

Issues Not (yet) Covered in the Guide

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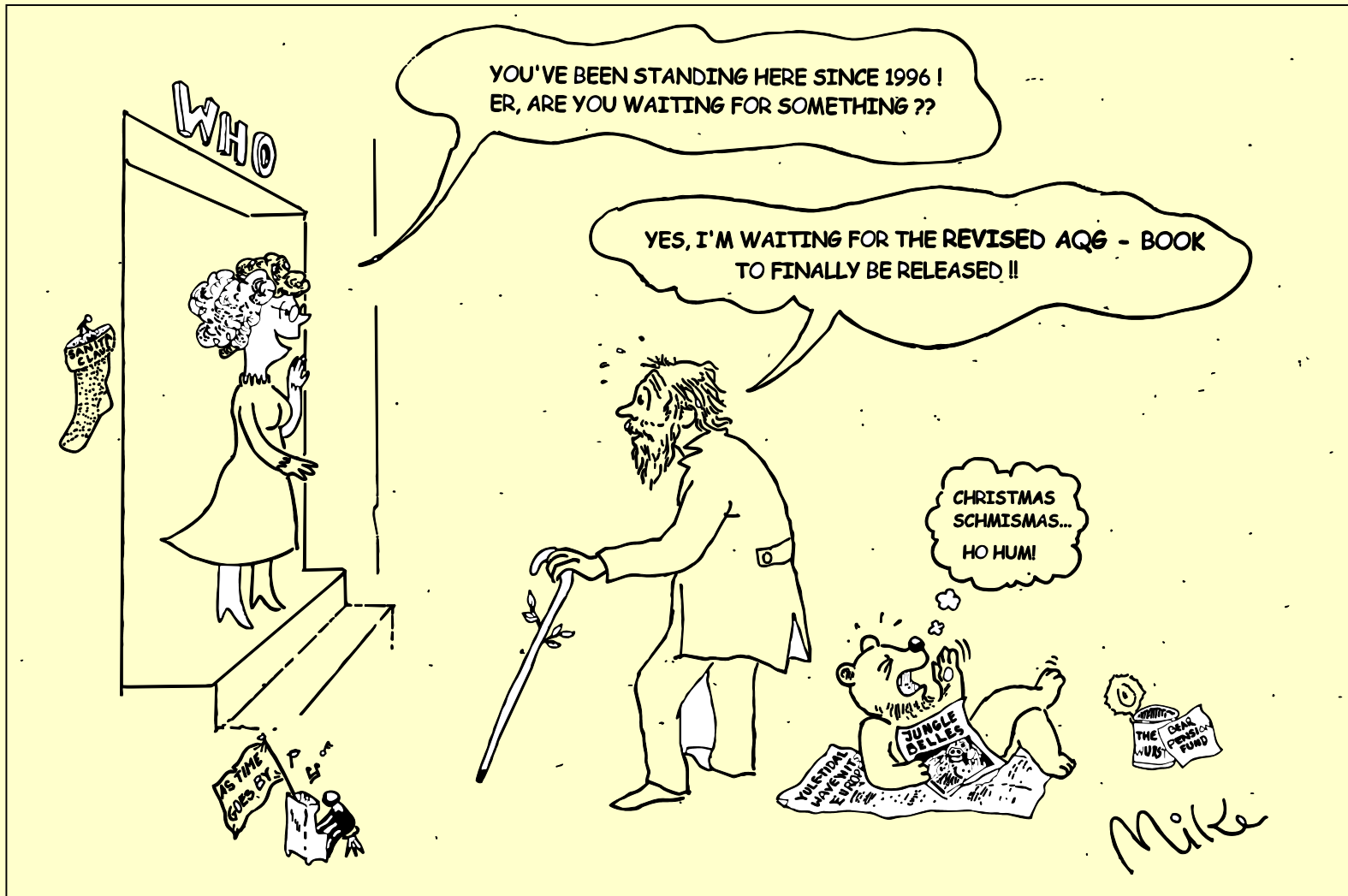
There are some things which -

(a) we have only just thought about, or

(b) have just come up, or

(c) are just too hard!

WHO Newsletter. December 2000



What are these ‘issues’?

- Calibration methods (eg perm tubes)
- Calibration standards (we don't have any!)
- Handling outliers (they can really skew things)
- Negative numbers (can't have them!)
- Passive samplers

PLUS

- New standards on the horizon

Calibration Methods

- Don't have defined methods – especially when equipment specs don't cover and/or we don't want to follow them!
- Probably need to have 'recommended' calibration periods.
- Haven't defined too well when something is 'good enough' – just how good does a calibration have to be?
- Perm tubes don't seem to be a good primary method (all sorts of problems), but are good enough for daily auto checks.

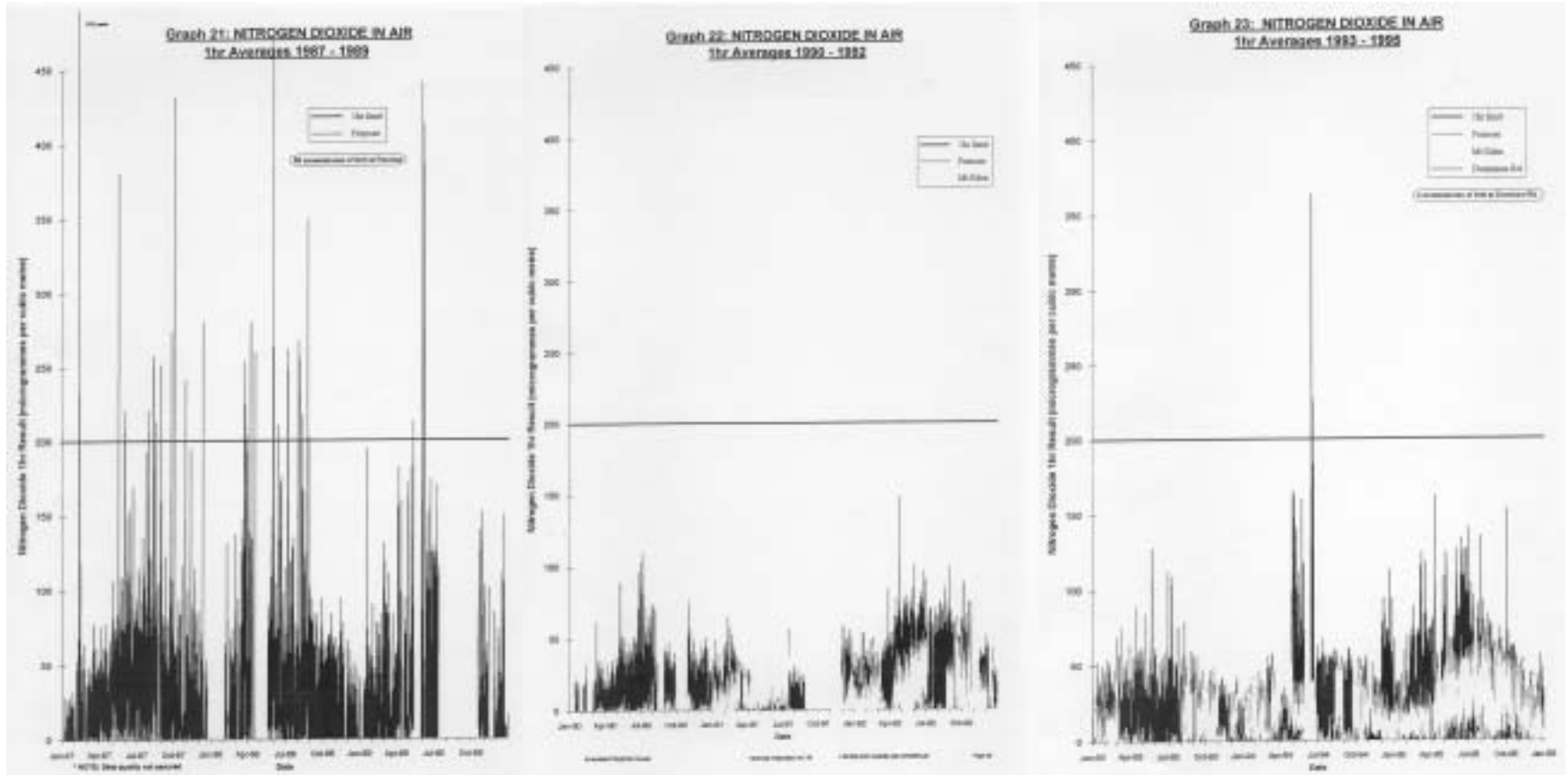
Calibration Standards

- We don't have any primary standards – eg traceable gases – have to rely on BOC.
- There is a place for a transferable standard – either a gas source, and/or a precision instrument.
- Could achieve this in some way by an intercomparison workshop (this can also be used to check overall processing procedures).
- Watercare / NIWA investigating getting a primary standard going.

Outliers

- All air quality data contains outliers – how should we handle these? (See Penrose NO_x example).
- Basic raw data should not be touched – unless we really know that a point is erroneous.
- But ‘users’ (eg epidemiological researchers, EPI statistics) can’t have outliers – some consistent algorithm for removing these might help.
- Seems to be done qualitatively to some extent – more guidance needed.

Penrose NO₂



Negative Values

- Issue 1 – cannot have a negative concentration!
- Issue 2 – instruments do output negative values, which may contain valid information.

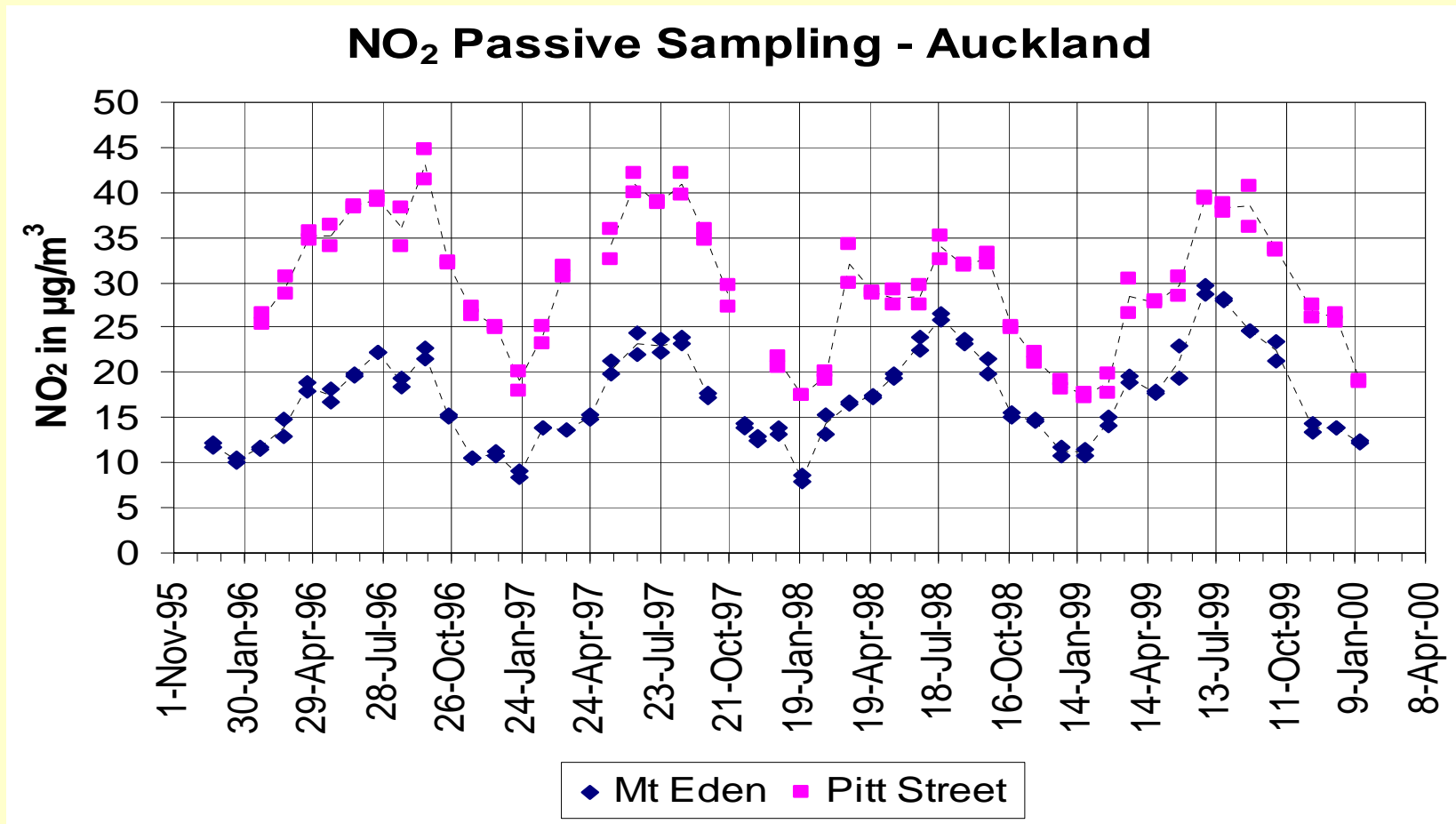
How do we resolve?

- Difference between an ‘instrumental measurement’ and ‘air quality information’ – these are both called ‘data’.
- Not fully resolved – but may need to have two (or more!) data sets. The raw data (which can have negatives), and useable processed data (which cannot have negatives).

Passive Samplers

- The use of passive samplers has served NZ well. (See excellent example for NO₂ in Auckland).
- Can't get peaks and some other information, but can get valid relative long term averages.
- Concept simple, analysis simple.
- Low cost – can do a lot for \$5,000.
- Might be very relevant for the new guidelines – specially hazardous contaminants – as many of these have annual average guidelines – passive method is perfect.

Passive Sampling of NO₂ in Auckland



New Standards.....

Several new and revised standards on the horizon, from Australia....

- TEOM (new) – expected mid-2001
- Nephelometer (revised) – expected late-2001
- Odour Measurement (new) – expected end-2001
- Dustfall, Lo-Vol PM10, Hi-Vol particulates (new) – drafts
- CO, O3, SO2 NOx (revised) – under development
- DOAS (new) – possible
- Indoor Air (Particles and VOCs) – under development

PS No new standards published since 1995