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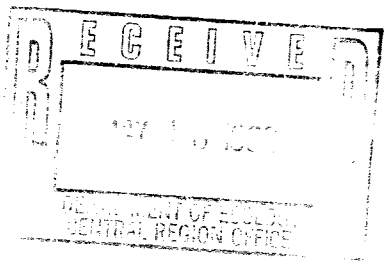
J-3546

May 13, 1993



Ms. Julie Atwood
Washington State Department of Ecology
Central Regional Office
106 South Sixth Avenue
Yakima, Washington 98902-3387

Subject: Recycled Aluminum Metals Company Salt Cake Stockpile Sampling Plan

Julie
Dear ~~Ms. Atwood~~:

Thank you for Ecology's conditional treatment by generator approval to R.A. Barnes, Inc., dated April 27, 1993. One of Ecology's conditions stated that a sampling plan for the salt cake waste stockpile be submitted to Ecology for review (paragraph eight, second bullet). The attached sampling plan is a variation of the previous work plan submitted, and conceptually approved by Ecology, under our letter to Mr. Gregory S. McElroy, dated May 28, 1992. This workplan has been slightly modified to allow for the increased salt cake waste stockpile size. In addition, the sampling plan now provides for sampling and storage of additional sample material, in the event that additional sample analysis would be required.

We believe this plan will provide representative samples to determine the characteristics of the salt cake stockpile, dangerous waste or nonhazardous salt cake. Based on the outcome of the sample results, either dangerous or nonhazardous, a program for the proper removal, transport and disposal of the waste pile will be developed and forwarded to Ecology for approval.

Please review and provide comments, if any, to the attached sampling plan. Sampling of the salt cake waste stockpile can begin one to two weeks following the approval of the sampling plan. If you have any questions, please call me at (509) 946-4344.

Sincerely,

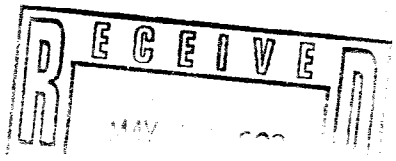
HART CROWSER, INC.

Ross D. Potter

ROSS D. POTTER
Senior Associate
HC#135:1797.DOC

cc: Bob Barnes

Attachment: **SALT CAKE WASTE STOCKPILE SAMPLING METHOD RECYLCLED ALUMINUM METALS COMPANY DALLESPORT, WASHINGTON**



SALT CAKE WASTE STOCKPILE SAMPLING METHOD
RECYCLED ALUMINUM METALS COMPANY
DALLESPORT, WASHINGTON

INTRODUCTION

This sampling method describes the procedures that will be used to collect representative samples from the salt cake waste stockpile at the Recycled Aluminum Metals Company (RAMCo) site near Dallesport, Washington. This sampling method is based upon American Society for Testing Materials (ASTM) Standard D2234-89 (updated version of D2234-86) and ASTM Standard D346-90 (updated version of D346-75), as referenced in WAC 173-303-110(2)(a).

The stockpile originally consisted of one pile, containing salt cake waste generated and stored since about November, 1991 (Figure 1). This waste was generated from the processing of aluminum dross from a representative cross-section of dross sources. Thus, the waste in the pile represents the probable range of variability that could be expected in the source dross from which the salt cake is generated.

During April 1992, the original pile was split approximately in half (north half and south half) to prevent possible service interferences with an overhead powerline (Figure 2). Processing of new dross began in late April 1992, and new salt cake has been piled adjacent to the southeast edge of the southern pile (Figure 2). Although the range of source dross in the piles is not known for certain, the variability between salt cake from different dross sources is not large, and should be minimized by the procedures described in this sampling method.

GENERAL SAMPLING APPROACH

The current configuration of the stockpiled salt cake is that of one older smaller waste pile, which has its center divided by the powerline right-of-way, and one newer, larger pile. The sampling method described below will obtain approximately half as much sample from the older pile as will be collected from the newer pile. This ratio will depend on the volume of salt cake waste in the newer pile at the time of sampling. Actual quantities of sample will be based on the ASTM Standard methods.

Based on ASTM D2234-89 recommendations, the waste pile will be subdivided into lots not to exceed 10,000 tons each. Based on current

dimensions of the stockpiled waste, the older waste is estimated to be less than 2,950 tons, and will be treated as a single lot. The pile containing the newer waste will be identified as a separate lot, and is estimated to be 9,100 tons. The number of samples and sample weight to be collected for each waste pile lot will be calculated using ASTM D2234-89.

The sample locations on each waste pile lot will be determined by a random number generator, and the location of each number selected will correspond to an imaginary grid on the waste pile. Samples will be collected from the selected location from three different depths; one from the top third, one from the middle third, and one from the bottom third of the waste pile. The number of incremental samples required by ASTM divided by three will equal the number of incremental sample locations required. After collection of samples from each waste pile lot, the samples will be composited, crushed to one inch or less size, and blended to create a homogeneous representative sample; the composited sample weight may exceed 2000 pounds. In order to provide a smaller, workable sample size (approximately 200 pounds) the composited sample will be resampled following procedures from ASTM D346-90.

LOT SAMPLE COLLECTION AND COMPOSITING

Composited sample collection will be performed in accordance with ASTM D2234-89. This procedure, as described below, is to be applied in tandem to the older waste pile and the newer waste pile. Thus, one set of sample locations and sizes will be identified for and collected from the older waste pile using the methods described below. Another sampling round will be performed in the same manner for the newer waste pile. The collected samples will be composited and resampled as discussed under **COMPOSITED LOT RESAMPLING**, below.

1. Estimate the weight of each waste pile.

2. Based on the gross weight of each waste pile, determine the number of samples required from Table 2 of the ASTM Standard D2234-89, *Number and Weight of Increments for General Purpose Sampling Procedure*. The portion of the table for Mechanically Cleaned Coal will be used. Increase the sample size using the formula from section 8.1.1.5.2 of ASTM Standard D2234-89 for lot gross weights that exceed 1,000 tons.

3. Use the sampling grid over the "to scale" drawing of each sample lot (i.e., waste pile). The grid provides sufficient possible sample points to allow for randomly locating the number of required samples identified under Step 2).

4. Based on the required number of samples, determine the sample location on the projected sampling grid using a random number generator. For example, if 30 samples are required, divide 30 by the number of incremental samples that will be taken at each location (e.g., top third, middle third, and bottom third of waste pile), in this case three increment sample points. Therefore, the number of incremental sample locations is ten. If the grid contains 100 possible sample locations, the random number generator will be used to select 10 numbers between 1 and 100. Each number will correspond to a sample location.

5. Due to the hazard associated with walking on the waste pile, use heavy equipment to collect the sample from the selected sample locations. To the maximum extent possible, obtain a 20-40 pound sample from each increment sample point (approximately 75 - 100 pounds per sample location). If the sample is a large block of material, a portion of the block will be broken off, if possible. If the block cannot be broken, the entire block will be collected as the sample.

6. All samples will be deposited in one location for further processing. A concrete dross storage bin in the RAMCo building or other suitable storage, will be used for the sample collection area. This sample collection area will be clean and free of residue from other materials or waste handling activities.

7. Continue sample collection until the required number of incremental samples have been collected from the lot.

8. Repeat the above process for each additional lot of waste (i.e., each waste pile).

9. After all dross samples have been collected and deposited in the sample collection area, crush the material into pieces not to exceed one inch across the largest dimension (1" minus).

4. Advancing along the side of the pile a distance equal to the width of the shovel, take a second shovelful and discard it as waste (discards will be returned to the outside salt cake waste pile).

5. Advancing in the same direction, take a third shovelful of material and add it to the first shovelful (the pile to be saved) continuing to form the new conical pile as outlined in Step 1.

6. Advancing in the same direction take a fourth shovelful of material and discard it.

7. Continue removing alternate shovelfuls as described in Steps through 6 until the long, straight pile has been completely divided. One conical pile now exists, representing approximately one-half the original volume.

8. Repeat Steps 2 through 7 to continue reducing the volume of the sampled waste until approximately 200 pounds of waste sample remains.

Once the required volume of waste sample has been obtained, it will be distributed into 15 eight ounce jars, and 10 one-gallon buckets filled within 2 - 3 inches from the top. Material will be removed from the last sample pile one shovelful at a time. Each shovelful will be distributed as equally as possible between all the containers. The 15 eight ounce jars will be distributed as follows: five jars will be sealed and placed in a cooler with a chain-of custody; blue ice and shipped overnight to the laboratory conducting the ecology dangerous waste aquatic bioassay test; five jars will be sealed and supplied to Ecology if requested; five jars will be sealed and held and refrigerated. The 10 one-gallon buckets will be placed outside on a covered porch. A thermometer and humidity gauge will be located near the samples and values recorded once per working shift.

When all of the sample has been distributed and sealed, sample custody tape (or equivalent device) will be placed on the cooler to indicate if the cooler was opened. A laboratory analysis request/chain-of-custody form will be prepared for shipment.

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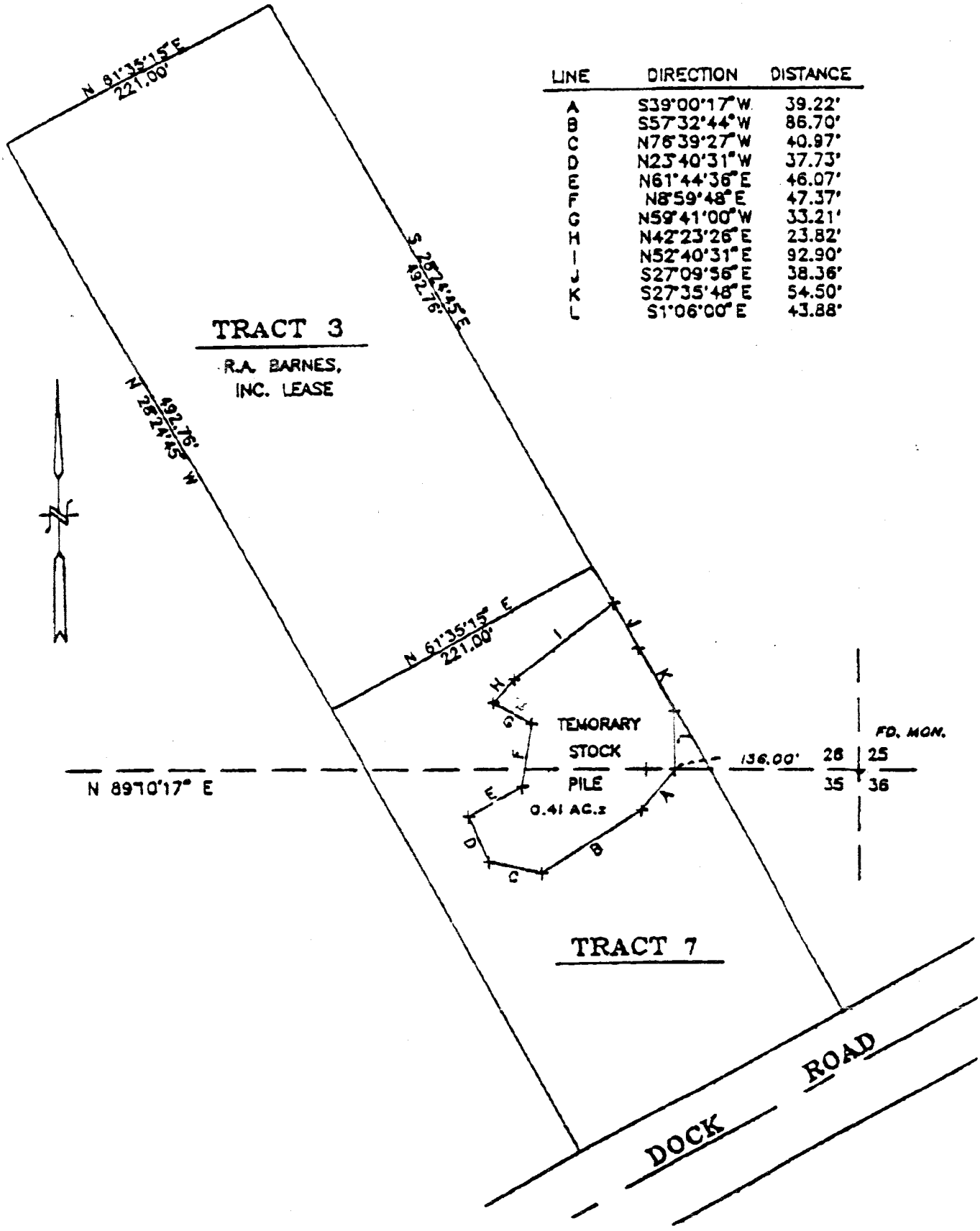
FIGURE 1
ORIGINAL WASTE PILE CONFIGURATION



LINE	DIRECTION	DISTANCE
A	S39°00'17"W.	39.22'
B	S57°32'44"W	86.70'
C	N76°39'27"W	40.87'
D	N23°40'31"W	37.73'
E	N61°44'36"E	46.07'
F	N8°59'48"E	47.37'
G	N59°41'00"W	33.21'
H	N42°23'26"E	23.82'
I	N52°40'31"E	92.90'
J	S27°09'56"E	38.36'
K	S27°35'48"E	54.50'
L	S1°06'00"E	43.88'

The old waste pile and new waste is estimated to contain 2,950, and 9,100 tons of salt cake respectively. Based on these estimated tonnages, the ASTM D-2234-89 recommends that the old waste pile have 26 incremental samples (27 will actually be collected), and the new waste pile have 45 incremental samples, for a total of 72 samples. Nine sample locations will be randomly selected in the old waste pile, and 15 in the new waste pile. All incremental samples would be composited, and would become one gross sample, that would be reduced using ASTM Method D 346-90 as described below in **COMPOSITED LOT RESAMPLING.**

COMPOSITED LOT RESAMPLING

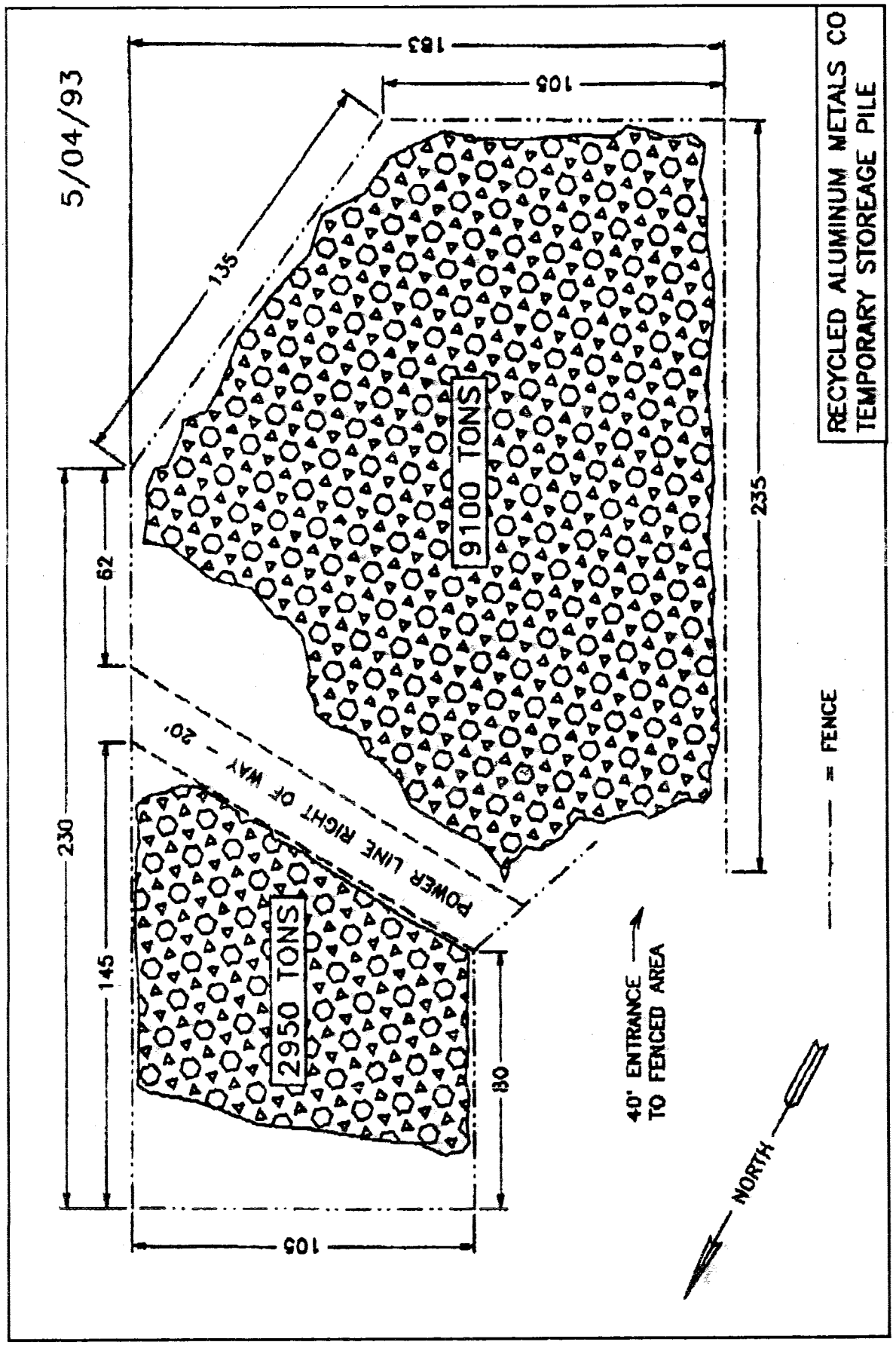
Lot samples will be placed in the sample collection area and crushed to 1" minus. Final sampling from the composited lot sample will be done according to the ASTM Standard D346-90 sample collection method. This procedure is described below.

1. Shovel the crushed material into a conical pile by depositing each shovelful of material on top of the preceding one. Because of the volume of the composited lot sample, heavy equipment (e.g., backhoe, shovel loader) may be used initially, with a change to hand shovels as the sample volume decreases and becomes more manageable to hand work.

2. From the conical pile, take a shovelful of material and spread it out in a straight pile having a width equal to the width of the shovel and as long as required. Spread the next shovelful directly over the top of the first shovelful, but in the opposite direction. Repeat this process until the conical pile is gone, occasionally flattening the long, straight pile as needed.

3. Begin removing shovelfuls from one side of the pile from either end. Shoveling from the bottom of the pile, take one shovelful and set it aside to begin forming a new conical pile as outlined in Step 1.

FIGURE 2


RECYCLED ALUMINUM METALS CO
TEMPORARY STOREAGE PILE
5/04/93
183
105
135
235
62
230
145
80
105
9100 TONS
2950 TONS
POWER LINE RIGHT OF WAY
20'
40' ENTRANCE
TO FENCED AREA
= FENCE
NORTH