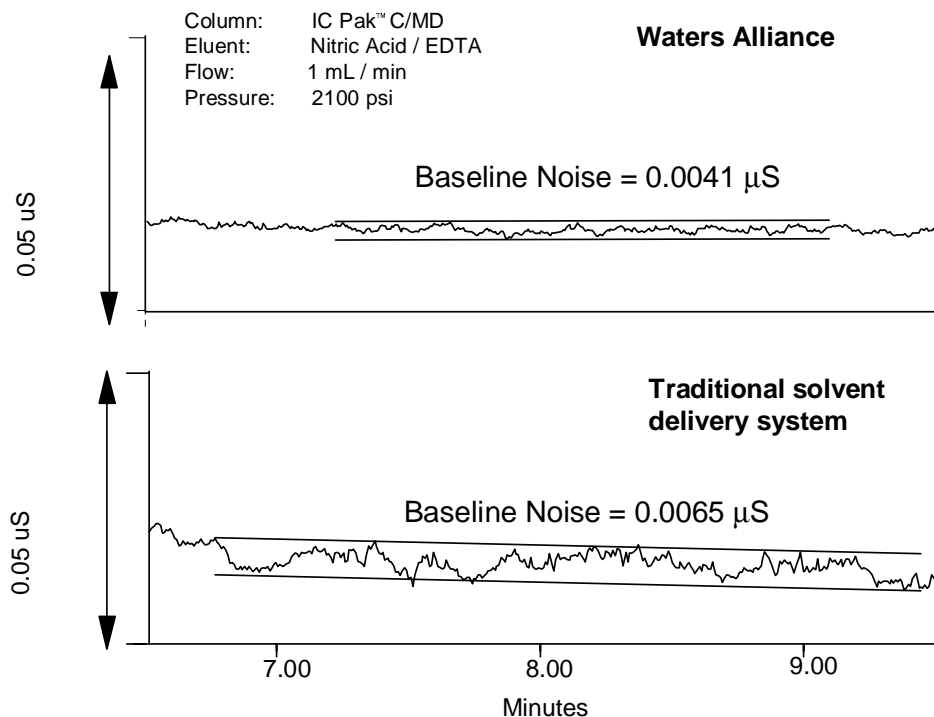


# Waters Alliance® System

## Smooth Flow for Enhanced Detector Performance

HPLC detectors, such as differential refractive index and conductivity, are sensitive to flow and pressure fluctuations. These fluctuations are typically seen as baseline noise. The exceptional flow characteristics of the Waters Alliance Separations Module reduce system fluctuations, providing smoother baselines, resulting in higher sensitivity detection. The comparison of conventional pumping technology to the Waters Alliance solvent management concept demonstrates a substantial reduction in conductivity baseline noise (0.0065 mS to 0.0041 mS). Point of delivery flow optimization incorporating dual pressure transducers with discrete signal processing control of independent piston drives allows the Waters Alliance Separations Module to outperform conventional pumps in smoothness of flow. This reduction of noise provides a greater signal to noise ratio, leading to enhanced sensitivity without instrument modifications. By design, the Alliance does not require the addition of a pulse dampener to achieve this level of performance.

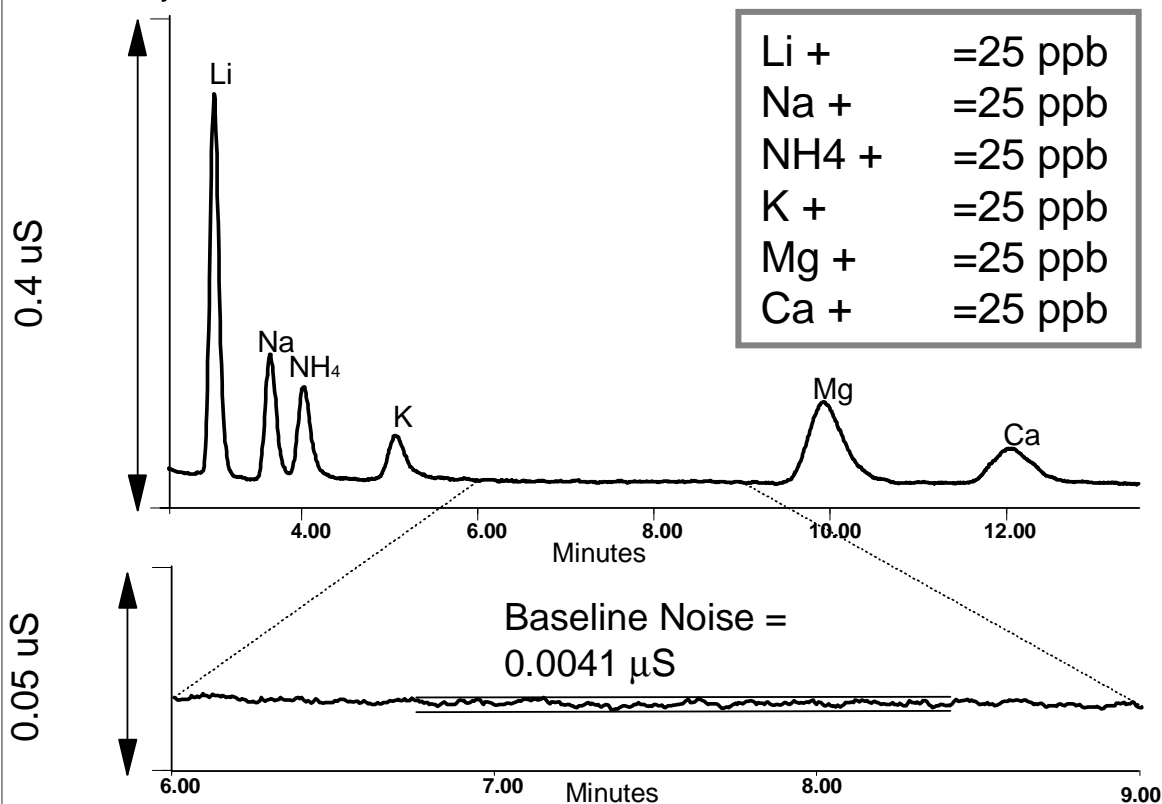
Other features of Waters Alliance Separations Module which make ion chromatography more dependable are solvent conditioning, column temperature control and integral needle and seal wash.



# Alliance System with 432 Conductivity Detector for Cation Analysis

This comparison of traditional pumping technology to the Alliance Separations Module concept demonstrates the substantial reduction in baseline noise, leading to enhanced sensitivity.

The following example is a cation analysis using the 432 Conductivity Detector to detect 6 cations at low concentrations, 25 ppb (parts per billion). The improved baseline noise directly relates to the enhanced sensitivity demonstrated here.



Waters Alliance System consisting of:  
Waters Alliance Separations Module  
Waters 432 Conductivity Detector  
Column: IC Pak C/MD  
Eluent: Nitric Acid / EDTA  
Flow: 1 mL / min  
Pressure: 2100 psi  
Conductivity: 1250 mS (indirect)  
Injection: 100  $\mu\text{L}$