

OFFICE MEMORANDUM

TO : File

DATE: June 21, 1976

FROM : M. Wheeler

SUBJECT : TEST BORINGS AT AREA A, TA-21

SYMBOL : H8-WS-610

0800 TA-21

In May, 1974, four test holes were drilled in Area A, adjacent to the subsurface liquid storage tanks (see attached Figure 1). The holes were augered to depths of 35 feet, using a truck mounted auger. Composite samples were collected at intervals of 5 feet, and double-bagged in plastic. The samples were submitted to H-8 Analytical Chemistry Section for gross alpha and gross beta determinations (see attached Table 1).

The tanks contained liquid waste contaminated with both plutonium and americium. Analysis of the west tank contents by H-7 staff indicated concentrations as follows:

Gross-α	1.7 x 10 ⁶ d/m/liter
²³⁸ Pu	1.6 x 10 ⁵ " " "
²³⁹ Pu	1.7 x 10 ⁶ " " "
²⁴¹ Am	1.2 x 10 ⁴ " " "

Analysis of the samples as indicated in Table 1, indicates that reported gross-alpha content is in the range of 0.8 to 2.3 pCi/gm, and gross beta contents in the range of 0.8 to 3.2 pCi/gm. The minimum detection limits for these variables in 1974 were 1 pCi/gm and 2 pCi/gm respectively, indicating that many of the values reported are at or below such limits. Further, analysis of regional soil samples, as reported in the 1974 Environmental Surveillance Report (LA-5977-PR) indicates that off-site soil materials average 1.0 pCi/gm gross-alpha, and 12 pCi/gm gross-beta. Thus, the samples collected at Area A are indistinguishable from these in areas affected only by atmospheric fallout. This is sufficient to conclude that the tuff sampled contained no contamination derived from the near-by storage tanks. By inference, no leakage of waste from the tanks has occurred into the surrounding tuff.

MLW:kr

cc: ~~M. A. Rogers, H-8~~ ← ~~M. S. 7371~~
T. K. Keenan, H-7



TO: File

-2-

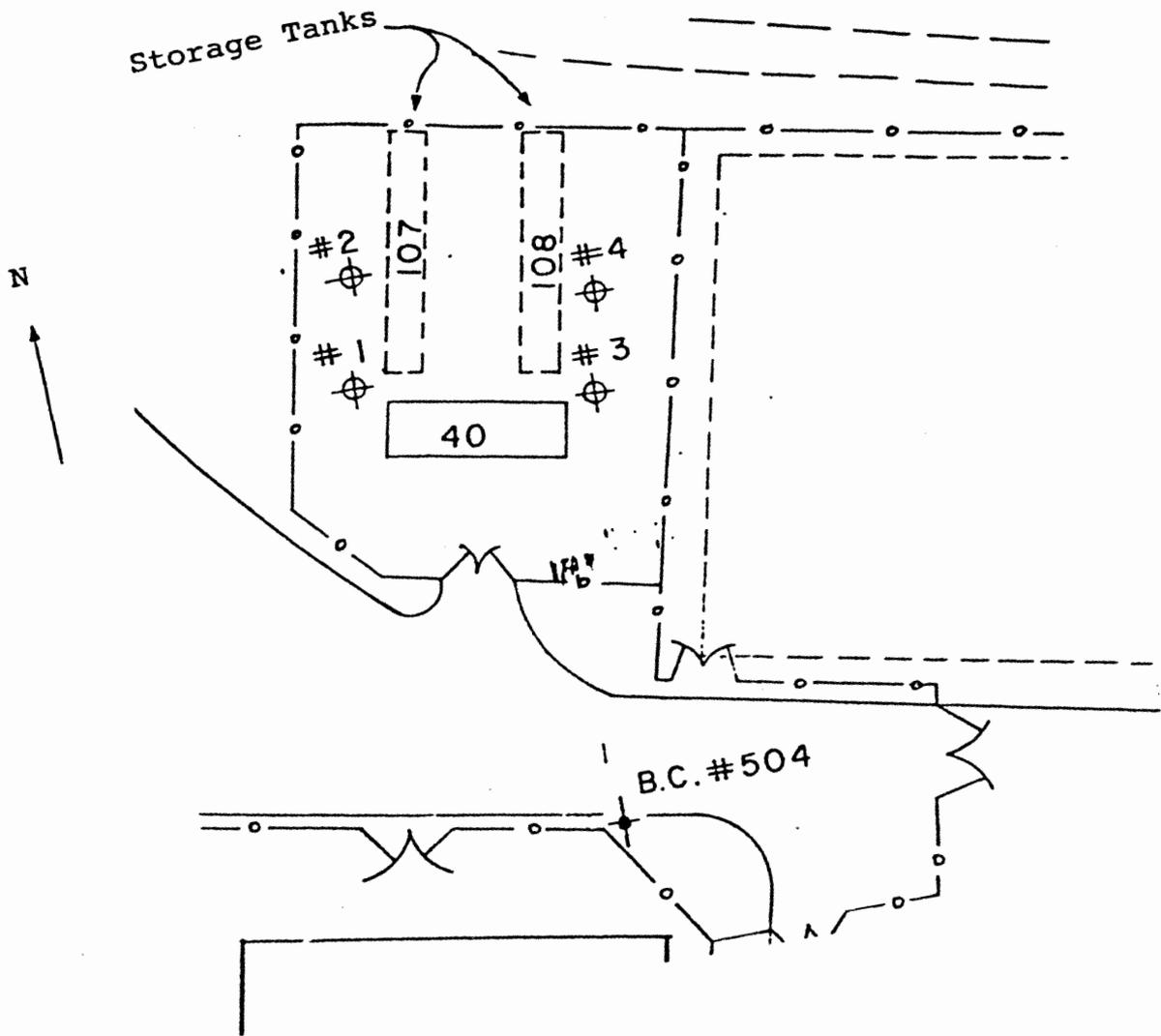
DATE: June 21, 1976

Table 1. Boring Sample Analysis

Depth ft.	Hole #1		Hole #2	
	Gross- α pCi/gm	Gross- β pCi/gm	Gross- α pCi/gm	Gross- β pCi/gm
0- 5	2.3	3.0	1.0	1.9
5-10	0.8	1.4	1.4	2.9
10-15	0.9	0.9	1.0	1.0
15-20	0.9	1.0	0.8	1.3
20-25	1.5	1.4	1.1	1.3
25-30	1.4	2.4	1.8	2.0
30-35	1.3	1.5	1.5	2.0

Depth ft.	Hole #3		Hole #4	
	Gross- α	Gross- β	Gross- α	Gross- β
0- 5	1.0	1.6	0.8	2.0
5-10	1.0	3.2	1.0	1.5
10-15	0.9	0.8	0.9	2.0
15-20	1.2	0.8	0.9	1.9
20-25	1.4	1.0	0.9	2.1
25-30	1.0	1.1	0.9	1.0
30-35	1.2	1.2	1.2	1.3

Fig. 1 - Auger Hole Locations



#1 Auger Hole Location and Number

[Taken from Engineering Drawing No. ENG-21-31]