





Presentation summary



What are the issues with competitor technology?



How do Aquamonitrix® Analysers differ?



What kinds of data sets does Aquamonitrix® deliver?



Current Technology



Issue 1 - UV probes not selective and can experience fouling



Issue 2 - Salinity impacts spectrum



Issue 3 – Colorimetry based systems use toxic reagents and are impacted by varying salinity



Aquamonitrix®



Combines ion chromatography
and UV spectroscopy



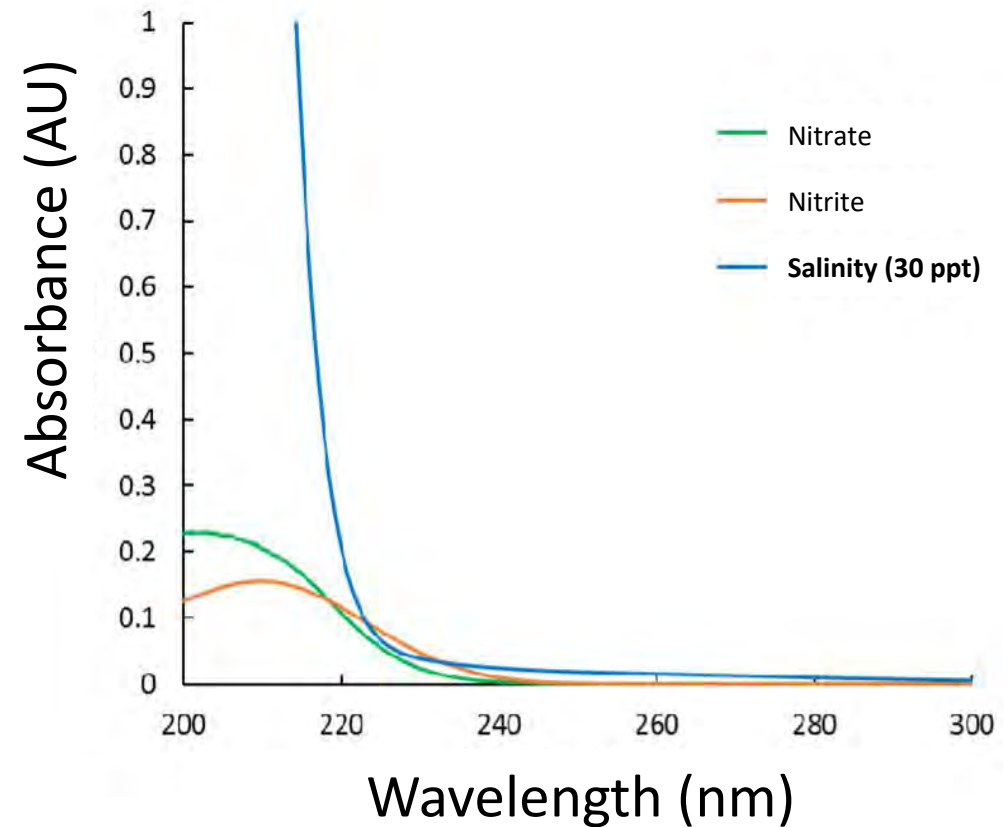
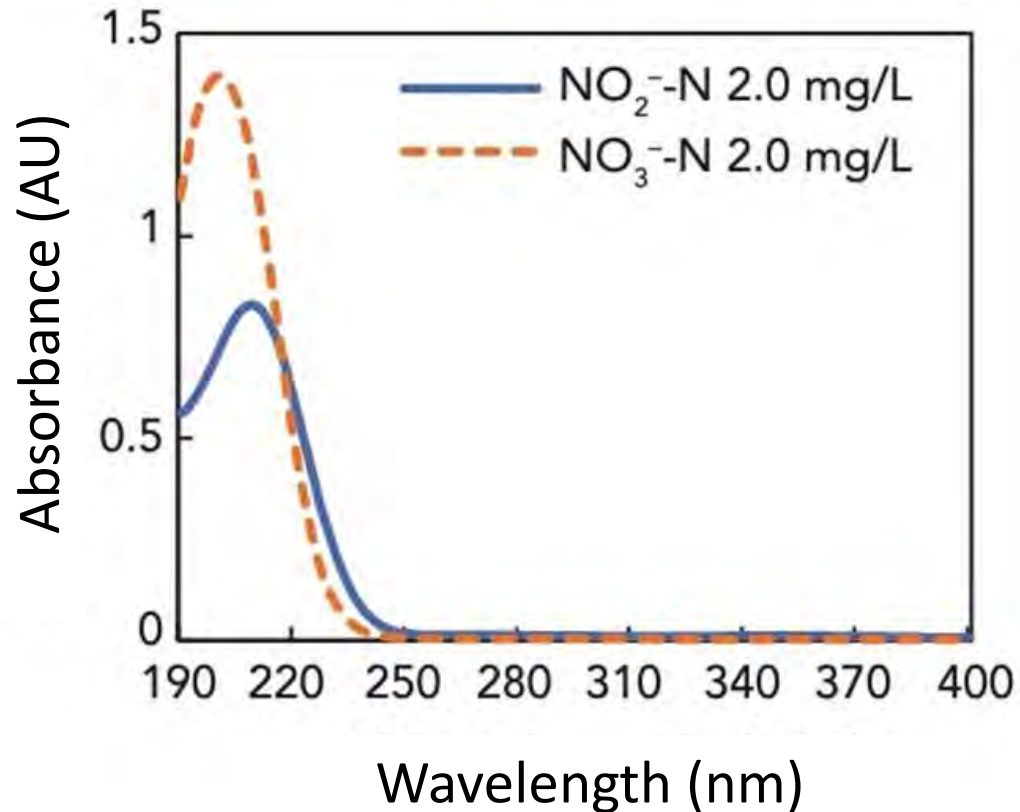
Saltwater eluent gives salinity
independent measurement



Separation of ions gives
selectivity

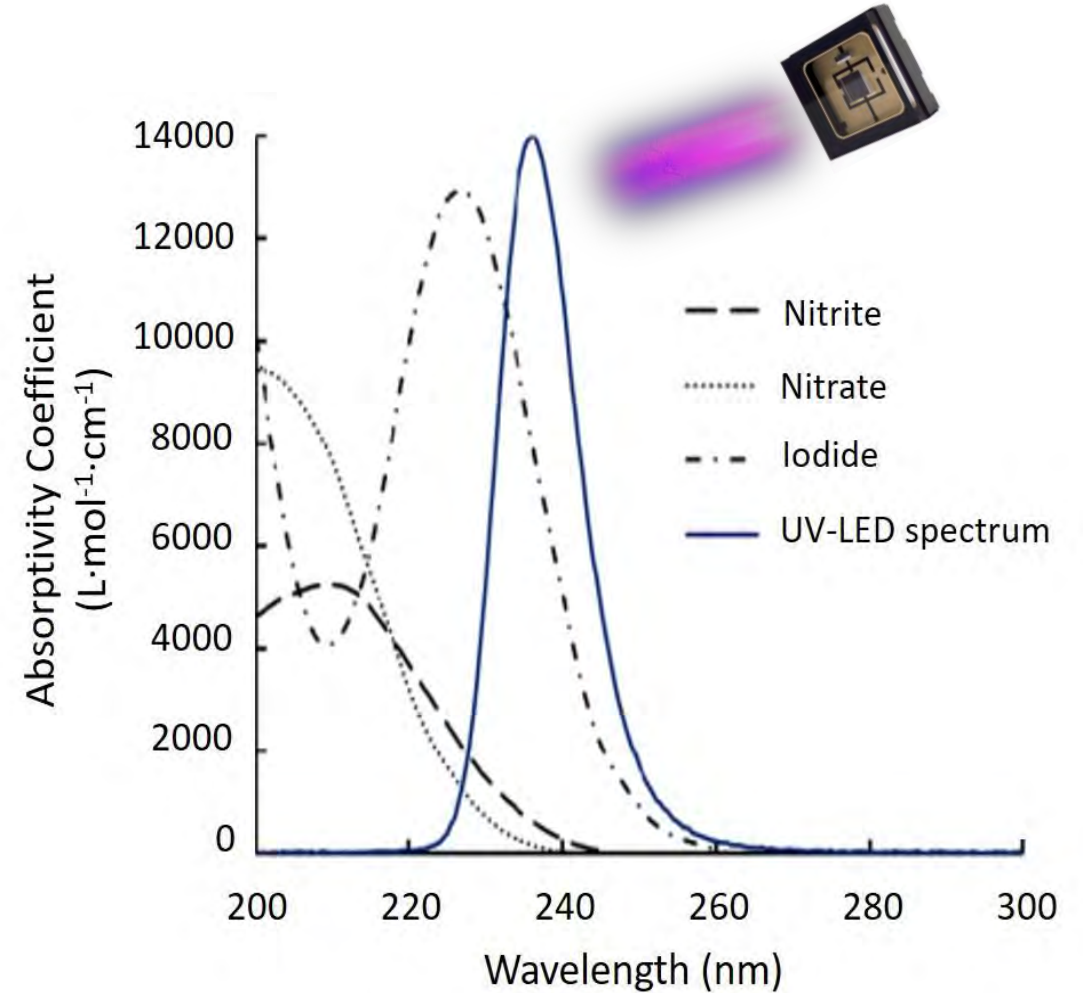
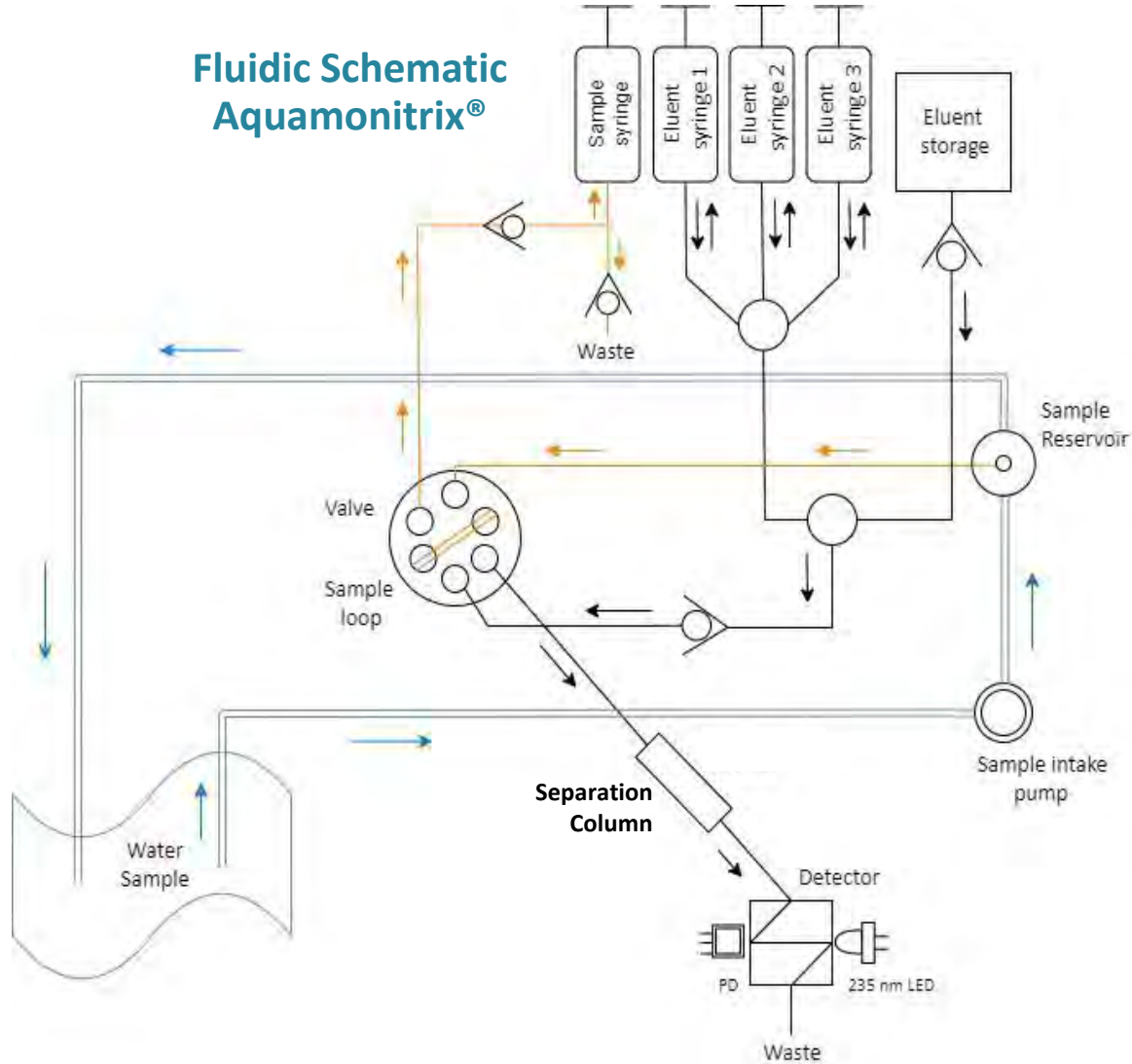
The separation by the IC column is vital

- All **UV-based competitor devices** must use algorithms and matrix specific calibration for nitrite and nitrate

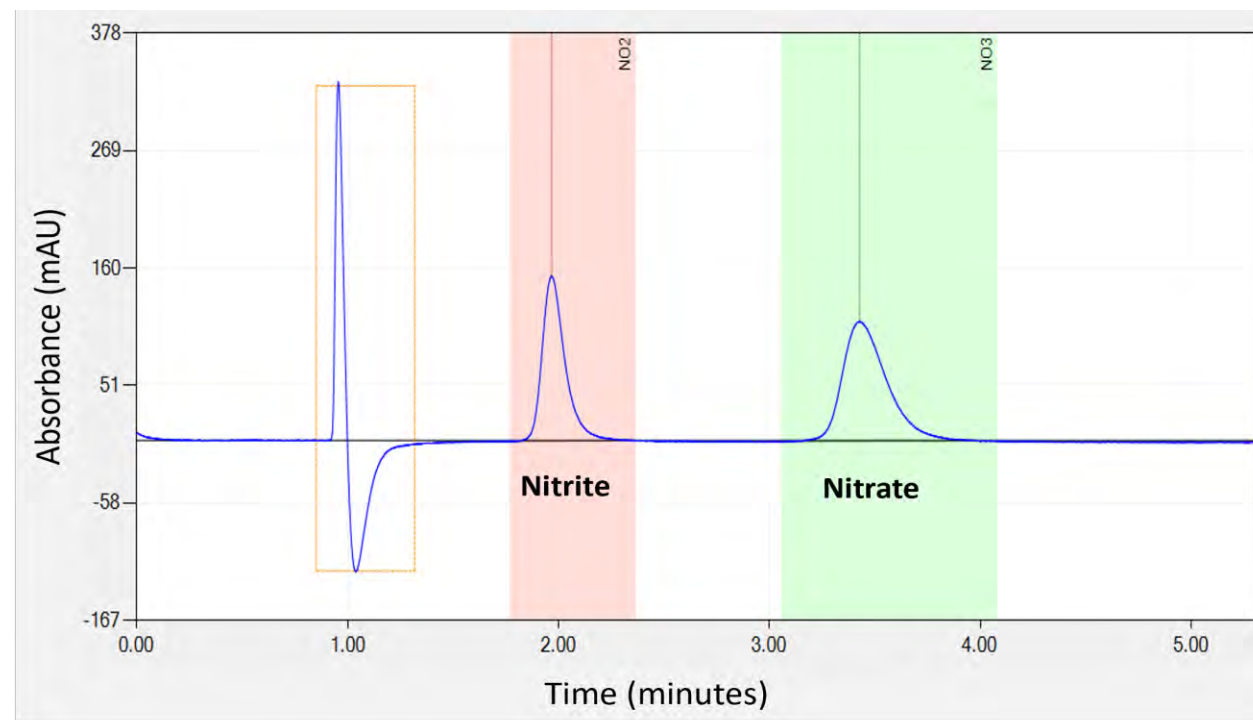


The separation by the IC column is vital

Fluidic Schematic
Aquamonitrix®



The separation by the IC column is vital



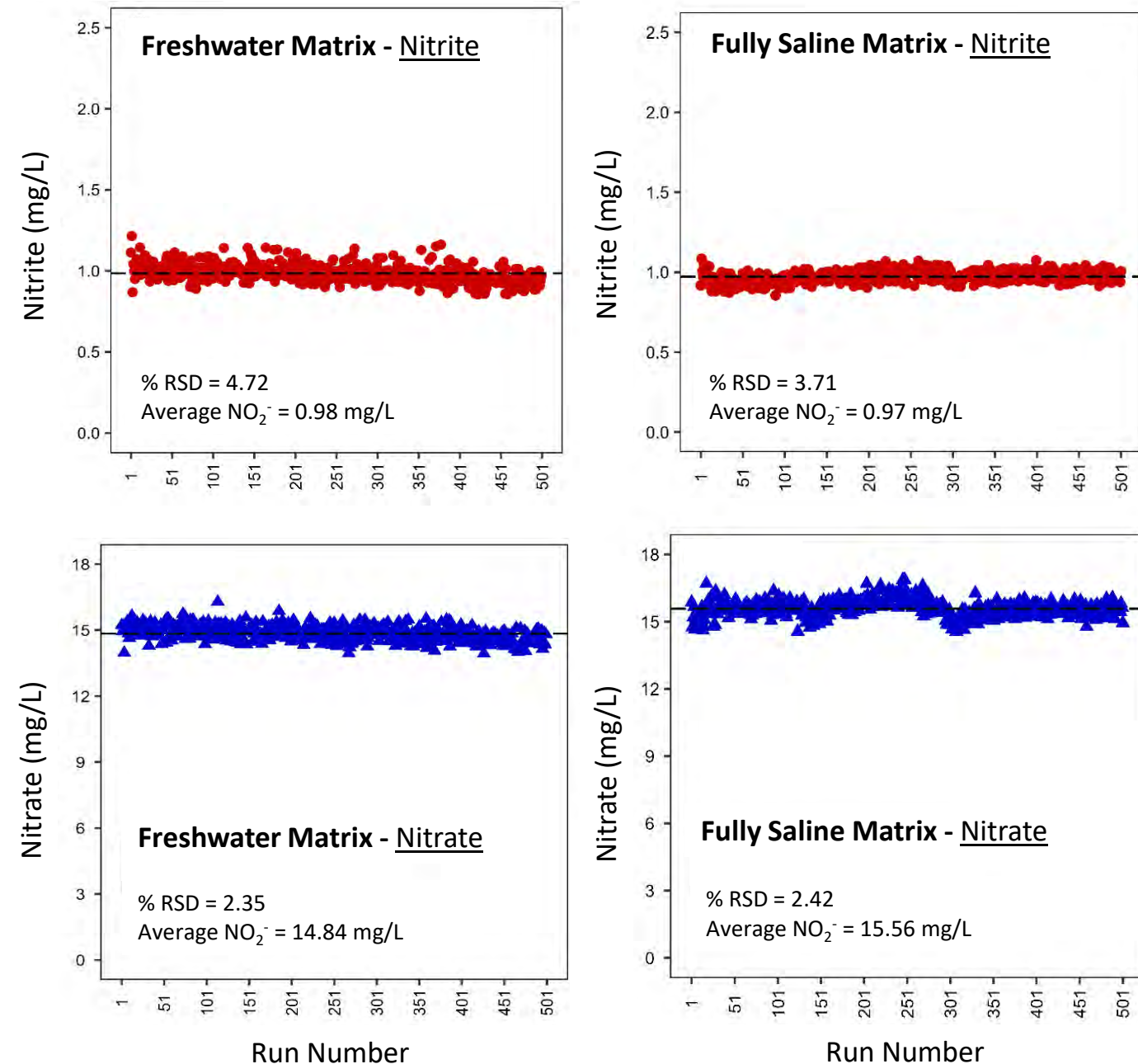
Nitrate: 0.6 - 500 mg/L as NO_3^- | 0.14 to 113 mg/L as N

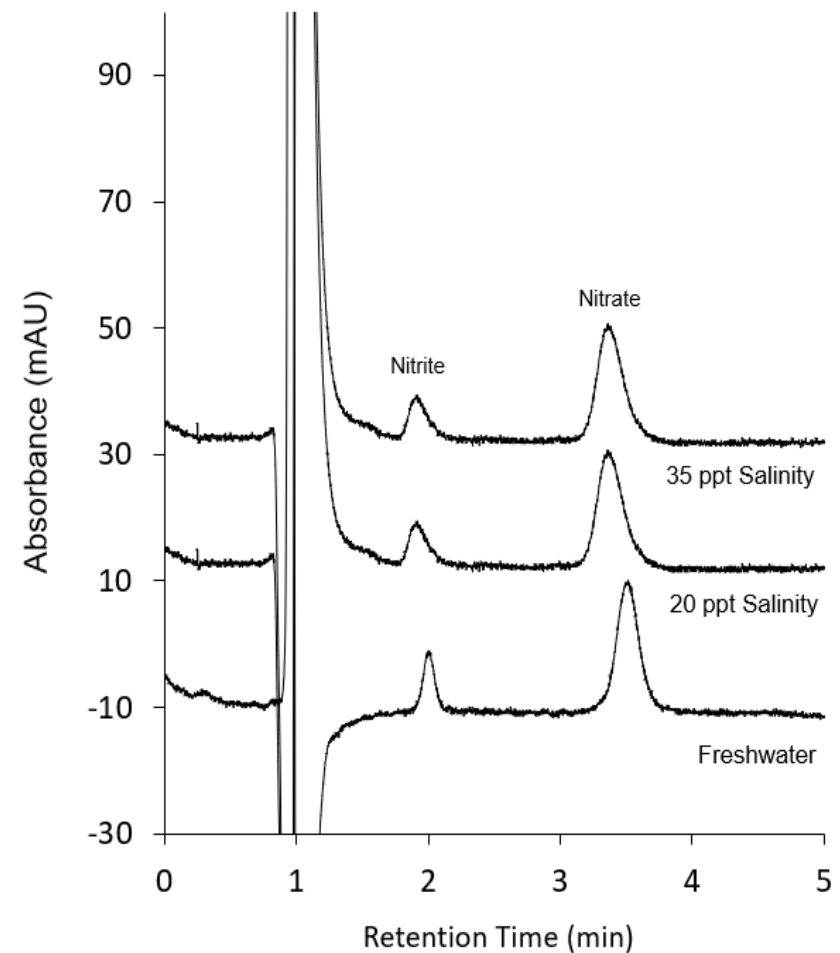
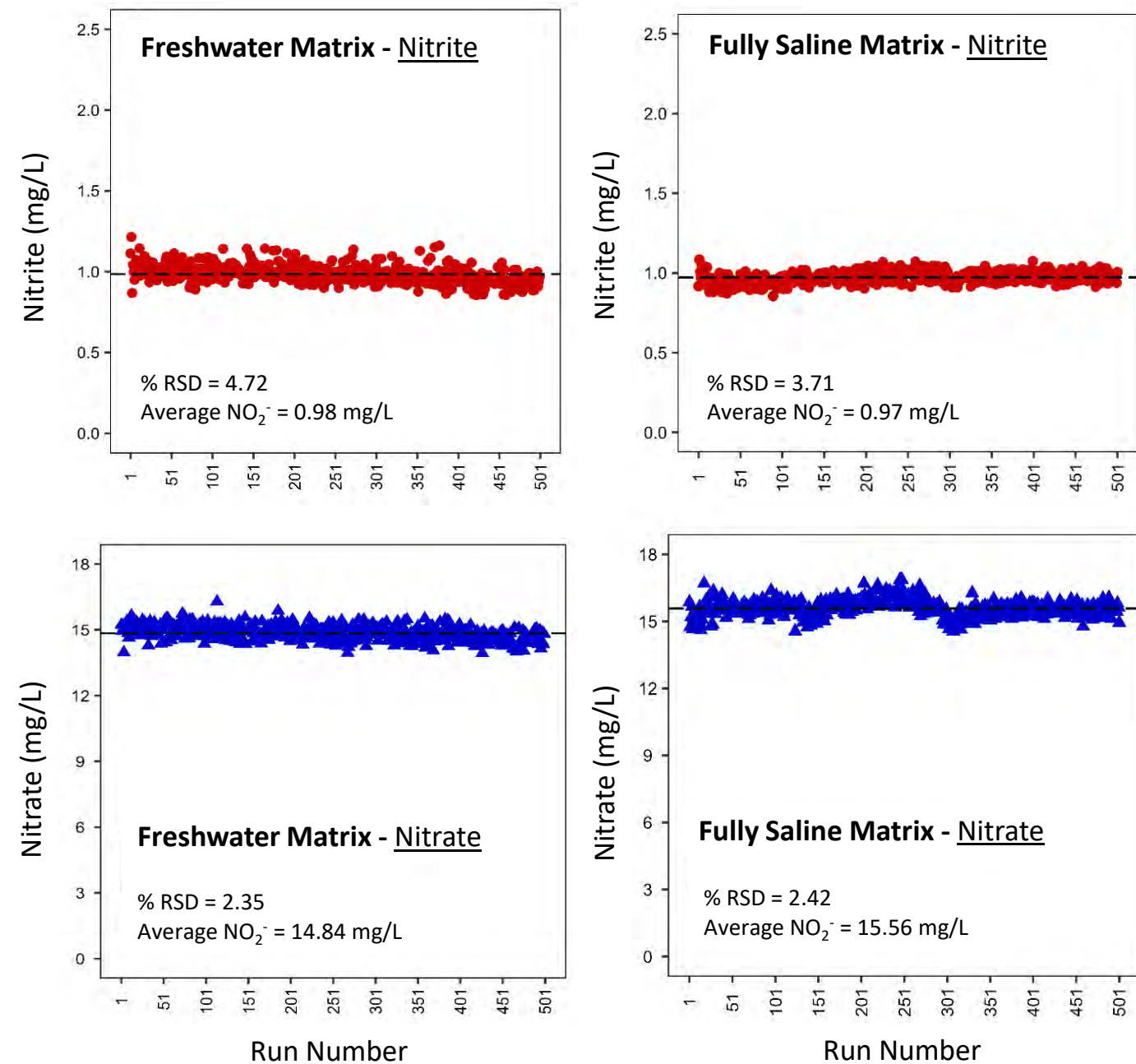
Nitrite: 0.05 - 100 mg/L as NO_2^- | 0.01 to 23 mg/L as N



Salinity Independent

- Using on-column matrix elimination using NaCl eluent, chloride matrix ion in eluent, overcomes the matrix effect of saline samples
- Using one calibration, the Aquamonitrix[®] analyser can accurately detect nitrite and nitrate in varying salinities





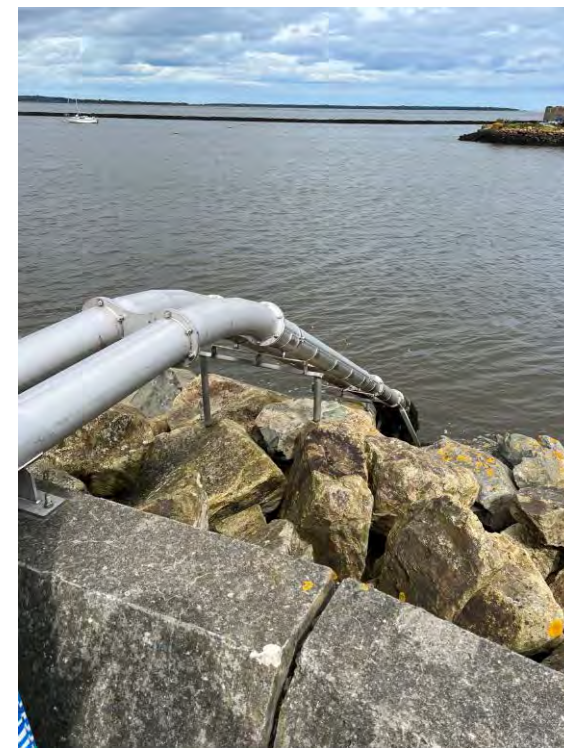
Chromatograms for the analysis of $1 \text{ mg L}^{-1} \text{NO}_2^-$ and $15 \text{ mg L}^{-1} \text{NO}_3^-$ freshwater, 20 ppt salinity and 35 ppt salinity sample matrices. Conditions: 120 mM NaCl Eluent, AG15 Column, 235 nm LED Detector



Continuous nitrate monitoring in estuarine and river waters
Wexford, Ireland

Continuous nitrate monitoring in estuarine and river waters

Aquamonitrix® versus Commercial UV Probe



Continuous nitrate monitoring in estuarine and river waters – Aquamonitrix® versus Commercial UV Probe

