ABORATORY CORRESPONDENCE
)AK RIDGE NATIONAL LABORATORY

June 24, 1971

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IRC 00149

To: D. M. Davis

Subject: White Wing Scrap Yard Area

This memorandum contains a summary report of the radioactive contamination conditions existing at the area known as the White Wing Scrap Yard in mid-1971. The information is based upon survey work and observations made during the removal of the contaminated materials from the area during 1970, during clean-up efforts in the area south of the access road early in 1971, and during a directed survey effort made on June 5, 1971.

The area south of the road, while much smaller in extent, originally (prior to scrap removal and preliminary clean-up) contained much more intensive contamination. Several (five or more) spots (2 to 3 feet in diameter) gave readings up to 5 rad/hr at 1 foot above the surface. Some of these were ground into the soil and distributed by the vehicles of the scrap removal contractor during his work there, resulting in loss of identity of the spot as a discrete area. Clean-up efforts of those that could be identified later required excavations down to 5 feet in depth (in the worst case). The surface of the south storage area was scraped three times; large spots were then excavated by Gradall operations; the remaining smaller spots were removed by hand shovels until no contamination remained sufficient to give a GMSM reading above 1 mrad/hr at 1 foot above the surface. Some 172 truckloads of contaminated earth were removed during these operations. There is no doubt, however, that considerable contamination has been covered over so that above-surface contamination surveys are no longer truly indicative of sub-surface conditions in the area south of the access road. The Analytical Data Report attached shows the results of analyses on one sample from one of the spots in that area.

The area north of the access road, in which no clean-up effort has been made, is much larger in extent (estimated to be in the 15 to 20-acre range), and shows widespread contamination from above-surface measurements.

On June 5, 1971, a GMSM survey team inspected the entire area bounded by the access road on the south and by heavy timber growth on the other three sides of the approximately rectangular area. The survey paths followed were roughly linear from east to west with 5 foot north-to-south spacings between paths. The detector elements were held ~ 1 foot above the ground on all paths.

ANALYTICAL DATA REPORT
(RCA)

SERIES NO.

CONTROL NO. 48249

FROM: E I Wyatt

TO: C. R. Guinn

DATE: 4-2-71

Sample Code	G-G cpm/gm	* G-α cpm/gm	^{137}Cs mc/gm	^{90}Sr mc/gm
K-25 Silver Ag. Sample #2	9.2×10^3	9.3×10^7	2.3	1.9

* Pulse height analyses showed activities to be composed of 85% 5.1 MEV (^{239}Pu & ^{240}Pu) and 15% 5.5 MEV. energy (^{241}Am & ^{238}Pu).

SAMPLES SENT TO WASTE ☐ RETURNED TO SENDER

COUNTED THROUGH ☐ AL ☐ Pb ABSORBER

COUNTED AT ____ % GEOMETRY

COUNTED AT ____ % GEOMETRY

SUPERVISOR: E J Wyatt

CN-2136
(9-60)

Over 60 places were found (and marked with wooden stakes) where the observed readings were ≥ 1 mrad/hr at 1 foot above the surface. Most of the readings noted were in the 1 to 5 mrad/hr range, but the maximum was ~ 15 mrad/hr (50 mrad/hr with detector at ground level at this point). Many other spots of lesser contamination were noticed (readings in the range from 0.2 to 0.9 mrad/hr at 1 foot above the surface). Considering the fact that the survey lines were spaced at 5-foot intervals and the distribution and number of spots found, it seems quite likely that any similar survey of the intermediate areas would give similar results. This would indicate that there are many more contaminated areas which are unmarked and that a spot decontamination effort based on the initial survey would probably be rather futile.

It is concluded that the entire area is quite extensively, and in some places intensively, contaminated. The principal problem south of the access road is a sub-surface condition. No conclusions regarding contamination in depth north of the road are drawn because no such investigative effort has been made there. It is known, however, that the surface contamination has been exposed to weathering effects for several years.

At present, a locked gate across the access road and an "Official Use Only" sign (both at the juncture of the road with State Highway 95) serve to interdict passage along the roadway. However, there is no fence on either side of the gate and there is another access road from another point on Highway 95 which does not have a gate across it. While it is true that the area is relatively remote and that only knowledgeable persons would have any obvious reason to enter, it is not absolutely clear that the access restrictions are entirely adequate.

If it could be assumed that all access to the area would be along the roadway, it would be better to place another gate across the road nearer to the area and to mark it with signs specific as to the reason for its presence, e.g., "Radioactive Contamination—Keep Out".

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June - July
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If that assumption is not applicable, then a fence should be placed around the perimeter of the entire area and marked with similar signs. The spacing between such signs would need to be very short because under the present conditions of unrestricted vegetative growth the signs would not be visible from any considerable distance.

Roy L. Clark

Roy L. Clark

RLC:cm

Attachment

cc: R. G. Affel
J. Bolinsky
J. R. Gissel
C. R. Guinn
W. M. Stanley