In most geochemical contexts the term "sigma" is wrong. The correct term is "s", which is an estimate of the standard deviation based on repeated measurements on a single sample.

Avoid the term "ppm", as it is ambiguous. Though often indicating a mass ratio, "ppm" could also relate to volume of a liquid (mg/l), or atomic ratios, or even a volume ratio for fluids.

Do you want to learn more about correct terminology in geochemistry? Then visit www.geoanalyst.org/glossary – a valuable resource.

Want to learn more?
www.geoanalyst.org/glossary
In most cases the term "error" is not correct for the plus-or-minus value associated with a measurement result. Rather, one should speak of "measurement uncertainty". 

Precision is always associated with a measurement result. Hence, a method cannot be precise, but a result can be.

The calibration of an instrument usually involves a Reference Material. A reference material is a well characterized, homogeneous material. The term "standard" can mean something totally different.

"Small bias" yes! "High accuracy" no! Don't be inaccurate!

Know your Reference Material!

Please, no more errors from your laboratory!

Standard ≠ Reference Material

An analytical error is when you make a blunder in the laboratory. 

...the VIM3 metrology guide sees things differently.

Precision is what you want when hammering a rock, however...