ELECTROCHEMICAL ANALYSIS WORKING GROUP ACTIVITIES AND PERPECTIVES 2013 - 2019

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Activities 2013, recently finished and running comparisons

- **CCQM-P37.2 (Ag/AgCl electrode comparison)**
  - Started in 2012 to compare Ag/AgCl electrodes from several NMI. Potential differences; stability, porosity, and electrode slope were assessed
  - Interesting preliminary results were shown in the April 2013 meeting, however, further data interpretation and discussion is required.
  - A draft report will be distributed for comments.

Activities 2013, recently finished and running comparisons

- CCQM-K105 (El.conductivity ~ 5 S/m) and CCQM-P142 (conductance ratios)
  - These comparisons were carried out in parallel to investigate the equivalence of conductance ratio measurement results.
  - They also aim to provide an SI traceable conductivity reference value for standard seawater, which is the world wide most accepted reference solution for Practical Salinity measurements.
  - Preliminary results were shown, but there is not Draft A so far.

Activities 2013, recently finished and running comparisons

- **CCQM-K91** (pH of phthalate buffer)
  - Draft B is on revision with recalculated reference values and degrees of equivalence – weighted mean with external consistency was used as KCRV
- **CCQM-K92** (El. conductivity)
  - Draft B is on revision status.

Activities 2013, forthcoming comparisons

- CCQM-K99 – pH of an unknown phosphate buffer (pH~ 7.4 at 25°C)
  - Sample were to be distributed in September 2013. Institutes which decide not to take part in a KC can participate in a DAkkS comparison, that will be run in parallel.
  - Coordinator: PTB

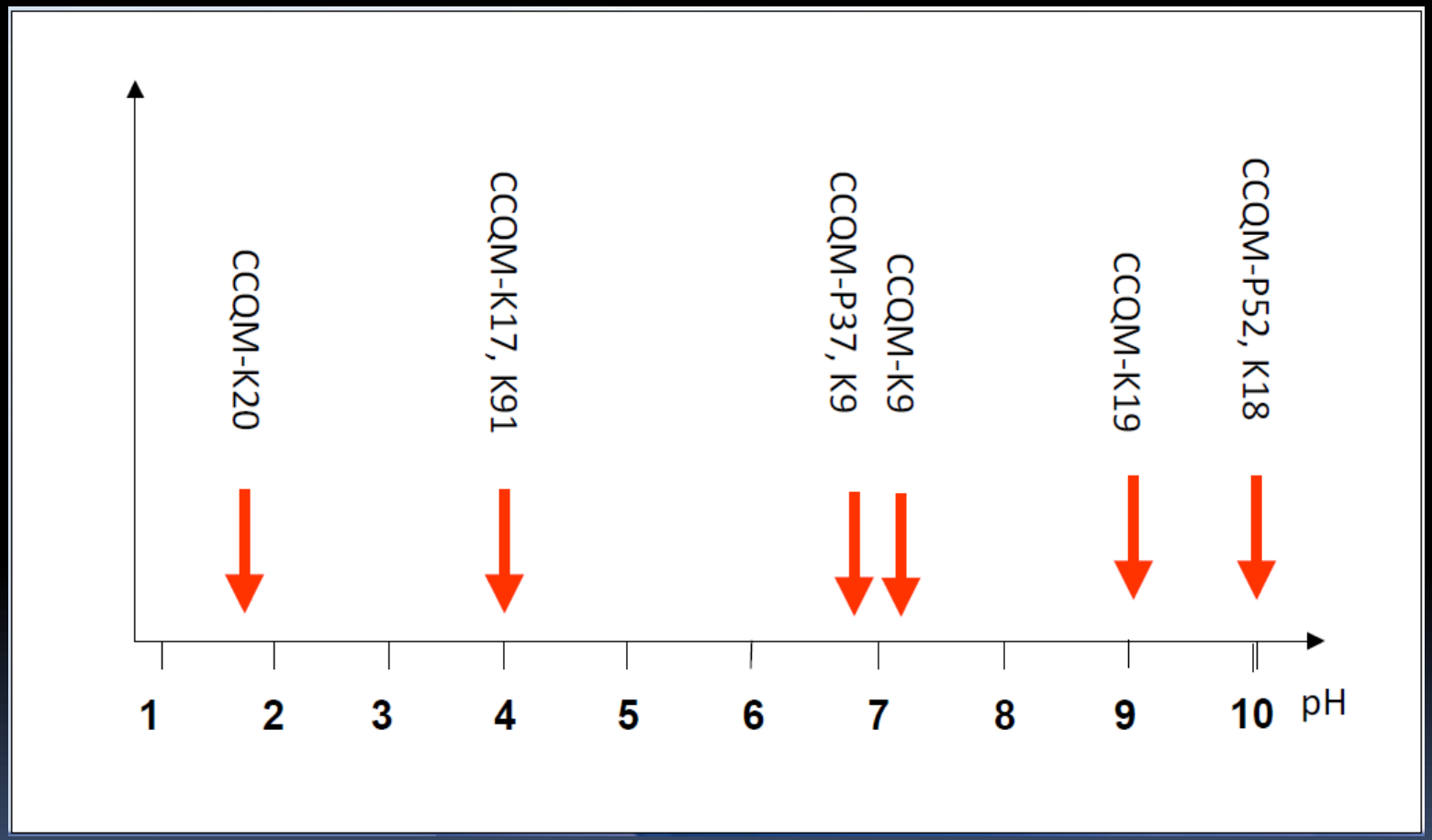
Activities 2013, forthcoming comparisons

- ¿CCQM-P144 Primary cell comparison –.
  - Questionnaires on primary cells shall be distributed by DFM to determine conductivity for the solution to be used and the volume necessary.
- CCQM-P143 preparative (traceability) comparison
  - Measurements are expected to take place in February-March 2014; all NMIs preparing (primary) calibrants from KCl are expected to participate.

Activities 2013, long term comparisons plan

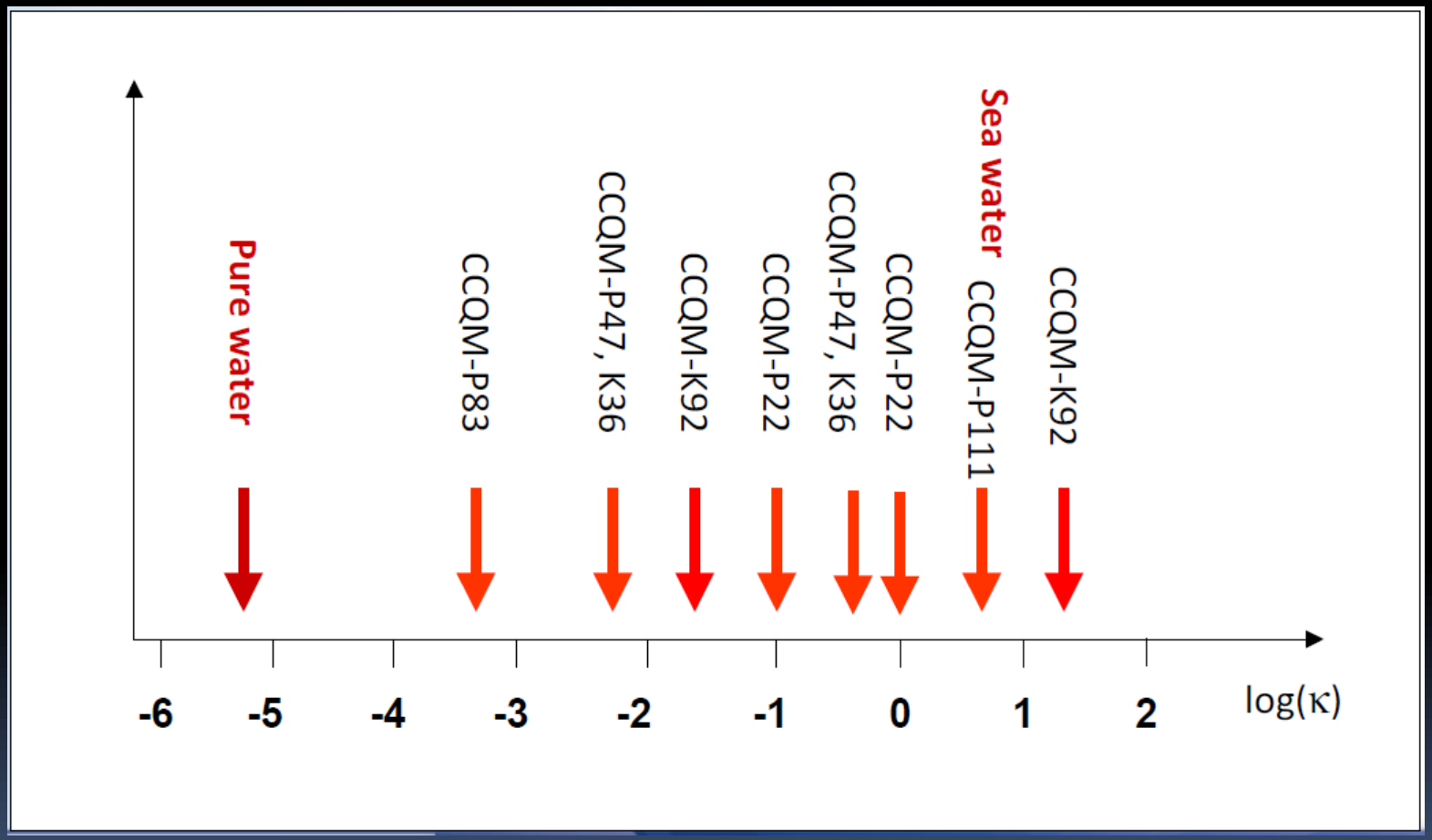
Year	pH	El. conductivity	Coulometry
2014	P152 - ethanol	P143-preparative P144-Primary cell comp P153 – bioethanol	K114 KCl
2015	P93 preparative	Kxx (K36+) Imp.spetr. study	Acid/base
2016	pH10		EDTA?
2017	tris/seawater	low EC	
2018	KC ethanol?		
2019		Kxx (K92+)	

Comparisons' summary up to 2013 pH



Taken from "CCQM EAWG Strategy", Michal Máriássy, December 4, 2012

Comparisons' summary up to 2013 Electrolytic conductivity



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Activities 2013, other subjects

- **Information from regions**
  - APMP-QM-K19 + P25 pH of borate buffer, NMIJ + NIMT coordinators, sample was distributed in January, results are expected in September.
  - SIM – SIM.QM-K92 El. conductivity ~ 0.05 S/m, around 6 participants; samples were distributed in May.

Activities 2013, other subjects

- **EMRP project ENV05 Ocean, pH in seawater**
  - Traceability in this case is challenging as B-G convention is not valid for this high ionic strength; experimental γ_{H} value obtained from work on HCl on several model solutions is to be compared with Pitzer model predictions. Work will also be done on tris buffers in simple model solutions to determine the values of pH, pH_T and pH_F and the dissociation constant for hydrogen sulfate ions