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OFFICE MEMORANDUM

TO : File

DATE: October 15, 1976

FROM : L. Trocki, H-8 XT

SUBJECT : SEPTEMBER, 1976 REPORT

SYMBOL : H8-WS-663

During September, 1976, soil and vegetation were sampled at the abandoned Waste Disposal Area C. The area was also surveyed with a phoswich detector. The purpose of the study was to determine the amount of radioactivity on or near the surface. Sample locations for the grid and the results of the phoswich survey are shown on the accompanying map.

A vegetation sample over an area of 0.1 m^2 and a soil sample 10 cm x 10 cm x 5 cm deep was collected at each grid location. More intensive sampling was done around Waste Disposal Shafts #9, #77, #88-90, #107 and the ^{90}Sr shaft (18 samples within a radius of 5 m around each shaft). I selected these shafts because they contained large amounts of ^3H , U, fission products or Sr. Analysis of these samples will be started in October.

The phoswich detects gamma radiation. Twenty-six "hot spots" were found. These are shown as circled areas with an ID number and counts per minute (cpm) reading on the accompanying map. Background on the phoswich is 1.2×10^3 cpm or "1.2K". The activity on the "hot spots" ranged from 1.3K to 90K. These readings cannot be translated to pCi/g unless one knows the geometric distribution of the contaminant. There is some correlation between the phoswich "hot spots" and the amounts of fission products that went into the shafts.^a This appears in the accompanying table. What went into the pits isn't known well enough to make any correlations. Samples will be collected at each "hot spot" and analysis will be begun in October.

^aI must note that some shafts which contained large amounts of fission products were not detected with the phoswich. This could be a function of depth of FP from surface or type of containment, etc.

I appreciate the help of Don Van Etten, John Smith and Margaret Anne Rogers.

LKT:kr

cc: Merl Wheeler



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<u>"Hot spot"</u> <u># near shafts</u>	<u>Phoswich reading (cpm)</u>	<u>Amt. of contaminant that</u> <u>went into the nearby shaf</u>
#12	50 K	839→1291 Ci of Ba-La wast in shafts 2, 3, 4.
13	1.5 K	500 Ci ³ H + 350 Ci of Ba- La in #9
14	>1.2 K	738.6 Ci FP from Ra-La in #16
15→19	5K→90 K	Nothing remarkable in the nearby shafts (will be re searched more).
20	40 K	645→755 Ci Ra-La in #46 & 48.
21	5 K	Nothing remarkable
#10	1.5 K	Near ⁹⁰ Sr shaft
23	3 K	89 Ci FP & MAP & 500 g U in shaft #71 & 500 g U in #72
24	1.3 K	880 Ci Ba-La & 1221 g U in #77
25	5 K	Nothing remarkable