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18 August 1952

To: C. L. Tyler  
From: R. E. Thompsett, H. O. Whipple, T. N. White  
Reference: INSPECTION OF CATTLE BELONGING TO FLOYD LAMB, ALAMO, NEVADA

1. Certain cattle located in the Kawich Valley, to the north and slightly west of the Nevada Proving Ground, on a range operated jointly by Floyd Lamb and his uncle, were inspected by us on 13 August 1952. Abnormalities in some of these cattle had been noted by Mr. Lamb in June or early July 1952, and he had raised the question whether these abnormalities were attributable to the recent test operations at the Proving Ground. It was the purpose of the inspection to obtain an answer to this question. In addition to ourselves the inspection party included:

- Mr. Floyd Lamb
- Dr. Martin, Veterinarian, Las Vegas, retained by Mr. Lamb.
- Mr. Joe Sanders, representing the Las Vegas Field Office of SFOO, AEC
- Mr. Fuchs, Carco Pilot (incidental observer)

2. Outline of Inspection

We were flown to Kawich Dry Lake by Mr. Fuchs, and while waiting there from 0930 until about 1130 to be joined by Lamb, Martin and Sanders, we made a fairly thorough radioactivity survey in the neighborhood of the corral at the south-east corner of the Lake, using two geiger counter type survey meters. When the rest of the party arrived, we drove several miles approximately east-south-east into the foothills of the Belted Range to a location known as Indian Spring. There we observed a herd of roughly 50 cattle. Four representative cattle showing the abnormalities in question were corralled, and of these two calves were roped, thrown, and held for close inspection. Radioactivity measurements were made. After returning to the Dry Lake, a herd of roughly 100 cattle located at the water-hole at the north end of the Lake were observed from an automobile which was driven among them. This completed the inspection.

Neither during nor after the inspection was Mr. Lamb or Dr. Martin given any indication by us as to our findings.

3. Results of Radiation Survey

At Kawich Dry Lake, gamma radiation readings of a few tenths milliroentgen per hour in excess of the normally expected background level were found. The "spotty" territorial distribution of the observations and the ratio of "open shield" to "closed shield" readings were typical of that ordinarily found where "fall-out" of radioactive particles from an atomic cloud has occurred.

This material contains information affecting the national defense of the United States within the meaning of the espionage laws Title 18 U. S. C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

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UNCLASSIFIED

17211

To: C. L. Tyler

- 2 -

18 August 1952

In the Indian Spring area, the observations were more cursory, but the indications were the same. No sure indications of radioactivity could be found on the two calves that were inspected closely. This proves nothing, since no activity was found on the Trinity cattle that had radiation burns.

The complete meteorological analysis shows that some radioactive fall-out from the shots fired on 1 June and 5 June 1952, would be expected to have occurred in most of the Kawich Valley including the Dry Lake. The location of the cattle on these dates is not known with any certainty. It was Mr. Lamb's opinion that they were probably near the Dry Lake, which is roughly 25 miles from the part of the Proving Ground that was used for these tests.

A request has been made for any information obtained by the Test Organization on intensity levels observed in the Kawich Valley following the June shots, but no information has yet been received. It is known that an observation of 1.2 r/hr was made by one of Kermit Larsen's teams near Gold Flat near the southern end of Kawich Valley (and within Lamb's grazing area) about 10 hours after one of the June shots.

Our radioactivity measurements can not yield any reliable estimate of the amount of radiation received by the cattle because the effect of wind and weather on the "fall-out" during the past two months is unknown. From the amount of radioactive material still present it is not unreasonable to suspect that the observed abnormalities are due to radioactive "fall-out".

#### 4. Results of Observations on Cattle

Approximately 150 out of the 500 cattle run on the Kawich Valley range by Mr. Lamb were observed by us at more or less close range and we would estimate that at least 50% of the cattle seen showed cutaneous lesions on their backs, with a few on the flanks.

Four cattle, two mature females and two calves of about four and ten months age were corralled and subjected to more detailed inspection. No actual ulcerations were observed. The lesions were distributed most heavily over the dorsal surfaces, with a few discolorations on the flanks, scattered more or less at random, in a few areas confluent. The patches were roughly circular and averaged about the size of a silver dollar. The skin in these areas was infiltrated, thickened and hyperkeratotic. Hair had fallen out. In addition there were many areas not denuded of hair, but where the normal solid red hair color pattern of the Hereford had been replaced with mixed red and white ("rean") hair. The same color alteration was noted about the healing margins of the lesions. Scrapings and hair samples were taken and revealed no evidences of parasitic or fungous infestation. As in the Trinity cattle there were no lesions on white pigmented areas.

~~CONFIDENTIAL~~  
~~SECURITY INFORMATION~~  
UNCLASSIFIED

To: C. L. Tyler

- 3 -

18 August 1952

The cattle seemed to be in excellent nutritional status and health in every respect other than the skin condition. Calves born since the first part of June have showed no abnormalities.

The distribution and appearance of the lesions leaves little doubt that these are superficial radiation burns from fall-out material.

Suspecting that the abnormalities were due to radiation, and having heard of sterilizing effects of radiation, Mr. Lamb was naturally concerned lest the breeding of his cattle might be affected. He was informed that the cattle at Trinity had more severe skin injuries than his cattle but that they showed no impairment in breeding capabilities over three generations.

If these cattle are to be sold for beef on the open market, and anticipating possibly unfavorable publicity in the press, it would seem advisable to acquire one or two specimens and have assays for fission product activity run on the edible portions. Expectation is high that no detectable activity due to this source will be found.

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