

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

November 29, 2004

Mr. Peter Lee
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

SUBJECT: ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED NOVEMBER 3, 2004 FROM THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES, BAY COUNTY MICHIGAN [INSPECTION REPORT 040-09015/004-001](RFTA NO. 05-001)

Dear Mr. Lee:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received six soil samples on November 9, 2004 that were collected at the Michigan Department of Natural Resources in Bay County, Michigan. A gamma scan was performed on the six soil samples using gamma spectroscopy (GS) (Procedure CP1, Revision 14) to determine the aliquot size needed for the isotopic thorium analysis. The thorium analysis was performed using alpha spectroscopy (AS) (Procedure AP11, Revision 2 and Procedure CP2, Revision 12). The isotopic thorium data are reported in Table 1.

ESSAP's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

If you have any questions, please call me at (865) 241-3242 or Wade Ivey at (865) 576-9184.

Sincerely,



Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC:WPI:ar

Enclosures

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ORISE TABLE 1

**CONCENTRATIONS OF THORIUM
ALPHA EMITTING RADIONUCLIDES
IN SOIL SAMPLES
BY ALPHA SPECTROSCOPY AP11, REVISION 2 AND
ALPHA SPECTROSCOPY CP2, REVISION 12
MICHIGAN DEPARTMENT OF NATURAL RESOURCES
BAY COUNTY, MICHIGAN**

ESSAP Sample ID	NRC Region III Sample ID	Radionuclide Concentrations ^a (pCi/g)			
		Th-228	Th-230	Th-232	Total Th ^b
1638S0001	SS-01A-002	0.50 ± 0.07 ^c	0.71 ± 0.09	0.57 ± 0.08	1.07 ± 0.11
1638S0002	SS-01A-003	0.32 ± 0.06	0.49 ± 0.07	0.42 ± 0.07	0.74 ± 0.09
1638S0003	SS-01A-004	0.37 ± 0.06	0.45 ± 0.07	0.34 ± 0.06	0.71 ± 0.08
1638S0004	SS-01A-005	0.40 ± 0.06	0.61 ± 0.08	0.38 ± 0.06	0.78 ± 0.08
1638S0005	SS-01A-006	0.43 ± 0.07	0.62 ± 0.08	0.47 ± 0.07	0.90 ± 0.10
1638S0006	SS-01A-007	0.65 ± 0.09	0.64 ± 0.09	0.58 ± 0.08	1.23 ± 0.12

^aThe average MDC by alpha spectroscopy for Th isotopes is 0.08 pCi/g.

^bTotal thorium is the sum of Th-228 and Th-232.

^cUncertainties represent the 95% confidence level, based on total propagated uncertainties.