



Wheelabrator Technologies Inc.

A Waste Management Company

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Hampton, NH 03842

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BUREAU OF AIR REGULATION

March 30, 2009

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

Subject: Wheelabrator South Broward, Inc.
South Broward Waste-To-Energy Facility
Project Description For Minor Boiler Upgrades

Dear Ms. Vielhauer:

Reference is made to Wheelabrator's previous letter to FDEP dated November 18, 2009, and an email from Alvaro Linero of FDEP to Chuck Faller dated January 14, 2009, same subject.

In Mr. Linero's correspondence of January 14, 2009, Wheelabrator was requested to provide additional technical heat input calculations along with drawings, to ascertain that the proposed minor boiler modifications will not result in any exceedances to existing permit limits. Submittal of this additional technical information must bear the seal of a Florida Registered Professional Engineer. The following are Wheelabrator's responses to the FDEP:

Background

The general configuration of each of the three South Broward boilers is shown in Figure 1, "Section Through Existing Boiler". Combustion of Municipal Solid Waste (MSW) on the reciprocating grates results in relatively high furnace exit gas temperature (FEGT) at the superheater. These high temperatures reduce both the life of the superheater tubes, and the time it takes for the boiler to become "fouled" and taken off line for cleaning.

Proposed Modifications and Impacts

Wheelabrator proposes to construct ten (10) water wall platens in front of the superheater, as shown in Figure 2, "Section Through Modified Boiler". These new water wall platens will reduce the FEGT by approximately 145°F, and will produce additional steam to flow to the steam drum. As was noted in the November 18, 2008 letter to FDEP, the steam generated in the platens will be utilized to preheat combustion air in the steam coiled air heaters (SCAHs). Currently, steam for the SCAHs is extracted from the steam turbine. Thus, more steam will be available for electricity production by the facility, and for export to the utility grid.

Permit Compliance and Electrical Generation

Each of the South Broward boilers is currently permitted for a maximum steam production rate of 192,000 pph, and a maximum design heat input rate of 323.6 MMBtu/hr. There will be no change to maximum steam production rate or maximum heat input, and no change to the maximum amount of MSW that can be combusted. The additional platens will not change the turbine generator nameplate capacity of 67 megawatts (MW), but will increase the efficiency of the turbine generator, allowing more power to be produced.

Thermal Heat Calculations

The following calculations are based on the data shown on Figure 3, "Fuel Heat Input vs. MSW (TPD)". The original 747 TPD boilers were based on Maximum Continuous Rating (MCR) of 323.6 MMBtu/hr, and a maximum Higher Heating Value (HHV) of 5,200 btu/# as follows:

$$747 \text{ TPD} \times 2,000 \text{ \#/ton} \times 5,200 \text{ btu/\#} \div 24 \text{ hrs/day} = 323.6 \text{ MMBtu/hr (Max. Fuel Heat Input)}$$

The Wheelabrator South Broward permitted fuel heat input per permit is 323.6 MMBtu/hr, and the peak MSW feed rate is 863 TPD.

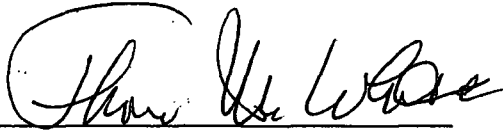
Over the past 20 years, Wheelabrator has experienced MSW HHV typically between 4500 btu/# and 5000 btu/#. Thus, Riley Power was directed by Wheelabrator to evaluate the thermal and steam generation impacts with 10 platens, clean and fouled boiler conditions, and MSW HHV between 4500 btu/# and 5000 btu/#. A summary of MSW feed rates and fuel heat inputs for low and high MSW HHV and fouled and clean boilers is listed below:

Boiler Condition	MSW HHV (btu/#)	No. of Platens	MSW Feed Rate (TPD)	Fuel Heat Input (MM btu/hr)
Fouled	4500	10	854	320
Clean	5000	10	746	320

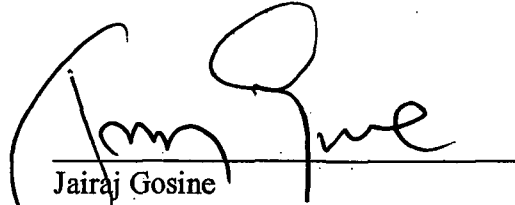
Thus, it is shown that the MSW feed rate and fuel heat input are, at all times, within the FDEP permit limits.

I hope that this additional information will allow the FDEP to conclude that this project is a minor boiler upgrade, and does not require a construction permit. If you have any questions, please feel free to contact us at any time, using the information below.

Very truly yours,



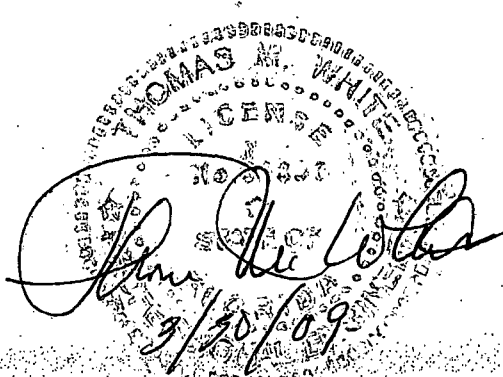
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Richard Myers
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File



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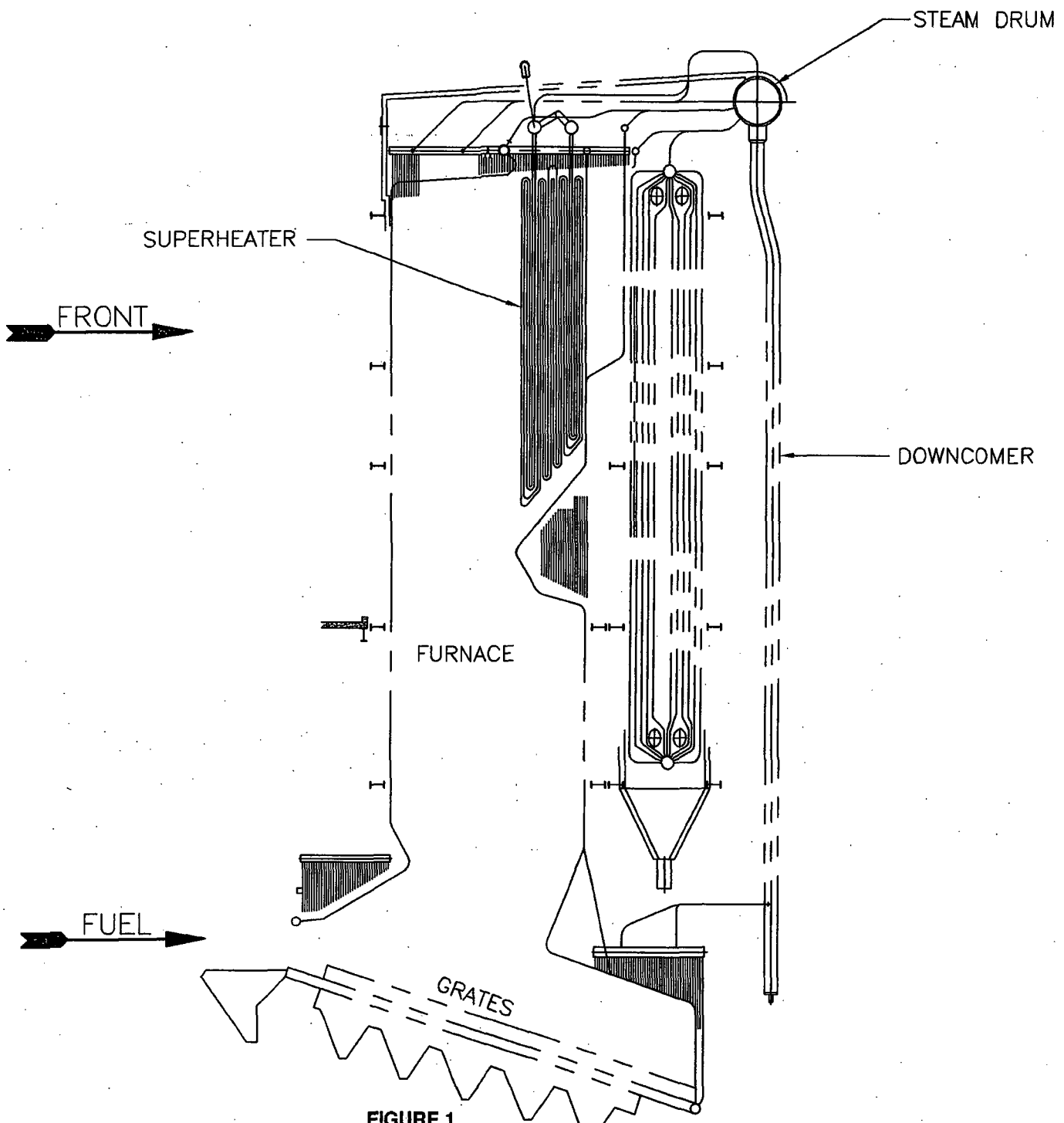


FIGURE 1
SECTION THROUGH EXISTING BOILER

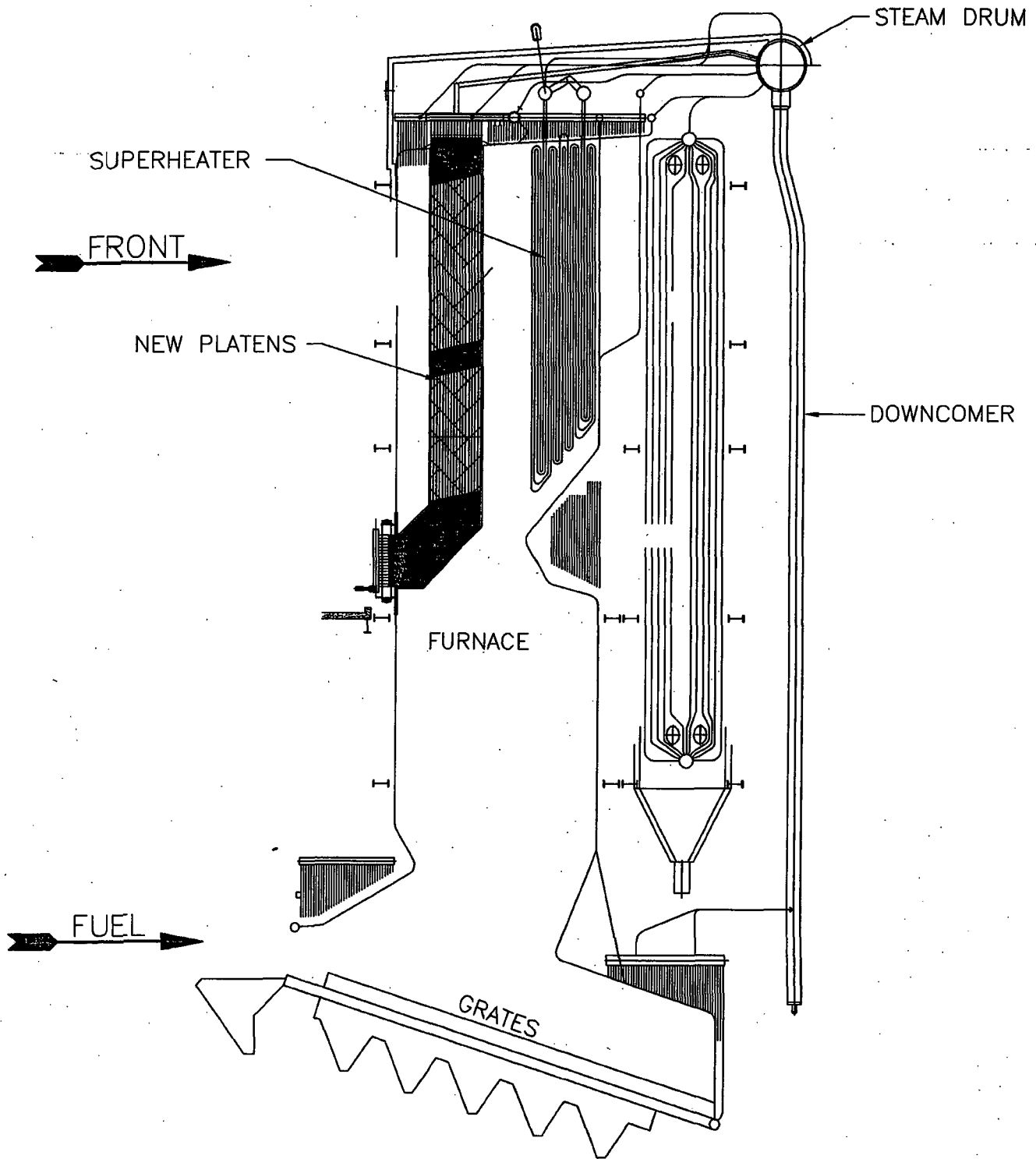


FIGURE 2
SECTION THROUGH MODIFIED BOILER



Fuel Heat Input vs MSW TPD

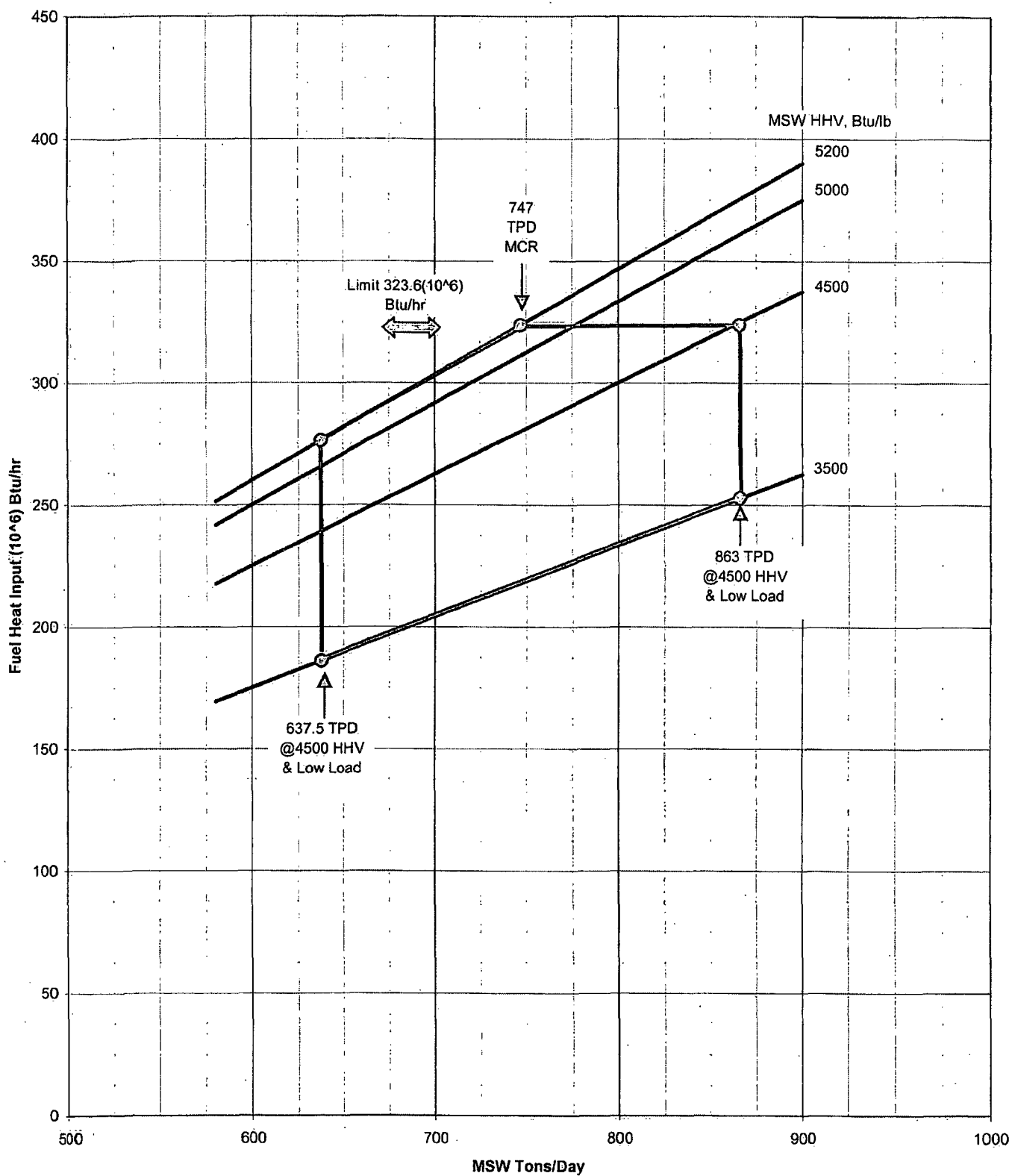


Figure 3. Fuel Heat Input vs. MSW (TPD)