Advanced Analytical Facilities for physico-chemical characterisation and quantification of trace & ultra-trace elements in environmental matrices

Determination of trace and ultra trace amount of elements in environmental matrices is a challenging task owing to their interferences in the sample matrix. As per present environmental norms, it is mandatory to measure the trace and ultra-trace elements in environmental samples collected around the nuclear facilities. The physico-chemical parameters are very important to understand the behaviour of analogue radionuclides and their chemistry in the ecosystem.

Major Analytical instruments in Health Physics Division for physico-chemical characterisation are:

- **Inductively Coupled Plasma – Optical Emission Spectrophotometer (ICP –OES)** : For simultaneous measurement trace elements in environmental media converted to aqueous medium
- **Mercury Analyser** : For measurement of nanogram of total mercury in any solid or liquid samples without chemical processing
- **Voltammeter** : For measurement of any electroactive element at sub-ppb level
- **Ion Chromatography** : For measurement of multiple anions and cations at ppb level

Mercury Analyser

LED Fluorimeter

CHNS Analyser

TOC Analyser

Voltameter

ICP OES

Ion Chromatography

Water Quality Sensors

AAS