

**Critical elements in nonsulphide Zn deposits:  
A reanalysis of the Kabwe Zn-Pb ores  
(central Zambia)**

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**APPENDIX 2**

Element menus and ICP-MS dwell time settings employed to obtain the compositions of the various minerals with LA-ICP-MS.

Investigated minerals	Sphalerite	Willemite, hemimorphite	Goethite, hematite	Smithsonite, descloizite
Method name	ZnSulph	ZnSil3	FeOxHOx2	ZnCarb1
Internal standard	<sup>66</sup> Zn	<sup>29</sup> Si	<sup>57</sup> Fe	<sup>66</sup> Zn
External standard	MASS-1	NIST 612	GSD-1g	NIST 610
2nd standard	NIST 610	GSD-1g	NIST612	NIST 612
3rd standard	NIST 2782		NIST 2782	
4th standard			BC_28*	
Quadrupole dwell time (ms)				
<sup>7</sup> Li	10	10		10
<sup>11</sup> B	10	10		10
<sup>23</sup> Na		10		10
<sup>24</sup> Mg	10	10	10	10
<sup>27</sup> Al	5	5	5	5
<sup>29</sup> Si	5	5	5	5
<sup>39</sup> K		10		10
<sup>43</sup> Ca	10	10	10	10
<sup>45</sup> Sc	10	10	10	10
<sup>47</sup> Ti	10	10	10	10
<sup>51</sup> V	10	10	10	10
<sup>53</sup> Cr	10	10	10	10
<sup>55</sup> Mn	10	10	10	10
<sup>57</sup> Fe	10	10	10	10
<sup>59</sup> Co	10	10	10	10
<sup>60</sup> Ni	10	10	10	10
<sup>65</sup> Cu	10	10	10	10
<sup>66</sup> Zn	10	5	10	10
<sup>69</sup> Ga	10			10
<sup>71</sup> Ga	10	10	10	10
<sup>72</sup> Ge	10	10	10	10
<sup>75</sup> As	10	10	10	10
<sup>88</sup> Sr	10	10	10	10
<sup>89</sup> Y	10	10	10	10
<sup>90</sup> Zr	10	10		10
<sup>95</sup> Mo	20	20	20	20
<sup>107</sup> Ag	10	10	10	10
<sup>111</sup> Cd	10	10	10	10
<sup>115</sup> In	30	50	30	50
<sup>118</sup> Sn	10	10	10	10
<sup>121</sup> Sb	10	10	10	10
<sup>137</sup> Ba	10	10	10	10
<sup>139</sup> La	10	10	20	10
<sup>140</sup> Ce	10	10	20	10
<sup>141</sup> Pr				10
<sup>146</sup> Nd				10
<sup>147</sup> Sm				10
<sup>153</sup> Eu				10
<sup>157</sup> Gd				10
<sup>159</sup> Tb				10
<sup>163</sup> Dy				10
<sup>165</sup> Ho				10
<sup>166</sup> Er				10
<sup>169</sup> Tm				10
<sup>172</sup> Yb				10
<sup>175</sup> Lu		10	20	10
<sup>182</sup> W	10	10	10	10
<sup>197</sup> Au	20	20	20	
<sup>208</sup> Pb	10	10	10	10
<sup>209</sup> Bi	10	10	10	10
<sup>232</sup> Th	10	10	10	10
<sup>238</sup> U	10	10	10	10

\* in-house magnetite standard of Dare et al., 2014;