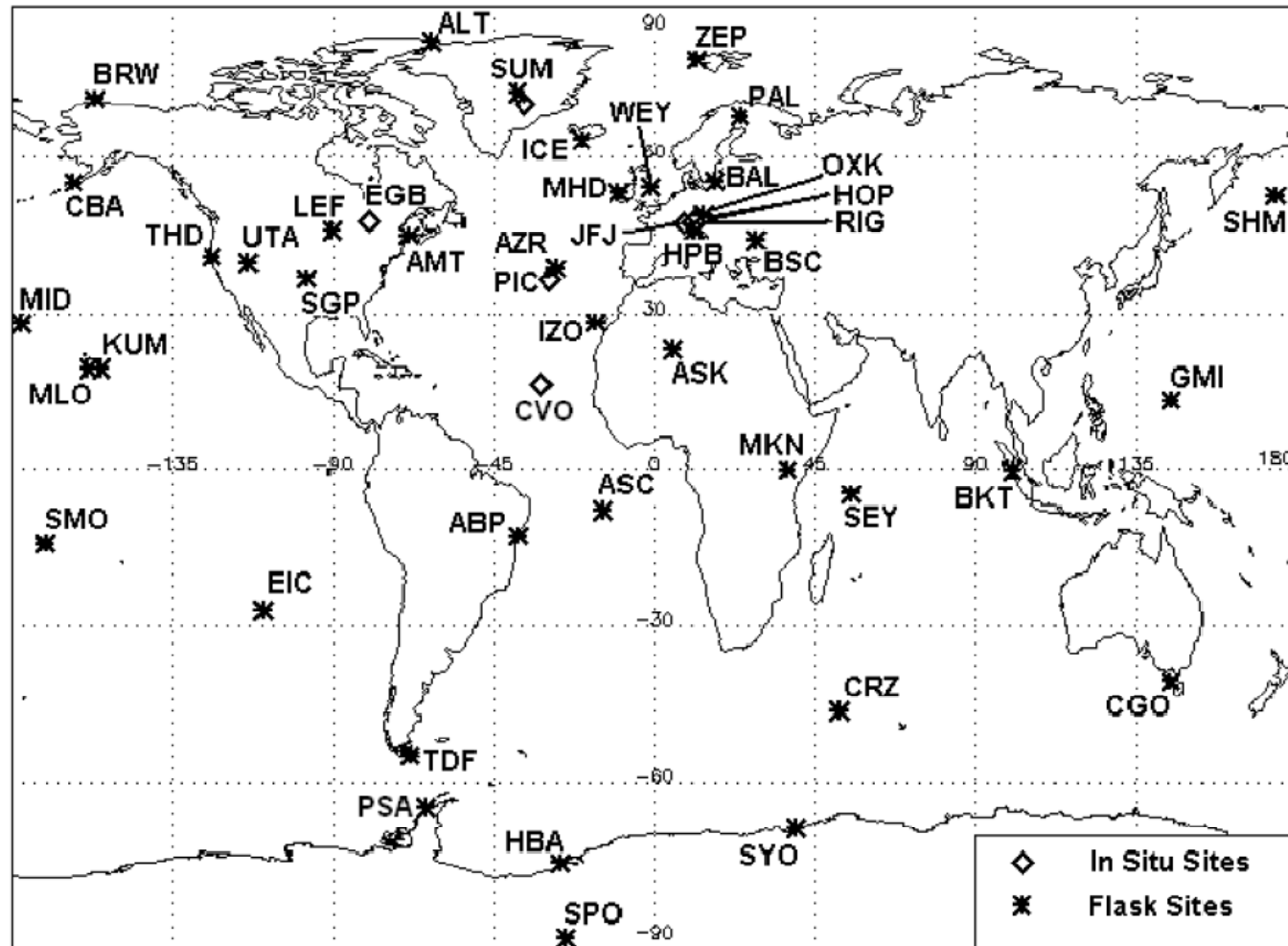


QA/QC in the VOC-Network in WMO GAW:Status of SOP

The GAW-VOC Network in 2010



Helmig, D., Bottenheim J., Galbally I.E., Lewis A., Milton M., Penkett S., Plass-Duelmer C., Read K. Reimann S., Steinbrecher R., Tans P., Thiel S. (2009): The WMO-GAW Volatile Organic Compound Program *Eos Trans. AGU*, 90(52), 513-514.

Rainer Steinbrecher
Elisabeth Weiß

<http://imk-ifu.fzk.de/wcc-voc/>

QA/QC for GAW-VOC

Current status for sampling procedure:

- SOP for canister sampling



the GMD-Protocol for glass flasks:
to be adopted by GAW?



the GAW-Protocol for stainless steel flasks:
to be updated?

World Calibration Center for VOC (WCC-VOC)

SOP for Sampling with Canisters



UBA

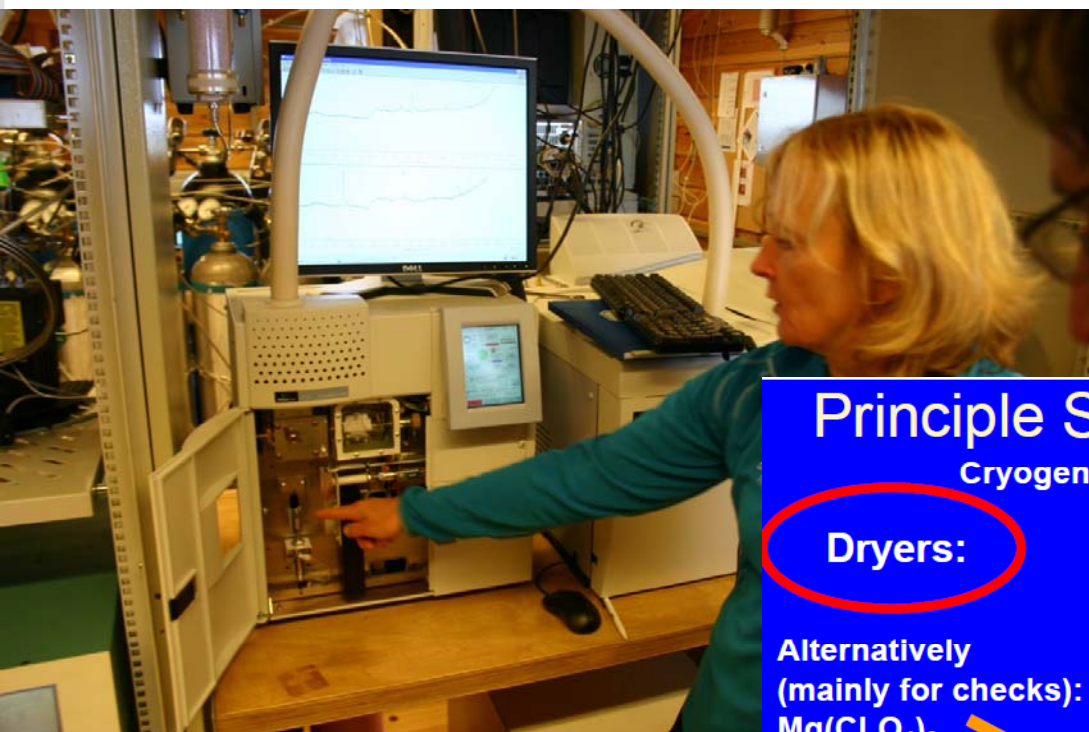
Other techniques?

Standard Operating Procedure (SOP)
for sampling with 2-Valve Canisters
(Repeated pressurisation/release)



QA/QC for GAW-VOC

Current status of SOP for VOC analysis:



Principle Set-Up for NMHC-Analysis in Air Samples

- Cryogenically:
- L = 300 mm, i.d. = 1.5 mm
 - Silcosteel-tube; no filling
 - at -30°C

Sample Vol.: 400 ml
Sample Flow: 100 ml/min

Dryers:

Alternatively
(mainly for checks):
Mg(CLO₄)₂

Temp. Progr. (*):

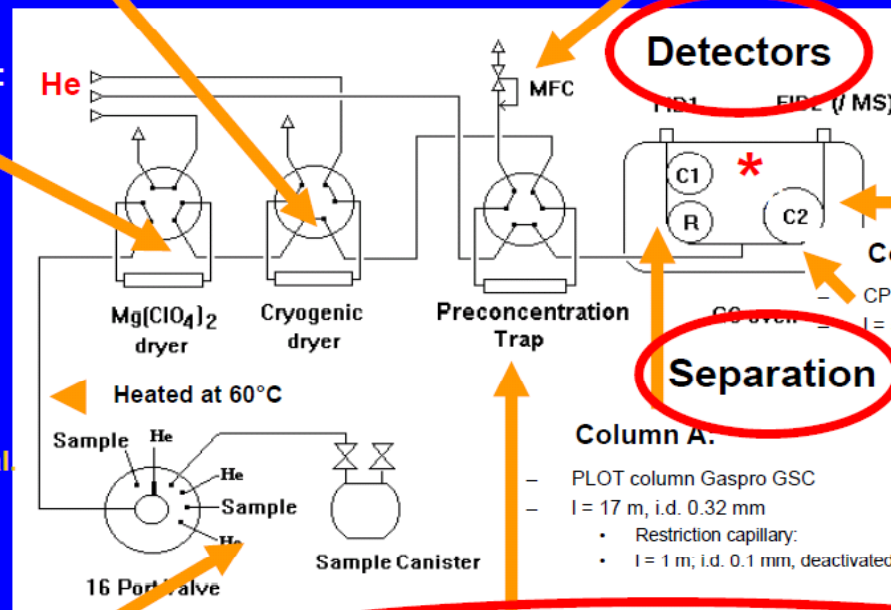
- 2.5 min isothermal
- 3.5 K/min to -13°C
- 20 K/min to 8°C
- 5 K/min to 70°C
- 10 K/min to 240°C
- 12.2 min isothermal

50 min

Up to 8 canisters:

- 6 samples,

Detectors



Varian 3600CX

Column B:
CP-SIL 5 CB
l = 50 m, i.d. 0.25mm, df 1 µm

Separation

Column A:

- PLOT column Gaspro GSC
- l = 17 m, i.d. 0.32 mm
- Restriction capillary:
• l = 1 m, i.d. 0.1 mm, deactivated

Sample pre-concentration trap (SPT; Varian)

- L = 8 cm, i.d. = 2.4 mm
- Description at 200 °C

➤ Very complex set of compounds requiring different approaches for analysis.

- How to formalise?



Current status of SOP for VOC analysis:

- No SOP available but some methods published for analysing different set of compounds in air samples, e.g. NMHCs, monoterpenes, oxyVOC (see WMO-GAW report 171)

General Questions:

How to formalise for GAW-VOC?



- one comprehensive SOP for analysis of all GAW-VOC targets?
- Several compound or compound-set specific SOPs?
- Plans in ACTRIS?
- Time-line?