

DATE 11/2/49 INITIALS JDB

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HANFORD WASTES

11/4/49

Two shipments of crib waste have been received to date. The first batch contained ruthenium, antimony, tellurium, and cesium as radioactive elements. In addition to the above, the second batch contained columbium, zirconium, and some of the rare earths.

Several methods have been tried, but the following method appears to be the most promising and will remove 99 + % of the activity from either waste.

The crib wastes are adjusted to a pH of 3.5 and saturated with hydrogen sulfide. One hundred mesh iron filings are then added to the solution. After agitating, one of the two following methods are used:

- (1) Either the pH is raised to 8, or
- (2) Potassium ferrocyanide is added,

and in either case the solution is filtered.

We are now studying the method to determine the optimum conditions and the minimum amounts of reagents necessary.

After the optimum conditions have been determined, an economic evaluation of this process will be prepared on the basis of the laboratory data, and small-scale pilot-plant work will be initiated by the end of the year.

*F. C. Mead, Jr.*  
F. C. Mead, Jr.

November 4, 1949

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