

Enclosure (1) to Rockwell
letter WSF-1 dated 7-18-88,
page 1 of 3.



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GENERAL LABORATORY
881 HILLSIDE
SURFACE SOIL SAMPLE REPORT

ROCKWELL INTERNATIONAL
AEROSPACE OPERATIONS
ROCKY FLATS PLANT
P.O. BOX 464
GOLDEN, COLORADO 80402-0464

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ADMIN RECORD

A-OU01-000900

1/3

881 Hillside Soil Analyses for Pu and Am

Nineteen surface soil samples from the 881 Hillside were delivered to the General Laboratory on 8-1-88 and 8-4-88. The soil samples are listed under the laboratory control numbers E88-3019 and E88-3036.

This letter reports the analysis of the first ten of nineteen samples submitted for analysis. However, only seven uranium results are reported due to technical problems with the electroplated planchets of three samples. These uranium results will be reported along with the remaining nine samples requiring plutonium and uranium analysis.

Plutonium and uranium were selectively separated from the dissolved soil sample using ion-exchange and solvent extraction techniques. The separated element was electroplated onto a stainless steel planchet and each isotope was counted by alpha spectroscopy.

A reagent blank and an NBS standard were analyzed with this batch of samples. Data for these analyses is available in the archives.

The activity of each isotope is reported based on the dry weight of the soil sample and its uncertainty is reported at the two sigma level. The theoretical minimum detectable activity (MDA) was calculated for each measurement. If the observed result was less than the MDA, the MDA is also reported. The uncertainties, denoted as +/- in the data summary, was calculated by propagating errors associated with the analyses.

881 Hillside Soil Report

E88-3019

Sample Number	881-1	881-2	881-3
Sample Date	7-28-88	7-28-88	7-28-88
Pu-239,240 (pCi/g)	4.5 +/- 0.6	2.5 +/- 0.3	5.3 +/- 0.6
U-233,234 (pCi/g)	0.60 +/- 0.26	0.83 +/- 0.26	0.91 +/- 0.26
U-235 (pCi/g)	0.00 +/- 0.08(MDA 0.07)	0.01 +/- 0.08(MDA 0.05)	0.06 +/- 0.08
U-238 (pCi/g)	0.64 +/- 0.15	0.91 +/- 0.15	1.0 +/- 0.2

Sample Number	881-4	881-5	881-6
Sample Date	7-28-88	7-22-88	7-28-88
Pu-239,240 (pCi/g)	0.20 +/- 0.04(MDA 0.46)	0.63 +/- 0.08	2.3 +/- 0.2
U-233,234 (pCi/g)	1.1 +/- 0.3	0.93 +/- 0.26	1.6 +/- 0.3
U-235 (pCi/g)	0.00 +/- 0.08(MDA 0.07)	0.00 +/- 0.08(MDA 0.07)	0.13 +/- 0.08
U-238 (pCi/g)	1.1 +/- 0.2	0.95 +/- 0.15	5.9 +/- 0.2

Sample Number	881-7	881-8	881-9
Sample Date	7-29-88	7-29-88	7-29-88
Pu-239,240 (pCi/g)	0.68 +/- 0.09	1.9 +/- 0.2	0.51 +/- 0.07
U-233,234 (pCi/g)	**	**	**
U-235 (pCi/g)	**	**	**
U-238 (pCi/g)	**	**	**

Sample Number	881-10
Sample Date	7-29-88
Pu-239,240 (pCi/g)	3.8 +/- 0.4
U-233,234 (pCi/g)	1.6 +/- 0.3
U-235 (pCi/g)	0.02 +/- 0.08(MDA 0.09)
U-238 (pCi/g)	1.1 +/- 0.2

** Data will be reported at a later date