

# Low Level Perchlorate Analysis in Surface and Ground Water by IC-MS

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Presented by WQ Laboratory

# WQ Laboratory Certified for Perchlorate Analysis

## Technique

- Ion Chromatography (IC)
- Ion Chromatography with  
Electrospray ionization  
Mass Spectrometry  
(IC-MS)

## Method

- EPA 314
- EPA 332



# WQ Laboratory IC-MS

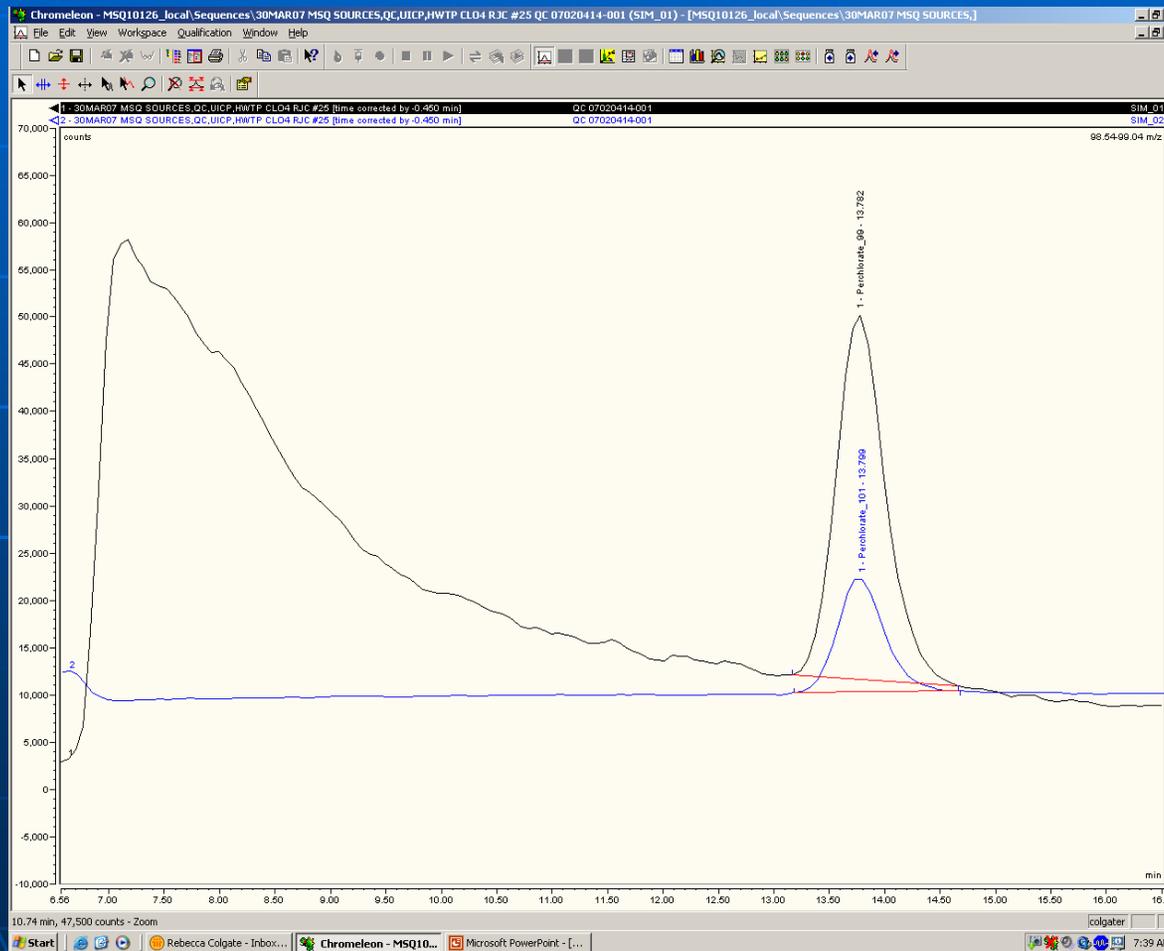


# Selectivity of Technique

- EPA 314 by IC
- EPA 332 by IC-MS
- Conductivity and Retention Time
- Molecular Ions of  $\text{ClO}_4 =$   
 $\text{Cl}^{35} + 4\text{O}^{16} = m/z\ 99$   
 $\text{Cl}^{37} + 4\text{O}^{16} = m/z\ 101$



# Overlay Chromatogram SIM 99 vs SIM 101 (3.0 ppb)



# Sensitivity of Technique

- EPA 314 (IC)
  - RL: 4.0 ppb
  - MDL: 2.0 ppb
  - Range: 4.0 – 120 ppb
- EPA 332 (IC-MS)
  - RL: 0.20 ppb
  - MDL: 0.050 ppb
  - Range: 0.20 – 10 ppb
  - Int. Std =  $\text{Cl}^{35} + 4\text{O}^{18}$
  - m/z 107



# Acknowledgement

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