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ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION
ENERGY/ENVIRONMENT SYSTEMS DIVISION

June 22, 1994

Mr. David Fauver
U.S. Nuclear Regulatory Commission
TWFN 7F27
Washington, DC 20555

SUBJECT: **SOIL SAMPLE ANALYSIS - KERR-MCGEE CORPORATION'S CUSHING FACILITY**

Dear Mr. Fauver:

As requested, the Environmental Survey and Site Assessment Program (ESSAP) of Oak Ridge Institute for Science and Education (ORISE) has completed the gamma spectrometry analysis of soil samples which were provided by Kerr-McGee Corporation. The results are presented in the attached Table. The sample identifications, A-2 through E-2, are Kerr-McGee sample designations.

If you have any questions or need additional information, please contact me at (615) 576-3355 or Jim Berger at (615) 576-2908.

Sincerely,

Armin J. Ansari
Project Leader
Environmental Survey and
Site Assessment Program

AJA:rde

Attachment

cc: T. Mo, NRC/NMSS/TWFN 7F27
D. Tiktinsky, NRC/NMSS/8A23
J. Berger, ORISE/ESSAP
J. Beck, ORISE/ESSAP
PMDA, NRC/TWFN 8A23
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P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

TABLE 1

RADIONUCLIDE CONCENTRATIONS IN SOIL SAMPLES
KERR-MCGEE CORPORATION
OKLAHOMA CITY, OKLAHOMA

Sample ID[a]	Radionuclide Concentrations (pCi/g)			
	U-235[b]	U-238[c]	Th-232[d]	Ra-226[e]
Cushing, A-2	12.5 ± 0.6[f]	36.6 ± 11.8	76.8 ± 3.5	1.6 ± 1.2
Cushing, B-2	6.8 ± 0.5	24.3 ± 7.5	42.4 ± 2.8	0.5 ± 0.7
Cushing, C-2	2.2 ± 0.2	3.6 ± 3.1	14.7 ± 1.4	1.0 ± 0.4
Reference Soil, D-2	10.3 ± 2.4[g]	156.8 ± 13.5	26.5 ± 3.5	113.1 ± 2.5
Cushing, E-2	1.5 ± 0.2	3.5 ± 2.5	7.8 ± 1.1	0.6 ± 0.4

[a]These sample were provided to ESSAP by Kerr-McGee corporation.
[b]0.186 MeV peak.
[c]0.063 MeV from Th-234 (assuming secular equilibrium).
[d]0.911 MeV from Ac-228 (assuming secular equilibrium).
[e]0.609 MeV from Bi-214 (assuming secular equilibrium).
[f]Uncertainties represent the 95% confidence level, based only on counting statistics.
[g]0.143 MeV peak (instead of 0.186 MeV), due to interference from Ra-226.