

2. Organic carbon analysis 6.4 % and 3. Bulk density analysis 10.3 %.

Uncertainty for organic carbon and bulk density is estimated by combining precision, recovery, and bias components. The mean (average) and standard deviation are first calculated to describe repeatability. Relative standard uncertainty, $u(x)$ (%), is derived from the standard deviation.

Recovery (yield, %) is used to assess method performance, and bias (%) is calculated as the deviation from the reference value. The standard uncertainty of bias (S bias) is determined from replicate measurements.

The combined bias uncertainty is then calculated as:

$$U_{bias} = \sqrt{S_{bias}^2 + U_{ref}^2 + u(y)^2}$$

where U_{ref} represents the uncertainty of the reference or certified material.

Finally, the combined standard uncertainty (U) is expanded using a coverage factor $k = 2$ to obtain the expanded uncertainty, corresponding to approximately 95% confidence.

4. Software (Google Earth) 5 % Google Earth does not provide a formally specified measurement uncertainty. Published studies indicate positional accuracy on the order of tens of meters (e.g., ~50 m RMSE globally). Therefore, uncertainty associated with spatial measurements is estimated based on literature values and the scale of the measured features.

	Name	Code	Date
Prepared:	D. KIROVA	DK072ZCS	15.4.2025
Checked:	K. SEMENZHEVA	KS0223KS	15.4.2025
Edited:	K. SEMENZHEVA	KS0223KS	20.4.2026
Checked:	L. ALEKSANDROVA	LA0424CS	23.4.2026
Checked:	Ch. Marinov	CM0622CS	26.4.2026
Edited:	K. SEMENZHEVA	KS0223KS	19.6.2026
Checked:	L. ALEKSANDROVA	LA0424CS	20.6.2026