

(21-240328-A) **Sulphur Hexafluoride (SF₆) Measurements from CSIRO's GASLAB**

E. Guerette¹, R. Langenfelds¹, B. Mitrevski¹, and C. Caldow²

¹Commonwealth Scientific and Industrial Research Organisation (CSIRO), Oceans and Atmosphere, Aspendale, Victoria, Australia; +61 3 9239 4484, E-mail: elise-andree.guerette@csiro.au

²Commonwealth Scientific & Industrial Research Organisation (CSIRO), Aspendale, Victoria, Australia

Sulphur hexafluoride is a long-lived, very potent greenhouse gas whose concentration is increasing in the atmosphere. The commissioning of a new gas chromatograph with electron capture detector (GC-ECD) in CSIRO's GASLAB in October 2021 has enabled the routine measurement of SF₆ in flask samples from GASLAB's global network.

In preparation for the first release of the data to the World Data Centre for Greenhouse Gases, we investigate:

- instrument performance,
- time series data from flask sampling sites,
- comparisons with other laboratories / programs,
- expanding the time series back in time using the kennaook/Cape Grim Air archive

The flask data will be made available alongside the 30+ year records of carbon dioxide, methane, nitrous oxide, carbon monoxide, hydrogen and the main isotopes of carbon dioxide published annually by CSIRO.

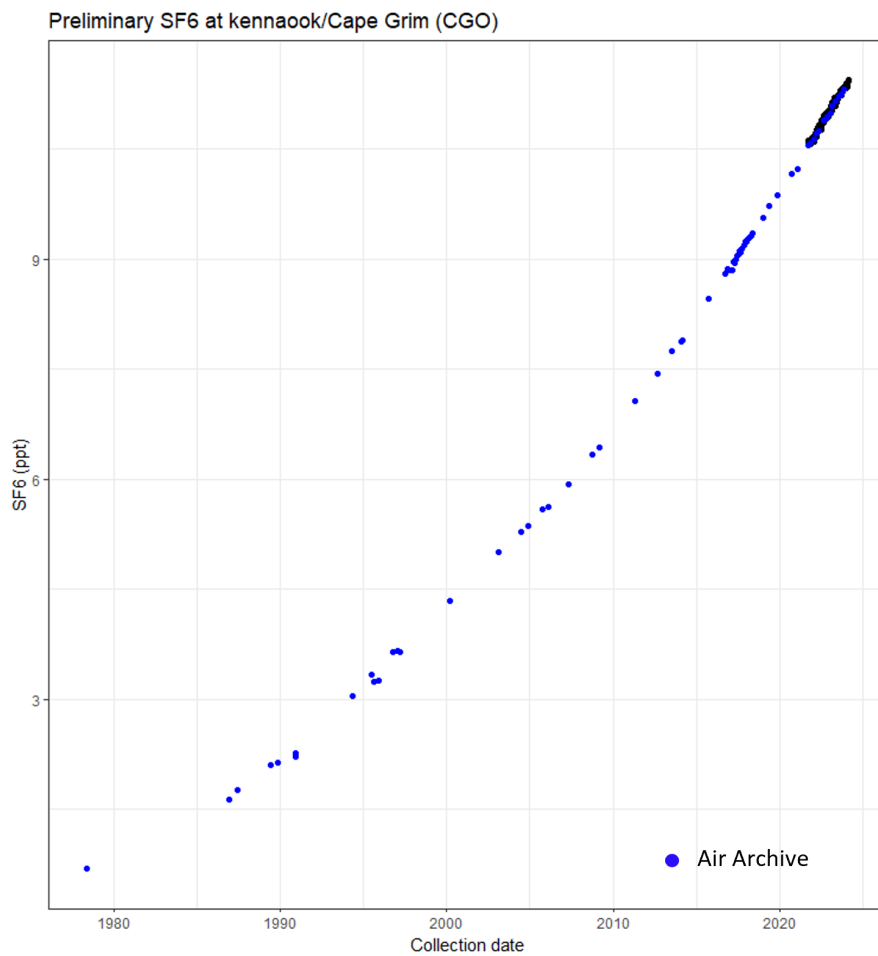


Figure 1. Preliminary sulphur hexafluoride (SF₆) record at kennaook/Cape Grim, showing flask measurements from August 2021 onwards as black dots and Air Archive measurements as blue dots. The Air Archive resampling is still only partial and the record will become more complete as more of the Archive is measured on the new CSIRO GC-ECD system.