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Golder Associates

January 30, 2006

Florida Department of Environmental Protection
Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

Attention: Mr. Christopher L. Kirts, P.E.

SUBJECT: Dixie Waste Service -Waste Gasification/Thermal Oxidizer
AIRS ID Number: 0290016
Response to January 20, 2006 Request for Additional Information

Dear Mr. Kirts:

This letter is presented in response to the letter received from the Florida Department of Environmental Protection (FDEP) to Mr. Anthony Fraccalvieri of Dixie Waste Service LLC (Dixie Waste), dated January 20, 2006, requesting additional information to continue processing the air construction permit application. Golder Associates Inc. (Golder), on behalf of Dixie Waste, has prepared the response presented below.

FDEP Comment 1-Rule Applicability – Please evaluate the applicability of 40 CFR, Subpart Ec-Standard Performance for Hospital/Medical/Infectious Waste Incinerators for which construction is commenced after June 20, 1996, and F.A.C. Rule 62-296.401(4)-Biological Waste Incinerator Facilities to the proposed unit since the applicant plans to incinerate medical waste.

Response to Comment 1
The proposed Waste Gasification/Thermal Oxidizer plant is not subject to Subpart Ec. Under §60.50c(c) in Subpart Ec, any co-fired combustor is not subject to this subpart if the owner or operator of the co-fired combustor is combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g. coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting fuel feed stream 10 percent or less of the weight of which is comprised in aggregate of hospital waste and medical/infectious wastes as measured on a calendar quarter basis.

Dixie Waste will limit the amount of medical waste to 10 percent or less of combustion fuel feed stream and has requested a federal enforceable limit in the air construction application to comply with the above referenced limit.

FDEP Comment 2-PSD Applicability – The applicant indicates that the facility is designated to facilitate the future plan with finished floor slab and pad that will allow for additional cell(s) for potential future increase in capacity. Please note that the "Municipal incinerators capable of charging more than 250 refuse or day" shall be subject to PSD preconstruction review if the unit has the potential to emit 100 tons or more of any regulated air pollutant. Please clarify if the facility

"will" increase the capacity in the future. The project may not be phased in order to avoid such a review.

Response to Comment 2
Comment acknowledged. It should be noted that each of the municipal waste combustor units have a maximum capacity of 50 tons per day for a total of 150 tons per day. Therefore, the combustor unit capacity is not 250 tons per day and not one of the 28 major source categories listed in F.A.C. Rule 62-210.200(173)(b). As such, this facility would be subject to New Source Review if the potential to emit is 250 tons or more for any regulated pollutant and not 100 tons per year.

FDEP Comment 3 – Please submit the following five items as required by 40 CFR 60.1090.

a. Your draft materials separation plan.
b. Your revised materials separation plan.
c. Your notice of public meeting for your draft materials separation plan.
d. A transcript of the public meeting on your draft materials separation plan.

The document that summarizes your responses to the public comments you received during the public comment period on your draft materials separation plan.

Response to Comment 3
The above five requested items will be provided under a separate cover as they are completed. It should be noted that under NSPS Subpart AAAA, a siting study is also required. The siting study will be provided and presented to the public during the second public meeting and provided to FDEP under a separate cover.

FDEP Comment 4 – In the application, page 19, Section E., Emissions Unit Pollutants, NO_x is listed as the only regulated pollutant for the emissions unit. Since the unit is subjected to NSPS, Subpart AAAA, the applicant shall include all the pollutants in Table I of NSPS, Subpart AAAA in the list and indicate the pollutant regulatory code as EL. Please provide the corrected page (s).

Response to Comment 4
The revised page 19 of the application designating the pollutants regulated under Subpart AAAA from NS to EL is attached as Attachment 1.

FDEP Comment 5 – For each pollutant with an applicable standard, the potential emissions shall be based on the applicable standard (or requested standard) and the maximum operating conditions-not the stack test result and expected fuel mix. Please revise the calculations and submit the corrected page (s).

Response to Comment 5
The application presents the potential emissions on a pound-per-hour and ton-per-year bases for each regulated pollutant. In addition, Section F2, page 21, presents the equivalent requested allowable emission limit expressed in the units of the applicable regulations (for example: for PM, the potential emission is 2 lb/hr and 7.1 tons per year, which is equivalent to 5.0 mg/dscm). The applicable Subpart AAAA also has an allowable limit of 24 mg/dscm. This limit must be presented in the application, because it is an applicable limit and it is included to demonstrate that the requested allowable limit of 5 mg/dscm is below the NSPS limit.

FDEP Comment 6 – To properly establish the emissions cap to avoid PSD source classification, the applicant shall establish federally enforceable restrictions on the operating rate or hours of operation or maximum allowable emissions rate in the permit according to the definition of "allowable emissions" in Rule 62- 210.200, F.A.C. Please describe how the facility plans to establish and demonstrate compliance with the emissions cap(s).

Response to Comment 6
The facility plans to demonstrate compliance by monitoring the amount of municipal solid waste, tires and medical waste throughput and maintaining continuous emissions monitoring system (CEMS) for nitrogen oxides (NO_x), Sulfur dioxide (SO_2), oxygen (O_2) and CO. All waste will be weighed prior to being placed into the combustor units. Records will be maintained at the facility that will include a log of the waste type and weight of the waste placed in each cell for specific batches.

FDEP Comment 7 – The applicant indicates that the potential mercury emissions from the unit are 228 lbs/year. Please describe how the facility plans to minimize such emissions.

Response to Comment 7
The applicant will receive all their waste from the adjacent Dixie County municipal solid waste transfer station. The Dixie County transfer station is a direct drop yard, where waste is collected from various collection points within the county and deposited on a yard for inspection and separation. All waste received at the transfer station will undergo an inspection by trained spotters to remove any suspected mercury-laden waste (e.g., bulbs, batteries, electrical equipment, etc.) and hazardous waste prior to loading the waste back into trucks for delivery to the waste/gasification combustion chambers. The waste separation plan, to be provided under a separate cover, will discuss the procedures used at the transfer station to manage the waste in accordance to the NSPS Subpart AAAA.

FDEP Comment 8 – In the application, Table A-2 identifies miscellaneous source tests for similar units. Please verify if any of the units have been tested for VOC emissions. Please provide the result of any VOC tests available for similar units and whether the emissions are uncontrolled or controlled by a thermal oxidizer.

Response to Comment 8
The reference source tests provided in the application did not test for VOCs. The starved air process employed at these similar sources uses the same technology of having a secondary chamber, which is a thermal oxidizer. The thermal oxidizer operates at temperatures to ensure destruction of VOC emissions. In fact, the level of VOC emissions from this type of source is so negligible that Subpart AAAA has not established a VOC emission limit.

FDEP Comment 9 – Please clarify whether the proposed unit is a batch or continuous municipal waste combustion unit according to the definitions in 40 CFR 60.1465.

Response to Comment 9
The definition of a "*Batch municipal waste combustion unit is as follows:*

> "means a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion."

The proposed units will combust waste using a batch loads. Each cell will be loaded up to its maximum capacity of 50 tons per day. Once the desired load and waste mix is loaded into the primary cell the waste is ignited and allowed to burn generally for 8 to 12 hours. Ash is removed as needed between batch combustion cycles.

FDEP Comment 10 – Please demonstrate that the capacity of the unit is determined based on the method shown in 40 CFR 60.1460. Describe how the maximum designed charging rate is determined.

Response to Comment 10
The facility is requesting a maximum throughput of 150 tons per day. The method shown on 40 CFR 60.1460 is not applicable due to the enforceable restriction on throughput accepted by the applicant.

FDEP Comment 11 – Describe how the facility will monitor the waste charging/destruction rate.

Response to Comment 11
All trucks delivering waste to the facility will pass through a scale to determine the weight of the waste that will be placed into one of three cells. Once the ideal waste mix is loaded into each cell, the combustion process will commence. The combustion process is monitored with CEMs for compliance with emission limits for NO_x, SO_2, and CO. The oxygen level is also monitored using CEMs, and CO emissions allow the operator to control the air mixture in the secondary chamber to provide good combustion. An annual stack test will be conducted to demonstrate compliance with non-CEM monitored pollutants.

FDEP Comment 12 – Please provide the following information:

a. The number of truck (s) required to fully loading a cell.

b. The number of truck (s) per day will deliver waste to the site.

c. Approximate time for each portion of the operating cycle: charging, control equipment startup, initial startup fuel firing in primary cell, gasification of the waste, cessation of startup fuel firing in primary cell, burn down, cessation of control equipment, and cool down.

Response to Comment 12

a. The number of trucks required to fully load a cell will depend on the size. Two and a half 20-ton trucks would be required to fill a 50-ton cell.

b. The number of trucks estimated on a daily basis is 10 to 12.

c. The charging of each vessel will depend on the time and speed of delivery of the waste. As trucks come to the site, waste is discharge into the primary cells in about 5 minutes. The total time for loading would be determined by the number of trucks available for unloading. The primary startup will vary slightly depending on the moisture content of the waste, but should be typically between 15 to 30 minutes once the waste is loaded. The waste will be gasified over a period of about 8 to 10 hours, again depending on the waste that is loaded. The startup fuel firing in the primary cell can be stopped immediately. Typically, the firing is slowed as the temperature nears normal operation. Initial testing and calibration for system commissioning will determine this, but typically, as the primary chamber reaches about 450°F, the primary burners can be shut off. Once the cell is finished processing its load of waste, the cell will cool within 2 to 4 hours. The cell can be cooled quicker, if necessary, by allowing air in through the air inlets and the load the doors. There should be no "burn down" of residuals necessary.

FDEP Comment 13 – Please identify the conditions that determine when each control device can be shut down. Describe how the air supply is controlled to primary cell to create the "starved" air condition for successful waste gasification and result in low entrained PM.

Response to Comment 13
The air control devices are typically fully open for startup, and then closed partially as the temperature in the primary cell begins to normalize within operating range. These valves are modulated butterfly valves that are open to ambient air on the outside. There is no forced air in the primary cell other than the air supply for the burners. These valves will automatically adjust themselves to maintain a constant temperature within the operating range (to be determined at system commissioning). As the waste in the primary cell is depleted, the air valves will open up in an effort to maintain operating temperature. When the waste is completely gasified, the temperature in the primary cell will begin to drop, regardless of the air supply. Since this is all done via natural draft conditions (typical pressure in the primary is -0.25inches to -0.50 inches of water column) with very low air flow into and out of the primary cell and no mechanical movement within the primary cell, the particulate matter is undisturbed and remains in the primary cell.

FDEP Comment 14 – Describe what is the "proper mix" of the flue gas and air in the secondary chamber that will result in low CO and organic gases emissions. Please demonstrate how the facility controls and monitors the air input rate to achieve the "proper mix"

Response to Comment 14
The "proper mix" of air in the flue gas is determined by sensors in the stack. These sensors will monitor CO and oxygen levels in the stack. If any CO is measured in the stack, the controller checks the oxygen level in the stack (above a set point, including 0.0 as a set point). If the oxygen level is low (below 9 percent), more air is put in through the air mixing chamber. If the oxygen level is reading normal (above 9 percent), the flow of gas from the primary cells is slowed by slowly closing the dampers in the exit duct from each primary cell.

FDEP Comment 15 – In the process flow diagram, please include the following:

a. For each component, identify the inlet/outlet temperature (degrees F), inlet/outlet flow rate (acfm and scfm), and pressure drop across the component (inches w.c.): primary gasification cell; air mixing chamber; thermal oxidizer; acid gas scrubber; and the stack outlet.

b. The diagram indicates that natural gas will be used in the primary gasification cell as well as the thermal oxidizer. Elsewhere in the application, propane and diesel are identified for use in the primary gasification cell and propane for use in the thermal oxidizer. Please clarify.

c. Identify the location of the induced draft fan.

Response to Comment 15

a. The specific design requirements requested will be provided to FDEP once the final design is completed but no later than 30 days prior to construction.

b. Propane gas is the primary fuel that will be utilized in the primary and secondary chambers. Diesel fuel had been included in the application as a back-up fuel to commence the combustion process. However, diesel fuel is no longer intended to be use. Revisions to page 18 are attached as part of this response to remove diesel fuel as an auxiliary fuel (Attachment 2). No natural gas will be utilized for this facility.

Although the process flow diagram indicates the use of natural gas only propane will be used. A revised flow diagram has been included as part of this response.

c. See response to comment 12.

FDEP Comment 16 – Describe does the project include a diesel tank and/or propane tank. Provide the size of the tank (s) if applicable.

Response to Comment 16
The project is going to use liquefied propane gas (LPG). The storage tanks would be required onsite. Two 2,500-gallon tanks of LPG are planned. Typically, these tanks are approximately 4 feet in diameter and 10 feet in length. No diesel fuel is planned for this project.

FDEP Comment 17 – Please submit the information for the completed deigns scrubber unit. The information shall include but not limited to the manufacturer and model of the control unit, description of its operation, critical parameters and design operating level or each parameters (i.e., such as flow rate, pressure differential, pH level, etc.), manufacturer's guarantee for control efficiency and diagram of the control unit.

Response to Comment 17
The specific design requirements requested for the scrubber will be provided to FDEP once the final design is completed but no later than 30 days prior to construction.

FDEP Comment 18 – Please provide the following information about the thermal oxidizer:

a. Manufacturer.

b. General dimension (length, width, height, and volume) that will support the design residence time of 4 seconds.

c. Internal baffles and/or mixing areas (if any).

d. The number, general configuration, and the maximum heat input rate (MMBtu/hr) of each burner.

e. The location of the temperature monitor.

Response to Comment 18
The applicant will provide detailed design information including drawings and specifications 30 days prior to construction. In general, the response to the above-referenced comment is as follow:

a. International Environmental Technology.

b. The dimensions for this particular unit should be approximately 10 feet diameter, 30 feet long.

c. The air mixing section will be at the front end of the secondary chamber and should add 6 feet to the total length. There will also be internal baffles to aid in the residence time and mixing of the gases for complete combustion.

d. This secondary chamber would be designed with 6 burners rated at 1 MMBtu/hr each. They will be placed along the length of the secondary to ensure uniform temperature throughout.

e. Temperature probes will be located throughout the secondary chamber to ensure even temperatures.

FDEP Comment 19 – Please provide four readable (plan-sized) version of the site plan.

Response to Comment 19
Attached to this letter are four large-size site plans as requested (Attachment 3).

FDEP Comment 20 – Please identify each component of the proposed system in the project area diagram. Please clarify whether the drawing shows that the system will have 3 cells or 6 cells.

Response to Comment 20
The drawings provided indicate the proposed 3 cells that will be constructed. An approximate location of the scrubber is provided. The applicant will provide detailed design information including drawings and specifications 30 days prior to construction.

FDEP Comment 21 – Please clarify if all the major roads, storage, parking and work areas will be paved. Describe how the facility plans to periodically remove particulate matter buildup on the paved areas.

Response to Comment 21
As presented in the site plan, the facility is designed with paved access roads that lead to the tipping floor. All parking and work areas are paved. Particulate build up should be minimal, since all non-paved areas will be landscaped. Dust control will also be controlled by watering areas covered with particulates as needed.

FDEP Comment 22 – The maximum dry standard flow rate in the application is identified as "3263 dscfm", but later also identified as "3263 dscm/minute". Please correct this data to term of "dscfm".

Response to Comment 22
The correct units are dscfm-dry standard cubic feet per minute. The page where this appears has been corrected and included with this letter (Attachment 4).

FDEP Comment 23 – Please verify that the combustion is solely for waste disposal and not for energy recovery purpose.

Response to Comment 23
The waste/gasification facility's sole purpose is for the disposal of municipal solid waste, tires, and medical wastes. The facility is not designed at this time or in the future to recover energy or produce electricity.

FDEP Comment 24 – Please provide details on how the ash generated from combustion will be handled and stored in accordance with Rule 62-701, F.A.C. Describe how the facility takes the precautions action to prevent fugitive emissions from ash handling.

Response to Comment 24
The ash is emptied from the primary cells using a completely closed system of conveyors and valves. The ash is then carried off to a central point and loaded into a sealed container.

The specific design requirements requested for the ash handling system will be provided to FDEP once the final design is completed but no later than 30 days prior to construction.

FDEP Comment 25 – Please describe how the facility plans to prevent and minimize the potential odor problems. Please estimate the distance of the closest residential area from the proposed site.

Response to Comment 25
The proposed facility lies next to a MSW transfer yard that has operated in this area for many years. The closest residential receptor is the Cross City Correctional Institution and the warden's home located 2,000 feet from the proposed facility.

The facility will control odor by quickly depositing the waste into the primary cells and closing the air lock-tight doors. No waste is stored at the site; it all goes directly into the unit. This eliminates any stockpiling of waste, which greatly reduces the potential for an odor problem.

FDEP Comment 26 – Please submit a startup/shutdown/malfunction plan to comply with the standard of NSPS, Subpart AAAA as indicated in the application.

Response to Comment 26
A start-up and shut down plan is not required for an air construction permit. The plan will be submitted as part of the Title V air operating permit

FDEP Comment 27 – Identify the location of the Dixie Waste Transfer Station on the area map. Please clarify if the Dixie Waste Transfer Station is contiguous/adjacent to the proposed site. Describe the relationship between Dixie Waste Transfer Station and Dixie Waste Service, LLC. Please explain how the relationship being established, for instance, through agreement/contract, and etc.

Response Comment 27
The Dixie County Transfer Station lies adjacent and east of the proposed waste/gasification plant. The waste/gasification plant is an independent company and not related to the county other than it will accept the county's waste. Dixie Waste LLC will have a contract with the County to accept MSW that has undergone separation in accordance to the separation plan submitted as part of NSPS Subpart AAAA. No waste is stored at the Dixie Waste LLC site but rather at the County's transfer station.

FDEP Comment 28 – Please include all the fugitive emissions in the PTE estimations. Please note that if the Dixie Waste Transfer Station is determined to be the "Support Facility" to the proposed site, the air emissions from the "Support Facility" shall be included in the PTE estimations too.

Response to Comment 28
The waste gasification plant is not a support facility to the transfer station but rather a stand-alone enterprise. The gasification plant will assist the county by providing an alterative waste disposal method than the current practice of depositing the waste in a landfill.

The fugitive emissions from the proposed waste gasification facility are anticipated to be insignificant. The facility will have paved and non-paved roads; all non-paved roads as well as all landscaped areas will be maintained. The trucks delivering waste to the facility will be traveling at very low speeds and over a short distance of 1,800 feet, the length of the entire site, with an estimated 13 trucks per day; fugitive PM emissions are expected to be minimal.

FDEP Comment 29 – In the application, Attachment A, Page 3, Paragraph 1 indicates, "vehicles discharge their waste loads directly into the cells." Please note that a waste inspection/sorting area is needed to be in compliance with FAC Rules 62-701.710(4)(a)2 & (c)2, which requires the waste to be sorted onsite and prohibited waste removed. Please explain how the prohibited waste will be sorted and stored in accordance with Rule 62-701, F.A.C.

Response to Comment 29
The waste received at the Dixie Waste Services waste gasification facility will have undergone an inspection/sorting by Dixie County according to the separation plan prior to delivering waste at the site. No waste will be stored, sorted, or separated at the proposed facility. The contractual agreement that will be established between Dixie Waste Services LLC and the County will stipulate that the County will only provide waste that is not prohibited.

FDEP Comment 30 – Please verify if the Tired Derived Fuel (TDF) will be stored on site.

Response to Comment 30
No waste will be stored at the site. Please see the response to Comment 29.

FDEP Comment 31 – Please indicate if the facility will have any litter control devices or visual screenings to show compliance with Rule 62-701.710(3)(a)., F.A.C.

Response to Comment 31
Please see the response to Comment 29

FDEP Comment 32 – Please verify if there will be a leachate control system on site in accordance with Rule 62-701.710(3)(b)., F.A.C. Please demonstrate how leachate will be kept from mixing with stormwater in accordance with FAC Rules 701. 710(3)(b) & (8).

Response to Comment 32
The bottom of the primary cells are sealed, so any leachate and any rainwater entering the primary cells while they are being loaded will be contained in the primary cells and will be disposed of during the process. Additional site designs will include diverting stormwater away from the primary cells. If absolutely necessary, a roof system could be put over the primary cells to keep large amounts of rainwater out, with that water carried away from the primary cells by a series of gutters, downspouts, and pipes.

Please contact me at (352) 336-5699 if you need additional information or have any questions regarding this request.

Sincerely,

GOLDER ASSOCIATES INC.

Benny Susi, P.E.
Associate
Florida P.E. # 35042
SEAL

Robert C. McCann, Jr.
Principal, Air Resources Group Director

BS/all/nav

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ATTACHMENT 1

REVISED APPLICATION PAGE 19

EMISSIONS UNIT INFORMATION
Section [1] of [1]
Waste Gasification / Thermal Oxidizer

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NO_x			EL
PM	001		EL
CO		021	EL
SO_2	001		EL
VOC	001	021	EL
HAPS	001	021	EL
Cadmium	001		EL
Lead	001		EL
Mercury	001		EL

ATTACHMENT 2

REFERENCED DOCUMENTS FOR COMMENT NO. 15:

- **REVISED APPLICATION PAGE 18**
- **REVISED FLOW DIAGRAM**

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 4

1. Segment Description (Process/Fuel Type): **Solid waste disposal – Industrial: Incineration MSW**		
2. Source Classification Code (SCC): **5-03-001-03**	3. SCC Units: **Tons burned**	
4. Maximum Hourly Rate: **2.81**	5. Maximum Annual Rate: **24,601**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0**	8. Maximum % Ash: **2**	9. Million Btu per SCC Unit: **9**
10. Segment Comment: **MSW heat content = 4,500 Btu/lb** **4,500 Btu/lb x 2,000 lb/ton x $\frac{1\ MMBtu}{1 \times 10^6\ Btu}$ = 9 MMBtu/ton**		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type): **Solid Waste Disposal – Industrial: Incineration – Tire-Derived Fuel (TDF)**		
2. Source Classification Code (SCC): **5-03-001-03**	3. SCC Units: **Tons burned**	
4. Maximum Hourly Rate: **2.94**	5. Maximum Annual Rate: **25,769**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash: **2**	9. Million Btu per SCC Unit: **31**
10. Segment Comment: **TDF heat content = 15,500 Btu/lb** **15,500 Btu/lb x 2,000 lb/ton x $\frac{1\ MMBtu}{1 \times 10^6\ Btu}$ = 31 MMBtu/ton**		

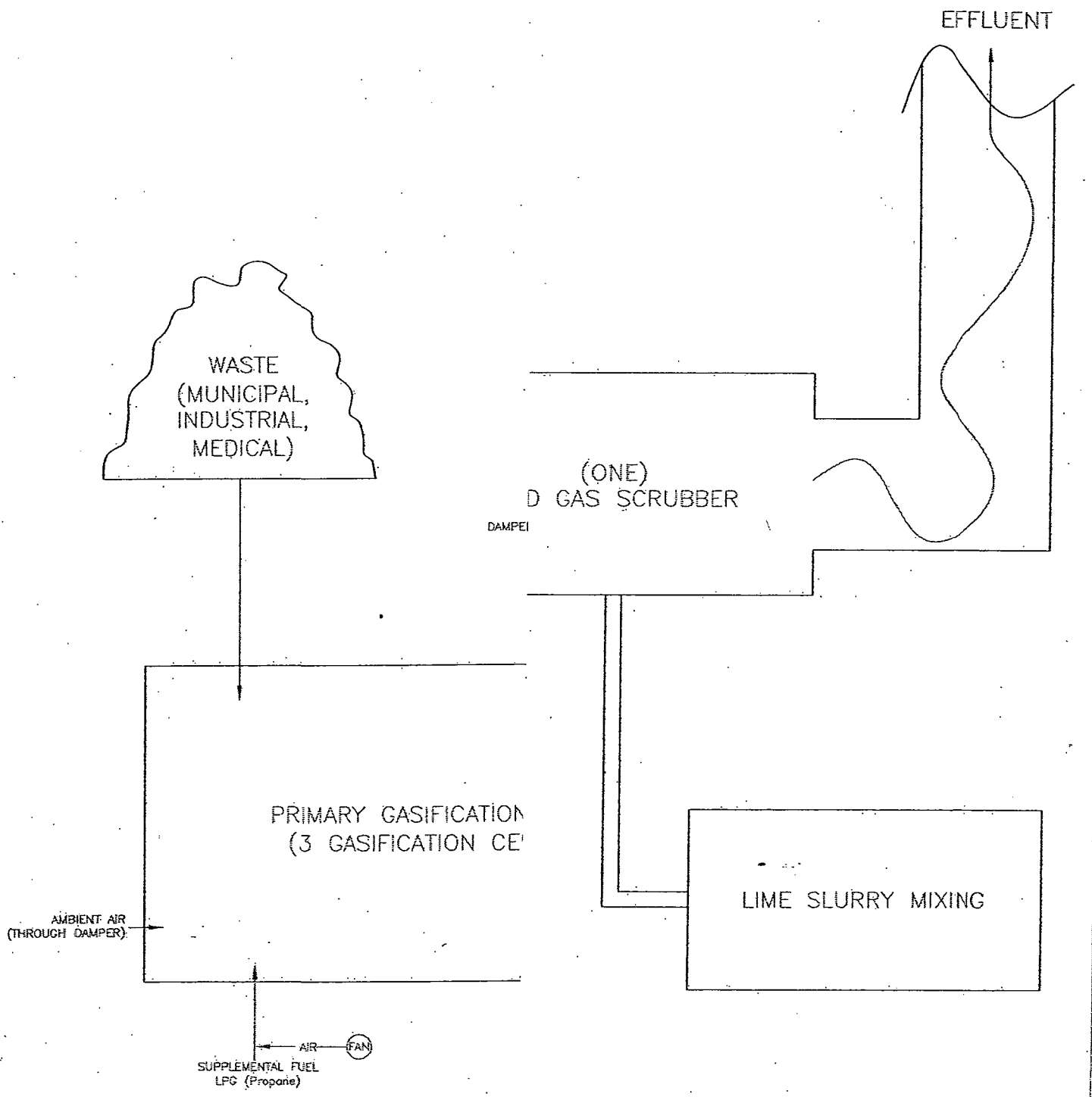
D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 4

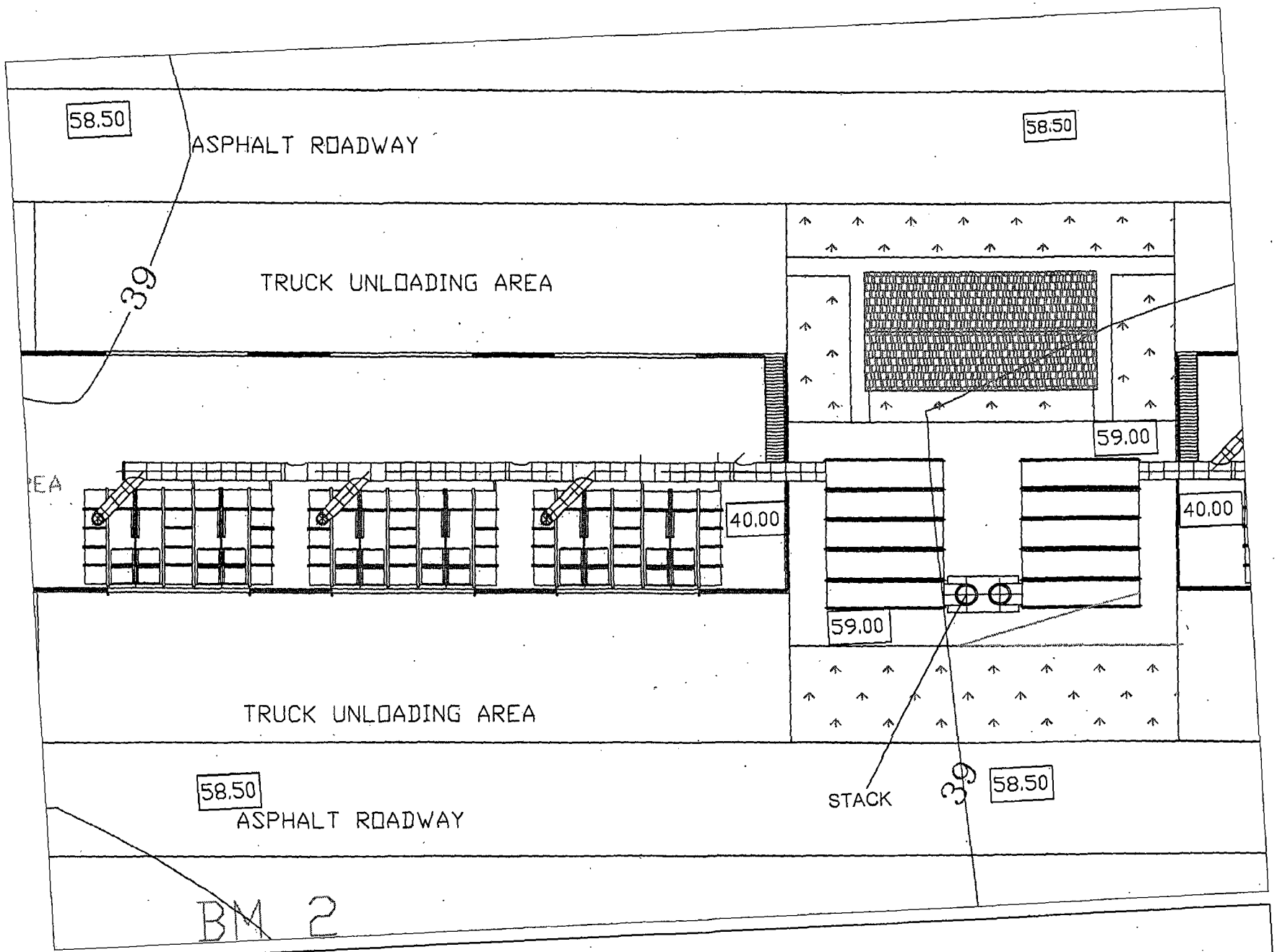
1. Segment Description (Process/Fuel Type): **Solid Waste Disposal – Industrial: Incineration – Medical Waste**		
2. Source Classification Code (SCC): **5-03-001-03**	3. SCC Units: **Tons burned**	
4. Maximum Hourly Rate: **0.50**	5. Maximum Annual Rate: **4,380**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash: **6**	9. Million Btu per SCC Unit: **17**
10. Segment Comment: **Medical Waste heat content = 8,500 Btu/lb** **8,500 Btu/lb x 2,000 lb/ton x $\frac{1\ MMBtu}{1 \times 10^6\ Btu}$ = 17 MMBtu/ton**		

Segment Description and Rate: Segment of 4 of 4

1. Segment Description (Process/Fuel Type): **Solid Waste Disposal – Industrial: Auxiliary Fuel**		
2. Source Classification Code (SCC): **5-03-900**	3. SCC Units: **1,000 gallons burned**	
4. Maximum Hourly Rate: **3.8×10^{-3}**	5. Maximum Annual Rate: **4.38**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0**	8. Maximum % Ash: **0**	9. Million Btu per SCC Unit: **91.5**
10. Segment Comment: **Propane gas used as auxiliary fuel in thermal oxidizer.** **91,500 Btu/gal or 91.5 MMBtu/1,000 gal.** **Maximum Fuel Usage During Start-Up = 3.8 gal/hr** **Average Fuel Usage = 0.5 gal/hr**		



		INTERNATIONAL ENVIRONMENTAL TECHNOLOGIES, INC. Holiday Plaza, Suite 200 165 Denmark Drive Danville, Kentucky 40422
		DATE: 11/14/97 · SCALE: NOT TO SCALE · DRAWN BY: CRD
		PROCESS FLOW DIAGRAM
IMINARY ENGINEERING	CRD	
DESCRIPTION	BY	0537608/4.4/DWS-FI-C2a · DWG. NO.



ATTACHMENT DWS-FI-C1a. PROJECT AREA
DIXIE WASTE PLANT, DIXIE COUNTY, FLORIDA

0537608/4.4/DWS-FI-C1a. dwg

ATTACHMENT 3

4 COPIES OF SITE PLAN (OVERSIZE)

ATTACHMENT 4

REVISED TABLES 2-5 AND 2-6

Table 2-5
Summary of Pollutant Emission Limits for New Small Municipal Waste Combustion Units
(NSPS, Subpart AAAA, 40 CFR 60.1000)

Pollutant	Emission Limits	Units	Compliance Method
Acid Gases			
Hydrochloric Acid [b]	25	ppmvd	Stack test
Nitrogen Oxides (NO_x)	500	ppmvd	None required [d]
Sulfur Dioxide (SO_2) [a]	30	ppmvd	Continuous emission monitoring
Metals			
Cadmium (Cd)	0.02	mg/dscm	Stack test
Lead (Pb)	0.2	mg/dscm	Stack test
Mercury (Hg) [c]	0.08	mg/dscm	Stack test
Opacity	10	percent	Stack test
Particulate Matter (PM)	24	mg/dscm	Stack test
Organics			
Dioxins/Furans	13	ng/dscm	Stack test
Carbon Monoxide	50	ppmvd	Continuous emission monitoring

Note:
ppmvd: parts per million by volume dry corrected to 7 percent oxygen.
mg/dscm: milligrams per dry standard cubic meter corrected to 7% oxygen.
ng/dscm: nanograms per dry standard cubic meter corrected to 7% oxygen.

[a] Or 80 percent reduction of potential sulfur dioxide emissions.
[b] Or 95 percent reduction of potential hydrogen chloride emissions.
[c] Or 85 percent reduction of potential mercury emissions.
[d] For Class II units, no monitoring, testing, recordkeeping, or reporting is required to demonstrate compliance.

TABLE 2-6
COMPARISON OF MAXIMUM HOURLY EMISSION RATES TO NSPS EMISSION LIMITS

Pollutant	Emissions (lb/hr)				Project Emissions at 7% O2 [a]	NSPS Limit at 7% O2	Units	Compliance Averaging Time
	MSW	TDF	MW	Maximum				
Acid Gases								
Hydrochloric Acid	0.27	0.10	0.58	0.58	0.7	25	ppmv	Initial and annual stack test
Nitrogen Oxides (NO_x)	69.8	46.6	67.9	69.8	102	500	ppmv	CEM-24 hours[4]
Sulfur Dioxide (SO_2)	0.69	9.50	8.76	9.50	6.5	30	ppmv	CEM-24 hours.
Metals								
Cadmium (Cd)	7.53E-04	1.93E-05	8.30E-04	8.30E-04	0.002	0.02	mg/dscm	Initial and annual stack test
Lead (Pb)	3.40E-04	5.52E-04	2.33E-03	2.33E-03	0.006	0.2	mg/dscm	Initial and annual stack test
Mercury (Hg)	3.22E-02	5.22E-05	2.96E-02	3.22E-02	0.080	0.08	mg/dscm	Initial and annual stack test
Opacity [b]	10	10	10	10	10	10	percent	Initial and annual stack test
Particulate Matter (PM)	2.01	0.93	1.97	2.01	5.02	24	mg/dscm	Initial and annual stack test
Organics								
Dioxins/Furans (CDD/CDF)	3.68E-07	0.00E+00	3.38E-07	3.68E-07	0.92	13	ng/dscm	Initial and annual stack test
Dioxins (2, 3, 7, 8-TCDD)	0.00E+00	0.00E+00	5.47E-10	5.47E-10	0.001	NA	ng/dscm	Initial and annual stack test
Furans (CDF)	0.00E+00	0.00E+00	7.15E-07	7.15E-07	1.8	NA	ng/dscm	Initial and annual stack test
Carbon Monoxide	1.97	5.67	6.7	6.7	11	50	ppmv	CEM-24 hours.

Note:
ppmvd: parts per million by volume dry corrected to 7 percent oxygen.
mg/dscm: milligrams per dry standard cubic meter corrected to 7% oxygen.
ng/dscm: nanograms per dry standard cubic meter corrected to 7% oxygen.

[a] Operating data used to calculate project emissions:

Temperature	100 °F	311 K	Pollutant	Molecular Weight
Oxygen	8 %		SO2	64
Moisture	20 %		HCL	36.5
Temperature, standard	60 °F	289 K	NOx	30
			CO	28
Flowrate	155,000 acfm			
	143,922 scfm			
	4,392 m^3/min			
	4,079 std m^3/min (scm/min)			
	3,263 dscm/min			

[b] Units are in percent.