

March 4, 2005

Mr. Robert Evans
U.S. Nuclear Regulatory Commission
Region IV: DNMS: NMLB
Suite 400
611 Ryan Plaza Drive
Arlington, TX 76011

MAR 08 2005

**SUBJECT: ANALYTICAL RESULTS FOR ONE SOIL SAMPLE COLLECTED FEBRUARY 8, 2005
FROM KAISER ALUMINUM, TULSA, OKLAHOMA (INSPECTION REPORT
#040-02377/05-02) [RFTA NO. 05-001]**

Dear Mr. Evans:


The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received one soil sample from Kaiser Aluminum, Tulsa, Oklahoma on February 10, 2005 that was collected February 8, 2005. At your request, the soil sample was analyzed as received (wet) for the thorium and uranium series by gamma spectroscopy (GS) (Procedure CPI, Revision 14). The soil sample was then dried and re-analyzed by GS. The percent moisture (Procedure SP3, Revision 3) was calculated for this sample.

The percent moisture for this sample was 16%. The comparison of wet to dry concentrations of GS data is presented in Table 1.

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

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 with any questions or comments.

Sincerely,


Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC/WPI:dh

Enclosure

cc: T. McLaughlin, NRC/NMSS/TWFN 7F27 E. Abelquist, ORISE/ESSAP
E. Knox-Davin, NRC/NMSS/TWFN T8A23 T. Vitkus, ORISE/ESSAP
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| Distribution approval and concurrence: | Initials |
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ORISE TABLE 1

**CONCENTRATIONS OF SELECTED
GAMMA EMITTING RADIONUCLIDES
AND WET TO DRY CONCENTRATION RATIOS
IN A SOIL SAMPLE
BY GAMMA SPECTROSCOPY CPI, REVISION 14
AND SP3, REVISION 3
KAISER ALUMINUM
TULSA, OKLAHOMA**

| ESSAP Sample ID | NRC Region IV Sample ID | Radionuclide Concentrations (pCi/g wet (W) and dry (D) weight) ^a | | | | | | | | | | |
|-------------------------|----------------------------|---|----------------------------------|-------------|----------------------|-----------|----------------------------------|---------------------|----------------------------------|---------------------|----------------------------------|-----------------------|
| | | U-238 by Th-234 | Wet to Dry Ratio ^b | U-235 | Total U ^c | Th-230 | Wet to Dry Ratio ^b | Th-228 by Pb-212 | Wet to Dry Ratio ^b | Th-232 by Ac-228 | Wet to Dry Ratio ^b | Total Th ^d |
| 1651S0001W ^e | NRC05-01-01 | 0.71 ± 0.46 ^f | 0.71 ± 0.58 | 0.05 ± 0.07 | 1.42 ± 0.65 | 3.5 ± 3.3 | 5 ± 23 | 0.99 ± 0.09 | 0.80 ± 0.10 | 1.14 ± 0.16 | 0.94 ± 0.20 | 2.13 ± 0.18 |
| 1651S0001D ^e | NRC05-01-01 | 1.00 ± 0.49 | | 0.08 ± 0.09 | 2.00 ± 0.70 | 0.7 ± 3.2 | | 1.24 ± 0.10 | | 1.21 ± 0.19 | | 2.45 ± 0.21 |

^aThe average MDCs for these radionuclides range from 0.04 pCi/g for Th-228 by Pb-212 to 4.9 pCi/g for Th-230.

^bWet to Dry Ratio is the ratio of the concentration in the sample counted wet divided by the concentration in the sample counted dry.

^cTotal uranium is calculated using (2·U-238) + U-235.

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

^eW extension on sample ID is for the wet sample and D extension on sample ID is for the dry sample.

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