UCLA RB 264 [redacted] ANGELES: ATOMIC ENERGY PROJECT

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MEMO TO: Project Director's Office

FROM: E. M. Romney, Radio-Ecology Division EMR

410218

SUBJECT: ACTIVITY OF SOIL FROM PACIFIC PROVING GROUNDS

The following information has been obtained on soil from the Pacific Proving Grounds which arrived at this Project on April 16, 1954.

1. On 23 April the mean activity of five samples, corrected for counter efficiency and coincidence, was 300,766 disintegrations per minute per gram using the following procedure: Approximately one gallon of bulk soil, removed from the shipping box by taking random samples, was sieved through a two millimeter screen to eliminate larger pieces of coral, shells, and unincorporated organic matter. After thoroughly mixing the sieved fraction, five one-gram samples were placed in plastic counting cups and counted in a gas flow counter with an efficiency of 30.8 per cent as determined with a U_3O_8 standard.

2. From 23 April to 27 April the above samples were decaying with an apparent half-life of 15.4 days.

3. Gamma readings taken with a Jordan survey meter on 27 April showed 2.0 mr/hr at three feet above exposed surface of soil in the shipping box and 25 mr/hr at the soil surface. The surface of the soil in the shipping box was 20" x 20", or approximately three square feet. Since we do not know the conditions of collection, that is to say, at what depth or over what area the soil was collected, we cannot say to what degree these levels of activity will correspond with our soil data from the Nevada Proving Grounds.

4. Half-thickness values for lead of approximately 7.5 gram/cm^2 were obtained on one gram soil samples indicating a gamma energy of 0.75 - 0.81 MEV.

5. Preliminary data indicate approximately one half of the radioactive material in the soil may be soluble in 0.1 N HCl. For example, a one gram soil sample assying 221,250 disintegrations per minute was placed in 0.1 N HCl and allowed to stand overnight. One ml. aliquots of the supernatant liquid evaporated to dryness assayed 4,100 disintegrations per minute, or a total in the solutions of 102,600 disintegrations per minute.

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BY [signature] DATE 5/14/81
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