RADIOACTIVITY ANALYSIS REPORT EA16-075 (Interim Report)

REQUESTED BY:	ARPANSA Reg branch
	Attention: Loch Castle
ORDER No.:	Request received 30/05/16

SAMPLE DETAILS:

Type:	Soil
Number of Samples:	6
Date Received:	30/05/2016
Sample Pre-treatment:	Samples for radium analysis set in resin.
Sampling:.	Samples tested as received
Date Analysis Started:	02/06/16
ANALYSES REQUESTED:	Uranium-238, Radium-226, Lead-210, Radium-228, Thorium-228, Uranium-235, Potassium-40 and Caesium-137
ANALYTICAL METHOD:	Sample measured by high resolution gamma-ray spectrometry based on ANSI N42.14-1999.

Report Prepared By: Sandra Sdraulig, Technical Manager

Signed: s 47F - privacy [redacted] Date: 13 July 2016

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Per: Carl-Magnus Larsson CEO of ARPANSA

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RADIOACTIVITY ANALYSIS REPORT EA16-075 (continued) (Interim Report)

RESULTS:

ARPANSA Sample Number	Client Sample Identifier	Sample Reference Date	Radioactivity Concentration (Bq/kg)							
			Potassium -40	Caesium-137	Uranium-238	Radium-226*	Lead-210	Radium-228*	Thorium-228*	Uranium-235
EA16-075-0096	ARP-WOO-01	30/05/2016	309 ± 45	1.17 ± 0.32		20.8 ± 2.4	38 ± 15	27.4 ± 3.5	28.6 ± 3.1	
EA16-075-0097	ARP-WOO-02	30/05/2016	224 ± 35	0.46 ± 0.22		14.5 ± 2.1	32.6 ± 8.2	21.6 ± 3.4	21.6 ± 3.0	
EA16-075-0098	ARP-WOO-03 (comp of 2)	30/05/2016	405 ± 54	<1.2		22.3 ± 2.7	19.8 ± 4.8	31.1 ± 4.6	32.7 ± 4.3	
EA16-075-0099	ARP-WOO-04 (comp of 2)	30/05/2016	295 ± 42	<1.1		19.1 ± 2.6	20.8 ± 4.9	32.1 ± 4.2	34.5 ± 4.4	
EA16-075-0100	ARP-WOO-05 (comp of 2)	30/05/2016	299 ± 43	0.82 ± 0.28		19.4 ± 2.5	128 ± 35	24.9 ± 3.4	26.2 ± 3.4	
EA16-075-0101	ARP-WOO-06 (comp of 2)	30/05/2016	348 ± 49	<0.79		24.9 ± 3.1	71 ± 21	35.4 ± 4.9	38.4 ± 4.7	

* Radionuclide concentration estimated from short-lived gamma-emitting progeny.
The reported uncertainty is an expanded uncertainty (sample mass and counting uncertainties only) calculated using a coverage factor of 2.
These results are reported on a dry weight basis.
Minimum detectable activity concentration (<x): the true activity concentration is estimated to be less than x with 95% confidence, as defined by Currie (Currie,L.A., 1968 Anal. Chem. 40, 586-593)
The radionuclides (from the uranium and thorium series) specified in our reports are the relatively long-lived members of the decay series that can be quantified. If a measure of total radioactivity is required, all radionuclides in the decay series should be considered.