The Hanna Furnace Corporation
Solid Waste Management Facility
Engineering Report
Addenda #1

March 4, 1980

Prepared by:

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1. General

1.1 Since the issuance of the "Solid Waste Management Facility Engineering Report" of 10-8-79, another source of material handled at the facility has been determined. The material consists of settlement removed from the gravity separation basins of a recirculating water system as outlined below.

2. Process and Plan of Operation

2.1 The recirculating water system is used to cool the pig iron in the molds. The pig molds are lined with a material referred to as Pig Mold Wash, consisting of eighty per-cent Revivo Clay and 20 per-cent Sea Coal. A portion of this material not consumed in the process is collected in the separation basins, along with any iron scale or iron oxides adhering thereto.

2.2 The separation basins also receive the blowdown from the boilers along with the settlement from the boiler water softening operation. The materials obtained from this process include Oxides of Phosphorous, Calcium, Magnesium, Silicon, Iron & Alumimum; Phosphates of Calcium & Magnesium; along with Magnesium Silicate and Calcium Carbonate.

2.3 The material is removed from the settlement basins in wet form and moved by rail car to "Settlement Storage Area E". The material is held at storage area E for drying and then is transhipped by rail car or truck to "Furnace and Construction Debris Storage Area D" The material is eventually used in the landfilling operation as described in the original report for materials held in "Furnace and Construction Debris Storage Area D."

2.4 The estimated yearly volume obtained in this process is 96,000 cu. ft., in the wet state. The wet state density is 65.0 lbs/cu. ft., therefore the yearly weight collected in the wet state is 6,240,000. lbs. The wet state consists of 84 percent moisture by weight, therefore the material collected, when dried, will be 6,240,000 x 0.16 = 998,400 lbs. (500 Tons) per year.

3. Revisions to Original Report

3.1 The following is a discussion of the original "Solid Waste Management Facility Engineering Report" of 10-8-79, noting areas where updating is required based on the above comments.

3.2 Report Sect. 1. General
- a.) Add comments in item 1 above

3.3 Report Sect. 2. Process and Plan of Operation:
- a.) Add comments in 2 above.
- b.) Section 2.8, change expected life of the site for landfilling operations to 27.5 years.

3.4 Operations Map:

a.) Attached find revised operations map locating the settlement basins and "Settlement Storage Area E"

3.5 Determination of Estimated Life for Landfilling Operation:

a.) Attached find revised calculation sheet for determination of estimated life for landfilling operation.

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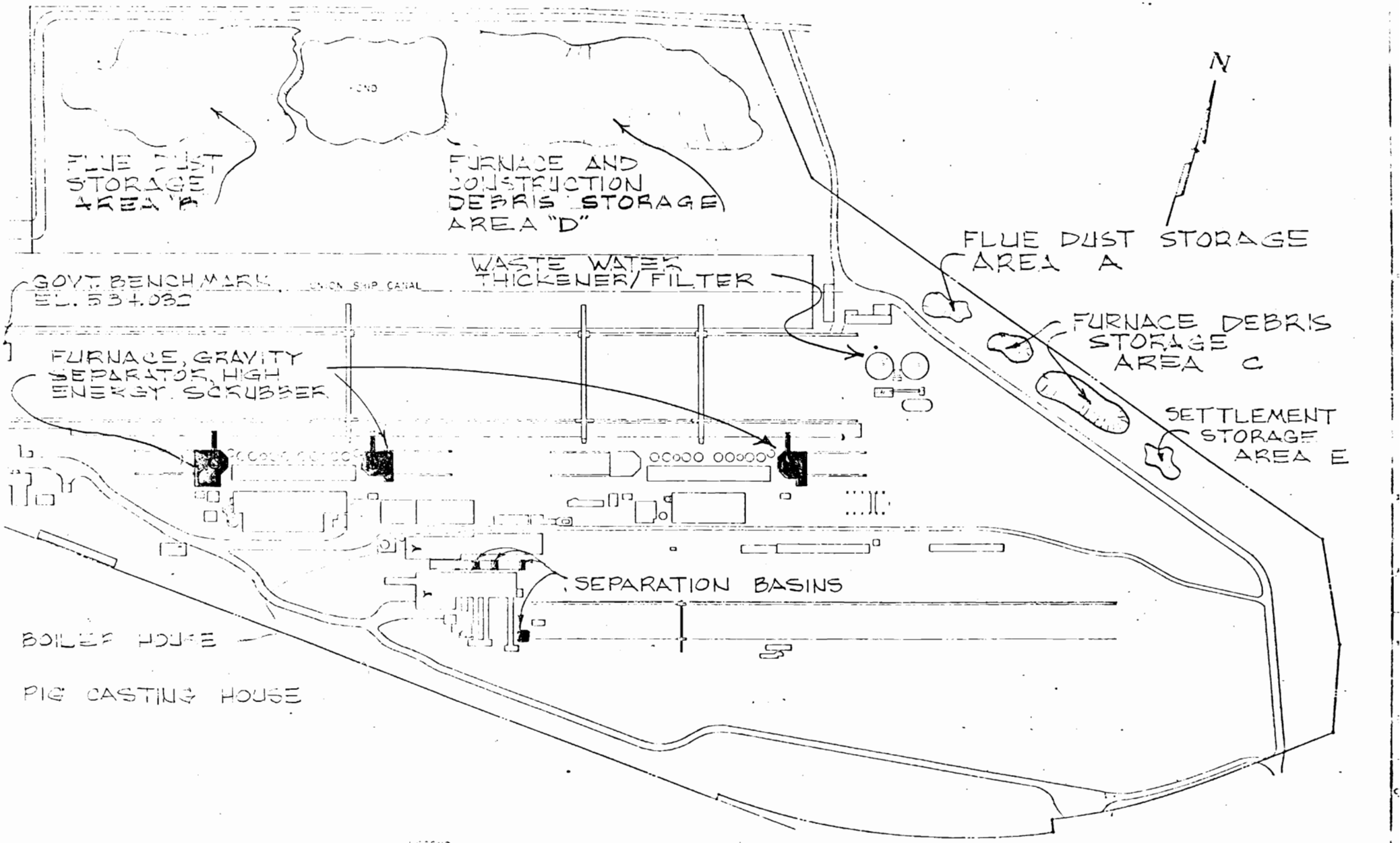

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The Hanna Furnace Corp.
Solid Waste Management Facility

Determination of Estimated Life for Landfilling Operation

1. Yearly to Landfill:

Furnace Debris	9500 Ton/yr
Construction Debris	500 Ton/yr
Settlement	500 Ton/yr
	10500 Ton/yr

2. Estimated Density of Material Handled:

   a) Furnace Debris and Construction Debris
   110 lb/cu. ft. x 0.0005 Ton/lb = 0.055 Ton/cu. ft.

   b) Settlement (Dry State)
   70 lb/cu. ft. x 0.0005 Ton/lb = 0.035 Ton/cu. ft.

3. Yearly Volume to Landfill:

   a) Furnace Debris and Construction Debris
   (9500 + 500) ÷ 0.055 = 182,000 cu. ft/yr

   b) Settlement
   500 ÷ 0.035 = 14,300 cu. ft/yr

   c) Total 196,300 cu. ft/yr

4. Available Volume:

   a) The pond has an approx. average depth of 12 ft.

   b) Fill to an average level of approx. 14 ft. above pond surface.

   c) Fill remainder of landfill area to an average level of approx. 14 ft. above existing grade (approx. 9 ft. above existing average fill height of approx. 5 ft. above grade.)

   d) Available Volume:

   Pond (12 ft. + 14 Ft.) x 300 ft. x 400 ft. = 3,120,000 cu. ft.

   Remaining Area 9 ft. x 300 ft. x 850 ft. = 2,295,000 cu. ft.

   Total 5,415,000 cu. ft.

5. Estimated Life:

   5,415,000 cu. ft. ÷ 196,300 cu. ft./yr = 27.5 yrs.