WAT-PS-10 Assigning Groundwater Assessment Criteria for Pollutant Inputs – Draft for Consultation

Annex 2 Groundwater Standard concentrations

A2.1 Standards for common substances

A list of standards for common substances is available here.

For radioactive substances, the standards are dose based and assessed by the risk to members of the public and non-human organisms and their habitats[1]. The risk will be assessed using the procedures set out in the relevant radioactive substances guidance; SEPA staff are recommended to consult the Radioactive Substances Unit for specialist advice.

For heat, no generic temperature standard has been set for groundwater. The temperature in groundwater must not be high or low enough to cause adverse direct or indirect impacts in groundwater-dependent receptors including surface waters, wetlands or abstractions.

A2.2 Methodology for deriving standards

Where no standards are available, standards may be derived using the methodology set out in Scottish Government directions.

When assessing risks to surface waters posed by metals in groundwater, bioavailability may be taken into account as set out in WAT-SG-53 provided the relevant supporting surface water quality data is available for the receiving waterbody.

[1] This standard is achieve the principles and standards set out in COUNCIL DIRECTIVE 2013/59/EURATOM)

A2.3 Methodology for modifying standards to account for naturally elevated background concentrations

Where appropriate site-specific assessment shows that natural background concentrations exceed the Hazardous Substance Input Value or Threshold Value, a site-specific value equal to the annual average natural background concentration may be used instead.

It is not permissible to modify the standards due to background concentrations that are elevated due to anthropogenic influences.

A2.3 Approach to managing limits of detection

SEPA recognise that, particularly for contaminated water samples, it may be difficult to achieve limits of detection and quantification that are below some Hazardous Substance Input Values or Threshold Values.

It is not permissible to modify the standards due to issues relating to limits of quantification or detection.

When undertaking numerical modelling or calculations during quantitative risk assessment, the standard should be used.

When undertaking site investigation or water monitoring, for example during site characterisation or for compliance assessment, efforts should be made to achieve limits of detection and quantification that are below the relevant standard. If this is not feasible, SEPA recommend the following approach:

- Use the minimum achievable limit of detection as an initial screening value;
- Adopt a lines of evidence approach to determine the potential significance of the consequent uncertainty;
- Take the significance of the uncertainty into account during regulatory decision making.

In particular, SEPA expect a precautionary approach to be adopted in relation to abstractions used for potable water supply and in relation to ecosystems and habitats that are designated sites (e.g. SSSI).