



**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
from 2010 to 2011
Technical Details on Laboratory Measurements**

National Institute of Water & Atmospheric Research Ltd. (NIWA)

1. Information on contributors

- (1) Contributors: Gordon Brailsford
- (2) Organization: National Institute of Water & Atmospheric Research Ltd., New Zealand

2. Information on instrument

- (1) Analytical method: Gas Chromatography (FID)
- (2) Manufacturer: Hewlett Packard
- (3) Model: 5890 series II

3. Information on sampling

- (1) Sampling volume: 5 m
- (2) Carrier gas: Instrument grade Nitrogen
- (3) Flow rate: 40 ml/min
- (4) Temperature of the oven: 100 C

4. Information on the main column

- (1) Diameter: 1/8" O.D.
- (2) Length: 6 feet
- (3) Material: Stainless steel

5. Information on column packings

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

6. Information on standard gas

- (1) Number of standard gases: 5
- (2) Concentration of standard gases: 1373 - 1975 ppb CH₄-in-air
- (3) Scale: NOAA04 Scale
- (4) 2 gases used at time of measurement are calibrated at NOAA
- (5) 3 gases used at time of measurement are prepared at NIWA and calibrated vs 5 NOAA calibrated tanks.

7. Other information (references, papers, literatures, etc.)

Lowe, D.C., W. Allan, M.R. Manning, A.M. Bromley, G.W. Brailsford, D.F. Ferretti, A. Gomez, R.K. Knobben, R.M. Martin, M. Zhu, R. Moss, K. Koshy, and M. Maarta, Shipboard determinations of the distribution of ^{13}C in atmospheric methane in the Pacific, *Journal of Geophysical Research*, 104 (D21), 26,125-26,135, 1999.

Lowe, D.C., C.A.M. Brenninkmeijer, G.W. Brailsford, K.R. Lassey, A.J. Gomez, and E.G. Nisbet, Concentration and ^{13}C records of atmospheric methane in New Zealand and Antarctica: Evidence for changes in methane sources, *Journal of Geophysical Research*, 99 (D8), 16,913-16,925, 1994.

Please note that these results are now on the NOAA04 scale.