



**GAW World Calibration Centre (WCC) for Methane
and
Quality Assurance/Science Activity Centre (QA/SAC)
in Asia and the South-West Pacific**



**Methane Reference Gas Intercomparison for the South-West Pacific
in 2003**

Technical Details on Laboratory Measurements

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

1. Instrument

- (1) Analytical method: Gas Chromatography (FID)
- (2) Manufacturer: CARLE (now EG&G)
- (3) Model: Series 400

2. Sampling

- (1) Sampling volume: 2 ml
- (2) Carrier gas: Helium (ultra high purity)
- (3) Flow rate: 40 ml/min
- (4) Temperature of the oven: 65°C

3. Main column

- (1) Diameter: 1/8" O.D.
- (2) Length: 3.5 feet
- (3) Material: stainless steel

4. Column packings

- (1) Trade name: Molecular Sieve 5A
- (2) Mesh: 80/100

5. Standard gas

- (1) Number of standard gases: 30+
- (2) Concentration of standard gases: 300-1850 ppb CH₄-in-air
- (3) Scale: CSIRO1994 CH₄ Scale

6. References

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Langenfelds, R.L., R.J. Francey, B.C. Pak, L.P. Steele, J. Lloyd, C.M. Trudinger and C.E. Allison, Interannual growth rate variations of atmospheric CO₂ and its d¹³C, H₂, CH₄ and CO between 1992 and 1999 linked to biomass burning, Global Biogeochem. Cycles, 16(3), 1048, doi:10.1029/2001GB001466, 2002.

Steele, L.P., R.L. Langenfelds, M.P. Lucarelli, P.J. Fraser, L.N. Cooper, D.A. Spencer, S. Chea and K. Broadhurst. Atmospheric methane, carbon dioxide, carbon monoxide, hydrogen and nitrous oxide from Cape Grim flask air samples analysed by gas chromatography. Baseline Atmospheric Program (Australia) 1994-95, edited by R.J.Francey, A.L.Dick and N.Derek, Bureau of Meteorology and CSIRO Division of Atmospheric Research, Melbourne, Australia, 107-110, 1996.