

June 26, 2006

Ms. Beth Schlapper  
U.S. Nuclear Regulatory Commission  
Region IV: DNMS: NMLB  
Suite 400  
611 Ryan Plaza Drive  
Arlington, TX 76011

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DNMS

**SUBJECT: ANALYTICAL RESULTS FOR FIVE SOIL SAMPLES COLLECTED  
JUNE 7, 2006 FROM KAISER ALUMINUM, TULSA, OKLAHOMA  
(INSPECTION REPORT #040-02377/06-003) [RFTA NO. 06-001]**

Dear Ms. Schlapper:

The Oak Ridge Institute for Science and Education (ORISE) received five soil samples for analysis from Kaiser Aluminum, Tulsa, Oklahoma on June 9, 2006. At your request, the soil samples were analyzed as received (wet) for the thorium and uranium series by gamma spectroscopy (GS) (Procedure CP1, Revision 15). The percent moisture (Procedure SP3, Revision 4) was calculated for each of these samples. The GS and percent moisture data are presented in Table 1.

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

My contact information is listed below. You may also contact Wade Ivey at 865.576.9184 with any questions or comments.

Sincerely,



Dale Condra, Manager  
Laboratory

RDC/WPI:db

Enclosures

c: B. Watson, NMSS/DWMEP/DD/SP 7E18                      E. Abelquist, ORISE  
E. Knox-Davin, NRC/NMSS/TWFN T8A23                  S. Kirk, ORISE  
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TABLE 1

**CONCENTRATIONS OF SELECTED GAMMA EMITTING RADIONUCLIDES  
AND PERCENT MOISTURE  
IN SOIL SAMPLES  
BY SAMPLE PREPARATION SP3, REVISION 4  
AND GAMMA SPECTROSCOPY CP1, REVISION 15  
KAISER ALUMINUM  
TULSA, OKLAHOMA**

ORISE Sample ID	NRC Region IV Sample ID	Percent Moisture	Radionuclide Concentrations (pCi/g wet weight) <sup>a</sup>						Total Th <sup>c</sup>
			U-238 by Th-234	U235	Total U <sup>b</sup>	Th-230	Th-228 by Pb-212	Th-232 by Ac-228	
1711S0001	NRC 06-3-01	19	2.4 ± 1.8 <sup>d</sup>	0.38 ± 0.45	5.2 ± 2.6	44 ± 17	19.7 ± 1.8	19.5 ± 1.6	39.2 ± 2.4
1711S0002	NRC 06-3-02	16	1.4 ± 1.2	0.18 ± 0.29	3.0 ± 1.7	37 ± 15	11.26 ± 0.95	12.0 ± 1.0	23.3 ± 1.4
1711S0003	NRC 06-3-03	20	0.6 ± 1.3	0.38 ± 0.31	1.6 ± 1.9	70 ± 20	17.0 ± 1.5	17.0 ± 1.4	34.0 ± 2.1
1711S0004	NRC 06-3-04	20	1.1 ± 1.4	-0.06 ± 0.30	2.1 ± 2.0	76 ± 19	13.6 ± 1.1	14.0 ± 1.2	27.6 ± 1.6
1711S0005	NRC 06-3-05	17	1.9 ± 1.7	0.37 ± 0.33	4.2 ± 2.4	93 ± 21	17.7 ± 1.2	17.2 ± 1.5	34.9 ± 1.9

<sup>a</sup>The average MDCs for these radionuclides range from 0.12 pCi/g for Th-228 by Pb-212 to 21 pCi/g for Th-230.

<sup>b</sup>Total uranium is calculated using the equation (2 \* U-238) + U-235.

<sup>c</sup>Total thorium is the sum of Th-228 and Th-232.

<sup>d</sup>Uncertainties represent the 95% confidence level, based on total propagated uncertainties.