

ภาคผนวก 4

ใบรับรองการวิเคราะห์ (**Certificate of analysis**) และรูปของเส้นสเปกตรัมพลังงานของรังสีแกมมา
ในแหล่งกำเนิดรังสีมาตรฐาน **IAEA/RGU-1 IAEA/RGTh-1 KCl และ IAEA/SL-2**



INTERNATIONAL ATOMIC ENERGY AGENCY

REFERENCE MATERIAL FOR GAMMA-RAY SPECTROMETRIC ANALYSIS OF GEOLOGICAL MATERIALS

IAEA/RGU-1

CERTIFICATE OF ANALYSIS

COMPONENT	CONCENTRATION*	CONFIDENCE INTERVAL**
Uranium	400 µg/g	± 2 µg/g
Thorium	less than 1 µg/g	---
Potassium	less than 20 µg/g	---

*Expressed on dry weight basis (constant weight at 130°C)
**At a significance level of 0.05

DESCRIPTION OF MATERIAL

RGU-1, RGTh-1 and RGK-1 are intended for use in calibrating laboratory gamma-ray spectrometers for the determination of U, Th and K in geological materials. RGU-1 was prepared by the Canada Centre for Mineral and Energy Technology (CANMET) under a contract with the International Atomic Energy Agency. The material was prepared by dilution of Canada Certified Reference Material Project (CCRMP) uranium ore BL-5 (7.09% U) with a floated silica powder of similar grain size distribution. BL-5 has been certified for uranium, ^{226}Ra and ^{210}Pb confirming that it is in radioactive equilibrium. The complete description of the preparation and certification of RGU-1 may be found in the reference.

REFERENCE

Preparation of Gamma-ray Spectrometry Reference Materials
RGU-1, RGTh-1 and RGK-1 Report - IAEA/RL/148, Vienna, 1987

This report may be obtained from:
INTERNATIONAL ATOMIC ENERGY AGENCY
Agency's Laboratories
Analytical Quality Control Services
P.O. Box 100
A-1400 Vienna, AUSTRIA



INTERNATIONAL ATOMIC ENERGY AGENCY

REFERENCE MATERIAL FOR GAMMA-RAY SPECTROMETRIC ANALYSIS OF GEOLOGICAL MATERIALS

IAEA/RGTh-1

CERTIFICATE OF ANALYSIS

COMPONENT	CONCENTRATION*	CONFIDENCE INTERVAL**
Thorium	800 µg/g	± 16 µg/g
Uranium	6.3 µg/g	± 0.4 µg/g
Potassium	0.02%	± 0.01%

*Expressed on dry weight basis (constant weight at 130°C)
**At a significance level of 0.05

DESCRIPTION OF MATERIAL

RGU-1, RGTh-1 and RGK-1 are intended for use in calibrating laboratory gamma-ray spectrometers for the determination of U, Th and K in geological materials. RGTh-1 was prepared by the Canada Centre for Mineral and Energy Technology (CANMET) under a contract with the International Atomic Energy Agency. The material was prepared by dilution of Canada Certified Reference Material Project (CCRMP) thorium ore OKA-2 (2.89% Th, 219 µg/g U) with a floated silica powder of similar grain size distribution. The agreement between radiometric and chemical measurements of thorium and uranium in OKA-2 shows both series to be in radioactive equilibrium. The complete description of the preparation and certification of RGTh-1 may be found in the reference.

REFERENCE

Preparation of Gamma-ray Spectrometry Reference Materials RGU-1, RGTh-1 and RGK-1 Report - IAEA/RL/148, Vienna, 1987

This report may be obtained from:
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A-1400 Vienna, AUSTRIA



International Atomic Energy Agency
Analytical Quality Control Services
 Wagramer Strasse 5, P.O.Box 100, A-1400 Vienna, Austria

REFERENCE SHEET

REFERENCE MATERIAL

IAEA-SL-2

**RADIONUCLIDES
 IN LAKE SEDIMENT**

Date of issue: September 1999[Ⓟ]

Recommended Values
 (Based on dry weight)

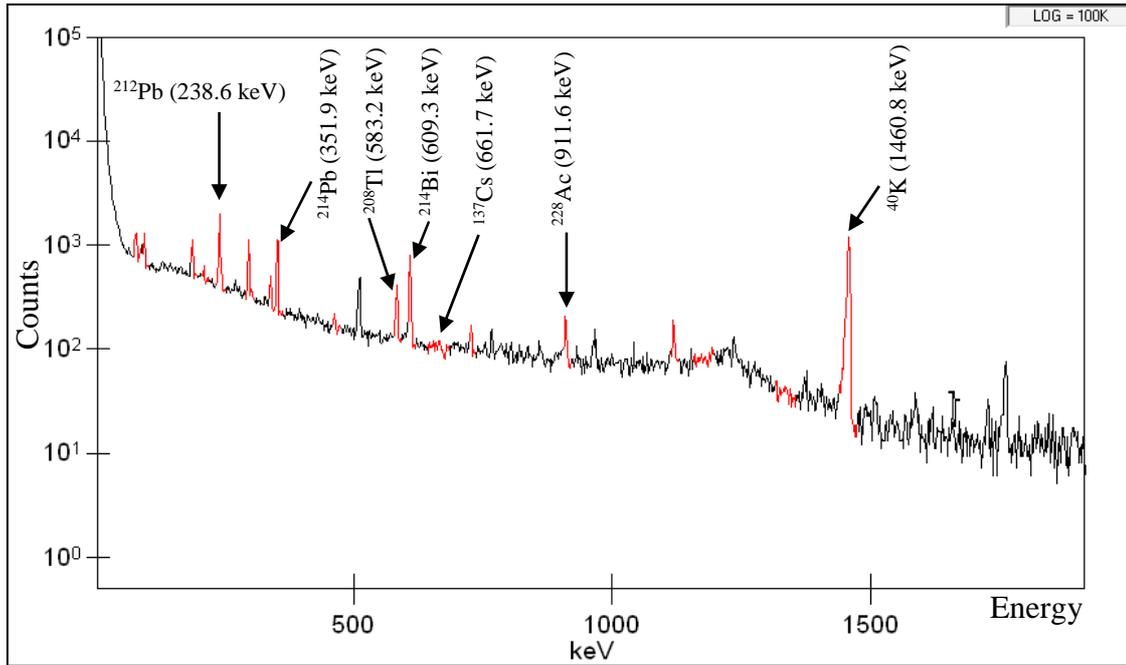
Reference Date for decay correction: 31st January 1986

Element	Recommended Value Bq/kg	95% Confidence Interval Bq/kg	N*
⁴⁰ K	240	216 – 264	16
¹³⁷ Cs	2.4	2.1 – 2.7	13

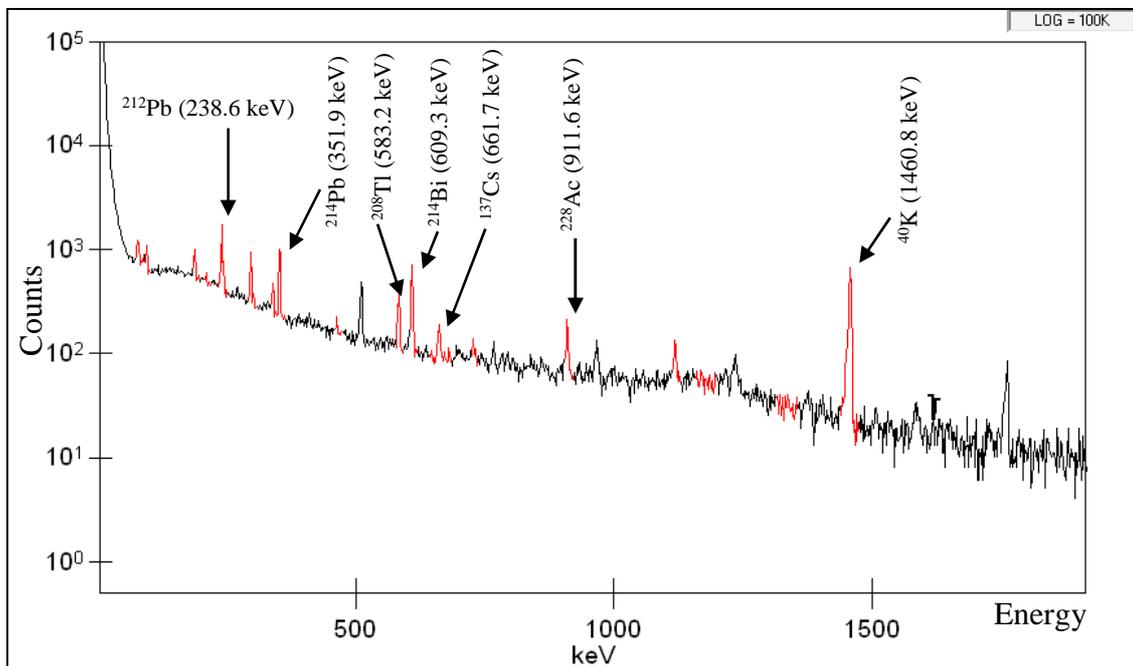
* Number of accepted laboratory means which were used to calculate the recommended values and confidence intervals.

Ⓟ Revision of the original reference sheet dated May 1987

The values listed above were established on the basis of statistically valid results submitted by laboratories which had participated in an international intercomparison exercise organized during 1986-1987. The details concerning the criteria for qualification as a recommended value can be found in the report (IAEA/RL/142) "Report on the Intercomparison Run IAEA-SL-2: Radionuclides in Lake Sediment" [1]. This report is available free of charge upon request.



ภาพที่ ผ 4-1 เส้นสเปกตรัมพลังงานของรังสีแกมมาในแหล่งกำเนิดรังสีมาตรฐาน IAEA/RGU-1 IAEA/RGTh-1 และ KCl



ภาพที่ ผ 4-2 เส้นสเปกตรัมพลังงานของรังสีแกมมาในแหล่งกำเนิดรังสีมาตรฐาน IAEA/SL-2