

NATIONAL POLLUTANT INVENTORY

TECHNICAL NOTE

NOVEMBER 2003

ADJUSTED AGGREGATED EMISSIONS DATA

in

PERTH AIRSHED EMISSIONS STUDY 1998/1999

1. INTRODUCTION

Aggregate Emissions Data (AED)

Emissions from non-reporting sources are called “aggregated emissions data” (AED), and include mobile, area-based and natural sources such as motor vehicles, domestic solid fuel burning, fuel combustion from commercial activities and wildfires.

This technical note outlines adjustments to aggregated emissions estimates reported:

- a) in the *October 2000 “NATIONAL POLLUTANT INVENTORY PERTH AIRSHED EMISSIONS STUDY 1998/1999”*, Western Australian Department of Environmental Protection, and
- b) on the NPI internet site (www.npi.gov.au).

A revised version of the October 2000 report (November 2003 Revision) makes corrections in some areas, while still using 1998/99 data references and sources. The November 2003 Revision report will be posted on the Internet at:

www.npi.gov.au/publications/perth-airshed.html.

Additionally, data on the NPI Internet site will be further adjusted to remove emissions from facilities which were non-NPI reporters in 1998/99 but commenced reporting to the NPI in later years. This will allow a better comparison of reported NPI facility emissions against emissions estimated from non-reporting facility sources, for the period 2001/02.

The NPI Perth Airshed Internet data changes have NOT been incorporated in the revised report (November 2003 Revision) on the internet at:

<http://www.npi.gov.au/publications/perth-airshed.html>.

It is intended that a new NPI Perth Airshed Emissions study will commence in 2004/2005.

It is important to note that the accuracy of aggregated emissions estimates varies with the availability of suitable emissions estimation techniques (EETs). EETs have been sourced from Australia and overseas, and those EETs used for the 1998/99 study were the best available at the time. Many changes have occurred to EETs and to fuel use at various commercial and industrial facilities since the 1998/99 study was published, and a new overall study is to be undertaken in the next two years.

2. NOVEMBER 2003 REVISION

The October 2000 Report presented emission estimates from 19 AED sources located within the Perth Airshed study area. A revision to that report – November 2003 Revision - has been prepared for publication.

The November 2003 Revision corrects some errors in the October 2000 report, and essentially maintains the same basis for the 1998/99 data. Data from one large emitter has been amended, and some minor changes have been made (inclusion of substance 1,2- dichloroethane). An erratum page in the November 2003 Revision details the changes.

The 2001 deletion of erroneous polychlorinated dioxins and furans estimates from the internet data is now reflected in the body of the report, in line with the erratum issued in mid-2001.

3. NPI PERTH AIRSHED INTERNET DATA

A further revision to NPI Perth Airshed data is outlined below. Adjustments to this data are necessary since various stakeholders have expressed interest in making comparisons of the most recent emissions reported to the NPI from facilities in Perth to emissions estimates in Perth from non-facility sources (AED).

NOTE: Such comparisons are subject to the limitations of coverage and accuracy of emissions estimates from NPI facility reports and aggregated sources. AED data does not necessarily represent the particular facility reporting year being examined. For example aggregated data may be from a study completed in 1998/99 and the facility data from 2001/02.

The set of NPI Perth Airshed data which will appear on the NPI Internet database modifies November 2003 Revision data by changing emission estimates for only one of the 19 sources - fuel combustion for 1998/99 sub-threshold facilities. The effects of these changes are summarised in the table below.

Purpose

The basic change in the NPI Perth Airshed Internet data is the removal from the "sub-threshold" group of facilities (or non-NPI reporters) of those which are no longer sub-threshold, since they have become reporting facilities. Emissions have also been removed for a site which would no longer be considered sub-threshold.

These Internet data changes are necessary to prevent double counting and misleading conclusions, if emissions from facilities for 2001/02 are compared with AED emissions that were current for 1998/99.

The procedure is in line with the October 2000 report which noted (page B-1) that the data "*will need to be updated in future years to remove facilities that did not report in the 1998-99 reporting period but do report in future years*".

Specifics

In the 1998/99 work, over 240 facilities' fuel combustion emissions were classified as "sub-threshold" since no NPI report was received from those facilities.

However, based on fuel use, around 40 of these facilities would have been required to report to the NPI, but at the time were not required to, due to lack of published Industry Handbooks, or because reporting was not then compulsory.

Emissions from fuel combustion from the group of around 240 facilities were estimated by the Department using data available at the time, and included in the "fuel combustion sub-threshold" source.

The group of over 40 facilities subsequently reported to the NPI in 2001/02, and their emissions should therefore no longer be considered as "sub-threshold". Emissions estimates from fuel combustion have now been removed for this group of facilities, and are included in the reporting facility section of the database.

Another adjustment removes fuel combustion emissions from a site which did not report to the NPI in 1998/99, and should no longer be considered “sub-threshold”. The site is not operational, and if included could lead to incorrect conclusions for 2001/02.

4. INTERNET DATA ADJUSTMENTS

Adjustments to NPI Perth Airshed Internet data relate solely to the aggregated emissions source “Fuel combustion-sub reporting threshold facilities”. A comparison of these adjustments appears in the following table.

NPI Substance (kilograms emitted to air)	Internet data 2001/02 basis	Nov 2003 Revision To Study Report	Perth Airshed Study Report October 2000 1998/99 basis
Arsenic and compounds	0.59	198	198
Benzene	5,201	32,800	32,800
Cadmium and compounds	2.73	47.7	47.7
Carbon Monoxide	158,457	2,040,000	1,700,000
Chromium (VI) compounds	0.01	1.39	1.39
Cobalt and compounds	0.35	63.7	63.7
Fluoride compounds	1.33	2,210	2,210
Lead and compounds	1.44	1,300	1,300
Mercury and compounds	0.69	155	155
Nickel and compounds	7.28	4,700	4,700
Oxides of nitrogen	397,852	4,830,000	5,650,000
Particulate matter 10um	33,142	2,400,000	2,200,000
Polycyclic aromatic hydrocarbons (PAH)	22.2	125	128
Sulfur dioxide	58,812	4,090,000	9,740,000
Total Volatile Organic compounds	201,974	660,000	664,000
Toluene	5,074	17,400	17,400
Xylenes	2,121	7,500	7,500

Notes.

1. Polychlorinated dioxin and furan emissions were removed from the October 2000 study and to NPI Perth airshed internet data in 2001 due to an erroneous emission factor in a 1996 US reference source.
2. Substance 1,2 dichloroethane has been included in November 2003 Revision and will appear in NPI Internet data to correct a transcription error in the source “Domestic commercial solvents/aerosols”. Emissions of 1-2 dibromoethane have been amended as a result. Refer to erratum in November 2003 Revision document.

5. DISCUSSION

NPI Perth Airshed Internet data compared with October 2000 report

The very large reduction in emissions shown in the Internet data column, compared to the October 2000 column, reflects the fact that many (over 40) facilities' emissions were classified as "sub-threshold" or non-NPI reporters in 1998-99, and their combined emissions were substantial. However, those facilities have subsequently reported to NPI and the estimated emissions of these substances are reported by the facilities themselves. The emissions from facilities that now report to the NPI that did not report to the NPI in 1998-99 should no longer be considered as "sub-threshold".

November 2003 Revision compared with October 2000 report

The differences between the November 2003 Revision column and the October 2000 column are due to corrections to estimates for one facility only, and maintain the original intent and basis for the October 2000 report. The November 2003 Revision of the NPI Perth Airshed Report contains an erratum page outlining differences.