

ATTACHMENT 5

ANALYSIS OF THORIUM AND URANIUM

## FORM I

## SAMPLE RESULTS

Date: 18-Aug-04

Lab Name: STL Richland  
 Lot-Sample No.: J4G230471-3  
 Client Sample ID: FW07224-1

SDG: 26542  
 Report No.: 26444  
 COC No.:

Collection Date: 7/20/2004  
 Received Date: 7/29/2004 2:30:00 PM  
 Matrix: SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4218136 RAD-UI ISO BY ALPHA												
URANIUM 233/234				Work Order: GMA851AJ		Report DB ID: 9GMA8510						
	5.32E+01		6.58E+00	1.16E+01	1.58E+00	pCi/g	57%	(33.7)	8/13/04 10:00 a		0.0539	ALP1
							5.16E-01	1.00E+00	(9.2)		g	
URANIUM 235/236				1.66E+00		9.70E-01	pCi/g	57%	(3.1)	8/13/04 10:00 a	0.0539	ALP1
	3.00E+00		1.57E+00				2.11E-01	1.00E+00	(3.6)		g	
URANIUM 238				1.80E+01		1.39E+00	pCi/g	57%	(63.6)	8/13/04 10:00 a	0.0539	ALP1
	8.85E+01		8.48E+00				4.21E-01	1.00E+00	(9.8)		g	
Ratio U-234/238 = 0.6												
Batch: 4218137 RICHRC5011												
THORIUM 228				Work Order: GMA851AH		Report DB ID: 9GMA8510						
	2.08E+02		1.15E+01	3.26E+01	9.03E-01	pCi/g	102%	(230.3)	8/13/04 01:59 p		0.0515	ALP175
							2.35E-01	1.00E+00	(12.7)		g	
THORIUM 230				1.11E+01		7.42E-01	pCi/g	102%	(84.3)	8/13/04 01:59 p	0.0515	ALP175
	6.26E+01		6.23E+00				1.61E-01	1.00E+00	(11.3)		g	
THORIUM 232				3.67E+01		4.20E-01	pCi/g	102%	(562.)	8/13/04 01:59 p	0.0515	ALP175
	2.36E+02		1.21E+01				1.00E+00	(12.9)			g	
Batch: 4218138 E901.1												
ACTINIUM 228				Work Order: GMA851AG		Report DB ID: 9GMA8510						
	2.03E+02		2.81E+01	2.81E+01	1.70E+00	pCi/g		(119.4)	8/9/04 04:39 p		50.3	GER1\$1
							8.51E-01	(14.4)			g	
BISMUTH 212				2.75E+01		9.85E+00	pCi/g	(19.5)	8/9/04 04:39 p		50.3	GER1\$1
	1.92E+02		2.75E+01				4.93E+00	(14.)			g	
CESIUM 137				4.70E-01		7.80E-01	pCi/g	-0.21	8/9/04 04:39 p		50.3	GER1\$1
	-1.62E-01	U	4.70E-01				2.00E-01	-0.69			g	

STL Richland MDC|MDA, Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
 rptSTL RchSample J Qual - No U< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.  
 V4.09.2 A97 U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

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POTASSIUM 40	1.52E+01		6.06E+00	6.06E+00	4.80E+00	pCi/g	(3.2)	(5.)	8/9/04 04:39 p		50.3	GER1\$1
MANGANESE 54	2.67E+00		6.32E-01	6.32E-01	6.81E-01	pCi/g	(3.9)	(8.5)	8/9/04 04:39 p		50.3	GER1\$1
LEAD 212	1.72E+02		2.57E+01	2.57E+01	9.48E-01	pCi/g	(181.6)	(13.4)	8/9/04 04:39 p		50.3	GER1\$1
RADIUM 223	4.66E+01		7.29E+00	7.29E+00	2.90E+00	pCi/g	(16.)	(12.8)	8/9/04 04:39 p		50.3	GER1\$1
RADIUM 224	1.76E+02		2.63E+01	2.63E+01	9.68E-01	pCi/g	(181.6)	(13.4)	8/9/04 04:39 p		50.3	GER1\$1
RADIUM 226	2.27E-01	U	7.78E-01	7.78E-01	1.31E+00	pCi/g	0.17	0.58	8/9/04 04:39 p		50.3	GER1\$1
RADIUM 228	2.04E+02		2.83E+01	2.83E+01	1.71E+00	pCi/g	(119.4)	(14.4)	8/9/04 04:39 p		50.3	GER1\$1
THORIUM 228	1.54E+02		1.90E+01	1.90E+01	2.03E+00	pCi/g	(75.7)	(16.1)	8/9/04 04:39 p		50.3	GER1\$1
THORIUM 232	1.93E+02		2.47E+01	2.47E+01	3.79E+00	pCi/g	(50.9)	(15.6)	8/9/04 04:39 p		50.3	GER1\$1
THALLIUM 208	5.41E+01		6.70E+00	6.70E+00	7.14E-01	pCi/g	(75.7)	(16.1)	8/9/04 04:39 p		50.3	GER1\$1
URANIUM 238	8.36E+01		2.15E+01	2.15E+01	2.12E+01	pCi/g	(3.9)	(7.8)	8/9/04 04:39 p		50.3	GER1\$1

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