

Instrument Summary:

Instrument ID: iCAP Q
Serial Number: Undefined

Labbook Summary:

Path and filename: _Application Data\Workspace\LabBooks\wlw\20210930-2.imexp
Labbook created by: Administrator
Based on template:
Hardware configuration: iCAPQ1
Labbook type: eQuant
Qtegra version (last saved): 2.7.2425.154
Labbook started: 9/30/2021 2:27:20 PM
Labbook finished: 9/30/2021 3:03:58 PM

Method Summary:

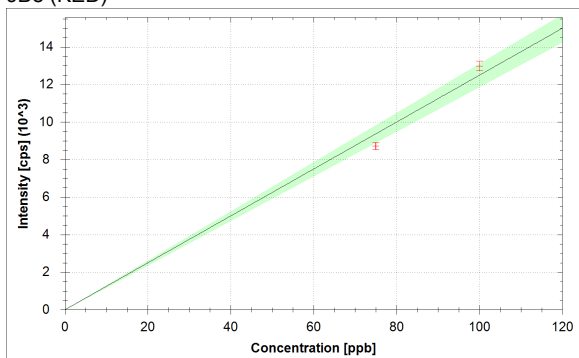
Isotope	Mode	Dwell time (s)	# of Channels	Spacing	Resolution	IS
6Li (KED)	KED	0.03	3	0.1	Normal	
9Be (KED)	KED	0.03	3	0.1	Normal	6Li (KED)
11B (KED)	KED	0.03	3	0.1	Normal	6Li (KED)
24Mg (KED)	KED	0.03	3	0.1	Normal	6Li (KED)
27Al (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
45Sc (KED)	KED	0.03	3	0.1	Normal	
51V (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
52Cr (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
55Mn (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
56Fe (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
58Ni (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
59Co (KED)	KED	0.03	3	0.1	Normal	45Sc (KED)
63Cu (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
64Zn (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
69Ga (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
75As (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
80Se (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
85Rb (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
88Sr (KED)	KED	0.03	3	0.1	Normal	89Y (KED)
89Y (KED)	KED	0.03	3	0.1	Normal	
107Ag (KED)	KED	0.03	3	0.1	Normal	115In (KED)
114Cd (KED)	KED	0.03	3	0.1	Normal	115In (KED)
115In (KED)	KED	0.03	3	0.1	Normal	
133Cs (KED)	KED	0.03	3	0.1	Normal	115In (KED)
138Ba (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
139La (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
140Ce (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
141Pr (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
142Nd (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
152Sm (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
153Eu (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
158Gd (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
159Tb (KED)	KED	0.03	3	0.1	Normal	
164Dy (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
166Er (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
169Tm (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
174Yb (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
175Lu (KED)	KED	0.03	3	0.1	Normal	159Tb (KED)
205Tl (KED)	KED	0.03	3	0.1	Normal	209Bi (KED)
208Pb (KED)	KED	0.03	3	0.1	Normal	209Bi (KED)
209Bi (KED)	KED	0.03	3	0.1	Normal	
232Th (KED)	KED	0.03	3	0.1	Normal	209Bi (KED)
238U (KED)	KED	0.03	3	0.1	Normal	209Bi (KED)

Isotope	Mode	Dwell time (s)	# of Channels	Spacing	Resolution
6Li (KED)	KED	0.03	3	0.1	Normal
45Sc (KED)	KED	0.03	3	0.1	Normal
89Y (KED)	KED	0.03	3	0.1	Normal
115In (KED)	KED	0.03	3	0.1	Normal
159Tb (KED)	KED	0.03	3	0.1	Normal
209Bi (KED)	KED	0.03	3	0.1	Normal

No. of sweeps	Time per sweep[s]	Time per main run[s]
10	3.87	38.7

Calibration Curves:

9Be (KED)



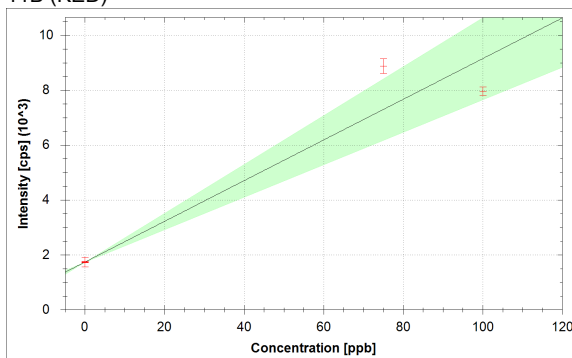
$$f(x) = 124.9240 \cdot x$$

$$R^2 = 0.9948$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0000 \text{ ppb}$$

11B (KED)



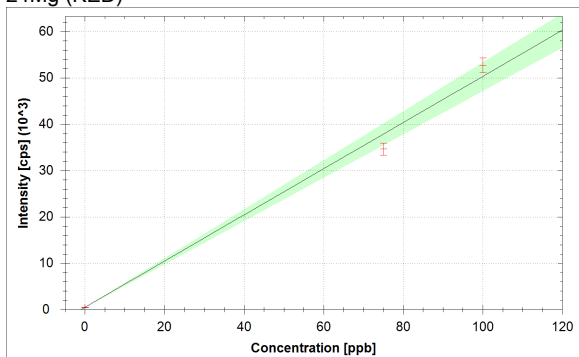
$$f(x) = 74.1391 \cdot x + 1735.4905$$

$$R^2 = 0.9134$$

$$\text{BEC} = 23.409 \text{ ppb}$$

$$\text{LoD} = 7.1649 \text{ ppb}$$

24Mg (KED)



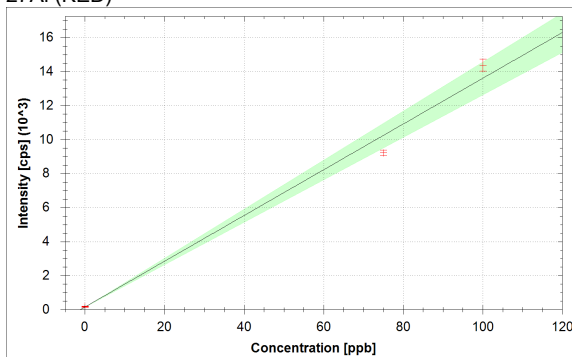
$$f(x) = 498.2452 \cdot x + 489.0984$$

$$R^2 = 0.9920$$

$$\text{BEC} = 0.982 \text{ ppb}$$

$$\text{LoD} = 0.3958 \text{ ppb}$$

27Al (KED)



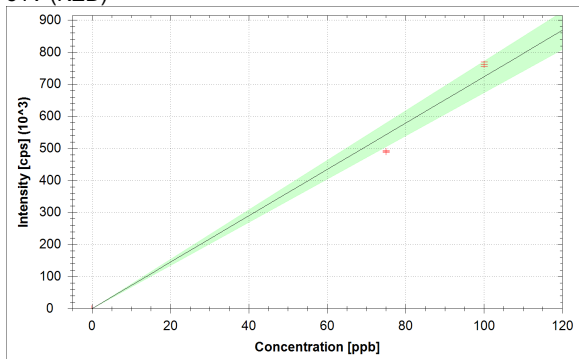
$$f(x) = 134.5426 \cdot x + 147.0973$$

$$R^2 = 0.9890$$

$$\text{BEC} = 1.093 \text{ ppb}$$

$$\text{LoD} = 0.3311 \text{ ppb}$$

51V (KED)



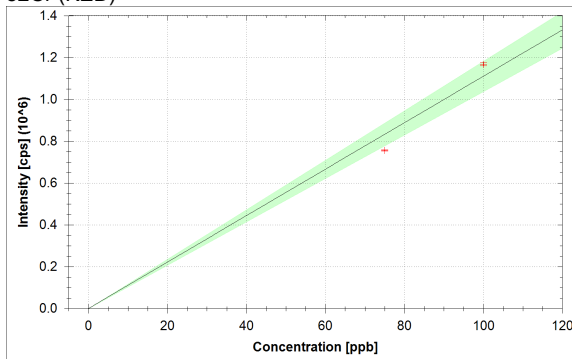
$$f(x) = 7231.9346 \cdot x + 21.3879$$

$$R^2 = 0.9901$$

$$\text{BEC} = 0.003 \text{ ppb}$$

$$\text{LoD} = 0.0018 \text{ ppb}$$

52Cr (KED)



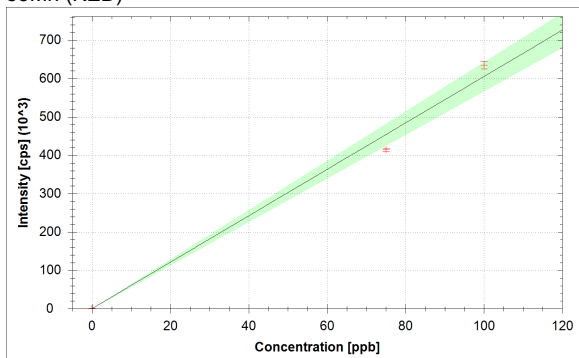
$$f(x) = 11101.3545 \cdot x + 183.0344$$

$$R^2 = 0.9908$$

$$\text{BEC} = 0.016 \text{ ppb}$$

$$\text{LoD} = 0.0078 \text{ ppb}$$

55Mn (KED)



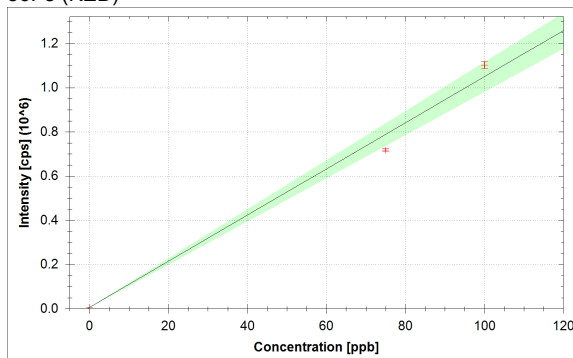
$$f(x) = 6050.0010 \cdot x + 342.7395$$

$$R^2 = 0.9917$$

$$\text{BEC} = 0.057 \text{ ppb}$$

$$\text{LoD} = 0.0226 \text{ ppb}$$

56Fe (KED)



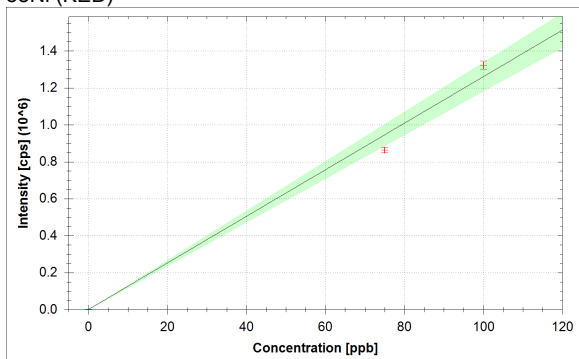
$$f(x) = 10430.4999 \cdot x + 6276.6521$$

$$R^2 = 0.9913$$

$$\text{BEC} = 0.602 \text{ ppb}$$

$$\text{LoD} = 0.0350 \text{ ppb}$$

58Ni (KED)



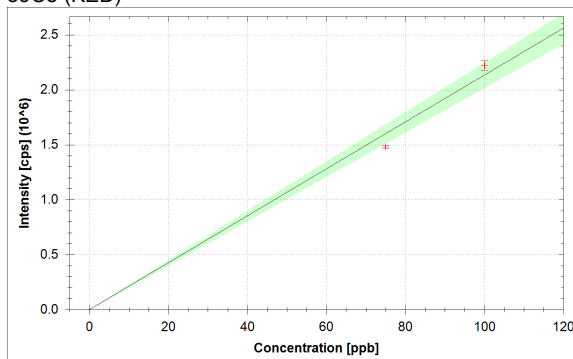
$$f(x) = 12600.0141 \cdot x + 443.7097$$

$$R^2 = 0.9918$$

$$\text{BEC} = 0.035 \text{ ppb}$$

$$\text{LoD} = 0.0050 \text{ ppb}$$

59Co (KED)



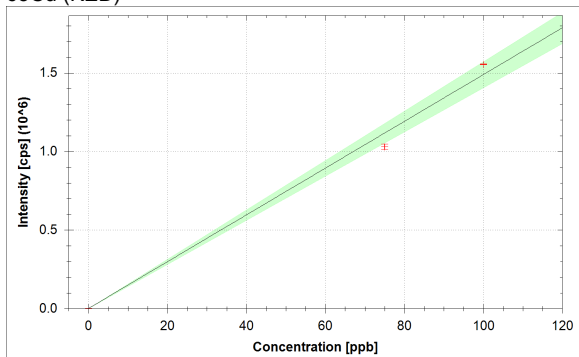
$$f(x) = 21335.6139 \cdot x + 75.2486$$

$$R^2 = 0.9940$$

$$\text{BEC} = 0.004 \text{ ppb}$$

$$\text{LoD} = 0.0006 \text{ ppb}$$

63Cu (KED)



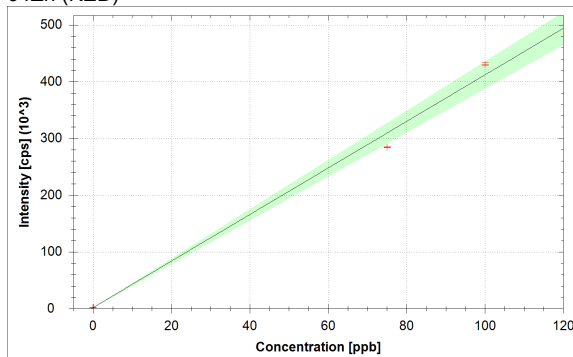
$$f(x) = 14882.1207 \cdot x + 754.1134$$

$$R^2 = 0.9933$$

$$\text{BEC} = 0.051 \text{ ppb}$$

$$\text{LoD} = 0.0155 \text{ ppb}$$

64Zn (KED)



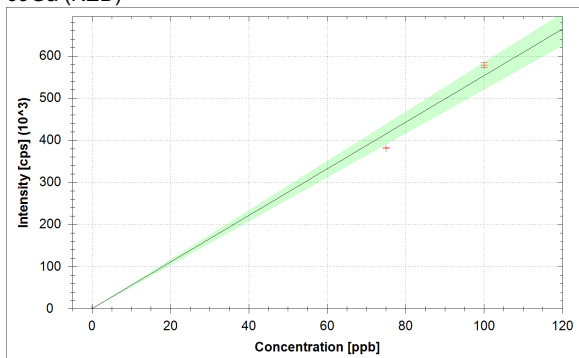
$$f(x) = 4103.2179 \cdot x + 1609.8369$$

$$R^2 = 0.9929$$

$$\text{BEC} = 0.392 \text{ ppb}$$

$$\text{LoD} = 0.0489 \text{ ppb}$$

69Ga (KED)



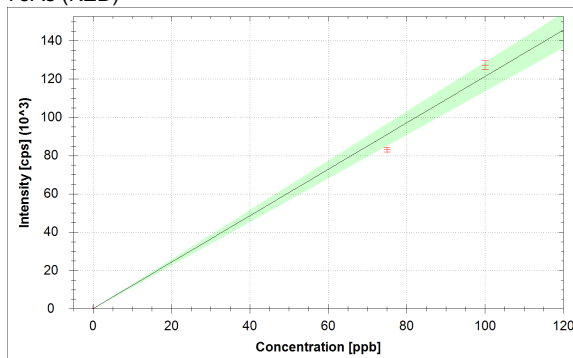
$$f(x) = 5528.9658 \cdot x + 113.2553$$

$$R^2 = 0.9929$$

$$\text{BEC} = 0.020 \text{ ppb}$$

$$\text{LoD} = 0.0057 \text{ ppb}$$

75As (KED)



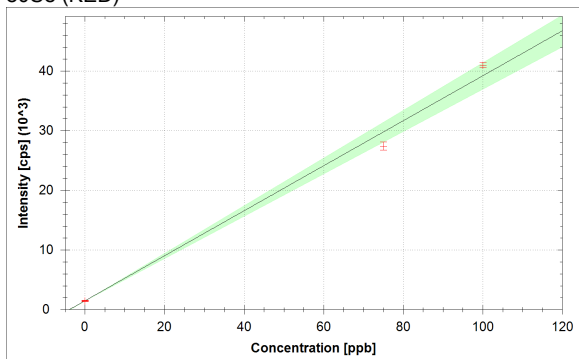
$$f(x) = 1213.0731 \cdot x + 18.0930$$

$$R^2 = 0.9918$$

$$\text{BEC} = 0.015 \text{ ppb}$$

$$\text{LoD} = 0.0238 \text{ ppb}$$

80Se (KED)



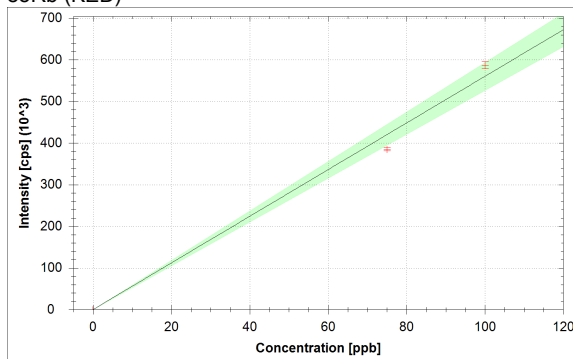
$$f(x) = 377.3792 \cdot x + 1465.6650$$

$$R^2 = 0.9926$$

$$\text{BEC} = 3.884 \text{ ppb}$$

$$\text{LoD} = 0.3195 \text{ ppb}$$

85Rb (KED)



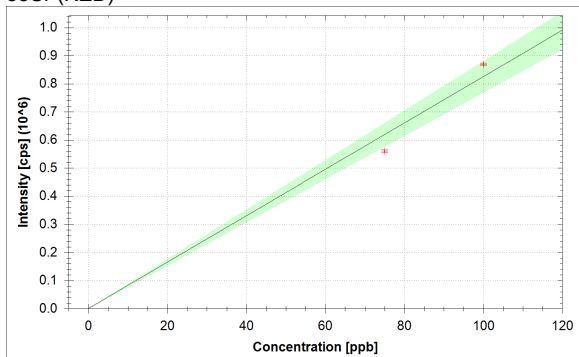
$$f(x) = 5603.4027 \cdot x + 35.0958$$

$$R^2 = 0.9923$$

$$\text{BEC} = 0.006 \text{ ppb}$$

$$\text{LoD} = 0.0106 \text{ ppb}$$

88Sr (KED)



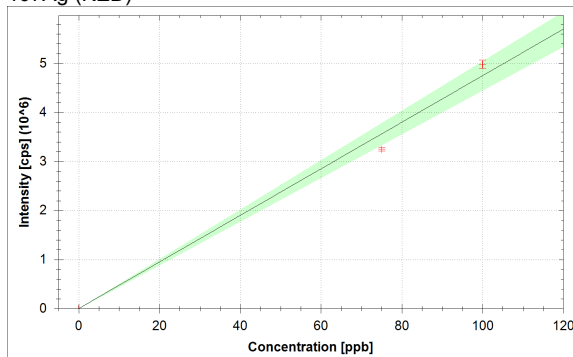
$$f(x) = 8252.0523 \cdot x + 222.9224$$

$$R^2 = 0.9904$$

$$\text{BEC} = 0.027 \text{ ppb}$$

$$\text{LoD} = 0.0115 \text{ ppb}$$

107Ag (KED)



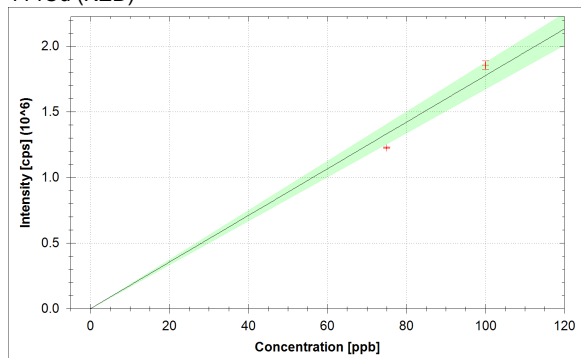
$$f(x) = 47486.9712 \cdot x + 93.7541$$

$$R^2 = 0.9918$$

$$\text{BEC} = 0.002 \text{ ppb}$$

$$\text{LoD} = 0.0010 \text{ ppb}$$

114Cd (KED)



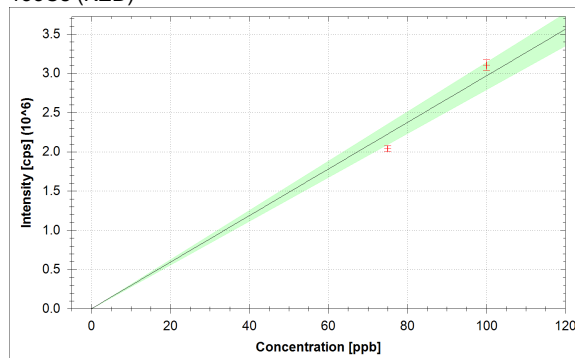
$$f(x) = 17759.4391 \cdot x + 73.6564$$

$$R^2 = 0.9930$$

$$\text{BEC} = 0.004 \text{ ppb}$$

$$\text{LoD} = 0.0027 \text{ ppb}$$

133Cs (KED)



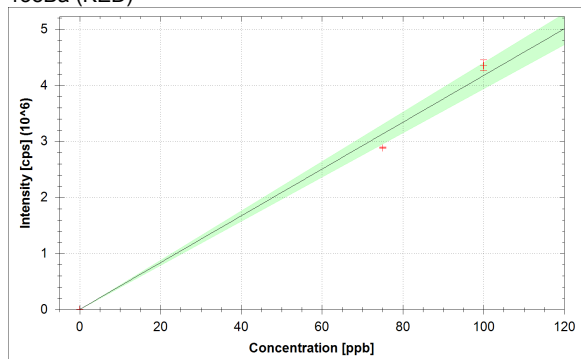
$$f(x) = 29666.1763 \cdot x + 88.1600$$

$$R^2 = 0.9926$$

$$\text{BEC} = 0.003 \text{ ppb}$$

$$\text{LoD} = 0.0003 \text{ ppb}$$

138Ba (KED)



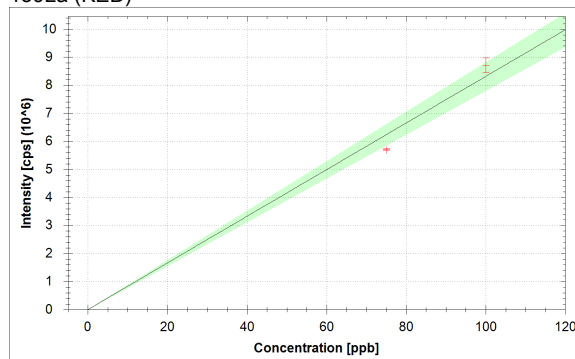
$$f(x) = 41706.2881 \cdot x + 2639.0196$$

$$R^2 = 0.9933$$

$$\text{BEC} = 0.063 \text{ ppb}$$

$$\text{LoD} = 0.0109 \text{ ppb}$$

139La (KED)



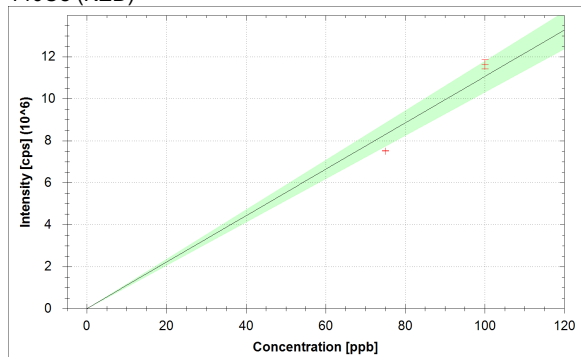
$$f(x) = 83144.1466 \cdot x + 98.1195$$

$$R^2 = 0.9922$$

$$\text{BEC} = 0.001 \text{ ppb}$$

$$\text{LoD} = 0.0004 \text{ ppb}$$

140Ce (KED)



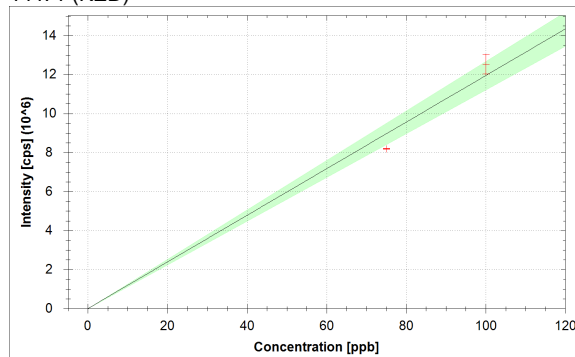
$$f(x) = 110550.5843 \cdot x + 304.5187$$

$$R^2 = 0.9905$$

$$\text{BEC} = 0.003 \text{ ppb}$$

$$\text{LoD} = 0.0010 \text{ ppb}$$

141Pr (KED)

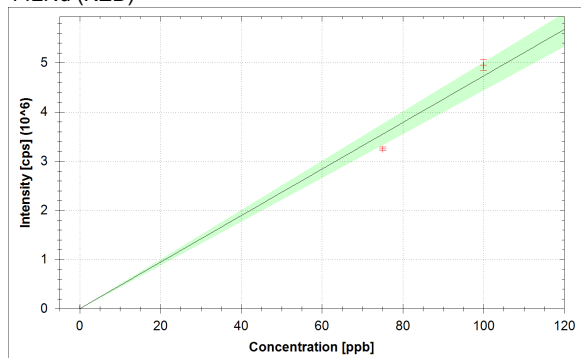


$$f(x) = 119470.4383 \cdot x + 63.1508$$

$$R^2 = 0.9920$$

$$\text{BEC} = 0.001 \text{ ppb}$$

$$\text{LoD} = 0.0004 \text{ ppb}$$

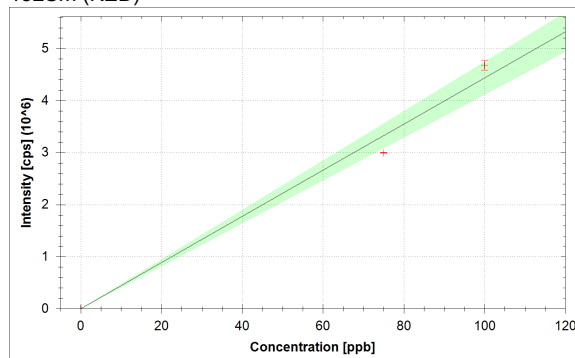
¹⁴²Nd (KED)

$$f(x) = 47309.6589 \cdot x + 75.5298$$

$$R^2 = 0.9925$$

$$\text{BEC} = 0.002 \text{ ppb}$$

$$\text{LoD} = 0.0009 \text{ ppb}$$

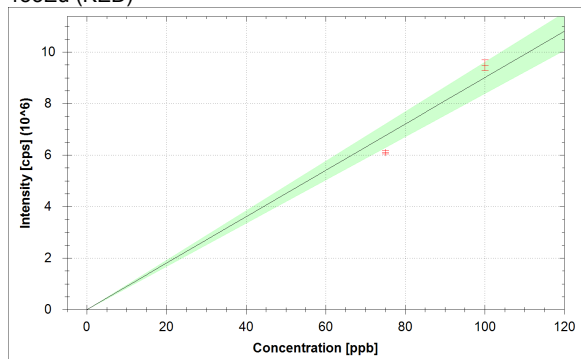
¹⁵²Sm (KED)

$$f(x) = 44336.6882 \cdot x + 12.4006$$

$$R^2 = 0.9894$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0004 \text{ ppb}$$

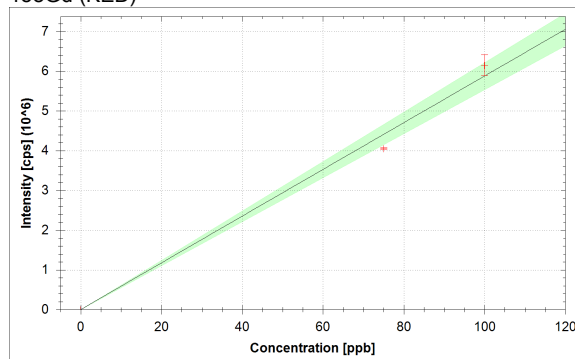
¹⁵³Eu (KED)

$$f(x) = 90036.3360 \cdot x + 28.2067$$

$$R^2 = 0.9902$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0003 \text{ ppb}$$

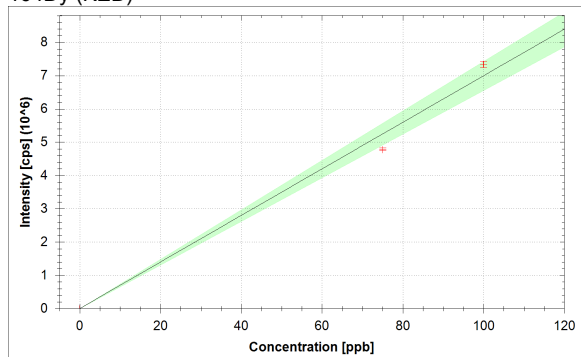
¹⁵⁸Gd (KED)

$$f(x) = 58803.4095 \cdot x + 36.0959$$

$$R^2 = 0.9928$$

$$\text{BEC} = 0.001 \text{ ppb}$$

$$\text{LoD} = 0.0007 \text{ ppb}$$

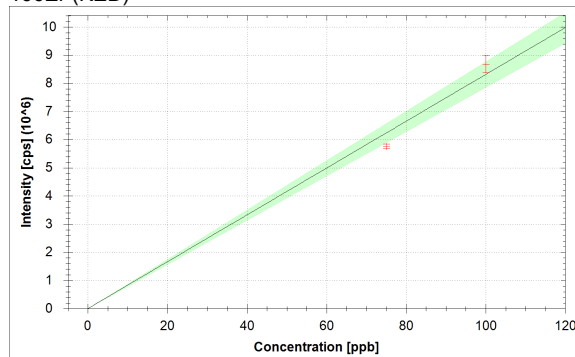
¹⁶⁴Dy (KED)

$$f(x) = 69937.9717 \cdot x + 30.4424$$

$$R^2 = 0.9916$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0002 \text{ ppb}$$

¹⁶⁶Er (KED)

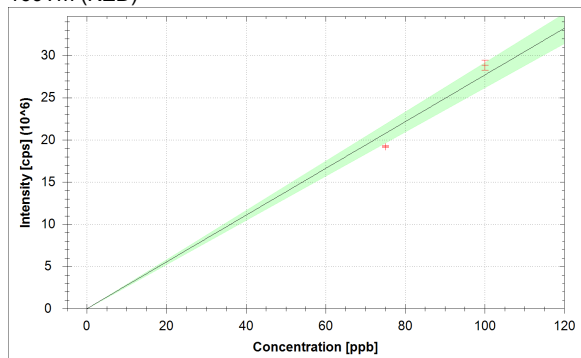
$$f(x) = 83153.2040 \cdot x + 286.4273$$

$$R^2 = 0.9936$$

$$\text{BEC} = 0.003 \text{ ppb}$$

$$\text{LoD} = 0.0009 \text{ ppb}$$

169Tm (KED)



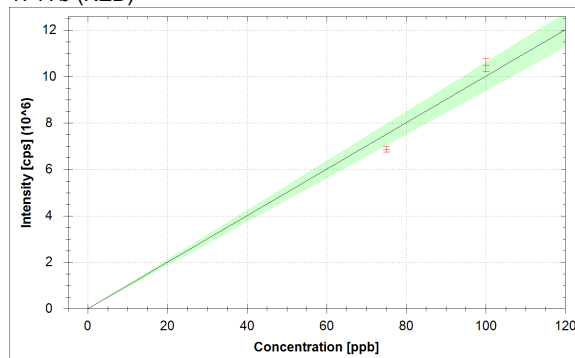
$$f(x) = 276789.7676 \cdot x + 64.2786$$

$$R^2 = 0.9938$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0002 \text{ ppb}$$

174Yb (KED)



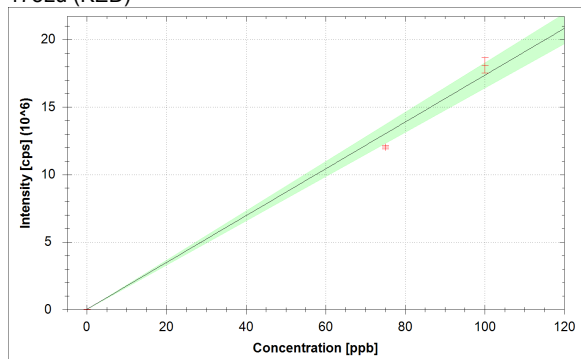
$$f(x) = 100132.9827 \cdot x + 40.6112$$

$$R^2 = 0.9921$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0002 \text{ ppb}$$

175Lu (KED)



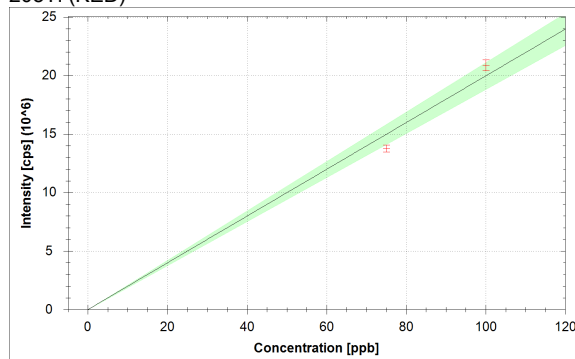
$$f(x) = 173368.7044 \cdot x + 17329.6593$$

$$R^2 = 0.9937$$

$$\text{BEC} = 0.100 \text{ ppb}$$

$$\text{LoD} = 0.0127 \text{ ppb}$$

205Tl (KED)



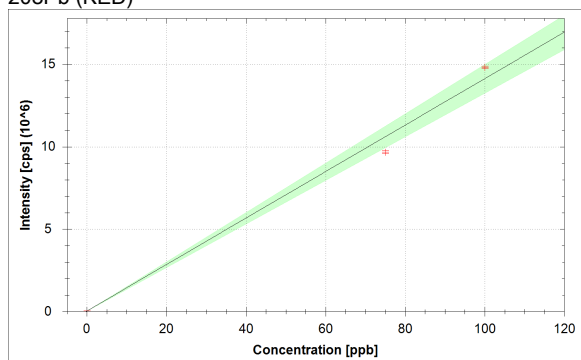
$$f(x) = 199639.4699 \cdot x + 55.5859$$

$$R^2 = 0.9929$$

$$\text{BEC} = 0.000 \text{ ppb}$$

$$\text{LoD} = 0.0003 \text{ ppb}$$

208Pb (KED)



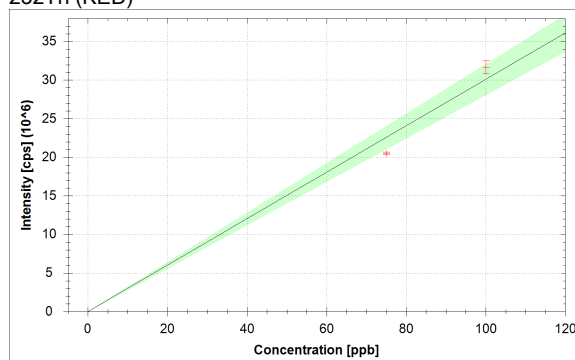
$$f(x) = 140945.7638 \cdot x + 33466.7568$$

$$R^2 = 0.9918$$

$$\text{BEC} = 0.237 \text{ ppb}$$

$$\text{LoD} = 0.0093 \text{ ppb}$$

232Th (KED)

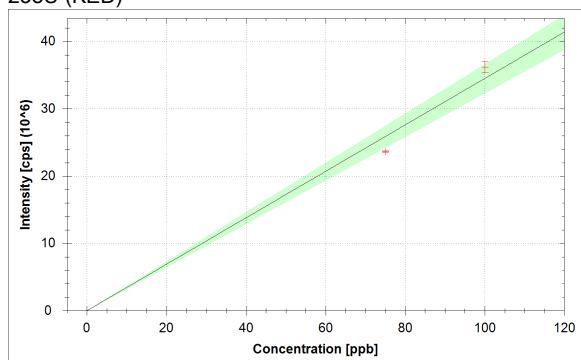


$$f(x) = 300888.1119 \cdot x + 2387.1139$$

$$R^2 = 0.9908$$

$$\text{BEC} = 0.008 \text{ ppb}$$

$$\text{LoD} = 0.0005 \text{ ppb}$$

²³⁸U (KED)

$$f(x) = 344884.7908 \cdot x + 1029.6627$$

$$R^2 = 0.9918$$

$$\text{BEC} = 0.003 \text{ ppb}$$

$$\text{LoD} = 0.0006 \text{ ppb}$$

Standards:

Analysis Index: 3
 Analysis Name: 0+20
 Analysis Type: STD
 Analysis Started at: 9/30/2021 2:34:10 PM
 Standard (Stock): std0
 Standard DF: 1

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (KED)	93.533 %		
9Be (KED)	0.000 ppb		0.000 ppb
11B (KED)	0.000 ppb	0.0 %	0.000 ppb
24Mg (KED)	0.000 ppb	0.1 %	0.000 ppb
27Al (KED)	0.000 ppb	0.1 %	0.000 ppb
45Sc (KED)	98.907 %		
51V (KED)	0.000 ppb	0.4 %	0.000 ppb
52Cr (KED)	0.000 ppb	0.1 %	0.000 ppb
55Mn (KED)	0.000 ppb	0.1 %	0.000 ppb
56Fe (KED)	0.000 ppb	0.0 %	0.000 ppb
58Ni (KED)	0.000 ppb	0.1 %	0.000 ppb
59Co (KED)	0.000 ppb	0.1 %	0.000 ppb
63Cu (KED)	0.000 ppb	0.1 %	0.000 ppb
64Zn (KED)	0.000 ppb	0.0 %	0.000 ppb
69Ga (KED)	0.000 ppb	0.2 %	0.000 ppb
75As (KED)	0.000 ppb	0.4 %	0.000 ppb
80Se (KED)	0.000 ppb	0.1 %	0.000 ppb
85Rb (KED)	0.000 ppb	0.2 %	0.000 ppb
88Sr (KED)	0.000 ppb	0.1 %	0.000 ppb
89Y (KED)	98.165 %		
107Ag (KED)	0.000 ppb	0.0 %	0.000 ppb
114Cd (KED)	0.000 ppb	0.3 %	0.000 ppb
115In (KED)	99.552 %		
133Cs (KED)	0.000 ppb	0.2 %	0.000 ppb
138Ba (KED)	0.000 ppb	0.0 %	0.000 ppb
139La (KED)	0.000 ppb	0.3 %	0.000 ppb
140Ce (KED)	0.000 ppb	0.1 %	0.000 ppb
141Pr (KED)	0.000 ppb	0.0 %	0.000 ppb
142Nd (KED)	0.000 ppb	0.3 %	0.000 ppb
152Sm (KED)	0.000 ppb	0.3 %	0.000 ppb
153Eu (KED)	0.000 ppb	0.5 %	0.000 ppb
158Gd (KED)	0.000 ppb	0.2 %	0.000 ppb
159Tb (KED)	98.527 %		
164Dy (KED)	0.000 ppb	0.2 %	0.000 ppb
166Er (KED)	0.000 ppb	0.1 %	0.000 ppb
169Tm (KED)	0.000 ppb	0.1 %	0.000 ppb
174Yb (KED)	0.000 ppb	0.3 %	0.000 ppb
175Lu (KED)	0.000 ppb	0.0 %	0.000 ppb
205Tl (KED)	0.000 ppb	0.1 %	0.000 ppb
208Pb (KED)	0.000 ppb	0.0 %	0.000 ppb
209Bi (KED)	99.958 %		
232Th (KED)	0.000 ppb	0.1 %	0.000 ppb
238U (KED)	0.000 ppb	0.1 %	0.000 ppb

Standards:

Analysis Index: 4
 Analysis Name: 50+20
 Analysis Type: STD
 Analysis Started at: 9/30/2021 2:39:15 PM
 Standard (Stock): std1
 Standard DF: 1

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (KED)	99.719 %		
9Be (KED)	69.809 ppb	2.2 %	75.000 ppb
11B (KED)	96.329 ppb	3.8 %	75.000 ppb
24Mg (KED)	68.540 ppb	3.8 %	75.000 ppb
27Al (KED)	67.397 ppb	1.7 %	75.000 ppb
45Sc (KED)	101.881 %		
51V (KED)	67.798 ppb	0.5 %	75.000 ppb
52Cr (KED)	68.070 ppb	0.4 %	75.000 ppb
55Mn (KED)	68.420 ppb	1.1 %	75.000 ppb
56Fe (KED)	68.263 ppb	0.8 %	75.000 ppb
58Ni (KED)	68.450 ppb	1.6 %	75.000 ppb
59Co (KED)	69.398 ppb	0.9 %	75.000 ppb
63Cu (KED)	69.098 ppb	1.7 %	75.000 ppb
64Zn (KED)	68.895 ppb	0.3 %	75.000 ppb
69Ga (KED)	68.921 ppb	0.2 %	75.000 ppb
75As (KED)	68.446 ppb	1.3 %	75.000 ppb
80Se (KED)	68.764 ppb	2.5 %	75.000 ppb
85Rb (KED)	68.659 ppb	1.0 %	75.000 ppb
88Sr (KED)	67.896 ppb	0.9 %	75.000 ppb
89Y (KED)	104.824 %		
107Ag (KED)	68.438 ppb	1.1 %	75.000 ppb
114Cd (KED)	68.967 ppb	0.5 %	75.000 ppb
115In (KED)	106.366 %		
133Cs (KED)	68.786 ppb	1.6 %	75.000 ppb
138Ba (KED)	69.098 ppb	0.5 %	75.000 ppb
139La (KED)	68.625 ppb	0.6 %	75.000 ppb
140Ce (KED)	67.930 ppb	0.1 %	75.000 ppb
141Pr (KED)	68.525 ppb	0.3 %	75.000 ppb
142Nd (KED)	68.721 ppb	1.1 %	75.000 ppb
152Sm (KED)	67.542 ppb	0.2 %	75.000 ppb
153Eu (KED)	67.834 ppb	1.2 %	75.000 ppb
158Gd (KED)	68.854 ppb	0.6 %	75.000 ppb
159Tb (KED)	107.063 %		
164Dy (KED)	68.383 ppb	0.8 %	75.000 ppb
166Er (KED)	69.204 ppb	1.4 %	75.000 ppb
169Tm (KED)	69.305 ppb	0.7 %	75.000 ppb
174Yb (KED)	68.587 ppb	1.8 %	75.000 ppb
175Lu (KED)	69.287 ppb	1.0 %	75.000 ppb
205Tl (KED)	68.917 ppb	2.2 %	75.000 ppb
208Pb (KED)	68.454 ppb	0.9 %	75.000 ppb
209Bi (KED)	105.588 %		
232Th (KED)	68.045 ppb	0.8 %	75.000 ppb
238U (KED)	68.444 ppb	0.5 %	75.000 ppb

Standards:

Analysis Index: 5
 Analysis Name: 100+20
 Analysis Type: STD
 Analysis Started at: 9/30/2021 2:44:27 PM
 Standard (Stock): std2
 Standard DF: 1

Category	Concentration average	Concentration RSD	Standard Concentration
6Li (KED)	97.992 %		
9Be (KED)	103.893 ppb	2.0 %	100.000 ppb
11B (KED)	84.003 ppb	2.4 %	100.000 ppb
24Mg (KED)	104.845 ppb	2.9 %	100.000 ppb
27Al (KED)	105.702 ppb	2.5 %	100.000 ppb
45Sc (KED)	99.274 %		
51V (KED)	105.402 ppb	0.9 %	100.000 ppb
52Cr (KED)	105.198 ppb	0.7 %	100.000 ppb
55Mn (KED)	104.935 ppb	1.6 %	100.000 ppb
56Fe (KED)	105.053 ppb	1.5 %	100.000 ppb
58Ni (KED)	104.913 ppb	1.7 %	100.000 ppb
59Co (KED)	104.202 ppb	2.0 %	100.000 ppb
63Cu (KED)	104.426 ppb	0.1 %	100.000 ppb
64Zn (KED)	104.579 ppb	0.6 %	100.000 ppb
69Ga (KED)	104.559 ppb	1.0 %	100.000 ppb
75As (KED)	104.916 ppb	1.8 %	100.000 ppb
80Se (KED)	104.677 ppb	1.1 %	100.000 ppb
85Rb (KED)	104.756 ppb	1.4 %	100.000 ppb
88Sr (KED)	105.328 ppb	0.5 %	100.000 ppb
89Y (KED)	103.061 %		
107Ag (KED)	104.921 ppb	1.8 %	100.000 ppb
114Cd (KED)	104.525 ppb	1.7 %	100.000 ppb
115In (KED)	104.845 %		
133Cs (KED)	104.661 ppb	2.2 %	100.000 ppb
138Ba (KED)	104.427 ppb	2.3 %	100.000 ppb
139La (KED)	104.781 ppb	3.0 %	100.000 ppb
140Ce (KED)	105.302 ppb	1.9 %	100.000 ppb
141Pr (KED)	104.856 ppb	4.0 %	100.000 ppb
142Nd (KED)	104.710 ppb	2.3 %	100.000 ppb
152Sm (KED)	105.594 ppb	2.1 %	100.000 ppb
153Eu (KED)	105.375 ppb	2.3 %	100.000 ppb
158Gd (KED)	104.609 ppb	4.2 %	100.000 ppb
159Tb (KED)	105.647 %		
164Dy (KED)	104.963 ppb	1.3 %	100.000 ppb
166Er (KED)	104.347 ppb	3.4 %	100.000 ppb
169Tm (KED)	104.271 ppb	2.1 %	100.000 ppb
174Yb (KED)	104.810 ppb	2.7 %	100.000 ppb
175Lu (KED)	104.285 ppb	3.2 %	100.000 ppb
205Tl (KED)	104.562 ppb	2.3 %	100.000 ppb
208Pb (KED)	104.910 ppb	0.5 %	100.000 ppb
209Bi (KED)	103.975 %		
232Th (KED)	105.217 ppb	2.6 %	100.000 ppb
238U (KED)	104.917 ppb	2.3 %	100.000 ppb

Sample List Summary:

Instrument ID: iCAP Q

Index:	Label:	Main Runs:	Survey Runs:	Start Time:	User name:
1	water	3	0	9/30/2021 2:27:24 PM	WINDOWS-UPCI4ER\Administrator
2	blk	3	0	9/30/2021 2:30:27 PM	WINDOWS-UPCI4ER\Administrator
3	0+20	3	0	9/30/2021 2:34:10 PM	WINDOWS-UPCI4ER\Administrator
4	50+20	3	0	9/30/2021 2:39:15 PM	WINDOWS-UPCI4ER\Administrator
5	100+20	3	0	9/30/2021 2:44:27 PM	WINDOWS-UPCI4ER\Administrator
6	179184jian	3	0	9/30/2021 2:49:27 PM	WINDOWS-UPCI4ER\Administrator
7	033915(179178)jian	3	0	9/30/2021 2:54:21 PM	WINDOWS-UPCI4ER\Administrator
8	046214(179142)jian	3	0	9/30/2021 2:59:11 PM	WINDOWS-UPCI4ER\Administrator

Sample Summary

Instrument ID: iCAP Q

Analysis index: 1

Analysis name: water

Analysis started at: 9/30/2021 2:27:24 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	0.040 %	173.2 %
24Mg (KED)	Infinity ppb	
45Sc (KED)	0.005 %	173.2 %
51V (KED)	Infinity ppb	
55Mn (KED)	Infinity ppb	
56Fe (KED)	Infinity ppb	
58Ni (KED)	Infinity ppb	
63Cu (KED)	Infinity ppb	
64Zn (KED)	Infinity ppb	
75As (KED)	Infinity ppb	
80Se (KED)	Infinity ppb	
89Y (KED)	0.000 %	173.2 %
115In (KED)	0.000 %	173.2 %
138Ba (KED)	545.640 ppb	94.3 %
139La (KED)	-0.001 ppb	0.0 %
140Ce (KED)	-0.003 ppb	0.0 %
141Pr (KED)	-0.001 ppb	0.0 %
142Nd (KED)	-0.002 ppb	0.0 %
152Sm (KED)	32.372 ppb	173.2 %
153Eu (KED)	0.000 ppb	0.0 %
158Gd (KED)	-0.001 ppb	0.0 %
159Tb (KED)	0.000 %	96.4 %
164Dy (KED)	0.000 ppb	0.0 %
166Er (KED)	-0.003 ppb	0.0 %
169Tm (KED)	0.000 ppb	0.0 %
174Yb (KED)	0.000 ppb	0.0 %
175Lu (KED)	-0.100 ppb	0.0 %
205Tl (KED)	10.493 ppb	73.2 %
208Pb (KED)	72.022 ppb	39.1 %
209Bi (KED)	0.001 %	27.3 %
232Th (KED)	-0.008 ppb	0.0 %
238U (KED)	0.336 ppb	174.7 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	0.040 %	1 cps	173.2 %
9Be (KED)		0 cps	
11B (KED)		7 cps	86.6 %
24Mg (KED)	Infinity ppb	9 cps	57.3 %
27Al (KED)		2 cps	86.6 %
45Sc (KED)	0.005 %	2 cps	173.2 %
51V (KED)	Infinity ppb	4 cps	43.3 %
52Cr (KED)		6 cps	91.7 %
55Mn (KED)	Infinity ppb	6 cps	69.3 %
56Fe (KED)	Infinity ppb	232 cps	7.4 %
58Ni (KED)	Infinity ppb	192 cps	9.6 %
59Co (KED)		0 cps	
63Cu (KED)	Infinity ppb	26 cps	19.9 %
64Zn (KED)	Infinity ppb	220 cps	5.5 %
69Ga (KED)		2 cps	173.2 %
75As (KED)	Infinity ppb	7 cps	50.0 %

Category	Concentration average	Intensity average	Intensity RSD
80Se (KED)	Infinity ppb	1,506 cps	4.5 %
85Rb (KED)		2 cps	86.6 %
88Sr (KED)		0 cps	
89Y (KED)	0.000 %	1 cps	173.2 %
107Ag (KED)		4 cps	86.6 %
114Cd (KED)		2 cps	173.2 %
115In (KED)	0.000 %	3 cps	173.2 %
133Cs (KED)		1 cps	173.2 %
138Ba (KED)	545.640 ppb	33 cps	36.1 %
139La (KED)	-0.001 ppb	0 cps	
140Ce (KED)	-0.003 ppb	0 cps	
141Pr (KED)	-0.001 ppb	0 cps	
142Nd (KED)	-0.002 ppb	0 cps	
152Sm (KED)	32.372 ppb	2 cps	173.2 %
153Eu (KED)	0.000 ppb	0 cps	
158Gd (KED)	-0.001 ppb	0 cps	
159Tb (KED)	0.000 %	11 cps	96.4 %
164Dy (KED)	0.000 ppb	0 cps	
166Er (KED)	-0.003 ppb	0 cps	
169Tm (KED)	0.000 ppb	0 cps	
174Yb (KED)	0.000 ppb	0 cps	
175Lu (KED)	-0.100 ppb	0 cps	
205Tl (KED)	10.493 ppb	18 cps	47.2 %
208Pb (KED)	72.022 ppb	90 cps	16.1 %
209Bi (KED)	0.001 %	37 cps	27.3 %
232Th (KED)	-0.008 ppb	0 cps	
238U (KED)	0.336 ppb	1 cps	173.2 %

Sample Summary

Instrument ID: iCAP Q

Analysis index: 2

Analysis name: blk

Analysis started at: 9/30/2021 2:30:27 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	100.000 %	
9Be (KED)	0.000 ppb	
11B (KED)	-0.025 ppb	9,500.2 %
24Mg (KED)	-0.084 ppb	157.0 %
27Al (KED)	0.195 ppb	56.7 %
45Sc (KED)	100.000 %	
51V (KED)	0.000 ppb	119.6 %
52Cr (KED)	0.002 ppb	120.3 %
55Mn (KED)	0.009 ppb	82.4 %
56Fe (KED)	0.037 ppb	31.7 %
58Ni (KED)	0.001 ppb	159.2 %
59Co (KED)	0.000 ppb	210.1 %
63Cu (KED)	0.003 ppb	151.8 %
64Zn (KED)	-0.013 ppb	127.9 %
69Ga (KED)	-0.005 ppb	38.2 %
75As (KED)	-0.002 ppb	379.7 %
80Se (KED)	-0.232 ppb	45.8 %
85Rb (KED)	-0.002 ppb	188.4 %
88Sr (KED)	0.002 ppb	211.0 %
89Y (KED)	100.000 %	
107Ag (KED)	0.000 ppb	140.7 %
114Cd (KED)	0.000 ppb	1,169.4 %
115In (KED)	100.000 %	
133Cs (KED)	0.000 ppb	34.9 %
138Ba (KED)	-0.003 ppb	135.7 %
139La (KED)	0.000 ppb	223.7 %
140Ce (KED)	0.000 ppb	1,272.4 %
141Pr (KED)	0.000 ppb	195.3 %
142Nd (KED)	0.000 ppb	403.5 %
152Sm (KED)	0.000 ppb	70.1 %
153Eu (KED)	0.000 ppb	47.8 %
158Gd (KED)	0.000 ppb	541.3 %
159Tb (KED)	100.000 %	
164Dy (KED)	0.000 ppb	58.8 %
166Er (KED)	0.000 ppb	375.7 %
169Tm (KED)	0.000 ppb	1,578.4 %
174Yb (KED)	0.000 ppb	1,025.5 %
175Lu (KED)	0.005 ppb	86.2 %
205Tl (KED)	0.000 ppb	791.5 %
208Pb (KED)	0.000 ppb	1,043.9 %
209Bi (KED)	100.000 %	
232Th (KED)	0.000 ppb	44.8 %
238U (KED)	0.000 ppb	166.9 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	100.000 %	2,767 cps	3.8 %
9Be (KED)	0.000 ppb	0 cps	
11B (KED)	-0.025 ppb	1,730 cps	7.7 %
24Mg (KED)	-0.084 ppb	446 cps	11.2 %
27Al (KED)	0.195 ppb	173 cps	9.6 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	100.000 %	44,094 cps	2.8 %
51V (KED)	0.000 ppb	18 cps	21.7 %
52Cr (KED)	0.002 ppb	207 cps	11.6 %
55Mn (KED)	0.009 ppb	398 cps	11.2 %
56Fe (KED)	0.037 ppb	6,663 cps	4.4 %
58Ni (KED)	0.001 ppb	457 cps	3.2 %
59Co (KED)	0.000 ppb	73 cps	7.9 %
63Cu (KED)	0.003 ppb	804 cps	9.3 %
64Zn (KED)	-0.013 ppb	1,558 cps	5.2 %
69Ga (KED)	-0.005 ppb	86 cps	12.5 %
75As (KED)	-0.002 ppb	16 cps	61.9 %
80Se (KED)	-0.232 ppb	1,378 cps	2.9 %
85Rb (KED)	-0.002 ppb	24 cps	78.7 %
88Sr (KED)	0.002 ppb	238 cps	13.0 %
89Y (KED)	100.000 %	418,527 cps	1.6 %
107Ag (KED)	0.000 ppb	106 cps	16.2 %
114Cd (KED)	0.000 ppb	72 cps	21.3 %
115In (KED)	100.000 %	794,412 cps	0.7 %
133Cs (KED)	0.000 ppb	80 cps	4.2 %
138Ba (KED)	-0.003 ppb	2,527 cps	5.8 %
139La (KED)	0.000 ppb	103 cps	9.7 %
140Ce (KED)	0.000 ppb	308 cps	13.5 %
141Pr (KED)	0.000 ppb	72 cps	26.2 %
142Nd (KED)	0.000 ppb	72 cps	21.8 %
152Sm (KED)	0.000 ppb	20 cps	28.9 %
153Eu (KED)	0.000 ppb	48 cps	20.1 %
158Gd (KED)	0.000 ppb	33 cps	40.0 %
159Tb (KED)	100.000 %	4,305,801 cps	2.2 %
164Dy (KED)	0.000 ppb	39 cps	13.1 %
166Er (KED)	0.000 ppb	280 cps	11.4 %
169Tm (KED)	0.000 ppb	66 cps	30.6 %
174Yb (KED)	0.000 ppb	41 cps	12.4 %
175Lu (KED)	0.005 ppb	18,174 cps	3.5 %
205Tl (KED)	0.000 ppb	58 cps	29.6 %
208Pb (KED)	0.000 ppb	33,424 cps	1.8 %
209Bi (KED)	100.000 %	3,856,025 cps	1.6 %
232Th (KED)	0.000 ppb	2,496 cps	2.8 %
238U (KED)	0.000 ppb	992 cps	7.7 %

Sample Summary

Instrument ID: iCAP Q

Analysis index: 3

Analysis name: 0+20

Analysis started at: 9/30/2021 2:34:10 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	93.533 %	
9Be (KED)	0.000 ppb	
11B (KED)	0.000 ppb	0.0 %
24Mg (KED)	0.000 ppb	0.1 %
27Al (KED)	0.000 ppb	0.1 %
45Sc (KED)	98.907 %	
51V (KED)	0.000 ppb	0.4 %
52Cr (KED)	0.000 ppb	0.1 %
55Mn (KED)	0.000 ppb	0.1 %
56Fe (KED)	0.000 ppb	0.0 %
58Ni (KED)	0.000 ppb	0.1 %
59Co (KED)	0.000 ppb	0.1 %
63Cu (KED)	0.000 ppb	0.1 %
64Zn (KED)	0.000 ppb	0.0 %
69Ga (KED)	0.000 ppb	0.2 %
75As (KED)	0.000 ppb	0.4 %
80Se (KED)	0.000 ppb	0.1 %
85Rb (KED)	0.000 ppb	0.2 %
88Sr (KED)	0.000 ppb	0.1 %
89Y (KED)	98.165 %	
107Ag (KED)	0.000 ppb	0.0 %
114Cd (KED)	0.000 ppb	0.3 %
115In (KED)	99.552 %	
133Cs (KED)	0.000 ppb	0.2 %
138Ba (KED)	0.000 ppb	0.0 %
139La (KED)	0.000 ppb	0.3 %
140Ce (KED)	0.000 ppb	0.1 %
141Pr (KED)	0.000 ppb	0.0 %
142Nd (KED)	0.000 ppb	0.3 %
152Sm (KED)	0.000 ppb	0.3 %
153Eu (KED)	0.000 ppb	0.5 %
158Gd (KED)	0.000 ppb	0.2 %
159Tb (KED)	98.527 %	
164Dy (KED)	0.000 ppb	0.2 %
166Er (KED)	0.000 ppb	0.1 %
169Tm (KED)	0.000 ppb	0.1 %
174Yb (KED)	0.000 ppb	0.3 %
175Lu (KED)	0.000 ppb	0.0 %
205Tl (KED)	0.000 ppb	0.1 %
208Pb (KED)	0.000 ppb	0.0 %
209Bi (KED)	99.958 %	
232Th (KED)	0.000 ppb	0.1 %
238U (KED)	0.000 ppb	0.1 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	93.533 %	2,588 cps	1.8 %
9Be (KED)	0.000 ppb	0 cps	
11B (KED)	0.000 ppb	1,623 cps	3.0 %
24Mg (KED)	0.000 ppb	458 cps	7.5 %
27Al (KED)	0.000 ppb	146 cps	9.5 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	98.907 %	43,613 cps	0.8 %
51V (KED)	0.000 ppb	21 cps	39.7 %
52Cr (KED)	0.000 ppb	181 cps	15.4 %
55Mn (KED)	0.000 ppb	339 cps	9.1 %
56Fe (KED)	0.000 ppb	6,208 cps	4.7 %
58Ni (KED)	0.000 ppb	439 cps	6.9 %
59Co (KED)	0.000 ppb	74 cps	10.3 %
63Cu (KED)	0.000 ppb	740 cps	11.3 %
64Zn (KED)	0.000 ppb	1,580 cps	3.9 %
69Ga (KED)	0.000 ppb	111 cps	23.3 %
75As (KED)	0.000 ppb	18 cps	39.0 %
80Se (KED)	0.000 ppb	1,439 cps	5.9 %
85Rb (KED)	0.000 ppb	34 cps	22.3 %
88Sr (KED)	0.000 ppb	219 cps	10.8 %
89Y (KED)	98.165 %	410,848 cps	0.4 %
107Ag (KED)	0.000 ppb	93 cps	0.0 %
114Cd (KED)	0.000 ppb	73 cps	27.6 %
115In (KED)	99.552 %	790,853 cps	0.2 %
133Cs (KED)	0.000 ppb	88 cps	15.8 %
138Ba (KED)	0.000 ppb	2,600 cps	4.4 %
139La (KED)	0.000 ppb	97 cps	30.6 %
140Ce (KED)	0.000 ppb	300 cps	7.8 %
141Pr (KED)	0.000 ppb	62 cps	3.1 %
142Nd (KED)	0.000 ppb	74 cps	29.1 %
152Sm (KED)	0.000 ppb	12 cps	31.5 %
153Eu (KED)	0.000 ppb	28 cps	45.4 %
158Gd (KED)	0.000 ppb	36 cps	19.5 %
159Tb (KED)	98.527 %	4,242,374 cps	0.2 %
164Dy (KED)	0.000 ppb	30 cps	19.2 %
166Er (KED)	0.000 ppb	282 cps	10.0 %
169Tm (KED)	0.000 ppb	63 cps	5.3 %
174Yb (KED)	0.000 ppb	40 cps	25.0 %
175Lu (KED)	0.000 ppb	17,075 cps	3.2 %
205Tl (KED)	0.000 ppb	56 cps	9.2 %
208Pb (KED)	0.000 ppb	33,449 cps	0.2 %
209Bi (KED)	99.958 %	3,854,397 cps	1.1 %
232Th (KED)	0.000 ppb	2,386 cps	7.9 %
238U (KED)	0.000 ppb	1,029 cps	8.1 %

Sample Summary

Instrument ID: iCAP Q

Analysis index: 4

Analysis name: 50+20

Analysis started at: 9/30/2021 2:39:15 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	99.719 %	
9Be (KED)	69.809 ppb	2.2 %
11B (KED)	96.329 ppb	3.8 %
24Mg (KED)	68.540 ppb	3.8 %
27Al (KED)	67.397 ppb	1.7 %
45Sc (KED)	101.881 %	
51V (KED)	67.798 ppb	0.5 %
52Cr (KED)	68.070 ppb	0.4 %
55Mn (KED)	68.420 ppb	1.1 %
56Fe (KED)	68.263 ppb	0.8 %
58Ni (KED)	68.450 ppb	1.6 %
59Co (KED)	69.398 ppb	0.9 %
63Cu (KED)	69.098 ppb	1.7 %
64Zn (KED)	68.895 ppb	0.3 %
69Ga (KED)	68.921 ppb	0.2 %
75As (KED)	68.446 ppb	1.3 %
80Se (KED)	68.764 ppb	2.5 %
85Rb (KED)	68.659 ppb	1.0 %
88Sr (KED)	67.896 ppb	0.9 %
89Y (KED)	104.824 %	
107Ag (KED)	68.438 ppb	1.1 %
114Cd (KED)	68.967 ppb	0.5 %
115In (KED)	106.366 %	
133Cs (KED)	68.786 ppb	1.6 %
138Ba (KED)	69.098 ppb	0.5 %
139La (KED)	68.625 ppb	0.6 %
140Ce (KED)	67.930 ppb	0.1 %
141Pr (KED)	68.525 ppb	0.3 %
142Nd (KED)	68.721 ppb	1.1 %
152Sm (KED)	67.542 ppb	0.2 %
153Eu (KED)	67.834 ppb	1.2 %
158Gd (KED)	68.854 ppb	0.6 %
159Tb (KED)	107.063 %	
164Dy (KED)	68.383 ppb	0.8 %
166Er (KED)	69.204 ppb	1.4 %
169Tm (KED)	69.305 ppb	0.7 %
174Yb (KED)	68.587 ppb	1.8 %
175Lu (KED)	69.287 ppb	1.0 %
205Tl (KED)	68.917 ppb	2.2 %
208Pb (KED)	68.454 ppb	0.9 %
209Bi (KED)	105.588 %	
232Th (KED)	68.045 ppb	0.8 %
238U (KED)	68.444 ppb	0.5 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	99.719 %	2,759 cps	2.6 %
9Be (KED)	69.809 ppb	8,695 cps	2.8 %
11B (KED)	96.329 ppb	8,849 cps	2.0 %
24Mg (KED)	68.540 ppb	34,521 cps	1.7 %
27Al (KED)	67.397 ppb	9,390 cps	3.8 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	101.881 %	44,924 cps	2.3 %
51V (KED)	67.798 ppb	499,536 cps	2.0 %
52Cr (KED)	68.070 ppb	770,033 cps	2.0 %
55Mn (KED)	68.420 ppb	422,013 cps	1.3 %
56Fe (KED)	68.263 ppb	731,728 cps	1.6 %
58Ni (KED)	68.450 ppb	879,017 cps	1.8 %
59Co (KED)	69.398 ppb	1,508,599 cps	2.5 %
63Cu (KED)	69.098 ppb	1,078,682 cps	1.7 %
64Zn (KED)	68.895 ppb	298,018 cps	1.2 %
69Ga (KED)	68.921 ppb	399,560 cps	0.9 %
75As (KED)	68.446 ppb	87,049 cps	1.0 %
80Se (KED)	68.764 ppb	28,738 cps	2.5 %
85Rb (KED)	68.659 ppb	403,300 cps	0.8 %
88Sr (KED)	67.896 ppb	587,569 cps	1.8 %
89Y (KED)	104.824 %	438,716 cps	1.0 %
107Ag (KED)	68.438 ppb	3,456,463 cps	1.3 %
114Cd (KED)	68.967 ppb	1,302,798 cps	1.8 %
115In (KED)	106.366 %	844,983 cps	2.1 %
133Cs (KED)	68.786 ppb	2,170,143 cps	0.7 %
138Ba (KED)	69.098 ppb	3,088,090 cps	0.8 %
139La (KED)	68.625 ppb	6,108,610 cps	0.6 %
140Ce (KED)	67.930 ppb	8,040,402 cps	1.0 %
141Pr (KED)	68.525 ppb	8,765,117 cps	1.3 %
142Nd (KED)	68.721 ppb	3,480,566 cps	0.2 %
152Sm (KED)	67.542 ppb	3,206,045 cps	1.0 %
153Eu (KED)	67.834 ppb	6,539,044 cps	1.8 %
158Gd (KED)	68.854 ppb	4,334,728 cps	0.8 %
159Tb (KED)	107.063 %	4,609,898 cps	1.1 %
164Dy (KED)	68.383 ppb	5,120,531 cps	1.6 %
166Er (KED)	69.204 ppb	6,161,340 cps	1.9 %
169Tm (KED)	69.305 ppb	20,538,237 cps	1.5 %
174Yb (KED)	68.587 ppb	7,353,776 cps	2.9 %
175Lu (KED)	69.287 ppb	12,878,764 cps	1.2 %
205Tl (KED)	68.917 ppb	14,527,323 cps	2.1 %
208Pb (KED)	68.454 ppb	10,222,444 cps	0.3 %
209Bi (KED)	105.588 %	4,071,515 cps	0.6 %
232Th (KED)	68.045 ppb	21,619,906 cps	0.4 %
238U (KED)	68.444 ppb	24,925,418 cps	0.7 %

Comprehensive

9/30/2021 3:05:13 PM

Sample Summary

Instrument ID: iCAP Q

Analysis index: 5

Analysis name: 100+20

Analysis started at: 9/30/2021 2:44:27 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	97.992 %	
9Be (KED)	103.893 ppb	2.0 %
11B (KED)	84.003 ppb	2.4 %
24Mg (KED)	104.845 ppb	2.9 %
27Al (KED)	105.702 ppb	2.5 %
45Sc (KED)	99.274 %	
51V (KED)	105.402 ppb	0.9 %
52Cr (KED)	105.198 ppb	0.7 %
55Mn (KED)	104.935 ppb	1.6 %
56Fe (KED)	105.053 ppb	1.5 %
58Ni (KED)	104.913 ppb	1.7 %
59Co (KED)	104.202 ppb	2.0 %
63Cu (KED)	104.426 ppb	0.1 %
64Zn (KED)	104.579 ppb	0.6 %
69Ga (KED)	104.559 ppb	1.0 %
75As (KED)	104.916 ppb	1.8 %
80Se (KED)	104.677 ppb	1.1 %
85Rb (KED)	104.756 ppb	1.4 %
88Sr (KED)	105.328 ppb	0.5 %
89Y (KED)	103.061 %	
107Ag (KED)	104.921 ppb	1.8 %
114Cd (KED)	104.525 ppb	1.7 %
115In (KED)	104.845 %	
133Cs (KED)	104.661 ppb	2.2 %
138Ba (KED)	104.427 ppb	2.3 %
139La (KED)	104.781 ppb	3.0 %
140Ce (KED)	105.302 ppb	1.9 %
141Pr (KED)	104.856 ppb	4.0 %
142Nd (KED)	104.710 ppb	2.3 %
152Sm (KED)	105.594 ppb	2.1 %
153Eu (KED)	105.375 ppb	2.3 %
158Gd (KED)	104.609 ppb	4.2 %
159Tb (KED)	105.647 %	
164Dy (KED)	104.963 ppb	1.3 %
166Er (KED)	104.347 ppb	3.4 %
169Tm (KED)	104.271 ppb	2.1 %
174Yb (KED)	104.810 ppb	2.7 %
175Lu (KED)	104.285 ppb	3.2 %
205Tl (KED)	104.562 ppb	2.3 %
208Pb (KED)	104.910 ppb	0.5 %
209Bi (KED)	103.975 %	
232Th (KED)	105.217 ppb	2.6 %
238U (KED)	104.917 ppb	2.3 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	97.992 %	2,711 cps	3.7 %
9Be (KED)	103.893 ppb	12,712 cps	1.8 %
11B (KED)	84.003 ppb	7,802 cps	3.6 %
24Mg (KED)	104.845 ppb	51,632 cps	1.0 %
27Al (KED)	105.702 ppb	14,264 cps	2.6 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	99.274 %	43,774 cps	1.3 %
51V (KED)	105.402 ppb	756,741 cps	1.5 %
52Cr (KED)	105.198 ppb	1,159,612 cps	2.0 %
55Mn (KED)	104.935 ppb	630,679 cps	2.9 %
56Fe (KED)	105.053 ppb	1,094,155 cps	2.7 %
58Ni (KED)	104.913 ppb	1,312,837 cps	2.6 %
59Co (KED)	104.202 ppb	2,207,546 cps	3.3 %
63Cu (KED)	104.426 ppb	1,602,438 cps	1.8 %
64Zn (KED)	104.579 ppb	443,921 cps	2.1 %
69Ga (KED)	104.559 ppb	595,946 cps	2.3 %
75As (KED)	104.916 ppb	131,213 cps	3.6 %
80Se (KED)	104.677 ppb	42,227 cps	2.7 %
85Rb (KED)	104.756 ppb	605,014 cps	2.5 %
88Sr (KED)	105.328 ppb	896,059 cps	2.2 %
89Y (KED)	103.061 %	431,340 cps	1.8 %
107Ag (KED)	104.921 ppb	5,224,378 cps	2.9 %
114Cd (KED)	104.525 ppb	1,946,460 cps	2.8 %
115In (KED)	104.845 %	832,902 cps	1.6 %
133Cs (KED)	104.661 ppb	3,255,724 cps	3.2 %
138Ba (KED)	104.427 ppb	4,602,559 cps	2.0 %
139La (KED)	104.781 ppb	9,200,397 cps	2.3 %
140Ce (KED)	105.302 ppb	12,295,579 cps	1.8 %
141Pr (KED)	104.856 ppb	13,225,777 cps	2.0 %
142Nd (KED)	104.710 ppb	5,232,033 cps	2.1 %
152Sm (KED)	105.594 ppb	4,944,869 cps	2.3 %
153Eu (KED)	105.375 ppb	10,019,285 cps	1.0 %
158Gd (KED)	104.609 ppb	6,502,138 cps	6.4 %
159Tb (KED)	105.647 %	4,548,966 cps	2.8 %
164Dy (KED)	104.963 ppb	7,754,150 cps	2.1 %
166Er (KED)	104.347 ppb	9,163,116 cps	2.6 %
169Tm (KED)	104.271 ppb	30,494,663 cps	4.0 %
174Yb (KED)	104.810 ppb	11,082,653 cps	1.3 %
175Lu (KED)	104.285 ppb	19,114,171 cps	3.3 %
205Tl (KED)	104.562 ppb	21,697,554 cps	3.2 %
208Pb (KED)	104.910 ppb	15,407,142 cps	3.4 %
209Bi (KED)	103.975 %	4,009,305 cps	3.9 %
232Th (KED)	105.217 ppb	32,899,602 cps	2.0 %
238U (KED)	104.917 ppb	37,622,367 cps	4.4 %

Comprehensive

9/30/2021 3:05:13 PM

Sample Summary

Instrument ID: iCAP Q

Analysis index: 6

Analysis name: 179184jian

Analysis started at: 9/30/2021 2:49:27 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	108.515 %	1.2 %
9Be (KED)	0.074 ppb	67.6 %
11B (KED)	-14.338 ppb	3.3 %
24Mg (KED)	759.221 ppb	1.4 %
27Al (KED)	885.012 ppb	0.7 %
45Sc (KED)	107.486 %	1.2 %
51V (KED)	1.712 ppb	0.8 %
52Cr (KED)	4.669 ppb	1.4 %
55Mn (KED)	24.228 ppb	0.9 %
56Fe (KED)	1,162.443 ppb	1.0 %
58Ni (KED)	5.456 ppb	1.1 %
59Co (KED)	0.480 ppb	0.9 %
63Cu (KED)	8.431 ppb	0.8 %
64Zn (KED)	156.309 ppb	1.0 %
69Ga (KED)	1.824 ppb	1.3 %
75As (KED)	0.678 ppb	6.3 %
80Se (KED)	-0.302 ppb	8.5 %
85Rb (KED)	2.668 ppb	2.0 %
88Sr (KED)	10.459 ppb	0.4 %
89Y (KED)	107.130 %	1.0 %
107Ag (KED)	0.192 ppb	3.9 %
114Cd (KED)	0.041 ppb	3.6 %
115In (KED)	104.225 %	1.5 %
133Cs (KED)	0.209 ppb	1.3 %
138Ba (KED)	7.446 ppb	1.4 %
139La (KED)	0.812 ppb	2.0 %
140Ce (KED)	1.654 ppb	1.3 %
141Pr (KED)	0.207 ppb	2.6 %
142Nd (KED)	1.071 ppb	2.1 %
152Sm (KED)	0.163 ppb	1.5 %
153Eu (KED)	0.035 ppb	7.3 %
158Gd (KED)	0.145 ppb	3.3 %
159Tb (KED)	112.933 %	1.7 %
164Dy (KED)	0.103 ppb	1.8 %
166Er (KED)	0.055 ppb	4.6 %
169Tm (KED)	0.012 ppb	13.9 %
174Yb (KED)	0.044 ppb	4.7 %
175Lu (KED)	0.014 ppb	19.3 %
205Tl (KED)	0.024 ppb	8.8 %
208Pb (KED)	1.469 ppb	1.2 %
209Bi (KED)	95.297 %	1.0 %
232Th (KED)	0.408 ppb	17.3 %
238U (KED)	0.100 ppb	3.3 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	108.515 %	3,003 cps	1.2 %
9Be (KED)	0.074 ppb	10 cps	66.7 %
11B (KED)	-14.338 ppb	730 cps	6.3 %
24Mg (KED)	759.221 ppb	410,999 cps	1.4 %
27Al (KED)	885.012 ppb	128,151 cps	2.0 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	107.486 %	47,395 cps	1.2 %
51V (KED)	1.712 ppb	13,328 cps	2.0 %
52Cr (KED)	4.669 ppb	55,907 cps	2.1 %
55Mn (KED)	24.228 ppb	157,926 cps	1.8 %
56Fe (KED)	1,162.443 ppb	13,038,397 cps	0.6 %
58Ni (KED)	5.456 ppb	74,365 cps	0.9 %
59Co (KED)	0.480 ppb	11,095 cps	1.6 %
63Cu (KED)	8.431 ppb	135,227 cps	1.6 %
64Zn (KED)	156.309 ppb	688,796 cps	0.9 %
69Ga (KED)	1.824 ppb	10,927 cps	1.3 %
75As (KED)	0.678 ppb	900 cps	5.1 %
80Se (KED)	-0.302 ppb	1,448 cps	1.0 %
85Rb (KED)	2.668 ppb	16,049 cps	1.1 %
88Sr (KED)	10.459 ppb	92,701 cps	0.9 %
89Y (KED)	107.130 %	448,369 cps	1.0 %
107Ag (KED)	0.192 ppb	9,614 cps	3.1 %
114Cd (KED)	0.041 ppb	832 cps	2.0 %
115In (KED)	104.225 %	827,975 cps	1.5 %
133Cs (KED)	0.209 ppb	6,542 cps	0.9 %
138Ba (KED)	7.446 ppb	353,665 cps	1.2 %
139La (KED)	0.812 ppb	76,385 cps	1.0 %
140Ce (KED)	1.654 ppb	206,758 cps	0.7 %
141Pr (KED)	0.207 ppb	28,055 cps	1.0 %
142Nd (KED)	1.071 ppb	57,307 cps	0.4 %
152Sm (KED)	0.163 ppb	8,157 cps	2.5 %
153Eu (KED)	0.035 ppb	3,611 cps	8.6 %
158Gd (KED)	0.145 ppb	9,669 cps	4.2 %
159Tb (KED)	112.933 %	4,862,681 cps	1.7 %
164Dy (KED)	0.103 ppb	8,167 cps	1.4 %
166Er (KED)	0.055 ppb	5,515 cps	3.7 %
169Tm (KED)	0.012 ppb	3,843 cps	13.7 %
174Yb (KED)	0.044 ppb	5,068 cps	3.8 %
175Lu (KED)	0.014 ppb	22,303 cps	2.7 %
205Tl (KED)	0.024 ppb	4,706 cps	8.7 %
208Pb (KED)	1.469 ppb	229,222 cps	0.9 %
209Bi (KED)	95.297 %	3,674,683 cps	1.0 %
232Th (KED)	0.408 ppb	119,212 cps	17.0 %
238U (KED)	0.100 ppb	33,740 cps	2.9 %

Comprehensive

9/30/2021 3:05:13 PM

Sample Summary

Instrument ID: iCAP Q

Analysis index: 7

Analysis name: 033915(179178)jian

Analysis started at: 9/30/2021 2:54:21 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	108.997 %	3.9 %
9Be (KED)	0.033 ppb	42.6 %
11B (KED)	-18.104 ppb	2.6 %
24Mg (KED)	531.505 ppb	3.7 %
27Al (KED)	738.261 ppb	0.7 %
45Sc (KED)	104.929 %	0.9 %
51V (KED)	1.450 ppb	1.1 %
52Cr (KED)	2.783 ppb	0.8 %
55Mn (KED)	19.146 ppb	2.5 %
56Fe (KED)	828.033 ppb	1.1 %
58Ni (KED)	3.953 ppb	2.2 %
59Co (KED)	0.346 ppb	3.5 %
63Cu (KED)	7.799 ppb	0.9 %
64Zn (KED)	144.633 ppb	1.3 %
69Ga (KED)	1.531 ppb	1.5 %
75As (KED)	0.567 ppb	3.9 %
80Se (KED)	0.131 ppb	193.5 %
85Rb (KED)	1.900 ppb	3.3 %
88Sr (KED)	6.705 ppb	1.1 %
89Y (KED)	103.200 %	0.5 %
107Ag (KED)	0.047 ppb	1.6 %
114Cd (KED)	0.048 ppb	5.1 %
115In (KED)	99.216 %	1.5 %
133Cs (KED)	0.158 ppb	3.9 %
138Ba (KED)	6.085 ppb	1.4 %
139La (KED)	0.613 ppb	1.4 %
140Ce (KED)	1.269 ppb	1.3 %
141Pr (KED)	0.148 ppb	3.0 %
142Nd (KED)	0.801 ppb	0.8 %
152Sm (KED)	0.116 ppb	1.2 %
153Eu (KED)	0.023 ppb	5.2 %
158Gd (KED)	0.103 ppb	2.6 %
159Tb (KED)	106.651 %	1.4 %
164Dy (KED)	0.075 ppb	2.6 %
166Er (KED)	0.039 ppb	4.5 %
169Tm (KED)	0.005 ppb	5.7 %
174Yb (KED)	0.031 ppb	5.6 %
175Lu (KED)	0.002 ppb	46.6 %
205Tl (KED)	0.017 ppb	1.7 %
208Pb (KED)	0.884 ppb	2.2 %
209Bi (KED)	91.957 %	0.9 %
232Th (KED)	0.230 ppb	2.5 %
238U (KED)	0.058 ppb	0.4 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	108.997 %	3,016 cps	3.9 %
9Be (KED)	0.033 ppb	4 cps	43.3 %
11B (KED)	-18.104 ppb	429 cps	10.8 %
24Mg (KED)	531.505 ppb	288,917 cps	1.0 %
27Al (KED)	738.261 ppb	104,374 cps	0.3 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	104.929 %	46,268 cps	0.9 %
51V (KED)	1.450 ppb	11,024 cps	1.8 %
52Cr (KED)	2.783 ppb	32,616 cps	1.4 %
55Mn (KED)	19.146 ppb	121,894 cps	2.2 %
56Fe (KED)	828.033 ppb	9,069,174 cps	1.5 %
58Ni (KED)	3.953 ppb	52,720 cps	1.5 %
59Co (KED)	0.346 ppb	7,830 cps	3.7 %
63Cu (KED)	7.799 ppb	120,559 cps	1.4 %
64Zn (KED)	144.633 ppb	614,104 cps	1.3 %
69Ga (KED)	1.531 ppb	8,854 cps	2.0 %
75As (KED)	0.567 ppb	729 cps	3.4 %
80Se (KED)	0.131 ppb	1,563 cps	6.0 %
85Rb (KED)	1.900 ppb	11,024 cps	3.6 %
88Sr (KED)	6.705 ppb	57,325 cps	0.7 %
89Y (KED)	103.200 %	431,921 cps	0.5 %
107Ag (KED)	0.047 ppb	2,312 cps	1.3 %
114Cd (KED)	0.048 ppb	913 cps	4.4 %
115In (KED)	99.216 %	788,182 cps	1.5 %
133Cs (KED)	0.158 ppb	4,728 cps	5.2 %
138Ba (KED)	6.085 ppb	273,461 cps	2.2 %
139La (KED)	0.613 ppb	54,422 cps	0.6 %
140Ce (KED)	1.269 ppb	149,969 cps	1.3 %
141Pr (KED)	0.148 ppb	18,952 cps	2.6 %
142Nd (KED)	0.801 ppb	40,472 cps	1.1 %
152Sm (KED)	0.116 ppb	5,483 cps	1.9 %
153Eu (KED)	0.023 ppb	2,241 cps	4.7 %
158Gd (KED)	0.103 ppb	6,475 cps	1.5 %
159Tb (KED)	106.651 %	4,592,169 cps	1.4 %
164Dy (KED)	0.075 ppb	5,602 cps	3.9 %
166Er (KED)	0.039 ppb	3,764 cps	4.2 %
169Tm (KED)	0.005 ppb	1,680 cps	6.8 %
174Yb (KED)	0.031 ppb	3,377 cps	4.9 %
175Lu (KED)	0.002 ppb	18,836 cps	1.0 %
205Tl (KED)	0.017 ppb	3,081 cps	2.1 %
208Pb (KED)	0.884 ppb	145,326 cps	0.8 %
209Bi (KED)	91.957 %	3,545,900 cps	0.9 %
232Th (KED)	0.230 ppb	65,851 cps	3.2 %
238U (KED)	0.058 ppb	19,241 cps	0.6 %

Comprehensive

9/30/2021 3:05:13 PM

Sample Summary

Instrument ID: iCAP Q

Analysis index: 8

Analysis name: 046214(179142)jian

Analysis started at: 9/30/2021 2:59:11 PM

User name: WINDOWS-UPCI4ER\Administrator

Category	Concentration average	Concentration RSD
6Li (KED)	117.874 %	3.6 %
9Be (KED)	0.022 ppb	173.2 %
11B (KED)	-12.661 ppb	13.6 %
24Mg (KED)	755.571 ppb	4.0 %
27Al (KED)	809.128 ppb	2.1 %
45Sc (KED)	115.331 %	3.7 %
51V (KED)	1.540 ppb	2.7 %
52Cr (KED)	2.965 ppb	1.7 %
55Mn (KED)	22.133 ppb	1.5 %
56Fe (KED)	983.406 ppb	1.9 %
58Ni (KED)	4.773 ppb	1.0 %
59Co (KED)	0.419 ppb	2.8 %
63Cu (KED)	11.983 ppb	0.1 %
64Zn (KED)	153.766 ppb	0.8 %
69Ga (KED)	2.000 ppb	2.4 %
75As (KED)	0.728 ppb	13.3 %
80Se (KED)	-0.142 ppb	103.5 %
85Rb (KED)	3.242 ppb	1.5 %
88Sr (KED)	9.477 ppb	0.7 %
89Y (KED)	109.216 %	0.5 %
107Ag (KED)	0.199 ppb	4.1 %
114Cd (KED)	0.047 ppb	9.2 %
115In (KED)	102.857 %	1.9 %
133Cs (KED)	0.185 ppb	1.8 %
138Ba (KED)	8.176 ppb	2.7 %
139La (KED)	0.812 ppb	1.2 %
140Ce (KED)	1.653 ppb	0.9 %
141Pr (KED)	0.199 ppb	0.7 %
142Nd (KED)	1.063 ppb	0.2 %
152Sm (KED)	0.153 ppb	1.4 %
153Eu (KED)	0.029 ppb	1.3 %
158Gd (KED)	0.131 ppb	2.7 %
159Tb (KED)	110.213 %	0.7 %
164Dy (KED)	0.090 ppb	2.1 %
166Er (KED)	0.043 ppb	1.9 %
169Tm (KED)	0.006 ppb	3.8 %
174Yb (KED)	0.038 ppb	3.1 %
175Lu (KED)	0.008 ppb	56.3 %
205Tl (KED)	0.018 ppb	2.3 %
208Pb (KED)	1.412 ppb	1.4 %
209Bi (KED)	91.702 %	0.9 %
232Th (KED)	0.308 ppb	1.6 %
238U (KED)	0.079 ppb	1.9 %

Category	Concentration average	Intensity average	Intensity RSD
6Li (KED)	117.874 %	3,262 cps	3.6 %
9Be (KED)	0.022 ppb	3 cps	173.2 %
11B (KED)	-12.661 ppb	937 cps	13.6 %
24Mg (KED)	755.571 ppb	443,954 cps	1.9 %
27Al (KED)	809.128 ppb	125,661 cps	1.9 %

Category	Concentration average	Intensity average	Intensity RSD
45Sc (KED)	115.331 %	50,855 cps	3.7 %
51V (KED)	1.540 ppb	12,863 cps	1.2 %
52Cr (KED)	2.965 ppb	38,153 cps	2.0 %
55Mn (KED)	22.133 ppb	154,781 cps	2.6 %
56Fe (KED)	983.406 ppb	11,831,817 cps	1.8 %
58Ni (KED)	4.773 ppb	69,855 cps	2.7 %
59Co (KED)	0.419 ppb	10,380 cps	1.3 %
63Cu (KED)	11.983 ppb	195,586 cps	0.5 %
64Zn (KED)	153.766 ppb	690,851 cps	1.2 %
69Ga (KED)	2.000 ppb	12,202 cps	2.9 %
75As (KED)	0.728 ppb	984 cps	13.5 %
80Se (KED)	-0.142 ppb	1,542 cps	4.1 %
85Rb (KED)	3.242 ppb	19,882 cps	2.0 %
88Sr (KED)	9.477 ppb	85,659 cps	1.3 %
89Y (KED)	109.216 %	457,097 cps	0.5 %
107Ag (KED)	0.199 ppb	9,789 cps	2.2 %
114Cd (KED)	0.047 ppb	933 cps	7.2 %
115In (KED)	102.857 %	817,106 cps	1.9 %
133Cs (KED)	0.185 ppb	5,737 cps	3.3 %
138Ba (KED)	8.176 ppb	378,777 cps	3.3 %
139La (KED)	0.812 ppb	74,532 cps	1.9 %
140Ce (KED)	1.653 ppb	201,738 cps	0.7 %
141Pr (KED)	0.199 ppb	26,238 cps	0.2 %
142Nd (KED)	1.063 ppb	55,528 cps	1.0 %
152Sm (KED)	0.153 ppb	7,486 cps	1.1 %
153Eu (KED)	0.029 ppb	2,871 cps	1.9 %
158Gd (KED)	0.131 ppb	8,512 cps	2.0 %
159Tb (KED)	110.213 %	4,745,570 cps	0.7 %
164Dy (KED)	0.090 ppb	6,963 cps	2.8 %
166Er (KED)	0.043 ppb	4,230 cps	1.3 %
169Tm (KED)	0.006 ppb	1,838 cps	3.9 %
174Yb (KED)	0.038 ppb	4,206 cps	2.7 %
175Lu (KED)	0.008 ppb	20,610 cps	3.4 %
205Tl (KED)	0.018 ppb	3,394 cps	2.9 %
208Pb (KED)	1.412 ppb	213,208 cps	0.6 %
209Bi (KED)	91.702 %	3,536,070 cps	0.9 %
232Th (KED)	0.308 ppb	87,045 cps	1.1 %
238U (KED)	0.079 ppb	25,773 cps	1.5 %