To: Dean Meyer, Group leader, H-1

From: John Enders, H-1

Subject: Disposal of Contaminated Trash for 1956.

2/4/57

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This report will attempt to give as much data as is possible on the
disposal of trash (solid) for 1956. Two previous reports have been made
(dated 9/17/56 and 1/3/57). These gave data concerning volume and numbers
of boxes and barrels placed into the Contaminated Dump during 1956 by quarters.

CARDBOARD BOXES:

In 1956, 26,471 boxes were taken to the Dump. This year, Don Rice,
Zia Janitoral Section, has issued to the various sites which have contaminated
trash to be boxed--- 27,530 boxes. This figure coincides fairly well with
the number of boxes picked up. The difference in the two numbers may well
be the number of boxes still at these sites.

The calculated volume in cubic yards of the number of boxes placed
in the Dump is 2,302.977. This volume was calculated by multiplying the
number of boxes (26,471) by 0.087 (cubic yards per box).

Don Rice, Zia Tech. Janitoral Section, was contacted about the cost of
these boxes. He told me the boxes were purchased in carload lots and that
the purchases were made on a bid basis. This practice has moved the unit cost
downward from about 25¢ a couple of years ago to the present figure of $0.1408
per box. The cost of the boxes put into the Dump during 1956 would then be
(.1408 x 26,471) $3,727.12.

MASKING TAPE:

Two inch (width) masking tape is used for sealing cardboard boxes. If
two strips of tape are used on each end of a box about 8 feet of tape is
needed per box. There are 180 feet of tape per box so in order to seal
26,471 boxes 1,182 boxes of tape would be used. SP-1 informs me the cost per

box is now $0.67. The cost of the tape used would then be $0.67 x 1,132 = $791.94.

Actually the amount of tape used was no doubt much greater because a large number of items are often sealed with tape, Also, the plastic bags used in hot trash cans are sealed with tape upon removal from the cans.

BARRELS:

In 1956, 638 barrels were hauled to the Dump from the Waste Treatment Plant. The volume of these barrels in cubic yards is calculated to be 234.784. 0.368 cubic yards per barrel was used in this calculation.

These barrels are obtained from Chemical Stock at a charge of $2.00 per barrel. According to Mr. Christensen, H-7, an additional charge of $0.50 per barrel is made for cutting off one end, and a charge of $0.10 per barrel is made for re-sealing. At $2.60 per barrel the total cost would then be: $2.60 x 638 = $1,658.80.

PLASTIC BAGS:

During 1956, D.P. Laundry issued an average of 1400 plastic bags per month. This would amount to a total of 16,800 for the year. These plastic bags are used largely for liners in hot trash cans. The number of bags actually used for containing trash is only educated guess at this time, but by far the greater portion of the estimated 16,800 bags were used for trash. If the figure of 16,000 is used; then the cost would be 16,000 x .054 (cents per bag) = $864.00.

EXCAVATION OF PIT #6:

In Feb. 1956, we started using Pit #6. Eng-4 has given a cost of $14,422.28 for the excavation of this Pit. A measure of the remaining area in this Pit was made in order to determine the volume in cubic yards of trash plus fill dirt that had been put into the Pit during 1956. As a result of these measurements it is estimated the pit was about one-half filled as of December 31, 1956.

The measurements taken were from the surface down to the filled portion along the north and south walls. The average depth was 12 feet. The remaining volume in cubic yards was determined by using pit demensions of 4 yard depth x 33 yards (width) x 166 yards (length). This equals 21,912 cubic yards. Eng-4 informs us the total volume of Pit #6 excavated was 34,894 cubic yards. 34,894 — 21,912 = CUBic yards that is in the pit as of December 31, 1956, or about $\frac{1}{2}$ of the usable space. Since the tbtal cost of digging the pit was $14,422.28, $\frac{1}{2}$ of this cost could be charged to 1956 operations or $7,211.14. The total charge included wages and heavy equipment charges.

COVERING TRASH:

Eng-4 supplied the figure of $6,352.91 for the cost of covering trash in 1956. This figure includes the costs of operating the bulldozer, carryall heavy equipment and wages.

From the preceding topic it is interesting to note that, of the 12,982 cubic yards put into the Pit #6, only 2,234 cubic yards was trash. The remaining 10,748 cubic yards was fill dirt. This seems to be a rather high ratio of fill dirt to trash. The frequency of covering is probably an important factor in that more fill dirt is used when covering is done frequently.

PICK UP OF TRASH:

It cost $13,424.39 to pick up and deliver the trash to the dump. This cost includes the wages and overhead of one Zia truck driver @$2.65 per hour and one Zia Laborer at $2.39 per hour. The cost of operating the $1\frac{1}{2}$ ton Reo truck (#5536) is also included.

In addition to above costs one monitor from this section supervises the pick up operation. I have used an average wage $2.50 per hour and an estimated 7/8 of his total time is spent on this job. This amounts to $4550.00 for 1956. An arbitrary overhead charge of 3/4 of $4,550.00 or $3,400.00 is also added in.

This brings the monitors costs to a total of $7,950.00 for 1956.

FENCING:

In 1956, $3,866.92 was spent on additional fence around the Dump area. This includes 1,000 feet of chain link fence with outriggers, two 8 ft gates and 200 feet of 8 foot hog wire. One tenth of this cost was charged to the 1956 operations cost or $386.69.

PACKAGING CONTAMINATED TRASH:

Don Rice, Zia Tech Janitoral Supervisor, was contacted about this subject. An estimated $1\frac{1}{2}$ hours per man is spent removing trash from lab hot waste cans and putting the trash into cardboard boxes. These boxes are then sealed and set outside of the buildings for pick up.

To illustrate how the total figure was determined the following example is given for the CMR Building: Number of men: 10 average man hours per day: $1\frac{1}{2}$, (total 15); Average salary $=$ $1.65 per hour, number of days per week that trash is packaged $=$ 5. There 5 (days) x 15 (man hrs per day) x $1.65 (ave. wage $=$ $121.50 (weekly cost), $121.50 x 52 $=$ $6,318.00 per year. By using the above calculations for all of the Sites which have trash to be picked up the total for 1956 is then $28,810.08.

COST OF DODGE PICK UP TRUCK #7849:

This truck is used about 7 hours per day by the monitor who supervises the disposal operation. Mr. Nino Segura, SP-2, was asked to supply the cost figures for this vehicle for 1956. He was able to supply cost figures for each month of 1956 except January and February. The total amount was averaged so a cost per month could be determined. This figure is arbitrarly used for the cost during January and February. By this method the cost of this vehicle is then $635.64 for 1956. 7/8 of this amount equals $556.18.

TABULATION OF 1956 COSTS

		TOTAL
1.	26,471 boxes at $0.1408 each	$3727.12
2.	1,182 rolls of masking tape, 2 inch, at 67¢ each	791.94
3.	638 55 gal. barrels at $ 2.60 each	1,658.80
4.	16,000 .002 inch, 24" x 12" x 13" Plastic bags at .054¢ ea.	864.00
5.	Covering trash (wages, oper. costs for dozer & carryall)	6352.91
6.	Trash pick up (wages & overhead of Zia Driver, laborer & cost of operating 1½ ton Reo truck #5536).	13,424.39
7.	Excavation cost of Pit #6 (½ of $14,422.28)	7,211.14
8.	Fencing (1/10 of $3,866.92)	386.69
9.	Wages of H-1 Monitor ($2.50 Per hr, Average) 7/8 total	4,550.00
10.	Monitor overhead (3/4 of $4,550)	3,400.00
11.	Dodge pick up (#7849) 7/8 of 1956 costs	556.18
12.	Packaging trash-- janitor costs	28,810.08

Total: $ 71,733.25

SUMMARY:

In 1956 there were 2,537 cubic yards of trash picked up. By dividing the total costs ($71733.25) by the total cubic yards of trash (2537) picked up an average cost per cubic yard is then $28.27 or $1.05 per cubic foot.

John Enders, H-1