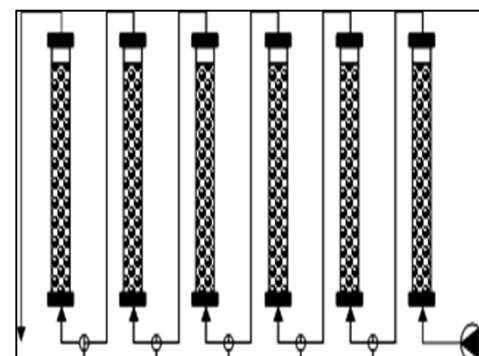
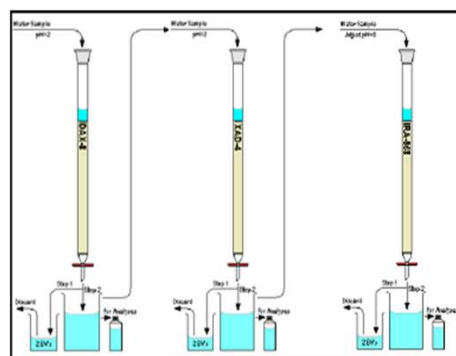


The NOMiNOR project

Results from testing of PeCOD as an alternative to DOC

B. Eikebrokk and G. Thorvaldsen, SINTEF

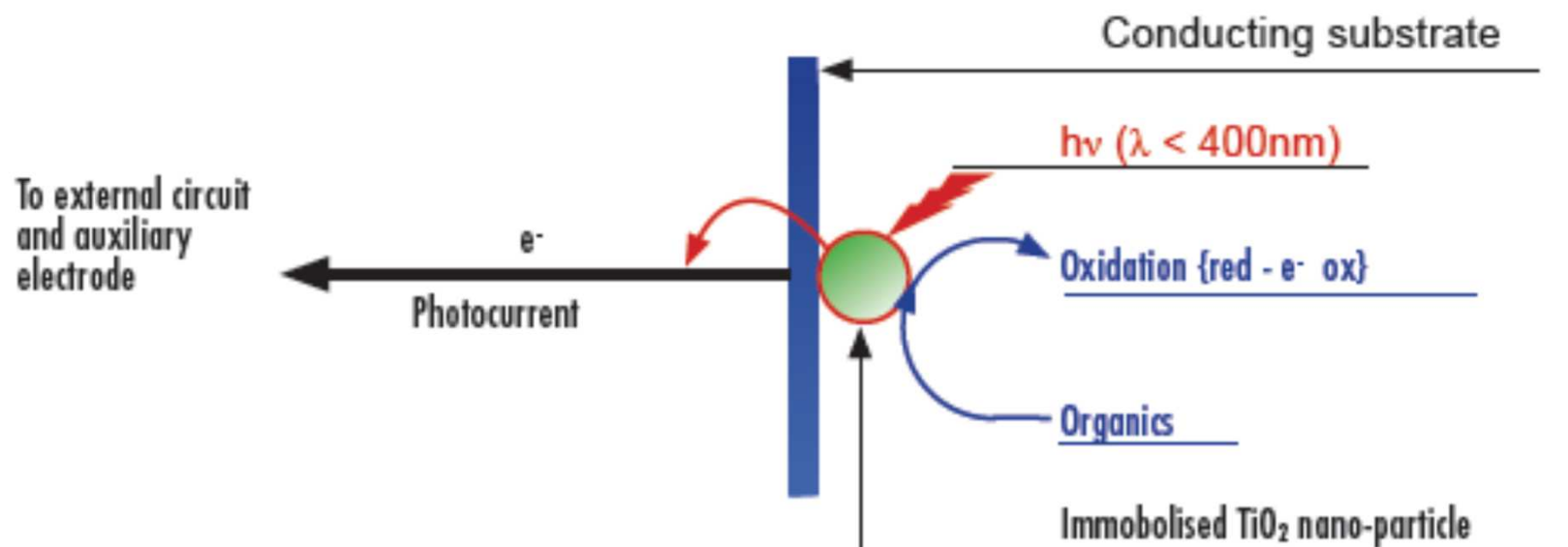


B. Eikebrokk, Chief Researcher, Dr. , SINTEF Norway
bjornar.eikebrokk@sintef.no

The principle of PeCOD[®] measurement

MANTECH INC, Guelph, Ontario, Canada

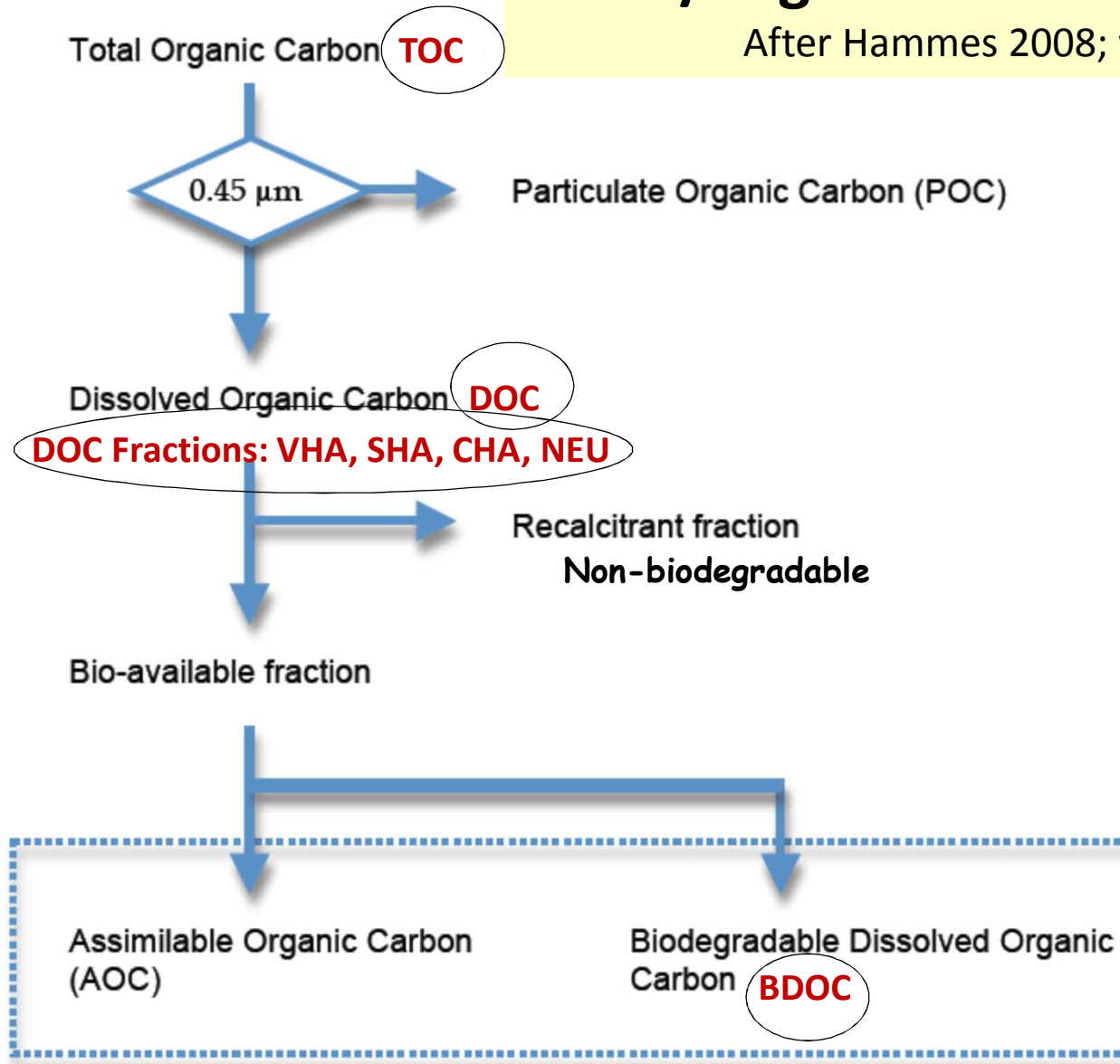
www.mantech-inc.com



Schematic of the photo-electrocatalytic process involved in the analytical signal generation

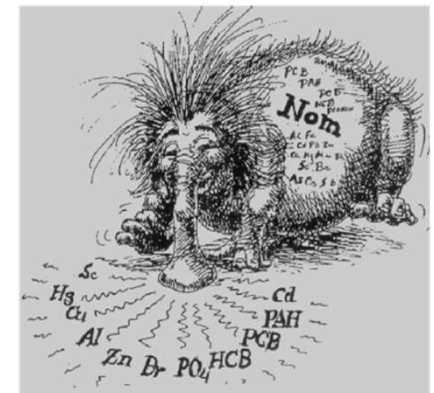
NOM/Organic Carbon in Drinking Water

After Hammes 2008; www.techneau.eu



Conventional parameters

- ✓ TOC and DOC
- ✓ Colour
- ✓ UV-absorbance
- ✓ SUVA



A complex matter that need more characterizing parameters?

PeCOD set-up



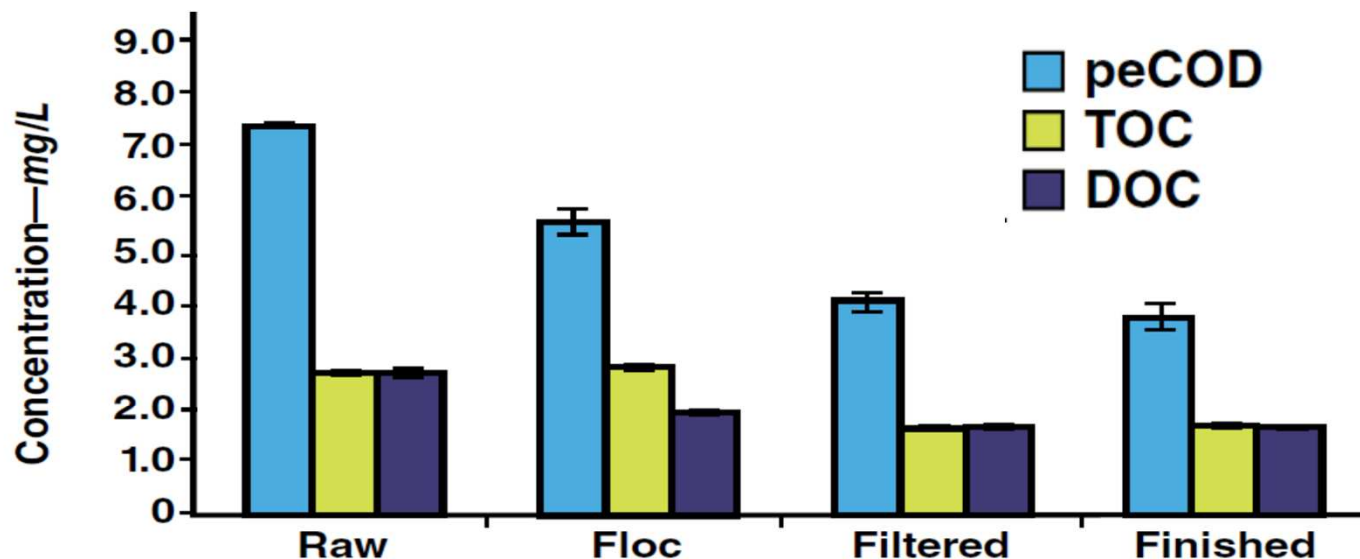
PeCOD set-up



PeCOD[®] versus TOC and DOC

STODDART & GAGNON | 106:9 • JOURNAL AWWA | SEPTEMBER 2014

FIGURE 1 Comparison of Pockwock Lake peCOD, TOC and DOC during treatment

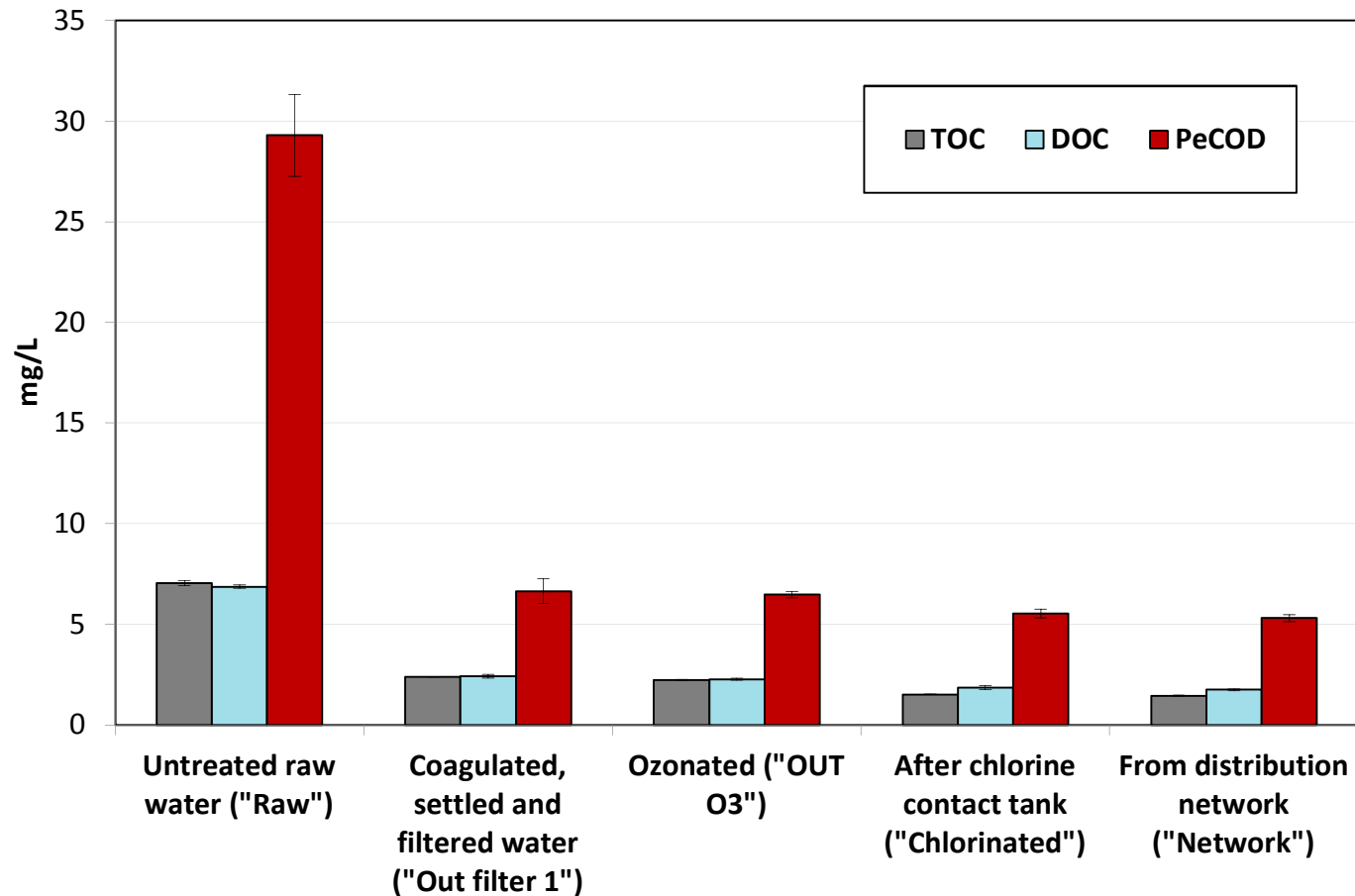


DOC—dissolved organic carbon, floc—flocculated water, peCOD—photoelectrochemical chemical oxygen demand, TOC—total organic carbon

Error bars represent 95% confidence intervals with $n = 3$.

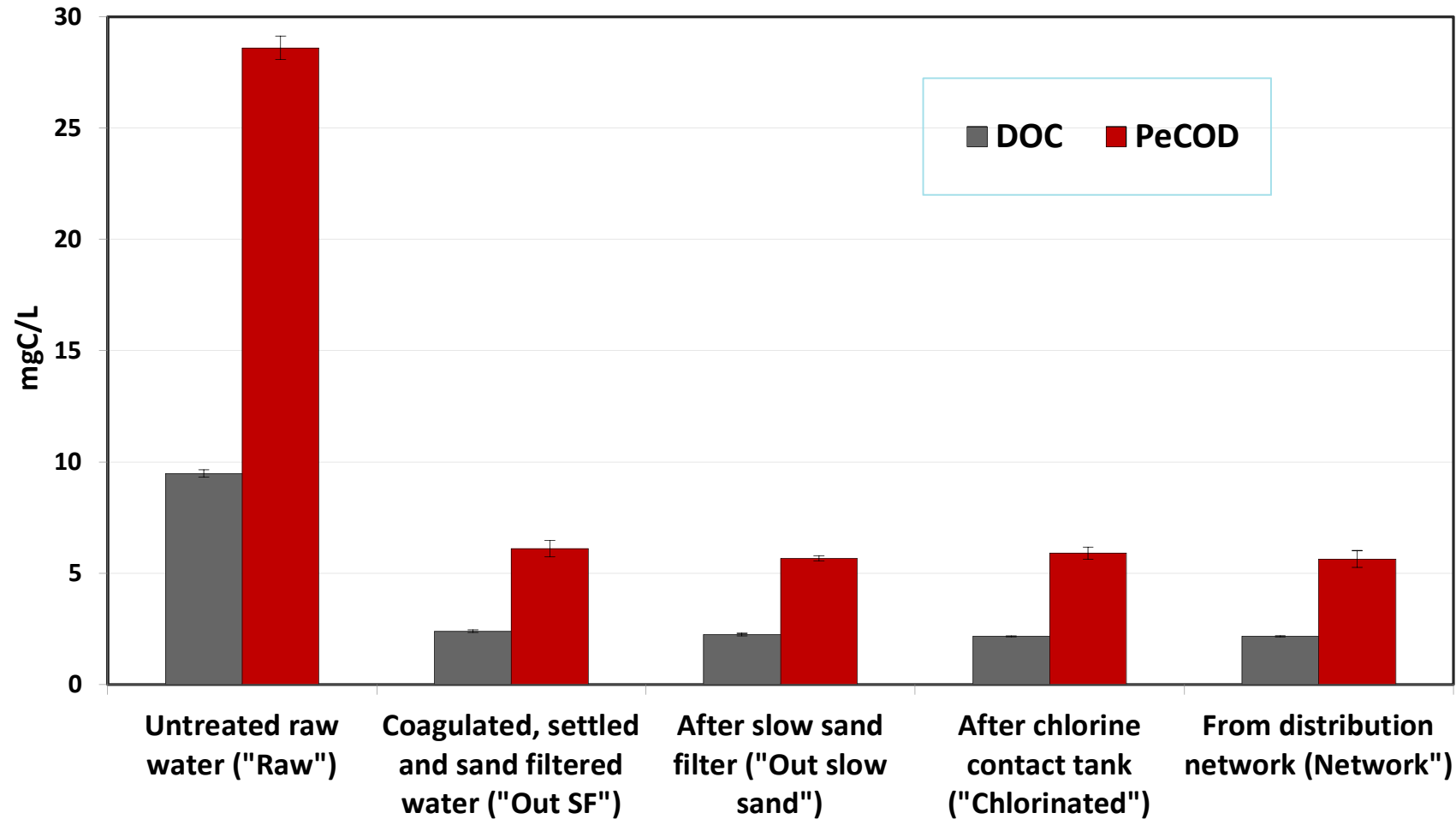
Testing of PeCOD[®] versus TOC and DOC

NOMiNOR Water Samples HSY-FIN, Mar 2015



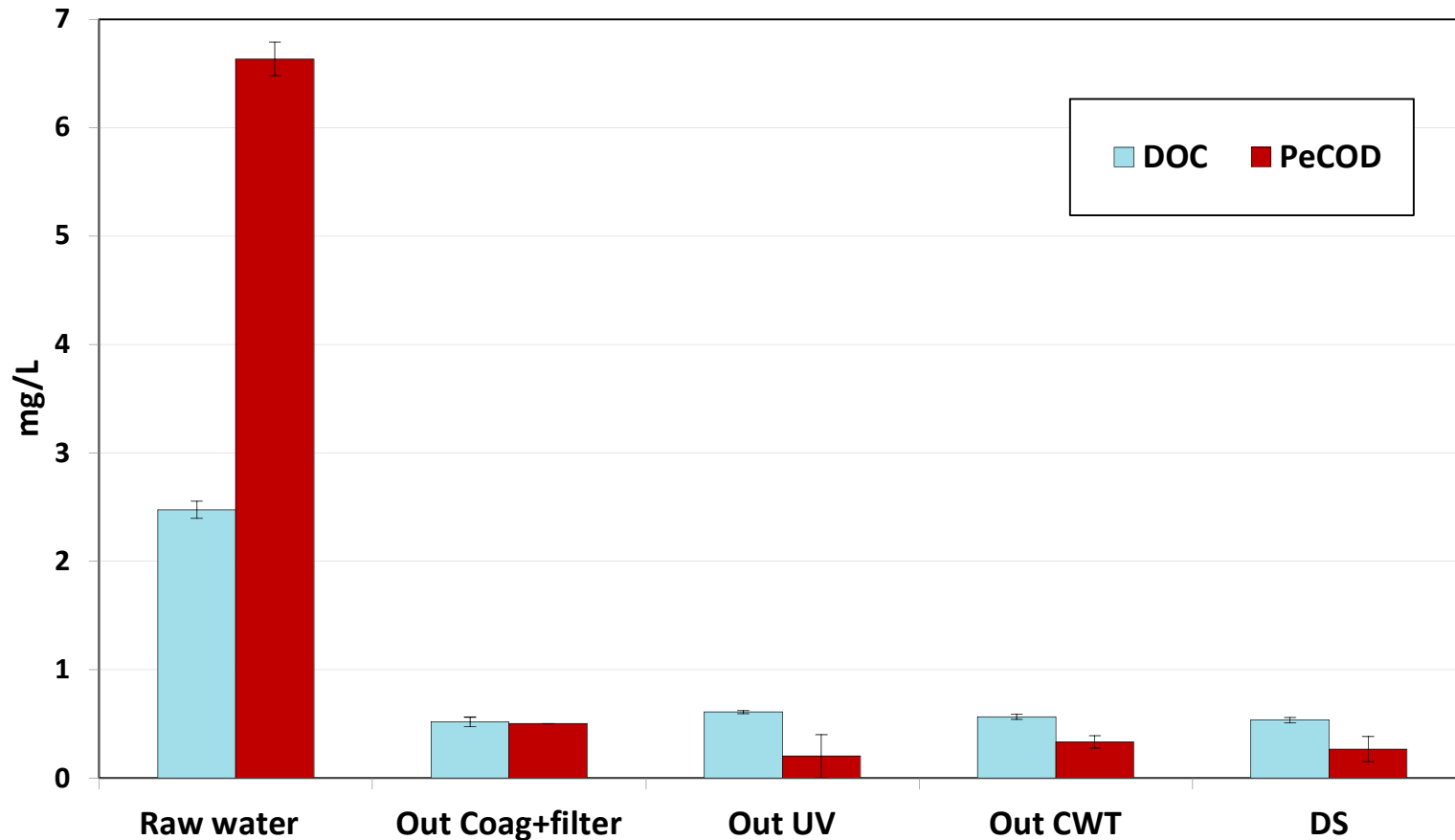
Testing of PeCOD[®] versus TOC and DOC

NOMiNOR Water Samples SYDVATTEN-SWE, Mar 2015



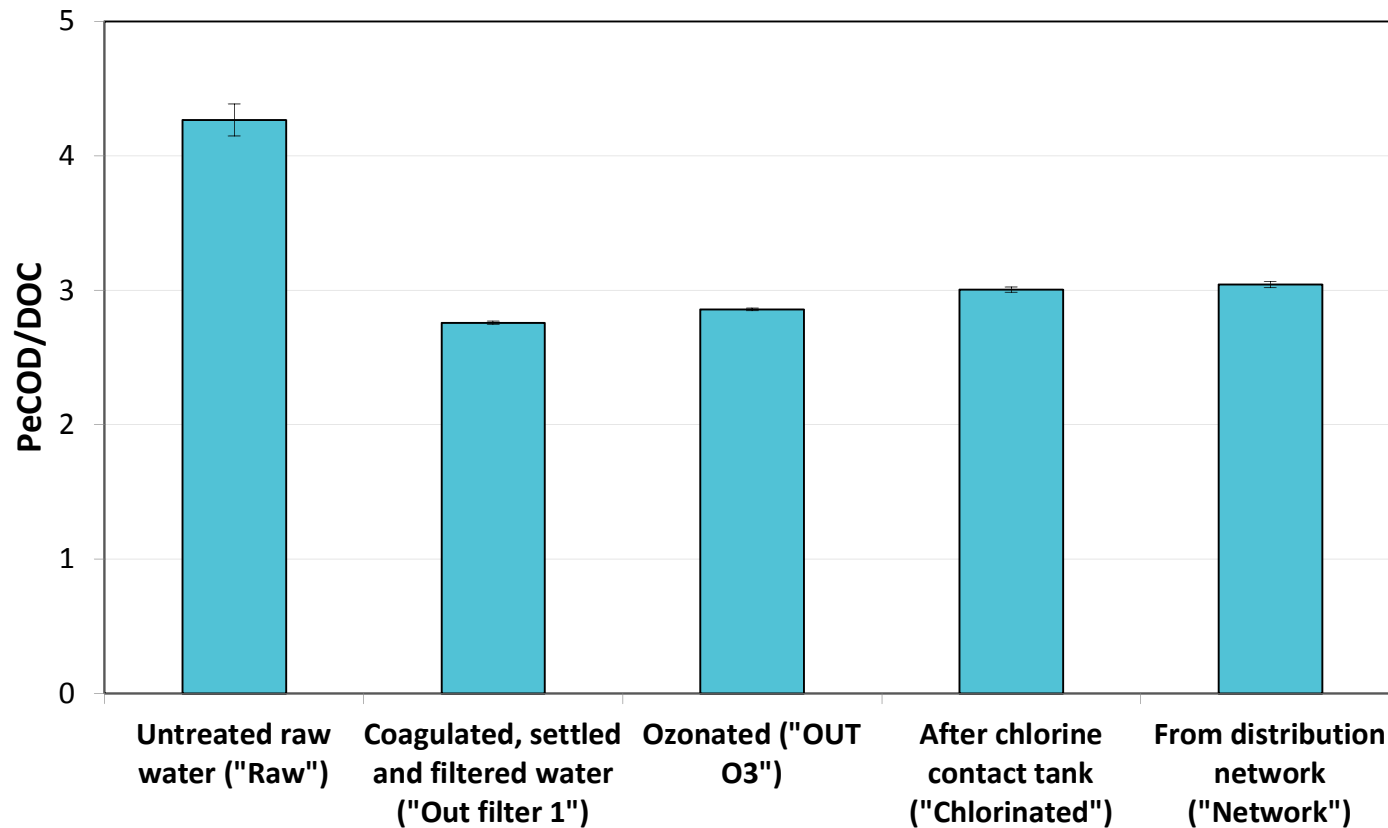
Testing of PeCOD[®] versus TOC and DOC

NOMiNOR Water Samples JOR-NO, Mar 2015



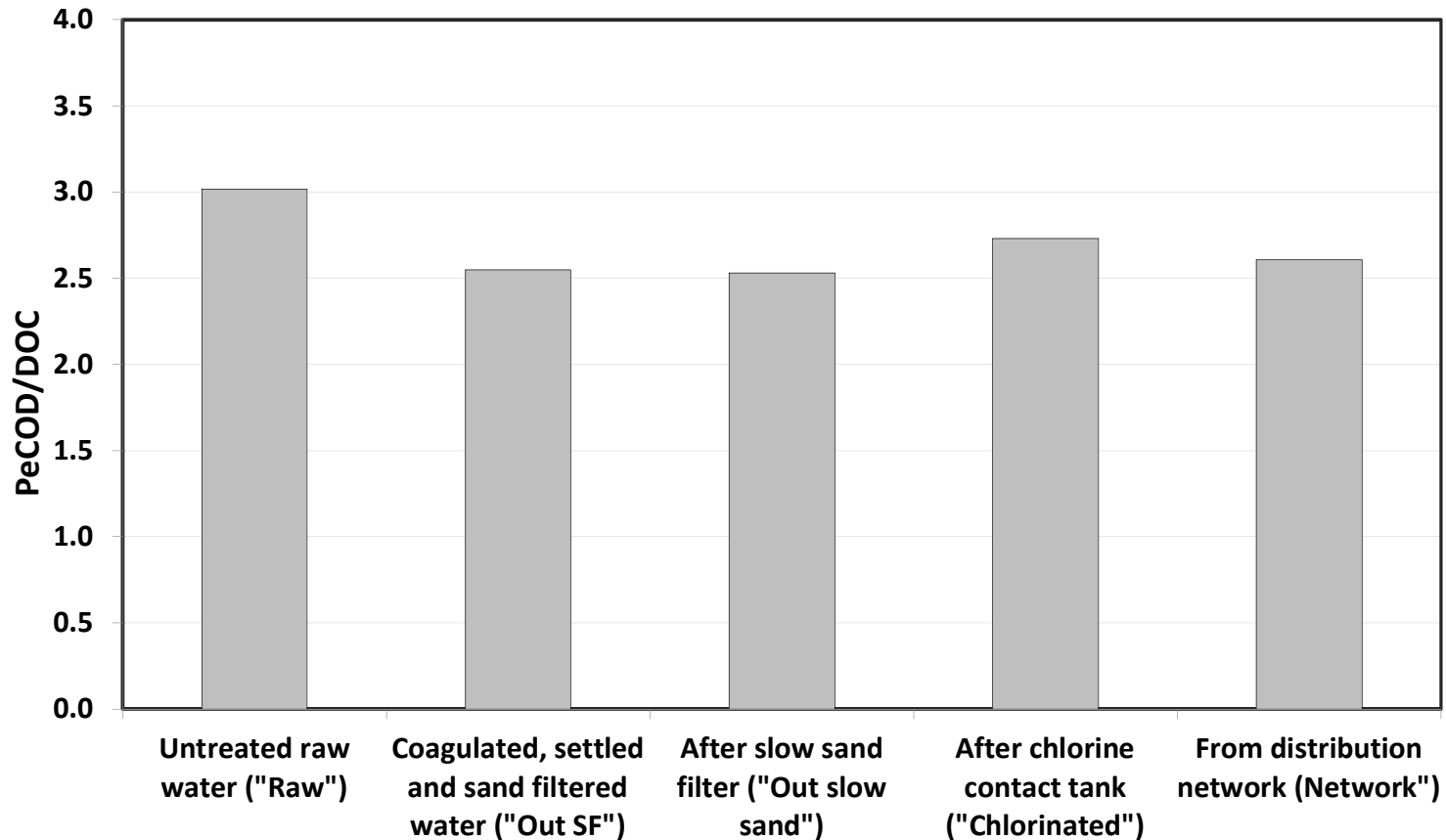
PeCOD[®] to DOC Ratios

NOMiNOR Water Samples HSY-FIN, Mar 2015



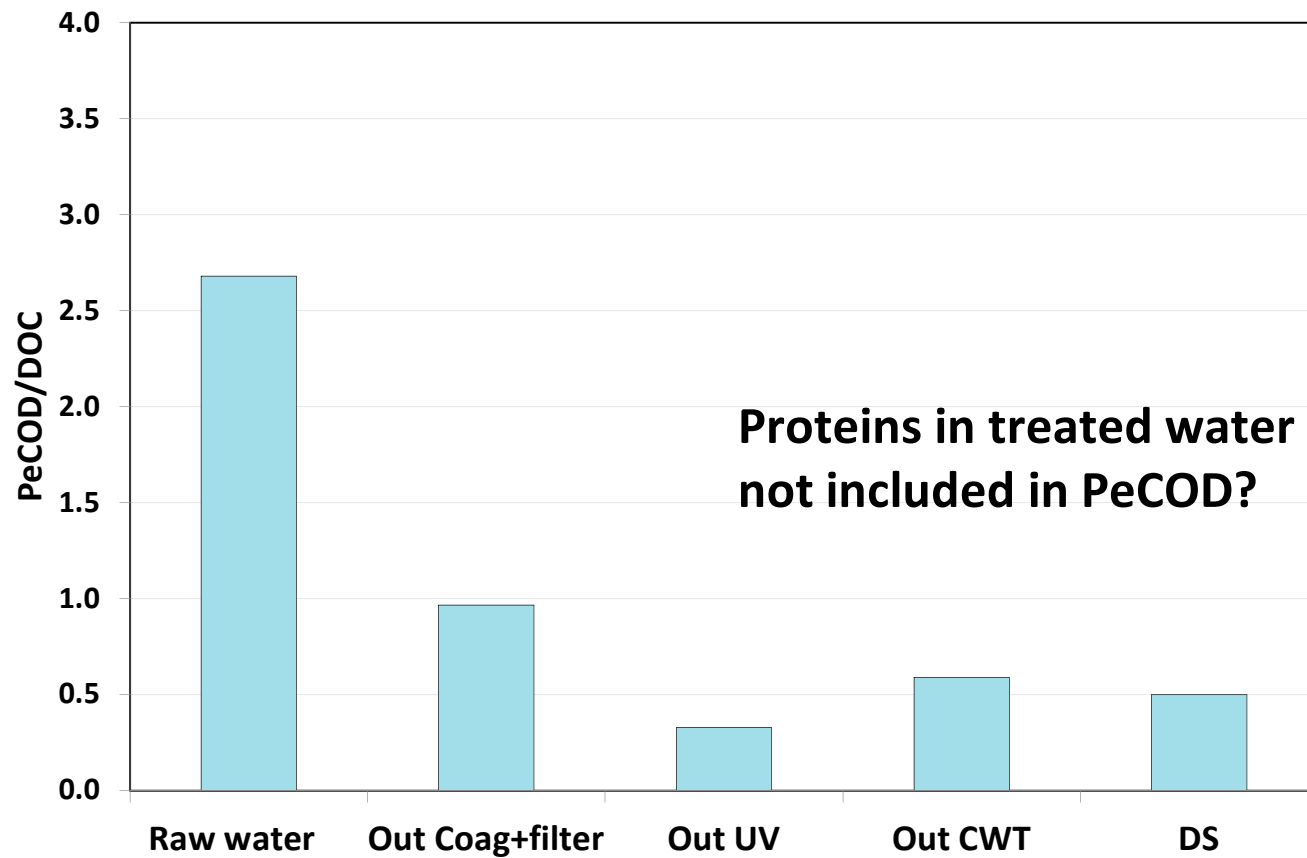
PeCOD[®] to DOC Ratios

NOMiNOR Water Samples SYDVATTEN-SWE, Mar 2015



PeCOD[®] to DOC Ratios

NOMiNOR Water Samples JOR-NO, Mar 2015



PeCOD[®] or DOC

- ✓ PeCOD more sensitive than DOC
 - ✓ PeCOD measures soluble COD – not including proteins, macromolecules or cellulose → Filtered samples
 - ✓ PeCOD can be automated
 - ✓ PeCOD can be used as a portable field analyser
 - ✓ PeCOD can be used on-line
 - ✓ Can PeCOD provide supplementary information?
- PeCOD: an alternative to DOC for NOM fractionation and BDOC?