

## Explanation Monthly Review Report

OELM-MRR\_EN.v1 [11-2013]

### Monthly Review Report

The Monthly Review Report gives a summary of results for the month shown. Click on the field arrow in the 'Sample' box and select the sample/month for which you wish to see the report. If results for more than one method/instrument have been submitted, separate reports may be selected from the 'Method Set' box.

**The Unit** refers to the units in which you have chosen to report your results (either mass or molar).

**The Z-score** is calculated as  $(x-X)/\sigma_{PT}$  where  $x$  = your result,  $X$  = the assigned value and  $\sigma_{PT}$  = the standard deviation for proficiency testing, defined by the organisers before the launch of the annual cycle on the basis of biological variability and/or the state of the art (see for example Arnaud *et al.* Clinical Chemistry 2008; 54: 1892-9). The tables below show, for each test, the quality specifications (QS) for the results, calculated as  $2 \sigma_{PT}$ , i.e. the intervals around the assigned value corresponding to z-scores between +2 and -2 when performance is acceptable.

Test Serum	QS criteria( $2\sigma_{PT}$ ) for proficiency assessment	
Aluminium	$\pm 0.18 \mu\text{mol/L}$ or $\pm 20\%$ , whichever is the greater	$\pm 5.00 \mu\text{g/L}$ or $\pm 20\%$ , whichever is the greater
Cobalt	$\pm 25 \text{ nmol/L}$ or $\pm 15\%$ , whichever is greater	$\pm 1.50 \mu\text{g/L}$ or $\pm 15\%$ , whichever is greater
Chromium	$\pm 38 \text{ nmol/L}$ or $\pm 20\%$ , whichever is greater	$\pm 2.00 \mu\text{g/L}$ or $\pm 20\%$ , whichever is greater
Copper	$\pm 0.84 \mu\text{mol/L}$ or $\pm 12\%$ , whichever is the greater	$\pm 53 \mu\text{g/L}$ or $\pm 12\%$ , whichever is the greater
Lithium	$\pm 0.03 \text{ mmol/L}$ or $\pm 10\%$ , whichever is greater	$\pm 0.20 \text{ mg/L}$ or $\pm 10\%$ , whichever is greater
Magnesium	$\pm 0.01 \text{ mmol/L}$ or $\pm 7.2\%$ , whichever is greater	$\pm 0.24 \text{ mg/L}$ or $\pm 7.2\%$ , whichever is greater
Selenium	$\pm 0.072 \mu\text{mol/L}$ or $\pm 12\%$ , whichever is the greater	$\pm 5.69 \mu\text{g/L}$ or $\pm 12\%$ , whichever is the greater
Thallium	$\pm 0.05 \text{ nmol/L}$ or $\pm 25\%$ , whichever is greater	$\pm 0.01 \mu\text{g/L}$ or $\pm 25\%$ , whichever is greater
Vanadium	$\pm 0.20 \text{ nmol/L}$ or $\pm 25\%$ , whichever is greater	$\pm 0.01 \mu\text{g/L}$ or $\pm 25\%$ , whichever is greater
Zinc	$\pm 1.20 \mu\text{mol/L}$ or $\pm 15\%$ , whichever is the greater	$\pm 78.5 \mu\text{g/L}$ or $\pm 15\%$ , whichever is the greater

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Test Blood	QS criteria( $2\sigma_{PT}$ ) for proficiency assessment	
Arsenic	$\pm 100$ nmol/L or $\pm 15\%$ , whichever is the greater	$\pm 7.5$ $\mu$ g/L or $\pm 15\%$ , whichever is the greater
Cadmium	$\pm 4.00$ nmol/L or $\pm 20\%$ , whichever is greater	$\pm 0.45$ $\mu$ g/L or $\pm 20\%$ , whichever is greater
Cobalt	$\pm 25$ nmol/L or $\pm 20\%$ , whichever is greater	$\pm 1.50$ $\mu$ g/L or $\pm 20\%$ , whichever is greater
Chromium	$\pm 38$ nmol/L or $\pm 20\%$ , whichever is greater	$\pm 2.00$ $\mu$ g/L or $\pm 20\%$ , whichever is greater
Mercury	$\pm 5.00$ nmol/L or $\pm 25\%$ , whichever is greater	$\pm 1.00$ $\mu$ g/L or $\pm 25\%$ , whichever is greater
Magnesium	$\pm 0.01$ mmol/L or $\pm 7.2\%$ , whichever is greater	$\pm 0.24$ mg/L or $\pm 7.2\%$ , whichever is greater
Manganese	$\pm 30.00$ nmol/L or $\pm 15\%$ , whichever is greater	$\pm 1.65$ $\mu$ g/L or $\pm 15\%$ , whichever is greater
Lead	$\pm 0.14$ $\mu$ mol/L or $\pm 10\%$ , whichever is greater	$\pm 30.00$ $\mu$ g/L or $\pm 10\%$ , whichever is greater
Selenium	$\pm 0.072$ $\mu$ mol/L or $\pm 12\%$ , whichever is the greater	$\pm 5.69$ $\mu$ g/L or $\pm 12\%$ , whichever is the greater
Thallium	$\pm 0.05$ nmol/L or $\pm 25\%$ , whichever is greater	$\pm 0.01$ $\mu$ g/L or $\pm 25\%$ , whichever is greater
Zinc	$\pm 1.50$ $\mu$ mol/L or $\pm 10\%$ , whichever is the greater	$\pm 0.10$ mg/L or $\pm 10\%$ , whichever is the greater

Test Urine	QS criteria( $2\sigma_{PT}$ ) for proficiency assessment	
Arsenic	$\pm 100$ nmol/L or $\pm 15\%$ , whichever is the greater	$\pm 7.5$ $\mu$ g/L or $\pm 15\%$ , whichever is the greater
Cadmium	$\pm 4.00$ nmol/L or $\pm 15\%$ , whichever is greater	$\pm 0.45$ $\mu$ g/L or $\pm 15\%$ , whichever is greater
Cobalt	$\pm 25$ nmol/L or $\pm 15\%$ , whichever is greater	$\pm 1.50$ $\mu$ g/L or $\pm 15\%$ , whichever is greater
Chromium	$\pm 58$ nmol/L or $\pm 20\%$ , whichever is greater	$\pm 3.00$ $\mu$ g/L or $\pm 20\%$ , whichever is greater
Copper	$\pm 0.25$ $\mu$ mol/L or $\pm 20\%$ , whichever is the greater	$\pm 16$ $\mu$ g/L or $\pm 20\%$ , whichever is the greater
Iron	$\pm 0.60$ $\mu$ mol/L or $\pm 20\%$ , whichever is the greater	$\pm 0.03$ mg/L or $\pm 20\%$ , whichever is the greater
Mercury	$\pm 15.00$ nmol/L or $\pm 30\%$ , whichever is greater	$\pm 3.00$ $\mu$ g/L or $\pm 30\%$ , whichever is greater
Magnesium	$\pm 0.03$ mmol/L or $\pm 12\%$ , whichever is greater	$\pm 0.73$ mg/L or $\pm 12\%$ , whichever is greater
Manganese	$\pm 10.00$ nmol/L or $\pm 25\%$ , whichever is greater	$\pm 0.55$ $\mu$ g/L or $\pm 25\%$ , whichever is greater
Nickel	$\pm 25.5$ nmol/L or $\pm 15\%$ , whichever is greater	$\pm 1.50$ $\mu$ g/L or $\pm 15\%$ , whichever is greater
Lead	$\pm 40.00$ nmol/L or $\pm 20\%$ , whichever is greater	$\pm 8.3$ $\mu$ g/L or $\pm 20\%$ , whichever is greater
Selenium	$\pm 0.30$ $\mu$ mol/L or $\pm 25\%$ , whichever is the greater	$\pm 23.7$ $\mu$ g/L or $\pm 25\%$ , whichever is the greater
Thallium	$\pm 0.49$ nmol/L or $\pm 25\%$ , whichever is greater	$\pm 0.10$ $\mu$ g/L or $\pm 25\%$ , whichever is greater

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Vanadium	$\pm 0.20$ nmol/L or $\pm 25\%$ , whichever is greater	$\pm 0.01$ $\mu$ g/L or $\pm 25\%$ , whichever is greater
Zinc	$\pm 1.20$ $\mu$ mol/L or $\pm 15\%$ , whichever is the greater	$\pm 0.08$ mg/L or $\pm 15\%$ , whichever is the greater

**The performance score** is calculated as follows (ignoring the + or – sign).

a Z-score of 0 to 1 = 3,

a Z-score of >1 to 2 = 2;

a Z-score of >2 to 3 = 1;

a Z-score of >3 = 0.

Scores of 0 are printed in red, of 1 in amber and of 2 or 3 in black.

**The cumulative performance score** is the sum of all performance scores in the past twelve months. For new participants, new schemes or changed method sets, the cumulative performance score is the sum of all performance scores from the beginning of the current cycle or from the change of the method set. A cumulative score of <30 indicates unsatisfactory performance and is printed in red while a score of 30 to 47 suggests performance could be improved and comes in amber.

Please note that during the first year of participation the scoring will be incomplete but will still be shown in red. The same may happen if participants change their method set during the cycle, submit less than 24 results or submit part of the results with different method set.

**The median cumulative performance score** refers to the scores of all participants.

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