



Air Quality Monitoring in Collie

Purpose

The purpose of this Fact Sheet is to provide information on air quality monitoring that is undertaken by the Department of Environment Regulation (DER) in Collie.

Introduction

Air quality monitoring is undertaken by DER at a number of regional and metropolitan locations within Western Australia, in accordance with the National Environment Protection (Ambient Air Quality) Measure (NEPM).

DER is responsible for the operation and maintenance of 13 air quality monitoring sites in Western Australia, including Collie.

The Department has been monitoring air quality in Collie at its Wittenoom Street site since 2008. The site monitors primarily for smoke from bushfires, prescribed fire hazard reduction burns and wood-fired home heaters.

Key Points - Air Quality in Collie

- Air quality in Collie is considered good on most days, although poor air quality events, occur in any given year.
- Poor air quality events have been primarily attributed to prescribed fire hazard reduction burns or bushfires over the past few years.
- Monitoring will continue in accordance with NEPM as the national standard. Monitoring is scheduled to be expanded in 2018/19, with the installation of a PM_{2.5} particle monitor in Collie.

Our Monitoring

One air quality pollutant, particle matter less than 10 microns in diameter (PM₁₀), is monitored in Collie. PM₁₀ contains small particles that can be harmful to people and can be attributed to industrial activities and events such as bushfires,

prescribed fire hazard reduction burns, dust storms and pollen.

Air Quality Particle Criteria

The NEPM provides a number of criteria for particle matter, as shown through Table 1.

Table 1. Air Quality Particle Criteria

Pollutant	Averaging Period	Maximum concentration (micrograms per cubic metre)
Particulate Matter as PM ₁₀	1 day	50 µg/m ³
	1 year	25 µg/m ³
Particulate Matter as PM _{2.5}	1 day	25 µg/m ³
	1 year	8 µg/m ³

All exceedences and events are reported and identified by DER. If an exceedence is caused by a fire or dust event, and causes the one day average particle standards to exceed normal historical fluctuations and background levels, it is referred to as an exceptional event.

Particle Levels in Collie

Collie has occasionally exceeded the daily (24 hour) standard 50 µg/m³ for PM₁₀ since 2008 as shown through Figure 1.

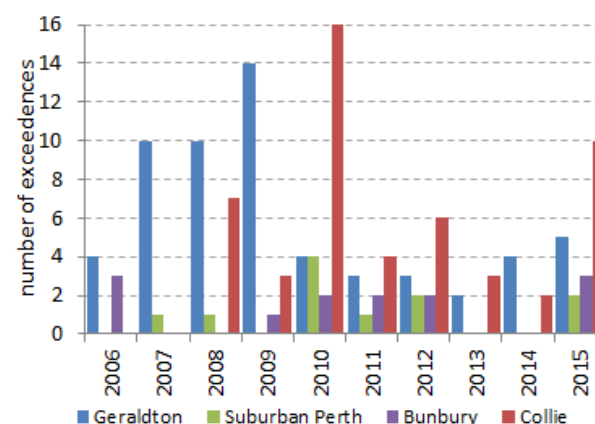


Figure 1. Number of times the NEPM 24 hour PM₁₀ standard was exceeded at a range of sites

Collie experienced 10 exceedences of the daily (24 hr) NEPM PM₁₀ standard in 2015. Four were caused by bushfires in January and February, while six exceedences were caused from prescribed fire hazard reduction burns in Autumn and Spring.

Since DER's commencement of particle monitoring in 2008, Collie has not exceeded the NEPM annual standard for PM₁₀ of 25 µg/m³ (Figure 2). In 2015, the annual average PM₁₀ concentration in Collie was 22.4 µg/m³.

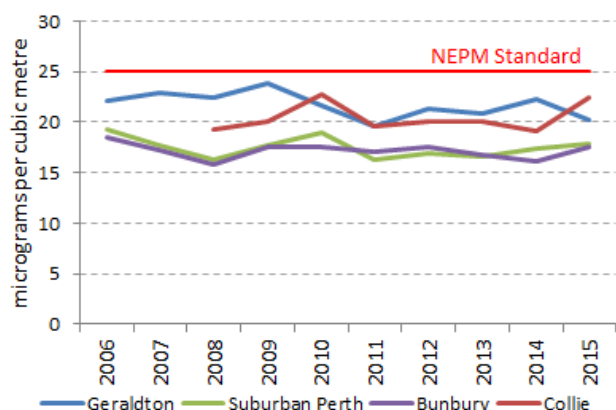


Figure 2 Annual average PM₁₀ concentrations at a range of sites

As Figure 3 shows elevated averaged particle levels at Collie have occurred predominantly in the afternoons and generally during the drier Summer months over the past three years. Additionally, the figure also shows there are elevated periods overnight during the Winter months.

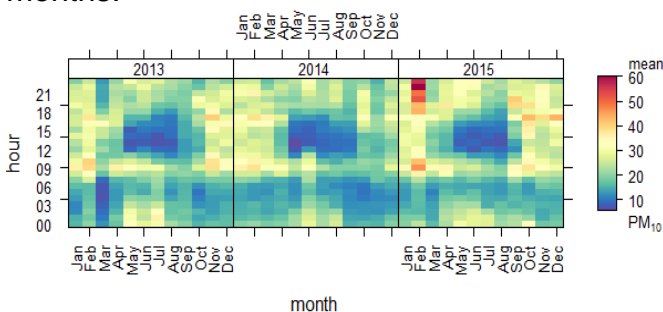


Figure 3 Average PM₁₀ concentrations at Collie for each hour over the last three years

Future Monitoring in Collie

Installation of a PM_{2.5} particle monitor is scheduled for 2018/19 for Collie.

Particles Explained

Airborne particles are commonly classified by size in terms of their equivalent aerodynamic diameter (EAD). An EAD is the diameter of a spherical particle of density 1 gram per cubic centimeter (the same density as water) which exhibits the same aerodynamic behavior as the particle in question. Particles are sampled and described on the basis of their EAD but usually simply called the particle size.

PM₁₀ particles are any substances that have an EAD less than or equal to 10 micrometres in diameter. PM_{2.5} are any substances that have an EAD less than or equal to 2.5 micrometres in diameter. Particles in this size range make up a large portion of dust that can be drawn into the lungs. Larger particles tend to be trapped in the nose, mouth or throat¹.

The important thing to note is that PM₁₀ and PM_{2.5} is not one particular substance, but simply a classification of particle or dust size.

¹ [National Pollutant Inventory, Particulate matter \(PM₁₀ and PM_{2.5}\)](#)

More Information

For advice on the Regulations, or related matters, please contact Licensing and Approvals on 6467 5000.

This document is available in alternative formats and other languages on request.

Related Documents

Additional publications about Air Quality are available online from www.der.wa.gov.au/airquality, or can be requested by phoning 6467 5000.

Legislation

This document is provided for guidance only. It should not be relied upon to address every aspect of the relevant legislation. Please refer to the State Law Publisher (SLP) for copies of the relevant legislation, available electronically from the SLP website at www.slp.wa.gov.au.

Document Versions

- July 2016

Disclaimer

The information contained in this document is provided by DER in good faith as a public service. However, DER does not guarantee the accuracy of the information contained in this document and it is the responsibility of recipients to make their own enquiries as to its accuracy, currency and relevance.

The State of Western Australia, DER and their servants and agents expressly disclaim liability, in negligence or otherwise, for any act or omission occurring in reliance on the information contained in this document or for any consequence of such act or omission.

Limitation

The Western Australian Government is committed to providing quality information to the community and makes every attempt to ensure accuracy, currency and reliability of the data contained in this document.

However, changes in circumstances after the time of publication may impact on the quality of information. Confirmation of the information may be sought from the relevant originating bodies or the department providing the information. The State of Western Australia and DER reserve the right to amend the content of this document at any time without notice.

Legal Advice

The information provided to you by DER in relation to this matter does not constitute legal advice. Due to the range of legal issues potentially involved in this matter, DER recommends that you obtain independent legal advice.