2045.00	POND																			

REVISED 2-14-94
 BY JACK FRANKS
 FOR CONTRACT NO. 21-4527L

3693.39	2024.03	5	7A	0.36		0.43		0.51	5.01	5	9.1	45.6	6.82	0.45	183.81	36	0.55	12.64	11.63	
3880.00	1971.03	7	7A	0.26		0.07		0.28	0.28	5	9.1	2.55	3.41	0.31	70.64	18	0.5	12.70	12.35	
3880.00	2045.00	7A	POND	-		-		-	5.29	5	9.1	48.15	8.31	0.41	203.58	36	0.8	11.63	10.00	REVISED DRAINAGE

AREA 7A NOW DRAINS TO AN EXISTING SUMP AND PUMP STATION FROM WHICH IT IS PUMPED TO THE WASTE WATER TREATMENT SYSTEM.

CIRCULAR CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

February 14, 1994
NORTH BROWARD RESOURCE RECOVERY FACILITY
21-4527L
STORM SEWER SEGMENT NO.5 - 7A

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	45.6
Channel Bottom Slope (feet per foot).....	0.0055
Manning's Roughness Coefficient (n-value).....	0.0150
Channel Diameter (feet).....	3.00

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	2.69
Flow Velocity (feet per second).....	6.82
Froude Number (Flow is Sub-Critical).....	0.629
Velocity Head (feet).....	0.72
Energy Head (feet).....	3.41
Cross-Sectional Area of Flow (square feet).....	6.68
Top Width of Flow (feet).....	1.83

CIRCULAR CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.5 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A complete program manual is available.

Best Available Copy

CIRCULAR CHANNEL ANALYSIS NORMAL DEPTH COMPUTATION

February 14, 1994
NORTH BROWARD RESOURCE RECOVERY FACILITY
21-4527L
STORM SEWER SEGMENT NO.7 - 7A

=====

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	2.5
Channel Bottom Slope (feet per foot).....	0.0050
Manning's Roughness Coefficient (n-value).....	0.0150
Channel Diameter (feet).....	1.50

=====

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	0.65
Flow Velocity (feet per second).....	3.41
Froude Number (Flow is Sub-Critical).....	0.855
Velocity Head (feet).....	0.18
Energy Head (feet).....	0.33
Cross-Sectional Area of Flow (square feet).....	0.73
Top Width of Flow (feet).....	1.49

=====

CIRCULAR CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.5 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A complete program manual is available.

CIRCULAR CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

February 14, 1994
NORTH BROWARD RESOURCE RECOVERY FACILITY
21-4527L
STORM SEWER SEGMENT NO 7A - POND

=====

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	48.1
Channel Bottom Slope (feet per foot).....	0.0080
Manning's Roughness Coefficient (n-value).....	0.0150
Channel Diameter (feet).....	3.00

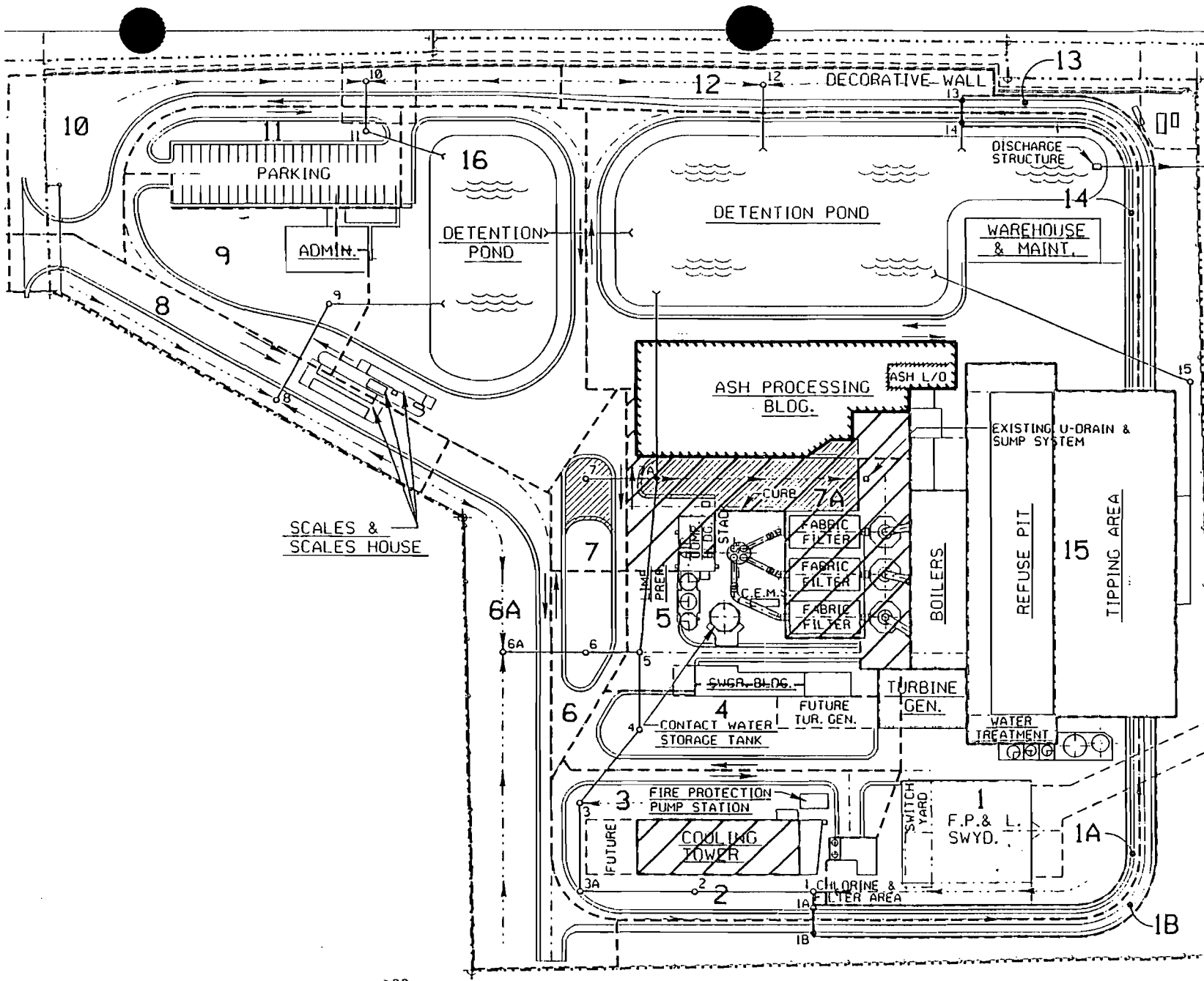
=====

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	2.29
Flow Velocity (feet per second).....	8.31
Froude Number (Flow is Sub-Critical).....	0.973
Velocity Head (feet).....	1.07
Energy Head (feet).....	3.36
Cross-Sectional Area of Flow (square feet).....	5.73
Top Width of Flow (feet).....	2.55

=====

CIRCULAR CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.5 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A complete program manual is available.



PLANT NORTH

LEGEND

- EXIST. FACILITIES
- NEW FACILITIES
- NEW PAVED AREA
- DEMOLITION
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA CONTAINED (EXCLUDED FROM STORM DRAINAGE)
- 7** DRAINAGE AREA
- 4** DRAINAGE STRUCTURE NO.
- 7A** EXIST. CATCH BASIN CAPPED

Jack Franks
 L. FL. P.E. No. 45496
 4/6/94

RUST Rust Engineering Company
 Birmingham, Alabama
 Contract 21-4527L

DRAINAGE AREA MAP
 NORTH BROWARD
 RESOURCE RECOVERY FACILITY

DRAWING NO. 4527L-01
 SCALE: 1"=100'
 REVISED 4/6/94

APPENDIX B

*POTENTIAL EMISSIONS ANALYSIS/^{NEW}EXISTING MINOR
AIR SOURCE PERMITS*

3-24-94

WHEELABRATOR NORTH BROWARD INC.
ASH RECYCLING PROCESSING FACILITY
PROJECT DESCRIPTION

An ash recycling processing facility is proposed to be installed to combine bottom ash, from the refuse fired boilers, with cement and water to produce a product to be used as landfill cover and/or construction aggregate. The process equipment will be installed in a totally enclosed building. There will be several particulate control pick-up points in the building (see attached Ash Recycling Processing Facility Flow Diagram). The air from the pick-up points will be routed to a baghouse dust collector. The vents from the ash storage silo and the cement silo will also be routed to the baghouse dust collector. The baghouse dust collector will be designed for a minimum particulate removal efficiency of 99.9%.

ASH RECYCLING PROCESSING FACILITY
PROCESS RATE AND EMISSION CALCULATIONS

1. Total Process Input Rate and Product Rate

a. Raw Materials

- 1) Ash
190 tons/hr X 2000 lb/ton = 380,000 lb/hr
- 2) Portland Cement Based Reagent Blend
6.5 tons/hr X 2000 lb/ton = 13,000 lb/hr
- 3) Water - normally none,
added as needed for dust control

Total Process Input Rate = 393,000 lb/hr
(Maximum)

includes 90,000 lb/hr metals
∴ 260,000 lb/hr ash
30,000 lb/hr misc non-magn.
290,000
+ 90,000
380,000

b. Product Weight

Sum of inputs to mixer:

- 1) Ash Product 260,000 lb/hr
- 2) Portland Cement Based Reagent Blend 13,000 lb/hr

Product Rate 273,000 lb/hr

2. Air Emission Calculations

a. Control Device Efficiency

Inlet Grain Loading to Baghouse 3.0 grains/act.ft³

Outlet Grain Loading from Baghouse 0.004 grains/act.ft³

$(3.0 \text{ grains/act.ft}^3 - 0.004 \text{ grains/act.ft}^3) / (3.0 \text{ grains/act.ft}^3) \times 100$

= 99.9%

COMPARE INLET GRAIN LOADING TO AP42 (8.8-3): FLY ASH CRUSHING, SCREENING, SINTERING, & FROGGE

$110 \frac{\text{lb PM}}{\text{ton met}^3} \times \frac{260,000 \text{ lb/hr mat}^3}{2000} = 14,300 \frac{\text{lb PM}}{\text{hr}}$

$14,300 \times 0.001 = 14.3 \frac{\text{lb}}{\text{hr}}$

$14.3 \times \frac{6000}{2000} = 42.9 \text{ tons/yr} \text{ -B2-}$

b. Airborne Contaminants Emitted

1) Potential Uncontrolled Particulate Emissions

$$3.0 \text{ grains/act.ft}^3 \times \text{lb/7000 grains} \times 114,000 \text{ act.ft}^3/\text{min} \times 60 \text{ min/hr}$$

$$= 2,931 \text{ lb/hr}$$

Tons/year

$$2,931 \text{ lb/hr} \times 6000 \text{ hr/yr} \times \text{ton/2000lb} = 8,793 \text{ tons/yr}$$

2) Particulate Emissions After Control Device

Maximum lb/hr

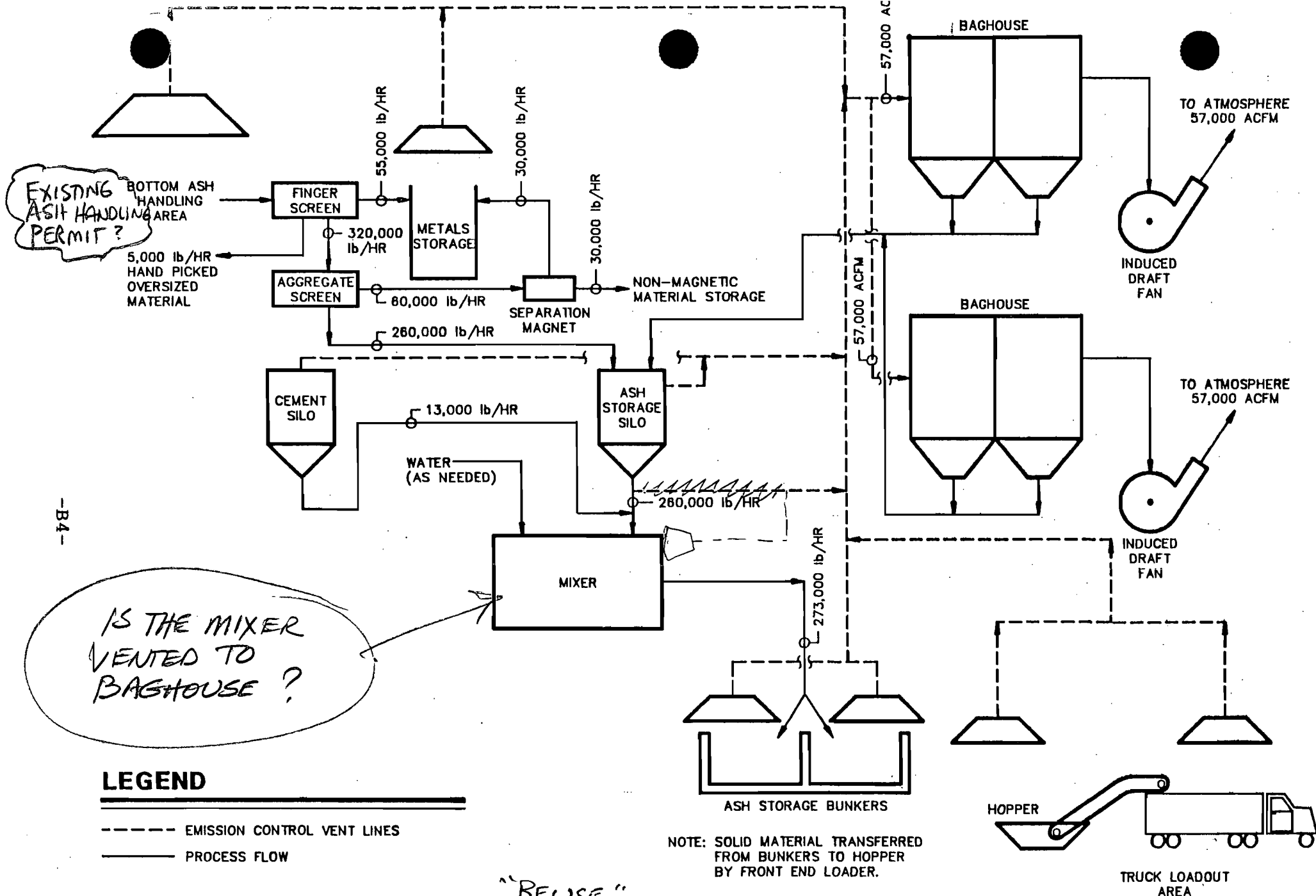
$$0.004 \text{ grains/act.ft}^3 \times \text{lb/7000 grains} \times 114,000 \text{ act.ft}^3/\text{min} \times 60 \text{ min/hr}$$

$$= 3.91 \text{ lb/hr}$$

Tons/year

$$3.91 \text{ lb/hr} \times 6000 \text{ hr/yr} \times \text{ton/2000lb} = 11.7 \text{ tons/yr}$$

$$\frac{3.021}{14.72}$$



-B4-

LEGEND

- - - - - EMISSION CONTROL VENT LINES
- PROCESS FLOW

NOTE: SOLID MATERIAL TRANSFERRED FROM BUNKERS TO HOPPER BY FRONT END LOADER.

^{"REUSE"}
NEW ASH RECYCLING PROCESSING FACILITY
FLOW DIAGRAM
NO SCALE

PROFESSIONAL ENGINEER REGISTERED IN FLORIDA

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in this document. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable rules and regulations of the Florida Department of Environmental Protection.

Signed *James Jackson Smith*

James Jackson Smith

Name (Please Type)

Rust Environment & Infrastructure

Company Name (Please Type)

100 Corporate Parkway, Birmingham, AL 35242

Mailing Address (Please Type)

Florida Registration No. 36535

Date: 3/24/94

Telephone No. 205/995-7361



Lawton Chiles
Governor

Florida Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia H. Wetherell
Secretary

March 22, 1994

William D. Preston
Hopping Boyd Green & Sams
123 South Calhoun Street
Post Office Box 6526
Tallahassee, Florida 32314

RECEIVED

MAR 23 1994

HOPPING, BOYD,
GREEN & SAMS, P.A.

RE: Ash Residue Use as Landfill Daily Cover

Dear Bill:

You have asked whether ash residue from the combustion of solid waste may be used as initial cover at a lined landfill, even though that landfill's liner system is not a double or composite liner which meets current standards. I agree with the reasoning set forth in your letter of February 21, and the answer is yes. If the ash residue meets the requirements as initial cover found in Rule 17-701.200(40), F.A.C., it may be used as initial cover at any lined landfill which met the Department's landfill design criteria at the time of permitting.

Sincerely,

A handwritten signature in cursive script that reads "Chris McGuire".

Chris McGuire
Assistant General Counsel

cc: Mary Jean Yon

cc Fancy Goldman Donelan

WHEELABRATOR NORTH BROWARD INC.

RECEIVED
JUN 21 1993

2600 N.W. 48th Street
Pompano Beach, FL 33073
305-971-8701 - Tel.
305-971-8703 - Fax

June 7, 1993

CERTIFIED MAIL # P 113 104 041

Division of Air Resources Management

RECEIVED

Mr. Hamilton S. Oven, P.E.
Administrator, Siting Coordination Office
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

JUN 15 1993

RE: North Broward County Resource Recovery Project
PPSC: 86-22, PSD-FL-112

D. E. R.
SITING COORDINATION

Dear Buck:

This correspondence is submitted to request the Department's guidance and assistance regarding an approach to change the short term heat input, limitation for each Resource Recovery Boiler at the North Broward Facility.

The emergency modification granted by the department on 9/1/92 temporarily increased the maximum heat input rate for each Resource Recovery Boiler, to the actual design heat input for the North Broward Facility of 323.73×10^6 Btu/hr. This design rate is identical to that allowed by the South Broward facility (P.A. 85-21). The current permitted heat input of 302.5×10^6 Btu/hr is an artifact of adjusting the maximum heat input for the original site certification of four units to three units (i.e., $226.9 \times 10^6 \times 4/3 = 302.5 \times 10^6$ Btu/hr). As previously discussed, the facility was constructed identical to the South Broward facility, but is currently operated at this lower capacity.

Wheelabrator North Broward Inc. would like the ability to operate at the design heat input rate of 323.73×10^6 Btu/hr. However, prior to requesting a modification of the certification pursuant to 403.516 Florida Statutes, we request a determination regarding our proposed approach. It is desired to modify Specific Condition XIV.A.1 as follows:

c. The Resource Recovery Boilers shall not be loaded to excess of their rated nameplate capacity of 71,917 pounds of MSW per hour or 323.73×10^6 Btu per hour each. The annual heat input for the entire facility shall not exceed $7,949,700 \times 10^6$ Btu. The temperature of the flue gas exiting the combustion chamber of the resource recovery boilers shall be equal to or greater than 1800 degrees F.

Retaining the authorized annual heat input for the facility of $7,949,700 \times 10^6$ Btu/hr (i.e. 302.5×10^6 Btu/hr x 3 units x 8760 hr/yr) will not result in an increase of permitted annual emissions. Using this approach, it is our understanding that both the New Source Performance Standards (NSPS), Subpart Ea and Prevention of Significant Deterioration (PSD) would not be applicable.

May 17, 1993
Page 2

The change in the permitted short term heat input is accomplished without any capital expenditure for the facility. In addition, as stated above, this will not result in an increase of annual permitted emissions and therefore, the increase in the short term heat input would not be a "modification" under the PSD Regulations.

We would like to meet with you at your earliest convenience to discuss the final details for seeking the requested change.

Sincerely,



Paul F. Claerbout
Plant Manager

PFC521/dep

cc: E. Selya
EHS 3.12 FDER
EHS 1.1.1
F. Ferraro WESI
T. Porter WESI
M. Williams FDER, S.E.
W. Ferguson WESI
T. Kirk WSB
T. Henderson BCOIWM



Best Available Copy

RECEIVED
APR 19 1993

Ans'd.....

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

April 8, 1993

Mr. William H. Ferguson
Regional Vice President
Wheelabrator McKay Bay, Inc.
107 North 34th Street
Tampa, Florida 33675

Dear Mr. Ferguson:

The Department has completed its review of the Wheelabrator McKay Bay Demonstration Project which was prepared for your company by Geraghty & Miller, Inc. Our review of the information you provided to date supports your contention that, from an environmental standpoint, treated bottom ash from the McKay Bay Waste-To-Energy facility (ie; McKaynite) is a suitable material for road construction. Therefore, we have determined that McKaynite may be considered a recovered material, and that its use will not require a permit from the Department, pursuant to Section 403.7045(1)(f), Florida Statutes (F.S.) provided that a majority of McKaynite is demonstrated to be sold, used, or reused annually, and provided that neither McKaynite or your processing operation is found to be a source of pollution.

Rule 17-702.600, Florida Administrative Code (F.A.C.) contains the requirements which you must meet to demonstrate these two conditions. In addition to the information you have already submitted, the following conditions are required to demonstrate continued compliance:

1. Wheelabrator or its licensees shall specify in their contracts with McKaynite consumers that their product shall be used in a manner that complies with all state, local and federal laws. The contracts must also require the owner to dispose of any debris containing McKaynite which is not recycled by the owner at a permitted solid waste management facility in accordance with Chapter 17-701, F.A.C., particularly Rule 17-701.300, F.A.C.
2. Chemical and physical properties of commercially used McKaynite will be characterized monthly and submitted to the Department's Southwest District office on a quarterly basis.

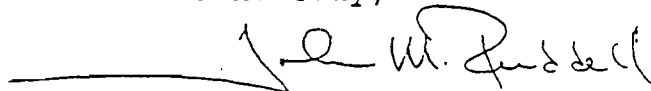
Mr. William H. Ferguson
April 8, 1993
Page Two

3. During the production of McKaynite, records shall be kept for a minimum of three years and shall include the following:
 - a. Name of the McKaynite manufacturing facility.
 - b. Name of the purchaser/contractor.
 - c. Name or location of the jobsite.
 - d. Number of tons delivered to each jobsite.
 - e. Monthly characterization of chemical and physical properties of ash being used, including a comparison that these ash results do not differ significantly from the baseline study.
 - f. Total amount of ash used in commercial production.

4. Any unprocessed ash or material not meeting the McKaynite specifications which is generated by Wheelabrator must be disposed of pursuant to the Ash Management Plan submitted to the Department in accordance with Permit Number AO29-206279 or may be used as landfill cover in accordance with Rule 17-701.520(6), F.A.C.

Failure to comply with these conditions may result in a determination that your process no longer meets the requirements of Section 403.7045 F.S. I appreciate your cooperation in furnishing information to date. If you have any questions concerning the Department's procedure or position, please contact Mary Jean Yon, the Administrator of our Solid Waste Section at 904/922-6104.

Sincerely,



John M. Ruddell, Director
Division of Waste Management

JMR/myv

cc: Rick Garrity
Bill Hinkley
Mary Jean Yon
Chris McGuire
Bill Preston - Hopping, Boyd, Green & Sams



Florida Department of Environmental Regulation

Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406

Lawton Chiles, Governor

Telephone: 407/433-2650

Carol M. Browner, Secretary

Fax: 407/433-2666

PERMITTEE:

Mr. Paul F. Claerbout
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, Florida 33073

I.D. NUMBER: 50/WPB/06/2120

PERMIT/CERTIFICATION NUMBER: AO 06-208187*

DATE OF ISSUE:

EXPIRATION DATE: February 28, 1996

COUNTY: Broward

LATITUDE/LONGITUDE: 26°17'14"N/80°09'35"W

UTM: Zone 17; 583.9 Km. E; 2907.6 Km. N

PROJECT: Wheelabrator North Broward, Inc.
Ash Handling System & Lime Silo

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2, and in conformance with all existing regulations of the Florida Department of Environmental Regulation. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

RATE: An air pollution source consisting of an ash handling system and lime silo at a Source Recovery Project (PSD permit No. PSD-FL-112).

Ash Handling System

Emissions from the ash handling system (with a process input rate of 21,435 lbs./hr. of fly ash and spray dryer reaction products) are controlled by MAC Filter Model 120 LST 100 baghouse designed at a flow rate of 8000 ACFM.

Lime Silo

The lime silo has a capacity of 236 tons. Only one truck can be unloaded pneumatically into the lime silo at a maximum process input rate of 40,000 lbs./hr. The lime silo is equipped with Wheelabrator Air Pollution Control Model 1016, BA-108, Jet III baghouse designed at a flow rate of 1500 ACFM.

IN ACCORDANCE WITH: Certificate of Completion of Construction received February 6, 1992 and additional information received April 30, 1992; Application to Construct Air Pollution Sources dated September 26, 1990 and additional information dated November 19, 1990 and January 9, 1991 (none are attached).

LOCATED AT: 2700 Hilton Road (N.W. 48th Street), Pompano Beach, Broward County, Florida.

TO SERVE: A resource recovery facility (SIC #4953).

SUBJECT TO: General Conditions 1-14. and Specific Conditions 1-13.

* This permit supersedes Construction Permits Nos. AC 06-186997 and AC 06-186998 issued March 12, 1991

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
 - (a) Have access to and copy any records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:
 - (a) A description of and cause of noncompliance; and
 - (b) The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

GENERAL CONDITIONS:

9. In accepting this permit, the permittee understands and agrees that all records, test results, monitoring data and other information relating to the construction or operation of the permitted source which are submitted to the Department, may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Rule 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. The permittee shall comply with the following :
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.
14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
Mr. Paul Claerbout
Wheelabrator North Broward, Inc.
Panama Beach, Florida

I.D. NUMBER: 50/WPB/06/2120
PERMIT/CERTIFICATION NUMBER: AQ 06-208187
DATE OF ISSUE: MAY 14 1992
EXPIRATION DATE: February 28, 1996

SPECIFIC CONDITIONS:

1. Wheelabrator North Broward, Inc.'s fly ash handling system and the lime silo shall be allowed to operate continuously (i.e. 8,760 hrs./yr.).
 2. Particulate emissions from the fly ash handling system and lime silo baghouses shall not exceed 0.010 gr./dscf, nor 3.0 tons/year and 0.021 tons/year, respectively.
 3. Visible emissions from the fly ash handling system shall not exceed 5% opacity.
 4. Visible emissions from the lime silo baghouse shall not exceed 5% opacity as noted in Specific Condition No. 6.
 5. Compliance with the particulate and visible emissions test shall be determined in the year prior to permit renewal using EPA Methods 1, 2, 3, 4, 5 and 9 contained in F.A.C. Rule 17-2.700. The visible emissions test for the fly ash handling system shall be conducted along with the particulate tests and shall be for at least 60 minutes. The visible emissions tests for the lime silo shall be conducted for the entire truck unloading operation. The minimum requirements for stack sampling facilities, source sampling and reporting shall be in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A. A stack drawing showing sampling locating for the MAC Filter Model 120 LST 100 baghouse shall be submitted to the Department at least 90 days prior to testing.
 6. The maximum allowable emission rate for particulate matter for the lime silo is set by Specific Condition No. 2. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department, pursuant to the authority granted under F.A.C. Rule 17-2.700 (3)(d), hereby waives the requirement for a stack test. The alternate standard set forth by this provision establishes a visible emission not to exceed an opacity of 5%.
- Should the Department have any reason to believe the particulate emission standard not being met for the lime silo, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with F.A.C. Rule 17-2.700.
8. No objectionable odors from this facility will be allowed.
 9. The Broward County Office of Natural Resource Protection and the Southeast District Office of the DER shall be given written notice at least 15 days prior to compliance testing.
 10. All conveyor loading points, transfer points and all ash processing equipment shall be properly enclosed. The facility shall be operated by personnel properly trained for the equipment herein. The Department shall be notified in writing on how the facility will be staffed and trained.
 11. Reasonable precautions shall be taken during operation to prevent and control and generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. Rule 17-2.610(3). Such reasonable precautions shall be: application of water or chemicals to control fugitive emissions from activities such as vehicular movement, loading, unloading, storage and handling.
 12. The permittee shall comply with all applicable provisions of Florida Administrative Code Chapters 17-2 and 17-4.

PERMITTEE:
Mr. Paul Claerbout
Wheelabrator North Broward, Inc.
Pompano Beach, Florida

I.D. NUMBER: 50/WPB/06/2120
PERMIT/CERTIFICATION NUMBER: AO 06-208187
DATE OF ISSUE: **MAY 14 1982**
EXPIRATION DATE: February 1996

SPECIFIC CONDITIONS:

13. The permittee shall be aware of and operate under the attached "General Permit Conditions #1 thru #14." General Permit Conditions are binding upon the permittee and enforceable pursuant to Chapter 403 of the Florida Statutes.

Issued this 14th day of MAY, 1992

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Bobby A. Cooley
Bobby A. Cooley
Acting Director of District Management



BEST AVAILABLE COPY

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Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

November 1, 1991

NOV 1 1991
XL
F. Fennell
K. Forester

Paul F. Claerbout
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, Florida 33073

Re: North Broward Resource Recovery Facility
PA 86-22

Dear Mr. Claerbout:

The testing of solid waste combustor ash residue in conformance with the Department's new ash rule is permissible without a formal change to the Conditions of Certification due to the provisions of Section 403.511(5), F.S. The next time that it is necessary to formally modify the conditions we will include the new ash testing method specified by regulation.

Sincerely,

Hamilton S. Owen

Hamilton S. Owen, P.E.
Administrator
Siting Coordination Office
Division of Air Resources
Management

HSO/hso
cc: Joe Lurix

WHEELABRATOR NORTH BROWARD-(PPSC-86-22)

2600 NW 48th Street

Pompano Beach, FL 33073

ASH RESIDUE MANAGEMENT PLAN

Waste-to-Energy Facility Contact

Paul Claerbout, Plant Manager (305) 971-8701

Landfill Contact

Michael Berg, General Manager (305) 977-9551

**Revision No. 2
April 1, 1994**

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- A. Waste Control Plan
- B. Ash Handling System Diagram
- B1. Ferrous Separation
- C. Comprehensive Quality Assurance Plan submitted to Sylvia Labie, FDER
- D. Standard Operating Procedure for Performance Standards and Operational Criteria "North Broward Resource Recovery Facility Ash processing Addition"

WHEELABRATOR NORTH BROWARD
ASH RESIDUE MANAGEMENT PLAN

I. OVERVIEW

The ash residue management plan encompasses the ash as it exits the plant, transport, disposal, monitoring, testing and management. This plan is in compliance with the applicable sections of chapter 17 of the Florida Administrative Code (FAC) pertaining to solid waste combustor ash. Implementation of this plan will be under the direction of the Plant Manager to ensure day to day operations and maintenance are consistent with this plan.

Wheelabrator North Broward (WNB) is committed to execute and manage its operations in a safe, and environmentally conscientious manner.

II. ASH HANDLING & TRANSPORT

WNB's trash to energy plant is permitted to process 2,419 tons per day of processable waste. Processable waste is defined as combustible materials including without limitation, all household and other refuse, wood, furniture, tires, yard waste and light industrial waste. There are a number of items that are not accepted commonly known as unprocessable waste (cement, wire cable, appliances, etc.) and unacceptable waste. Unacceptable waste is pathological, biological, sludges, motor vehicles, sewerage, manure, asbestos, chemicals, car batteries, ozone depleting chemicals, etc. In order to ensure that correct wastes are being disposed of, a quality assurance program is in place. This program consists of trash inspections based on random

spot checks. Haulers will be directed by WNB personnel to dump their loads on the tipping floor, where it will be inspected and either accepted or rejected (see attachment A) depending on its content. A letter as well as informational packets have been issued to the haulers informing them of acceptable and unacceptable waste.

When the Plant is operating at design capacity, it is estimated that approximately 700 tons per day of Ash Residue will be generated. Ash residue generated by the Resource Recovery Process consists of two, different streams, "Bottom ash" and "Fly ash". Bottom ash is the noncombustable heavy fraction of the ash which remains on the grates after processing. Bottom ash exits the facility, through the ram ash expellers via the vibrating pan and belt conveyor system (see Attachment B). The ash residue may be processed into either landfill daily cover or construction aggregate product streams; ferrous metal will be removed via magnet. The processing system description is included in Attachment E. Ash not processed for reuse will be disposed of in accordance with F.A.C. 17-702.

When construction aggregate is produced, flyash which is entrained in the furnace flues, and is collected in the boiler, scrubber, and baghouse enters a surge bin where it is metered into the fly ash pelletizer for conditioning. When the conditioning is complete, the conditioned Flyash is transported via drag chain conveyors to the truck load out area. The fly ash is fed into dump type container trucks appropriately sized to provide uninterrupted plant operations. There are two trucks in continuous operation

with a third truck available as a spare when preventive or corrective maintenance is being performed or for additional capacity for operating flexibility. The trucks are designed with climate controlled cabs to minimize personnel exposure to the ash.

The ventilation system is designed to maintain a slight vacuum in the area to capture any fugitive dust emissions. All personnel working in the area have been instructed regarding any health related issues. It is Wheelabrator's policy that there is no eating, drinking or smoking in the area and proper respiratory protection should be worn when conditions warrant. Signs are prominently displayed identifying the area and special requirements. The truck's container and/or tailgate is water tight to prevent ash or liquid from discharging during transit. Prior to departing the ash loading area, the container transporting the ash is covered by a tarpaulin and properly secured for transport. The cover has been designed to cover the entire length of the body, ensuring that no dust emanates from the truck or through the cover. The ash will begin transport without any free liquids present, but with a moisture content sufficient to allow good placement without creating a dust nuisance. Ash that could potentially spill over the side rail, and any ash that has collected on the exterior of the truck is required to be removed prior to hauling. Any spillage of ash on the floor is collected with a front end loader and loaded into trucks and hauled to the landfill when full. If necessary, trucks will be washed prior to leaving the loading area. A high-pressure cleaner is installed in the

ash handling area to wash down trucks, equipment and ash areas. The floor in the loading area is designed to contain run-off from the trucks and wash water. This contained wash water is reused within the facility process. A truck washing facility is available at the landfill. Each truck will be weighed at the monofill scalehouse upon entrance and departure.

III. HOURS OF OPERATION

The Central Disposal Sanitary Landfill (CDSL) which is owned and operated by WMX will accept residue from the WNB trash to energy plant 24 hours per day, seven days a week. The trash-to-energy plant accepts trash from 4:00 A.M.-6:00 P.M., Monday through Saturday.

IV. PERSONNEL AND FACILITIES

CDSL employs personnel responsible for overall operation of the landfill, including record keeping, heavy equipment operation, general site maintenance and maintenance of access roads. Signs are posted at the entrance gate identifying the company as the operator of the landfill and warning signs prohibiting unauthorized entrance into the area are also posted. The landfill access gate is equipped with an automatic opener. Each truck is equipped with a wireless transmitter for entry to the landfill. All visitors must sign in at the facility's Administration building. The equipment maintenance portion of the building is sized to house and maintain all on-site equipment. A truck wash area has been provided to clean the tires and container of the trucks upon departure of the landfill. The

wash water is collected back into the contact water collection system. The equipment operators and drivers are equipped with radio communication and fire extinguishers in the event of an accident or other emergency.

All personnel working around the ash have been trained in the proper techniques of ash handling. This includes the use of personal protective equipment such as gloves, safety glasses, dust masks and other respiratory protection. The items previously mentioned are company provided along with uniforms, shoes, locker rooms and showers.

EQUIPMENT/MAINTENANCE

The equipment required for operation at the landfill consists of diesel powered dozers and loaders which are utilized to spread and compact the ash residue. A light tower is on-site to allow for a safe working environment during night hours of ash delivery. Other equipment such as water trucks will be available for dust control as necessary.

Preventive maintenance of all landfill equipment and machinery will be performed as required to sustain reliable equipment availability. Preventive maintenance will be performed by CDSL's on-site maintenance staff. Major repairs requiring specialized equipment may be made by local, private repair services, or dealers. Fuel tanks and a fueling truck are on-site to provide fuel to the equipment.

VI. TRAFFIC CONTROL

Under normal operating conditions, approximately 35 ash truck deliveries will be made to the landfill during the 24 hour-a-day operating period. A private access road from the plant to the landfill is the travel route for the ash trucks. The trucks travel in a East-West direction.

The haul route is approximately 1 mile round trip. The on-site speed limit for all traffic is 10 mph. Access to the landfill is secured by a perimeter fence, and a remote control motorized gate. This fence arrangement will control entry from the private road entering the landfill. The employees at the facility will be responsible for monitoring activities at the landfill.

VII. WORK AREA CONTROL

Ash will be placed in a manner which will allow for adequate compaction by the dozer track, truck tire and vibratory roller. The operational sequence is patterned in a manner which phases each section and subsection to allow for site drainage and visual screening of operations as practicable. Each cell will be brought to an operational final grade before proceeding to the next subsection. The outside exterior side slopes of the landfill will be graded and provided with intermediate cover by either grassing or hydroseeding with materials to promote plant growth. Intermediate cover will be periodically applied to the exterior side slopes as needed to provide dust and erosion control of the slopes until such time as a permanent or

final cover is added. This procedure may be modified according to the demands of actual site conditions and success of using various trial products such as synthetic or organic mats which provide similar protection, containment and aesthetic appearance.

VIII. LEACHATE COLLECTION

Leachate collection pipes have been installed throughout the developed landfill. Leachate reduction is achieved by filling to promote storm water runoff. Ash residue leachate is delivered to the trash-to-energy facility via tanker or pipeline for use in the process. A quarterly leachate sampling program has been instituted by CDSL to trend leachate composition, as required by applicable state laws and permits.

IX. STORM WATER CONTROL

Surface water control will be managed to minimize water infiltration and maximize water runoff. In order to achieve these objectives, several steps will be implemented. These steps are:

1. Filling Area Size: As previously discussed in paragraph VII, the active filling area will be kept to a minimum dimension. Orderly operations will be accomplished by maintaining a narrow working face. The working face will be wide enough to prevent a backlog of incoming truck deliveries but not so wide as to be unmanageable. By maintaining a small fill area, it

will enable the proper arrangements and preparation for:

- ° supply of cover material
- ° vertical control
- ° proper drainage
- ° waste deposition
- ° general maintenance

The ash residue will be spread and compacted in layers within a confined area. These sections of the overall landfill will be rapidly brought up to an operational final grade, properly contoured and covered.

2. Proper Slope: The fill area will be sloped to ensure ponding will not occur. Each grade on site will be developed to provide rapid removal of rainwater. All lifts will be graded to minimize leachate generation. Elevation control benchmarks will be established to ensure reliable horizontal and vertical control as each section of the landfill is developed.

3. Tarps/Cover Material: Tarps or cover material can be utilized to cover exposed ash areas in the event of severe weather conditions. The impermeable cover will limit rainwater contact with the ash, promote runoff and reduce the formation of leachate.

4. Final Grades: Exterior final side slopes will be covered with a low permeability impervious material. The slope will either be grassed or hydroseeded to promote good vegetative growth in an effort to reduce the open area exposed to rainfall and erosion. Drainage swales will be incorporated to intercept overland flow before it can be concentrated to form gullies. Storm water runoff will be diverted into drainage swales to move water off the landfill quickly without eroding final cover soils. The quick transfer of storm water reduces the amount of leachate generation. In addition, runoff will be directed away from the working face and newly prepared base.

5. Compaction: The compaction of the ash will be accomplished with the landfill equipment. Several passes with the landfill equipment will provide the necessary compaction to reduce ash permeability thereby reducing leachate constituent concentrations.

6. Hay bales and Screen Fences: Hay bales and screen fences may be used at the perimeter of the filling area. This technique will provide additional water management control to divert runoff to desired locations. Also, their use will maintain the ash at the filling area boundary providing additional protection to outlying areas.

In summary, all storm water which comes in contact with the ash residue will be retained and collected by the leachate collection system or lost via evaporation. All other storm water will be collected in the adjoining drainage swales and retention pond and dispatched via percolation, evaporation or exfiltration. After a heavy rain, the entire landfill will be inspected, and corrective measures will be taken to repair any damage from the rainfall event. As noted above, by initiating effective surface water management control measures, leachate generation will be minimized.

X. VECTOR AND PEST CONTROL

A fully licensed outside contractor will bait the area as necessary to insure against any type of rodent or pest infestation. Due to the type of waste to be disposed, little or no rodent and pest problems are expected.

XI. LITTER CONTROL

The landfill will be inspected and patrolled for litter. Litter will be collected when present.

XII. ODOR CONTROL

Odor is not expected to be a problem during residue filling operations because the material that is being disposed of contains no significant amount of organic or putrescible matter.

XIII. BYPASSED WASTE PROVISIONS

It is not anticipated that a bypass condition will ever occur at the WNB facility. If an unexpected shutdown at the facility results in the inability of the plant to accept solid waste, waste will be directed to an alternate solid waste receiver.

XIV. RECORD KEEPING

Records are kept identifying the tonnage of trash received at the plant, total ash residue disposed of at the landfill and gallons of ash leachate received at the plant. These records can be reviewed and are on file at the WNB Administrative Office.

XV. CONTINGENCY PLANS

In the event of unexpected or abnormal conditions or circumstances impacting the normal operation of the landfill, the following contingency plans and provisions will be in effect:

1. Loss of Power: The main area of concern for this event is the operation of the leachate pumping station. An emergency power generator connection was provided at the power supply panel for the pumps. A temporary fuel driven power generator would be rented or purchased as needed upon the occurrence of such an event.

2. Loss of Leachate Pump: The pump station is a duplex configuration with a lead and lag control arrangement. Each pump is over-sized for normal flow conditions. A spare pump will be available for replacement purposes.

3. Loss of Dozer Equipment: A short term loss of dozer equipment will not result in a crisis situation. Routine maintenance and repair to this equipment will not impact operations to any major extent. Should major equipment repair become necessary, a rental replacement will be provided for that period.

4. Hurricanes and Natural Disasters: In the event of a hurricane, flood, or other natural disaster, the landfill, storm water management system, leachate collection and removal systems are designed and will be maintained in such a manner as to allow, within limitations, unattended operation for an extended period assuming the cessation of deliveries to the landfill.

XVI. ASH RESIDUE QUALITY ASSURANCE AND SAMPLING PLAN

(See Attachment C)

COMPREHENSIVE QUALITY ASSURANCE PLAN

XVII. ASH REUSE

Wheelabrator has evaluated the use of treated ash residue as a road sub-base or a substitute in asphaltic concrete, FDER # permit SC 29-183237. The project evaluated potential environmental effects of ash residue aggregates as a substitute for commercially available aggregates. The project demonstrated that the processed ash residue may be used as an equivalent material without adverse environmental consequences. This project also compared the performance of the ash aggregate vs. commercially available materials.

An application to modify our siting certificate, in order to begin processing the ash residue into a reusable product has been submitted to the department. A system description and process flow diagram has been included in Attachment D.

031.RD

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT A

WASTE CONTROL PLAN

NORTH BROWARD RESOURCE RECOVERY FACILITY

"WASTE CONTROL PLAN"

Revised NO. 1
March 15, 1994

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- VI. INSPECTION PROCEDURE
- VII. WASTE SCREENING PROCEDURES AND FORMS
- VIII. RECORDS RETENTION
- IX. CONTACT PERSONNEL

INTRODUCTION

This program is designed to ensure that the facility receives and treats only household, nonhazardous commercial, nonhazardous industrial, and other solid waste specifically authorized by the Florida Department of Environmental Protection.

The key elements of the program are:

- (A) Random inspections of incoming loads.
- (B) Inspections of suspicious loads.
- (C) Records of all inspections
- (D) Training of facility personnel to recognize if a regulated hazardous waste is discovered.
- (E) Identification of personnel trained to detect and handle hazardous waste.

II. RESPONSIBILITIES

The responsibilities of ensuring that the facility accepts and processes only authorized waste rests with the following representatives of the North Broward Resource Recovery Facility.

- (1) Plant Manager
- (2) Operations Manager
- (3) Director, Health Safety and Environmental Compliance
- (4) Loader Operators
- (5) Crane Operators
- (6) Scalehouse Operators
- (7) Shift Supervisors

III. TRAINING PROGRAM

A training program has been developed to ensure that responsible facility personnel are able to recognize unacceptable waste. This program is conducted periodically.

The program contains - but is not limited to - the items listed below.

- (A) Load inspection for suspicious loads
- (B) Records retention
- (C) Recognition and handling
 - (1) Hazardous/Toxic materials
 - (2) Radioactive materials
 - (3) Biohazardous/Pathological materials
 - (4) Unprocessable waste
- (D) Notification requirements

ACCEPTABLE WASTE GUIDELINES

Acceptable Waste

All municipal or commercial solid waste consistent with the following size limitations will be considered acceptable:

- o Nothing exceeding an overall length of 6' will be accepted. (Some discretion relative to lengths of light pliable pieces of lumber may be used by the Weigh Scale Operator). All bulky items will be restricted to 6' x 4' x 4' overall dimensions.

Non-Acceptable Waste - "Will not be accepted"

- o All hazardous wastes
- o Radioactive, toxic, pathological or biological wastes
- o 55-gallon chemical drums, whether empty or full
- o Concrete, dirt, sand, or gravel
- o Trees or branches in excess of six feet in length or eight inches in diameter
- o Tree trunks or stumps (WATCH CAREFULLY)
- o Other materials which may adversely affect the operation of the facility
- o White Goods (appliances) or items containing any Ozone-Depleting chemicals.

Any food products, controlled substances, confidential or security items requiring special handling must be referred to the Plant Manager, or Director Health Safety and Environmental Compliance, and handled on an individual load or prearranged basis.

On a day-to-day basis, any questionable loads will be checked by the Operations Manager, Shift Supervisor or Director Health Safety and Environmental Compliance (DHSEC), or the Loader Operator. If any questions arise, the final decision will be made by the Shift Supervisor, Operations Manager, or DHSEC.

Non-Acceptable waste also includes all "Untreatable Waste" which includes, but is not limited to: batteries, such as dry cell batteries, mercury batteries and vehicle batteries; refrigerators; stoves; washers; dryers.

The NBRRF will adhere to the provisions of FDER Rule 17-712-Biohazardous and Biological Waste Management Rule.

If hazardous waste is discovered on-site in the tipping floor areas, and the responsible truck cannot be identified, the NBRRF would be considered under the Treatment, Storage, and Disposal Facility Provision of 40 CFR 264. The NBRRF would be allowed to properly maintain such waste on-site for 180 days before it would be required to have it removed by a reputable transporter to an approved treatment/disposal facility.

V. RADIOACTIVE WASTE

This facility will accept no radioactive waste. The following control measures have been installed to prevent material from entering the property along with procedures for handling such material.

Procedure for Radioactive Loads:

A radiation detector is installed and functional in the scale house. In the event that an incoming truck trips the radiation detector, the following procedure will apply:

- 1) The scalehouse operator will immediately call the shift supervisor and the operations manager.
- 2) "THE SCALE OPERATOR WILL NOT WEIGH IN THE TRUCK OR PERMIT THE TRUCK TO PROCEED PAST THE SCALE."
- 3) The truck drivers will be directed to park his truck off to the side, where the shift supervisor will measure the radiation with a portable detector.
- 4) If radiation levels as detected by the shift supervisor are below background levels, the truck will be permitted to return to the scalehouse, weigh in, and unload.
- 5) If radiation levels as detected by the shift supervisor are above background levels, the shift supervisor will:
 - a) Inform the driver that his load is radioactive and therefore can not be accepted at the plant.
 - b) Inform the driver that the truck must be removed immediately from our property.
 - c) Neither the shift supervisor nor the scale operator will suggest to the driver where to haul the load. If asked, the driver will be told to contact his dispatcher for directions.
- 6) Once the truck is off our property, the shift supervisor will notify the following:
 - a) Office of Natural Resource Protection
 - b) Department of Public Health (305) 467-4800.
 - c) The hauler's office.
- 7) A radiation detection report will be filled out and submitted to the Operations Manager.

RADIOACTIVE WASTE

TO: Distribution

FROM: _____ DATE: _____

RADIATION DETECTION REPORT

Time: Arrived _____ Departed: _____

Scale Operator: _____

Shift Supervisor: _____

Vehicle Identification:

Truck Registration Number: _____

Company/Community _____

Company/Community Telephone Number: _____

Radiation Meter Reading:

Scale House _____ Counts/Min.

Portable _____ MR/HR

CONTACTS:

Office of Natural Resource Protection: _____

Department of Public Health: _____

Hauler: _____

Source of Origination (if known) _____

RETURN COMPLETED REPORT TO OPERATIONS MANAGER

Distribution:

Plant Manager
EH&S Director

VI. INSPECTION PROCEDURE

All trucks entering the facility are subject to inspection.

- (A) Random inspections will be performed as outlined in the Waste Screening Procedure.
- (B) Any load deemed suspicious will be inspected.
- (C) All records of inspection will be maintained in the EHSD's office. All records will be maintained for seven years.
- (D) If unacceptable waste is found, proper authorities will be notified. Such notification may include (but is not limited to):
 - (1) Plant Manager, Operations Manager
 - (2) Office of Natural Resource Protection
 - (3) Florida Department of Environmental Regulation
- (E) If unacceptable waste is found it will be reloaded into the truck in which it came and then moved from the site after all authorities have been notified, as outlined in the Waste Screening Procedure.

MUNICIPAL SOLID WASTE SCREENING

To ensure that unacceptable waste or wastes that may create special environmental pollution problems will not be processed at the NBRRF, a waste screening and control plan will be implemented.

This is a multitiered program that requires a cooperative effort between the serviced clients and NBRRF. The program includes identifying potentially hazardous waste sources, checking delivery trucks, imposing deterrent penalties on violators, and removing any hazardous material from the waste stream.

The following is an outline of NBRRF's procedure for controlling hazardous waste deliveries:

1. A joint effort between NBRRF and its serviced clients will be made to identify all private collectors that service generators of hazardous waste.
2. All contracts signed with collectors will clearly identify what types of wastes and chemicals are not accepted at the Facility. These contracts will also identify the penalties imposed on the delivery of such materials.
3. A list of identifying unacceptable waste will be posted at the Facility. The driver will be asked to identify the load and the source. If it is determined that the load is unacceptable waste, the driver will be denied access to the tipping floor.
4. NBRRF will conduct random spot checks of incoming loads by periodically dumping a load on the tipping area floor for inspection by an approved "Inspector". Acceptable waste will be pushed into the pit by a front-end loader. If the load contains any unacceptable waste, the entire load will be rejected and will be loaded back on the delivering vehicle. Spot check inspections will be appropriately documented as illustrated previously in the Waste Control Plan. In addition to visual spot checks, all loads entering the facility are scanned by continuous radiation monitors to prevent disposal of any radioactive materials at the facility.
5. Crane operators, in the course of stockpiling and mixing refuse in the pit, will be required to scan the waste pile for any questionable contents. Unacceptable materials will be removed from the refuse pit for disposal in an acceptable manner.

6. NBRRF has developed hazardous waste identification and response procedures as part of the Hazardous Material Training Program for the Facility. All personnel undergo this training program. This procedure will clearly address the following:
 - a. Policies for controlling the delivery of any hazardous waste to the site.
 - b. Indicators and other information about potentially hazardous materials.
 - c. Employees' responsibilities in preventing hazardous waste from being accepted at the Facility.
 - d. Reporting procedures if questionable wastes are found.

In the event unacceptable waste does enter the Facility, it would be isolated and placed in a designated area for such material. An effort would be made to identify the sender for removal of the material first. If that is not possible, the material will be properly disposed of in accordance with all Federal and State regulations.

Waste screening will be conducted on a random basis as necessary to ensure compliance with the Waste Screening Program.

Prerequisites

1. Safety equipment including appropriate personnel protective gear (i.e. Scott Air Packs, respirators, protective clothing, gloves, boots, first aid kit, etc.), emergency fire fighting equipment, and clean up equipment will be stored near the tipping floor and be readily available. Appropriate materials (e.g., rope, pylons, etc.) needed to isolate any potentially dangerous waste will also be stored nearby and be readily available.
2. The Facility Manager will assign a "trained" employee to serve as Inspector. He will conduct the screening and complete the necessary report.
3. A front end loader and operator will be standing by the help with the screening.

Types of Screening

- I. On-Board Screening (only done on open type vehicles)
 1. The Inspector shall select a vehicle for screening and, upon entering the tipping floor, inform the driver of this fact.
 2. The driver will be asked to fold back the screens or tarpaulin covering his load.
 3. The Inspector shall then position himself such as to obtain the maximum possible view of the load.
 4. If the load is observed to contain unacceptable materials, the Inspector will immediately notify the Facility Manager or other designated management representative who will inspect the load and determine if the hauler is to be turned away.
 5. If the load is acceptable, the driver will be directed where to unload.
 6. In unsure, the Inspector will direct the driver to a designated area of the Tipping Hall where Floor Screening will be conducted, as described below.

4. The Inspector will watch the unloading process and, if possible, stop the process if he observes unacceptable or potentially dangerous material.
5. If Unacceptable Waste is found, the Facility Manager or designated management representative is to be notified and the hauler may be required to remove it from the facility. A screening report and notice of infraction will be issued as appropriate.
6. The Inspector will complete the Waste Screening Report which will be submitted to the Facility Manager for appropriate disposition. The driver will be asked to sign the Report before leaving the Facility.
7. After conclusion of screening, acceptable waste will be charged to the pit by the front end loader and the hauler will leave the Facility.
8. In cases where potentially dangerous materials are found and considered to present a possible immediate threat (such as explosives or large quantities of infectious materials), no attempt will be made by facility personnel to move these materials. The material will be left in place and that portion of the tipping floor or tipping bay roped off. Personnel and traffic will be prevented from operating in that section of the plant. Danger signs and warnings will be posted. No attempt will be made to open suspect waste containers. The Company will notify appropriate government agencies, including the local Fire and Rescue Department and/or Police Department, for dispatch to the Facility.

WHEELABRATOR NORTH BROWARD

ATTACHMENT "B"

- Page 4 of 4 -

WASTE SCREENING REPORT

Waste Hauler: _____ Date: _____ Time: _____

Truck Permit #: _____ Scale Ticket #: _____

Driver's Signature: _____

Screening Location { } On Board Truck { } On Tipping Floor { } In Pit

A. Waste Description Acceptable Waste (Do Not Complete Parts B, C, D)

Primary Composition Based on Appearance

{ } Residential

{ } Commercial

{ } Other (Provide Description Below)

B. Unacceptable Waste

{ } Explosives

{ } Sealed Drums

{ } Liquid Wastes

{ } Pressurized Containers

{ } Demolition Debris

{ } Tar or Asphalt

{ } Biohazardous

{ } Hazardous or Suspected Hazardous

(Complete Part C below)

{ } Large Bulky Objects

{ } Other (Provide description, documentation with photos if appropriate)

{ } White goods, materials containing chlorofluorocarbons

C. Hazardous or Suspected Hazards (DO NOT MOVE ANY SUSPECT WASTES! CALL PLANT MANAGER AT ONCE! Complete all items below:

{ } Identifying Marks (specify) _____

{ } Number/Quantity of items _____

{ } Description of Materials (Document with photos if appropriate) _____

D. Disposition of Unacceptable Waste (Removal Date: _____)

{ } Returned to vehicle

{ } Isolated and monitored for removal by hauler

{ } Other (describe) _____

E. Inspector: Name: _____ Date: _____

Signature _____

Shift Supervisor _____

File No _____

es#4/wsz/ocr

PROCEDURES FOR SCREENING AND HANDLING OF
UNACCEPTABLE WASTE AT TRANSFER STATIONS

Although not currently set up for use by the NBRRE, if transfer stations are used by the Facility in the future, any materials arriving at the transfer stations that is identified as unacceptable waste will be handled in the following manner.

1. Should the load arriving at the scale house be deemed unacceptable waste, the load will be rejected by the transfer station (TS) employees operating the scale house at the transfer station.
2. Should such a load or part of a load reach the tipping floor and be suspected as containing unacceptable waste, that load will be rejected by the TS personnel on duty. At which time, the lead man in control of the floor will notify the office that such a material is present on the floor and has been rejected and is being reloaded onto the carrier's truck. The office will then notify the scale house the load is being rejected and the carrier is returning to the scale with the load. It will be the responsibility of the carrier to dispose of the load according to applicable County, State, and Federal regulations.
3. Should the material be dumped and go unnoticed at the time of the off-loading - such as in a mixed load of compacted waste - the operators will attempt to identify the waste by continuously scanning the waste for any contaminated product. This is an ongoing practice that is in place at all times for the purpose of spotting any materials that will either damage the equipment or be in any way a contaminant.
4. If, in the course of the day-to-day operation, such material is identified by the operators on duty, they will immediately notify the office. The office will in turn notify the TS personnel operating the scale house. The material in question will be segregated and - wherever possible - the carrier that has dumped the material will be identified and then contacted to remove the material in accordance with applicable regulations.
5. If it is impossible to identify the carrier, the TS will keep a record of the time, place, and type of material identified and the material will be removed by a licensed carrier and disposed of in accordance with the applicable regulations.

VIII. RECORDS RETENTION

All records will be maintained on file for a minimum of seven years. This to include but is not limited to:

- (A) Load Inspection
- (B) Radiation Reports
- (C) Personnel Training Records

CONTACT PERSONNEL

A. INTERNAL

	<u>Name and Title</u>	<u>Office Phone</u>	<u>Home Phone</u>
1.	Paul Claerbout Plant Manager	305/971-8701	305/345-5512
2.	Eric Selya Environmental Health and Safety Director	305/971-8701	305/344-0132
3.	Paul Grego Operations Manager	305/971-8701	305/753-9327

B. REGULATORY AGENCIES

1. National Response Center 1-800-424-8802 (24 hours)
2. FDER - West Palm Beach 407-433-2650
Emergency Response Department - Jeff Tobergte
3. Broward County Office of Natural Resource Protection
305-765-4900
4. South Florida Water Management District
Enforcement/Right-of-Way Department
Broward Field Office - Rusty Huckabee 305-434-1100

C. CLEAN-UP CONTRACTORS

Chemical Waste Management 2700 N.W. 48th Street Pompano Beach, FL. 33073	305-973-6666
--	--------------

D. LOCAL AUTHORITIES

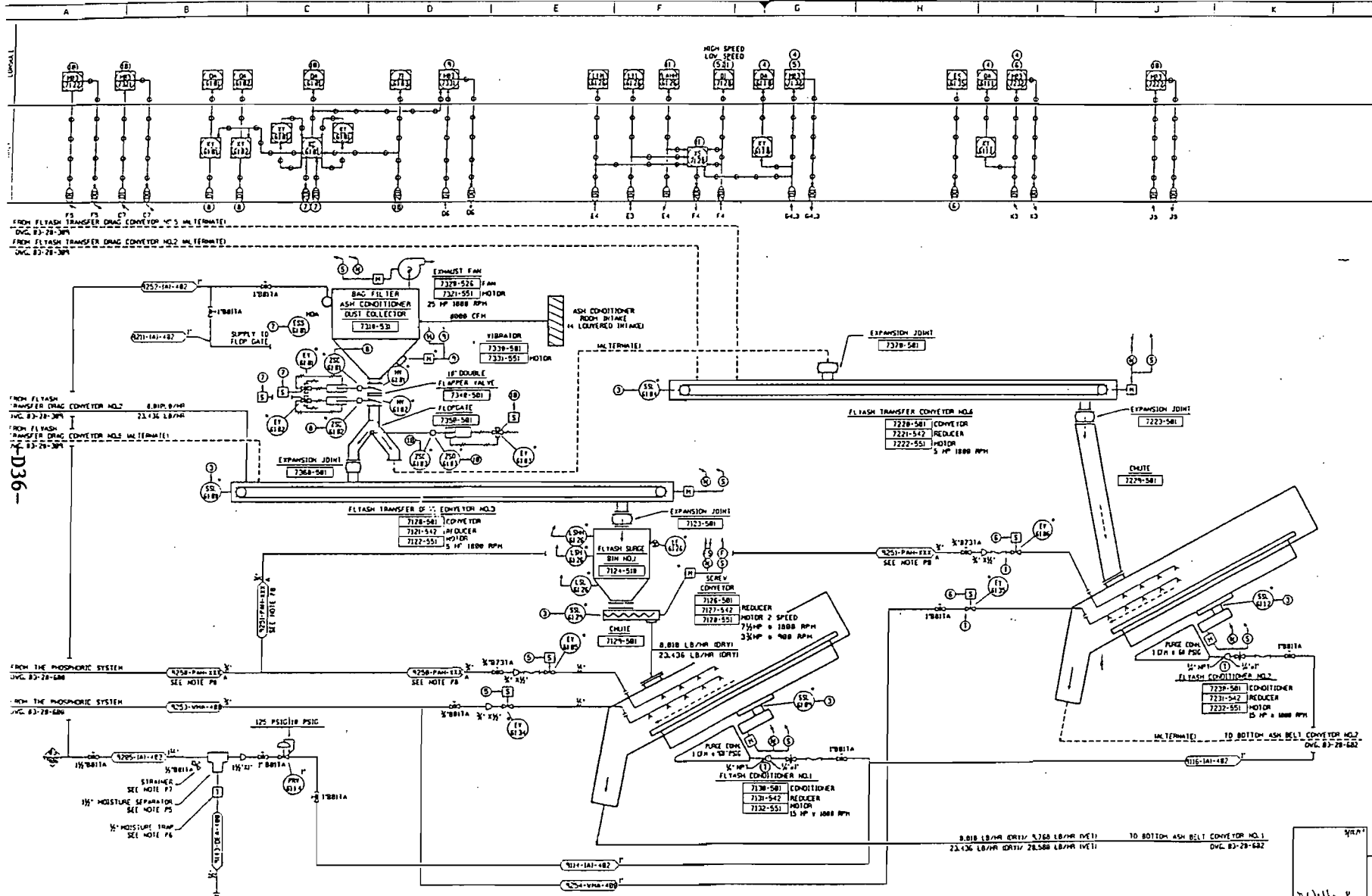
1. Police (Pompano Beach) 305-786-4200
2. Fire (Pompano Beach) 305-786-4510
3. North Broward Regional
Wastewater Treatment Plant 305-357-7585
4. North Broward Medical Center 305-786-6400
5. Broward County Department of Health
and Rehabilitative Services 305-467-4298
6. Emergency 911

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT B

ASH HANDLING SYSTEM



PROCESS CONTROL NOTES:

- ALL INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY AN AREA #3 UNLESS OTHERWISE NOTED.
- # DENOTES YENDOR FURNISHED INSTRUMENTS.
- CONVEYERS ARE STARTED & STOPPED IN SEQUENCE. ZERO SPEED SWITCHES STOP ALL SYSTEM CONVEYERS.
- ASH CONDITIONERS MOD-7132 AND MOD-7132 ARE INTERLOCKED WITH ASSOCIATED BELT CONVEYER MOD-7222 MOD-7232. CONDITIONER RUNNING AND BELT CONVEYER NOT RUNNING SHALL ACTIVATE AN ALARM AND DISPLAY THE EXPIRED TIME WARNING. FLASH SYSTEM WILL SHUT DOWN IN 10MC. RE-ARM AFTER 5 MINUTES AND STOP CONDITIONER AFTER 10 MINUTES MOD-04-618 AND #3-04-8111.
- EF-6185 IS ENERGIZED TO OPEN WHEN MOD-7128 IS RUNNING. EF-6184 IS ENERGIZED WHEN MOD-7128 IS RUNNING ON HIGH SPEED. SEE NOTE L7.
- EF-6184 IS ENERGIZED TO OPEN WHEN MOD-7232 FLASH CONDITIONER HOLS IS RUNNING. EF-6183 IS CONTROLLED FROM BOX #5-4204.
- EF-6184 CONTROLS OPENING AND CLOSING OF FLAPPER VALVES. GIBS 6181 & 6180 FOR SEQUENCE OPERATION. SEE LOGIC DIAGRAM #3-26-115.
- LIMIT SWITCHES ARE MONITORED TO VERIFY THAT FLAPPER VALVES ARE CYCLING. PROPERLY FAILURE TO CYCLE ACTIVATES ALARM. SEE LOGIC DIAGRAM #3-26-115.
- VIBRATOR OPERATES ONLT WHEN TOP FLAPPER VALVE #4-6181 IS OPEN.
- FLASH DRAG CONVEYER HOLS OR HOLS MUST BE RUNNING & FLY GATE #3-7234 MUST BE IN CORRECT POSITION BEFORE FLAPPER VALVES #4-6181 & #4-6182 VALV SEQUENCE.
- LSL-6126 STOPS MOD-7128 WHEN LOW AND RANG ON LOW SPEED WHEN LOW TIME DELAYED STARTS. LSH-6125 RANG MOD-7128 ON HIGH SPEED WHEN HIGH AND ON LOW SPEED WHEN HIGH TIME DELAYED. LSH-6126 ALARMS WHEN HIGH/LOW.

PIPING NOTES:

- FL FLOWMETERS SHOWN ABOVE LINE REPRESENT AVERAGE NORMAL FLOW WHEN FIRING 5200 BTU/LB REFUSE. FLOWMETERS SHOWN BELOW LINE ARE DESIGN MAX FLOWS AND INCLUDE ADJUSTMENTS FOR REFUSE HEATING VALUE VARIATION.
- STRAINER TO BE 1/2" SPIRAL-SARDED TYPE. C1. CAST STEEL WITH SCD ENDS. 20 DB 85 SCREEN WITH 8.32 OPENINGS OR EQUAL.
- LUBRICATOR TO BE 1/2" AND HEAVY DUTY SERIES. MODEL 2634-B16 WITH METAL BOWL OR EQUAL.
- LUBRICATOR TO BE 1/2" AND HEAVY DUTY SERIES. MODEL 2634-B16 WITH METAL BOWL OR EQUAL.
- MOISTURE TRAP TO BE 1/2" SPIRAL-SARDED TYPE. C1. CAST IRON SEPARATOR WITH SCD END AND 1/2" NPT DRAIN CONNECTION OR EQUAL.
- MOISTURE TRAP TO BE 1/2" SPIRAL-SARDED C-508 WITH SCD FROM BODY AND COVER AND THREADED INLET AND DISCHARGE CONNECTIONS OR EQUAL.
- STRAINER TO BE 1/2" SPIRAL-SARDED TYPE. C1. CAST STEEL WITH SCD ENDS. 20 MESH SS SCREEN WITH 8.32 OPENINGS OR EQUAL.
- PA XXX DENOTES 3/4" AC SOCKET-WELDED PVC PIPE.

RELEASED FOR CONSTRUCTION BY [Signature] DATE 10-1-82

WHEELABRATOR ENVIRONMENTAL SYSTEMS INC. Denver, Colorado

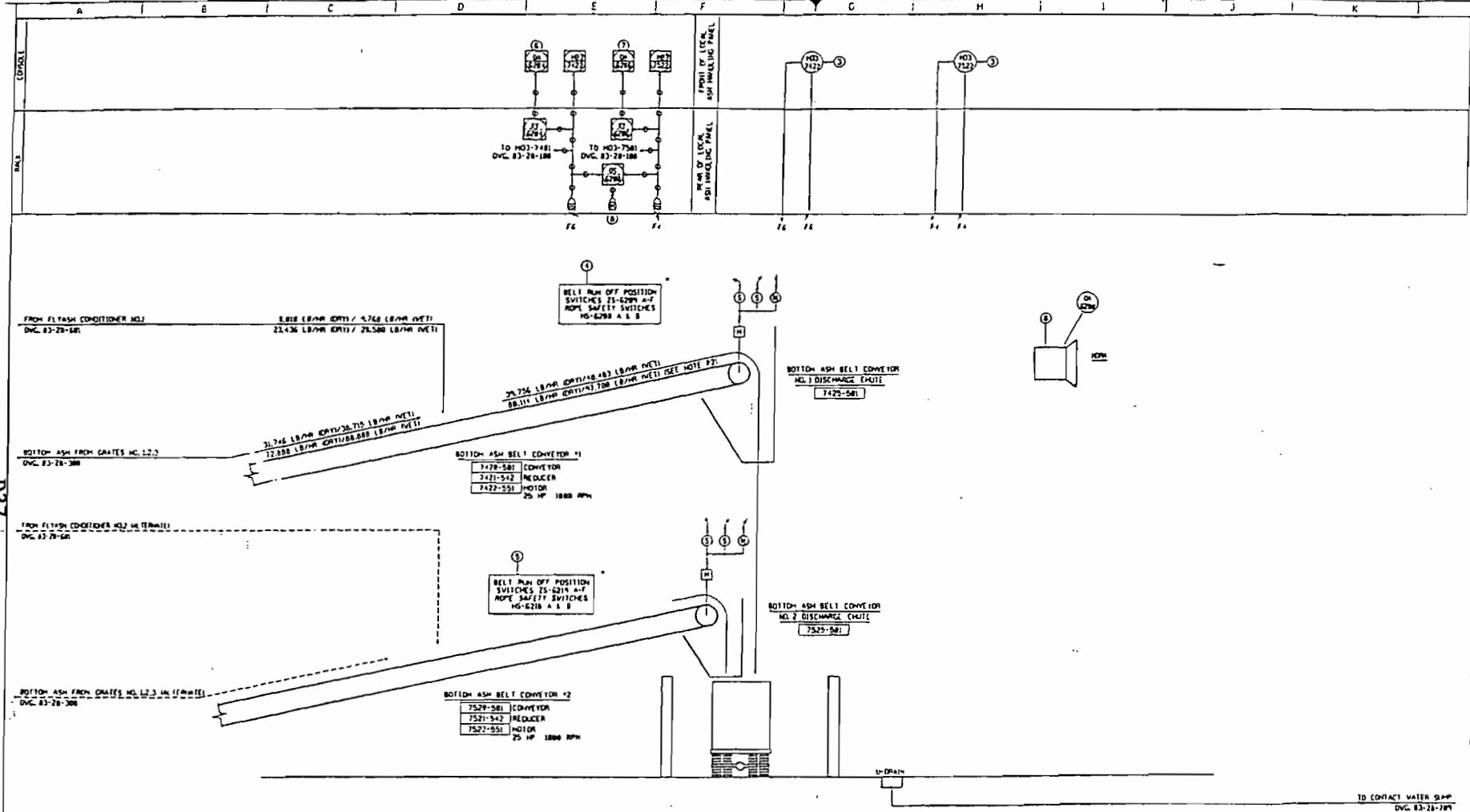
RUJST
Contract # 21-3457

FLYASH HANDLING SYSTEM P&ID DIAGRAM
FLASH CONDITIONERS
NORTH BROWARD RESOURCE RECOVERY FACILITY

INSTRUMENT NUMBERS 6180-6195
LAST NUMBER USED 6125

03-28-601

D36-



PROCESS CONTROL NOTES

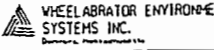
- ① ALL INSTRUMENT NUMBERS ON THIS SHEET ARE IDENTIFIED BY 83 AREA DESIGN UNLESS OTHERWISE NOTED.
- ② = DEVICES VENDOR FURNISHED INSTRUMENT
- ③ BELT CONVEYOR STOPS ON ZERO SPEED SWITCH SIGNAL.
- ④ BOTTOM ASH BELT CONVEYOR NO. 1 STOP ON OPEN RUN OFF OR ROPE SAFETY SWITCH MOTOR ELEMENTARY M83-7422. SEE DRAWING 83-28-581L.
- ⑤ BOTTOM ASH BELT CONVEYOR NO. 2 STOP ON OPEN RUN OFF OR ROPE SAFETY SWITCH MOTOR ELEMENTARY M83-7522. SEE DRAWING 83-28-581L.
- ⑥ BELT CONVEYOR #1 NOT RUNNING FOR 10 SECS. SMALL ACTIVATE AN ALARM (M83-7422. USE DRAWING 83-28-581L).
- ⑦ BELT CONVEYOR #2 NOT RUNNING FOR 10 SECS. SMALL ACTIVATE AN ALARM (M83-7522. USE DRAWING 83-28-581L).
- ⑧ LOW ON-CYCLE SIGNALS IN SECTIONS BEFORE CONVEYOR M83-7422 OR M83-7522 SIGNAL.

PIPING NOTES:

- P1 FLOW RATES SHOWN ABOVE LINE REPRESENT AVERAGE ASH FLOW AND FIRING LOW BLOW REFUSE FLOW RATES SHOWN BELOW LINE ARE DESIGN PEAK FLOWS AND INCLUDE ADJUSTMENTS FOR REFUSE HEATING VARIATION.
- P2 MAXIMUM BOTTOM ASH AND MAXIMUM FLYASH DO NOT OCCUR AT THE SAME TIME AND ARE NOT ADDITIVE. MAXIMUM EXHAUSTED ASH FLOW OCCURS WITH ZERO BLOW REFUSE FLOW. FUTURE 4" IN BLOWER IS.

-D37-

RELEASED FOR CONSTRUCTION
 BY *[Signature]* DATE *2-2-67*

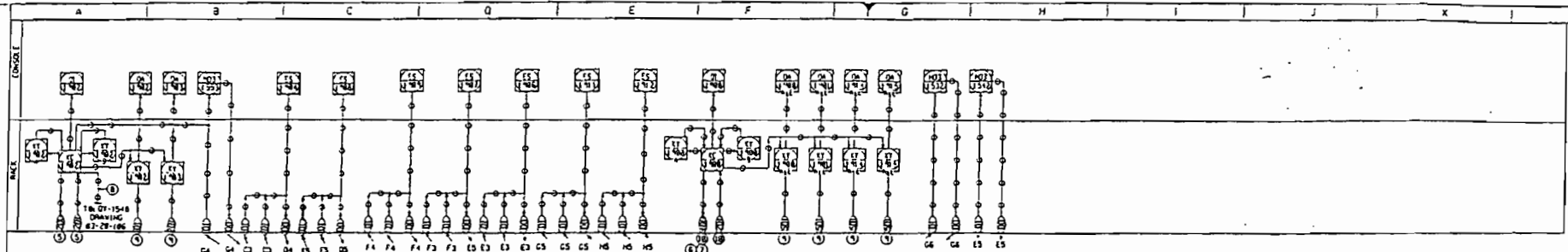


RUST
 CONSULTANTS

ASH HANDLING SYSTEM
 P & I DIAGRAM
 ASH HANDLING BUILDING
 NORTH BROWARD
 RESOURCE RECOVERY FACILITY

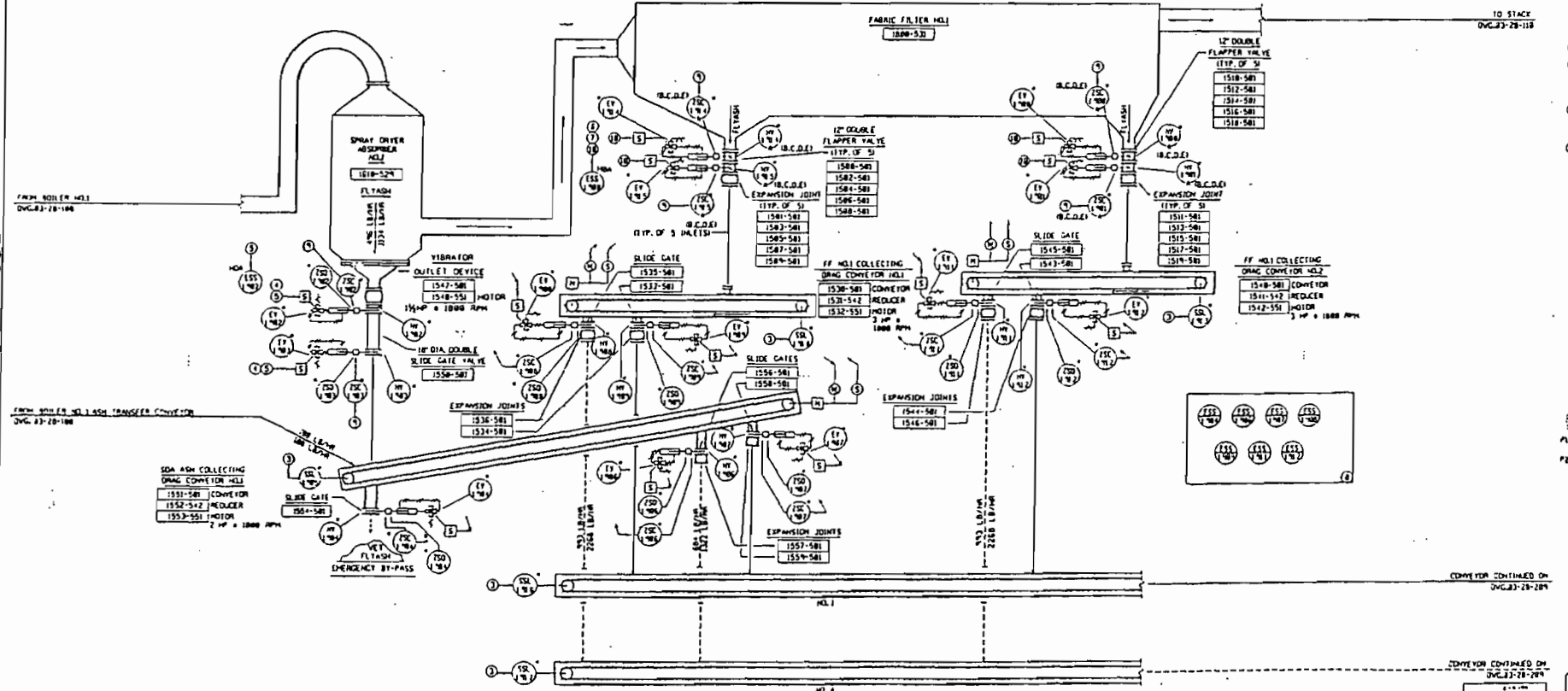
CONTRACT NO. 21-3457
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NO.	DATE	BY	DESCRIPTION
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3	1-11-67	W. J. [Signature]	ISSUED FOR CONSTRUCTION
4	1-11-67	W. J. [Signature]	ISSUED FOR CONSTRUCTION
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7	1-11-67	W. J. [Signature]	ISSUED FOR CONSTRUCTION
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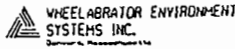
- ① ALL INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY AREA #3 UNLESS OTHERWISE NOTED.
- ② * DENOTES VENDOR FURNISHED INSTRUMENTATION.
- ③ CONVEYORS ARE STARTED AND STOPPED IN SEQUENCE. ZERO SPEED SWITCHES STOP ALL UP STREAM CONVEYORS.
- ④ SPRAY DRYER ABSORBER FLYASH COLLECTING CONVEYOR MUST BE RUNNING FOR SLIDE GATES #11902 & #11910 TO OPERATE. IF ZERO SPEED SWITCHES STOP CONVEYOR, SLIDE GATES #11902 & #11910 MUST BE CLOSED. FLYASH COLLECTION IS STOPPED AND ALARM SOUNDS.
- ⑤ #C-11902 CONTROLS OPENING AND CLOSING OF FLYASH LOOP #11902 & #11910 FOR SEQUENCE OF OPERATION. SEE LOGIC DIAGRAM #3-26-119.
- ⑥ FABRIC FILTER #1 FLYASH COLLECTING CONVEYOR #102 MUST BE RUNNING AND EITHER #11910 OR #11912 MUST BE OPEN BEFORE FLAPPER VALVES #11904 AND #11915 WILL OPEN.
- ⑦ FABRIC FILTER #1 FLYASH COLLECTING CONVEYOR #102 MUST BE RUNNING AND EITHER #11910 OR #11912 MUST BE OPEN BEFORE FLAPPER VALVES #11904 AND #11915 WILL OPEN.
- ⑧ LOCAL SWITCHES FOR SLIDE GATE OPERATION.
- ⑨ LIMIT SWITCHES ARE INSTALLED TO VERIFY THAT FLAPPER VALVES OR SLIDE GATES ARE CYCLING PROPERLY. FAILURE TO CYCLE ACTIVATES ALARM. SEE LOGIC DIAGRAM #3-26-119 AND #3-26-119.
- ⑩ #C-11902 CONTROLS OPENING AND CLOSING OF FLAPPER VALVES LOOPS #11904, #11910 & #11912 FOR SEQUENCE OF OPERATION. SEE LOGIC DIAGRAM #3-26-119.
- ⑪ SOA BIN ACTIVATOR SWITCH #15418 IS ENERGIZED WHILE SLIDE GATE #11902 IS OPEN. SEE DWG #3-28-119.



PIPING NOTES:

FOR GENERAL NOTES AND LEGEND SEE DWG #3-28-119.
 PIPING LINES SHOWN ABOVE LINE REPRESENT AVERAGE NORMAL FLOW WHEN FIRING #508. BELOW REFUSE FLOW RATES SHOWN BELOW LINE ARE DESIGN PEAK FLOWS AND INCLUDE ADJUSTMENTS FOR REFUSE HEATING VALUE VARIATION. FLYASH COLLECTING CONTAINS 25% FREE MOISTURE.

RELEASED FOR CONSTRUCTION
 BY *[Signature]* DATE 02-03-93



FLASH TRANSFER DRAG CONVEYOR #1	
CONVEYOR 7188-581	7298-581 CONVEYOR
REDUCER 7181-542	7281-542 REDUCER
MOTOR 7182-551	7282-551 MOTOR
5 HP @ 1800 RPM	

SCALE: PIPING INSTRUMENT DATE

DATE	BY	REVISION
02/03/93	[Signature]	1

BOILER NO.1
 P & I DIAGRAM
 FLYASH HANDLING SYSTEM
 NORTH BROWARD
 RESOURCE RECOVERY FACILITY

CONTRACT NO. 21-3452
 DRAWING NO. 03-28-109

INSTRUMENT NUMBERS 1900-1999 LAST NUMBER USED NUMBERS NOT USED

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT B1

FERROUS RECOVERY SYSTEM_

Best Available Copy



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NORTH BROWARD MAGNET & CONVEYOR ASSEMBLY FOR WHEELABATOR

LOCATION: TAMPA

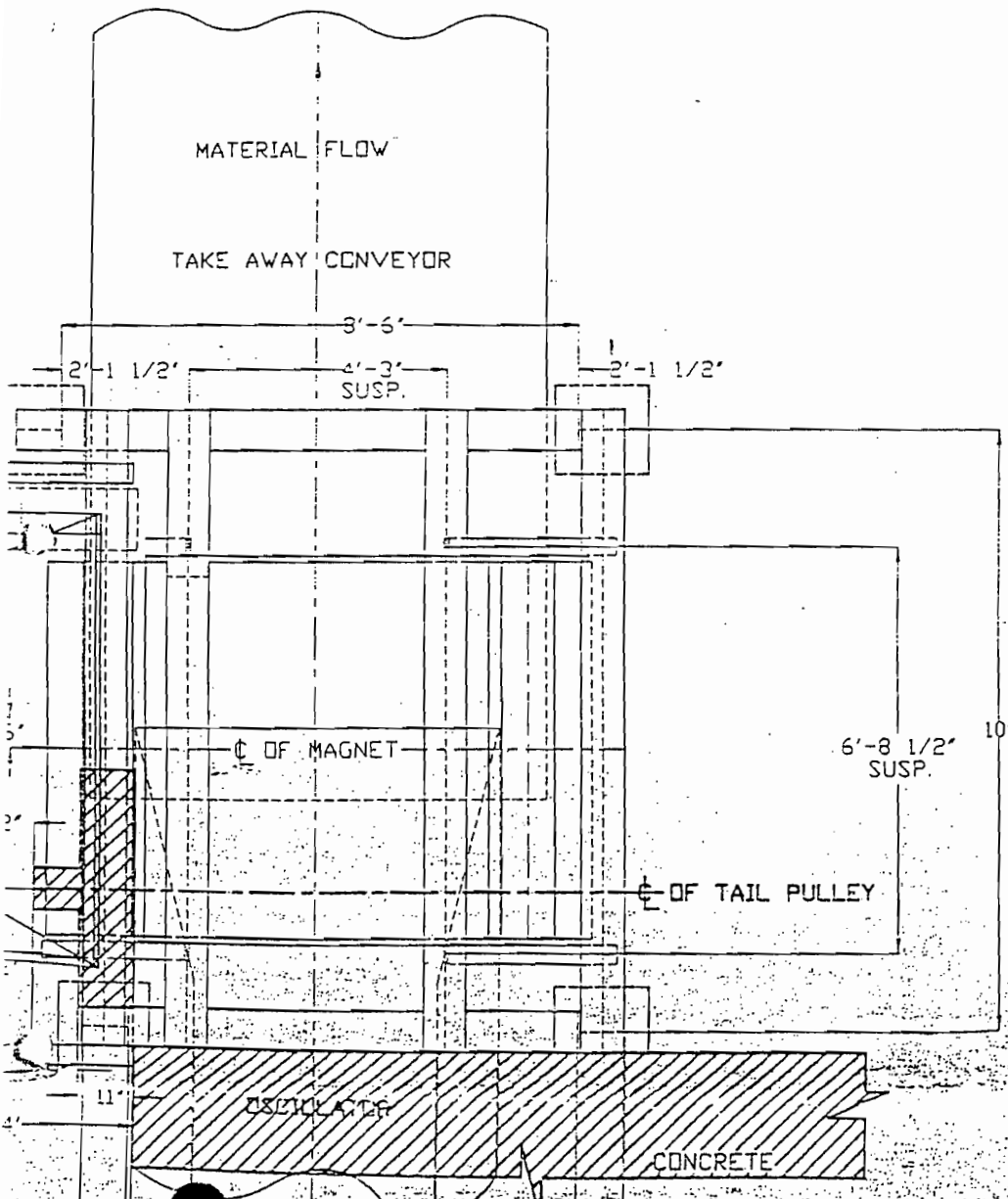
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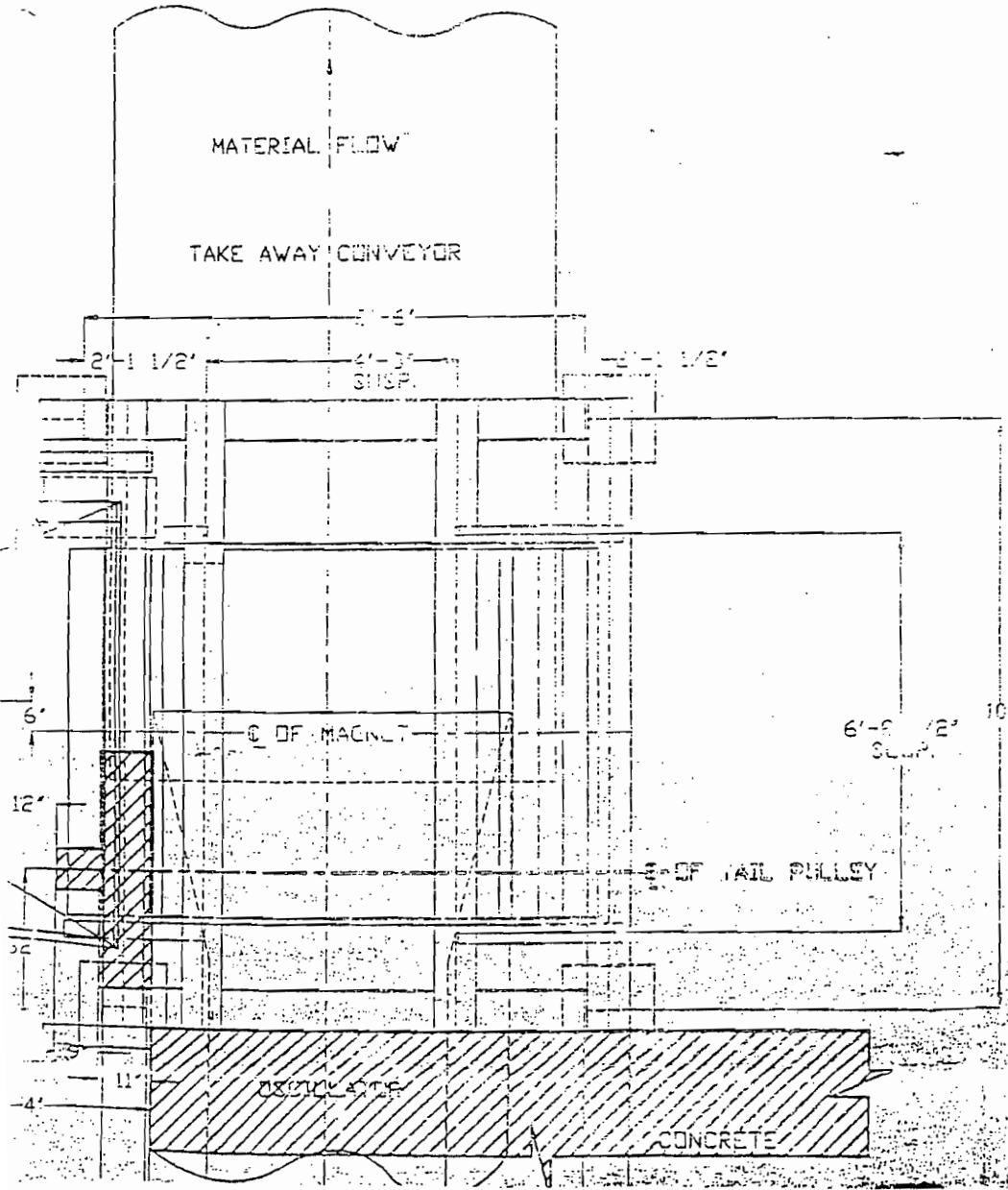
REV. #:


SCALE: 1/2"=1' DEPT:



-D41-

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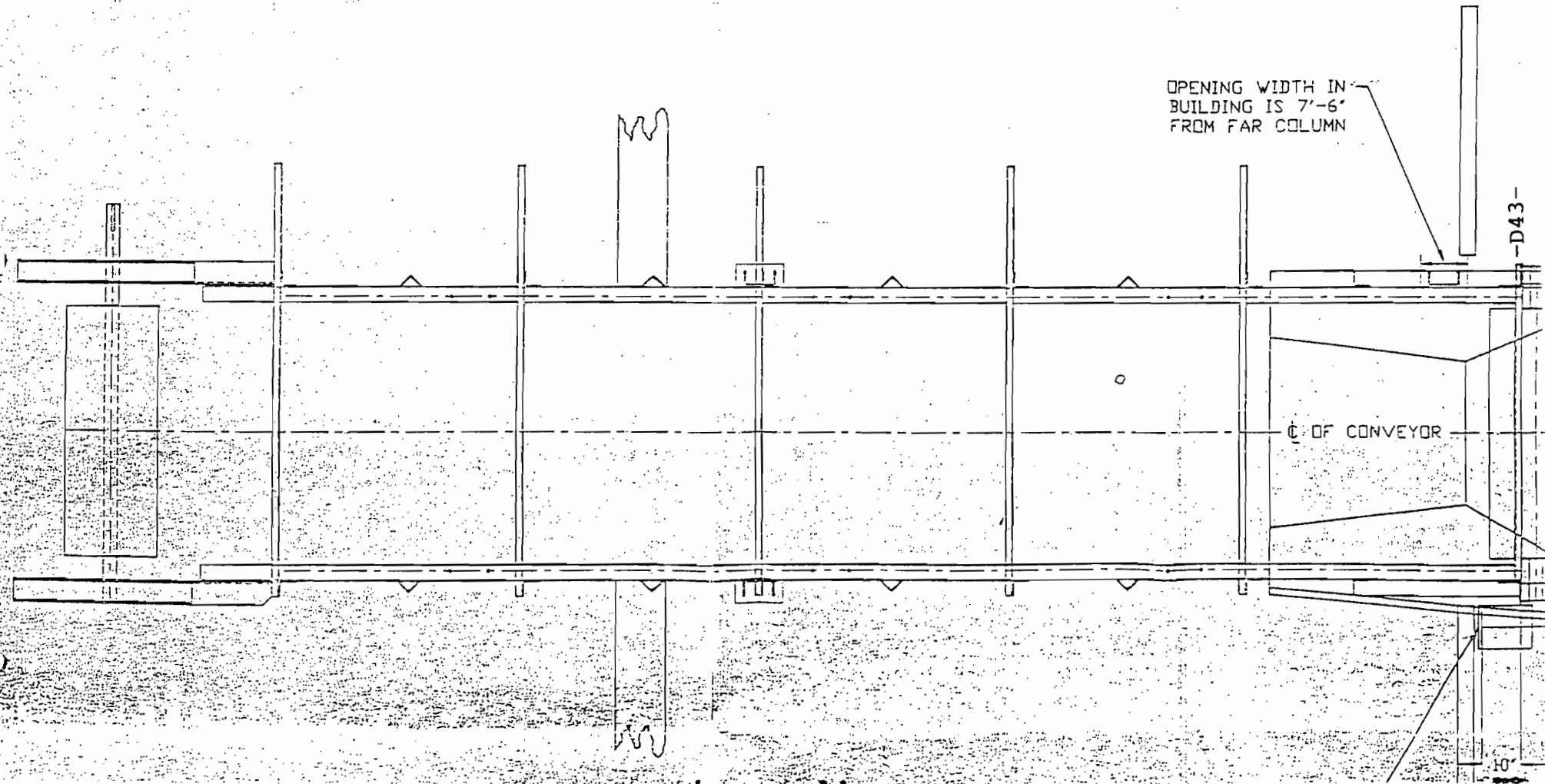
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NORTH BROWARD MAGNET & CONVEYOR ASSEMBLY FOR WHEELABATOR

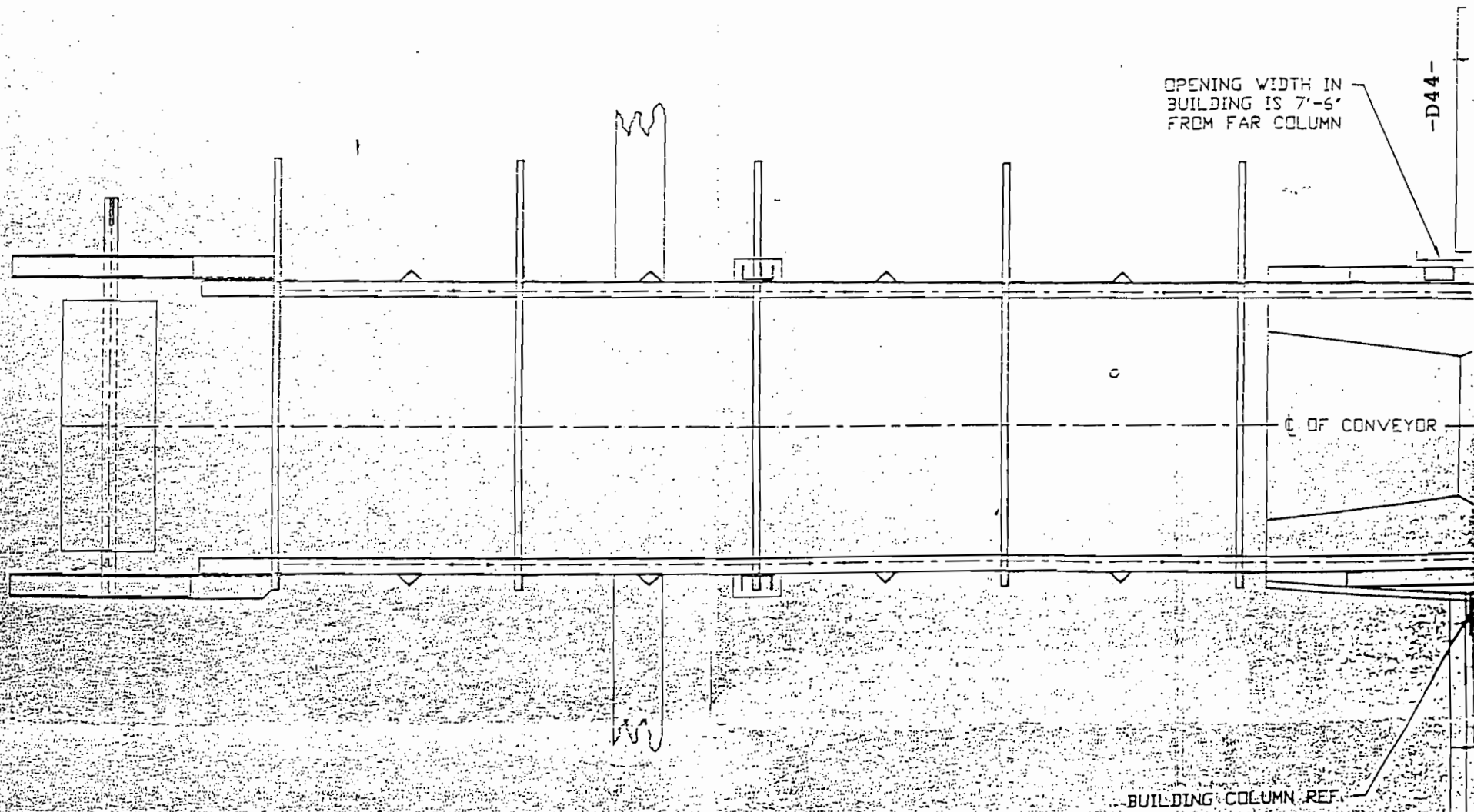
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WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT C

QUALITY ASSURANCE PLAN (QAP)

April 6, 1994

Certified Mail #P 092 622 518

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL. 32399-2400
Attn: Sylvia Labie, Administrator
Quality Assurance Section

Dear Ms. Labie:

Wheelabrator North Broward (WNB) respectfully submits a Statement of Intent to comply with the Department of Environmental Protection Standard Operating Procedures (SOPs) for Sample Collection Activities. It is anticipated that when the Statement of Intent is approved, it will become WNB Comprehensive Quality Assurance Plan (Comp QAP), and replace the Comp QAP initially submitted with the facility ash residue management plan.

WNB will implement these quality assurance (QA) procedures for the ash sampling required pursuant to FAC 17-702.570(2) for solid waste combustor ash, which is disposed of in the landfill and 17-702.600(1) for ash residue which is processed into an ash reuse product. The sampling of ash and processed ash for reuse will be performed in accordance with the Department's "Quality Assurance Standard Operating Procedures Manual for Sampling of Ash Residue from Solid Waste Combustors". The sampling frequency of the reused ash product is outlined in the attached Standard Operating Procedure for Performance Standards and Operational Criteria for the North Broward Resource Recovery Facility Ash Reuse Processing Facility.

Based on the above requirements, WNB wishes to have ash sampling and ash reuse product sampling activities covered by this Statement of Intent. Sampling will be performed by WNB personnel or personnel from a laboratory with an approved QAP on file with the State. Analyses of these samples will be conducted by an outside laboratory that has an approved Comp QAP. Field instrumentation requiring calibration procedures (SOP Section 7.0), maintenance procedures (SOP Section 8.0), and reagent and calibration standard storage (SOP Section 4.4.4), are not used for these activities.

Please do not hesitate to call me if you have any questions regarding the submittal.

Sincerely,



Paul F. Claerbout
Plant Manager

cc: E. Selya WNB
C. Faller WNB
F. Ferraro Hampton
J. Lurix FDEP S.E.

Q.A. CERTIFICATION

Part II: CERTIFICATION

I, the undersigned, PAUL F. CLAERBOUT (name)
PLANT MANAGER (title) NORTH BROWARD RESOURCE RECOVERY
FACILITY (organization), and ERIC SELYA
ENVIRONMENTAL HEALTH AND SAFETY DIRECTOR (title)
NORTH BROWARD RESOURCE RECOVERY FACILITY (organization), hereby certify that they have

obtained copies of all documents pertinent to the protocols that they have identified on the document titled "Standard Operating Procedures to be Incorporated into Comprehensive QA Plans" and that these documents shall be incorporated by reference into the Comprehensive Quality Assurance Plan attached hereto or identified herein. They further certify that the organization of which they are officials or officers as identified herein has the instrumentation and/or equipment and capability to perform the protocols specified by these documents and that they will be responsible for the implementation of said protocols when performing the specified activity. They certify that the officials and employees of the organization identified herein are committed to generating data of a known and verifiable quality. They further certify that they understand that final approval of the Comprehensive Quality Assurance Plan attached hereto or identified herein is contingent upon satisfying the Department's review requirements.

They further certify that the information, statements, facts and representations given and made above are true and correct to the best of their knowledge and belief, and that they are aware that any misrepresentations or falsifications constitute grounds for rejection of approval of the Comprehensive QA Plan attached hereto or identified herein, and that anyone who knowingly makes a false statement in writing with the intent to mislead a public servant in the performance of his official duty shall be guilty of a misdemeanor, of the second degree in violation of Section 837.06, Florida Statutes.

4/6/94
DATE

Paul F. Claerbout
(print name PAUL F. CLAERBOUT)
(Title: PLANT MANAGER)
(Organization NORTH BROWARD RRF)

4/6/94
DATE

Eric Selya
(print name(s) ERIC SELYA, EH&SD AND QUALITY ASSURANCE OFFICER)
Quality Assurance Officer(s)
(Organization NORTH BROWARD RRF)

Part I: STANDARD OPERATING PROCEDURES TO BE INCORPORATED INTO COMPREHENSIVE QA PLANS, cont.

Preservatives are:

- Provided by the laboratory in separate containers
- Provided by the laboratory already premeasured into the containers
- Provided by the field consultant

Field-Related Activities:

- Sample Dispatch (4.4.3)
- Reagent and Standard Storage (4.4.4)
- Field Waste Disposal (4.4.5)

SAMPLE CUSTODY AND DOCUMENTATION (Chapter 5):

- General Requirements (5.1)
- Preparation of Field-Sampling Supplies (5.2)
- Custody and Documentation for Field Operations (5.3)
- Custody and Documentation for Laboratory Operations (5.4)
- Electronic Data Documentation (5.5)
- Legal or Evidentiary Custody (5.6)

ANALYTICAL PROCEDURES (Chapter 6):

- Laboratory Glassware Cleaning and Storage Protocols (6.1)
- Laboratory Reagent Storage (6.2)
- Laboratory Waste Disposal (6.3)

CALIBRATION PROCEDURES AND FREQUENCY (Chapter 7):

- General Requirements and Documentation (7.1, 7.2, 7.8 and 7.9)
- Standard Receipt and Traceability (Sec. 7.3)
- Frequency of Standard Preparation and Standard Storage (Sec. 7.4)

Field:

- General Requirements (7.5.1)
- pH (7.5.2)
- Temperature (7.5.3)
- Dissolved Oxygen (7.5.4)
- Automatic Wastewater-type Samplers (7.5.8)
- Specific Conductance (7.5.5)
- Chlorine Measurements (7.5.6)
- OVAs (7.5.7)

Laboratory:

- Laboratory Instruments (7.6)
- Support Equipment Calibration (7.7)

PREVENTATIVE MAINTENANCE (Chapter 8.0)

QUALITY CONTROL REQUIREMENTS AND ROUTINES TO CALCULATE AND ASSESS PRECISION, ACCURACY AND METHOD

DETECTION LIMITS (Chapter 9):

- Documentation (9.4)

Field Quality Control Requirements:

- Minimum Field Quality Control Requirements (9.1.1)

Laboratory Quality Control Requirements:

- Chemical Analysis (9.1.2.1)
- Microbiological Analysis (9.1.2.2)
- Formulae for Calculating and Assessing Precision and Accuracy (9.2)
- Formulae for Calculating Method Detection Limits (9.3)
- Toxicity (Bioassay) Tests (9.1.2.3)
- Macrobenthic Species Identification (9.1.2.4)

DATA REDUCTION, VALIDATION AND REPORTING (Chapter 10)

CORRECTIVE ACTION (Chapter 11)

PERFORMANCE AND SYSTEMS AUDITS (Chapter 12)

QUALITY ASSURANCE REPORTS (Chapter 13)

**STATEMENT OF INTENT TO COMPLY WITH
THE DEPARTMENT OF ENVIRONMENTAL REGULATION
STANDARD OPERATING PROCEDURES FOR LABORATORY OPERATIONS AND
SAMPLE COLLECTION ACTIVITIES**

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
Quality Assurance Section

Part I: STANDARD OPERATING PROCEDURES TO BE INCORPORATED INTO COMPREHENSIVE QA PLANS

Name of Organization:

NORTH BROWARD RESOURCE RECOVERY FACILITY

Address:

2600 N.W. 48TH STREET POMPANO BEACH, FL. 33073

Comprehensive QA Plan Number:

Check the specific protocols that your organization will be using while collecting and/or analyzing environmental samples. NOTE: check only documents and protocols as listed in the "DER Standard Operating Procedures for Laboratory Operations and Sample Collection Activities" (DER-QA-001/92) dated September 30, 1992 for which your organization has current equipment capabilities.

THIS FORM MUST BE ACCOMPANIED BY THE SUPPORTING DOCUMENTATION SPECIFIED IN DER-QA-001/92

ORGANIZATION AND RESPONSIBILITY (Chapter 3)

FIELD ACTIVITIES (Chapter 4):

Field Decontamination and Cleaning Protocols:

Container Cleaning protocols (4.4.1):

Sample containers cleaned by organization

Sample containers obtained precleaned from commercial vendor

Sample containers obtained precleaned from laboratory with an approved Comprehensive QA Plan

General Considerations and Reagents (4.1.1 through 4.1.3)

Sampling Equipment (4.1.4)

Pumps used only for Purging (4.1.8.1 and 4.1.8.2)

Automatic Samplers (4.1.5)

Pumps used for Purging and Sampling (4.1.8.1 and 4.1.8.2)

Field Filtration Equipment (4.1.6)

Non-Sampling Equipment (Augers, etc.) (4.1.9)

Teflon Tubing (4.1.7.1)

Analyte-Free Water Containers (4.1.10)

Non-teflon Tubing (4.1.7.2 through 4.1.7.5)

Ice Chests and Shipping Containers (4.1.11)

Field Meters, Flow Meters and Other Field Instruments including Lanyards, Well Sounders and Tapes (4.1.9)

Sampling Protocols:

General (4.0)

Aqueous Matrices:

General Concerns and Special Sample Handling Procedures (4.2.1 and 4.2.2)

Surface Water (4.2.3)

Drinking Water Supply System (4.2.8)

Wastewater (4.2.4)

Temporary Well Points (4.2.9)

Groundwater (4.2.5)

Air Stripper and Remedial Treatment Systems (4.2.10)

Wells with in-place Plumbing (4.2.6)

Bioassay (4.2.11)

Potable Well Sampling (4.2.7)

Solid Matrices:

General Concerns and Special Sample Handling Procedures (4.3.1 through 4.3.3)

Soil (4.3.4)

Domestic Waste Sludges (Residuals) (4.3.8)

Sediment (4.3.5)

Sludges - Solid and Hazardous Wastes (4.3.9)

Fish Tissue (4.3.6)

Liquid Hazardous Wastes (4.3.9)

Shellfish (4.3.7)

Macrobenthic Invertebrates (4.3.10)

Preservation, Holding Times and Containers Types:

Aqueous samples - 40 CFR Part 136, Table II (4.4.2)

SAMPLING OF ASH RESIDUE FROM SOLID WASTE COMBUSTORS

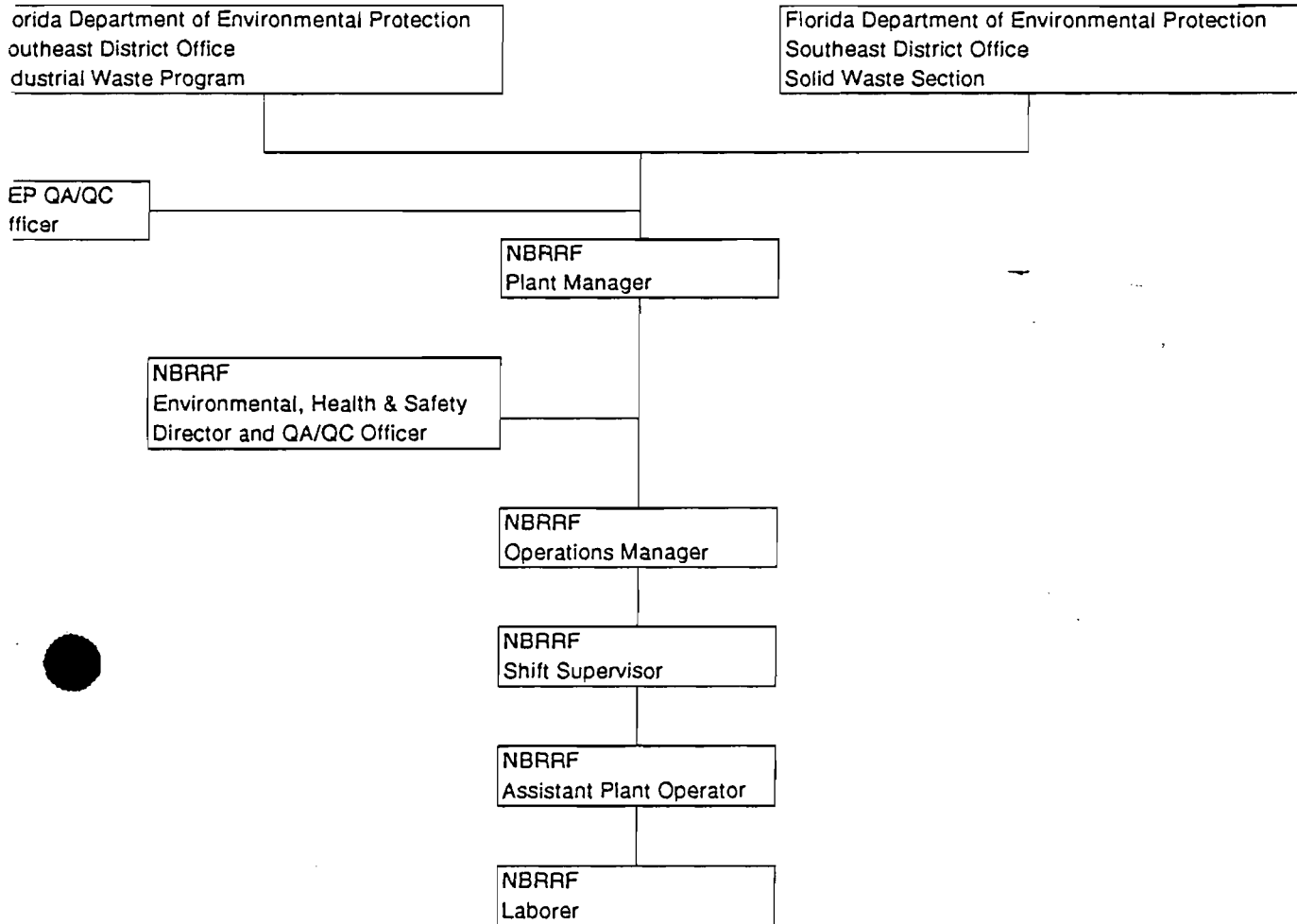
Aqueous samples - 17-160.700, F.A.C., Table 4 (4.4.2)

Aqueous samples - 17-160.700, F.A.C., Table 8 (4.4.2)

Solid samples - 17-160.700, F.A.C., Table 5 (4.4.2)

TABLE 1	
SAMPLING CAPABILITIES*	
PARAMETER GROUP	SAMPLE SOURCE
PRIORITY POLLUTANT METALS	1. LANDFILLED MUNICIPAL SOLID WASTE COMBUSTOR ASH 2. ASH DERIVED PRODUCTS

Since the North Broward Resource Recovery Facility does not plan to use field instrumentation to monitor combined bottom and fly ash analyze, QA objectives for field measurements parameters do not apply.



KEY PERSONNEL

NORTH BROWARD RESOURCE RECOVERY FACILITY (NBRRF)

COMPREHENSIVE QUALITY ASSURANCE PLAN

TABLE 2
SAMPLING EQUIPMENT, MATERIALS AND APPROPRIATE USE

EQUIPMENT TYPE	CONSTRUCTION	USE	PERMISSIBLE PARAMETER GROUPS
SOLID SAMPLING			
1. TROWEL, SCOOP, SPOON, SPATULA	STAINLESS STEEL, TEFLON	SAMPLING AND COMPOSITING	PRIORITY POLLUTANT METALS
2. SHOVEL	STAINLESS STEEL	SAMPLING	PRIORITY POLLUTANT METALS
3. MIXING TRAY	STAINLESS STEEL POLYETHYLENE/PVC	COMPOSITING OR HOMOGENIZING	PRIORITY POLLUTANT METALS
4. BLENDER/MIXER	STAINLESS STEEL POLYETHYLENE/PVC	COMPOSITING OR HOMOGENIZING	PRIORITY POLLUTANT METALS
MICELLANEOUS EQUIPMENT			
1. HARD HAT		PROTECTION/SAFETY	X
2. STEEL TOE FOOTWEAR		PROTECTION/SAFETY	X
3. DISPOSABLE GLOVES	LETEX	PROTECTION/SAFETY	X
4. BUCKETS	PVC, POLETHYLENE	DECONTAMINATION	PRIORITY POLLUTANT METALS
5. BRUSHES		DECONTAMINATION	PRIORITY POLLUTANT METALS
6. ALCONOX OR EQUIVALENT TRISODIUM PHOSPHATE SOAP		DECONTAMINATION	PRIORITY POLLUTANT METALS
7. BOUND FIELD BOOK		FIELD NOTES	PRIORITY POLLUTANT METALS
8. INDELIBLE PENS		FIELD NOTES	PRIORITY POLLUTANT METALS
9. ICE CHESTS		SAMPLE TRANSPORT	PRIORITY POLLUTANT METALS
10. WET ICE (BLUE ICE IS PHOGIBITED)		SAMPLE TRANSPORT	PRIORITY POLLUTANT METALS
11. DEIONIZED WATER	POLYETHYLENE, ON DEMAND AT GENERATING STATION	FINAL DECONTAMINATION RINSE	PRIORITY POLLUTANT METALS
12. NITRIC ACID	REAGENT GRADE	DECONTAMINATION RINSE	PRIORITY POLLUTANT METALS

Department of Environmental Protection

Quality Assurance Standard Operating Procedures Manual for Sampling of Ash Residue from Solid Waste Combustors



Solid Waste Section
December, 1993

Memorandum

Environmental Protection

TO: District Waste Program Administrators

FROM: Mary Jean Yon, Administrator
Solid Waste Section

DATE: March 1, 1994

SUBJECT: Ash Sampling SOP Manual

A question has arisen regarding the applicability of the Ash Sampling SOP Manual, dated December, 1993. The Manual refers to ash residue from "solid waste combusters," which are defined to include any incinerator which burns solid waste. However, the intent of the Manual was to address the routine ash testing requirements for waste-to-energy facilities for the purpose of compliance with Rule 17-702.570, F.A.C. The procedures set forth in the Manual may not be appropriate for other types of incinerators, including biomedical waste incinerators, and may not be sufficient to demonstrate compliance with State and Federal hazardous waste regulations. In addition, waste-to-energy facilities that have requested permission to recycle/reuse their ash should check with the Department to ensure that the sampling procedures listed in this manual are applicable to their situation.

Please attach a copy of this memorandum to each Ash SOP Manual you provide to the public. Future editions of the Manual will include this clarification in the Introduction.

QUALITY ASSURANCE
STANDARD OPERATING PROCEDURES MANUAL
FOR SAMPLING ASH RESIDUE
FROM SOLID WASTE COMBUSTORS

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I. INTRODUCTION

The Department of Environmental Protection has compiled the following document in order to establish comprehensive procedures which address the sampling of ash residue from solid waste combustors. Chapter 17-702.570(2), Florida Administrative Code (F.A.C.), requires that ash residue sampling and analysis be conducted in accordance with an approved Comprehensive Quality Assurance Plan (Comp QAP). In accordance with Rule 17-160.700(3), F.A.C., all sampling and analysis will be conducted in a manner consistent with Category 2C as specified in Table 3 of that rule. All parties conducting ash residue sampling should follow these Standard Operating Procedures. Subsequent analyses of collected samples must be performed by a laboratory which has an approved Comp QAP.

The intent of this document is to clarify Department regulations and requirements dealing with the sampling of solid waste combustor ash. These procedures have been developed in cooperation with the Bureau of Laboratories, Quality Assurance Section, and reflect the current rules governing solid waste combustor ash.

II. SAMPLING PROCEDURES

A. Ash Residue Sampling

Chapter 17-702.570(2), F.A.C. requires at least quarterly sampling for those priority pollutant metals listed in Table I.

B. Sampling Location

(1) A composite sample of the ash residue (combined fly ash, bottom ash and scrubber residue) shall be taken from the ash residue, either at the conveyance mechanism or in the ash load-out building. Grab samples shall be collected every 10 minutes for 4 consecutive hours during a single day each month. This specifically means that 6 samples shall be collected each hour with each individual sample weighing approximately 1 pound. At the end of the sampling day approximately 24 pounds of ash residue will have been collected. These monthly samples shall be composited and stored in a locked cabinet which is maintained at 4 degrees Centigrade. At the end of the sampling quarter (e.g. January-March) 3 composite samples, one composite sample for each month for that calendar quarter, will have been collected. The 3 monthly composite samples shall then be composited into 1 composite sample weighing approximately 2 pounds.

(2) If the fly ash and scrubber residue are not normally mixed with the bottom ash at the facility, then equal parts of fly ash and scrubber residue shall be collected in accordance with Section II.C. below and thoroughly mixed with the bottom ash prior to testing to obtain a representative sample.

C. Composite Ash Residue Sampling Procedure

The following composite and residue sampling procedures shall be used for collecting samples for the priority pollutant metals listed in Table I.

(1) At 10 minute intervals over the 4-hour sampling period, gather random sequential grab samples with a decontaminated stainless steel or plastic spoon, taking a cross section of the entire conveyance mechanism or the ash load-out building. The total amount sampled each 10 minutes should be approximately 1 pound.

(2) Place the samples into a stainless steel or glass tray until the sample has reached ambient air temperature. Place each sample into a clean plastic container and seal it with a screw top plastic lid. Store the samples in a locked cabinet at 4 degrees Centigrade.

(3) At the end of the sampling period, transfer the 24 samples into a clean stainless steel or glass tray for mixing.

(4) Thoroughly mix the daily composite ash residue sample with a large, precleaned, stainless steel or plastic spoon. To promote mixing, the stainless steel or plastic spoon should be slotted.

(5) Screen the mixed daily composite ash residue sample through a 3/8-inch stainless steel screen.

(6) Place \leq 3/8 inch ash residue into a clean mixer which is large enough to accommodate the daily composite ash sample.

(7) Remove $>$ 3/8 inch noncrushable ash residue from the sample (e.g. wheels, batteries, rebar, metal frames, etc.), weigh it and discard it. Record in a bound log the weight, type and approximate size of the discarded material.

(8) Pass $>$ 3/8 inch crushable ash residue through a crusher and then recombine crushed ash residue with \leq 3/8 inch ash residue in a mixer.

(9) Turn on the mixer for 10 minutes to assure thorough mixing of the composite sample. Remove the sample from the

mixer with stainless steel or plastic spoon and obtain a quarter of the total sample for the daily composite sample. The remaining 3/4 of the original sample may be discarded.

(10) Place the daily composite sample into a clean container and seal with a screw top plastic lid. Store this sample in a locked cabinet which is maintained at 4 degrees Centigrade. The third monthly composite sample of each sampling quarter (i.e. March, June, September and December) shall be analyzed separately from the quarterly composite sample for Mercury. The laboratory holding time for Mercury is 28 days.

(11) After 3 monthly composite samples are obtained, combine all three monthly composite samples in the mixer. Remove the sample after mixing for 10 minutes and divide it into four equal portions. Two of these portions may be discarded. Place each of the remaining two quarterly composite samples into separate clean containers and seal them with screw top plastic lids.

(12) Label containers for all composites as to location, date, samples and composite number.

(13) Ship one quarterly composite sample to the approved laboratory using the chain of custody form found in Figure I.

(14) Archive the other quarterly composite sample on-site in the locked refrigerated cabinet as a control and/or for future analyses for a maximum of 6 months, depending on the holding times for each analyte.

D. Cleaning Procedures

Equipment utilized to obtain samples must be decontaminated before every 4-hour sampling event.

(1) Wash equipment thoroughly with detergent and tap water using a brush to remove any particulate matter or surface film. Cleaning detergent shall be metal-free (Acationox or equivalent).

(2) Rinse equipment with tap water.

(3) Rinse equipment with 10% nitric acid rinse. The 10% nitric acid shall be made with 1 part reagent grade concentrated nitric acid and 5 parts deionized water.

(4) Rinse all non-metallic sampling and compositing equipment with deionized water and allow to air dry.

(5) Wrap equipment completely with plastic wrap to prevent contamination during transportation to or within a sampling site.

E. Sample Identification, Storage, and Holding Time

(1) Immediately after each monthly sample is collected, the container shall be sealed and labeled to identify the sample by location, date and time of collection, collector's name and analysis type.

(2) All samples must be shipped in wet ice, and access to samples must be restricted to only those persons identified in the chain of custody record.

III. SAMPLE CUSTODY

A. Sample Control Log

A sample control log must be maintained which will show the field ID number, the name of the sample collector, the date, shift, and location of collection. The field ID number also must be written on the sample label. A numbering system should be used for the field ID numbers which will allow accurate identification of ash samples with no ambiguity.

B. Chain of Custody Record

(1) A chain of custody record must be completed for every monthly composite sample collected. All parties accepting custody of the samples including the collector, coordinator, transporter, laboratory custodian, etc., must provide signatures on the chain of custody forms. In this record every sample will be identified by the following: field ID number, date, time, sampling method, sampling location, shift, container, and analytical methods. A chain of custody record must be filled out per sample collector per shift.

(2) A binder containing copies of chain of custody records must be maintained by the party which collects the sample. Two copies of a chain of custody record form must accompany the sample to the laboratory. Once the sample transporter signs out and the receiver signs in, one copy must be retained by the laboratory and one retained by the transporter who will deliver it to the party collecting the sample.

IV. REFERENCES

(1) Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, Third Edition (EPA SW-846), 1986 as amended by Final Update 1, November 1990.

TABLE I

PRIORITY POLLUTANT METALS

Antimony	(mg/kg)
Arsenic	(mg/kg)
Beryllium	(mg/kg)
Cadmium	(mg/kg)
Chromium	(mg/kg)
Copper	(mg/kg)
Lead	(mg/kg)
Mercury	(mg/kg)
Nickel	(mg/kg)
Selenium	(mg/kg)
Silver	(mg/kg)
Thallium	(mg/kg)
Zinc	(mg/kg)

FIGURE I
CHAIN OF CUSTODY FORM

SAMPLE DATE _____ SAMPLE TIME _____

SAMPLE NUMBER _____ SAMPLE TYPE _____

ANALYTICAL METHOD REQUESTED _____

PARAMETERS TO BE MEASURED _____

FIELD INFORMATION _____

SAMPLE COLLECTOR: NAME _____

TITLE _____

ADDRESS _____

TELEPHONE _____

LABORATORY REPORT TO _____

LABORATORY INVOICE TO _____

CHAIN OF CUSTODY

1.	_____ Printed name	_____ Signature	_____ Date
2.	_____ Printed name	_____ Signature	_____ Date
3.	_____ Printed name	_____ Signature	_____ Date
4.	_____ Printed name	_____ Signature	_____ Date
5.	_____ Printed name	_____ Signature	_____ Date
6.	_____ Printed name	_____ Signature	_____ Date

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT D

STANDARD OPERATING PROCEDURE FOR PERFORMANCE
STANDARDS AND OPERATIONAL CRITERIA
"NORTH BROWARD RESOURCE RECOVERY FACILITY ASH PROCESSING ADDITION"

STANDARD OPERATING PROCEDURE
FOR
PERFORMANCE STANDARDS AND OPERATIONAL CRITERIA
NORTH BROWARD RESOURCE RECOVERY FACILITY
ASH PROCESSING ADDITION

INTRODUCTION

This standard operating procedure supplements the Ash Residue Management Plan for the Wheelabrator North Broward Facility. The procedure will be implemented when ash residue is processed for reuse either for landfill daily cover or construction aggregate for road construction applications at the facility. A comprehensive demonstration, as required by Chapter 17-702 F.A.C. and authorized by FDEP Permit No. SC29-183237 concluded that McKaynite construction aggregate meets the requirements of a recovered material pursuant to Section 403.7045 (1)(f) Florida statutes and Rule 17-702.600, F.A.C..

In addition to the recovered materials determination Chapter 17-702 F.A.C. requires that performance standards and operational criteria be established to demonstrate reliable operation.

The process was patented in 1989 and has undergone rigorous field testing with the oversight by FDEP. This standard operating procedure details the operational standards that will be employed during ash processing to assure compliance with the ash rule.

PROCESS DESCRIPTION

The ash reuse process was developed for the purpose of manufacturing both landfill cover or a marketable aggregate product from the ash residue remaining from the combustion of municipal solid waste. The modification will allow for the processing of ash residue into recovered materials. These materials meet the criteria for landfill daily cover as described in F.A.C. 17-701 and also qualify as a recycled material pursuant to F.A.C. 17-702.

The process begins when the ash residue exits the facility. While the refuse processing in the Resource Recovery Facility is a continuous 24 hours per day operation, the ash reuse process is designed as a single shift operation. Therefore, the ash residue is conveyed to a storage bunker prior to processing.

The process is divided into four phases: initial ferrous recovery and processing; initial size gradation, reagent introduction and curing; final sizing; and shipping. A description of each phase of the process is provided below and is shown in Figure 1 and 2.

LANDFILL DAILY COVER

Ferrous Recovery

Recovery of ferrous metal from the ash residue stream is important for three reasons. Ferrous metal recovery avoids consumption of ash monofill air space and therefore extends its useful life. Recovered ferrous scrap is a valuable scrap metal product which enhances recycling efforts and is easily reused. Thirdly, removal of the ferrous metal, which varies in size from large bulky objects to small nails, screws, etc., enhances the ability to produce a homogeneous product.

The ash residue is conveyed to a finger screen where the stream is divided into plus 4" and minus 4" fractions. The plus 4" is primarily ferrous metal and is conveyed to a bunker for storage prior to shipping.

Initial Size Gradation

The minus 4" fraction from the finger screen is conveyed to a sizing screen. The ferrous metal in this fraction is magnetically removed from the screen oversize stream. The screen undersize stream is then either shipped as landfill daily cover or further processed into a construction aggregate.

CONSTRUCTION AGGREGATE

The process was developed and patented for the purpose of manufacturing a marketable aggregate product from the ash residue remaining from the combustion of municipal solid waste. The product meets the Florida Department of Transportation criteria for a road construction material either as a substitute for natural granular sub-base or as a substitute for aggregate in asphaltic concrete.

During the production of construction aggregate, the bottom ash and fly ash streams will be separated. The bottom ash stream will be diverted to the aggregate production facility and the fly ash will be conditioned and transported to the adjacent landfill as described in the ash residue management plan. The ferrous recovery and initial sizing operations will be performed as previously described for landfill daily cover.

Reagent Introduction

The production of construction aggregate requires the addition of a portland cement based reagent blend to the remaining ash stream after ferrous metal recovery.

The discharge from the ash storage silo is weighed and reagents are proportioned into a mixer. After mixing is complete; the blend is discharged into an interim curing bunker.

Final Sizing and Shipping

After the curing period, the blend is removed from the interim storage bunker by a front end loader and introduced to another sizing screen. A final cleanup magnet removes any remaining ferrous metal. The cured aggregate product discharges into a truck and is shipped to the purchaser. The oversize material is crushed and returned to the final screen.

Process Results

The system is designed with the capability of processing all of the ash residue generated at the Wheelabrator North Broward Facility. Approximately 80% of the ash will be processed, while approximately 10% of the initial ash residue will be recovered as marketable ferrous metal. The processed aggregate will be sold as landfill cover or construction aggregate. Approximately 10% of the initial ash is expected to be process reject material and will be disposed of in accordance with F.A.C. 17-702.

MATERIAL SPECIFICATIONS

Processed Ash will be available for road construction applications as a substitute aggregate for several phases of road construction. The primary applications will be sub-base aggregate and asphalt aggregate. Processed Ash will be produced to provide a substitute equal to currently specified base materials consisting of limestone, sand-clay, crushed shell, soil cement or other suitable materials. Grain size distribution will generally be less than 3/8 inch, but can be adjusted to meet customer specifications.

LOADING AND SHIPPING CONTROLS

Truck Loading

Trucks will be loaded by two independent means:

By conveyor - The facility is designed so that the product from the final phase of production can be loaded directly onto trucks.

Front end loader - The aggregate product may be placed in an interim short-term stockpile during times when trucks are not available or aggregate is being stockpiled prior to sale. When the aggregate is loaded, a front end loader will be used to load directly from the stockpile onto trucks. Trucks will be covered prior to exiting the facility.

Identification of Product

Upon arriving at the facility, all haul trucks shall enter the scale house where the following information shall be entered by the scale operator:

Truck number and owner
Code number of the material
Tare weight of the vehicle

After loading, the operator shall complete a Bill of Lading containing the following information:

Name of customer
Description of product
Destination of shipment
Name of hauler
Truck ID No.

The completed bill of lading will be given to the truck driver who shall proceed to the scale house. Upon presenting the bill of lading to the scale operator, the weight ticket shall be completed and the code for the aggregate product will be entered on the scale ticket.

After the material is loaded, the driver shall proceed across the exit scale where the operator shall enter gross, tare and net weights in addition to the above information. The scale operator will ascertain that the material in the loaded truck is what it is stated to be. A scale ticket will not be issued until the identification of the material is certain.

SAMPLING PLAN

A representative sample shall be obtained monthly from each product stream and tested for grain size distribution and moisture content. In addition, each sample will be analyzed for metals concentration according to SW-846 for priority pollutant metals. The sampling shall be performed by Wheelabrator personnel or a state certified laboratory. Analysis will be performed by a laboratory having an approved quality assurance plan.

Sampling Location

A composite sample of the aggregate shall be taken from the discharge of the load-out conveyor. Grab samples shall be collected every 10 minutes for four consecutive hours during a single day on which aggregate is produced each week. This specifically means that six samples shall be collected each hour with each individual sample weighing approximately one pound. At the end of the sampling period, approximately 24 pounds of aggregate will have been collected. These weekly samples shall be composited and stored in a locked cabinet. The weekly composite samples shall then be composited into 1 monthly sample weighing approximately 2 pounds.

Composite Sampling Procedure

The following composite sampling procedure shall be used for collecting samples for the priority pollutant metals listed in Table I.

1. At ten minute intervals over the 4-hour sampling period, gather random sequential grab samples with a decontaminated stainless steel spoon, taking a cross section of the entire conveyor. The total amount sampled each ten minutes should be approximately 1 pound.
2. Place the samples into a container until the sample has reached ambient air temperature. Place each sample into a clean plastic container and seal it. Store the samples in a locked cabinet.
3. At the end of the sampling periods, transfer the 24 samples into a clean container for mixing.
4. Thoroughly mix the daily composite sample with a large, precleaned, stainless steel or plastic spoon. To promote mixing, the spoon should be slotted.
5. Place the composite sample into a clean mixer which is large enough to accommodate the sample.

6. Turn on the mixer for 10 minutes to assure thorough mixing of the composite sample. Remove the sample from the mixer with a stainless steel or plastic spoon and obtain a quarter of the total sample for a daily composite sample. The remaining 3/4 of the original sample may be discarded.
7. Place the daily composite sample into a clean container and seal. Store this sample in a locked cabinet.
8. After 4 weekly composite samples are obtained, combine all the composite samples in a mixer. Remove the samples after mixing for 10 minutes and divide it into four equal portions. Two of the portions may be discarded. Place each of the two remaining weekly composite samples into separate clean containers and seal them.
9. Label containers for all composites as to location, date, samples and composite number.
10. Ship one quarterly sample to the approved laboratory using the chain of custody form shown in Figure 1.
11. Archive the other monthly sample in the locked refrigerated cabinet as a control and or for future analysis for a maximum of six months, depending on the holding time for each analyte.

Cleaning Procedure

Equipment used to obtain samples must be decontaminated before every four hour sampling event.

1. Wash equipment thoroughly with detergent and tap water using a brush to remove any particulate matter or surface film. Cleaning detergent shall be metal-free (Acationox or equivalent).
2. Rinse with tap water.
3. Rinse equipment with 10% nitric acid rinse. The 10% nitric acid shall be made with 1 part reagent grade concentrated nitric acid and 5 parts deionized water.
4. Rinse all non-metallic sampling and compositing equipment with deionized water and allow to air dry.
5. Wrap equipment completely with plastic wrap to prevent contamination during transportation to or within a sampling site.

Sample Identification, Storage, and Holding Time

1. Immediately after each weekly sample is collected, the container shall be sealed and labeled to identify the sample by location, date and time of collection, collector's name and analysis type.
2. All samples shall be shipped in wet ice, and access to samples must be restricted to only those persons identified in the chain of custody record.

Sample Custody

Sample Control Log

A sample control log must be maintained which will show the field ID number, the name of the sample collector, the date, shift, and location of the collection. The field ID number must also be written on the sample label. A numbering system should be used for the field ID numbers which will allow accurate identification of samples with no ambiguity.

Chain of Custody Record

A chain of custody record must be completed for each composite sample collected. All parties accepting custody of the samples including the collector, coordinator, transporter, laboratory custodian, etc., must provide signatures on the chain of custody forms. In this record, every sample will be identified with the following: field ID number, date, time, sampling method, sampling location, shift, container, and analytical methods. A chain of custody record must be filled out per sample collected. The chain of custody records will be maintained at the facility.

TABLE I

PRIORITY POLLUTANT METALS

Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc

Availability of Data

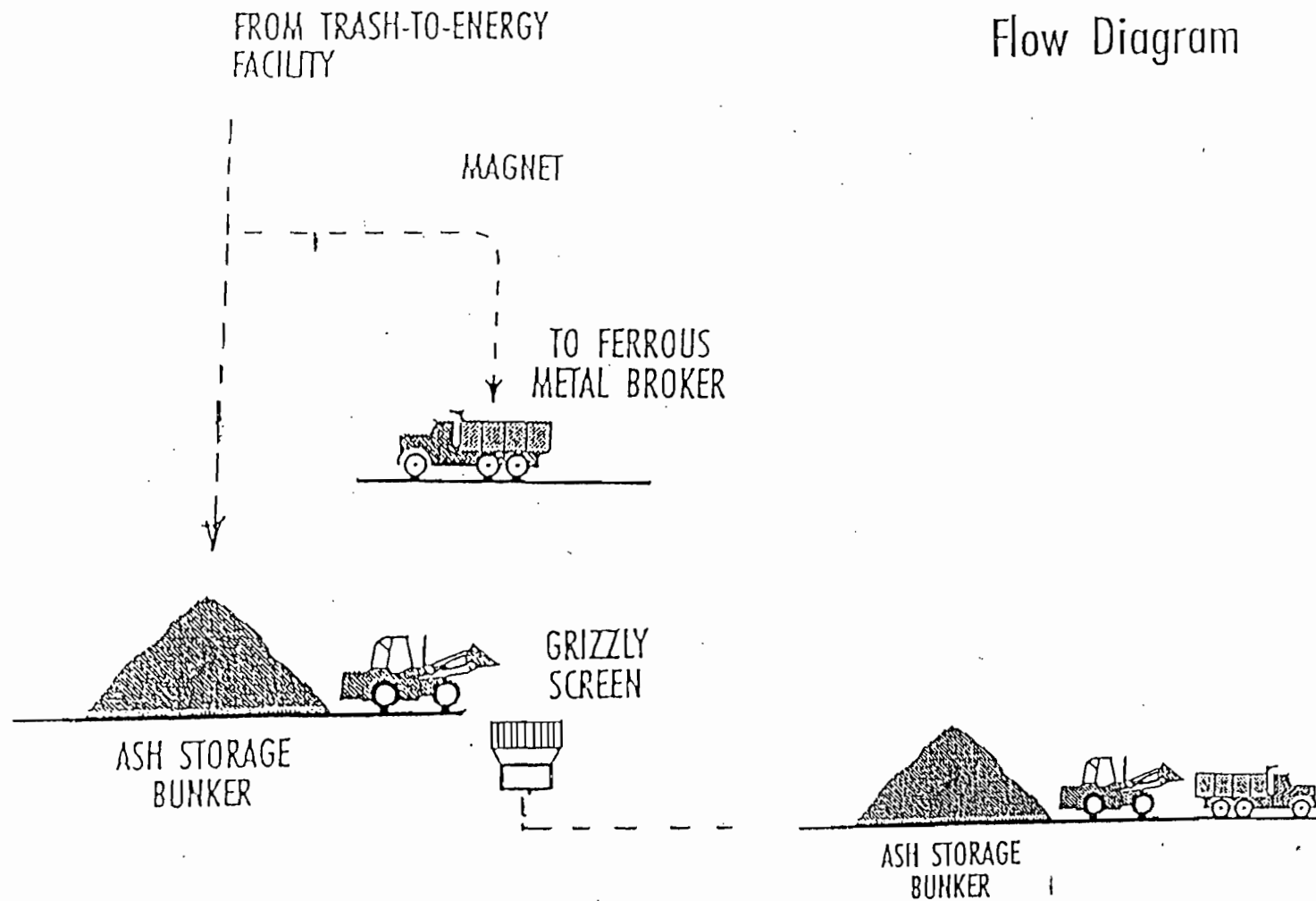
Chemical and physical properties of commercially used aggregate will be characterized monthly and submitted to the FDEP Southeast District office on a quarterly basis. Chemical and physical properties of the bottom ash used to manufacture aggregate will be determined monthly and compared to baseline data developed during the FDEP permitted research, development and demonstration project. These results will be filed at the facility for a minimum of three years following the production of aggregate.

Testing laboratory

A testing laboratory shall be selected which has a demonstrated ability to perform the required tests. The laboratory shall have an approved Quality Assurance Plan on file with FDEP.

LANDFILL DAILY COVER

Flow Diagram



-D74-

FIGURE 1

ROAD CONSTRUCTION AGGREGATE

Flow Diagram

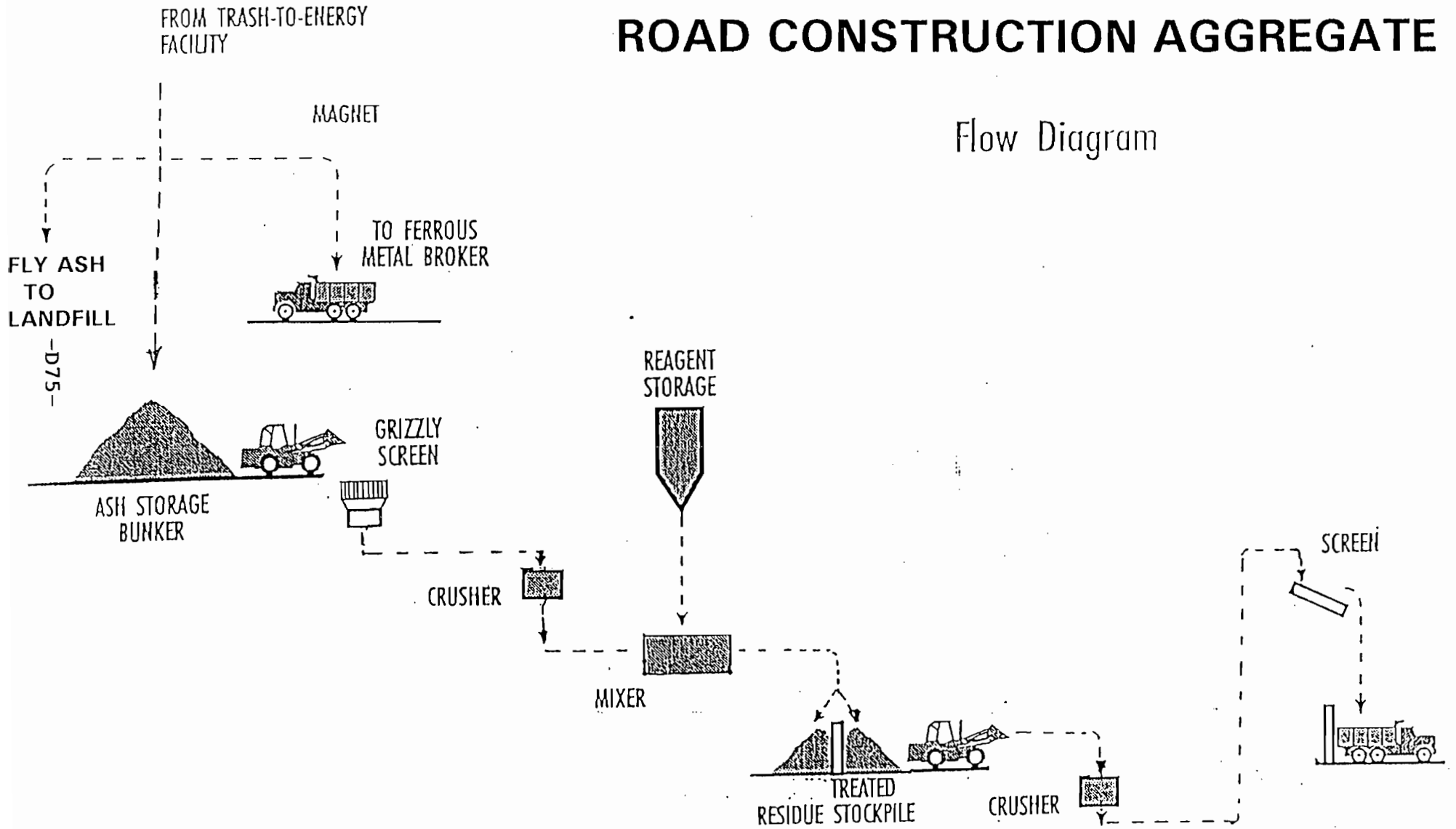
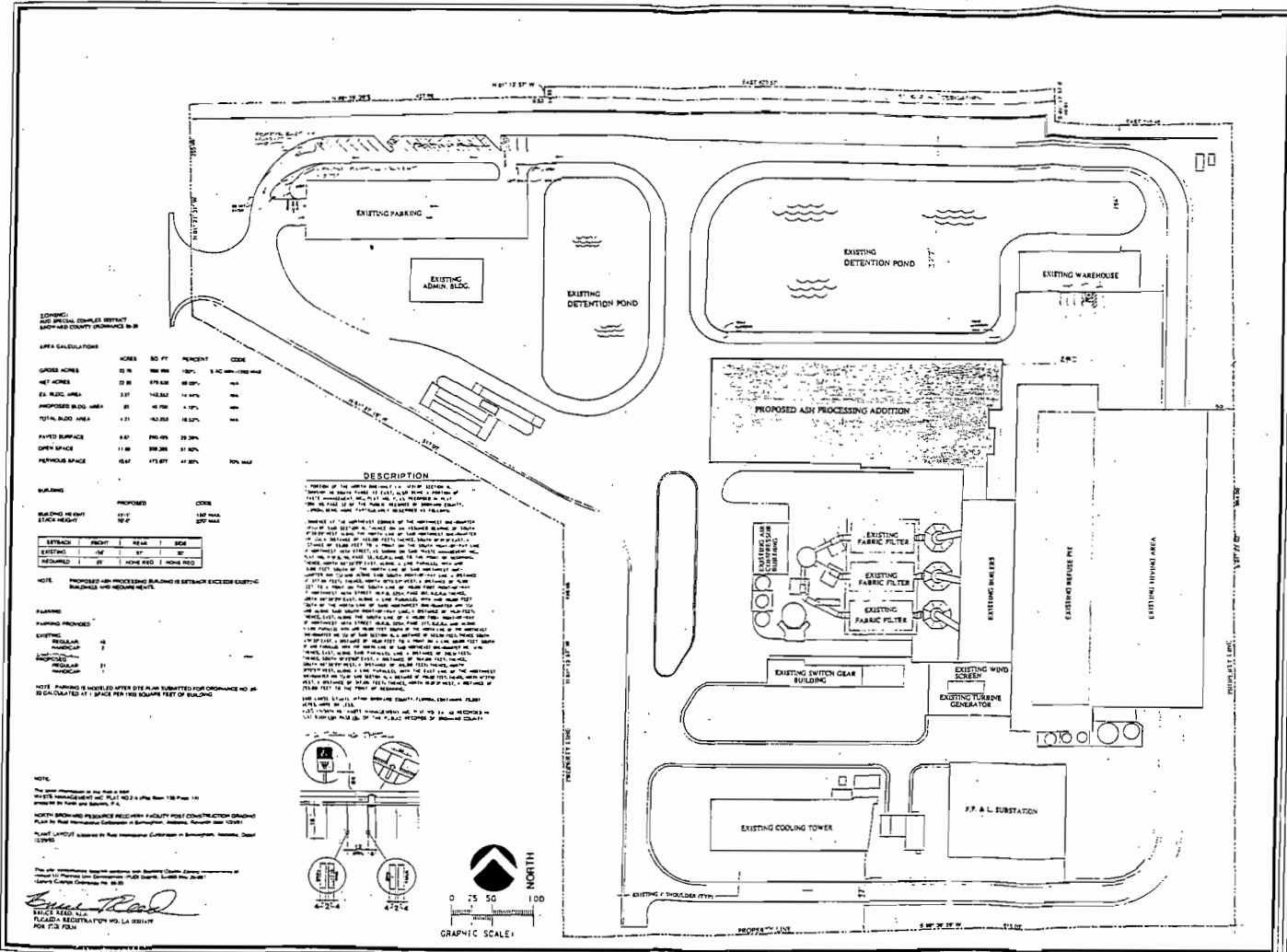


FIGURE 2

DRAWINGS

1. 07-27-0001 Revised Site Plan, Ash Reuse Addition.
2. 07-27-0002 Plan View, Ash Reuse Process
3. 07-24-0001 North & South Elevations, Ash Reuse Process
4. Certified Site Conformance Diagram
5. Revised Surface Water Drainage Map

es#5/519/ocr



LEGEND:
SEE SPECIAL COMPLIANCE REPORT
BROWARD COUNTY ORDINANCE NO. 9

AREA CALCULATIONS

ITEMS	NO. OF	PERCENT	CODE
GREEN SPACES	25.75	100%	5.00
NET AREA	22.85	89.25%	5.00
EX. ROAD AREA	2.37	14.44%	5.00
IMPROVED BLDG. AREA	25	100%	5.00
TOTAL BLDG. AREA	25	100%	5.00
PAVED SURFACE	6.67	26.68%	5.00
OPEN SPACE	11.88	47.52%	5.00
POROUS SPACE	15.87	62.12%	5.00

DESCRIPTION

BUILDING	PROPOSED	CODE
BLDG. HEIGHT	15 FT	100 MAX
SETBACK HEIGHT	10 FT	200 MAX

NOTE: PROPOSED ASH PROCESSING BUILDING IS SETBACK EXCEEDS EXISTING BUILDINGS AND HEIGHTS.

NOTE: PARKING IS PROVIDED AFTER SITE PLAN SUBMITTED FOR ORDINANCE NO. 9 IS RECALCULATED 11.1 SPACES PER 100 SQUARE FEET OF BUILDING.

NOTE: THE BEST PRACTICES OF THE ASH & SOOT...
NORTH BROWARD RESOURCE RECOVERY FACILITY POST CONSTRUCTION GRADING PLAN BY PAUL HERRINGTON CONSULTING ENGINEERS, INCORPORATED, 10000...
PLAN LAYOUT ISSUED BY PAUL HERRINGTON CONSULTING ENGINEERS, INCORPORATED, 10000...
THIS PLAN IS A PRELIMINARY DESIGN AND SHOULD BE USED ONLY FOR INFORMATIONAL PURPOSES. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

Keith and Schnars, P.A.
ENGINEERS - PLANNERS - SURVEYORS

DATE: 3-25-20
SCALE: 1" = 50'-0"
FIELD BK.:
DRAWN BY: J.P.
CHECKED BY: J.R.

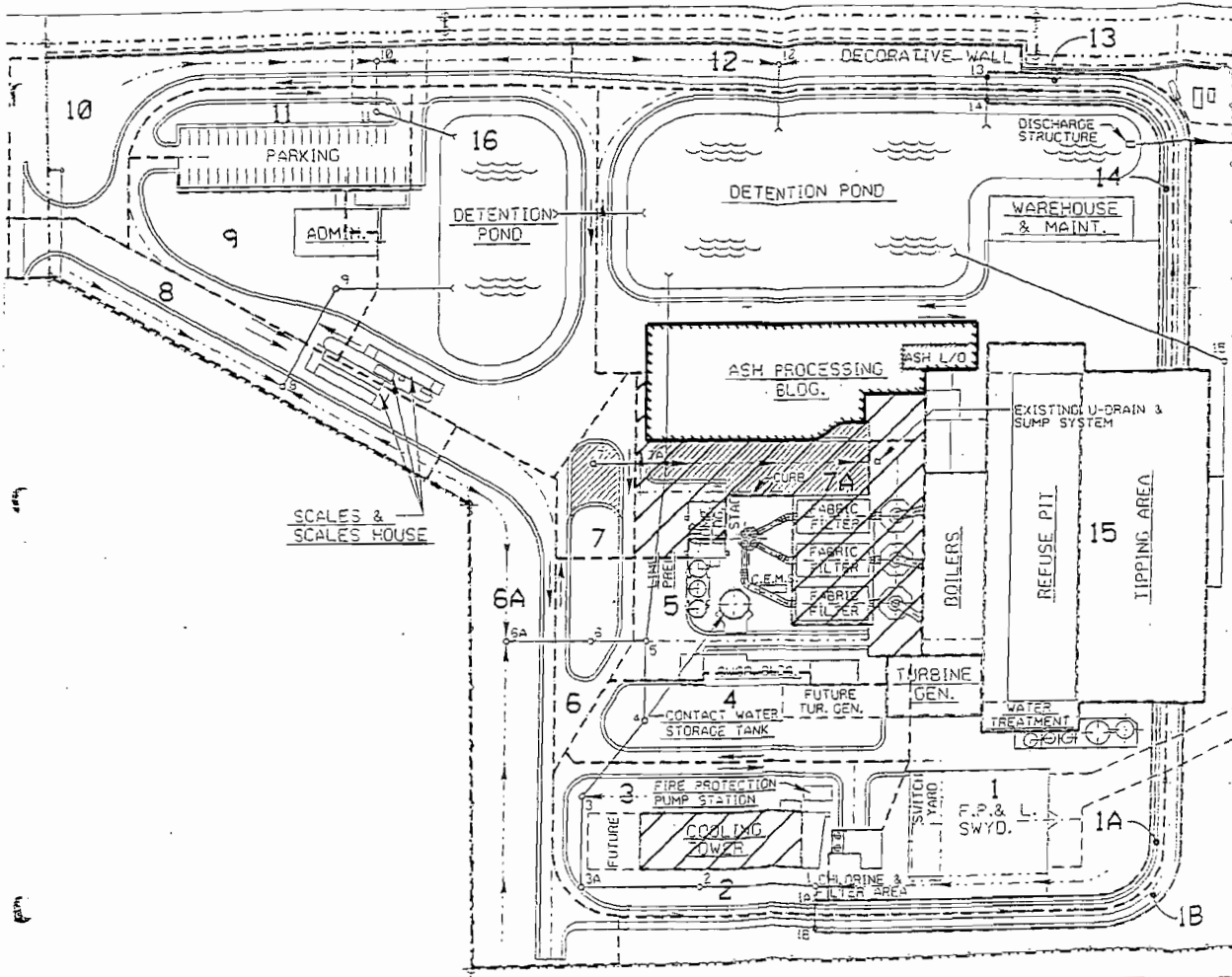
**NORTH BROWARD RESOURCE RECOVERY FACILITY
ASH PROCESSING ADDITION**

FLORIDA

SITE CONFORMANCE DIAGRAM

SHEET NO. 1
OF SHEETS
PROJECT NO.

Best Available Copy



PLANT NORTH

LEGEND

- EXIST. FACILITIES
- NEW FACILITIES
- NEW PAVED AREA
- DEMOLITION
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA CONTAINED (EXCLUDES FROM STORM DRAINAGE)
- 7** DRAINAGE AREA
- 7a** DRAINAGE STRUCTURE NO.
- 7a1** EXIST. CATCH BASIN CAPPED

Jack Franks
 L. P. E. No. 45496
 4/6/94

RUST Rust Engineering Company
 Birmingham, Alabama
 Contract: 21-4527L

DRAINAGE AREA MAP
 NORTH BROWARD
 RESOURCE RECOVERY FACILITY

DRAWING NO. 4527L-01
 SCALE: 1"=100'
 REVISED 4/6/94

FIGURES

1. Landfill Cover Production
2. Construction Aggregate Production

LANDFILL DAILY COVER

Flow Diagram

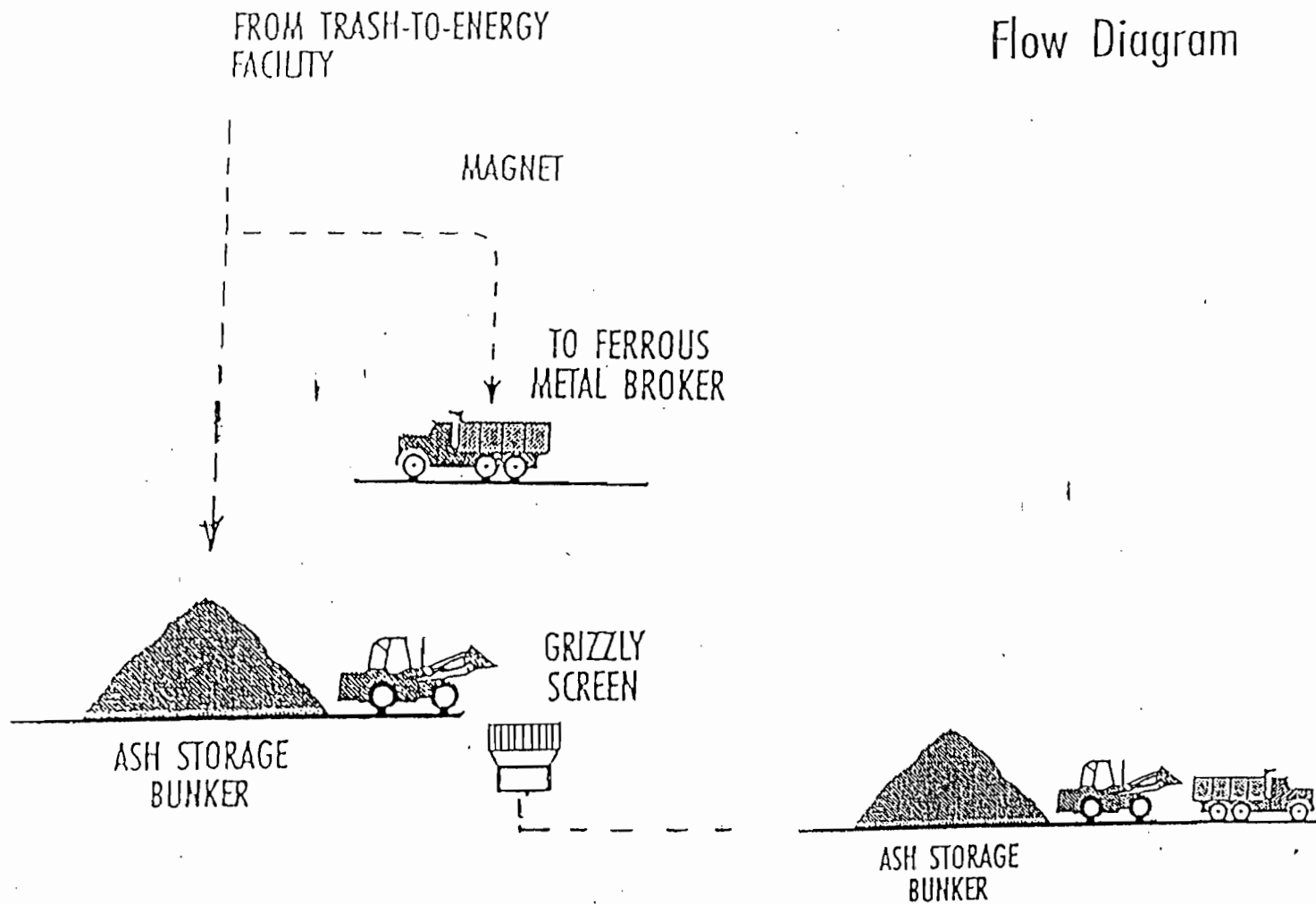


FIGURE 1

ROAD CONSTRUCTION AGGREGATE

Flow Diagram

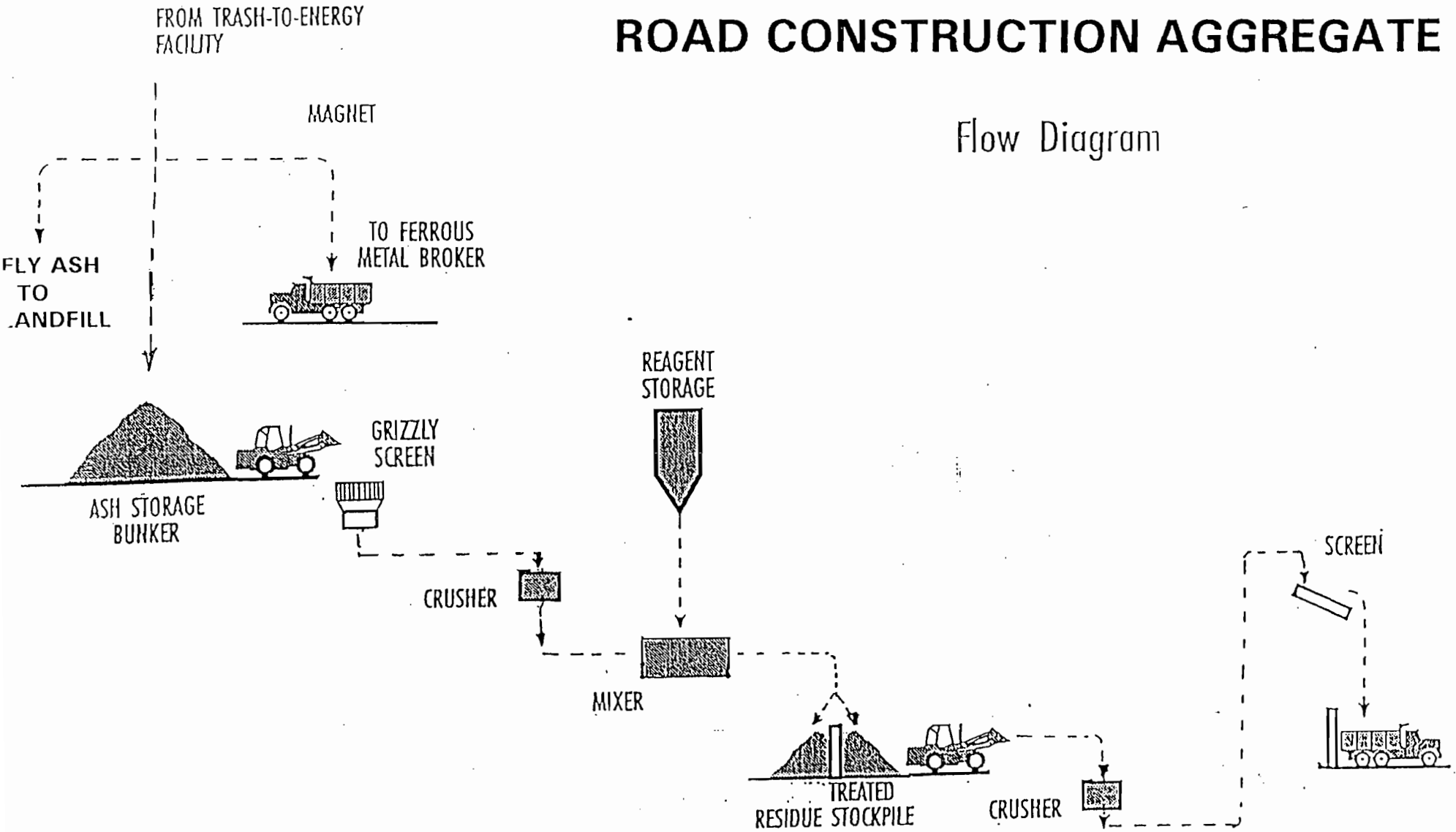
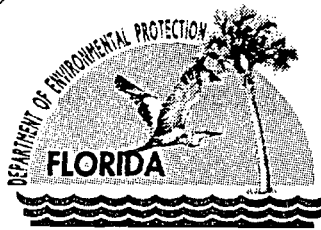


FIGURE 2



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

Mr. Paul Grego
Plant Manager
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, FL 33073

Final Air Construction Permit No. 0112120-003-AC
PSD-FL-112C
North Broward Waste-to-Energy Facility

Enclosed is final PSD permit modification number 0112120-003-AC. This permit authorizes Wheelabrator North Broward, Inc., to augment the ash handling system (emissions unit 005) in the ash handling building by *adding a wet scrubber to remove particulate matter (PM)*.

This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

A. A. Linero, P.E.
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this permit modification was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/22/02 to the person(s) listed:

Paul Grego, Wheelabrator North Broward, Inc.*
Daniela Banu, Broward County Department of Natural Resource Protection
Thomas Tittle, Southeast District Office
Hamilton S. Oven, Jr., FDEP (Internet E-mail)
Jeanne Gettle, USEPA, Region 4
John Bunyak, National Park Service

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52,
Florida Statutes, with the designated Department
Clerk, receipt of which is hereby acknowledged.

Barbara J. Friday 10/22/02
(Clerk) (Date)

FINAL DETERMINATION

Wheelabrator North Broward, Inc.
North Broward Waste-to-Energy Facility
DEP File No. 0112120-003-AC; PSD-FL-112C

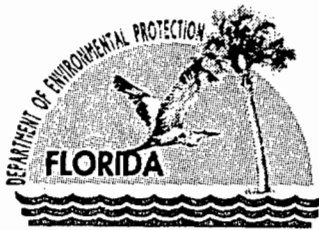
The Department distributed a public notice package on September 20, 2002, to allow the applicant to modify permit No. **PSD-FL-112B** for the North Broward Waste-to-Energy Facility located at 2600 N.W. 48th Street, Pompano Beach, Broward County. The purpose of the modification is to augment the ash handling system (emissions unit 005) in the ash handling building by *adding a wet scrubber to remove particulate matter (PM)*. The Public Notice of Intent to Issue was published in the Sun-Sentinel on September 28, 2002.

COMMENTS/CHANGES

No comments were received by the Department from the public, U.S.EPA, NPS/FWS, or the applicant.

CONCLUSION

The final action of the Department is to issue the permit with no changes.



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

October 17, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Paul Grego
Plant Manager and Responsible Official
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, FL 33073

Re: DEP File No. **0112120-003-AC, PSD-FL-112C**
Modification of Permit No. PSD-FL-112B
North Broward Waste-to-Energy Facility

The applicant, Wheelabrator North Broward, Inc., applied on July 27, 2000, to the Department for a modification to PSD permit number PSD-FL-112B for its North Broward Waste-to-Energy Facility located at 2600 N.W. 48th Street, Pompano Beach, Broward County. The modification is to augment the ash handling system (emissions unit 005) in the ash handling building by adding a wet scrubber to remove particulate matter (PM). The Department has reviewed the modification request. The referenced permit is hereby modified as follows:

Two specific conditions of PSD-FL-112B are changed as noted below (underlined passages are added text).

a.(2). Fugitive Ash Emissions From Ash Conveying Systems.

No owner or operator of this facility shall cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5% of the observation period (i.e., 9 minutes per 3-hour period) as determined by EPA Reference Method 22. The 5 percent visible ash emission limit does not cover visible ash emissions discharged inside a building or ash conveying systems, but the visible emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems (including conveyor transfer points) and the wet scrubber vent.

[Rules 62-204.800(8) & 62-4.070(3), F.A.C.; and 40 CFR 60.36b & 40 CFR 60.55b.]

a.(4). Ash Handling Facilities.

The potential for dust generation by ash handling activities will be mitigated by quenching or conditioning the ash prior to loading in ash transport trucks. Ash handling facilities shall be primarily enclosed (including the proposed future metal recovery area), but the ash handling building shall have a wet scrubber installed to control PM emissions. Unprocessed refuse storage areas which must be open for operational purposes (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure. Residue from the grates, and grate siftings shall be discharged into the bottom ash quenching system, and ash from the combustor/boiler and fabric filter hoppers shall be discharged into the flyash conditioning system during normal operations to minimize visible dust generation. The ash/residue in the Ash Handling Building shall remain sufficiently moist to minimize dust during storage and handling operations. Compliance with this condition shall be determined in accordance with Specific Condition **a.(2).**

[Rules 62-204.800(8) & 62-4.070(3), F.A.C.; and 40 CFR 60.36b & 40 CFR 60.55b.]

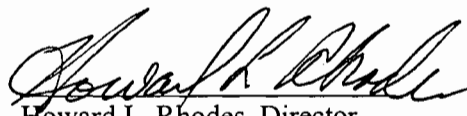
"More Protection, Less Process"

Printed on recycled paper.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit modification) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.


Howard L. Rhodes, Director
Division of Air Resource
Management

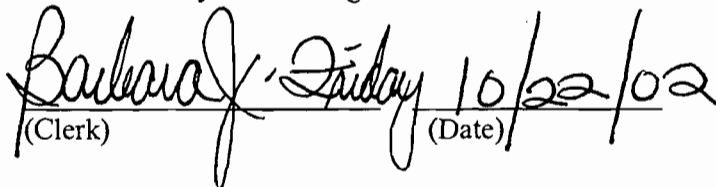
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this permit modification was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/22/02 to the person(s) listed:

Paul Grego, Wheelabrator North Broward, Inc.*
Thomas Tittle, Southeast District Office
Daniela Banu, Broward County Department of Natural Resource Protection
John Bunyak, National Park Service
Jeananne Gettle, USEPA Region 4
Hamilton S. Oven, Jr., FDEP

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52, Florida Statutes,
with the designated Department Clerk, receipt of
which is hereby acknowledged.


(Clerk) Friday 10/22/02
(Date)

DEP ROUTING AND TRANSMITTAL SLIP

TO: (NAME, OFFICE, LOCATION)

3. _____

1. ~~Al Green~~ *ay*

4. _____

2. Howard Rhodes

5. _____

PLEASE PREPARE REPLY FOR:

____ SECRETARY'S SIGNATURE

____ DIV/DIST DIR SIGNATURE

____ MY SIGNATURE

____ YOUR SIGNATURE

____ DUE DATE _____

ACTION/DISPOSITION

____ DISCUSS WITH ME

____ COMMENTS/ADVISE

____ REVIEW AND RETURN

____ SET UP MEETING

____ FOR YOUR INFORMATION

____ HANDLE APPROPRIATELY

____ INITIAL AND FORWARD

____ SHARE WITH STAFF

____ FOR YOUR FILES

COMMENTS:

Re: Kincl permit

I recommend issuance/

Signature:

ay

FROM:

Scott Sheple

DATE:

10/16

PHONE:

Events Scheduled

AIRS ID: 0112120 Site Name: WHEELABRATOR NORTH BROWARD
 Permit #: 0112120-003-AC Type/Subtype: AC / M1
 Project #: 003 Project Name: (WHEELABRATOR NORTH BROWARD)

> Awaiting Additional Information: Received

Event	Begin Date	Period	Due Date	Rmn	Status
RESET CLOCK	07/02/2002	1	07/03/2002		Done
Awaiting Additional Information	07/02/2002	45	08/16/2002		Received
Completeness Review	09/03/2002	30	10/03/2002		Complete
Determine Agency Action	09/03/2002	90	12/02/2002		Issue
Mail Public Notice of Intent to Applicant and Date of Publication	09/20/2002	10	09/30/2002		Done
Awaiting Petition for Administrative Proceedings	09/20/2002	999	06/15/2005		Publish
Issue Final Permit	09/28/2002	14	10/12/2002		Not Received
ISSUE PERMIT	10/12/2002	14	10/26/2002		Issued
STOP CLOCK	10/22/2002	1	10/23/2002		Issued
ARMS Data Entry	10/22/2002	40	12/01/2002	31	Done
					Pending

DEP ROUTING AND TRANSMITTAL SLIP

TO: (NAME, OFFICE, LOCATION) 3. _____

1. ~~Al Green~~ *AG* 4. _____

2. *Howard Rhodes* 5. _____

PLEASE PREPARE REPLY FOR:

- SECRETARY'S SIGNATURE
- DIV/DIST DIR SIGNATURE
- MY SIGNATURE
- YOUR SIGNATURE
- DUE DATE _____

ACTION/DISPOSITION

- DISCUSS WITH ME
- COMMENTS/ADVISE
- REVIEW AND RETURN
- SET UP MEETING
- FOR YOUR INFORMATION
- HANDLE APPROPRIATELY
- INITIAL AND FORWARD
- SHARE WITH STAFF
- FOR YOUR FILES

COMMENTS:

Re: Kincaid permit

I recommend issuance/

Signature

Agree AG

FROM: *Scott Sheple* DATE: *10/16* PHONE: _____



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 17, 2001

Mr. William Roberts
Regional Manager
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, FL 33073

Re: DEP File No. 0112120-003-AC, PSD-FL-^{112C}~~122C~~
Modification to Permit No. PSD-FL-122B
Wheelabrator North Broward

Dear Mr. Roberts:

In our letter dated August 22, 2000 we deemed *incomplete* your application for a minor modification to the referenced facility PSD permit for the construction of two minor source wet scrubbers because of the following reasons:

1. You need to submit your application using the proper Department form No. 62-210.900(1). The form is available on the Department's Internet web site: www.dep.state.fl/air.
2. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Please ensure that the completed application is so certified.

We are concerned that a significant time period has passed and we have not received your response. Please note that Rule 62-4.055(1), F.A.C. requires a response to requests for information within 90 days. When we receive the above-mentioned items, we will continue processing your application. If you have questions, please contact Tom Cascio at 850/921-9526.

Sincerely,

Scott M. Sheplak, P.E.
Administrator
Title V Section

cc: Jarrett Mack, Broward County
Isidore Goldman, SE District

"More Protection, Less Process"

Printed on recycled paper.

Check Sheet

Company Name: Wheelabrator S. Broward

Permit Number: _____

PSD Number: 105

Permit Engineer: Teressa DeLeon

Application:

- Initial Application *Modification*
- Incompleteness Letters
- Responses
- Waiver of Department Action
- Department Response
- Other

Cross References:

-
-
-

Intent:

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT Determination
- Unsigned Permit

Correspondence with:

- EPA
- Park Services
- Other

Proof of Publication

- Petitions - (Related to extensions, hearings, etc.)
- Waiver of Department Action
- Other

Final Determination:

- Final Determination *Modification*
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other

Appendix H-1, Permit History/ID Number Changes

Wheelabrator South Broward, Inc.
 South Broward Waste-to-Energy Facility

Facility ID No.: 0112119

Permit History (for tracking purposes):

<u>E.U. ID No.</u>	<u>Description</u>	<u>Permit No.</u>	<u>Issue Date</u>	<u>Expiration Date</u>	<u>ExtendedDate^{1,2}</u>	<u>Revised Date(s)</u>
001, 002, 003	Municipal Solid Waste Combustors	PSD-FL-105	05/15/87			05/22/97; 09/28/99
		PA 85-21	06/03/86			04/17/91
		0112119-001-AC	03/25/96	03/25/2001		
004	Lime Silo	AC06-187000	03/12/91	02/28/92		
		AO06-208864	05/04/92	04/30/97		
005	Ash Handling System	AC06-187001	03/12/91	02/28/92		
		AO06-208864	05/04/92	04/30/97		

(if applicable) ID Number Changes (for tracking purposes):

From: Facility ID No.: 30BRO062119

To: Facility ID No.: 0112119

Notes:

1 - AO permit(s) automatic extension(s) in Rule 62-210.300(2)(a)3.a., F.A.C., effective 03/21/96.

2 - AC permit(s) automatic extension(s) in Rule 62-213.420(1)(a)4., F.A.C., effective 03/20/96.

{Rule 62-213.420(1)(b)2., F.A.C., allows Title V Sources to operate under existing valid permits that were in effect at the time of application until the Title V permit becomes effective}

Permit #:		PATS:AC06187000		Issue:12-MAR-1991		Expire:	
Project #/Name	Owner/Company	Type/Sub	Receive				
001/ALTERNATIVE TEST METHOD	WHEELABRATOR SOUTH BROWARD,	AC /M1	21-MAR-1996				
002/S BROWARD RRF	WHEELABRATOR SOUTH BROWARD,	AV /00	17-JUN-1996				
/SOUTH BROWARD RESOURCE RE	WHEELABRATOR SOUTH BROWARD,	AC /1E	27-SEP-1990				
/SOUTH BROWARD RESOURCE RE	WHEELABRATOR SOUTH BROWARD,	AC /1E	27-SEP-1990				
/WHEELABRATOR SO.BROWARD(L	WHEELABRATOR SOUTH BROWARD,	A0 /2B	18-FEB-1992				
/		/					
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/		/					
/		/					

Press [NXTBLK] for summary information.
 Count: *5

<Replace>

P 265 659 308

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>Thomas Kirk</i>	
Street & Number <i>Wheelabrator South Brow.</i>	
Post Office, State, & ZIP Code <i>Ft. Lauderdale FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>PSO-FI-105(B) 9-28-99</i>	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Thomas D. Kirk
Wheelabrator South Brow
4400 S. State Rd 7
Ft. Lauderdale, FL
33314

4a. Article Number

P 265 659 308

4b. Service Type

- Registered
- Certified
- Express Mail
- Insured
- Return Receipt for Merchandise
- COD

7. Date of Delivery

9/30/99

5. Received By: (Print Name)

C. Hays
 6. Signature: (Addressee or Agent)
X

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

RECEIVED

OCT 04 1999

BUREAU OF AIR REGULATION

• Print your name, address, and ZIP Code in this box •

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400



**PUBLIC NOTICE OF INTENT
TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DRAFT Permit No. PSD-FL-105(B)
Wheelabrator South Broward, Inc.
Broward County**

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment to Wheelabrator South Broward, Inc. to improve the air pollution control system; specify which materials can be burned; install a metals recovery facility; and make a number of monitoring changes at its resource recovery facility. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 62.21. Prevention of Significant Deterioration (PSD). The applicant's name and address are Wheelabrator South Broward, Inc. 4400 South State Road 7, Ft. Lauderdale, 33314, Broward County.

The purpose of the air pollution control project is to comply with 40 CFR 60, Subpart Cb - Emission Guideline and Compliance Times for Municipal Waste Combustors That are Constructed on or Before December 19, 1995. The Emission Guideline was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. These requirements are incorporated in Department Rule 62-204.800 (8), F.A.C. The facility consists of three nominal 750 ton per day (TPD) mass burn furnaces, waterwall boilers, ash discharge systems, air pollution control equipment, and a steam turbine with a 68 megawatt electrical generator. The existing air pollution control system for each unit consists of spray dryer absorbers and fabric filters. The system will be improved by installation of a selective non-catalytic reduction system for the control of nitrogen oxides and by incorporation of combustion controls to minimize formation of dioxins and furans, volatile organic compounds, and carbon monoxide.

The original PSD permit contained limits in accordance with the existing regulations in 1987. Specific limits, in compliance with current Subpart Cb, and testing requirements are proposed for all previously mentioned pollutants. Continuous emissions monitors will be installed for sulfur dioxide, nitrogen oxides, oxygen, carbon monoxide, and temperature at key points.

The units were originally permitted to utilize "refuse such as garbage and trash" as defined in the Department's solid waste rules. The modified permit will specify the wastes as: solid waste including municipal solid waste (MSW) as defined at 40 CFR 60.51b and Section 403.706(5), F.S.; segregated wastes such as records and documents, non-hazardous contraband, clean wood and land clearing debris, packaging materials, clothing and fabric remnants and certain types of floor covering; segregated waste tires (not to exceed 3 percent of the total wastes received); other segregated wastes (not to exceed 5 percent of the total wastes received) such as construction and demolition debris, oil spill debris, expired or off-spec packaged or un-packaged consumable goods (e.g. pharmaceuticals), consumer products, waste materials containing oil, used oil and filters and certain other wastes similar to MSW. The precise nature of the waste is detailed in the draft permit package. By limiting the amount of segregated materials combusted at the facility, the Department has reasonable assurance that the overall composition of the wastes burned will be within the typical characteristics of MSW in terms of heating value, moisture, ash and emissions characteristics.

Additional requested revisions to the permit are to replace the 300 degree F temperature limit at the acid control device (fabric filter outlet) with the Subpart Cb particulate control device inlet temperature and to eliminate the furnace temperature requirements by incorporation of the good combustion practices specified in Subpart Cb. Wheelabrator is also planning to install equipment and facilities to expand the removal of recoverable metals from the bottom ash generated by the facility.

The Department will issue the FINAL Permit Modification, in accordance with the conditions of the DRAFT Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed DRAFT Permit Modification issuance action for a period of 30 (thirty) days from the date of publication of the Notice. Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Modification, the Department shall issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

The Department will issue FINAL Permit Modification with the conditions of the DRAFT Permit Modification unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administration Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed ; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m. Monday through Friday, except legal holidays, at:

Department of Environmental Protection, Bureau of Air Regulation, 111 S. Magnolia Drive, Suite 4, Tallahassee, Florida 32301. Telephone: 850/488-0114 Fax: 850/922-6979

Department of Environmental Protection, Southeast District Office, 400 North Congress Avenue, West Palm Beach, Florida 33416-5425. Telephone: (561) 681-6600 Fax: (561) 681-6755.

Broward County Department of Natural Resource Protection, Air Quality Division, 218 Southwest First Avenue, Ft. Lauderdale, Florida 33301. Telephone: (954) 519-1220 Fax: (954) 519-1495

The complete project file includes the Draft Permit Modification, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested person may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0144, for additional information.

August 13, 1998

S U N - S E N T I N E L
PUBLISHED DAILY
FORT LAUDERDALE, BROWARD COUNTY, FLORIDA
BOCA RATON, PALM BEACH COUNTY, FLORIDA
MIAMI, DADE COUNTY, FLORIDA

STATE OF FLORIDA
COUNTY OF BROWARD/PALM BEACH/DADE
BEFORE THE UNDERSIGNED AUTHORITY PERSONALLY APPEARED

..... WHO ON OATH SAYS THAT
HE/SHE IS A DULY AUTHORIZED REPRESENTATIVE OF THE
CLASSIFIED DEPARTMENT OF THE SUN-SENTINEL, DAILY
NEWSPAPER PUBLISHED IN BROWARD/PALM BEACH/DADE COUNTY,
FLORIDA THAT THE ATTACHED COPY OF ADVERTISEMENT, BEING A

NOTICE

IN THE MATTER OF

PSD-FL-105(B)

IN THE CIRCUIT COURT, WAS PUBLISHED IN SAID NEWSPAPER IN
THE ISSUES OF
C , 08/13, 1 X

8B790030

AFFIANT FURTHER SAYS THAT THE SAID SUN-SENTINEL IS A
NEWSPAPER PUBLISHED IN SAID BROWARD/PALM BEACH/DADE
COUNTY, FLORIDA, AND THAT THE SAID NEWSPAPER HAS HERETOFORE
BEEN CONTINUOUSLY PUBLISHED IN SAID BROWARD/PALM BEACH/DADE
COUNTY, FLORIDA, EACH DAY, AND HAS BEEN ENTERED AS SECOND
CLASS MATTER AT THE POST OFFICE IN FORT LAUDERDALE, IN SAID
BROWARD COUNTY, FLORIDA, FOR A PERIOD OF ONE YEAR NEXT
PRECEDING THE FIRST PUBLICATION OF THE ATTACHED COPY OF
ADVERTISEMENT; AND AFFIANT FURTHER SAYS THAT HE/SHE HAS
NEITHER PAID NOR PROMISED ANY PERSON, FIRM OR CORPORATION
ANY DISCOUNT, REBATE, COMMISSION OR REFUND FOR THE PURPOSE
OF SECURING THIS ADVERTISEMENT FOR PUBLICATION IN SAID
NEWSPAPER.

.....
(SIGNATURE OF AFFIANT)

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 13 DAY OF AUGUST
A.D. 1999

.....
(SIGNATURE OF NOTARY PUBLIC)



Tara L. Bezak
MY COMMISSION # CC638935 EXPIRES
July 20, 2001
BONDED THRU TROY FAIR INSURANCE, INC.

.....
(NAME OF NOTARY TYPED, PRINTED OR STAMPED)

PERSONALLY KNOWN OR
PRODUCED IDENTIFICATION

**PUBLIC NOTICE OF INTENT
TO ISSUE PSD PERMIT MODIFICATION
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. PSD-FL-112(B)
Wheelabrator North Broward, Inc.
Broward County**

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit Modification to Wheelabrator North Broward, Inc. to improve the air pollution control system; specify which materials can be burned; install a metals recovery facility; and make a number of monitoring changes at its resource recovery facility. A Best Available Control Technology determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are Wheelabrator North Broward, Inc. 2600 NW 48th Street Pompano Beach, Florida 33073.

The purpose of the air pollution control project is to comply with 40 CFR 60, Subpart Cb - Emission Guideline and Compliance Times for Municipal Waste Combustors That are Constructed on or Before December 19, 1995. The Emission Guideline was developed pursuant to Section 129 (Solid Waste Combustion) of the Clean Air Act as amended in 1990. These requirements are incorporated in Department Rule 62-204 800 (8), F.A.C.

The facility consists of three nominal 747 ton per day (TPD) mass burn furnaces, waterwall boilers, ash discharge systems, air pollution control equipment, and a steam turbine with a 68 megawatt electrical generator. The existing air pollution control system for each unit consists of spray dryer absorbers and fabric filters. The system will be improved by installation of a selective non-catalytic reduction system for the control of nitrogen oxides and by incorporation of combustion controls to minimize formation of dioxins and furans, volatile organic compounds, and carbon monoxide.

The original PSD permit contained limits in accordance with the existing regulations in 1987. Specific limits, in compliance with current Subpart Cb, and testing requirements are proposed for all previously mentioned pollutants. Continuous emissions monitors will be installed for sulfur dioxide, nitrogen oxides, oxygen, carbon monoxide, and temperature at key points.

The units were originally permitted to utilize "refuse such as garbage and trash" as defined in the Department's solid waste rules. The modified permit will specify the wastes as: solid waste including municipal solid waste (MSW) as defined at 40 CFR 60.51b and Section 403.706(5), F.S.; segregated wastes such as records and documents, non-hazardous contraband, clean wood and land clearing debris, packaging materials, clothing and fabric remnants and certain types of floor covering; segregated waste tires (not

to exceed 3 percent of the total wastes received); other segregated wastes (not to exceed 5 percent of the total wastes received) such as construction and demolition debris, oil spill debris, expired or off-spec packaged or un-packaged consumable goods (e.g. pharmaceuticals), consumer products, waste materials containing oil, used oil and filters and certain other wastes similar to MSW. The precise nature of the waste is detailed in the draft permit package. By limiting the amount of segregated materials combusted at the facility, the Department has reasonable assurance that the overall composition of the waste burned will be within the typical characteristics of MSW in terms of heating value, moisture, ash and emissions characteristics.

Additional requested revisions to the permit are to replace the 300 degree F temperature limit at the acid control device (fabric filter outlet) with the Subpart Cb particulate control device inlet temperature and to eliminate the furnace temperature requirements by incorporation of the good combustion practices specified in Subpart Cb. Wheelabrator is also planning to install equipment and facilities to expand the removal of recoverable metals from the bottom ash generated by the facility.

The Department will issue the FINAL Permit Modification, in accordance with the conditions of the DRAFT Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed DRAFT Permit Modification issuance action for a period of 30 (thirty) days from the date of publication of the Notice. Any written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Modification, the Department shall issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

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A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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Department of Environmental Protection, Bureau of Air Regulation, 111 S. Magnolia Drive, Suite 4, Tallahassee, Florida 32301. Telephone: 850/488-0114 Fax: 850/922-6979

Department of Environmental Protection, Southeast District Office, 400 North Congress Avenue, West Palm Beach, Florida 33416-5425. Telephone: (561) 681-6600 Fax: (561) 681-6755.

Broward County Department of Natural Resource Protection, Air Quality Division, 218 Southwest First Avenue, Ft. Lauderdale, Florida 33301. Telephone: (954) 519-1220 Fax: (954) 519-1495

The complete project file includes the Draft Permit Modification, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.11, F.S. Interested person may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 or call 850/488-0114, for additional information. August 13, 1995

S U N - S E N T I N E L
PUBLISHED DAILY
FORT LAUDERDALE, BROWARD COUNTY, FLORIDA
BOCA RATON, PALM BEACH COUNTY, FLORIDA
MIAMI, DADE COUNTY, FLORIDA

STATE OF FLORIDA
COUNTY OF BROWARD/PALM BEACH/DADE
BEFORE THE UNDERSIGNED AUTHORITY PERSONALLY APPEARED

..... WHO ON OATH SAYS THAT
HE/SHE IS A DULY AUTHORIZED REPRESENTATIVE OF THE
CLASSIFIED DEPARTMENT OF THE SUN-SENTINEL, DAILY
NEWSPAPER PUBLISHED IN BROWARD/PALM BEACH/DADE COUNTY,
FLORIDA THAT THE ATTACHED COPY OF ADVERTISEMENT, BEING A

PUBLIC NOTICE OF

IN THE MATTER OF

PSD-FL-112(B)

IN THE CIRCUIT COURT, WAS PUBLISHED IN SAID NEWSPAPER IN
THE ISSUES OF

C , 08/13, 1 X

8B790020

AFFIANT FURTHER SAYS THAT THE SAID SUN-SENTINEL IS A
NEWSPAPER PUBLISHED IN SAID BROWARD/PALM BEACH/DADE
COUNTY, FLORIDA, AND THAT THE SAID NEWSPAPER HAS HERETOFORE
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NEITHER PAID NOR PROMISED ANY PERSON, FIRM OR CORPORATION
ANY DISCOUNT, REBATE, COMMISSION OR REFUND FOR THE PURPOSE
OF SECURING THIS ADVERTISEMENT FOR PUBLICATION IN SAID
NEWSPAPER.

.....
(SIGNATURE OF AFFIANT)

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 13 DAY OF AUGUST
A.D. 1999

.....
(SIGNATURE OF NOTARY PUBLIC)

Mara L. Bezak
MY COMMISSION # CC638935 EXPIRES
July 20, 2001
BONDED THRU TROY FAIN INSURANCE, INC.

.....
(NAME OF NOTARY TYPED, PRINTED OR STAMPED)

PERSONALLY KNOWN OR

PRODUCED IDENTIFICATION

Z 333 618 151

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

PS Form 3800, April 1995

Sent to <i>Thomas Kirk</i>	
Street & Number <i>Wheelabrator South</i>	
Post Office, State, & ZIP Code <i>Ft. Lauderdale, FL</i>	
Postage	\$ <i>1.65</i>
Certified Fee	<i>1.40</i>
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	<i>1.65</i>
TOTAL Postage & Fees	\$ <i>4.30</i>
Postmark on Date	<i>5-24-99</i>



Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
 - Restricted Delivery
- Consult postmaster for fee.

3. Article Addressed to:

*Thomas D. Kirk, PM 99 MA
 Wheelabrator South Boulevard
 4400 South State Rd 7000
 Ft. Lauderdale, FL 33314*

4a. Article Number

Z 333 618 151

4b. Service Type

- Registered
- Certified
- Express Mail
- Insured
- Return Receipt for Merchandise
- COD

7. Date of Delivery

5/24

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Addressee or Agent)

X [Signature]

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Print your name, address, and ZIP Code in this box •

AIR REGULATION
BUREAU OF

JUN 28 1999

RECEIVED

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

P 265 659 296

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to <i>Thomas Kirk</i>	
Street & Number <i>Wheelerator South</i>	
Post Office, State, & ZIP Code <i>St. Lauderdale</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date <i>PSD-FI 105(A) 2-16-98</i>	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. Addressee's Address
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Thomas D. Kirk, Plant Mgr
Wheelerator South Road
4400 South State Road 7
St. Lauderdale, FL
33314

4a. Article Number
P 265 659 296

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery
2/18

5. Received By: (Print Name)

[Signature]

6. Signature: (Addressee or Agent)

X

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

OCR #4 FT LAUDERDALE FL 333 02-18-98 21 05+

UNITED STATES POSTAL SERVICE 333 TLH FL 33301

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Print your name, address, and ZIP Code in this box •

RECEIVED

FFR 23 1998

BUREAU OF
AIR REGULATION

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400



P 265 659 220

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

PS Form 3800 April 1995

Sent to	Thomas Kirk
Street & Number	Whelabrator South B.
Post Office, State, & ZIP Code	St. Lauderdale, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	5-22-97
	PSD-FI-105

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
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I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Thomas D. Kirk, Plant Mgr.
Whelabrator S. Broward, Inc.
4400 South State Road 7
St. Lauderdale, FL
33314

4a. Article Number

P 265 659 220

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5/27

5. Received By: (Print Name)

Sandy Dusew

8. Addressee's Address (Only if requested and fee is paid)

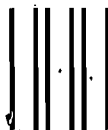
6. Signature: (Addressee or Agent)

X

OR

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Print your name, address, and ZIP Code in this box •

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

RECEIVED

MAY 29 1997

BUREAU OF
AIR REGULATION



4/19 Preston

I assume you will be
handling this.

Clan

TO: Power Plant Siting Review Committee
FROM: Buck Oven
DATE: April 18, 1994
SUBJECT: Wheelabrator - North Broward Resource Recovery
Facility, PA 86-22, Module 8029

We received a request to modify the conditions of certification for the North Broward RRF to allow construction of an ash processing facility. The request also includes incorporation of existing minor air source permits in the conditions. I will be distributing the modification materials within the next few days. Copies are being sent to the SE District, SFWMD, Broward County, and the original parties by Wheelabrator. Please review for completeness and sufficiency. Your response by May 18th would be appreciated.

cc: Richard Donelan
Mary Williams
Raisa Neginsky

^{Patey}
John Reynolds has been
assigned this project
with Charles assisting

Justin

4/20/94

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 681-2964

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DEMEO
THOMAS M. DE ROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
DAVID L. POWELL
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MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
R. SCOTT RUTH
JULIE ROME STEINMEYER
OF COUNSEL
W. ROBERT FOKES

April 18, 1994

Mr. Hamilton S. Oven
Siting Coordinator
Florida Department of Environmental
Protection
3900 Commonwealth Blvd., Suite 953
Tallahassee, FL 32399

Re: Wheelabrator North Broward Inc.;
North Broward County Resource Recovery Facility;
Request for Modification of Site Certification PA 86-22

Dear Mr. Oven:

Pursuant to Section 403.516(1)(b), Florida Statutes, I am submitting, on behalf of Wheelabrator North Broward Inc. (WNB), the enclosed Proposed Agreement to Modify the Site Certification for the North Broward County Resource Recovery Project. The cited provision of the Florida Electrical Power Plant Siting Act, Chapter 403, Part II, (PPSA) authorizes the Department of Environmental Protection (DEP) to modify the site certification, including the conditions of certification, when no objection to the proposed modification is raised by a party or by any person whose substantial interests will be affected by the proposed modification.

The Siting Board's original certification order authorizing construction and operation of the North Broward Resource Recovery Project (Project) was issued on March 9, 1987. Several subsequent modifications have been issued for the Project. By this Proposed Agreement, WNB requests approval of a modification of the certification to authorize WNB to construct and operate a new ash reuse processing facility on the Project site, as described in the attached document. WNB is also proposing to incorporate into the certification the terms and conditions of a recently-issued Department air permit for a lime silo and the ash handling system at the Project site. These permitted facilities are directly related to the original Project. Incorporation of that permit into the certification will establish a single unified authorization for the project.

Mr. Hamilton S. Oven
April 18, 1994
Page 2

WNB is also proposing an amended condition of certification for ash residue testing consistent with current Department solid waste rules.

This ash reuse process facility, its location and expected impacts are discussed in greater detail in the attached modification submittal. No other changes to the existing facilities at the Project site or other new facilities will be required as a result of this modification. The location of the new ash reuse process facility is adjacent to the existing units at the Project site on a previously developed area of the site. The ash reuse process facility will utilize existing facilities on the site to the extent necessary.

Wheelabrator North Broward Inc., is requesting a modification of the certification, including additional conditions of certification, that will authorize the construction and operation of this new ash reuse process facility. Those proposed conditions are attached to the Proposed Agreement for Modification of Certification. These additional conditions of certification will allow the construction of the ash reuse facility to proceed following the Department's issuance of this modification request.

WNB requests that the Department issue an order pursuant to section 403.516(1)(b), F.S., modifying the terms and conditions of the certification for the North Broward Resource Recovery Project. The modification order should contain the attached conditions and any additional necessary or revised conditions proposed by agency parties and accepted by WNB.

In accordance with DEP's rules, we have forwarded copies of this Proposed Agreement by hand delivery or U.S. mail to those parties in the original certification proceedings, as indicated in the Certificate of Service to the attached Agreement for Modification of Certification. Copies of this Request are also being provided to the persons and agencies identified below.

An application fee in the amount of \$10,000 payable to the Department is being submitted with this proposed agreement. If you or any of the parties have questions or comments on this request, please contact either Eric Selya of WNB in Pompano Beach at 305/971-8701 or me at 904/222-7500.

Sincerely,



Douglas S. Roberts

Attachments

Mr. Hamilton S. Oven

April 18, 1994

Page 3

cc: Richard T. Donelan, DEP
Cindy S. Price, Asst. Gen. Counsel, FDOT
James Antista, Gen. Counsel, FG&FWFC

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NORTH BROWARD RESOURCE RECOVERY FACILITY
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Hamilton S. Oven, Jr., P.E. Florida Department of Environmental Protection 2600 Blair Stone Road, Room 612 Tallahassee, FL. 32399-2400 (904) 487-0472	10
Richard T. Donelan, Esquire Assistant General Counsel Florida Department of Environmental Protection 2600 Blair Stone Road, Room 612 Tallahassee, FL. 32399-2400 (904) 487-0472	1
Mary Williams Florida Department of Environmental Protection 1900 South Congress Avenue West Palm Beach, FL. 33406 (407) 433-2650	3
Karen Brodeen Asst. General Counsel Florida Department of Community Affairs 2740 Centerview Drive Tallahassee, FL. 32399-2100 (904) 488-0410	1
Paul Darst Florida Department of Community Affairs 2740 Centerview Drive Tallahassee, FL. 32399-2100 (904) 488-0410	1
Sylvia Labie, Administrator, Quality Assurance Section Florida Department of Environmental protection 2600 Blair Stone Road Tallahassee, FL. 32399-2400	1

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Doug Roberts Hopping Boyd Green & Sams 123 South Calhoun Street Tallahassee, FL. 32314 (904) 222-7500	3
Thomas Henderson Broward County O.I.W.M. 210 South Andrews Avenue Ft. Lauderdale, FL. 33301 (305) 765-4208	3
Paul Claerbout Wheelabrator North Broward Inc. 2600 N.W. 48th Street Pompano Beach, FL. 33073 (305) 971-8701	1
J. Alan Cox, Esquire Maclear, Amato, Arien, Ethal 105 West Fifth Avenue Tallahassee, FL. 32301	1
Micheal Palecki, Esquire Florida Public Service Commission Fletcher Building 101 E. Gaines Street Tallahassee, FL. 32301	1
John Copeland, Esquire Office of General Counsel Governmental Center, Suite 423 115 South Andrews Avenue Ft. Lauderdale, FL. 33301	1

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Cindy S. Price Assistant General Counsel Department of Transportation Haydon Burns Building 605 Suwannee Street, M.S. #58 Tallahassee, FL. 32399 (904) 488-6212	2
Cecile Ross South Florida Water Management District 3301 Gun Club Road West Palm Beach, FL. 33416-4680 (407) 686-8800-(800) 432-2045	1
Susan M. Coughanour South Florida Water Management District 3301 Gun Club Road West Palm Beach, FL. 33416-4680 (407) 686-8800-(800) 432-2045	5
Cliff Shulman, Esquire 1401 Brickell Avenue, PH-1 Miami, FL. 33131	1
Bill Hooper Wheelabrator McKay Bay Inc. 107 North 34th Street Tampa, FL. 33605	1

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE: SITE CERTIFICATION,)
 NORTH BROWARD COUNTY))
 RESOURCE RECOVERY) DEP CASE NO. PA 86-22
 PROJECT))
_____)

PROPOSED AGREEMENT FOR MODIFICATION
OF SITE CERTIFICATION, INCLUDING
ADDITIONAL CONDITIONS OF CERTIFICATION,
FOR ASH REUSE PROCESS FACILITY

I.

Wheelabrator North Broward Inc. (WNB), hereby requests a modification of the site certification, including conditions of certification, for the North Broward County Resource Recovery Project pursuant to Section 403.516.(1)(b), Florida Statutes (F.S.) and Rule 17-17.211, Florida Administrative Code (F.A.C.). Those provisions authorize the Department of Environmental Protection (DEP) to modify the certification after public notice and opportunity for review by the public and by the parties to the original certification proceeding and upon no objection to the proposed modification being raised by those persons. This agreement for modification would authorize the construction and operation of an ash reuse processing facility to be located within the certified Project site to facilitate the recycling of municipal

solid waste combustor ash residue. In addition, WNB proposes to incorporate into the certification the relevant conditions contained in Department Permit Number AO 06-208187 contained in Appendix B of this submittal, which was previously issued for an onsite lime silo and ash handling system. WNB also is proposing to include in the conditions of certification an additional condition addressing testing of ash residue as previously suggested by the Department of Environmental Protection. In support of this modification, WNB states:

II.

On March 9, 1987, a final Site Certification Order was issued by the Siting Board, pursuant to Chapter 403, Part II, F.S., authorizing the construction and operation of the North Broward Resource Recovery Project, subject to the provisions of the certification order and to the conditions of certification included in that order. Subsequent modifications of site certification were issued on April 12, 1988 and February 1, 1989 to revise the project site layout and the air emissions limits in conformance with the separate prevention of significant deterioration permit based upon the installation of acid gas scrubbers at the Project. That certification, as modified, authorized the construction and operation of a mass-burn resource recovery facility at a site in Broward County, Florida. The facility came on line in June of 1991. All tests demonstrating facility compliance were completed on October 10, 1991, and the facility has been operating in compliance with all operating permits since that time. The

facility converts up to 2419 tons per day of municipal solid waste to electricity.

WNB has identified several additional needed modifications to the certification including additional conditions of certification to allow construction and operation of a new ash processing facility within the certified site and to incorporate several recent regulatory authorizations for the Project.

On May 14, 1992, the Department of Environmental Protection issued to WNB an operation permit No. AO 06-208187 for a 236 ton lime storage silo and an ash handling system. Copies of that permit are contained in Appendix B of this Request for Modification of Certification. WNB requests that the non-procedural terms and conditions of that permit be incorporated into this permit, whereupon WNB would return the issued permit to the Department. Such consolidation of that permit authorization into the certification will place all of the relevant state-imposed limitations and conditions for the Project into a single authorization. The proposed conditions of certification attached hereto reflect the pertinent conditions from that existing permit.

The Department of Environmental Protection has recently indicated that the required testing of ash residue from the Project should be revised during the next certification modification to allow use of a revised test under Rule 17-702, FAC. A copy of that letter is included in Appendix C of the Modification Request.

III.

The ash reuse processing facility will be constructed on a

less than one-acre parcel of the existing site, adjacent to the existing resource recovery units. The proposed enclosed facility will process ash from the existing units for use as landfill cover or, as markets develop, for use as a construction aggregate. Such uses have been approved by the Department of Environmental Protection as indicated in the attached appendix of this modification request. Such recycling of ash will reduce the amount of material currently being landfilled, extending the useful life of the landfill. Minimal offsite and onsite impacts will occur, principally due to the development and operation of the small project site. No changes to other onsite facilities will be required as a result of the project. The details of the project and its impacts are described in this Request for Modification of Site Certification.

IV.

WNB proposes that additional and modified conditions of certification be imposed as part of the approval of this modification. A proposed set of revised and additional conditions of certification is appended to this request, which incorporates conditions from the previously issued Department air operation permit for the lime silo and ash handling system. These conditions address principally the air emissions of particulate matter from the existing ash handling system and the proposed new ash treatment facility. A condition to address the revised testing of ash residue is also proposed.

Request For Relief

Accordingly, Wheelabrator North Broward, Inc. requests that


1. All parties to the original certification proceeding agree to, or otherwise do not object to, this proposed modification and the attached additional provisions of the certification and the conditions of certification within thirty (30) days of submittal of this proposed Agreement, as provided for in Section 403.516(1)(b), F.S.;

2. Upon no objection being raised by the parties as provided above or by a substantially affected person within forty-five (45) days of public notice of this proposed modification, the Department of Environmental Protection issue an order modifying the terms and conditions of the certification, pursuant to Section 403.516.(1)(b), F.S., and incorporating the proposed additional and modified conditions of certification; and

3. The Department of Environmental Protection grant such other relief as may be appropriate, including necessary additional conditions of certification proposed by agency parties.

Respectfully submitted this 18th day of April, 1994.

HOPPING BOYD GREEN & SAMS


Douglas S. Roberts
Fla. Bar No. 0559466
123 South Calhoun Street
Post Office Box 6526
Tallahassee, Florida 32314
(904) 222-7500

Attorney for Wheelabrator
North Broward, Inc.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing and attachment have been furnished to the following on this 15th day of April, 1994:

Cathy Carter
Agency Clerk
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Hamilton S. Oven, Jr., P.E.
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Richard T. Donelan
Assistant General Counsel
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Karen Brodeen
Assistant General Counsel
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

Rob Vandiver
General Counsel
Michael Palecki
Florida Public Service Commission
101 East Gaines Street
Fletcher Building, Room 212
Tallahassee, FL 32399-0850

Elizabeth D. Ross, Esquire
South Florida Water Management District
3301 Gun Club Rd.
West Palm Beach Florida 32303

Susan Coughanour
South Florida Water Management District
3301 Gun Club Rd.
West Palm Beach Florida 32303

John Copeland
Office of General Counsel
Broward County
Governmental Center, Suite 423
115 South Andrews Ave.
Ft. Lauderdale, Fla. 33301

Cliff Schulman
Greenberg, Traurig, Hoffman, Lipoff, Rosen & Quentel
1401 S. Brickell Ave. PH-1
Miami, Fla. 33131

J. Allen Cox
105 West Fifth St.
Tallahassee, Fla. 32303


Attorney

Proposed Revised and Additional Conditions of Certification

**North Broward Resource Recovery Facility
PA 86-22**

1. **ADDITIONAL AUTHORIZED FACILITIES:**

Ash Handling System Particulate Control¹

Particulate emissions from the ash handling system are controlled by a baghouse with an outlet grain loading not to exceed 0.01 gr/dscf or 3 tons per year.

Lime Silo Particulate Control¹

Particulate emissions from the unloading of pebble lime into a storage silo are controlled with a baghouse having an outlet loading design not to exceed 0.021 tons/per year.

Ash Reuse Process Facility

Particulate emissions from the ash processing addition will be controlled using a baghouse system with a minimum removal efficiency of 99.9%.

2. **REVISED CONDITIONS OF CERTIFICATION:**

Condition of Certification XIV., E.5., Solid/Hazardous Waste is revised to read as follows:

Ash, prior to transport to the landfill or processed into landfill daily cover or construction aggregate shall be stored in an enclosed building on an impervious surface or by another method approved by the Southeast District Office. Final disposal of the unprocessed ash shall be into ~~the~~ a lined landfill or by another method approved by the Southeast District Office. Any leachate generated within the building shall be collected and reused within the facility or disposed of by a method approved by the Southeast District Office. The Southeast District Office shall notify the SFWMD of the plans and specifications regarding the above referenced method.

Conditions XIV., E. Solid/Hazardous Waste, 8 is revised to read as follows:

8. The sampling analysis and reporting of results of municipal solid waste combustor ash residue will be in accordance with F.A.C. Chapter 17-702.

¹ Previously permitted, constructed and placed in operation under DEP permit AO 06-208187. Permit contained in Appendix B of Modification Request

9. Deleted.
10. Deleted.

Conditions XIV., E. Solid/Hazardous Waste 12 is added to read as follows:

12. Chemical and physical properties of the processed ash shall be determined and reported in accordance with F.A.C. Chapter 17-702 and reported to the department.

3. ADDITIONAL SPECIFIC CONDITIONS OF CERTIFICATION:

Condition XIV., A. Air, 6. is added to read as follows:

6. Ash Handling, Reuse Facility, Lime Silo²

- a. Wheelabrator North Broward, Inc.'s fly ash handling system and the lime silo shall be allowed to operate continuously (i.e. 8,760 hrs./yr.).
- b. Particulate emissions from the fly ash handling system, and lime silo baghouses shall not exceed 0.01 gr./dscf, nor 3.0 tons/year and 0.021 tons/year, respectively.
- c. The ash reuse facility shall be allowed to operate up to 6000 hrs/yr at a maximum process rate of 260,000 lb/hr of ash residue.³
- d. Particulate emissions from the ash reuse process facility shall not exceed 0.01 gr./dscf. nor 11.7 tons/yr.³
- e. Visible emissions from the fly ash handling system and the ash reuse process facility shall not exceed 5% opacity.
- f. Visible emissions from the lime silo baghouse shall not exceed 5% opacity.
- g. Compliance with the particulate and visible emissions test shall be determined annually using EPA Methods 1, 2, 3, 4, 5 and 9 contained in F.A.C. Rule 17-297. The visible emissions test for the fly ash handling system and ash

² Unless otherwise indicated, these proposed specific conditions are consistent with the existing permit conditions in DEP permit AO 06-208187. Permit contained in Appendix B of Modification Request.

³ New specific condition not contained in DEP permit AO 06-208187. Permit can be found in Appendix B of Modification Request.

processing facility conducted along with the particulate tests shall be for at least 60 minutes. The visible emissions tests for the lime silo shall be conducted for the entire truck unloading operation. The minimum requirements for stack sampling facilities, source sampling and reporting shall be in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A. A stack drawing showing sampling locations for the proposed ash processing facility baghouse shall be submitted to the Department at least 90 days prior to testing.

- h. The maximum allowable emission rate for particulate matter for the lime silo is 0.021 tons/year. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department, pursuant to the authority granted under F.A.C. Rule 17-2.700(3)(d), hereby waives the requirement for a stack test. The alternate standard set forth by this provision establishes a visible emission not to exceed an opacity of 5%.
- i. Should the Department have any reason to believe the particulate emission standard is not being met for the lime silo, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with F.A.C. Rule 17-297.
- j. No objectionable odors from this facility will be allowed.
- k. The Southeast District Office of the DEP shall be given written notice at least 15 days prior to compliance testing.
- l. All conveyor loading points, transfer points and all ash processing equipment shall be properly enclosed. The facility shall be operated by personnel properly trained for the equipment herein. The Department shall be notified in writing on how the facility will be staffed and trained.
- m. Reasonable precautions shall be taken during operation to prevent and control generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. Rule 17-2.610(3). Such reasonable precautions shall be: application of water or chemicals to control fugitive emissions from activities such as vehicular movement, loading, unloading, storage and handling.
- n. The permittee shall comply with all applicable provisions of Florida Administrative Code Chapters 17-4 and 17-210 to 297.

NORTH BROWARD RESOURCE RECOVERY FACILITY
ASH PROCESSING ADDITION

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Construction Environmental Control Plan.....	5

es#/520/ocr

NORTH BROWARD RESOURCE RECOVERY FACILITY ASH PROCESSING ADDITION

LIST OF APPENDICES

- Appendix A: Revised Storm Water Drainage Calculations
Appendix B: Potential Air Emissions Analysis/Existing Air Permits
Appendix C: Letter from John M. Ruddell
RE: Approval for Reuse of ash generated at Wheelabrator's McKay Bay Facility.

Letter from Chris McGuire
RE: Reuse of ash as a daily cover

Letter from Hamilton Owen
RE: Incorporation of ash testing Conditions pursuant to FAC 17-702.
Appendix D: Revised Ash Residue Management Plan including Standard Operating Procedures for performance standards and operational criteria and Comprehensive Quality Assurance Plan

LIST OF DRAWINGS & FIGURES

1. 07-27-0001 Revised Site Plan, Ash Reuse Process Addition
2. 07-27-0002 Plan View, Ash Reuse Process
3. 07-24-0001 North & South elevations Ash Reuse Process
4. Certified Site Conformance Diagram
5. Revised Surface Water Drainage Map

PROCESS FLOW DIAGRAMS

- Figure 1. Landfill Cover Production
Figure 2. Construction Aggregate Production

es#5/506/ocr

INTRODUCTION

Wheelabrator North Broward Inc. (WNB) seeks agency approval for a modification of site certification No. PA86-22.

The refuse fueled boilers at the North Broward County Resource Recovery Facility (RRF) convert Municipal Solid Waste (MSW) into electrical energy and reduce the volume of MSW by 90% through the combustion process. The remaining residue consists of two streams. **Bottom Ash** is the material remaining on the grates after combustion is complete. **Fly Ash** is the ash component in the flue gas and is collected in a scrubber/baghouse system. The bottom ash and fly ash are currently combined for disposal into the adjacent ash monofill.

The purpose of this modification is to construct appropriate equipment to sufficiently process the ash residue for beneficial reuse either as landfill daily cover or substitute aggregate material for construction applications. The Department of Environmental Protection has authorized such reuse application for Wheelabrator's McKay Bay Facility as indicated in Appendix C and is currently reviewing Wheelabrator's data submittal seeking a recovered materials determination for WNB.

PROCESS DESCRIPTION

The ash reuse process was developed for the purpose of manufacturing both landfill cover or a marketable aggregate product from the ash residue remaining from the combustion of municipal solid waste. The modification will allow for the processing of ash residue into recovered materials. These materials meet the criteria for landfill daily cover as described in F.A.C.17-701 and also qualify as a recycled material pursuant to F.A.C.17-702.

The process begins when the ash residue exits the facility. While the refuse processing in the Resource Recovery Facility is a continuous 24 hours per day operation, the ash reuse process is designed as a single shift operation. Therefore, the bottom ash which discharges from the combustion grates is conveyed to a storage bunker prior to processing.

The process is divided into four phases: initial ferrous recovery and processing; initial size gradation, reagent introduction and curing; final sizing; and shipping. A description of each phase of the process is provided below and is shown in Figure 1 and 2.

Ferrous Recovery

Recovery of ferrous metal from the ash residue stream is important for three reasons. Ferrous metal recovery avoids consumption of ash monofill volume and therefore extends its useful life. Recovered ferrous scrap is a valuable scrap metal product which enhances recycling efforts and is easily reused. Thirdly, removal of the ferrous metal, which varies in size from large bulky objects to small nails, screws, etc., enhances the ability to produce a homogeneous product.

The ash residue is conveyed to a finger screen where the stream is divided into plus 4" and minus 4" fractions. The plus 4" material is primarily ferrous metal and is conveyed to a bunker where it is stored prior to shipping.

Initial Size Gradation

The minus 4" fraction from the finger screen is conveyed to a sizing screen. The ferrous metal in this fraction is magnetically removed from the screen oversize stream. The screen undersize stream is then, through the following steps, either shipped as landfill daily cover or processed into a construction aggregate.

Reagent Introduction

The production of construction aggregate requires the addition of a portland cement based reagent blend to the remaining ash stream after ferrous metal recovery.

The discharge from the ash storage silo is weighed and reagents are proportioned into a mixer. After mixing is complete, the blend is discharged into an interim curing bunker.

Final Sizing and Shipping

After the curing period, the blend is removed from the interim storage bunker by a front end loader and introduced to another sizing screen. A final cleanup magnet removes any remaining ferrous metal. The cured aggregate product discharges into a truck and is shipped to the purchaser. The oversize material is crushed and returned to the final screen.

Process Results

The system is designed with the capability of processing all of the ash residue generated at the Wheelabrator North Broward Facility. Approximately 80% of the ash will be processed, while approximately 10% of the initial ash residue will be recovered as marketable ferrous metal. The processed aggregate will be sold as landfill cover or construction aggregate. Approximately 10% of the initial ash is expected to be process reject material and will be disposed of in accordance with F.A.C. 17-702.

This fully enclosed ash reuse process building will measure 125' x 350', and will be located adjacent to the existing ash residue handling and loading area. The equipment utilized in this process will be conveyors, loaders, screens, and mixers which are not unlike equipment already utilized at the Resource Recovery Facility.

The ash reuse processing building will be designed and constructed at an estimated cost of seven million dollars, and may require additional employees to operate and maintain the new facility.

IMPACTS

Site impacts for the North Broward Resource Recovery Facility were discussed in detail in the original siting application and in subsequent modifications. The addition of the ash reuse process building, whether producing landfill cover or construction aggregate, has little additional resource impact. Pertinent issues with regards to these impacts are as follows.

Air

The modification includes two new air emission points, all of which control particulate emissions generated by the production of recovered materials or the delivery of bulk reagents.

Two dust collectors will be mounted on the roof of the ash processing building. The dust collectors have several "pick up" points throughout the process. This dust collection system is designed to properly ventilate work areas and eliminate the possibility of fugitive dusting. Potential emissions from all points total less than 15 tons per year and actual emissions will be much lower. Emission estimates and air flow diagrams are included in Appendix B.

Water

The Ash Reuse Process Facility will generate approximately 1800 gallons of wastewater derived from washdown activities per day. This water will be supplied from the existing North Broward Resource Recovery Facility process water stream. The wastewater will enter the sump inside the ash reuse process building and will be pumped to the water storage tank at the Resource Recovery Plant for reuse on site.

Storm water shown in the cross hatched area in Drawing No. 5 will enter one of the sumps through a surface U-drain system. The runoff, will be pumped to the onsite contact water recycle tank. Manhole 7A will be capped to keep this runoff from entering the detention pond. The area from the new ash processing facility is presently an impervious area and construction of the proposed facility will not increase runoff volume from the area, as demonstrated in the storm water calculations provided in Appendix A.

Potable water will be used inside the building for working personnel and visitors. The sanitary sewers serving the new restroom facility within the ash reuse processing building will flow to the Facility's lift station which flow to the North Broward Waste Water Treatment Plant. The estimated daily usage of potable water is approximately 225 gallons.

Traffic

The ash reuse process will generate approximately 4500 tons per week of landfill daily cover or construction aggregate product. The product will be shipped six days per week and will be distributed as close to the production facility as possible.

The production of the ash reuse facility will be consumed at the adjacent landfill or other nearby markets as daily cover. The material will be transported via an existing internal road linking the resource recovery facility with the landfill. Since the processed ash products can be used in the landfill as daily cover, it will displace truck loads of purchased cover material that currently travels to the landfill from Powerline Road.

The balance of the processed aggregate will be utilized as a road construction aggregate. Markets are the three asphalt batch plants in the vicinity of 48th Street and Powerline Road. Trucks will exit the production facility and travel less than one mile to the consumers. The processed aggregate is a 100% substitute for natural aggregates; therefore, the batch plants in the vicinity will avoid delivery of aggregate that is currently delivered through the Sample Road and Powerline Road corridor. The processed aggregate will be delivered in covered trucks in accordance with Department of Transportation requirements.

The ash processing facility will require deliveries of reagents and supplies estimated to be 2-3 trucks per day in addition to existing normal deliveries to the project site. The ash reuse process will not impact normal refuse deliveries to the facility. We anticipate minimal impact to the facility staffing requirements.

In summary, the ash reuse process will result in a net reduction of vehicle traffic in the congested Sample Road and Powerline Road area. Truck deliveries of processed aggregate to local asphalt plants and the adjacent landfill will have a one for one offset of existing aggregate deliveries.

Noise

The North Broward Ash Processing Facility will be designed, procured, constructed and operated to meet all applicable noise ordinances (Sec 27-231-27) Broward County Ordinances.

The Facility will be designed to operate during the day shift with occasional second shift work when necessary due to equipment maintenance and plant outages.

Various noise abatement measures will be required and incorporated into the Ash Reuse Processing Facility design to reduce noise impact due to operation of the facility. Different forms of noise control measures include equipment enclosures, attenuating materials, barriers, mufflers, lagging, vibration damping and insulation.

CONSTRUCTION ENVIRONMENTAL CONTROL PLAN

The total duration of construction is expected to be 120 days from ground breaking to completion.

Piling will be required for support of various building and foundation loads. Pile driving activities will be restricted to the hours of 7:00 am to 7:00 pm and are anticipated to be completed within a two week time frame.

There is sufficient impervious surface on site to serve as a laydown area.

An environmental control program shall be established under the supervision of a qualified individual to assure that all construction activities conform to applicable environmental regulations and the applicable conditions of certification.

If harmful effects or irreversible environmental damage not anticipated by the application are detected during construction, the the Southeast District Office shall be notified.

APPENDIX A

REVISED STORM WATER DRAINAGE CALCULATIONS

RUST ENGINEERING COMPANY

RUST AND QUALITY--A Company and a Commitment SM

100 Corporate Parkway 35242
Post Office Box 101
Birmingham, Alabama 35201
Tel. (205) 995-7878

April 6, 1994

Mr. Paul Claerbout, Plant Manager
WHEELABRATOR NORTH BROWARD, Inc.
2600 N. W. 48th Street
Pompano Beach, FL 33073

SUBJECT: RUST Contract No. 21-4527L
Proposed Ash Processing Recycling Facility and
Required Revision to
STORM DRAINAGE CALCULATIONS
for the NORTH BROWARD COUNTY
RESOURCE RECOVERY FACILITY
Broward County, Florida

Dear Mr. Claerbout:

Reference is made to the following report entitled: STORM
DRAINAGE CALCULATIONS FOR THE NORTH BROWARD COUNTY RESOURCE
RECOVERY FACILITY, BROWARD COUNTY, FLORIDA;

Prepared by: RUST INTERNATIONAL CORPORATION
Birmingham, Alabama
Contract 21-3457
October 4, 1989

Also, reference power plant siting Certification No. PA86-22. The current project being proposed for this site consists of a 350 ft. long by 126 ft. wide Ash Processing Building to be constructed on the site in an area just south of the eastern Storm Water Detention Pond. This area is now mostly paved except for the eastern end which has the Ash Loadout Facility and a portion of the Conveyor Gallery. An area along the south side of the proposed building of approximately 235 ft. by 65 ft. will be paved to provide truck access to the doors of the proposed building along its south side. This proposed paved area is now pervious as considered in the referenced storm drainage calculations.

The attached calculations determine the impact on the existing storm drainage and Detention Ponds resulting from the construction of the proposed Ash Processing Facility. These calculations demonstrate that the stormwater management requirements of the South Florida Water Management District are still being met.

-A1-

Page Two
Mr. Paul Claerbout
April 6, 1994

The new calculations sheets presented here represent only those sheets of the original referenced report that are revised because of the proposed project. These calculations show that only minor changes will occur in the storm drainage runoff and the stage storage capacity of the two detention ponds. Drainage Areas 5, 7, and 7A will be impacted. The proposed Ash Processing Building is to be constructed within Drainage Area 7A and its roofed area will replace an area that is presently paved. The existing catch basin at 7A is to be covered over to exclude any surface storm drainage. The surface water coming from the existing and proposed paved areas is considered to have been in contact with ash. The storm drainage from this paved portion of Drainage Area 7A will be directed by a swale toward the east into an existing U-drain and sump system from which it will be pumped to the on site contact water recycle system. The storm drainage from the roof of the proposed Ash Processing Building will be directed to downspouts located along the north side of the new building which drain to the detention ponds. This will be achieved by having a relatively flat roof that slopes down from the south side to the north side of the building. An area of approximately 72 ft. by 45 ft. located just north of the stack will be transferred from drainage area 7A to drainage area 5. An area of new pavement approximately 70 ft. by 60 ft. is to be added inside drainage area 7. Also, the construction of the proposed building and the new paved area will reduce the available site stage storage above El. 18.0 by 0.30 Ac-Ft. This loss of site stage storage does not cause the results to fall outside of the requirements.

If additional information is required, please contact this office.

Sincerely,



Jack Franks
RUST Engineering Company
Civil Engineer
Florida PE NO. 45496

JF/er

Attachments: Revised pages of Referenced
STORM DRAINAGE CALCULATIONS

STORM DRAINAGE CALCULATIONS

for the

NORTH BROWARD COUNTY
RESOURCE RECOVERY FACILITY
Broward County, Florida

Prepared by

RUST INTERNATIONAL CORPORATION
Birmingham, Alabama

Contract 21-3457
October 4, 1989
Revised February 14, 1994
for Contract 21-4527L

Jack Frankel

FL. P.E. No. 45496
3-24-94

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REVISED PAGES

I. DETENTION CALCULATIONS

REVISED PAGES FOR CONTRACT 21-4527L
February 14, 1994

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVER FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

INPUT

ACREAGES (AC)

* TOTAL AREA (AC)	22.72 AC
- LESS AREA OUT TO WASTE TREATMENT	1.31 AC
- NET SITE AREA	21.41 AC
* IMPERVIOUS (AC)	
- BUILDING (ROOF)	3.84 AC
- ROAD AND PARKING	6.64 AC
* WATER OR POND AREA	2.60 AC
* PERVIOUS AREA	8.33 AC

MINIMUM ELEVATIONS (FT-NGVD)

* ROADS AND PARKING	16.80 FT
* FLOORS	19.00 FT

SITE STORAGE ELEVATIONS USED (FT-NGVD)

* BEGIN SITE STORAGE AT ELEV.	15.80
* MAX. SITE STORAGE ELEVATION	19.00

ZONING

INDUSTRIAL

ALLOWABLE DISCHARGE-CSM

69.20 CSM

WATER LEVELS (FT-NGVD)

* WET SEASON W. TABLE	10.00 FT
-----------------------	----------

DESIGN STORM RAINFALL AMOUNTS (IN)

* ROADS (10YR-24HR)	10.90 IN
* POND DESIGN (25YR-72HR)	18.10 IN
* FLOORS (100YR-72HR)	24.70 IN

PRETREATMENT? (YES=1, NO=0)

1.00

COMPUTATIONS

DETENTION REQUIREMENTS (AC FT)

* STORAGE FOR FIRST 1" RUNOFF (AC-FT)	1*21.41/12	1.78 AC-FT
* STORAGE FOR 2.5" * IMPERV.		
- WATER + ROOF AREA	2.60 + 3.84	6.44 AC
- SITE AREA FOR W Q	21.41 - 6.44	14.97 AC
- IMPERV AREA FOR W Q	14.97 - 8.33	6.64 AC
- % IMPERVIOUS FOR W Q	6.64 * 100	44.36%
	14.97	
- 2.5 * % IMPERVIOUS	2.5 * 0.4436	1.11 IN

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVERY FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994
 =====

VOL REQ'D FOR WATER 1.11*
 QUALITY DETENTION REQUIRED (AC-FT) (21.41-2.60)/12= 1.74 AC-FT

* CONTROLLING DETENTION 1.78 vs. 1.74 1.78 AC-FT
 REQUIRED (AC-FT)

* 1/2" PRETREATMENT .5* 0.78 AC-FT
 REQUIRED (INCL. ROOF AREA) (21.41-2.60)/12

* REQUIRED LAKE VOL. (AC-FT) 0.75*1.78 1.34 AC-FT
 (Assumes dry det, no separate
 pre-trtmt system)

Lake Bottom Elevation = 11.00, 3:1 side slopes
 Assume all storage above elevation 17.00 as vertical

STAGE-STORAGE TABLE

<u>STAGE (FT)</u>	<u>LAKE (AC-FT)</u>	<u>SITE (AC-FT)</u>	<u>PROJECT (AC-FT)</u>
10.0	0.00	0.00	0.00
11.0	0.00	0.00	0.00
11.2	0.36	0.00	0.36
11.4	0.73	0.00	0.73
11.6	1.10	0.00	1.10
11.8	1.48	0.00	1.48
12.0	1.87	0.00	1.87
12.5	2.85	0.00	2.85
13.0	3.87	0.00	3.87
14.0	6.00	0.00	6.00
15.0	8.27	0.00	8.27
15.5	9.45	0.00	9.45
16.0	10.67	0.08	10.75
16.5	11.92	0.95	12.87
17.0	13.20	2.80	16.00
18.0	15.80	9.42	25.22
19.0	18.40	19.63	38.03

CONTROL STRUCTURE DETENTION DISCHARGE WEIR (BLEEDER)

MIN CONTROL ELEVATION (DWT) 10.00 FT
 MIN CONTROL ELEVATION (ROAD EL. - 2) 14.80 FT
 CONTROL ELEVATION USED (FT-NGVD) 10.00 FT
 MIN EL WEIR CREST (FT-NGVD) FOR WATER QUALITY
 DETENTION 11.74 FT
 WEIR CREST ELEVATION USED (FT-NGVD) 12.00 FT
 MAX DAILY DISCHARGE VOLUME (AC-FT) @ 1/2" PER DAY 0.81 AC-FT
 OR 0.41 CFS

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVERY FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

SIZE CONTROL STRUCTURE DETENTION DISCHARGE WEIR

USE COMBINATION 3" DIA. HOLE (INVERT AT CONTROL
 ELEVATION. 10.00) AND V-NOTCH OPENING (NOTCH
 ELEV. 11.40) FOR BLEEDER STRUCTURE:
 V-NOTCH ANGLE USED (DEGREES) 40.64 DEG
 WEIR LENGTH (FT) $(12.00-11.40)*2*\text{TAN}(40.64/2)$ 0.44 FT

SIZE ALLOWABLE PEAK DISCHARGE WEIR

ALLOW PEAK DISCH. FOR THIS PROJ
 $69.20*21.41/640$ 2.32 CFS

SOIL STORAGE:

* IMPERVIOUS (AC) 3.84 + 6.64 + 2.60 13.08
 * PERVIOUS (AC) 21.41 - 13.08 8.33 AC
 * AVERAGE PERV. AREA ELEVATION (NGVD) 18.00
 * DEPTH TO WATER TABLE (FT) 18.00 - 10.00 8.00 FT
 * SOIL (COMPACTED) MOIST. STOR. AVAIL. (IN.) 8.18 IN
 * COMPOS SOIL MOIST. STOR. (S) $8.33/21.41*8.18$ 3.18 IN

MAX 25YR-72HR ZERO DISCHARGE STAGE:

* TOTAL RAINFALL (P) 18.10 IN
 * TOTAL RUNOFF (Q) (IN) $((P-.2S)^2)/(P+.8S)$ 14.77 IN
 * TOTAL RUNOFF VOLUME (AC-FT) $14.77*21.41/12$ 26.35 AC-FT
 * ZERO DISCHARGE STAGE ELEV.
 (FROM STA-STO TABLE) 18.10 FT
 * DISCH. AT STAGE 18.10
 (FROM STA-STO DISCH TABLE) 2.27 CFS

PEAK DISCHARGE WEIR DIMENSIONS

FOR RECTANGULAR: (PLACE "1" HERE TO CALCULATE ---> 0
 PEAK DISCHARGE USING RECT. WEIR)

*
 *
 *

* FOR V-NOTCH: (A "1" HERE INDICATES PEAK ---> 1
 DISCHARGE USES THE BLEEDER WEIR)

DRY DETENTION STARTS AT STAGE 11.00 FT
 - TOTAL WET DETENTION 0.00 AC-FT
 - 25YR-72HR DRY DETENTION 26.35 AC-FT

NORTH BROWARD WATER MANAGEMENT DISTRICT
 STORM DRAINAGE CALCULATIONS
 NORTH BROWARD RESOURCE RECOVERY FACILITY
 REVISED CALCULATIONS - FEBRUARY 14, 1994

STAGE-STORAGE-DISCHARGE TABLE

STAGE (FT)	STORAGE (AC-FT)	3" DIA. ORIFICE	V-NOTCH	TOTAL
10.0	0.00	0.00	0.00	0.00
11.0	0.00	0.22	0.00	0.22
11.2	0.36	0.25	0.00	0.25
11.4	0.73	0.27	0.00	0.27
11.6	1.10	0.29	0.02	0.31
11.8	1.48	0.31	0.09	0.40
12.0	1.87	0.32	0.29	0.61
12.5	2.85	0.36	0.54	0.90
13.0	3.87	0.40	0.70	1.10
14.0	6.00	0.47	0.95	1.42
15.0	8.27	0.52	1.14	1.66
15.5	9.45	0.55	1.23	1.78
16.0	10.75	0.57	1.31	1.88
16.5	12.87	0.60	1.39	1.99
17.0	16.00	0.62	1.46	2.08
18.0	25.22	0.66	1.59	2.25
19.0	38.03	0.70	1.72	2.42

CHECK PROPOSED MIN BUILDING FLOOR ELEV

MAX 100YR-72HR ZERO DISCHARGE STAGE
 TOTAL RAINFALL (P) 24.70 IN
 TOTAL RUNOFF (Q) (IN) $((P-.2S)^2)/(P+.8S)$ 21.26 IN
 TOTAL RUNOFF VOLUME (AC-FT) $21.26*21.41/12$ 37.93 AC-FT
 ZERO DISCHARGE STAGE ELEV
 (FROM STA-STO TABLE) 19.00 FT, OK
 BUILDING FINISHED FLOORS EL. 19.00 ARE OK

CHECK PROPOSED MIN ROAD ELEV

MAX 10YR-24HR ZERO DISCHARGE STAGE
 TOTAL RAINFALL (P) 10.90 IN
 TOTAL RUNOFF (Q) (IN) $((P-.2S)^2)/(P+.8S)$ 7.84 IN
 TOTAL RUNOFF VOLUME (AC-FT) $7.84*21.41/12$ 13.99 AC-FT
 ZERO DISCHARGE STAGE ELEV (FROM STA-STO TABLE) 16.68 FT, OK
 ROAD CENTERLINE EL. 16.80 IS OK

S C S P R O G R A M

PROJECT NAME : NORTH BROWARD RRF (REV. 2-14-94)
 REVIEWER : L. E. CRIGLER
 PROJECT AREA : 21.45 ACRES
 GROUND STORAGE : 8.18 INCHES
 TERMINATION DISCHARGE : 1.00 CFS
 DISTRIBUTION TYPE . . . : SFWMD
 RETURN FREQUENCY . . . : 10.00 YEARS
 RAINFALL DURATION . . . : 1-DAY
 24-HOUR RAINFALL . . . : 10.90 INCHES
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
10.00	.00	.00
11.00	.00	.22
11.20	.36	.25
11.40	.73	.27
11.60	1.10	.31
11.80	1.48	.40
12.00	1.87	.61
12.50	2.85	.90
13.00	3.87	1.10
14.00	6.00	1.42
15.00	8.27	1.66
15.50	9.45	1.78
16.00	10.75	1.88
16.50	12.87	1.99
17.00	16.00	2.08
18.00	25.22	2.25
19.00	38.03	2.42

- - - - - R E S E R V O I R - - - - -

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	STAGE (FT)
.00	.00	.00	.0	.0	.0	.0	.0	.0	10.00
4.00	.49	.00	.0	.0	.0	.0	.0	.0	10.00
8.00	1.49	.00	.0	.0	.0	.0	.0	.0	10.00
10.00	2.32	.05	1.4	.1	.1	.0	.2	.1	11.03
11.00	2.93	.18	3.6	.3	.3	.0	.2	.2	11.13
11.50	3.48	.34	7.4	.6	.6	.0	.3	.2	11.26
11.75	5.11	1.04	60.4	1.9	1.8	.1	.3	.3	11.64
12.00	7.15	2.22	102.4	4.0	3.9	.1	.9	.6	12.49
12.50	7.95	2.75	23.1	4.9	4.8	.1	1.2	1.1	13.32
13.00	8.36	3.03	12.4	5.4	5.3	.1	1.3	1.2	13.59
14.00	8.92	3.43	7.8	6.1	5.8	.3	1.4	1.3	13.83

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	R E S E R V O I R			STAGE (FT)
						ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
6.00	9.69	3.92	5.2	7.0	6.5	.5	1.5	1.4	14.19
9.00	10.33	4.52	3.2	8.1	7.1	1.0	1.5	1.5	14.45
24.00	10.90	4.92	2.2	8.8	7.3	1.5	1.6	1.5	14.55
30.00	10.90	4.92	.0	8.8	6.5	2.3	1.5	1.5	14.23
36.00	10.90	4.92	.0	8.8	5.3	3.0	1.4	1.4	13.31
42.00	10.90	4.92	.0	8.8	5.1	3.7	1.3	1.3	13.60
48.00	10.90	4.92	.0	8.8	4.5	4.3	1.2	1.2	13.31
54.00	10.90	4.92	.0	8.8	4.0	4.8	1.1	1.2	13.04
60.00	10.90	4.92	.0	8.8	3.4	5.4	1.0	1.1	12.78
61.00	10.90	4.92	.0	8.8	3.3	5.5	1.0	1.0	12.74

SUMMARY INFORMATION

MAXIMUM STAGE WAS 14.55 FEET AT 24.00 HOURS
 MAXIMUM DISCHARGE WAS 1.6 CFS AT 24.00 HOURS

S O S P R O G R A M

2-14-94

PROJECT NAME : N. BROWARD RRF (REV. ~~1-27-94~~)
 REVIEWER : L. E. CRIGLER
 PROJECT AREA : 21.45 ACRES
 GROUND STORAGE : 8.18 INCHES
 TERMINATION DISCHARGE : 1.00 CFS
 DISTRIBUTION TYPE . . . : SFWMD
 RETURN FREQUENCY . . . : 25.00 YEARS
 RAINFALL DURATION . . . : 3-DAY
 24-HOUR RAINFALL . . . : 13.32 INCHES
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
10.00	.00	.00
11.00	.00	.22
11.20	.36	.25
11.40	.73	.27
11.60	1.10	.31
11.80	1.48	.40
12.00	1.87	.61
12.50	2.35	.90
13.00	3.87	1.10
14.00	6.00	1.42
15.00	8.27	1.66
15.50	9.45	1.73
16.00	10.75	1.88
16.50	12.87	1.99
17.00	16.00	2.08
18.00	25.22	2.25
19.00	38.03	2.42

- - - - - R E S E R V O I R - - - - -									
TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	STAGE (FT)
.00	.00	.00	.0	.0	.0	.0	.0	.0	10.00
4.00	.32	.00	.0	.0	.0	.0	.0	.0	10.00
8.00	.65	.00	.0	.0	.0	.0	.0	.0	10.00
12.00	.97	.00	.0	.0	.0	.0	.0	.0	10.00
16.00	1.30	.00	.0	.0	.0	.0	.0	.0	10.00
20.00	1.62	.00	.0	.0	.0	.0	.0	.0	10.00
24.00	1.94	.01	.1	.0	.0	.0	.1	.1	10.55
28.00	2.42	.07	.4	.1	.0	.1	.2	.2	11.02
32.00	2.89	.17	.6	.3	.1	.2	.2	.2	11.07
36.00	3.36	.30	.8	.5	.3	.2	.2	.2	11.16
40.00	3.34	.47	1.0	.8	.5	.3	.3	.3	11.27

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	R E S E R V O I R				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
4.00	4.31	.66	1.1	1.2	.3	.4	.3	.3	11.41
8.00	4.78	.87	1.2	1.6	1.1	.5	.3	.3	11.57
52.00	5.38	1.18	2.1	2.1	1.5	.6	.4	.3	11.79
56.30	6.51	1.88	5.3	3.4	2.5	.9	.8	.5	12.31
58.00	7.62	2.53	9.4	4.5	3.8	.9	1.0	.9	12.50
59.00	8.36	3.04	12.6	5.4	4.4	1.0	1.2	1.1	13.17
59.30	9.03	3.51	20.7	6.3	5.2	1.1	1.3	1.2	13.51
59.75	11.03	5.02	130.6	9.0	7.2	1.2	1.5	1.4	14.22
60.00	13.52	7.04	174.6	12.6	11.4	1.2	1.8	1.5	15.56
60.50	14.49	7.86	35.6	14.0	12.8	1.2	2.0	1.9	16.40
61.00	15.00	8.29	18.7	14.8	13.5	1.3	2.0	2.0	16.57
62.00	15.68	9.87	11.4	15.9	14.4	1.5	2.0	2.0	16.72
64.00	16.50	9.59	7.5	17.1	15.3	1.8	2.1	2.0	16.83
68.00	17.46	10.43	4.6	18.7	16.1	2.6	2.1	2.1	17.01
72.30	18.10	11.00	3.1	19.7	16.5	3.2	2.1	2.1	17.05
80.00	18.10	11.00	.0	19.7	15.1	4.6	2.1	2.1	16.85
88.00	18.10	11.00	.0	19.7	13.7	6.0	2.0	2.0	16.64
96.00	18.10	11.00	.0	19.7	12.4	7.3	2.0	2.0	16.39
104.00	18.10	11.00	.0	19.7	11.1	8.6	1.9	1.9	16.09
112.00	18.10	11.00	.0	19.7	9.9	9.8	1.8	1.9	15.68
120.00	18.10	11.00	.0	19.7	8.7	11.0	1.7	1.8	15.20
128.00	18.10	11.00	.0	19.7	7.7	12.0	1.6	1.7	14.73
136.00	18.10	11.00	.0	19.7	6.6	13.1	1.5	1.5	14.28
144.00	18.10	11.00	.0	19.7	5.7	14.0	1.4	1.4	13.85
152.00	18.10	11.00	.0	19.7	4.8	14.9	1.2	1.3	13.45
160.00	18.10	11.00	.0	19.7	4.0	15.7	1.1	1.2	13.08
167.75	18.10	11.00	.0	19.7	3.4	16.3	1.0	1.1	12.75

SUMMARY INFORMATION

MAXIMUM STAGE WAS 17.05 FEET AT 72.00 HOURS
 MAXIMUM DISCHARGE WAS 2.1 CFS AT 72.00 HOURS

S C S P R O G R A M

2-14-94

PROJECT NAME : N. BROWARD RRF (REV ~~2-13-94~~)
 REVIEWER : L. E. CRIGLER
 PROJECT AREA : 21.45 ACRES
 GROUND STORAGE : 8.18 INCHES
 TERMINATION DISCHARGE : 1.00 CFS
 DISTRIBUTION TYPE . . . : SFWMD
 RETURN FREQUENCY . . . : 100.00 YEARS
 RAINFALL DURATION . . . : 3-DAY
 24-HOUR RAINFALL . . . : 18.18 INCHES
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
10.00	.00	.00
11.00	.00	.22
11.20	.36	.25
11.40	.73	.27
11.60	1.10	.31
11.80	1.48	.40
12.00	1.87	.61
12.50	2.85	.90
13.00	3.87	1.10
14.00	6.00	1.42
15.00	8.27	1.66
15.50	9.45	1.78
16.00	10.75	1.88
16.50	12.87	1.99
17.00	16.00	2.08
18.00	25.22	2.25
19.00	38.03	2.42

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	- - - - - R E S E R V O I R - - - - -				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
.00	.00	.00	.0	.0	.0	.0	.0	.0	10.00
4.00	.44	.00	.0	.0	.0	.0	.0	.0	10.00
8.00	.88	.00	.0	.0	.0	.0	.0	.0	10.00
12.00	1.33	.00	.0	.0	.0	.0	.0	.0	10.00
16.00	1.77	.00	.1	.0	.0	.0	.1	.0	10.31
20.00	2.21	.04	.3	.1	.0	.1	.2	.2	11.00
24.00	2.65	.11	.5	.2	.1	.1	.2	.2	11.03
28.00	3.30	.28	1.1	.5	.3	.2	.2	.2	11.16
32.00	3.95	.51	1.4	.9	.6	.3	.3	.3	11.33
36.00	4.59	.78	1.6	1.4	1.0	.4	.3	.3	11.55
40.00	5.24	1.10	1.8	2.0	1.5	.5	.4	.3	11.73

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	- - - R E S E R V O I R - - -				STAGE (FT)
					VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
4.00	5.88	1.45	2.0	2.6	1.9	.7	.6	.5	12.02
8.00	6.53	1.83	2.1	3.3	2.4	.9	.8	.7	12.25
52.00	7.34	2.35	3.6	4.2	3.0	1.2	.9	.3	12.57
56.00	9.02	3.50	3.5	6.3	4.7	1.6	1.2	1.1	13.37
58.00	10.40	4.53	13.2	8.1	6.4	1.7	1.4	1.3	14.10
59.00	11.42	5.33	19.9	9.5	7.7	1.8	1.6	1.5	14.64
59.50	12.33	6.06	31.7	10.8	8.9	1.9	1.7	1.6	15.13
59.75	15.05	8.34	197.2	14.9	12.9	2.0	1.9	1.8	16.03
60.00	18.45	11.31	257.7	20.2	18.2	2.0	2.1	2.0	16.93
60.50	19.73	12.51	51.7	22.4	20.3	2.1	2.1	2.1	17.40
61.00	20.47	13.13	27.1	23.5	21.6	2.2	2.2	2.2	17.54
62.00	21.40	13.98	16.5	25.0	22.6	2.4	2.2	2.2	17.70
64.00	22.53	15.01	10.9	26.8	24.1	2.7	2.2	2.2	17.87
68.00	23.83	16.22	6.6	29.0	25.5	3.5	2.3	2.2	18.02
72.00	24.71	17.03	4.4	30.4	26.2	4.2	2.3	2.3	18.07
80.00	24.71	17.03	.0	30.4	24.7	5.7	2.2	2.3	17.95
83.00	24.71	17.03	.0	30.4	23.3	7.1	2.2	2.2	17.79
96.00	24.71	17.03	.0	30.4	21.8	8.6	2.2	2.2	17.63
104.00	24.71	17.03	.0	30.4	20.4	10.0	2.2	2.2	17.47
112.00	24.71	17.03	.0	30.4	19.0	11.4	2.1	2.1	17.32
120.00	24.71	17.03	.0	30.4	17.5	12.9	2.1	2.1	17.17
123.00	24.71	17.03	.0	30.4	16.2	14.2	2.1	2.1	17.02
125.00	24.71	17.03	.0	30.4	14.8	15.6	2.0	2.1	16.81
144.00	24.71	17.03	.0	30.4	13.5	16.9	2.0	2.0	16.59
152.00	24.71	17.03	.0	30.4	12.1	18.3	2.0	2.0	16.33
160.00	24.71	17.03	.0	30.4	10.9	19.5	1.9	1.9	16.03
168.00	24.71	17.03	.0	30.4	9.7	20.7	1.8	1.8	15.58
176.00	24.71	17.03	.0	30.4	8.5	21.9	1.7	1.7	15.10
184.00	24.71	17.03	.0	30.4	7.4	23.0	1.6	1.6	14.63
192.00	24.71	17.03	.0	30.4	6.4	24.0	1.5	1.5	14.19
200.00	24.71	17.03	.0	30.4	5.5	24.9	1.3	1.4	13.76
208.00	24.71	17.03	.0	30.4	4.7	25.7	1.2	1.3	13.37
216.00	24.71	17.03	.0	30.4	3.9	26.5	1.1	1.2	13.01
222.25	24.71	17.03	.0	30.4	3.3	27.1	1.0	1.0	12.74

SUMMARY INFORMATION

MAXIMUM STAGE WAS 18.07 FEET AT 72.00 HOURS
 MAXIMUM DISCHARGE WAS 2.3 CFS AT 72.00 HOURS

RUST, BIRMINGHAM, ALABAMA

PROPOSAL
OR JOB NO. 21-3457

FOR NORTH BROWARD RESOURCE RECOVERY FACILITY
AT NORTH BROWARD COUNTY, FLORIDA
DESCRIPTION DETENTION POND OUTLET CONTROL
STRUCTURE

DATE 10-2-89

BY WJC CKD.

DWG.

REVISED 02-14-94
BY: JACK FRANKS
FOR CONTRACT 21-4527L

NORTH BROWARD RRF DETENTION
POND OUTLET CONTROL STRUCTURE

EL. 18.10 — ZERO DISCHARGE STAGE FOR 25-YR., 3-DAY STORM
DISCHARGE AT THIS STAGE IS $<$ ALLOWABLE
PEAK DISCHARGE FOR THIS SITE ($2.27 < 2.32$)

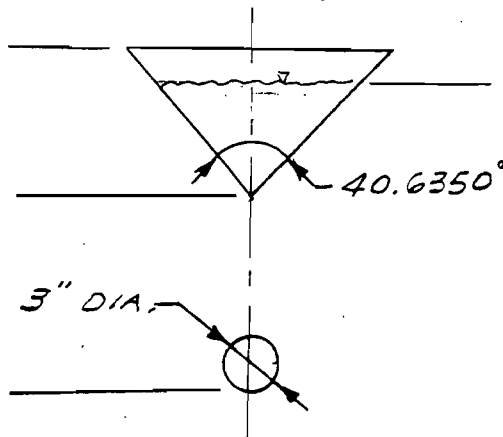
EL. 17.25 — TOP OF DIKE

EL. 17.10 — TOP OF STRUCTURE

EL. 12.00

EL. 11.40

EL. 10.00



EL. 11.74, STAGE @ REQUIRED
1.37 AC.-FT. OF DETENTION
(VOLUME UP TO THIS STAGE
CAN BE DISCHARGED NO
FASTER THAN 0.81 AC.-FT./DAY,
OR 0.41 CFS, WHICH IS $\frac{1}{2}$ "
OF SITE RUNOFF). ACTUAL
DISCHARGE IS 0.37 CFS.

(ROUTED)

ACTUAL 25-YR., 3-DAY STAGE IS

→ 17.05 FEET WITH 2.1 CFS
DISCHARGE (< 2.32 , O.K.)

(ROUTED)

ACTUAL 100-YR., 3-DAY STAGE IS

→ 18.07 FEET WITH 2.3 CFS DISCHARGE
(< 2.32 , STILL O.K.) 100-YR., 3-DAY ZERO
DISCHARGE STAGE = 19.00 (BLDG FLOORS) O.K.

10-YR., 1-DAY ZERO DISCHARGE STAGE IS

→ 16.68 FEET, FROM CALCULATED 13.99
AC.-FT. STORAGE.

→ 16.68 $<$ 16.80 (ROAD ELEV.) O.K.

II. STORM DRAINAGE CALCULATIONS

REVISED PAGES FOR CONTRACT 21-4527L
February 14, 1994

RUST, BIRMINGHAM, ALABAMA

PROPOSAL OR JOB NO. 21-3457

FOR NORTH BROWARD RRF
 AT NORTH BROWARD COUNTY, FLORIDA
 DESCRIPTION STORM SEWER SYSTEM CALCULATIONS
- MAIN SYSTEM

DATE 9-28-89 REV. WJC 10-4-89
 BY WJC CKD.
 DWG. REV. 2-14-94
 BY: JACK FRANKS

ORIGINAL CALCULATIONS
9-28-89 E 10-4-89

INLET LOCATION		INLET STRUCT. NO.	OUTLET STRUCT. NO.	AREA, ACRES				S.C.A.		TIME TO CONC. T _c , MIN.	INTENS. I, IN/HR.	FLOW Q, CFS	VELOCITY V, FPS	FLOW TIME t, MIN.	PIPE LENGTH L, FT.	PIPE DIA. D, IN.	SLOPE S, %	ELEVATION		NOTES:
N	E			PAVED C=0.95	GRAVEL C=0.50	YARD C=0.40		INCREMENTAL	CUMULATIVE									INLET	OUTLET	
3385.78	2211.33	1B	1A	0.26				0.25	0.25	5	9.1	2.3	2.6	-	24.66	15	0.25	16.40	16.34	
3429.44	2211.33	1A	1	0.20				0.19	0.44	5	9.1	4.0	3.7	-	9.31	15	0.5	16.34	16.29	ACTUAL TIME OF CONC. @ M.H. NO. 1 = 3.36 MIN.
3429.00	2211.33	1	2	1.06	0.37			2.2	2.64	5	9.1	24.0	5.0	0.39	116.08	30	0.4	15.62	15.16	
3429.00	2090.00	2	3A	0.07		0.19		0.14	2.78	5	9.1	25.3	5.4	0.38	123.43	30	0.45	15.16	14.60	
3429.00	1961.32	3A	3					-	2.78	5	9.1	25.3	5.4	0.29	94.70	30	0.45	14.60	14.17	
3528.95	1961.32	3	4	0.18		0.53		0.38	3.16	5	9.1	28.8	6.4	0.26	100.25	30	0.6	14.17	13.57	
3611.16	2024.03	4	5	0.23		0.45		0.40	3.56	5	9.1	32.4	7.1	0.18	78.23	30	0.75	13.57	12.98	
3693.39	1892.07	6A	6	0.32		1.0		0.70	0.70	5	9.1	6.4	4.2	-	77.63	18	0.5	14.15	13.76	
3693.39	1971.03	6	5	0.19		0.14		0.24	0.94	5	9.1	8.6	5.2	-	49.67	18	0.8	13.76	13.36	
3693.39	2024.03	5	7A	0.36		0.36		0.49	4.99	5	9.1	45.4	6.8	0.46	183.81	36	0.55	12.64	11.63	
3880.00	1971.03	7	7A	0.19		0.14		0.24	0.24	5	9.1	2.2	3.3	-	70.64	18	0.5	12.70	12.35	
3880.00	2045.00	7A	POND	0.66		0.40		0.79	6.02	5.3	9.0	54.2	8.3	-	203.58	36	0.8	11.63	10.00	
4085.58	2045.00	POND																		

REVISED 2-14-94
 BY JACK FRANKS
 FOR CONTRACT NO. 21-4527L

3693.39	2024.03	5	7A	0.36		0.43		0.51	5.01	5	9.1	45.6	6.82	0.45	183.81	36	0.55	12.64	11.63	
3880.00	1971.03	7	7A	0.26		0.07		0.28	0.28	5	9.1	2.55	3.41	0.31	70.64	18	0.5	12.70	12.35	
3880.00	2045.00	7A	POND	-		-		-	5.29	5	9.1	48.15	8.31	0.41	203.58	36	0.8	11.63	10.00	REVISED DRAINAGE...

AREA 7A NOW DRAINS TO AN EXISTING SUMP AND PUMP STATION FROM WHICH IT IS PUMPED TO THE WASTE WATER TREATMENT SYSTEM.

CIRCULAR CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

February 14, 1994
NORTH BROWARD RESOURCE RECOVERY FACILITY
21-4527L
STORM SEWER SEGMENT NO.5 - 7A

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	45.6
Channel Bottom Slope (feet per foot).....	0.0055
Manning's Roughness Coefficient (n-value).....	0.0150
Channel Diameter (feet).....	3.00

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	2.69
Flow Velocity (feet per second).....	6.82
Froude Number (Flow is Sub-Critical).....	0.629
Velocity Head (feet).....	0.72
Energy Head (feet).....	3.41
Cross-Sectional Area of Flow (square feet).....	6.68
Top Width of Flow (feet).....	1.83

CIRCULAR CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.5 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A complete program manual is available.

Best Available Copy

CIRCULAR CHANNEL ANALYSIS NORMAL DEPTH COMPUTATION

February 14, 1994
NORTH BROWARD RESOURCE RECOVERY FACILITY
21-4527L
STORM SEWER SEGMENT NO.7 - 7A

=====

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	2.5
Channel Bottom Slope (feet per foot).....	0.0050
Manning's Roughness Coefficient (n-value).....	0.0150
Channel Diameter (feet).....	1.50

=====

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	0.65
Flow Velocity (feet per second).....	3.41
Froude Number (Flow is Sub-Critical).....	0.855
Velocity Head (feet).....	0.18
Energy Head (feet).....	0.33
Cross-Sectional Area of Flow (square feet).....	0.73
Top Width of Flow (feet).....	1.49

=====

CIRCULAR CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.5 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77093
(713) 895-8322. A complete program manual is available.

CIRCULAR CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

February 14, 1994
NORTH BROWARD RESOURCE RECOVERY FACILITY
21-4527L
STORM SEWER SEGMENT NO 7A - POND

=====

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	48.1
Channel Bottom Slope (feet per foot).....	0.0080
Manning's Roughness Coefficient (n-value).....	0.0150
Channel Diameter (feet).....	3.00

=====

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	2.29
Flow Velocity (feet per second).....	8.31
Froude Number (Flow is Sub-Critical).....	0.973
Velocity Head (feet).....	1.07
Energy Head (feet).....	3.36
Cross-Sectional Area of Flow (square feet).....	5.73
Top Width of Flow (feet).....	2.55

=====

CIRCULAR CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.5 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A complete program manual is available.

APPENDIX B

*POTENTIAL EMISSIONS ANALYSIS/EXISTING MINOR
AIR SOURCE PERMITS*

WHEELABRATOR NORTH BROWARD INC.
ASH RECYCLING PROCESSING FACILITY
PROJECT DESCRIPTION

An ash recycling processing facility is proposed to be installed to combine bottom ash, from the refuse fired boilers, with cement and water to produce a product to be used as landfill cover and/or construction aggregate. The process equipment will be installed in a totally enclosed building. There will be several particulate control pick-up points in the building (see attached Ash Recycling Processing Facility Flow Diagram). The air from the pick-up points will be routed to a baghouse dust collector. The vents from the ash storage silo and the cement silo will also be routed to the baghouse dust collector. The baghouse dust collector will be designed for a minimum particulate removal efficiency of 99.9%.

ASH RECYCLING PROCESSING FACILITY
PROCESS RATE AND EMISSION CALCULATIONS

1. Total Process Input Rate and Product Rate

a. Raw Materials

1) Ash
 $190 \text{ tons/hr} \times 2000 \text{ lb/ton} = 380,000 \text{ lb/hr}$

2) Portland Cement Based Reagent Blend
 $6.5 \text{ tons/hr} \times 2000 \text{ lb/ton} = 13,000 \text{ lb/hr}$

3) Water - normally none,
 added as needed for dust control

Total Process Input Rate = 393,000 lb/hr
 (Maximum)

b. Product Weight

Sum of inputs to mixer:

1) Ash Product 260,000 lb/hr

2) Portland Cement Based Reagent Blend 13,000 lb/hr

Product Rate 273,000 lb/hr

2. Air Emission Calculations

a. Control Device Efficiency

Inlet Grain Loading to Baghouse 3.0 grains/act.ft³

Outlet Grain Loading from Baghouse 0.004 grains/act.ft³

$(3.0 \text{ grains/act.ft}^3 - 0.004 \text{ grains/act.ft}^3) / (3.0 \text{ grains/act.ft}^3) \times 100$

= 99.9%

b. Airborne Contaminants Emitted

1) Potential Uncontrolled Particulate Emissions

$$3.0 \text{ grains/act.ft}^3 \times \text{lb/7000 grains} \times 114,000 \text{ act.ft}^3/\text{min} \times 60 \text{ min/hr}$$

$$= 2,931 \text{ lb/hr}$$

Tons/year

$$2,931 \text{ lb/hr} \times 6000 \text{ hr/yr} \times \text{ton/2000lb} = 8,793 \text{ tons/yr}$$

2) Particulate Emissions After Control Device

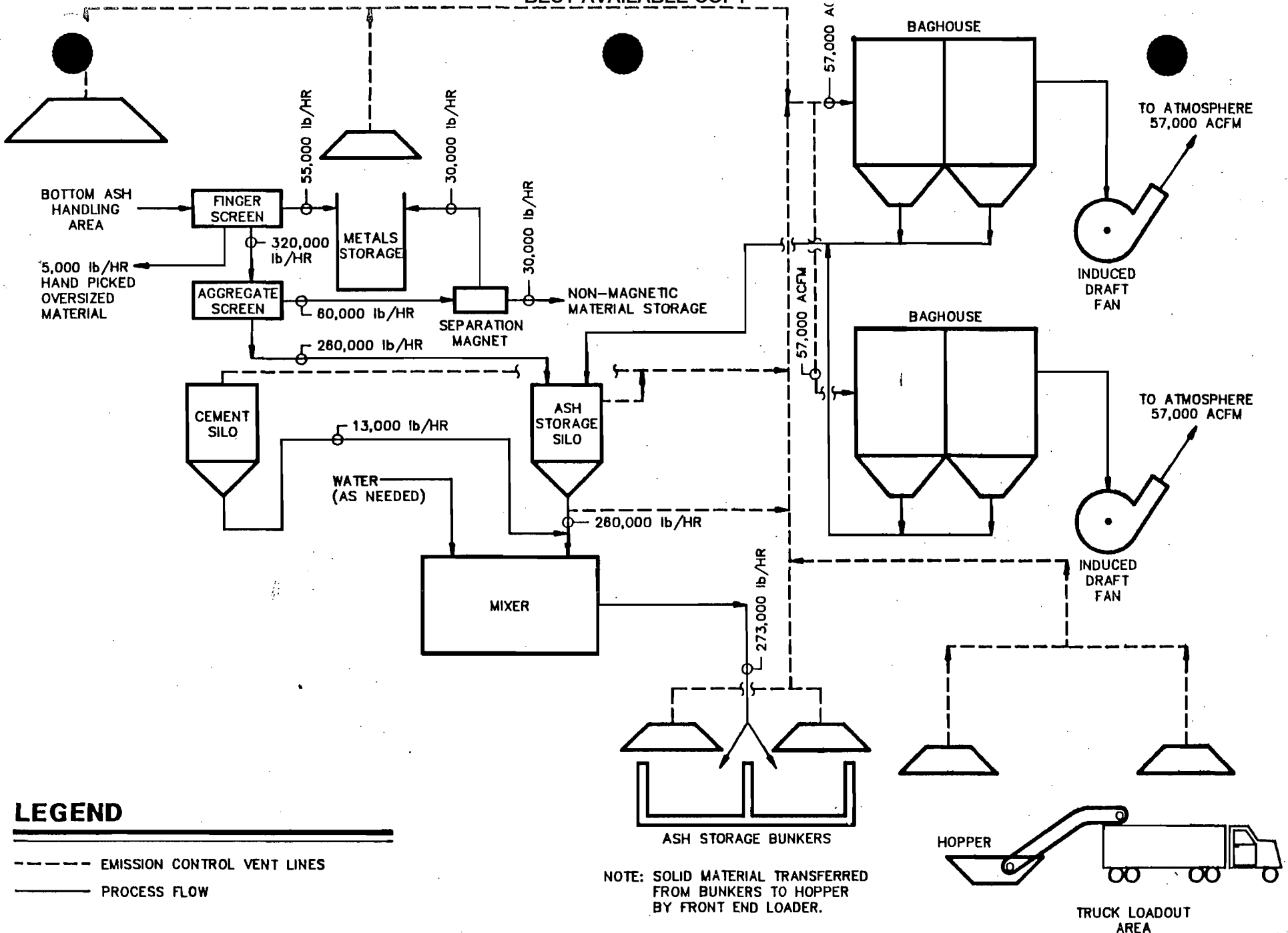
Maximum lb/hr

$$0.004 \text{ grains/act.ft}^3 \times \text{lb/7000 grains} \times 114,000 \text{ act.ft}^3/\text{min} \times 60 \text{ min/hr}$$

$$= 3.91 \text{ lb/hr}$$

Tons/year

$$3.91 \text{ lb/hr} \times 6000 \text{ hr/yr} \times \text{ton/2000lb} = 11.7 \text{ tons/yr}$$



-B4-

LEGEND

- EMISSION CONTROL VENT LINES
- PROCESS FLOW

ASH RECYCLING PROCESSING FACILITY
FLOW DIAGRAM
NO SCALE

PROFESSIONAL ENGINEER REGISTERED IN FLORIDA

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in this document. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable rules and regulations of the Florida Department of Environmental Protection.

Signed *James Jackson Smith*

James Jackson Smith

Name (Please Type)

Rust Environment & Infrastructure

Company Name (Please Type)

100 Corporate Parkway, Birmingham, AL 35242

Mailing Address (Please Type)

Florida Registration No. 36535

Date: 3/24/94

Telephone No. 205/995-7361



Florida Department of Environmental Regulation

Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406

Lawton Chiles, Governor

Telephone: 407/433-2650

Carol M. Browner, Secretary

Fax: 407/433-2666

PERMITTEE:

Mr. Paul F. Claerbout
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, Florida 33073

I.D. NUMBER: 50/WPB/06/2120

PERMIT/CERTIFICATION NUMBER: AO 06-208187*

DATE OF ISSUE:

MAY 14 1992

EXPIRATION DATE: February 28, 1996

COUNTY: Broward

LATITUDE/LONGITUDE: 26°17'14"N/80°09'35"W

UTM: Zone 17; 583.9 Km. E; 2907.6 Km. N

PROJECT: Wheelabrator North Broward, Inc.
Ash Handling System & Lime Silo

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-2, and in conformance with all existing regulations of the Florida Department of Environmental Regulation. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

DATE: An air pollution source consisting of an ash handling system and lime silo at a Source Recovery Project (PSD permit No. PSD-FL-112).

Ash Handling System

Emissions from the ash handling system (with a process input rate of 21,435 lbs./hr. of fly ash and spray dryer reaction products) are controlled by MAC Filter Model 120 LST 100 baghouse designed at a flow rate of 8000 ACFM.

Lime Silo

The lime silo has a capacity of 236 tons. Only one truck can be unloaded pneumatically into the lime silo at a maximum process input rate of 40,000 lbs./hr. The lime silo is equipped with Wheelabrator Air Pollution Control Model 1016, BA-108, Jet III baghouse designed at a flow rate of 1500 ACFM.

IN ACCORDANCE WITH: Certificate of Completion of Construction received February 6, 1992 and additional information received April 30, 1992; Application to Construct Air Pollution Sources dated September 26, 1990 and additional information dated November 19, 1990 and January 9, 1991 (none are attached).

LOCATED AT: 2700 Hilton Road (N.W. 48th Street), Pompano Beach, Broward County, Florida.

TO SERVE: A resource recovery facility (SIC #4953).

SUBJECT TO: General Conditions 1-14. and Specific Conditions 1-13.

* This permit supersedes Construction Permits Nos. AC 06-186997 and AC 06-186998 issued March 12, 1991

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

- (a) Have access to and copy any records that must be kept under the conditions of the permit;
- (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:

- (a) A description of and cause of noncompliance; and
- (b) The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

GENERAL CONDITIONS:

9. In accepting this permit, the permittee understands and agrees that all records, tests, monitoring data and other information relating to the construction or operation of the permitted source which are submitted to the Department, may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rule 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following :

- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.
- (b) The permittee shall hold at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.
- (c) Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
Mr. Paul Claerbout
Wheelabrator North Broward, Inc.
Panama Beach, Florida

I.D. NUMBER: 50/WPB/06/2120
PERMIT/CERTIFICATION NUMBER: AO 06-208187
DATE OF ISSUE: MAY 14 1992
EXPIRATION DATE: February 28 1996

SPECIFIC CONDITIONS:

1. Wheelabrator North Broward, Inc.'s fly ash handling system and the lime silo shall be allowed to operate continuously (i.e. 8,760 hrs./yr.).
2. Particulate emissions from the fly ash handling system and lime silo baghouses shall not exceed 0.010 gr./dscf, nor 3.0 tons/year and 0.021 tons/year, respectively.
3. Visible emissions from the fly ash handling system shall not exceed 5% opacity.
4. Visible emissions from the lime silo baghouse shall not exceed 5% opacity as noted in Specific Condition No. 6.
5. Compliance with the particulate and visible emissions test shall be determined in the year prior to permit renewal using EPA Methods 1, 2, 3, 4, 5 and 9 contained in F.A.C. Rule 17-2.700. The visible emissions test for the fly ash handling system shall be conducted along with the particulate tests and shall be for at least 60 minutes. The visible emissions tests for the lime silo shall be conducted for the entire truck unloading operation. The minimum requirements for stack sampling facilities, source sampling and reporting shall be in accordance with F.A.C. Rule 17-2.700 and 40 CFR 60, Appendix A. A stack drawing showing sampling locating for the MAC Filter Model 120 LST 100 baghouse shall be submitted to the Department at least 90 days prior to testing.
6. The maximum allowable emission rate for particulate matter for the lime silo is set by Specific Condition No. 2. Because of the expense and complexity of conducting a stack test on minor sources of particulate matter, the Department, pursuant to the authority granted under F.A.C. Rule 17-2.700 (3)(d), hereby waives the requirement for a stack test. The alternate standard set forth by this provision establishes a visible emission not to exceed an opacity of 5%.
7. Should the Department have any reason to believe the particulate emission standard not being met for the lime silo, the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with F.A.C. Rule 17-2.700.
8. No objectionable odors from this facility will be allowed.
9. The Broward County Office of Natural Resource Protection and the Southeast District Office of the DER shall be given written notice at least 15 days prior to compliance testing.
10. All conveyor loading points, transfer points and all ash processing equipment shall be properly enclosed. The facility shall be operated by personnel properly trained for the equipment herein. The Department shall be notified in writing on how the facility will be staffed and trained.
11. Reasonable precautions shall be taken during operation to prevent and control and generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. Rule 17-2.610(3). Such reasonable precautions shall be: application of water or chemicals to control fugitive emissions from activities such as vehicular movement, loading, unloading, storage and handling.
12. The permittee shall comply with all applicable provisions of Florida Administrative Code Chapters 17-2 and 17-4.

PERMITTEE:
Mr. Paul Claerbout
Wheelabrator North Broward, Inc.
Pompano Beach, Florida

I.D. NUMBER: 50/WPB/06/2120
PERMIT/CERTIFICATION NUMBER: AO 06-208187
DATE OF ISSUE: **MAY 14 1992**
EXPIRATION DATE: February 1996

SPECIFIC CONDITIONS:

13. The permittee shall be aware of and operate under the attached "General Permit Conditions #1 thru #14." General Permit Conditions are binding upon the permittee and enforceable pursuant to Chapter 403 of the Florida Statutes.

Issued this 14th day of MAY, 1992

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Bobby A. Cogley
Bobby A. Cogley
Acting Director of District Management

APPENDIX C

LETTER FROM JOHN M. RUDELLE

*RE: APPROVAL FOR REUSE OF ASH GENERATED AT
WHEELABRATOR'S McKAY BAY FACILITY*

LETTER FROM CHRIS McQUIRE

RE: ASH RESIDUE USE AS LANDFILL DAILY COVER

LETTER FROM HAMILTON OVEN

*RE: TESTING OF SOLID WASTE COMBUSTOR
ASH RESIDUE PERSUANT TO FAC 17.702.*

BEST AVAILABLE COPY APR 19 1993



Ans'd.....

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

April 8, 1993

Mr. William H. Ferguson
Regional Vice President
Wheelabrator McKay Bay, Inc.
107 North 34th Street
Tampa, Florida 33675

Dear Mr. Ferguson:

The Department has completed its review of the Wheelabrator McKay Bay Demonstration Project which was prepared for your company by Geraghty & Miller, Inc. Our review of the information you provided to date supports your contention that, from an environmental standpoint, treated bottom ash from the McKay Bay Waste-To-Energy facility (ie; McKaynite) is a suitable material for road construction. Therefore, we have determined that McKaynite may be considered a recovered material, and that its use will not require a permit from the Department, pursuant to Section 403.7045(1)(f), Florida Statutes (F.S.) provided that a majority of McKaynite is demonstrated to be sold, used, or reused annually, and provided that neither McKaynite or your processing operation is found to be a source of pollution.

Rule 17-702.600, Florida Administrative Code (F.A.C.) contains the requirements which you must meet to demonstrate these two conditions. In addition to the information you have already submitted, the following conditions are required to demonstrate continued compliance:

1. Wheelabrator or its licensees shall specify in their contracts with McKaynite consumers that their product shall be used in a manner that complies with all state, local and federal laws. The contracts must also require the owner to dispose of any debris containing McKaynite which is not recycled by the owner at a permitted solid waste management facility in accordance with Chapter 17-701, F.A.C., particularly Rule 17-701.300, F.A.C.
2. Chemical and physical properties of commercially used McKaynite will be characterized monthly and submitted to the Department's Southwest District office on a quarterly basis.

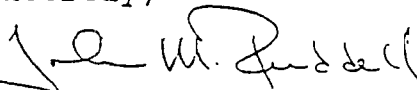
Mr. William H. Ferguson
April 8, 1993
Page Two

3. During the production of McKaynite, records shall be kept for a minimum of three years and shall include the following:
 - a. Name of the McKaynite manufacturing facility.
 - b. Name of the purchaser/contractor.
 - c. Name or location of the jobsite.
 - d. Number of tons delivered to each jobsite.
 - e. Monthly characterization of chemical and physical properties of ash being used, including a comparison that these ash results do not differ significantly from the baseline study.
 - f. Total amount of ash used in commercial production.

4. Any unprocessed ash or material not meeting the McKaynite specifications which is generated by Wheelabrator must be disposed of pursuant to the Ash Management Plan submitted to the Department in accordance with Permit Number AO29-206279 or may be used as landfill cover in accordance with Rule 17-701.520(6), F.A.C.

Failure to comply with these conditions may result in a determination that your process no longer meets the requirements of Section 403.7045 F.S. I appreciate your cooperation in furnishing information to date. If you have any questions concerning the Department's procedure or position, please contact Mary Jean Yon, the Administrator of our Solid Waste Section at 904/922-6104.

Sincerely,



John M. Ruddell, Director
Division of Waste Management

JMR/myv

cc: Rick Garrity
Bill Hinkley
Mary Jean Yon
Chris McGuire
Bill Preston - Hopping, Boyd, Green & Sams



Lawton Chiles
Governor

Florida Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia H. Wetherell
Secretary

March 22, 1994

William D. Preston
Hopping Boyd Green & Sams
123 South Calhoun Street
Post Office Box 6526
Tallahassee, Florida 32314

RECEIVED

MAR 23 1994

HOPPING, BOYD,
GREEN & SAMS, P.A.

RE: Ash Residue Use as Landfill Daily Cover

Dear Bill:

You have asked whether ash residue from the combustion of solid waste may be used as initial cover at a lined landfill, even though that landfill's liner system is not a double or composite liner which meets current standards. I agree with the reasoning set forth in your letter of February 21, and the answer is yes. If the ash residue meets the requirements as initial cover found in Rule 17-701.200(40), F.A.C., it may be used as initial cover at any lined landfill which met the Department's landfill design criteria at the time of permitting.

Sincerely,

Chris McGuire
Assistant General Counsel

cc: Mary Jean Yon

ES



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

November 1, 1991

NOV 1 1991
X
F. Ferraro
K. Forester

Paul F. Claerbout
Wheelabrator North Broward, Inc.
2600 N.W. 48th Street
Pompano Beach, Florida 33073

Re: North Broward Resource Recovery Facility
PA 86-22

Dear Mr. Claerbout:

The testing of solid waste combustor ash residue in conformance with the Department's new ash rule is permissible without a formal change to the Conditions of Certification due to the provisions of Section 403.511(5), F.S. The next time that it is necessary to formally modify the conditions we will include the new ash testing method specified by regulation.

Sincerely,

Hamilton S. Owen

Hamilton S. Owen, P.E.
Administrator
Siting Coordination Office
Division of Air Resources
Management

HSO/hso
cc: Joe Lurix

APPENDIX D

REVISED ASH RESIDUE MANAGEMENT PLAN

COMPREHENSIVE QUALITY ASSURANCE PLAN

WHEELABRATOR NORTH BROWARD-(PPSC-86-22)

2600 NW 48th Street

Pompano Beach, FL 33073

ASH RESIDUE MANAGEMENT PLAN

Waste-to-Energy Facility Contact

Paul Claerbout, Plant Manager (305) 971-8701

Landfill Contact

Michael Berg, General Manager (305) 977-9551

Revision No. 2

April 1, 1994

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Attachments

- A. Waste Control Plan
- B. Ash Handling System Diagram
- B1. Ferrous Separation
- C. Comprehensive Quality Assurance Plan submitted to Sylvia Labie, FDER
- D. Standard Operating Procedure for Performance Standards and Operational Criteria "North Broward Resource Recovery Facility Ash processing Addition"

WHEELABRATOR NORTH BROWARD
ASH RESIDUE MANAGEMENT PLAN

I. OVERVIEW

The ash residue management plan encompasses the ash as it exits the plant, transport, disposal, monitoring, testing and management. This plan is in compliance with the applicable sections of chapter 17 of the Florida Administrative Code (FAC) pertaining to solid waste combustor ash. Implementation of this plan will be under the direction of the Plant Manager to ensure day to day operations and maintenance are consistent with this plan.

Wheelabrator North Broward (WNB) is committed to execute and manage its operations in a safe, and environmentally conscientious manner.

II. ASH HANDLING & TRANSPORT

WNB's trash to energy plant is permitted to process 2,419 tons per day of processable waste. Processable waste is defined as combustible materials including without limitation, all household and other refuse, wood, furniture, tires, yard waste and light industrial waste. There are a number of items that are not accepted commonly known as unprocessable waste (cement, wire cable, appliances, etc.) and unacceptable waste. Unacceptable waste is pathological, biological, sludges, motor vehicles, sewerage, manure, asbestos, chemicals, car batteries, ozone depleting chemicals, etc. In order to ensure that correct wastes are being disposed of, a quality assurance program is in place. This program consists of trash inspections based on random

spot checks. Haulers will be directed by WNB personnel to dump their loads on the tipping floor, where it will be inspected and either accepted or rejected (see attachment A) depending on its content. A letter as well as informational packets have been issued to the haulers informing them of acceptable and unacceptable waste.

When the Plant is operating at design capacity, it is estimated that approximately 700 tons per day of Ash Residue will be generated. Ash residue generated by the Resource Recovery Process consists of two, different streams, "Bottom ash" and "Fly ash". Bottom ash is the noncombustable heavy fraction of the ash which remains on the grates after processing. Bottom ash exits the facility, through the ram ash expellers via the vibrating pan and belt conveyor system (see Attachment B). The ash residue may be processed into either landfill daily cover or construction aggregate product streams; ferrous metal will be removed via magnet. The processing system description is included in Attachment E. Ash not processed for reuse will be disposed of in accordance with F.A.C. 17-702.

When construction aggregate is produced, flyash which is entrained in the furnace flues, and is collected in the boiler, scrubber, and baghouse enters a surge bin where it is metered into the fly ash pelletizer for conditioning. When the conditioning is complete, the conditioned Flyash is transported via drag chain conveyors to the truck load out area. The fly ash is fed into dump type container trucks appropriately sized to provide uninterrupted plant operations. There are two trucks in continuous operation

with a third truck available as a spare when preventive or corrective maintenance is being performed or for additional capacity for operating flexibility. The trucks are designed with climate controlled cabs to minimize personnel exposure to the ash.

The ventilation system is designed to maintain a slight vacuum in the area to capture any fugitive dust emissions. All personnel working in the area have been instructed regarding any health related issues. It is Wheelabrator's policy that there is no eating, drinking or smoking in the area and proper respiratory protection should be worn when conditions warrant. Signs are prominently displayed identifying the area and special requirements. The truck's container and/or tailgate is water tight to prevent ash or liquid from discharging during transit. Prior to departing the ash loading area, the container transporting the ash is covered by a tarpaulin and properly secured for transport. The cover has been designed to cover the entire length of the body, ensuring that no dust emanates from the truck or through the cover. The ash will begin transport without any free liquids present, but with a moisture content sufficient to allow good placement without creating a dust nuisance. Ash that could potentially spill over the side rail, and any ash that has collected on the exterior of the truck is required to be removed prior to hauling. Any spillage of ash on the floor is collected with a front end loader and loaded into trucks and hauled to the landfill when full. If necessary, trucks will be washed prior to leaving the loading area. A high-pressure cleaner is installed in the

ash handling area to wash down trucks, equipment and ash areas. The floor in the loading area is designed to contain run-off from the trucks and wash water. This contained wash water is reused within the facility process. A truck washing facility is available at the landfill. Each truck will be weighed at the monofill scalehouse upon entrance and departure.

III. HOURS OF OPERATION

The Central Disposal Sanitary Landfill (CDSL) which is owned and operated by WMX will accept residue from the WNB trash to energy plant 24 hours per day, seven days a week. The trash-to-energy plant accepts trash from 4:00 A.M.-6:00 P.M., Monday through Saturday.

IV. PERSONNEL AND FACILITIES

CDSL employs personnel responsible for overall operation of the landfill, including record keeping, heavy equipment operation, general site maintenance and maintenance of access roads. Signs are posted at the entrance gate identifying the company as the operator of the landfill and warning signs prohibiting unauthorized entrance into the area are also posted. The landfill access gate is equipped with an automatic opener. Each truck is equipped with a wireless transmitter for entry to the landfill. All visitors must sign in at the facility's Administration building. The equipment maintenance portion of the building is sized to house and maintain all on-site equipment. A truck wash area has been provided to clean the tires and container of the trucks upon departure of the landfill. The

wash water is collected back into the contact water collection system. The equipment operators and drivers are equipped with radio communication and fire extinguishers in the event of an accident or other emergency.

All personnel working around the ash have been trained in the proper techniques of ash handling. This includes the use of personal protective equipment such as gloves, safety glasses, dust masks and other respiratory protection. The items previously mentioned are company provided along with uniforms, shoes, locker rooms and showers.

EQUIPMENT/MAINTENANCE

The equipment required for operation at the landfill consists of diesel powered dozers and loaders which are utilized to spread and compact the ash residue. A light tower is on-site to allow for a safe working environment during night hours of ash delivery. Other equipment such as water trucks will be available for dust control as necessary.

Preventive maintenance of all landfill equipment and machinery will be performed as required to sustain reliable equipment availability. Preventive maintenance will be performed by CDSL's on-site maintenance staff. Major repairs requiring specialized equipment may be made by local, private repair services, or dealers. Fuel tanks and a fueling truck are on-site to provide fuel to the equipment.

VI. TRAFFIC CONTROL

Under normal operating conditions, approximately 35 ash truck deliveries will be made to the landfill during the 24 hour-a-day operating period. A private access road from the plant to the landfill is the travel route for the ash trucks. The trucks travel in a East-West direction.

The haul route is approximately 1 mile round trip. The on-site speed limit for all traffic is 10 mph. Access to the landfill is secured by a perimeter fence, and a remote control motorized gate. This fence arrangement will control entry from the private road entering the landfill. The employees at the facility will be responsible for monitoring activities at the landfill.

VII. WORK AREA CONTROL

Ash will be placed in a manner which will allow for adequate compaction by the dozer track, truck tire and vibratory roller. The operational sequence is patterned in a manner which phases each section and subsection to allow for site drainage and visual screening of operations as practicable. Each cell will be brought to an operational final grade before proceeding to the next subsection. The outside exterior side slopes of the landfill will be graded and provided with intermediate cover by either grassing or hydroseeding with materials to promote plant growth. Intermediate cover will be periodically applied to the exterior side slopes as needed to provide dust and erosion control of the slopes until such time as a permanent or

final cover is added. This procedure may be modified according to the demands of actual site conditions and success of using various trial products such as synthetic or organic mats which provide similar protection, containment and aesthetic appearance.

VIII. LEACHATE COLLECTION

Leachate collection pipes have been installed throughout the developed landfill. Leachate reduction is achieved by filling to promote storm water runoff. Ash residue leachate is delivered to the trash-to-energy facility via tanker or pipeline for use in the process. A quarterly leachate sampling program has been instituted by CDSL to trend leachate composition, as required by applicable state laws and permits.

IX. STORM WATER CONTROL

Surface water control will be managed to minimize water infiltration and maximize water runoff. In order to achieve these objectives, several steps will be implemented. These steps are:

1. Filling Area Size: As previously discussed in paragraph VII, the active filling area will be kept to a minimum dimension. Orderly operations will be accomplished by maintaining a narrow working face. The working face will be wide enough to prevent a backlog of incoming truck deliveries but not so wide as to be unmanageable. By maintaining a small fill area, it

will enable the proper arrangements and preparation for:

- ° supply of cover material
- ° vertical control
- ° proper drainage
- ° waste deposition
- ° general maintenance

The ash residue will be spread and compacted in layers within a confined area. These sections of the overall landfill will be rapidly brought up to an operational final grade, properly contoured and covered.

2. Proper Slope: The fill area will be sloped to ensure ponding will not occur. Each grade on site will be developed to provide rapid removal of rainwater. All lifts will be graded to minimize leachate generation. Elevation control benchmarks will be established to ensure reliable horizontal and vertical control as each section of the landfill is developed.

3. Tarps/Cover Material: Tarps or cover material can be utilized to cover exposed ash areas in the event of severe weather conditions. The impermeable cover will limit rainwater contact with the ash, promote runoff and reduce the formation of leachate.

4. Final Grades: Exterior final side slopes will be covered with a low permeability impervious material. The slope will either be grassed or hydroseeded to promote good vegetative growth in an effort to reduce the open area exposed to rainfall and erosion. Drainage swales will be incorporated to intercept overland flow before it can be concentrated to form gullies. Storm water runoff will be diverted into drainage swales to move water off the landfill quickly without eroding final cover soils. The quick transfer of storm water reduces the amount of leachate generation. In addition, runoff will be directed away from the working face and newly prepared base.

5. Compaction: The compaction of the ash will be accomplished with the landfill equipment. Several passes with the landfill equipment will provide the necessary compaction to reduce ash permeability thereby reducing leachate constituent concentrations.

6. Hay bales and Screen Fences: Hay bales and screen fences may be used at the perimeter of the filling area. This technique will provide additional water management control to divert runoff to desired locations. Also, their use will maintain the ash at the filling area boundary providing additional protection to outlying areas.

In summary, all storm water which comes in contact with the ash residue will be retained and collected by the leachate collection system or lost via evaporation. All other storm water will be collected in the adjoining drainage swales and retention pond and dispatched via percolation, evaporation or exfiltration. After a heavy rain, the entire landfill will be inspected, and corrective measures will be taken to repair any damage from the rainfall event. As noted above, by initiating effective surface water management control measures, leachate generation will be minimized.

X. VECTOR AND PEST CONTROL

A fully licensed outside contractor will bait the area as necessary to insure against any type of rodent or pest infestation. Due to the type of waste to be disposed, little or no rodent and pest problems are expected.

XI. LITTER CONTROL

The landfill will be inspected and patrolled for litter. Litter will be collected when present.

XII. ODOR CONTROL

Odor is not expected to be a problem during residue filling operations because the material that is being disposed of contains no significant amount of organic or putrescible matter.

XIII. BYPASSED WASTE PROVISIONS

It is not anticipated that a bypass condition will ever occur at the WNB facility. If an unexpected shutdown at the facility results in the inability of the plant to accept solid waste, waste will be directed to an alternate solid waste receiver.

XIV. RECORD KEEPING

Records are kept identifying the tonnage of trash received at the plant, total ash residue disposed of at the landfill and gallons of ash leachate received at the plant. These records can be reviewed and are on file at the WNB Administrative Office.

XV. CONTINGENCY PLANS

In the event of unexpected or abnormal conditions or circumstances impacting the normal operation of the landfill, the following contingency plans and provisions will be in effect:

1. Loss of Power: The main area of concern for this event is the operation of the leachate pumping station. An emergency power generator connection was provided at the power supply panel for the pumps. A temporary fuel driven power generator would be rented or purchased as needed upon the occurrence of such an event.

2. Loss of Leachate Pump: The pump station is a duplex configuration with a lead and lag control arrangement. Each pump is over-sized for normal flow conditions. A spare pump will be available for replacement purposes.

3. Loss of Dozer Equipment: A short term loss of dozer equipment will not result in a crisis situation. Routine maintenance and repair to this equipment will not impact operations to any major extent. Should major equipment repair become necessary, a rental replacement will be provided for that period.

4. Hurricanes and Natural Disasters: In the event of a hurricane, flood, or other natural disaster, the landfill, storm water management system, leachate collection and removal systems are designed and will be maintained in such a manner as to allow, within limitations, unattended operation for an extended period assuming the cessation of deliveries to the landfill.

XVI. ASH RESIDUE QUALITY ASSURANCE AND SAMPLING PLAN

(See Attachment C)

COMPREHENSIVE QUALITY ASSURANCE PLAN

XVII. ASH REUSE

Wheelabrator has evaluated the use of treated ash residue as a road sub-base or a substitute in asphaltic concrete, FDER # permit SC 29-183237. The project evaluated potential environmental effects of ash residue aggregates as a substitute for commercially available aggregates. The project demonstrated that the processed ash residue may be used as an equivalent material without adverse environmental consequences. This project also compared the performance of the ash aggregate vs. commercially available materials.

An application to modify our siting certificate, in order to begin processing the ash residue into a reusable product has been submitted to the department. A system description and process flow diagram has been included in Attachment D.

031.RD

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT A

WASTE CONTROL PLAN

NORTH BROWARD RESOURCE RECOVERY FACILITY

"WASTE CONTROL PLAN"

Revised NO. 1
March 15, 1994

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- II. RESPONSIBILITIES
- III. TRAINING PROGRAM
- IV. ACCEPTABLE WASTE GUIDELINES
- V. RADIOACTIVE WASTE AND FORMS
- VI. INSPECTION PROCEDURE
- VII. WASTE SCREENING PROCEDURES AND FORMS
- VIII. RECORDS RETENTION
- IX. CONTACT PERSONNEL

INTRODUCTION

This program is designed to ensure that the facility receives and treats only household, nonhazardous commercial, nonhazardous industrial, and other solid waste specifically authorized by the Florida Department of Environmental Protection.

The key elements of the program are:

- (A) Random inspections of incoming loads.
- (B) Inspections of suspicious loads.
- (C) Records of all inspections
- (D) Training of facility personnel to recognize if a regulated hazardous waste is discovered.
- (E) Identification of personnel trained to detect and handle hazardous waste.

II. RESPONSIBILITIES

The responsibilities of ensuring that the facility accepts and processes only authorized waste rests with the following representatives of the North Broward Resource Recovery Facility.

- (1) Plant Manager
- (2) Operations Manager
- (3) Director, Health Safety and Environmental Compliance
- (4) Loader Operators
- (5) Crane Operators
- (6) Scalehouse Operators
- (7) Shift Supervisors

III. TRAINING PROGRAM

A training program has been developed to ensure that responsible facility personnel are able to recognize unacceptable waste. This program is conducted periodically.

The program contains - but is not limited to - the items listed below.

- (A) Load inspection for suspicious loads
- (B) Records retention
- (C) Recognition and handling
 - (1) Hazardous/Toxic materials
 - (2) Radioactive materials
 - (3) Biohazardous/Pathological materials
 - (4) Unprocessable waste
- (D) Notification requirements

ACCEPTABLE WASTE GUIDELINES

Acceptable Waste

All municipal or commercial solid waste consistent with the following size limitations will be considered acceptable:

- o Nothing exceeding an overall length of 6' will be accepted. (Some discretion relative to lengths of light pliable pieces of lumber may be used by the Weigh Scale Operator). All bulky items will be restricted to 6' x 4' x 4' overall dimensions.

Non-Acceptable Waste - "Will not be accepted"

- o All hazardous wastes
- o Radioactive, toxic, pathological or biological wastes
- o 55-gallon chemical drums, whether empty or full
- o Concrete, dirt, sand, or gravel
- o Trees or branches in excess of six feet in length or eight inches in diameter
- o Tree trunks or stumps (WATCH CAREFULLY)
- o Other materials which may adversely affect the operation of the facility
- o White Goods (appliances) or items containing any Ozone-Depleting chemicals.

Any food products, controlled substances, confidential or security items requiring special handling must be referred to the Plant Manager, or Director Health Safety and Environmental Compliance, and handled on an individual load or prearranged basis.

On a day-to-day basis, any questionable loads will be checked by the Operations Manager, Shift Supervisor or Director Health Safety and Environmental Compliance (DHSEC), or the Loader Operator. If any questions arise, the final decision will be made by the Shift Supervisor, Operations Manager, or DHSEC.

Non-Acceptable waste also includes all "Untreatable Waste" which includes, but is not limited to: batteries, such as dry cell batteries, mercury batteries and vehicle batteries; refrigerators; stoves; washers; dryers.

The NBRRF will adhere to the provisions of FDER Rule 17-712-Biohazardous and Biological Waste Management Rule.

If hazardous waste is discovered on-site in the tipping floor areas, and the responsible truck cannot be identified, the NBRRF would be considered under the Treatment, Storage, and Disposal Facility Provision of 40 CFR 264. The NBRRF would be allowed to properly maintain such waste on-site for 180 days before it would be required to have it removed by a reputable transporter to an approved treatment/disposal facility.

V. RADIOACTIVE WASTE

This facility will accept no radioactive waste. The following control measures have been installed to prevent material from entering the property along with procedures for handling such material.

Procedure for Radioactive Loads:

A radiation detector is installed and functional in the scale house. In the event that an incoming truck trips the radiation detector, the following procedure will apply:

- 1) The scalehouse operator will immediately call the shift supervisor and the operations manager.
- 2) "THE SCALE OPERATOR WILL NOT WEIGH IN THE TRUCK OR PERMIT THE TRUCK TO PROCEED PAST THE SCALE."
- 3) The truck drivers will be directed to park his truck off to the side, where the shift supervisor will measure the radiation with a portable detector.
- 4) If radiation levels as detected by the shift supervisor are below background levels, the truck will be permitted to return to the scalehouse, weigh in, and unload.
- 5) If radiation levels as detected by the shift supervisor are above background levels, the shift supervisor will:
 - a) Inform the driver that his load is radioactive and therefore can not be accepted at the plant.
 - b) Inform the driver that the truck must be removed immediately from our property.
 - c) Neither the shift supervisor nor the scale operator will suggest to the driver where to haul the load. If asked, the driver will be told to contact his dispatcher for directions.
- 6) Once the truck is off our property, the shift supervisor will notify the following:
 - a) Office of Natural Resource Protection
 - b) Department of Public Health (305) 467-4800.
 - c) The hauler's office.
- 7) A radiation detection report will be filled out and submitted to the Operations Manager.

RADIOACTIVE WASTE

TO: Distribution

FROM: _____ DATE: _____

RADIATION DETECTION REPORT

Time: Arrived _____ Departed: _____

Scale Operator: _____

Shift Supervisor: _____

Vehicle Identification:

Truck Registration Number: _____

Company/Community _____

Company/Community Telephone Number: _____

Radiation Meter Reading:

Scale House _____ Counts/Min.

Portable _____ MR/HR

CONTACTS:

Office of Natural Resource Protection: _____

Department of Public Health: _____

Hauler: _____

Source of Origination (if known) _____

RETURN COMPLETED REPORT TO OPERATIONS MANAGER

Distribution:

Plant Manager
EH&S Director

VI. INSPECTION PROCEDURE

All trucks entering the facility are subject to inspection.

(A) Random inspections will be performed as outlined in the Waste Screening Procedure.

(B) Any load deemed suspicious will be inspected.

(C) All records of inspection will be maintained in the EHSD's office. All records will be maintained for seven years.

(D) If unacceptable waste is found, proper authorities will be notified. Such notification may include (but is not limited to):

(1) Plant Manager, Operations Manager

(2) Office of Natural Resource Protection

(3) Florida Department of Environmental Regulation

(E) If unacceptable waste is found it will be reloaded into the truck in which it came and then moved from the site after all authorities have been notified, as outlined in the Waste Screening Procedure.

MUNICIPAL SOLID WASTE SCREENING

To ensure that unacceptable waste or wastes that may create special environmental pollution problems will not be processed at the NBRRF, a waste screening and control plan will be implemented.

This is a multitiered program that requires a cooperative effort between the serviced clients and NBRRF. The program includes identifying potentially hazardous waste sources, checking delivery trucks, imposing deterrent penalties on violators, and removing any hazardous material from the waste stream.

The following is an outline of NBRRF's procedure for controlling hazardous waste deliveries:

1. A joint effort between NBRRF and its serviced clients will be made to identify all private collectors that service generators of hazardous waste.
2. All contracts signed with collectors will clearly identify what types of wastes and chemicals are not accepted at the Facility. These contracts will also identify the penalties imposed on the delivery of such materials.
3. A list of identifying unacceptable waste will be posted at the Facility. The driver will be asked to identify the load and the source. If it is determined that the load is unacceptable waste, the driver will be denied access to the tipping floor.
4. NBRRF will conduct random spot checks of incoming loads by periodically dumping a load on the tipping area floor for inspection by an approved "Inspector". Acceptable waste will be pushed into the pit by a front-end loader. If the load contains any unacceptable waste, the entire load will be rejected and will be loaded back on the delivering vehicle. Spot check inspections will be appropriately documented as illustrated previously in the Waste Control Plan. In addition to visual spot checks, all loads entering the facility are scanned by continuous radiation monitors to prevent disposal of any radioactive materials at the facility.
5. Crane operators, in the course of stockpiling and mixing refuse in the pit, will be required to scan the waste pile for any questionable contents. Unacceptable materials will be removed from the refuse pit for disposal in an acceptable manner.

6. NERRF has developed hazardous waste identification and response procedures as part of the Hazardous Material Training Program for the Facility. All personnel undergo this training program. This procedure will clearly address the following:
 - a. Policies for controlling the delivery of any hazardous waste to the site.
 - b. Indicators and other information about potentially hazardous materials.
 - c. Employees' responsibilities in preventing hazardous waste from being accepted at the Facility.
 - d. Reporting procedures if questionable wastes are found.

In the event unacceptable waste does enter the Facility, it would be isolated and placed in a designated area for such material. An effort would be made to identify the sender for removal of the material first. If that is not possible, the material will be properly disposed of in accordance with all Federal and State regulations.

Waste screening will be conducted on a random basis as necessary to ensure compliance with the Waste Screening Program.

Prerequisites

1. Safety equipment including appropriate personnel protective gear (i.e. Scott Air Packs, respirators, protective clothing, gloves, boots, first aid kit, etc.), emergency fire fighting equipment, and clean up equipment will be stored near the tipping floor and be readily available. Appropriate materials (e.g., rope, pylons, etc.) needed to isolate any potentially dangerous waste will also be stored nearby and be readily available.
2. The Facility Manager will assign a "trained" employee to serve as Inspector. He will conduct the screening and complete the necessary report.
3. A front end loader and operator will be standing by the help with the screening.

Types of Screening

- I. On-Board Screening (only done on open type vehicles)
 1. The Inspector shall select a vehicle for screening and, upon entering the tipping floor, inform the driver of this fact.
 2. The driver will be asked to fold back the screens or tarpaulin covering his load.
 3. The Inspector shall then position himself such as to obtain the maximum possible view of the load.
 4. If the load is observed to contain unacceptable materials, the Inspector will immediately notify the Facility Manager or other designated management representative who will inspect the load and determine if the hauler is to be turned away.
 5. If the load is acceptable, the driver will be directed where to unload.
 6. In unsure, the Inspector will direct the driver to a designated area of the Tipping Hall where Floor Screening will be conducted, as described below.

4. The Inspector will watch the unloading process and, if possible, stop the process if he observes unacceptable or potentially dangerous material.
5. If Unacceptable Waste is found, the Facility Manager or designated management representative is to be notified and the hauler may be required to remove it from the facility. A screening report and notice of infraction will be issued as appropriate.
6. The Inspector will complete the Waste Screening Report which will be submitted to the Facility Manager for appropriate disposition. The driver will be asked to sign the Report before leaving the Facility.
7. After conclusion of screening, acceptable waste will be charged to the pit by the front end loader and the hauler will leave the Facility.
8. In cases where potentially dangerous materials are found and considered to present a possible immediate threat (such as explosives or large quantities of infectious materials), no attempt will be made by facility personnel to move these materials. The material will be left in place and that portion of the tipping floor or tipping bay roped off. Personnel and traffic will be prevented from operating in that section of the plant. Danger signs and warnings will be posted. No attempt will be made to open suspect waste containers. The Company will notify appropriate government agencies, including the local Fire and Rescue Department and/or Police Department, for dispatch to the Facility.

WHEELABRATOR NORTH BROWARD

ATTACHMENT "B"

- Page 4 of 4 -

WASTE SCREENING REPORT

Waste Hauler: _____ Date: _____ Time: _____

Truck Permit #: _____ Scale Ticket #: _____

Driver's Signature: _____

Screening Location { } On Board Truck { } On Tipping Floor { } In Pit

A. Waste Description Acceptable Waste (Do Not Complete Parts B, C, D)

Primary Composition Based on Appearance

- { } Residential { } Commercial
- { } Other (Provide Description Below)

B. Unacceptable Waste

- { } Explosives { } Sealed Drums
- { } Liquid Wastes { } Pressurized Containers
- { } Demolition Debris { } Tar or Asphalt
- { } Biohazardous { } Hazardous or Suspected Hazardous
(Complete Part C below)

{ } Large Bulky Objects

{ } Other (Provide description, documentation with photos if appropriate)

{ } White goods, materials containing chlorofluorocarbons

C. Hazardous or Suspected Hazards (DO NOT MOVE ANY SUSPECT WASTES! CALL PLANT MANAGER AT ONCE! Complete all items below:

- { } Identifying Marks (specify) _____
- { } Number/Quantity of items _____
- { } Description of Materials (Document with photos if appropriate) _____

D. Disposition of Unacceptable Waste (Removal Date: _____)

- { } Returned to vehicle
- { } Isolated and monitored for removal by hauler
- { } Other (describe)

E. Inspector: Name: _____ Date: _____

Signature _____

Shift Supervisor _____

File No _____

es#4/wsr/ocr

PROCEDURES FOR SCREENING AND HANDLING OF
UNACCEPTABLE WASTE AT TRANSFER STATIONS

Although not currently set up for use by the NBRRF, if transfer stations are used by the Facility in the future, any materials arriving at the transfer stations that is identified as unacceptable waste will be handled in the following manner.

1. Should the load arriving at the scale house be deemed unacceptable waste, the load will be rejected by the transfer station (TS) employees operating the scale house at the transfer station.
2. Should such a load or part of a load reach the tipping floor and be suspected as containing unacceptable waste, that load will be rejected by the TS personnel on duty. At which time, the lead man in control of the floor will notify the office that such a material is present on the floor and has been rejected and is being reloaded onto the carrier's truck. The office will then notify the scale house the load is being rejected and the carrier is returning to the scale with the load. It will be the responsibility of the carrier to dispose of the load according to applicable County, State, and Federal regulations.
3. Should the material be dumped and go unnoticed at the time of the off-loading - such as in a mixed load of compacted waste - the operators will attempt to identify the waste by continuously scanning the waste for any contaminated product. This is an ongoing practice that is in place at all times for the purpose of spotting any materials that will either damage the equipment or be in any way a contaminant.
4. If, in the course of the day-to-day operation, such material is identified by the operators on duty, they will immediately notify the office. The office will in turn notify the TS personnel operating the scale house. The material in question will be segregated and - wherever possible - the carrier that has dumped the material will be identified and then contacted to remove the material in accordance with applicable regulations.
5. If it is impossible to identify the carrier, the TS will keep a record of the time, place, and type of material identified and the material will be removed by a licensed carrier and disposed of in accordance with the applicable regulations.

VIII. RECORDS RETENTION

All records will be maintained on file for a minimum of seven years. This to include but is not limited to:

- (A) Load Inspection
- (B) Radiation Reports
- (C) Personnel Training Records

CONTACT PERSONNEL

A. INTERNAL

	<u>Name and Title</u>	<u>Office Phone</u>	<u>Home Phone</u>
1.	Paul Claerbout Plant Manager	305/971-8701	305/345-5512
2.	Eric Selya Environmental Health and Safety Director	305/971-8701	305/344-0132
3.	Paul Grego Operations Manager	305/971-8701	-305/753-9327

B. REGULATORY AGENCIES

1. National Response Center 1-800-424-8802 (24 hours)
2. FDER - West Palm Beach 407-433-2650
Emergency Response Department - Jeff Tobergte
3. Broward County Office of Natural Resource Protection
305-765-4900
4. South Florida Water Management District
Enforcement/Right-of-Way Department
Broward Field Office - Rusty Huckabee 305-434-1100

C. CLEAN-UP CONTRACTORS

Chemical Waste Management 305-973-6666
2700 N.W. 48th Street
Pompano Beach, FL. 33073

D. LOCAL AUTHORITIES

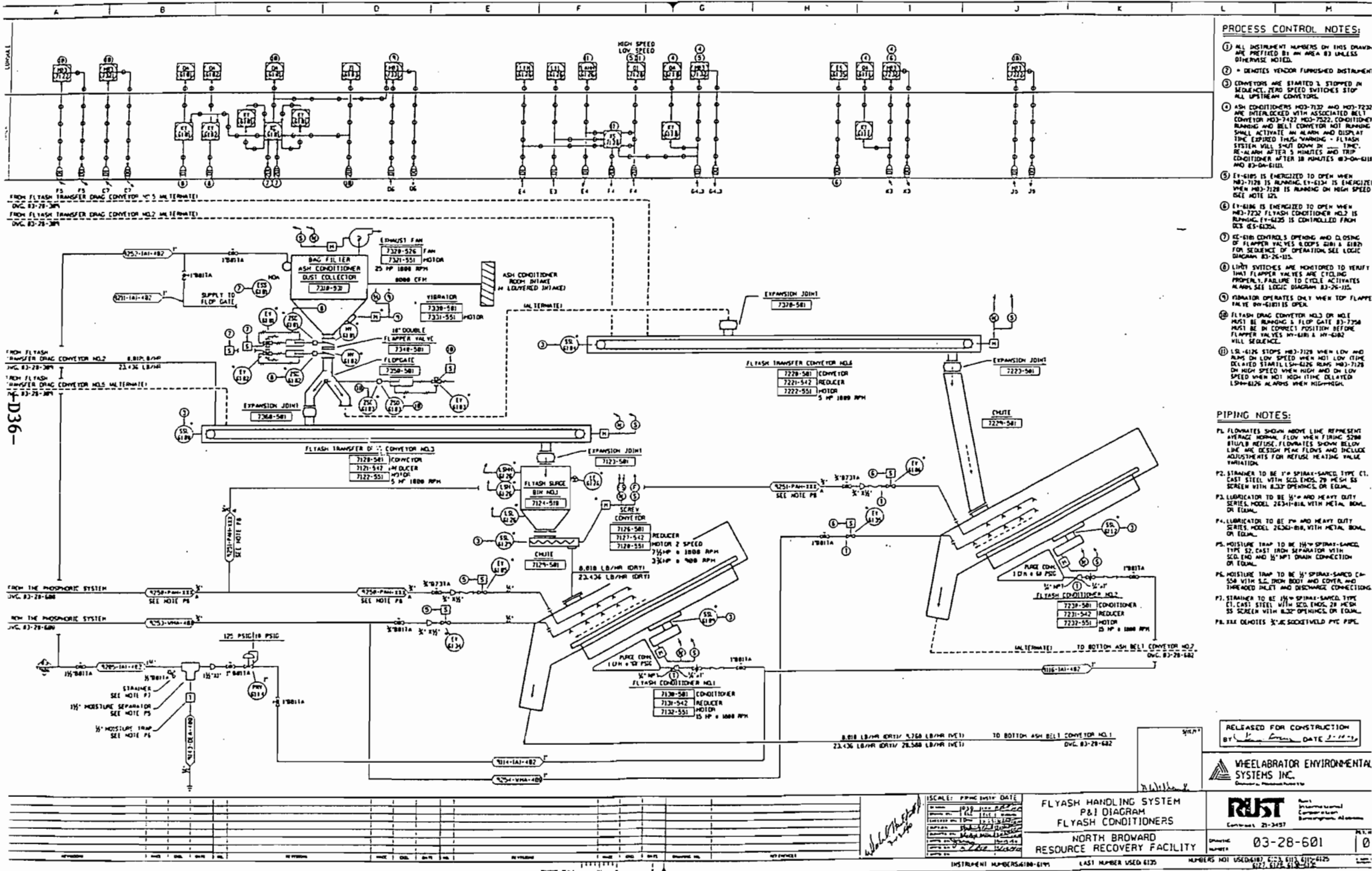
1. Police (Pompano Beach) 305-786-4200
2. Fire (Pompano Beach) 305-786-4510
3. North Broward Regional
Wastewater Treatment Plant 305-357-7585
4. North Broward Medical Center 305-786-6400
5. Broward County Department of Health
and Rehabilitative Services 305-467-4298
6. Emergency 911

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT B

ASH HANDLING SYSTEM



PROCESS CONTROL NOTES:

- ① ALL INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY M&A UNLESS OTHERWISE NOTED.
- ② = DENOTES VENDOR FURNISHED EQUIPMENT.
- ③ CONVEYORS ARE STARTED & STOPPED IN SEQUENCE. ZERO SPEED SWITCHES STOP ALL UPSTREAM CONVEYORS.
- ④ ASH CONDITIONERS MOD-7127 AND MOD-7232 ARE INTERLOCKED WITH ASSOCIATED BELT CONVEYOR MOD-7422. MOD-7222 CONDITIONER RUNNING AND BELT CONVEYOR NOT RUNNING SHALL ACTIVATE AN ALARM AND DISPLAY TIME EXPIRED TRIP WARNING. FLASH SYSTEM WILL SHUT DOWN IN 15 MIN. RE-ARM AFTER 3 MINUTES AND TRIP CONDITIONER AFTER 18 MINUTES. M-30-0111 AND M-30-0112.
- ⑤ EY-6105 IS ENERGIZED TO OPEN WHEN MOD-7128 IS RUNNING. EY-6104 IS ENERGIZED WHEN MOD-7128 IS RUNNING ON HIGH SPEED. SEE NOTE 12.
- ⑥ EY-6106 IS ENERGIZED TO OPEN WHEN MOD-7220 FLYASH CONDITIONER MOD-2 IS RUNNING. EY-6103 IS CONTROLLED FROM SET 65-6255A.
- ⑦ EY-6108 CONTROLS OPENING AND CLOSING OF FLAPPER VALVES & DOPS 6101 & 6102 FOR SEQUENCE OF OPERATION. SEE LOGIC DIAGRAM. 83-28-115.
- ⑧ LIGHT SWITCHES ARE MONITORED TO VERIFY THAT FLAPPER VALVES ARE CYCLING PROPERLY. FAILURE TO CYCLE ACTIVATES ALARM. SEE LOGIC DIAGRAM. 83-28-115.
- ⑨ VIBRATOR OPERATES ONLY WHEN TOP FLAPPER VALVE (M-6101) IS OPEN.
- ⑩ FLASH DRAG CONVEYOR HOLD ON HOLD MUST BE RUNNING & FLOP GATE 83-7250A MUST BE IN CORRECT POSITION BEFORE FLAPPER VALVES M-6101 & M-6102 WILL SEQUENCE.
- ⑪ LSR-6126 STOPS MOD-7128 WHEN LOW AND ALMS ON LOW SPEED WHEN MOD LOW. TIME DELAYED STARTUP. LSR-6126 RUNS MOD-7128 ON HIGH SPEED WHEN HIGH AND ON LOW SPEED WHEN MOD HIGH. TIME DELAYED LSR-6126 ALMS ON HIGH INTERLOCK.

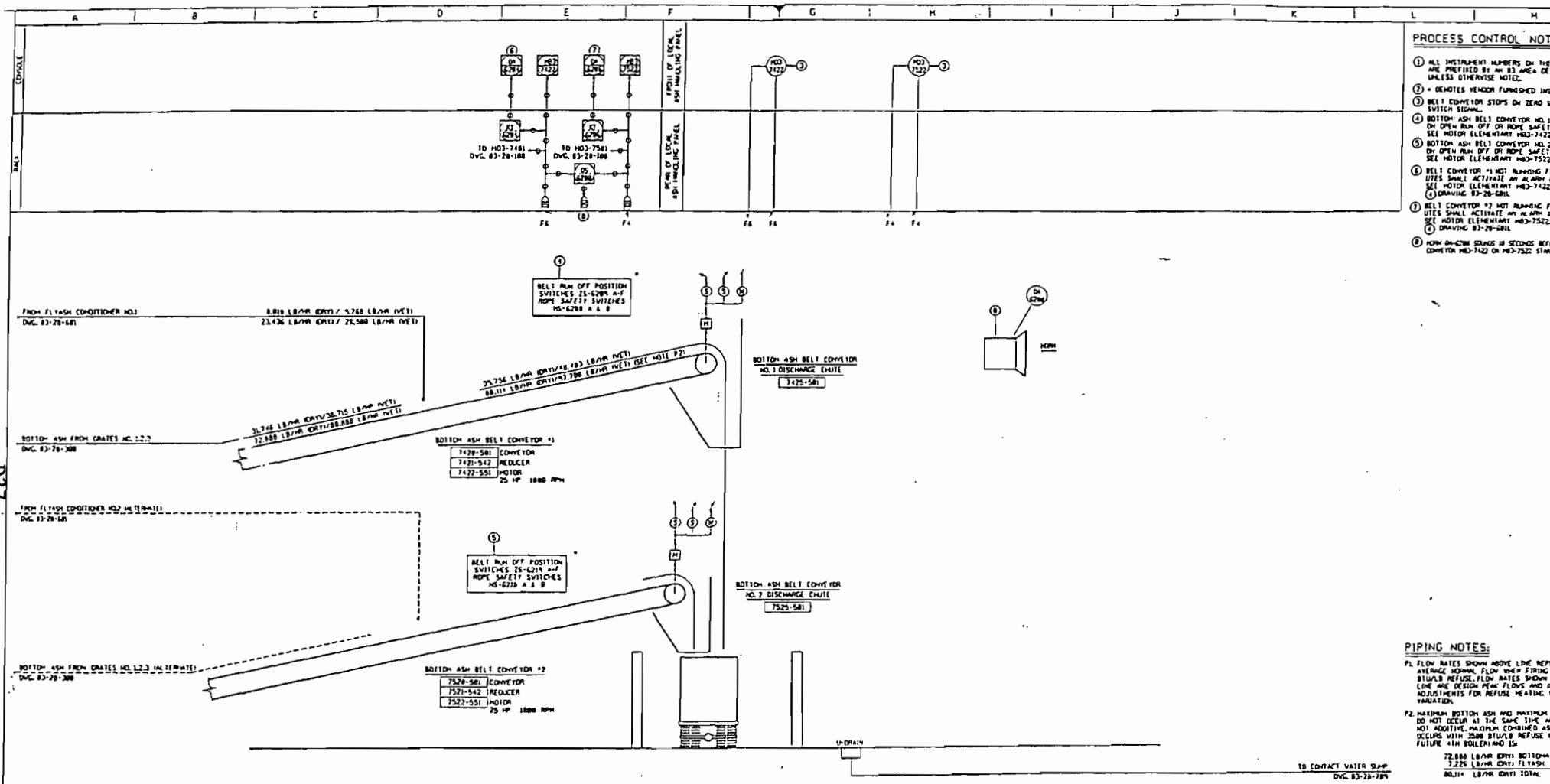
PIPING NOTES:

- P1. FLOWMATES SHOWN ABOVE LINE REPRESENT AVERAGE NORMAL FLOW WHEN FLOWING 2500 BBL/D. REFUSE. FLOWMATES SHOWN BELOW LINE ARE DESIGN FLOW FLOWMATES AND INCLUDE ADJUSTMENTS FOR REFUSE HEATING VALUE VARIATION.
- P2. STRAINER TO BE 1/2" SPIRAL-SANDED TYPE (1) CAST STEEL WITH 50-100 MESH 20" MESH 8" SCREEN WITH 8.25" OPENING ON TOP.
- P3. LUBRICATOR TO BE 1/2" AND HEAVY DUTY SERIES MODEL 2531-010A WITH METAL BOWL ON TOP.
- P4. LUBRICATOR TO BE 1/2" AND HEAVY DUTY SERIES MODEL 2530-010A WITH METAL BOWL ON TOP.
- P5. MOISTURE TRAP TO BE 1/2" SPIRAL-SANDED TYPE (1) CAST IRON SEPARATOR WITH 50-100 MESH 20" MESH 8" SCREEN WITH 8.25" OPENING ON TOP.
- P6. MOISTURE TRAP TO BE 1/2" SPIRAL-SANDED TYPE (1) CAST IRON SEPARATOR WITH 50-100 MESH 20" MESH 8" SCREEN WITH 8.25" OPENING ON TOP.
- P7. STRAINER TO BE 1/2" SPIRAL-SANDED TYPE (1) CAST STEEL WITH 50-100 MESH 20" MESH 8" SCREEN WITH 8.25" OPENING ON TOP.
- P8. SEE DENOTES 1/2" SOCKET WELD PTC PIPE.

RELEASED FOR CONSTRUCTION BY: [Signature] DATE: 11/1/83

WHEELABRATOR ENVIRONMENTAL SYSTEMS INC.
Contract 21-3437

<p>RUST Contract 21-3437</p>	
<p>FLYASH HANDLING SYSTEM P&I DIAGRAM FLYASH CONDITIONERS</p>	<p>DATE: 11/1/83 BY: [Signature] CHECKED: [Signature] APPROVED: [Signature]</p>
<p>NORTH BROWARD RESOURCE RECOVERY FACILITY</p>	<p>Drawing Number: 03-28-601</p>
<p>INSTRUMENT NUMBERS 6100-6199</p>	<p>LAST NUMBER USED 6125</p>



PROCESS CONTROL NOTE

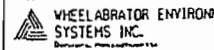
- ① ALL INSTRUMENT NUMBERS ON THIS ARE PREFIXED BY AN 83 AREA DESIGN UNLESS OTHERWISE NOTED.
- ② - DENOTES VENDOR FURNISHED INSTRUMENT.
- ③ BELT CONVEYER STOPS ON ZERO SPEED SWITCH SIGNAL.
- ④ BOTTOM ASH BELT CONVEYER NO. 1 S ON OPEN RUN OFF OR HOME SAFETY SEE MOTOR ELEMENTARY NO.3-7422.
- ⑤ BOTTOM ASH BELT CONVEYER NO. 2 S ON OPEN RUN OFF OR HOME SAFETY SEE MOTOR ELEMENTARY NO.3-7522.
- ⑥ BELT CONVEYER #1 NOT RUNNING FOR 40 SECS SHALL ACTIVATE AN ALARM. SEE MOTOR ELEMENTARY NO.3-7422.1. (DRAWING 83-28-681L)
- ⑦ BELT CONVEYER #2 NOT RUNNING FOR 40 SECS SHALL ACTIVATE AN ALARM. SEE MOTOR ELEMENTARY NO.3-7522.1. (DRAWING 83-28-681L)
- ⑧ RUN ON-60 SEC DLY IN SECONDS BEFORE CONVEYER NO.3-7422 OR NO.3-7522 STARTS.

PIPING NOTES:

- P1. FLOW RATES SHOWN ABOVE LINE REPRESENT AVERAGE NORMAL FLOW WHEN FIRING 50 BTU/LB REFUSE. FLOW RATES SHOWN BELOW LINE ARE DESIGN PEAK FLOWS AND INCORPORATE ADJUSTMENTS FOR REFUSE HEATING AND FRICTION.
- P2. MAXIMUM BOTTOM ASH AND PORTLAND FC DO NOT OCCUR AT THE SAME TIME AND NOT ADDITIVE. MAXIMUM COMBINED ASH OCCURS WITH 2000 BTU/LB REFUSE IN FUTURE 4TH ROLLER AND IS:
 - 72,888 LB/HR (80% BOTTOM ASH)
 - 7,226 LB/HR (20% PORTLAND FC)
 - 80,114 LB/HR (90% TOTAL)

-D37-

RELEASED FOR CONSTRUCTION
BY *[Signature]* DATE *[Date]*

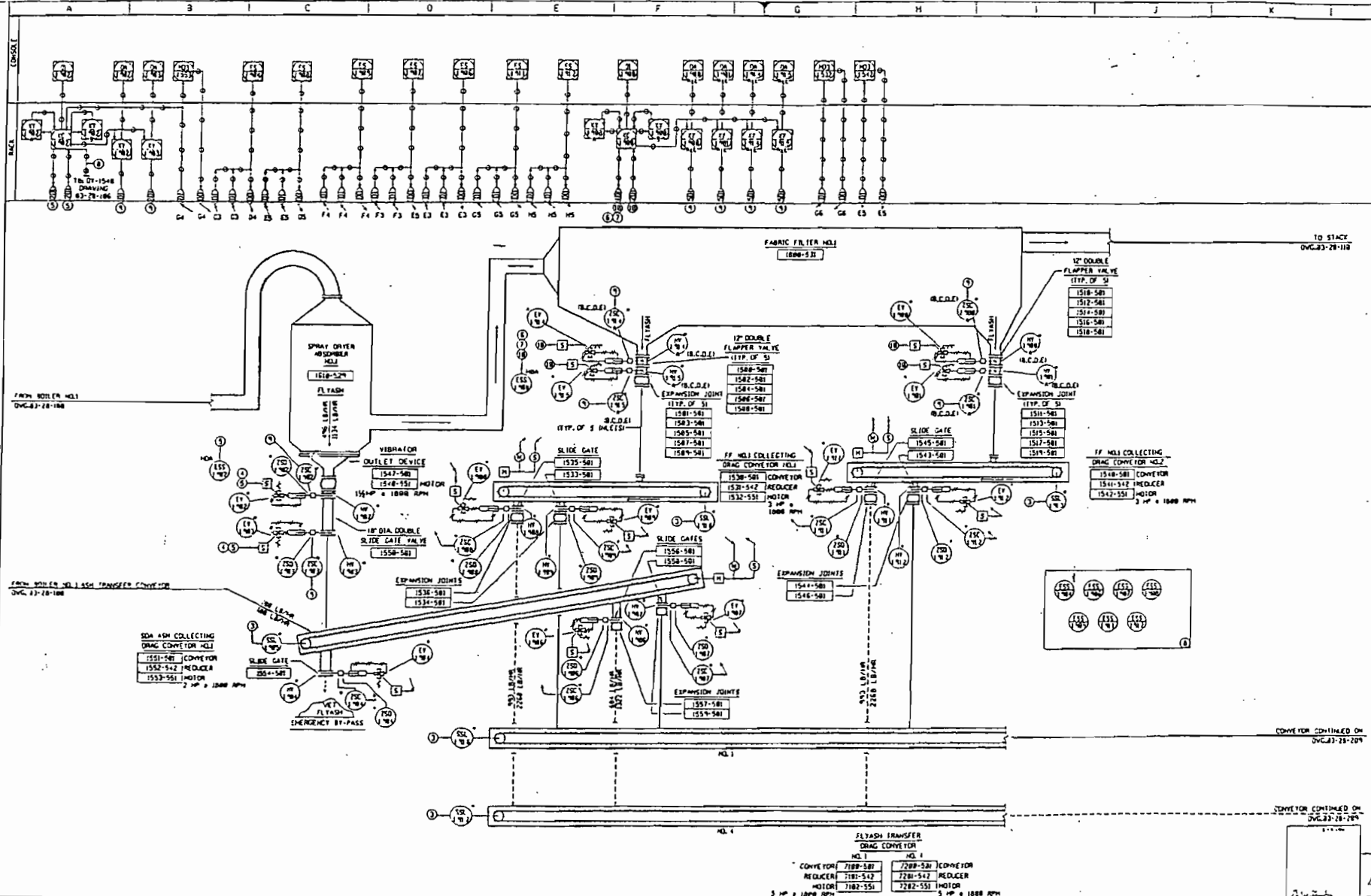


ASH HANDLING SYSTEM
P & I DIAGRAM
ASH HANDLING BUILDING
NORTH BROWARD
RESOURCE RECOVERY FACILITY

CONTRACT NUMBER: 03-28-602

INSTRUMENT NUMBERS 6400-6404 LAST NUMBER 05066274 NUMBERS NOT USED

-D37-



PROCESS CONTROL NOTES

- ① ALL INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY AREA 83 UNLESS OTHERWISE NOTED.
- ② * DENOTES VENDOR FURNISHED INSTRUMENT.
- ③ CONVEYORS ARE STARTED AND STOPPED SEQUENCE. ZERO SPEED SWITCHES STOP UP STREAM CONVEYORS.
- ④ SPRAY DRIER ASSEMBLER (SDA) ASH COLLECTING CONVEYOR MUST BE RUNNING FOR SLIDE GATES 151102 & 151103 TO OPERATE. IF VELOCITY STOPS, SLIDE GATES ARE CLOSED. SEQUENCE IS STOPPED AND ALARM SOUND.
- ⑤ KC-1102 CONTROLS OPENING AND CLOSING OF FLY-ASHES FLOP-1102. A PNEUMATIC SEQUENCE OF OPERATION SEE LOGIC DIAGRAM 83-25-1102.
- ⑥ FABRIC FILTER #1 OFF-FLYASH COLLECTING CONVEYOR MUST BE RUNNING AND EITHER 151108 OR 151109 MUST BE OPEN BEFORE FLAPPER VALVES 151108 AND 151109 WILL OPEN.
- ⑦ FABRIC FILTER #2 OFF-FLYASH COLLECTING CONVEYOR MUST BE RUNNING AND EITHER 151110 OR 151111 MUST BE OPEN BEFORE FLAPPER VALVES 151108 AND 151109 WILL OPEN.
- ⑧ LOCAL SWITCHES FOR SLIDE GATE OPERATION.
- ⑨ LIMIT SWITCHES ARE MOUNTED TO VERIFY THAT FLAPPER VALVES OR SLIDE GATES ARE CYCLING CORRECTLY. FAILURE TO CYCLE ACTIVATES ALARM. SEE LOGIC DIAGRAM 83-25-1102 AND 83-25-1110.
- ⑩ KC-1108 CONTROLS OPENING AND CLOSING OF FLAPPER VALVES & CONVEYOR 1108 WITH A PNEUMATIC SEQUENCE OF OPERATION SEE LOGIC DIAGRAM 83-25-1108.
- ⑪ SDA ASH COLLECTOR 1503-540 MUST BE ENERGIZED WHILE SLIDE GATE 151102 IS OPEN. SEE DWG. 83-28-1102.

PIPING NOTES:

- FOR GENERAL NOTES AND LEGENDS SEE DWG. 83-20-1101.
- PIPE FLOW DATES SHOW ABOVE LINE REPRESENT AVERAGE NORMAL FLOW WHEN FIRING 1508 STILLER REFUSE. FLOW DATES SHOWN BELOW LINE ARE DESIGN PEAK FLOWS AND INCLUDE ADJUSTMENTS FOR REFUSE HEATING VALUE VARIATION. FLYASH UNLESS NOTED CONTAINS 25% FREE MOISTURE.

RELEASED FOR CONSTRUCTION BY *[Signature]* DATE 02/03/22

WHEELABRATOR ENVIRONMENTAL SYSTEMS INC. *[Logo]*

BOILER NO. 1
P & I DIAGRAM
FLYASH HANDLING SYSTEM
NORTH BROWARD
RESOURCE RECOVERY FACILITY

Contract 21-2457

03-25-109

SCALE: PIPING (MIN. DATE)

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

INSTRUMENT NUMBERS 1700-1999 LAST NUMBER USED NUMBERS NOT USED

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT B1

FERROUS RECOVERY SYSTEM

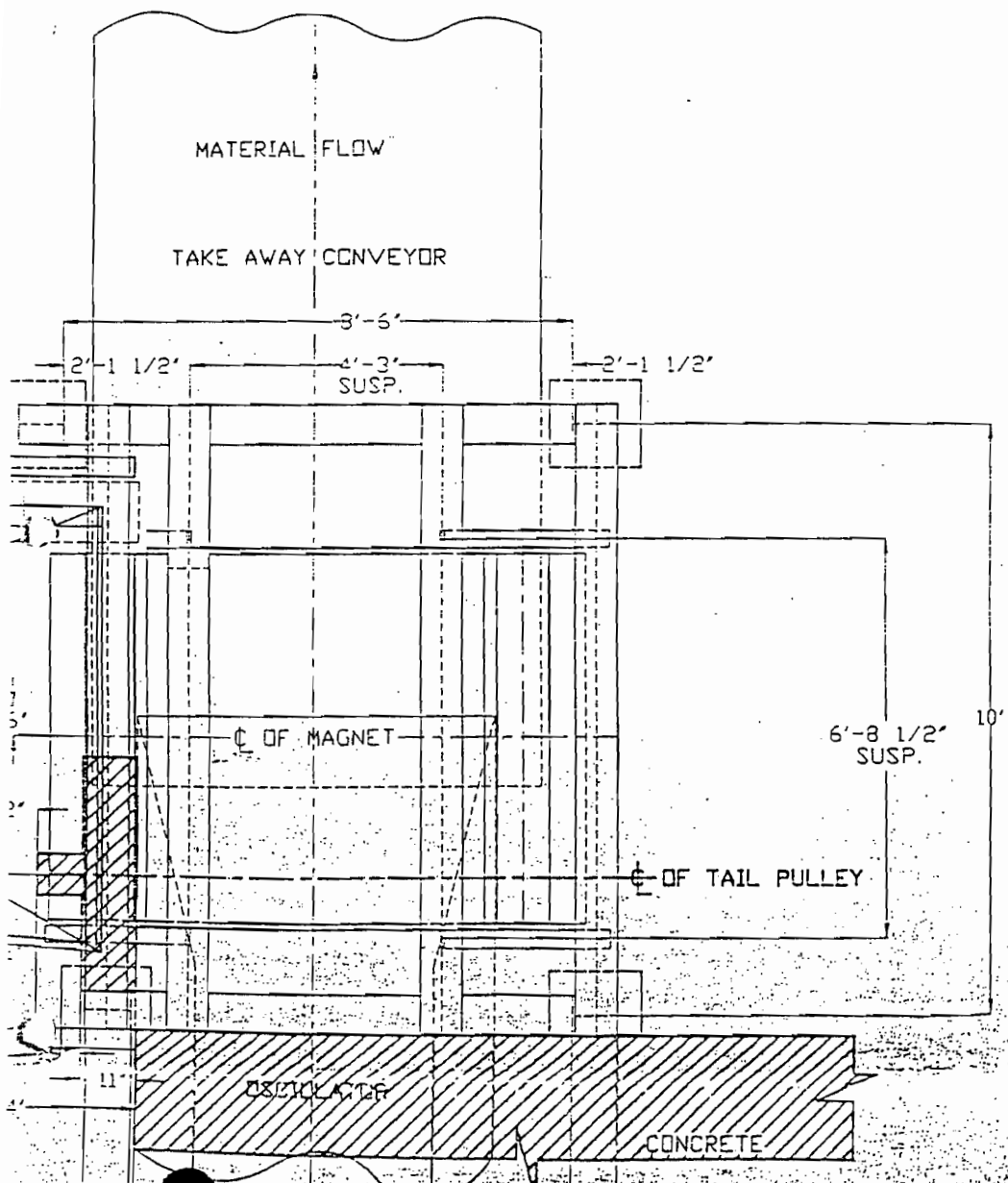
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NORTH BROWARD MAGNET & CONVEYOR ASSEMBLY FOR WHEELABATOR

LOCATION: TAMPA	DATE: 11-14-91	EQUIP:
DWG #: TA-119	REV. #:	SCALE: 1/2"=1' DEPT:



-D41-

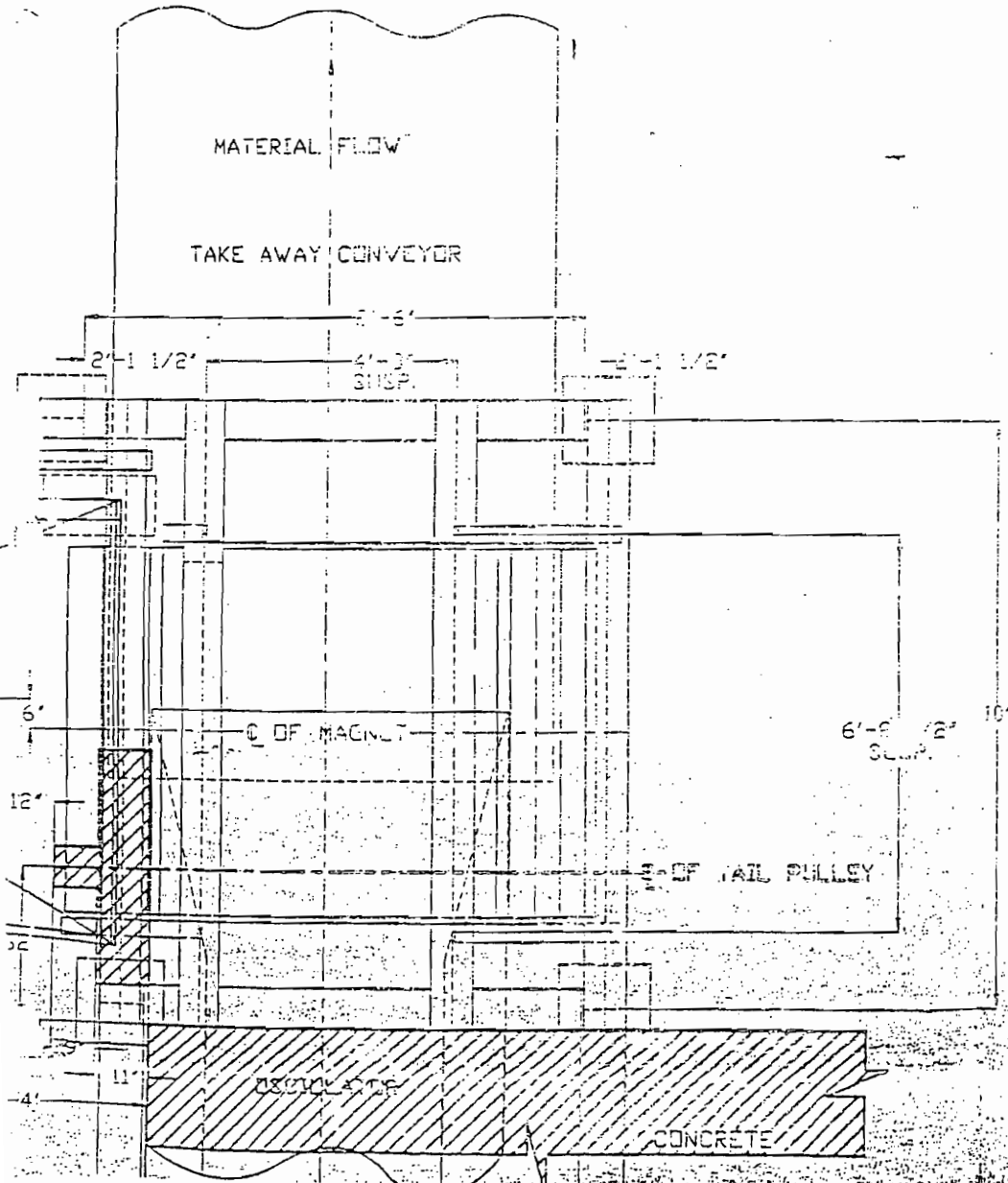
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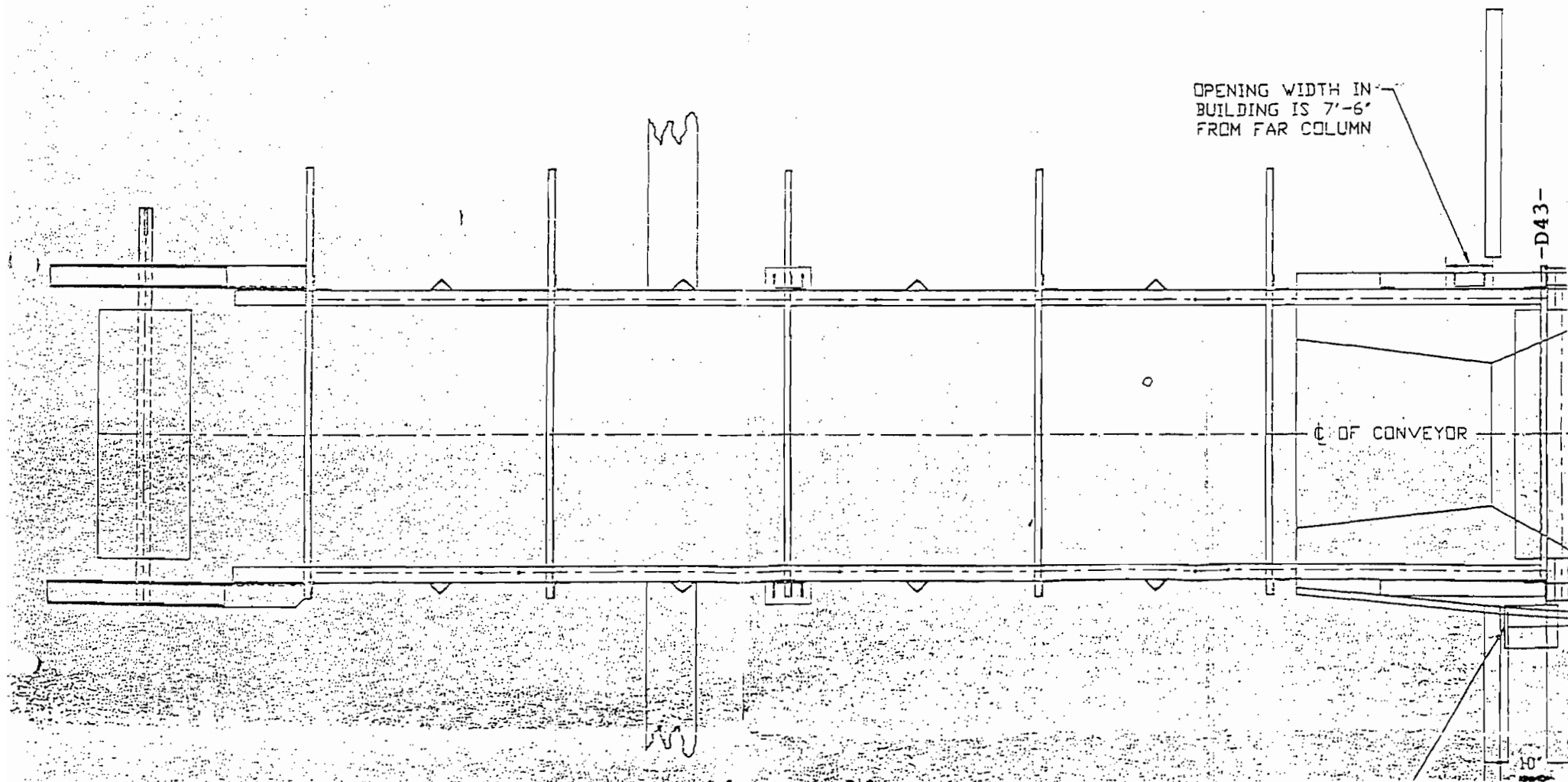
NORTH BROWARD MAGNET & CONVEYOR ASSEMBLY FOR WHEELABATOR

LOCATION: TAMPA	DATE: 11-14-91	EQUIP:
DWG # 10-119	REV. #:	SCALE: 1/2"=1' DEPT:

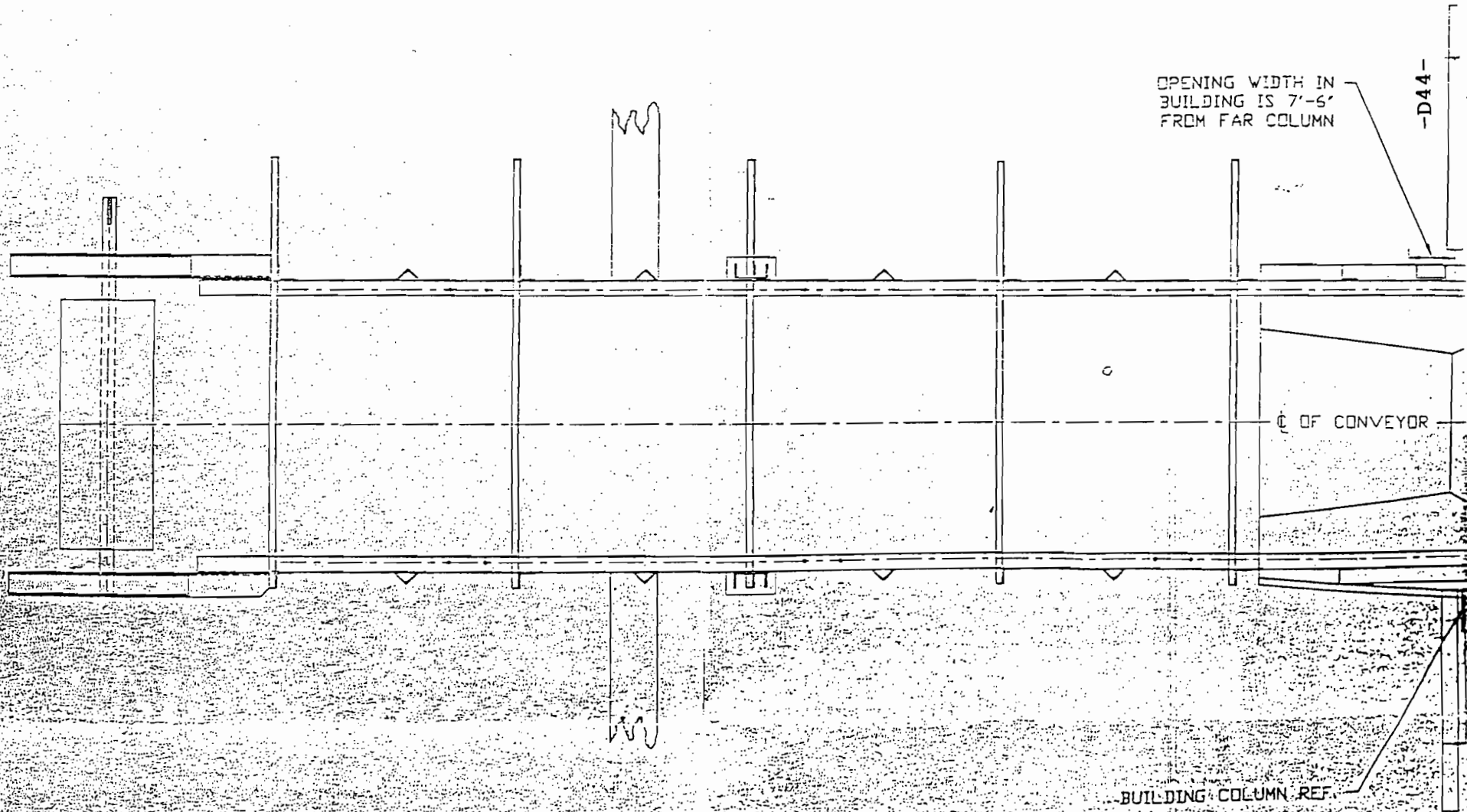


-D42-

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WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT C

QUALITY ASSURANCE PLAN (QAP)

April 6, 1994

Certified Mail #P 092 622 518

Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL. 32399-2400
Attn: Sylvia Labie, Administrator
Quality Assurance Section

Dear Ms. Labie:

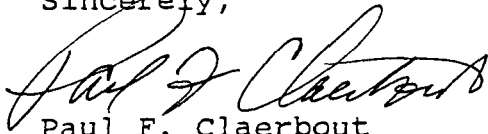
Wheelabrator North Broward (WNB) respectfully submits a Statement of Intent to comply with the Department of Environmental Protection Standard Operating Procedures (SOPs) for Sample Collection Activities. It is anticipated that when the Statement of Intent is approved, it will become WNB Comprehensive Quality Assurance Plan (Comp QAP), and replace the Comp QAP initially submitted with the facility ash residue management plan.

WNB will implement these quality assurance (QA) procedures for the ash sampling required pursuant to FAC 17-702.570(2) for solid waste combustor ash, which is disposed of in the landfill and 17-702.600(1) for ash residue which is processed into an ash reuse product. The sampling of ash and processed ash for reuse will be performed in accordance with the Departments "Quality assurance Standard Operating Procedures Manual for Sampling of Ash Residue from Solid Waste Combustors". The sampling frequency of the reused ash product is outlined in the attached Standard Operating Procedure for Performance Standards and Operational Criteria for the North Broward Resource Recovery Facility Ash Reuse Processing Facility.

Based on the above requirements, WNB wishes to have ash sampling and ash reuse product sampling activities covered by this Statement of Intent. Sampling will be performed by WNB personnel or personnel from a laboratory with and approved QAP on file with the State. Analyses of these samples will be conducted by an outside laboratory that has an approved Comp QAP. Field instrumentation requiring calibration procedures (SOP Section 7.0), maintenance procedures (SOP Section 8.0), and reagent and calibration standard storage (SOP Section 4.4.4), are not used for these activities.

Please do not hesitate to call me if you have any questions regarding the submittal.

Sincerely,



Paul F. Claerbout
Plant Manager

cc: E. Selya WNB
C. Faller WNB
F. Ferraro Hampton
J. Lurix FDEP S.E.

Q.A. CERTIFICATION

Part II: CERTIFICATION

The undersigned, PAUL F. CLAERBOUT (name)
PLANT MANAGER (title) NORTH BROWARD RESOURCE RECOVERY
FACILITY (organization), and ERIC SELYA
(name) ENVIRONMENTAL HEALTH AND SAFETY DIRECTOR (title)
NORTH BROWARD RESOURCE RECOVERY FACILITY (organization), hereby certify that they have

obtained copies of all documents pertinent to the protocols that they have identified on the document titled "Standard Operating Procedures to be Incorporated into Comprehensive QA Plans" and that these documents shall be incorporated by reference into the Comprehensive Quality Assurance Plan attached hereto or identified herein. They further certify that the organization of which they are officials or officers as identified herein has the instrumentation and/or equipment and capability to perform the protocols specified by these documents and that they will be responsible for the implementation of said protocols when performing the specified activity. They certify that the officials and employees of the organization identified herein are committed to generating data of a known and verifiable quality. They further certify that they understand that final approval of the Comprehensive Quality Assurance Plan attached hereto or identified herein is contingent upon satisfying the Department's review requirements.

They further certify that the information, statements, facts and representations given and made above are true and correct to the best of their knowledge and belief, and that they are aware that any misrepresentations or falsifications constitute grounds for rejection of approval of the Comprehensive QA Plan attached hereto or identified herein, and that anyone who knowingly makes a false statement in writing with the intent to mislead a public servant in the performance of his official duty shall be guilty of a misdemeanor, of the second degree in violation of Section 837.06, Florida Statutes.

DATE

4/6/94

Paul F. Claerbout

(print name PAUL F. CLAERBOUT)

(Title: PLANT MANAGER)

(Organization NORTH BROWARD RRF)

DATE

4/6/94

Eric Selya

(print name(s) ERIC SELYA, EH&SD AND QUALITY ASSURANCE OFFICER)

Quality Assurance Officer(s)

(Organization NORTH BROWARD RRF)

Part I: STANDARD OPERATING PROCEDURES TO BE INCORPORATED INTO COMPREHENSIVE QA PLANS, cont.

Preservatives are:

- Provided by the laboratory in separate containers
- Provided by the laboratory already premeasured into the containers
- Provided by the field consultant

Field-Related Activities:

- Sample Dispatch (4.4.3)
- Reagent and Standard Storage (4.4.4)
- Field Waste Disposal (4.4.5)

SAMPLE CUSTODY AND DOCUMENTATION (Chapter 5):

- General Requirements (5.1)
- Preparation of Field-Sampling Supplies (5.2)
- Custody and Documentation for Field Operations (5.3)
- Custody and Documentation for Laboratory Operations (5.4)
- Electronic Data Documentation (5.5)
- Legal or Evidentiary Custody (5.6)

ANALYTICAL PROCEDURES (Chapter 6):

- Laboratory Glassware Cleaning and Storage Protocols (6.1)
- Laboratory Reagent Storage (6.2)
- Laboratory Waste Disposal (6.3)

CALIBRATION PROCEDURES AND FREQUENCY (Chapter 7):

- General Requirements and Documentation (7.1, 7.2, 7.8 and 7.9)
- Standard Receipt and Traceability (Sec. 7.3)
- Frequency of Standard Preparation and Standard Storage (Sec. 7.4)

Field:

- General Requirements (7.5.1)
- pH (7.5.2)
- Temperature (7.5.3)
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- Automatic Wastewater-type Samplers (7.5.8)
- Specific Conductance (7.5.5)
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Laboratory:

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QUALITY CONTROL REQUIREMENTS AND ROUTINES TO CALCULATE AND ASSESS PRECISION, ACCURACY AND METHOD

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- Chemical Analysis (9.1.2.1)
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- Formulae for Calculating and Assessing Precision and Accuracy (9.2)
- Formulae for Calculating Method Detection Limits (9.3)
- Toxicity (Bioassay) Tests (9.1.2.3)
- Macroinvertebrate Species Identification (9.1.2.4)

DATA REDUCTION, VALIDATION AND REPORTING (Chapter 10)

CORRECTIVE ACTION (Chapter 11)

PERFORMANCE AND SYSTEMS AUDITS (Chapter 12)

QUALITY ASSURANCE REPORTS (Chapter 13)

**STATEMENT OF INTENT TO COMPLY WITH
THE DEPARTMENT OF ENVIRONMENTAL REGULATION
STANDARD OPERATING PROCEDURES FOR LABORATORY OPERATIONS AND
SAMPLE COLLECTION ACTIVITIES**

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
Quality Assurance Section

Part I: STANDARD OPERATING PROCEDURES TO BE INCORPORATED INTO COMPREHENSIVE QA PLANS

Name of Organization:

NORTH BROWARD RESOURCE RECOVERY FACILITY

Address:

2600 N.W. 48TH STREET POMPANO BEACH, FL. 33073

Comprehensive QA Plan Number:

Check the specific protocols that your organization will be using while collecting and/or analyzing environmental samples. NOTE: check only documents and protocols as listed in the "DER Standard Operating Procedures for Laboratory Operations and Sample Collection Activities" (DER-QA-001/92) dated September 30, 1992 for which your organization has current equipment capabilities.

THIS FORM MUST BE ACCOMPANIED BY THE SUPPORTING DOCUMENTATION SPECIFIED IN DER-QA-001/92

ORGANIZATION AND RESPONSIBILITY (Chapter 3)

FIELD ACTIVITIES (Chapter 4):

Field Decontamination and Cleaning Protocols:

Container Cleaning protocols (4.4.1):

Sample containers cleaned by organization

Sample containers obtained precleaned from commercial vendor

Sample containers obtained precleaned from laboratory with an approved Comprehensive QA Plan

General Considerations and Reagents (4.1.1 through 4.1.3)

Sampling Equipment (4.1.4)

Pumps used only for Purging (4.1.8.1 and 4.1.8.2)

Automatic Samplers (4.1.5)

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Teflon Tubing (4.1.7.1)

Analyte-Free Water Containers (4.1.10)

Non-teflon Tubing (4.1.7.2 through 4.1.7.5)

Ice Chests and Shipping Containers (4.1.11)

Field Meters, Flow Meters and Other Field Instruments including Lanyards, Well Sounders and Tapes (4.1.9)

Sampling Protocols:

General (4.0)

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General Concerns and Special Sample Handling Procedures (4.2.1 and 4.2.2)

Surface Water (4.2.3)

Drinking Water Supply System (4.2.8)

Wastewater (4.2.4)

Temporary Well Points (4.2.9)

Groundwater (4.2.5)

Air Stripper and Remedial Treatment Systems (4.2.10)

Wells with in-place Plumbing (4.2.6)

Bioassay (4.2.11)

Potable Well Sampling (4.2.7)

Solid Matrices:

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Macrobenthic Invertebrates (4.3.10)

Preservation, Holding Times and Containers Types:

Aqueous samples - 40 CFR Part 136, Table II (4.4.2)

SAMPLING OF ASH RESIDUE FROM SOLID
WASTE COMBUSTORS

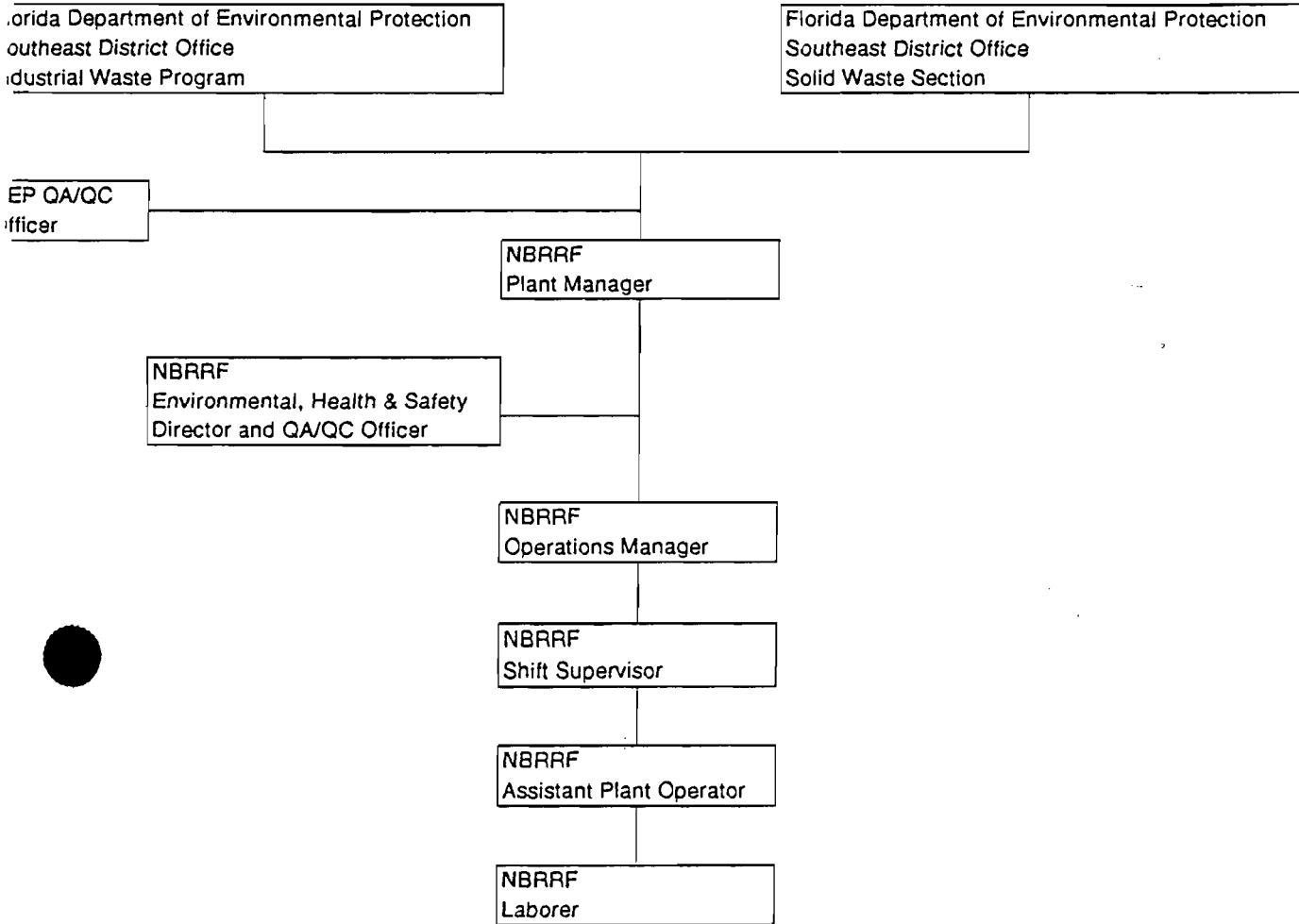
Aqueous samples - 17-160.700, F.A.C., Table 4 (4.4.2)

Aqueous samples - 17-160.700, F.A.C., Table 8 (4.4.2)

Solid samples - 17-160.700, F.A.C., Table 5 (4.4.2)

TABLE 1	
SAMPLING CAPABILITIES*	
PARAMETER GROUP	SAMPLE SOURCE
PRIORITY POLLUTANT METALS	1. LANDFILLED MUNICIPAL SOLID WASTE COMBUSTOR ASH 2. ASH DERIVED PRODUCTS

Since the North Broward Resource Recovery Facility does not plan to use field instrumentation to monitor combined bottom and fly ash analyze, QA objectives for field measurements parameters do not apply.



KEY PERSONNEL

NORTH BROWARD RESOURCE RECOVERY FACILITY (NBRRF)

COMPREHENSIVE QUALITY ASSURANCE PLAN

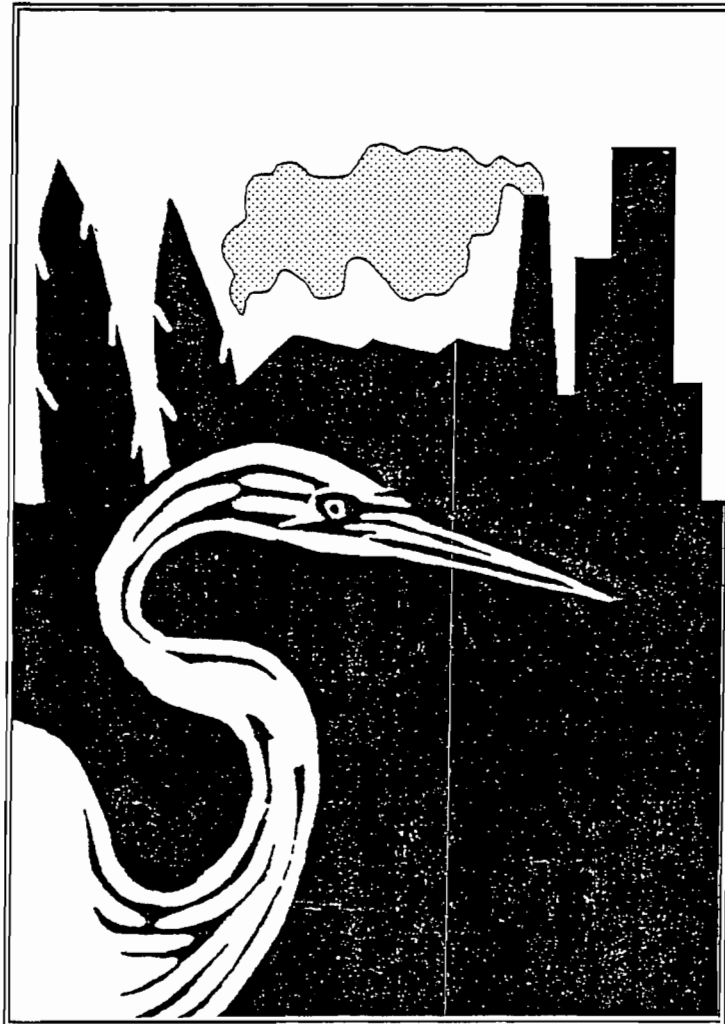
TABLE 2

SAMPLING EQUIPMENT, MATERIALS AND APPROPRIATE USE

EQUIPMENT TYPE	CONSTRUCTION	USE	PERMISSIBLE PARAMETER GROUPS
<i>SOLID SAMPLING</i>			
1. TROWEL, SCOOP, SPOON, SPATULA	STAINLESS STEEL, TEFLON	SAMPLING AND COMPOSITING	PRIORITY POLLUTANT METALS
2. SHOVEL	STAINLESS STEEL	SAMPLING	PRIORITY POLLUTANT METALS
3. MIXING TRAY	STAINLESS STEEL POLYETHYLENE/PVC	COMPOSITING OR HOMOGENIZING	PRIORITY POLLUTANT METALS
4. BLENDER/MIXER	STAINLESS STEEL POLYETHYLENE/PVC	COMPOSITING OR HOMOGENIZING	PRIORITY POLLUTANT METALS
<i>MICELLANEOUS EQUIPMENT</i>			
1. HARD HAT		PROTECTION/SAFETY	X
2. STEEL TOE FOOTWEAR		PROTECTION/SAFETY	X
3. DISPOSABLE GLOVES	LETEX	PROTECTION/SAFETY	X
4. BUCKETS	PVC, POLETHYLENE	DECONTAMINATION	PRIORITY POLLUTANT METALS
5. BRUSHES		DECONTAMINATION	PRIORITY POLLUTANT METALS
6. ALCONOX OR EQUIVALENT TRISODIUM PHOSPHATE SOAP		DECONTAMINATION	PRIORITY POLLUTANT METALS
7. BOUND FIELD BOOK		FIELD NOTES	PRIORITY POLLUTANT METALS
8. INDELIBLE PENS		FIELD NOTES	PRIORITY POLLUTANT METALS
9. ICE CHESTS		SAMPLE TRANSPORT	PRIORITY POLLUTANT METALS
10. WET ICE (BLUE ICE IS PHOGIBITED)		SAMPLE TRANSPORT	PRIORITY POLLUTANT METALS
11. DEIONIZED WATER	POLYETHYLENE, ON DEMAND AT GENERATING STATION	FINAL DECONTAMINATION RINSE	PRIORITY POLLUTANT METALS
12. NITRIC ACID	REAGENT GRADE	DECONTAMINATION RINSE	PRIORITY POLLUTANT METALS

Department of Environmental Protection

Quality Assurance Standard Operating Procedures Manual for Sampling of Ash Residue from Solid Waste Combustors



Solid Waste Section
December, 1993

TO: District Waste Program Administrators

FROM: Mary Jean Yon, Administrator
Solid Waste Section

DATE: March 1, 1994

SUBJECT: Ash Sampling SOP Manual

A question has arisen regarding the applicability of the Ash Sampling SOP Manual, dated December, 1993. The Manual refers to ash residue from "solid waste combusters," which are defined to include any incinerator which burns solid waste. However, the intent of the Manual was to address the routine ash testing requirements for waste-to-energy facilities for the purpose of compliance with Rule 17-702.570, F.A.C. The procedures set forth in the Manual may not be appropriate for other types of incinerators, including biomedical waste incinerators, and may not be sufficient to demonstrate compliance with State and Federal hazardous waste regulations. In addition, waste-to-energy facilities that have requested permission to recycle/reuse their ash should check with the Department to ensure that the sampling procedures listed in this manual are applicable to their situation.

Please attach a copy of this memorandum to each Ash SOP Manual you provide to the public. Future editions of the Manual will include this clarification in the Introduction.

QUALITY ASSURANCE
STANDARD OPERATING PROCEDURES MANUAL
FOR SAMPLING ASH RESIDUE
FROM SOLID WASTE COMBUSTORS

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I. INTRODUCTION

The Department of Environmental Protection has compiled the following document in order to establish comprehensive procedures which address the sampling of ash residue from solid waste combustors. Chapter 17-702.570(2), Florida Administrative Code (F.A.C.), requires that ash residue sampling and analysis be conducted in accordance with an approved Comprehensive Quality Assurance Plan (Comp QAP). In accordance with Rule 17-160.700(3), F.A.C., all sampling and analysis will be conducted in a manner consistent with Category 2C as specified in Table 3 of that rule. All parties conducting ash residue sampling should follow these Standard Operating Procedures. Subsequent analyses of collected samples must be performed by a laboratory which has an approved Comp QAP.

The intent of this document is to clarify Department regulations and requirements dealing with the sampling of solid waste combustor ash. These procedures have been developed in cooperation with the Bureau of Laboratories, Quality Assurance Section, and reflect the current rules governing solid waste combustor ash.

II. SAMPLING PROCEDURES

A. Ash Residue Sampling

Chapter 17-702.570(2), F.A.C. requires at least quarterly sampling for those priority pollutant metals listed in Table I.

B. Sampling Location

(1) A composite sample of the ash residue (combined fly ash, bottom ash and scrubber residue) shall be taken from the ash residue, either at the conveyance mechanism or in the ash load-out building. Grab samples shall be collected every 10 minutes for 4 consecutive hours during a single day each month. This specifically means that 6 samples shall be collected each hour with each individual sample weighing approximately 1 pound. At the end of the sampling day approximately 24 pounds of ash residue will have been collected. These monthly samples shall be composited and stored in a locked cabinet which is maintained at 4 degrees Centigrade. At the end of the sampling quarter (e.g. January-March) 3 composite samples, one composite sample for each month for that calendar quarter, will have been collected. The 3 monthly composite samples shall then be composited into 1 composite sample weighing approximately 2 pounds.

(2) If the fly ash and scrubber residue are not normally mixed with the bottom ash at the facility, then equal parts of fly ash and scrubber residue shall be collected in accordance with Section II.C. below and thoroughly mixed with the bottom ash prior to testing to obtain a representative sample.

C. Composite Ash Residue Sampling Procedure

The following composite and residue sampling procedures shall be used for collecting samples for the priority pollutant metals listed in Table I.

(1) At 10 minute intervals over the 4-hour sampling period, gather random sequential grab samples with a decontaminated stainless steel or plastic spoon, taking a cross section of the entire conveyance mechanism or the ash load-out building. The total amount sampled each 10 minutes should be approximately 1 pound.

(2) Place the samples into a stainless steel or glass tray until the sample has reached ambient air temperature. Place each sample into a clean plastic container and seal it with a screw top plastic lid. Store the samples in a locked cabinet at 4 degrees Centigrade.

(3) At the end of the sampling period, transfer the 24 samples into a clean stainless steel or glass tray for mixing.

(4) Thoroughly mix the daily composite ash residue sample with a large, precleaned, stainless steel or plastic spoon. To promote mixing, the stainless steel or plastic spoon should be slotted.

(5) Screen the mixed daily composite ash residue sample through a 3/8-inch stainless steel screen.

(6) Place \leq 3/8 inch ash residue into a clean mixer which is large enough to accommodate the daily composite ash sample.

(7) Remove $>$ 3/8 inch noncrushable ash residue from the sample (e.g. wheels, batteries, rebar, metal frames, etc.), weigh it and discard it. Record in a bound log the weight, type and approximate size of the discarded material.

(8) Pass $>$ 3/8 inch crushable ash residue through a crusher and then recombine crushed ash residue with \leq 3/8 inch ash residue in a mixer.

(9) Turn on the mixer for 10 minutes to assure thorough mixing of the composite sample. Remove the sample from the

mixer with stainless steel or plastic spoon and obtain a quarter of the total sample for the daily composite sample. The remaining 3/4 of the original sample may be discarded.

(10) Place the daily composite sample into a clean container and seal with a screw top plastic lid. Store this sample in a locked cabinet which is maintained at 4 degrees Centigrade. The third monthly composite sample of each sampling quarter (i.e. March, June, September and December) shall be analyzed separately from the quarterly composite sample for Mercury. The laboratory holding time for Mercury is 28 days.

(11) After 3 monthly composite samples are obtained, combine all three monthly composite samples in the mixer. Remove the sample after mixing for 10 minutes and divide it into four equal portions. Two of these portions may be discarded. Place each of the remaining two quarterly composite samples into separate clean containers and seal them with screw top plastic lids.

(12) Label containers for all composites as to location, date, samples and composite number.

(13) Ship one quarterly composite sample to the approved laboratory using the chain of custody form found in Figure I.

(14) Archive the other quarterly composite sample on-site in the locked refrigerated cabinet as a control and/or for future analyses for a maximum of 6 months, depending on the holding times for each analyte.

D. Cleaning Procedures

Equipment utilized to obtain samples must be decontaminated before every 4-hour sampling event.

(1) Wash equipment thoroughly with detergent and tap water using a brush to remove any particulate matter or surface film. Cleaning detergent shall be metal-free (Acationox or equivalent).

(2) Rinse equipment with tap water.

(3) Rinse equipment with 10% nitric acid rinse. The 10% nitric acid shall be made with 1 part reagent grade concentrated nitric acid and 5 parts deionized water.

(4) Rinse all non-metallic sampling and compositing equipment with deionized water and allow to air dry.

(5) Wrap equipment completely with plastic wrap to prevent contamination during transportation to or within a sampling site.

E. Sample Identification, Storage, and Holding Time

(1) Immediately after each monthly sample is collected, the container shall be sealed and labeled to identify the sample by location, date and time of collection, collector's name and analysis type.

(2) All samples must be shipped in wet ice, and access to samples must be restricted to only those persons identified in the chain of custody record.

III. SAMPLE CUSTODY

A. Sample Control Log

A sample control log must be maintained which will show the field ID number, the name of the sample collector, the date, shift, and location of collection. The field ID number also must be written on the sample label. A numbering system should be used for the field ID numbers which will allow accurate identification of ash samples with no ambiguity.

B. Chain of Custody Record

(1) A chain of custody record must be completed for every monthly composite sample collected. All parties accepting custody of the samples including the collector, coordinator, transporter, laboratory custodian, etc., must provide signatures on the chain of custody forms. In this record every sample will be identified by the following: field ID number, date, time, sampling method, sampling location, shift, container, and analytical methods. A chain of custody record must be filled out per sample collector per shift.

(2) A binder containing copies of chain of custody records must be maintained by the party which collects the sample. Two copies of a chain of custody record form must accompany the sample to the laboratory. Once the sample transporter signs out and the receiver signs in, one copy must be retained by the laboratory and one retained by the transporter who will deliver it to the party collecting the sample.

IV. REFERENCES

(1) Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, Third Edition (EPA SW-846), 1986 as amended by Final Update 1, November 1990.

TABLE I

PRIORITY POLLUTANT METALS

Antimony	(mg/kg)
Arsenic	(mg/kg)
Beryllium	(mg/kg)
Cadmium	(mg/kg)
Chromium	(mg/kg)
Copper	(mg/kg)
Lead	(mg/kg)
Mercury	(mg/kg)
Nickel	(mg/kg)
Selenium	(mg/kg)
Silver	(mg/kg)
Thallium	(mg/kg)
Zinc	(mg/kg)

FIGURE I
CHAIN OF CUSTODY FORM

SAMPLE DATE _____ SAMPLE TIME _____

SAMPLE NUMBER _____ SAMPLE TYPE _____

ANALYTICAL METHOD REQUESTED _____

PARAMETERS TO BE MEASURED _____

FIELD INFORMATION _____

SAMPLE COLLECTOR: NAME _____

TITLE _____

ADDRESS _____

TELEPHONE _____

LABORATORY REPORT TO _____

LABORATORY INVOICE TO _____

CHAIN OF CUSTODY

	Printed name	Signature	Date
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

WHEELABRATOR NORTH BROWARD

ASH RESIDUE MANAGEMENT PLAN

ATTACHMENT D

STANDARD OPERATING PROCEDURE FOR PERFORMANCE
STANDARDS AND OPERATIONAL CRITERIA
"NORTH BROWARD RESOURCE RECOVERY FACILITY ASH PROCESSING ADDITION"

STANDARD OPERATING PROCEDURE
FOR
PERFORMANCE STANDARDS AND OPERATIONAL CRITERIA
NORTH BROWARD RESOURCE RECOVERY FACILITY
ASH PROCESSING ADDITION

INTRODUCTION

This standard operating procedure supplements the Ash Residue Management Plan for the Wheelabrator North Broward Facility. The procedure will be implemented when ash residue is processed for reuse either for landfill daily cover or construction aggregate for road construction applications at the facility. A comprehensive demonstration, as required by Chapter 17-702 F.A.C. and authorized by FDEP Permit No. SC29-183237 concluded that McKaynite construction aggregate meets the requirements of a recovered material pursuant to Section 403.7045 (1)(f) Florida statutes and Rule 17-702.600, F.A.C..

In addition to the recovered materials determination Chapter 17-702 F.A.C. requires that performance standards and operational criteria be established to demonstrate reliable operation.

The process was patented in 1989 and has undergone rigorous field testing with the oversight by FDEP. This standard operating procedure details the operational standards that will be employed during ash processing to assure compliance with the ash rule.

PROCESS DESCRIPTION

The ash reuse process was developed for the purpose of manufacturing both landfill cover or a marketable aggregate product from the ash residue remaining from the combustion of municipal solid waste. The modification will allow for the processing of ash residue into recovered materials. These materials meet the criteria for landfill daily cover as described in F.A.C. 17-701 and also qualify as a recycled material pursuant to F.A.C. 17-702.

The process begins when the ash residue exits the facility. While the refuse processing in the Resource Recovery Facility is a continuous 24 hours per day operation, the ash reuse process is designed as a single shift operation. Therefore, the ash residue is conveyed to a storage bunker prior to processing.

The process is divided into four phases: initial ferrous recovery and processing; initial size gradation, reagent introduction and curing; final sizing; and shipping. A description of each phase of the process is provided below and is shown in Figure 1 and 2.

LANDFILL DAILY COVER

Ferrous Recovery

Recovery of ferrous metal from the ash residue stream is important for three reasons. Ferrous metal recovery avoids consumption of ash monofill air space and therefore extends its useful life. Recovered ferrous scrap is a valuable scrap metal product which enhances recycling efforts and is easily reused. Thirdly, removal of the ferrous metal, which varies in size from large bulky objects to small nails, screws, etc., enhances the ability to produce a homogeneous product.

The ash residue is conveyed to a finger screen where the stream is divided into plus 4" and minus 4" fractions. The plus 4" is primarily ferrous metal and is conveyed to a bunker for storage prior to shipping.

Initial Size Gradation

The minus 4" fraction from the finger screen is conveyed to a sizing screen. The ferrous metal in this fraction is magnetically removed from the screen oversize stream. The screen undersize stream is then either shipped as landfill daily cover or further processed into a construction aggregate.

CONSTRUCTION AGGREGATE

The process was developed and patented for the purpose of manufacturing a marketable aggregate product from the ash residue remaining from the combustion of municipal solid waste. The product meets the Florida Department of Transportation criteria for a road construction material either as a substitute for natural granular sub-base or as a substitute for aggregate in asphaltic concrete.

During the production of construction aggregate, the bottom ash and fly ash streams will be separated. The bottom ash stream will be diverted to the aggregate production facility and the fly ash will be conditioned and transported to the adjacent landfill as described in the ash residue management plan. The ferrous recovery and initial sizing operations will be performed as previously described for landfill daily cover.

Reagent Introduction

The production of construction aggregate requires the addition of a portland cement based reagent blend to the remaining ash stream after ferrous metal recovery.

The discharge from the ash storage silo is weighed and reagents are proportioned into a mixer. After mixing is complete; the blend is discharged into an interim curing bunker.

Final Sizing and Shipping

After the curing period, the blend is removed from the interim storage bunker by a front end loader and introduced to another sizing screen. A final cleanup magnet removes any remaining ferrous metal. The cured aggregate product discharges into a truck and is shipped to the purchaser. The oversize material is crushed and returned to the final screen.

Process Results

The system is designed with the capability of processing all of the ash residue generated at the Wheelabrator North Broward Facility. Approximately 80% of the ash will be processed, while approximately 10% of the initial ash residue will be recovered as marketable ferrous metal. The processed aggregate will be sold as landfill cover or construction aggregate. Approximately 10% of the initial ash is expected to be process reject material and will be disposed of in accordance with F.A.C. 17-702.

MATERIAL SPECIFICATIONS

Processed Ash will be available for road construction applications as a substitute aggregate for several phases of road construction. The primary applications will be sub-base aggregate and asphalt aggregate. Processed Ash will be produced to provide a substitute equal to currently specified base materials consisting of limestone, sand-clay, crushed shell, soil cement or other suitable materials. Grain size distribution will generally be less than 3/8 inch, but can be adjusted to meet customer specifications.

LOADING AND SHIPPING CONTROLS

Truck Loading

Trucks will be loaded by two independent means:

By conveyor - The facility is designed so that the product from the final phase of production can be loaded directly onto trucks.

Front end loader - The aggregate product may be placed in an interim short-term stockpile during times when trucks are not available or aggregate is being stockpiled prior to sale. When the aggregate is loaded, a front end loader will be used to load directly from the stockpile onto trucks. Trucks will be covered prior to exiting the facility.

Identification of Product

Upon arriving at the facility, all haul trucks shall enter the scale house where the following information shall be entered by the scale operator:

Truck number and owner
Code number of the material
Tare weight of the vehicle

After loading, the operator shall complete a Bill of Lading containing the following information:

Name of customer
Description of product
Destination of shipment
Name of hauler
Truck ID No.

The completed bill of lading will be given to the truck driver who shall proceed to the scale house. Upon presenting the bill of lading to the scale operator, the weight ticket shall be completed and the code for the aggregate product will be entered on the scale ticket.

After the material is loaded, the driver shall proceed across the exit scale where the operator shall enter gross, tare and net weights in addition to the above information. The scale operator will ascertain that the material in the loaded truck is what it is stated to be. A scale ticket will not be issued until the identification of the material is certain.

SAMPLING PLAN

A representative sample shall be obtained monthly from each product stream and tested for grain size distribution and moisture content. In addition, each sample will be analyzed for metals concentration according to SW-846 for priority pollutant metals. The sampling shall be performed by Wheelabrator personnel or a state certified laboratory. Analysis will be performed by a laboratory having an approved quality assurance plan.

Sampling Location

A composite sample of the aggregate shall be taken from the discharge of the load-out conveyor. Grab samples shall be collected every 10 minutes for four consecutive hours during a single day on which aggregate is produced each week. This specifically means that six samples shall be collected each hour with each individual sample weighing approximately one pound. At the end of the sampling period, approximately 24 pounds of aggregate will have been collected. These weekly samples shall be composited and stored in a locked cabinet. The weekly composite samples shall then be composited into 1 monthly sample weighing approximately 2 pounds.

Composite Sampling Procedure

The following composite sampling procedure shall be used for collecting samples for the priority pollutant metals listed in Table I.

1. At ten minute intervals over the 4-hour sampling period, gather random sequential grab samples with a decontaminated stainless steel spoon, taking a cross section of the entire conveyor. The total amount sampled each ten minutes should be approximately 1 pound.
2. Place the samples into a container until the sample has reached ambient air temperature. Place each sample into a clean plastic container and seal it. Store the samples in a locked cabinet.
3. At the end of the sampling periods, transfer the 24 samples into a clean container for mixing.
4. Thoroughly mix the daily composite sample with a large, precleaned, stainless steel or plastic spoon. To promote mixing, the spoon should be slotted.
5. Place the composite sample into a clean mixer which is large enough to accommodate the sample.

6. Turn on the mixer for 10 minutes to assure thorough mixing of the composite sample. Remove the sample from the mixer with a stainless steel or plastic spoon and obtain a quarter of the total sample for a daily composite sample. The remaining 3/4 of the original sample may be discarded.
7. Place the daily composite sample into a clean container and seal. Store this sample in a locked cabinet.
8. After 4 weekly composite samples are obtained, combine all the composite samples in a mixer. Remove the samples after mixing for 10 minutes and divide it into four equal portions. Two of the portions may be discarded. Place each of the two remaining weekly composite samples into separate clean containers and seal them.
9. Label containers for all composites as to location, date, samples and composite number.
10. Ship one quarterly sample to the approved laboratory using the chain of custody form shown in Figure 1.
11. Archive the other monthly sample in the locked refrigerated cabinet as a control and or for future analysis for a maximum of six months, depending on the holding time for each analyte.

Cleaning Procedure

Equipment used to obtain samples must be decontaminated before every four hour sampling event.

1. Wash equipment thoroughly with detergent and tap water using a brush to remove any particulate matter or surface film. Cleaning detergent shall be metal-free (Acationox or equivalent).
2. Rinse with tap water.
3. Rinse equipment with 10% nitric acid rinse. The 10% nitric acid shall be made with 1 part reagent grade concentrated nitric acid and 5 parts deionized water.
4. Rinse all non-metallic sampling and compositing equipment with deionized water and allow to air dry.
5. Wrap equipment completely with plastic wrap to prevent contamination during transportation to or within a sampling site.

Sample Identification, Storage, and Holding Time

1. Immediately after each weekly sample is collected, the container shall be sealed and labeled to identify the sample by location, date and time of collection, collector's name and analysis type.
2. All samples shall be shipped in wet ice, and access to samples must be restricted to only those persons identified in the chain of custody record.

Sample Custody

Sample Control Log

A sample control log must be maintained which will show the field ID number, the name of the sample collector, the date, shift, and location of the collection. The field ID number must also be written on the sample label. A numbering system should be used for the field ID numbers which will allow accurate identification of samples with no ambiguity.

Chain of Custody Record

A chain of custody record must be completed for each composite sample collected. All parties accepting custody of the samples including the collector, coordinator, transporter, laboratory custodian, etc., must provide signatures on the chain of custody forms. In this record, every sample will be identified with the following: field ID number, date, time, sampling method, sampling location, shift, container, and analytical methods. A chain of custody record must be filled out per sample collected. The chain of custody records will be maintained at the facility.

TABLE I

PRIORITY POLLUTANT METALS

Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc

Availability of Data

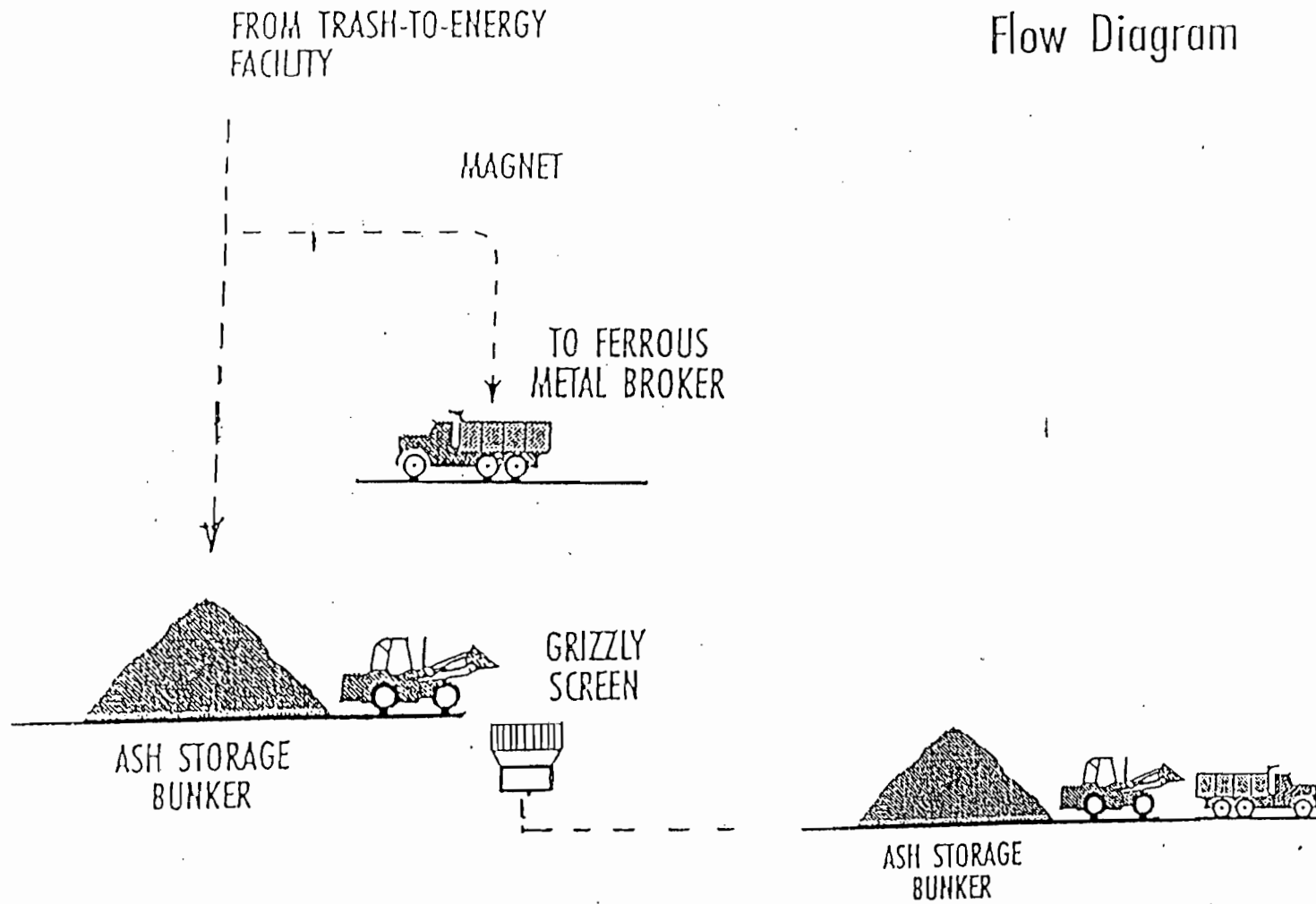
Chemical and physical properties of commercially used aggregate will be characterized monthly and submitted to the FDEP Southeast District office on a quarterly basis. Chemical and physical properties of the bottom ash used to manufacture aggregate will be determined monthly and compared to baseline data developed during the FDEP permitted research, development and demonstration project. These results will be filed at the facility for a minimum of three years following the production of aggregate.

Testing laboratory

A testing laboratory shall be selected which has a demonstrated ability to perform the required tests. The laboratory shall have an approved Quality Assurance Plan on file with FDEP.

LANDFILL DAILY COVER

Flow Diagram



-D74-

FIGURE 1

ROAD CONSTRUCTION AGGREGATE

Flow Diagram

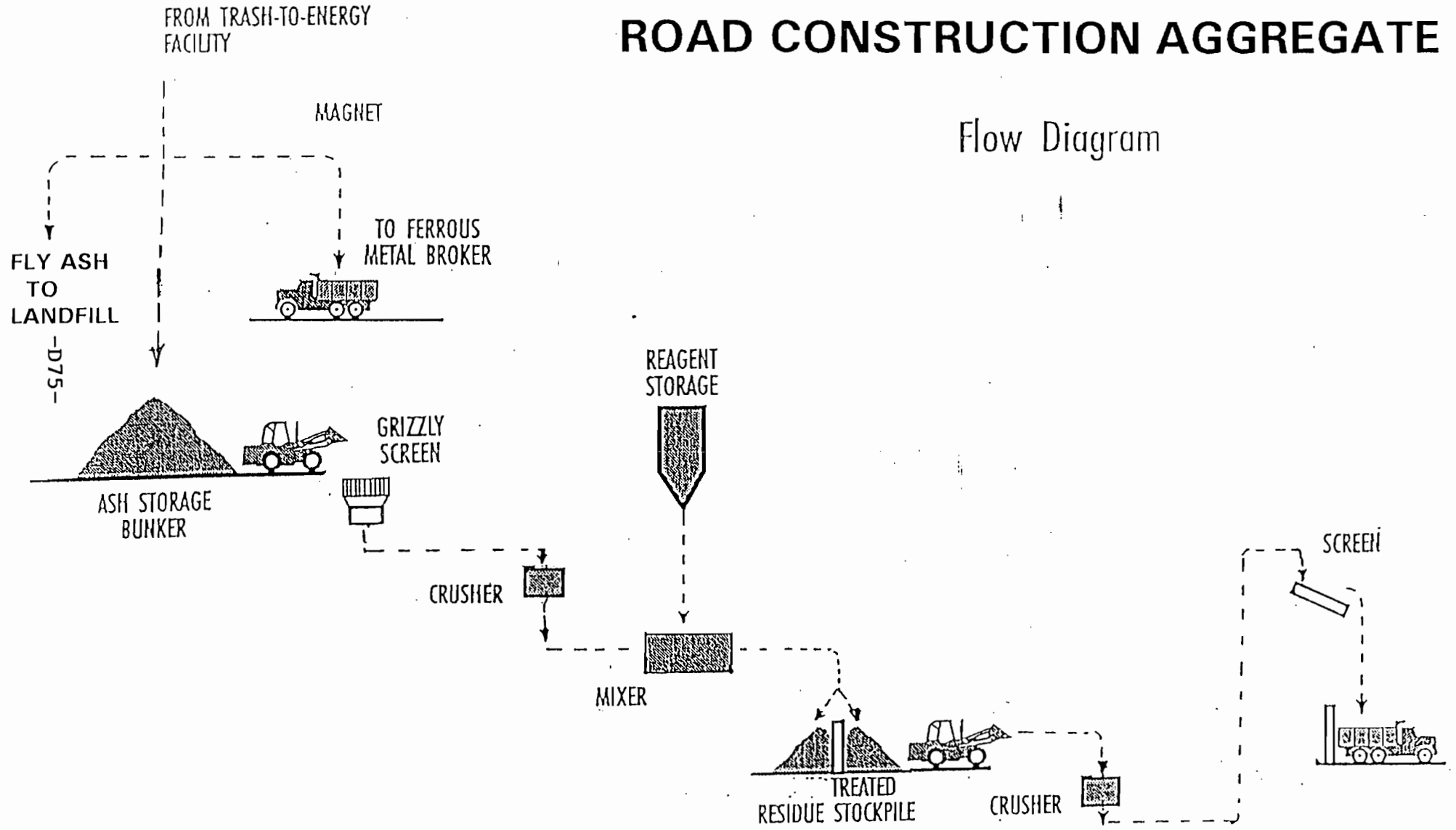


FIGURE 2

DRAWINGS

1. 07-27-0001 Revised Site Plan, Ash Reuse Addition.
2. 07-27-0002 Plan View, Ash Reuse Process
3. 07-24-0001 North & South Elevations, Ash Reuse Process
4. Certified Site Conformance Diagram
5. Revised Surface Water Drainage Map

es#5/519/ocr

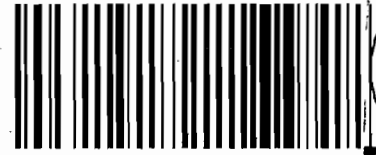


Wheelabrator North Broward

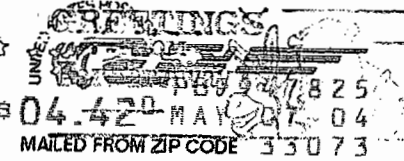
A Waste Management Company

2600 N.W. 48th Street
Pompano Beach, FL 33073

CERTIFIED MAIL™



7002 2410 0002 9086 1507

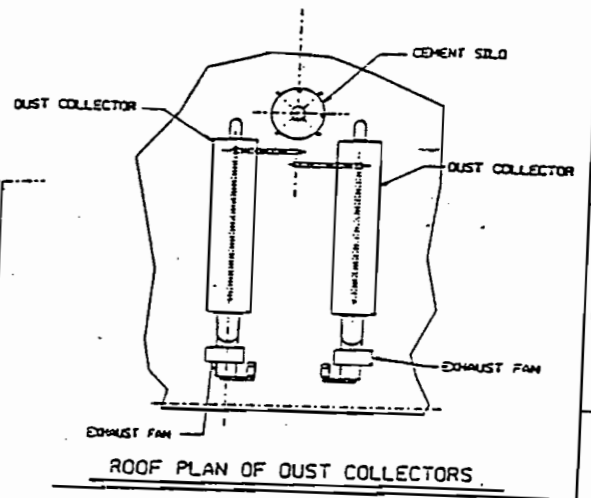
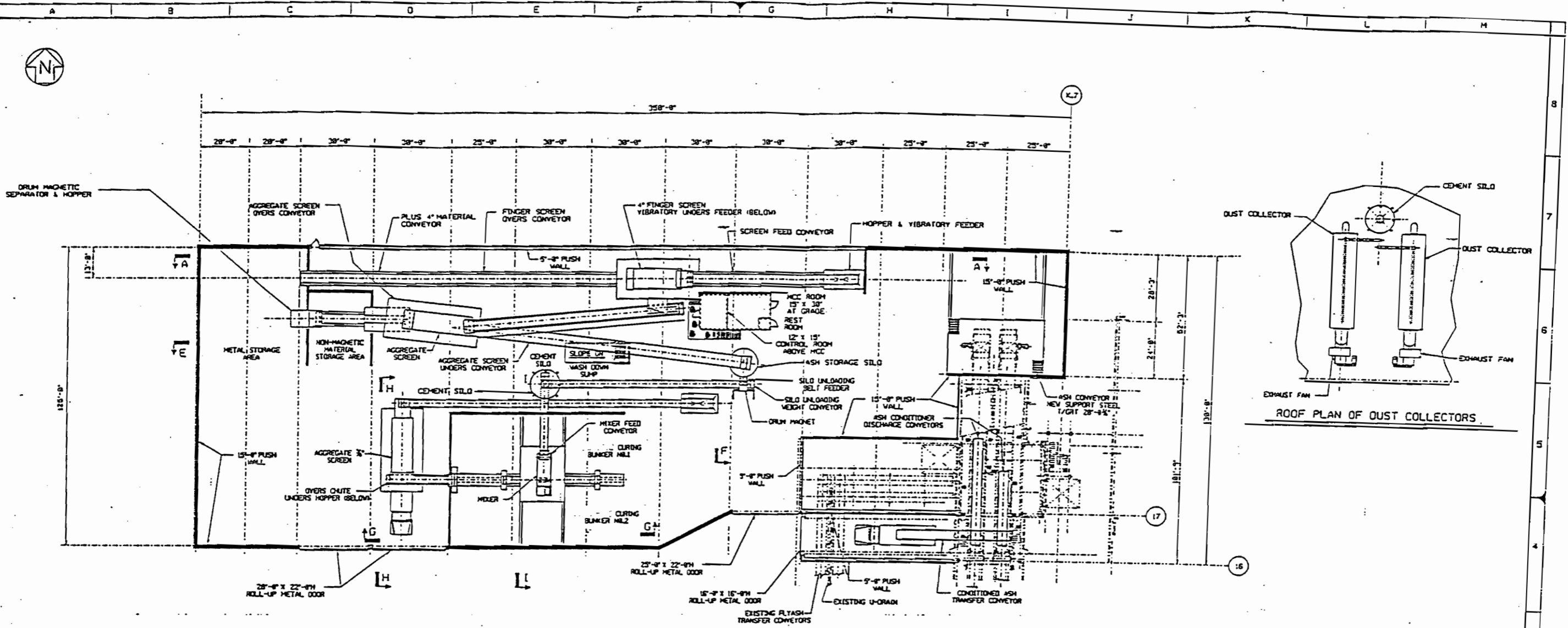


Mr. Al Linero, FDEP
Twin Towers Office Building
2600 Blair Stone Road
MS 5505
Tallahassee, FL 32399-2400



32399+2400 01





NOTE:
FOR SECTIONS SEE DRAWING 07-27-0003.

RELEASED FOR PERMITTING PURPOSES ONLY
ISSUE No. _____ DATE 03-24-94

PRELIMINARY

WHEELABRATOR ENVIRONMENTAL SYSTEMS INC.
Pompano, FL

RUST Rust International Corporation
Pittsburgh, Alabama
Contract 21-4527L

ASH RECYCLING PROCESSING FACILITY
PLAN VIEW

WHEELABRATOR NORTH BROWARD INC
POMPANO BEACH, FLORIDA

DRAWING NUMBER 07-27-0002

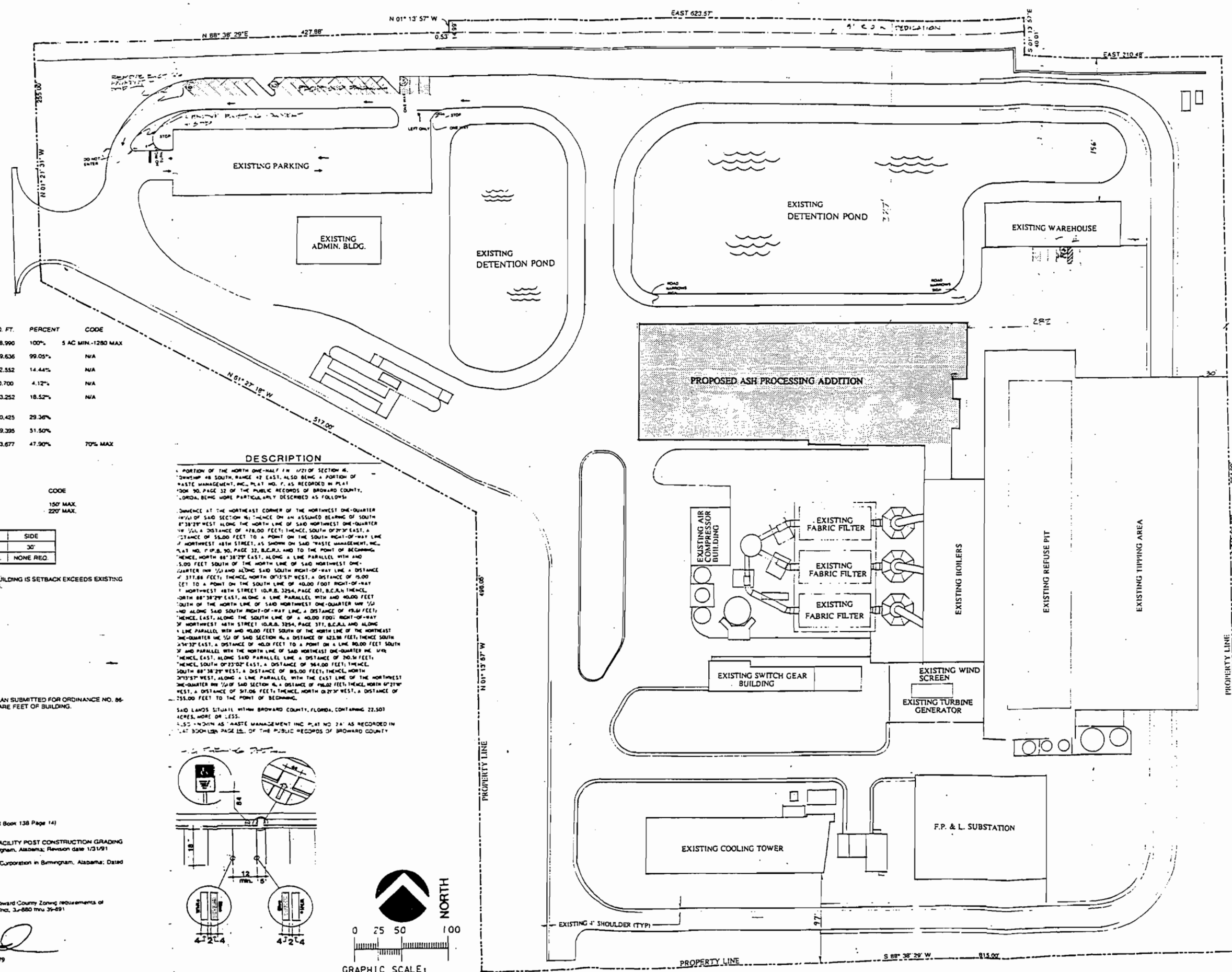
NO.	REVISION	DATE	BY	CHKD.	APP'D.

SCALE: AS SHOWN
DATE: 12-18-93

DATE	REVISIONS

DATE 3-25-24
 SCALE 1" = 50'-0"
 FIELD BK.
 DWNG. BY JYT
 CHECKED BY BR

NORTH BROWARD RESOURCE RECOVERY FACILITY
 BROWARD COUNTY FLORIDA
ASH PROCESSING ADDITION
SITE CONFORMANCE DIAGRAM



ZONING:
 PUD SPECIAL COMPLEX DISTRICT
 BROWARD COUNTY ORDINANCE 86-20

AREA CALCULATIONS

	ACRES	SQ. FT.	PERCENT	CODE
GROSS ACRES	22.70	988,990	100%	5 AC MIN-1280 MAX
NET ACRES	22.50	979,636	99.05%	N/A
EX. BLDG. AREA	3.27	142,552	14.44%	N/A
PROPOSED BLDG. AREA	.93	40,700	4.12%	N/A
TOTAL BLDG. AREA	4.21	183,252	18.52%	N/A
PAVED SURFACE	6.67	290,425	29.36%	
OPEN SPACE	11.69	509,295	51.50%	
PERVIOUS SPACE	10.87	473,677	47.90%	70% MAX

BUILDING

	PROPOSED	CODE
BUILDING HEIGHT	45'-3"	150' MAX.
STACK HEIGHT	70'-0"	220' MAX.

SETBACK	FRONT	REAR	SIDE
EXISTING	156'	97'	30'
REQUIRED	25'	NONE REQ.	NONE REQ.

NOTE: PROPOSED ASH PROCESSING BUILDING IS SETBACK EXCEEDS EXISTING BUILDINGS AND REQUIREMENTS.

PARKING

PARKING PROVIDED

EXISTING	
REGULAR:	45
HANDICAP:	2
PROPOSED	
REGULAR:	21
HANDICAP:	1

NOTE: PARKING IS MODELED AFTER SITE PLAN SUBMITTED FOR ORDINANCE NO. 86-20 CALCULATED AT 1 SPACE PER 1900 SQUARE FEET OF BUILDING.

NOTE:
 The base information of this map is from:
 WASTE MANAGEMENT INC. PLAT NO. 2-A (Plat Book 138 Page 14)
 prepared by Keith and Schnars, P.A.
 NORTH BROWARD RESOURCE RECOVERY FACILITY POST CONSTRUCTION GRADING PLAN by Russ International Corporation in Birmingham, Alabama; Revision date 1/3/1991
 PLANT LAYOUT prepared by Russ International Corporation in Birmingham, Alabama; Dated 12/29/93

This site conformance diagram conforms with Broward County Zoning requirements of Article 111 Planned Unit Development (PUD) District, 3-1-88 thru 3-1-89
 Zoning Change Ordinance No. 86-20

Bruce Reed
 BRUCE REED, KLA
 FLORIDA REGISTRATION NO. LA 0001479
 FOR THE FIRM

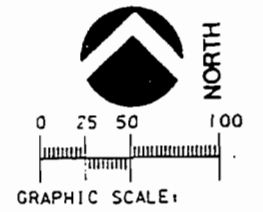
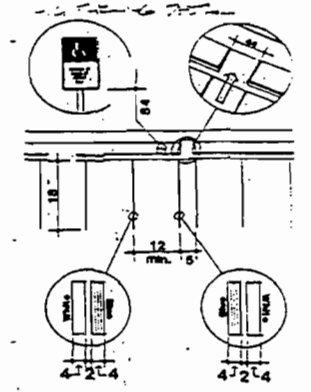
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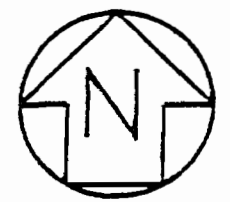
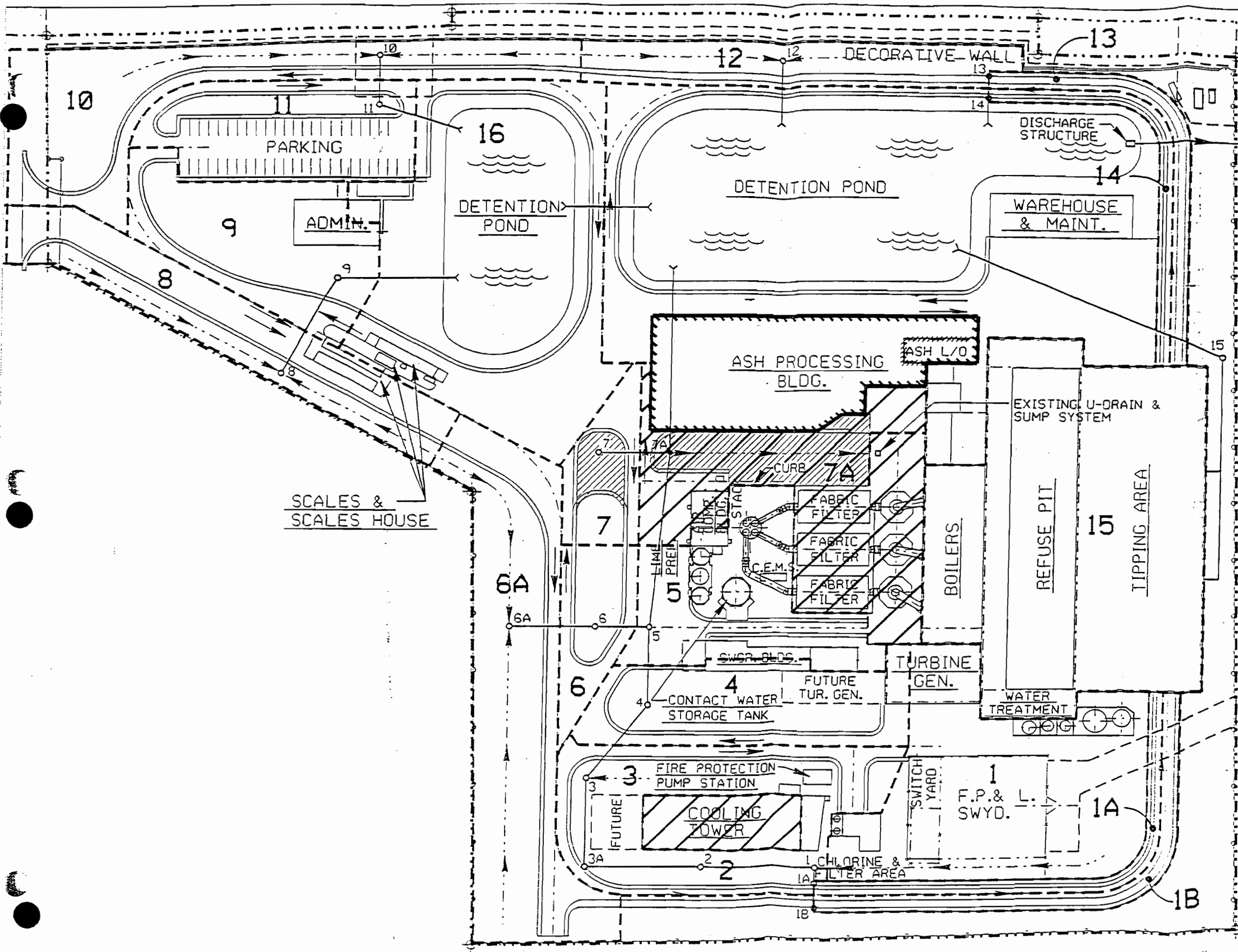
A PORTION OF THE NORTH ONE-HALF IN 1/221 OF SECTION 8, TOWNSHIP 48 SOUTH, RANGE 47 EAST, ALSO BEING A PORTION OF WASTE MANAGEMENT, INC. PLAT NO. 2-A AS RECORDED IN PLAT BOOK 138, PAGE 14 OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER (1/4) OF SAID SECTION 8; THENCE ON AN ASSUMED BEARING OF SOUTH 87°38'29" WEST ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) A DISTANCE OF 484.00 FEET; THENCE SOUTH 0°21'00" EAST, A DISTANCE OF 54.00 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF NORTHWEST 48TH STREET, AS SHOWN ON SAID "WASTE MANAGEMENT, INC. PLAT NO. 2-A" (P.L.B. NO. 2-A, PAGE 14, B.C.R.), AND TO THE POINT OF BEGINNING; THENCE NORTH 88°38'29" EAST, ALONG A LINE PARALLEL WITH AND 5.00 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) AND ALONG SAID SOUTH RIGHT-OF-WAY LINE A DISTANCE OF 317.88 FEET; THENCE NORTH 0°13'57" WEST, A DISTANCE OF 15.00 FEET TO A POINT ON THE SOUTH LINE OF 40.00 FOOT RIGHT-OF-WAY OF NORTHWEST 48TH STREET (D.B.L. 3254, PAGE 317, B.C.R.); THENCE NORTH 88°38'29" EAST, ALONG A LINE PARALLEL WITH AND 40.00 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER (1/4) AND ALONG SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 49.84 FEET; THENCE EAST, ALONG THE SOUTH LINE OF A 40.00 FOOT RIGHT-OF-WAY OF NORTHWEST 48TH STREET (D.B.L. 3254, PAGE 317, B.C.R.) AND ALONG A LINE PARALLEL WITH AND 40.00 FEET SOUTH OF THE NORTHEAST ONE-QUARTER (1/4) OF SAID SECTION 8, A DISTANCE OF 423.98 FEET; THENCE SOUTH 2°34'32" EAST, A DISTANCE OF 40.00 FEET TO A POINT ON A LINE 40.00 FEET SOUTH OF AND PARALLEL WITH THE NORTH LINE OF SAID NORTHEAST ONE-QUARTER (1/4); THENCE EAST, ALONG SAID PARALLEL LINE A DISTANCE OF 20.34 FEET; THENCE SOUTH 0°23'02" EAST, A DISTANCE OF 364.00 FEET; THENCE SOUTH 88°38'29" WEST, A DISTANCE OF 85.00 FEET; THENCE NORTH 0°13'57" WEST, ALONG A LINE PARALLEL WITH THE EAST LINE OF THE NORTHWEST ONE-QUARTER (1/4) OF SAID SECTION 8, A DISTANCE OF 194.02 FEET; THENCE NORTH 0°21'00" WEST, A DISTANCE OF 51.06 FEET; THENCE NORTH 0°21'00" WEST, A DISTANCE OF 75.00 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE WITHIN BROWARD COUNTY, FLORIDA, CONTAINING 22.501 ACRES, MORE OR LESS.

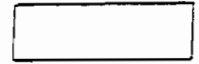
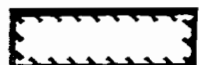

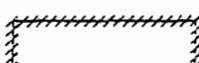
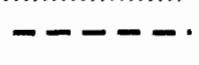
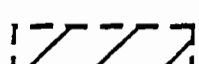


AS SHOWN AS "WASTE MANAGEMENT INC. PLAT NO. 2-A" AS RECORDED IN PLAT BOOK 138, PAGE 14, OF THE PUBLIC RECORDS OF BROWARD COUNTY.





PLANT NORTH

LEGEND

-  EXIST. FACILITIES
-  NEW FACILITIES
-  NEW PAVED AREA
-  DEMOLITION
-  DRAINAGE AREA BOUNDARY
-  DRAINAGE AREA CONTAINED (EXCLUDED FROM STORM DRAINAGE)
- 7** DRAINAGE AREA
-  DRAINAGE STRUCTURE NO.
-  EXIST. CATCH BASIN CAPPED

Jack Franks
 L. FL.P.E. No. 45496
 4/6/94

RUST Rust Engineering Company
 Birmingham, Alabama
 Contract 21-4527L

DRAINAGE AREA MAP
 NORTH BROWARD
 RESOURCE RECOVERY FACILITY

DRAWING NO. 4527L-01
 SCALE: 1"=100'
 REVISED 4/6/94

FIGURES

1. Landfill Cover Production
2. Construction Aggregate Production

LANDFILL DAILY COVER

Flow Diagram

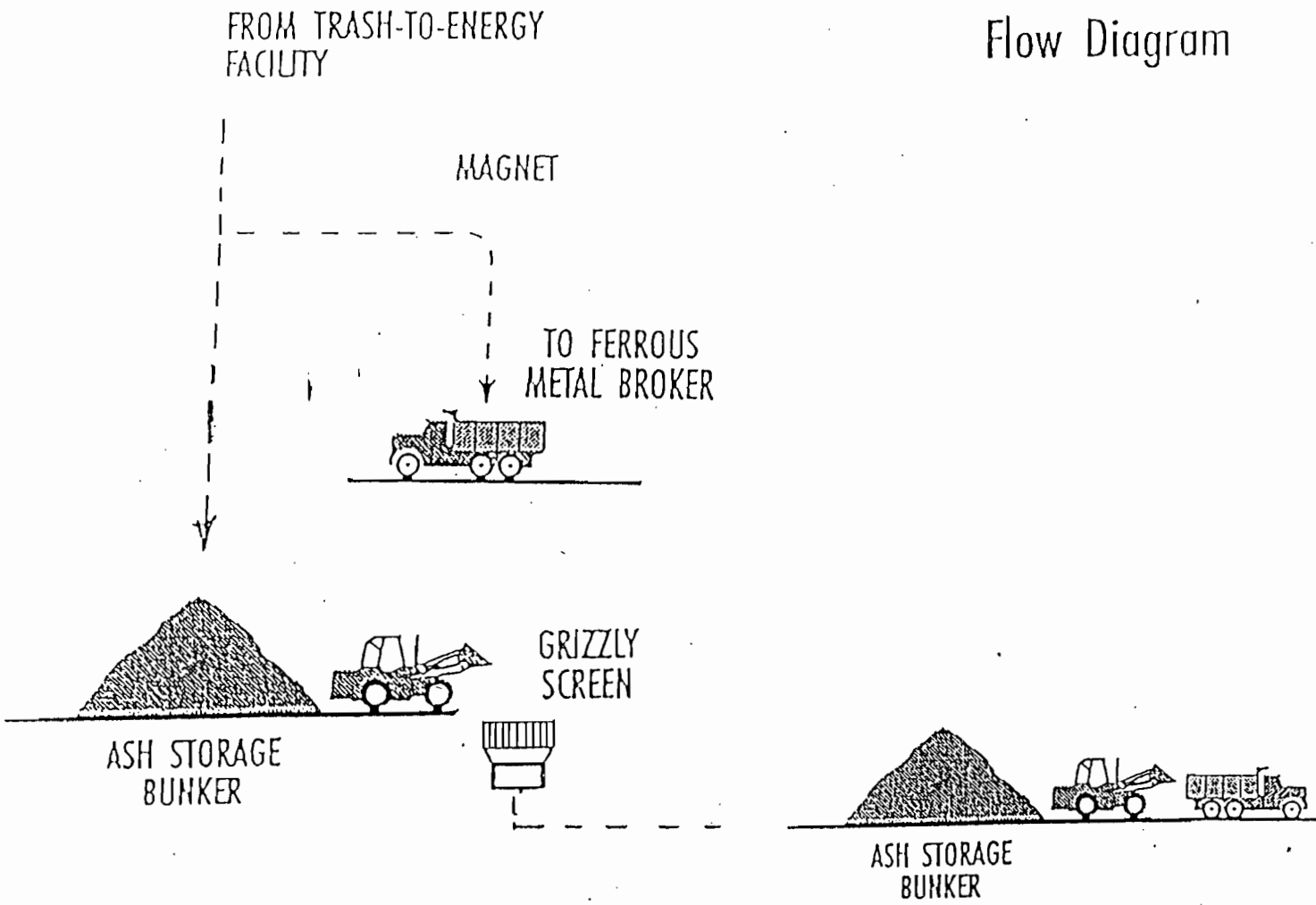


FIGURE 1

ROAD CONSTRUCTION AGGREGATE

Flow Diagram

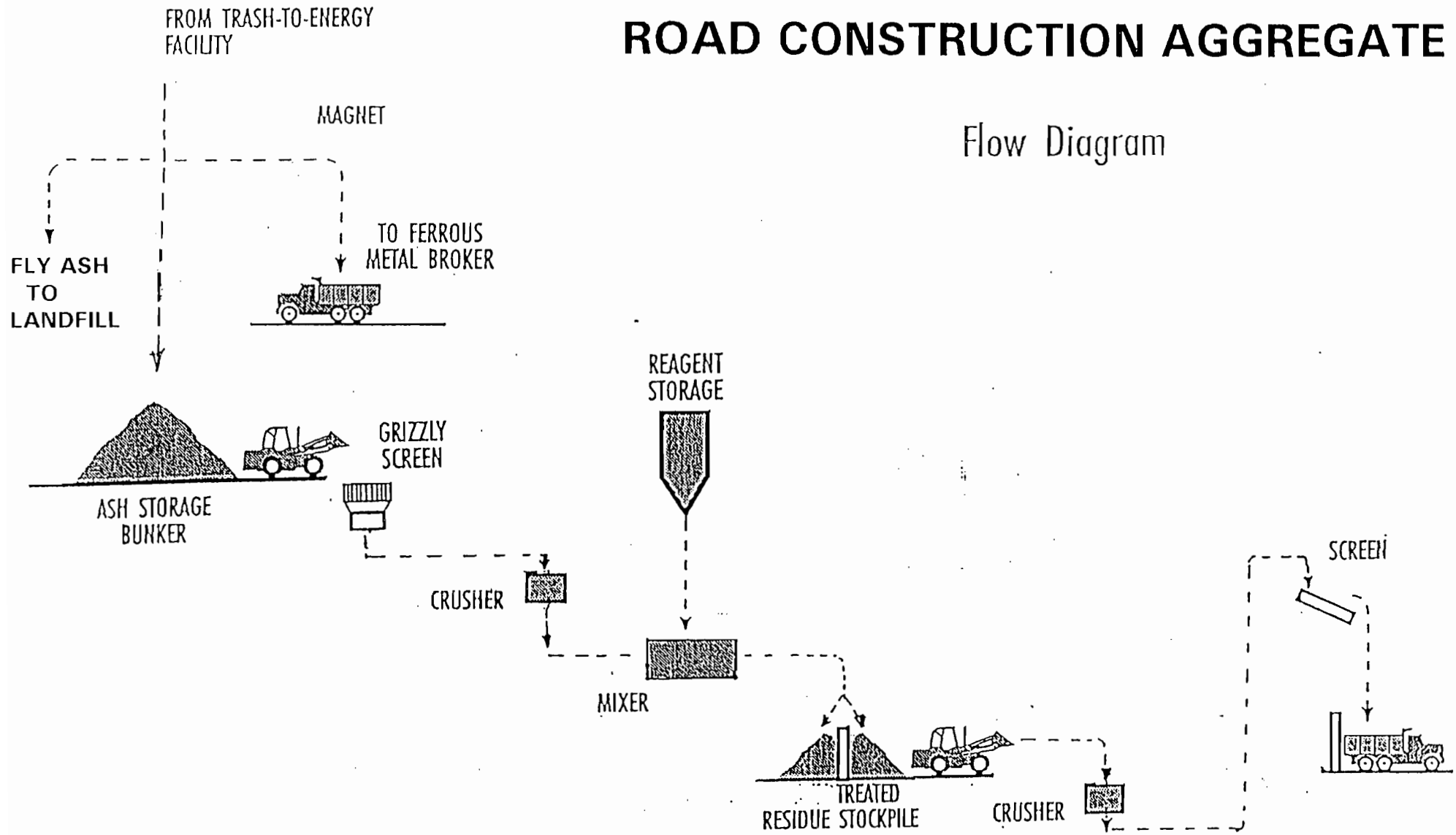


FIGURE 2