ANNUAL COMPLIANCE REPORT FOR THE NORTHERN TERRITORY
1 JANUARY – 31 DECEMBER 2004

AMBIENT AIR NEPM
REPORT TO THE NATIONAL ENVIRONMENT PROTECTION COUNCIL (NEPC)

BACKGROUND

Clause 18 of the National Environment Protection (Ambient Air Quality) Measure (Ambient Air NEPM) requires jurisdictions to submit a report of their compliance with the Measure for each calendar year. The content of the jurisdictional report is prescribed in clause 17 of the Ambient Air NEPM.

This NT report covers the performance evaluation and assessment under the NEPM for the 2004 reporting year (1 January to 31 December 2004). The report is based on Technical Paper No. 8 (Annual Reports) which details the format and data requirements of the Annual Report. It is a technical report to the NEPC and supplements the annual summary report provided each year by each jurisdiction under the NEPC Act on the overall implementation process.

SECTION A – MONITORING SUMMARY

The results of campaign monitoring in 2000-2001 were used to assess the monitoring requirements for the Northern Territory using the screening criteria outlined in Technical Paper 4 (Screening Procedures) (CSIRO 2001, 2002). This monitoring identified particulate matter from landscape fires affecting the Darwin region as the primary air pollutant of concern in the Northern Territory. Screening of the 2000-2001 data indicated that nitrogen oxides, sulfur dioxide, carbon monoxide, ozone and lead aerosols were not a cause for concern in the Darwin region when assessed against the Ambient Air NEPM national standards.

Based on a population of 109 248, the Darwin region is the only area in the Northern Territory requiring a performance monitoring station (threshold population >25,000) (ABS 2003). There are currently two monitoring stations established for the purpose of collecting data for the Ambient Air NEPM 2004 for the Darwin Region and are located in Palmerston and Casuarina.

Sampling at the two monitoring stations commenced in April 2004 and consequently there is no data for the first quarter of 2004. Due to the reporting requirements this means that compliance is not demonstrated however due to the low readings, it is indicative that had all of the data been collected the goal would have been met.

The status of NATA accreditation for the monitoring network and analysis is still under consideration. The requirements will be reassessed within the 2005 reporting period.

SECTION B – ASSESSMENT OF COMPLIANCE WITH STANDARDS AND GOALS

2004 Annual Compliance Summary for 24 hr PM_{10}
NEPM Standard 50µg/m^3 (Averaging period 1 day)
NEPM Goal within 10 years – No greater than 5 exceedences

Region/ Performance monitoring station	Data Availability Rates (% of Days)					Number of exceedences (days)	Performance against the standard and goal
	Q1	Q2	Q3	Q4	Annual		
Palmerston*	0	90	84	99	69	1	Not Demonstrated#
Casuarina**	0	91	76	83	63	0	Not Demonstrated#

* TEOM (adjusted)
** Partisol Dichotomous Sampler

ND- performance is not demonstrated as less that 75% of data was captured in one quarter as sampling did not commence until April 2004. As recorded data is low and the quarter missed is in the wet season it is likely that the goal would have been met.

2004 Annual Compliance Summary for 24 hr $PM_{2.5}$
NEPM Standard 25µg/m^3
NEPM Goal – To gather data

Region/ Performance monitoring station	Data Availability Rates (% of Days)					Number of exceedences (days)	Performance against the standards and goal
	Q1	Q2	Q3	Q4	Annual		
Palmerston*	0	-	-	-	-	-	#
Casuarina**	0	91	76	83	63	5	Goal is to gather data

* ACCU
** Partisol Dichotomous Sampler
#Sampling for $PM_{2.5}$ was also undertaken in Palmerston although data integrity is currently being assessed.

As previously reported in the 2003 monitoring report there was a delay in establishing a performance monitoring stations for PM_{10} and $PM_{2.5}$ in the Darwin region. This has resulted in a lack of data for the first quarter, meaning that the goal cannot be demonstrated. $PM_{2.5}$ data from the Palmerston site is still being interrogated due to a number of anomalies; this data will be provided to NEPC when the issues are resolved.

SECTION C – ANALYSIS OF AIR QUALITY MONITORING

The elevated levels of particulate matter in Darwin during the dry season are predominantly due to bushfire smoke. There is no other significant source of particulate matter affecting the region and levels of PM_{10} and $PM_{2.5}$ above the Ambient Air NEPM national standards are almost certainly from the interaction of smoke from landscape fires in the region and the prevailing wind conditions. The exceedences detected through monitoring coincide with bushfire events in the Darwin Region over the dry season.

The monitoring program will contribute to a collaborative research project assessing the seasonal patterns of landscape fires and bushfire smoke plumes across the Top End, and their impacts on public health and landscape condition. The project will provide information on processes generating the particulate matter affecting the Darwin region and will contribute to the development of appropriate and effective management strategies aimed at meeting the NEPM standards and goal in the future.

The Department of Natural Resources, the Environment and The Arts (DNRETA) is continuing to discuss fire management in the region with the Northern Territory Bushfires Council in an ongoing process to minimise the impacts of particulate matter from smoke on the Darwin region.

Monitoring activities are being complemented by studies of the health impacts from particulate matter by the Charles Darwin University and the Menzies School of Tropical Health. These studies are being carried out over three years.

References

A Pilot Study of Air Quality in Darwin, NT for the Northern Territory Government, Department of Lands Planning and Environment, Final Report CSIRO Atmospheric Research Aspendale, Victoria Australia, 15 March 2001

A Screening Procedure for Monitoring Ozone and Nitrogen Dioxide in "Small-to Medium-sized" Cities: Phase II – application of the procedure, Report CSIRO Atmospheric Research Aspendale, Victoria Australia, October 2002.

Australian Bureau of Statistics, Publication Number 1362.7 Regional Statistics, Northern Territory, 6 August 2003.