Variation to the National Environment Protection (Ambient Air Quality) Measure

made under section 20 of the

National Environment Protection Council Act 1994 (Cwlth), *National Environment Protection Council (New South Wales) Act 1995* (NSW), *National Environment Protection Council (Victoria) Act 1995 (*Vic), *National Environment Protection Council (Queensland) Act 1994* (*Qld)*, *National Environment Protection Council (Western Australia) Act 1996* (WA), *National Environment Protection Council (South Australia) Act 1995* (SA), *National Environment Protection Council (Tasmania) Act 1995 (*Tas), *National Environment Protection Council Act 1994 (*ACT) and the *National Environment Protection Council (Northern Territory) Act 1994* (NT)

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Introductory Note

Section 20 of the *National Environment Protection Council Act 1994* and the equivalent provision of the corresponding Act of each participating State and Territory enables the National Environment Protection Council to vary a National Environment Protection Measure. This is a variation to the National Environment Protection (Ambient Air Quality) Measure made by the National Environment Protection Council on 26 June 1998.

The Variation is to be implemented by the laws and other arrangements participating jurisdictions consider necessary (see Section 7 of the Commonwealth Act and the equivalent provision of the corresponding Act of each participating State and Territory).

Part 1 Preliminary

1 Citation

This Variation may be cited as the Variation to the National Environment Protection (Ambient Air Quality) Measure for Particles as $PM_{2.5}$.

Note: This Variation commences on gazettal (see *National Environment Protection Council Act* 1994, s 21 and *Acts Interpretation Act* 1901, s 48 as applied by s 46A).

2 Purpose

The purpose of this Variation is to vary the National Environment Protection (Ambient Air Quality) Measure (the Principal Measure) to include Advisory Reporting Standards for particles as $PM_{2.5}$ (hereafter referred to as $PM_{2.5}$).

Part 2 Variation

3 Purpose of Part

The purpose of this Part is to vary the National Environment Protection (Ambient Air Quality) Measure to introduce Advisory Reporting Standards for $PM_{2.5}$ and a protocol for monitoring and reporting of $PM_{2.5}$.

Establishing Advisory Reporting Standards and a protocol setting out monitoring and reporting requirements for $PM_{2.5}$ will provide a tool for communicating information to the community on air quality related to $PM_{2.5}$, and enable the effectiveness of air quality management programs that are designed to manage $PM_{2.5}$ emissions to be assessed.

4 Variation to the Principal Measure

(1) In Part 1, Clause 2 of the Principal Measure insert the following definitions –

"***Advisory Reporting Standard*** means a health-based standard to assess the results of monitoring for particles as $PM_{2.5}$. These standards do not have a timeframe for compliance associated with them;

Continuous direct mass measurement technique means a method for continuously monitoring suspended particulate matter changes of particles in ambient air, providing near real time measurement of mean particle concentration;

Manual gravimetric method means a manual method for sampling particles by drawing air through a filter and determining the mass by weighing the filters;

Particles as PM2.5 means particulate matter with an equivalent aerodynamic diameter of 2.5 micrometres or less;

Principal Measure means the National Environment Protection (Ambient Air Quality) Measure;

Reference method means the monitoring method used for collection of data that can be compared to the Advisory Reporting Standards;

TEOM means tapered element oscillating microbalance;".

(2) In Clause 3 of the Principal Measure for the existing clause substitute –

"Participating jurisdictions must:

(a) for carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulfur dioxide, lead and particles as PM_{10} establish monitoring procedures and commence assessment and reporting in accordance with the Protocol in this Measure, within 3 years after its commencement;

(b) for particles as $PM_{2.5}$ undertake monitoring and reporting in accordance with Schedule 4 and Schedule 5 in this Measure.".

(3) In clause 6 of the Principal Measure, for the existing clause substitute -

"The National Environment Protection Goal of this Measure is:

(a) for carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulfur dioxide, lead and particles as PM_{10} to achieve the National Environment Protection Standards as assessed in accordance with the monitoring protocol (Part 4) within ten years from commencement to the extent specified in Schedule 2 column 5; and

(b) for particles as $PM_{2.5}$ to gather sufficient data to facilitate a review of the Advisory Reporting Standards as part of the review of this Measure scheduled to commence in 2005.".

(4) In clause 8 of the Principal Measure, for sub-clause (2) substitute -

"(2) For:

(a) each pollutant mentioned in table 1 of Schedule 2, the standard for an averaging period mentioned in the Schedule is the concentration in column 4 of table 1 of Schedule 2;

(b) particles as $PM_{2.5}$, the Advisory Reporting Standard for an averaging period mentioned in the Schedule is the concentration in column 3 of table 2 of Schedule 2.".

(5) In Schedule 2 to the Principal Measure -

(a) for the heading "Standards and Goal" substitute "Table 1: Standards and Goal for Pollutants other than Particles as $PM_{2.5}$"; and

(b) after the table insert –

"Table 2: Advisory Reporting Standards and Goal for Particles as $PM_{2.5}$

Column 1 Pollutant	Column 2 Averaging Period	Column 3 Maximum Concentration	Column 4 Goal
Particles as $PM_{2.5}$	1 day	25 µg/m^3	Goal is to gather sufficient data nationally to facilitate a review of the Advisory Reporting Standards as part of the review of this

1 year	8 µg/m^3	Measure scheduled to commence in 2005"

(6) After Schedule 3 to the Principal Measure insert -

"Schedule 4: Protocol for Monitoring $PM_{2.5}$

Note: Clauses 11 to 18 of the Measure are not to be applied to $PM_{2.5}$. This Schedule sets out all applicable requirements for $PM_{2.5}$.

1. Location of monitoring for $PM_{2.5}$

Measurement and assessment of the concentration of $PM_{2.5}$ in the air is to be undertaken at existing or planned performance monitoring stations specified for particles as PM_{10} under this Measure as selected by participating jurisdictions.

2. Number of performance monitoring stations for $PM_{2.5}$

(1) Each participating jurisdiction will establish at least one monitoring location for $PM_{2.5}$ and commence monitoring in accordance with the Table below.

Dates for Commencement of $PM_{2.5}$ Monitoring in Participating Jurisdictions

Jurisdiction	Commencement Date
New South Wales	1 January 2004
Victoria	1 January 2004
Queensland	1 January 2004
Western Australia	1 January 2004
South Australia	1 January 2004
Tasmania	1 July 2004*
Australian Capital Territory	1 July 2004*
Northern Territory	1 July 2004*

* These jurisdictions must commence monitoring on 1 July 2004 if resources are available and, if not, as soon as resources become available to ensure sufficient data are collected to inform the review of this Measure scheduled to commence in 2005.

(2) Jurisdictions are encouraged to introduce monitoring for $PM_{2.5}$ at as many performance monitoring stations for PM_{10} as practicable. The extent of such monitoring may vary depending on the requirements and resources of the jurisdiction.

3. Monitoring methods for $PM_{2.5}$

(1) The reference methods for monitoring particles as $PM_{2.5}$ are reference, Class 1 and Class 2 equivalent manual gravimetric methods designated in the USEPA Federal Reference Method (USEPA reference method; *US Code of Federal Regulations*

Title 40 Part 50 Appendix L Reference Method for the Determination of Fine Particulate Matter as $PM_{2.5}$ in the Atmosphere).

(2) Continuous direct mass methods using a tapered element oscillating microbalance may also be used in addition to the reference method, however the values obtained by using these methods cannot be used for comparison with the Advisory Reporting Standards until the outcomes of the $PM_{2.5}$ Equivalence Program (Schedule 5) have been formally included in the Principal Measure.

(3) To enable the development of equivalent methods for monitoring $PM_{2.5}$ as part of the review of this Measure scheduled to commence in 2005, collocation of continuous direct mass monitors and reference samplers must be undertaken at a limited number of sites in accordance with Schedule 5.

(4) Participating jurisdictions must reach agreement on the collocation of samplers to ensure that, nationally, a minimum of nine locations house collocated samplers and annual reporting to Council must include information on the collocation of samplers.

4. Evaluation of monitoring for $PM_{2.5}$

(1) Each participating jurisdiction must evaluate its monitoring results for $PM_{2.5}$ in accordance with this clause.

(2) For each $PM_{2.5}$ performance monitoring station in the jurisdiction there must be:

(a) a determination of the exposed population in the region or sub-region monitored by the station; and

(b) a report on whether the $PM_{2.5}$ Advisory Reporting Standards of this Measure, as measured by the reference method, have been met.

5. Reporting

(1) Each participating jurisdiction must submit a report on $PM_{2.5}$ monitoring and data assessment in accordance with this clause to Council by the 30 June next following each reporting year.

(2) In this clause "***reporting year***" means a year ending on 31 December.

(3) The first report to Council will be for the 2003 reporting year for data currently being collected by jurisdictions.

(4) The report must include:

(a) an evaluation and assessment of all $PM_{2.5}$ data collected by the reference method;

(b) the evaluations and assessments outlined in clause 4 of this Schedule;

(c) the number of times the monitored values (by the reference method) are greater than the Advisory Reporting Standards of this Measure;

(d) all other $PM_{2.5}$ data collected by other acceptable methods as outlined in this Schedule; and

(e) the maximum 24-hour concentration of $PM_{2.5}$ in each jurisdiction collected by any method specified in Schedule 4 of this Variation.

(5) A description of the circumstances that led to monitored values (by the reference method) being greater than the Advisory Reporting Standards including the influence of natural events and fire management, must be reported to the extent that such information can be determined.

(6) The report must include the percentage of data available in the reporting period.".

"Schedule 5: $PM_{2.5}$ Equivalence Program

(1) Jurisdictions must undertake monitoring with collocated instruments for the purpose of determining equivalent methods for monitoring $PM_{2.5}$ in accordance with the Table in this Schedule and the requirements specified in the Technical Paper on Monitoring and Reporting for Particles as $PM_{2.5}$.

(2) At locations where reference method samplers are to be used, there is no requirement for equivalence studies to be undertaken, except where such locations have been designated as collocation sites.

(3) If alternative $PM_{2.5}$ monitoring methods are used, equivalence between the reference method and the alternative method must be demonstrated by collocation of samplers over a three-year period.

(4) For jurisdictions undertaking equivalence monitoring, there must be at least one collocation site with a reference sampler run on a daily basis (preferred) or on a 1-in-3 day operation (minimum requirement).

(5) Data availability must exceed 75% and it is recommended that higher data recovery be achieved during seasons with expected elevated particle loadings.

(6) To ensure national consistency with regard to the collection of $PM_{2.5}$ data, monitoring must be done in accordance with procedures specified in the Technical Paper on Monitoring and Reporting for Particles as $PM_{2.5}$.

Sites Proposed for the Equivalence Program

Jurisdiction	Site	Sampling Frequency (reference sampler)	Sampling Period	Alternative Method	Commencement Date
New South Wales	Earlwood Richmond	1 in 3 days 1 in 3 days	3 years 3 years	$PM_{2.5}$ TEOM	1 January 2004
Victoria	Alphington Mooroolbark	1 in 3 days 1 in 3 days	3 years 3 years	$PM_{2.5}$ TEOM	1 January 2004
Queensland	Springwood Rocklea	1 in 3 days 1 in 3 days	3 years 3 years	$PM_{2.5}$ TEOM	1 January 2004
Western Australia	Duncraig	1 in 3 days	3 years	$PM_{2.5}$ TEOM	1 January 2004
South Australia	Netley	1 in 3 days	3 years	$PM_{2.5}$ TEOM	1 January 2004
Tasmania	Launceston	1 in 3 days	3 years	$PM_{2.5}$ TEOM	1 July 2004”