

Air quality quarterly summary report – October to December (Q4) 2015

Issued May 2016

Introduction

One of the EPA's environmental goals is good quality air. To support this goal the EPA conducts ambient air quality monitoring at locations around the state.

This report contains a summary of the previous quarter's air quality based on data from the EPA's monitoring network. This data, where applicable, is compared to the standards and goals set out in the *National Environment Protection (Ambient Air Quality) Measure (Air NEPM)*.

Details on the Air NEPM, along with locations of monitoring stations and the parameters measured at each site can be found on the EPA [website](#):

To assist in interpreting the information provided the following formats have been implemented.

- Values represented in the graphs are the maximum concentration recorded for each day for the given averaging period. Concentrations that are larger than the maximum allowed in the standard are recorded as exceedences. Each parameter that is measured has a target goal of a maximum number of exceedences allowed, with the aim being to not breach the goal.
- Exceedence days in **BLACK** provide the total number of exceedence days for the year.
- Exceedence days in **RED** indicate an exceedence of the NEPM standard this current month.
- Exceedence days in **BOLD** indicate the total number of exceedence days for the year and indicate a breach of the NEPM goal. Bold can be either black or red and once a site has breached the goal all subsequent results for the year will be reported this way.

1 Adelaide region

Of the pollutants defined in the Air NEPM, pollution from fine particles and nitrogen dioxide are among the greatest challenges to managing air quality across metropolitan Adelaide, with the bulk of emissions coming from motor vehicles and domestic sources; significant contributions from industrial sources; and on occasions, from planned burning, bushfires and dust storms. They are also a primary focus of the [National Clean Air Agreement: Towards a clean air future for all Australians](#).

Fine [particles](#) are often a complex mixture of materials arising from many sources, but are generally grouped into two categories, called PM₁₀ and PM_{2.5}, where the number gives an idea of the range of sizes of particles. Both are able to enter the lungs and are known to have health effects.

[Nitrogen dioxide](#) (NO₂) mostly comes from combustion of fuels such as petrol, diesel or gas. Although it is generally found at concentrations below the national standard in Adelaide, recent Australian research suggests that it may still cause health effects in our communities.

While there is considerable variation in the mix of sources in different parts of the metropolitan area, air pollution knows no boundaries, so emissions in one area may well affect air quality in another. The impacts of emissions into our air depend heavily on the weather conditions on any day. For example, very still conditions over the city for several days allow pollutants to build up, leading at times to concentrations above the national standards. In contrast, very windy conditions across the State can raise dust into the air, resulting in exceedences of standards in Adelaide and regional population centres.

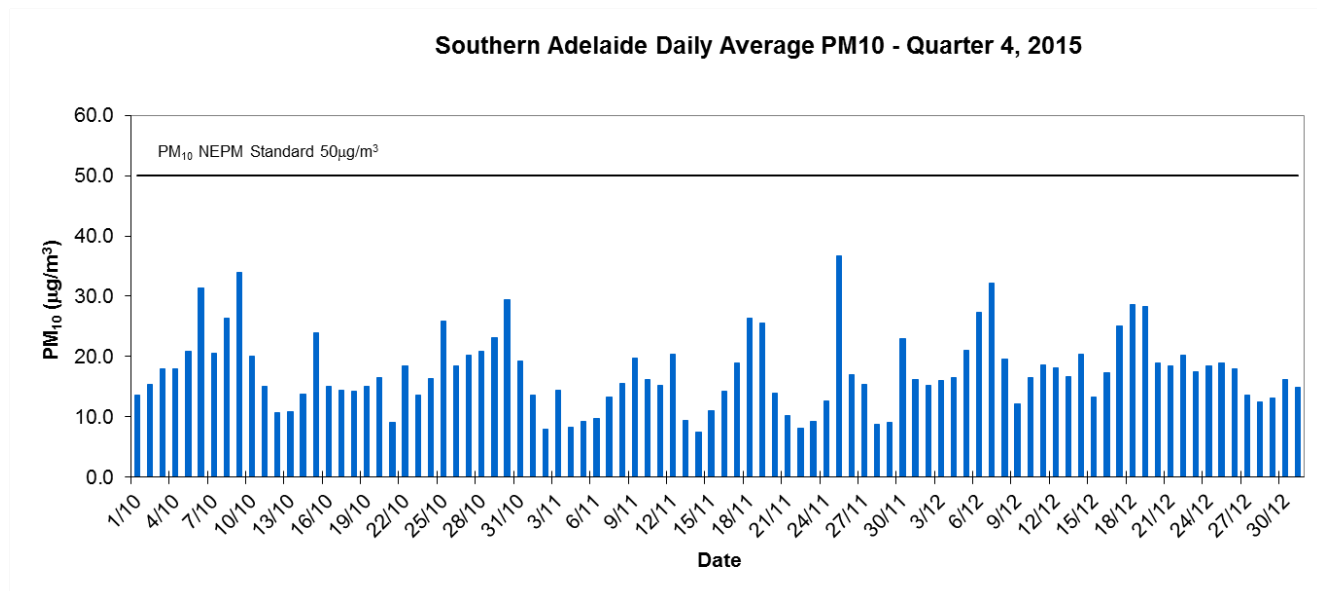
1.1 Southern Adelaide

Air quality in Southern Adelaide was generally good this quarter.

1.1.1 Particles (PM₁₀)

- The 24-hour NEPM Standard for PM₁₀ particles was NOT exceeded at Southern Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Southern Adelaide: 0



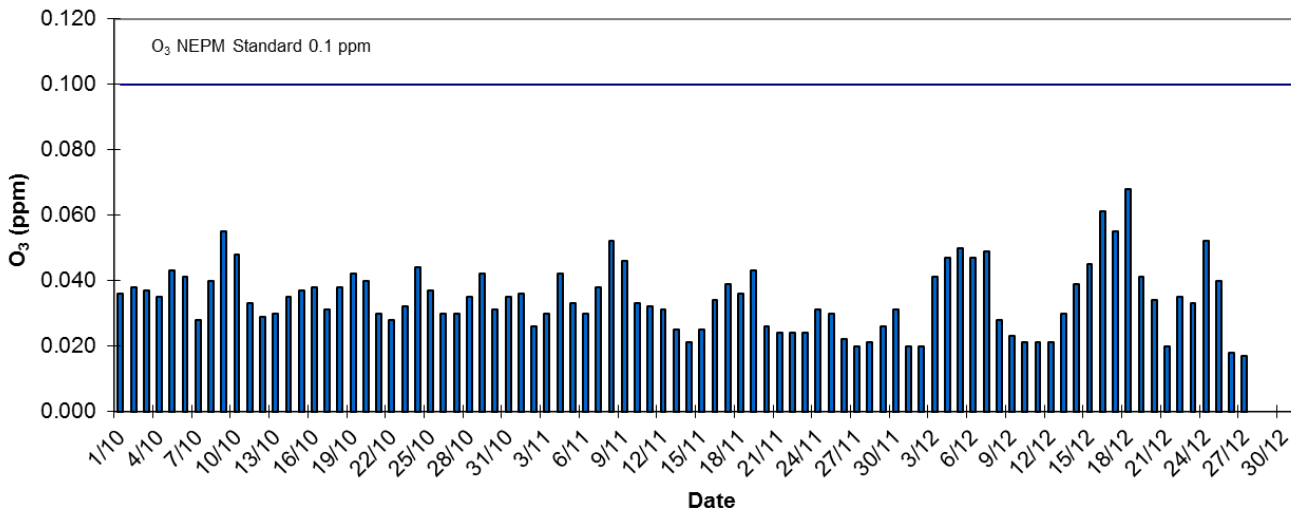
1.1.2 Ozone

- The 1-hour NEPM Standard for ozone was NOT exceeded at Southern Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Southern Adelaide: 0

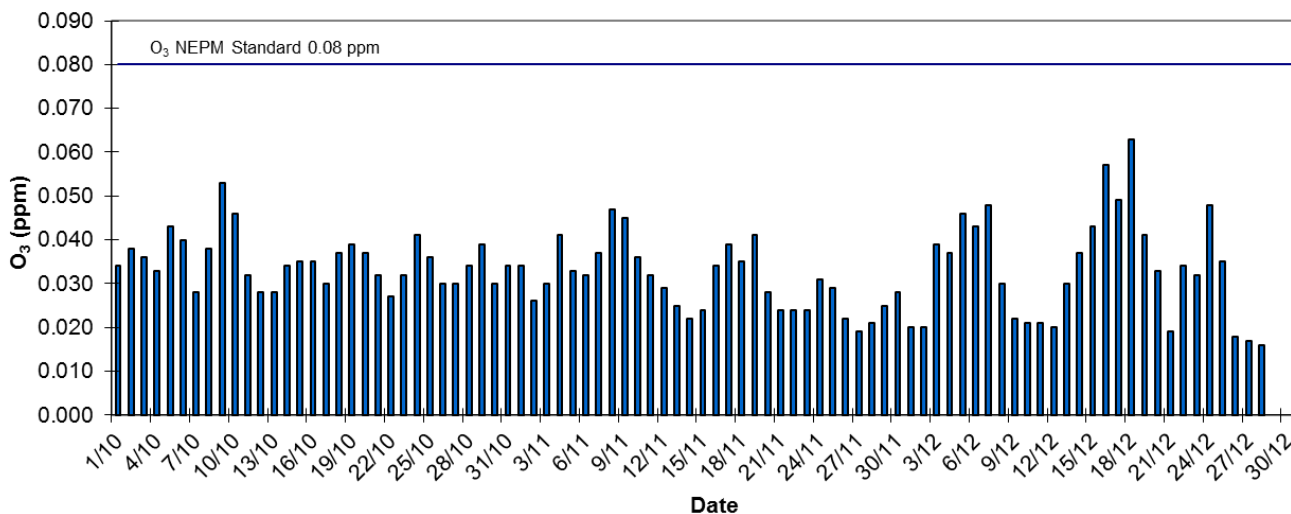
- This is less than the NEPM Goal of once per year.

Southern Adelaide 1 Hr Daily Maxima O3 - Quarter 4, 2015



- The 4-hour NEPM Standard for ozone was NOT exceeded at Southern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
 Southern Adelaide: 0
- This is less than the NEPM Goal of once per year.

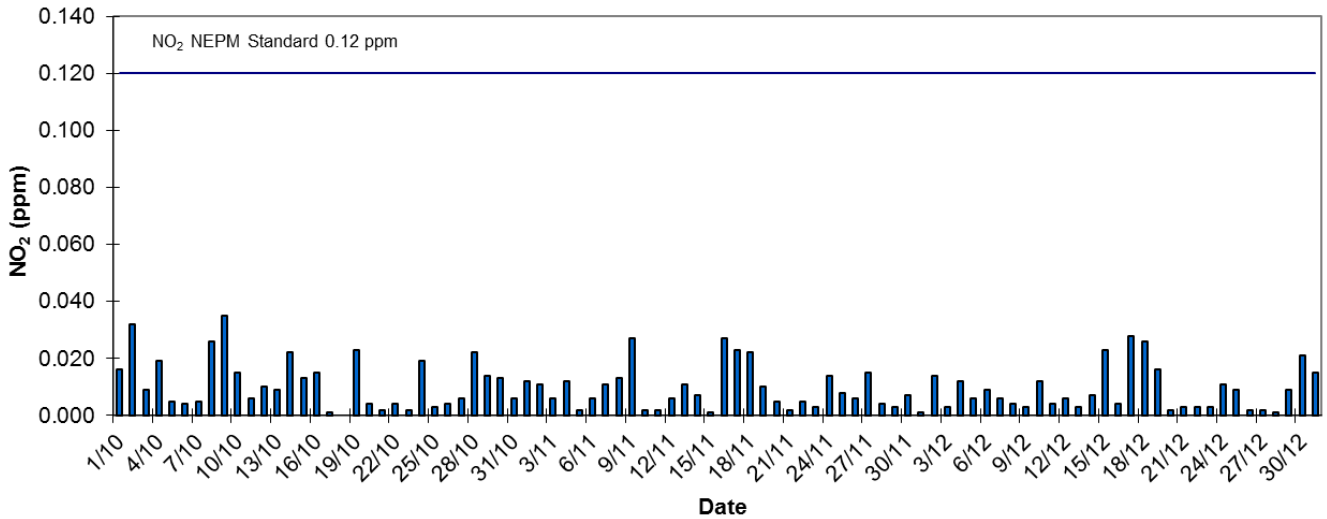
Southern Adelaide 4 Hr Daily Maxima O3 - Quarter 4, 2015



1.1.3 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Southern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
 Southern Adelaide: 0
- This is less than the NEPM Goal of once per year.

Southern Adelaide 1 Hr Daily Maxima NO2 - Quarter 4, 2015



1.2 Northern Adelaide

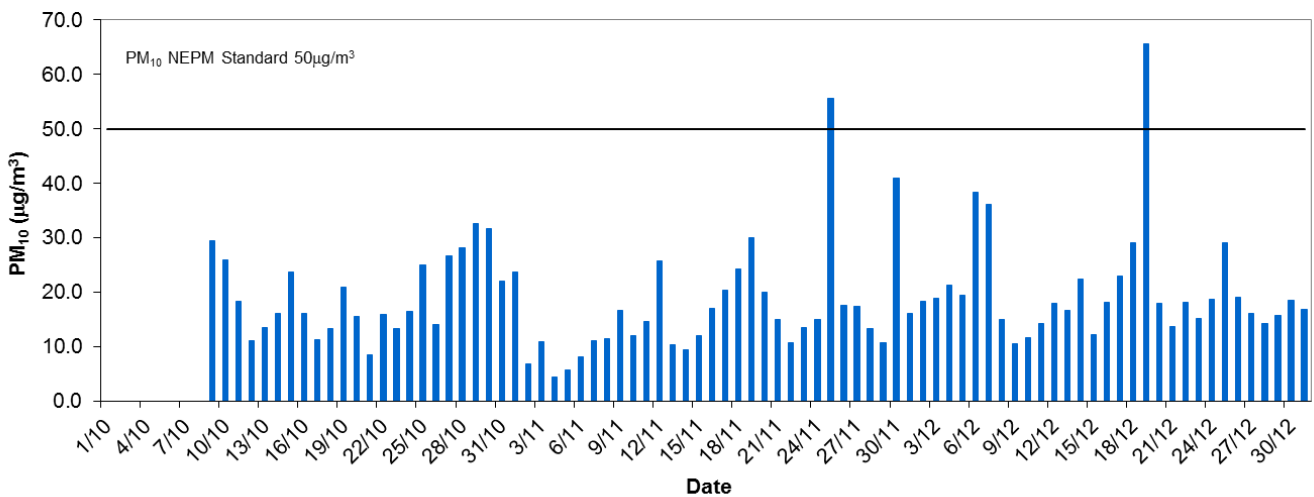
Air quality in Northern Adelaide was generally good this quarter.

1.2.1 Particles (PM₁₀)

- The 24hr NEPM Standard for PM₁₀ particles was exceeded on **2** occasions at Northern Adelaide this quarter. This was likely due to the Pinery bushfire from 25 to 27 November 2015.
- Total NEPM Exceedence days for 2015

Northern Adelaide: **3**

Northern Adelaide Daily Average PM10 - Quarter 4, 2015

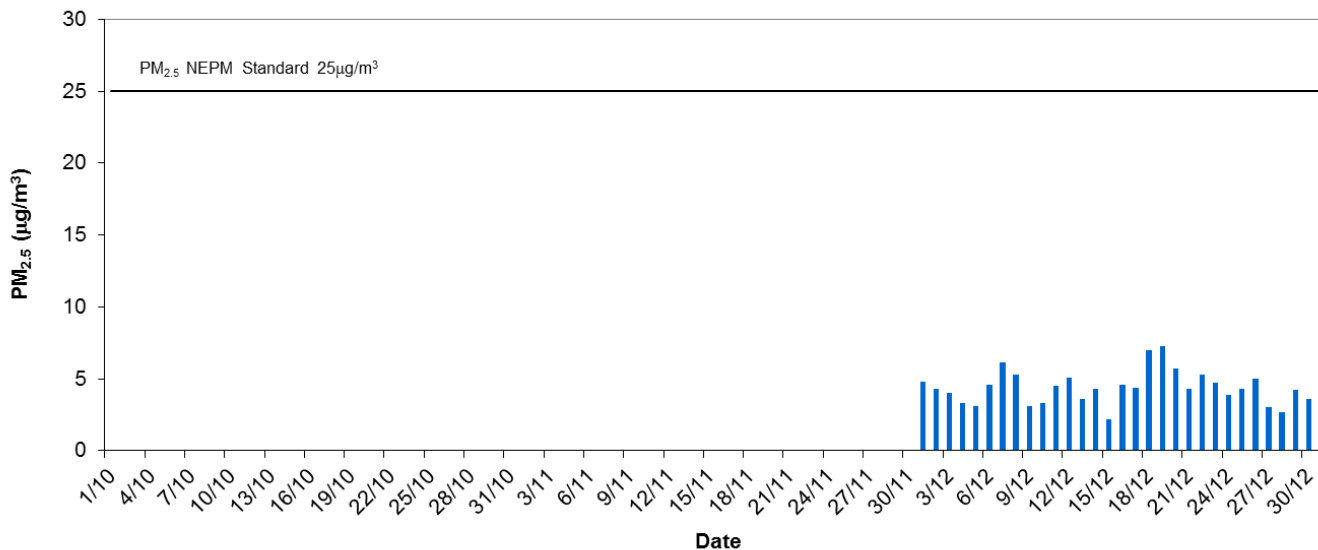


1.2.2 Particles (PM_{2.5})

- The 24hr NEPM Standard for PM_{2.5} particles was not exceeded at Northern Adelaide this quarter. PM_{2.5} monitoring at Northern Adelaide began on 2 December 2015.
- Total NEPM Exceedence days for 2015

Northern Adelaide: 0

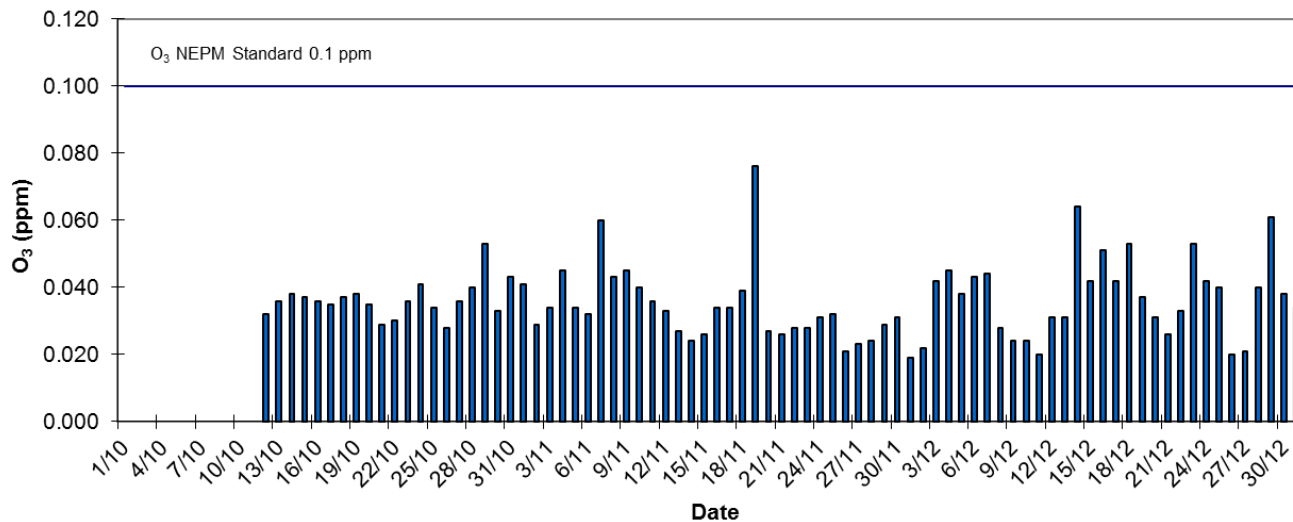
Northern Adelaide Daily Average PM2.5 - Quarter 4, 2015



1.2.3 Ozone

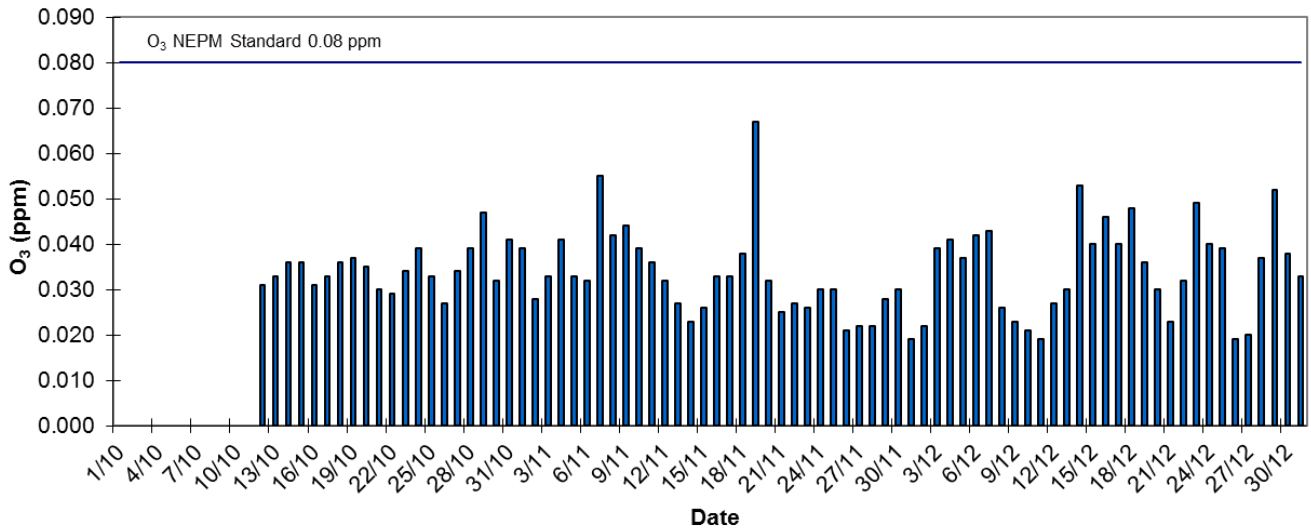
- The 1-hour NEPM Standard for ozone was NOT exceeded at Northern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
Northern Adelaide: 0
- This is less than the NEPM Goal of once per year.

Northern Adelaide 1 Hr Daily Maxima O3 - Quarter 4, 2015



- The 4-hour NEPM Standard for ozone was NOT exceeded at Northern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
Northern Adelaide: 0
- This is less than the NEPM Goal of once per year.

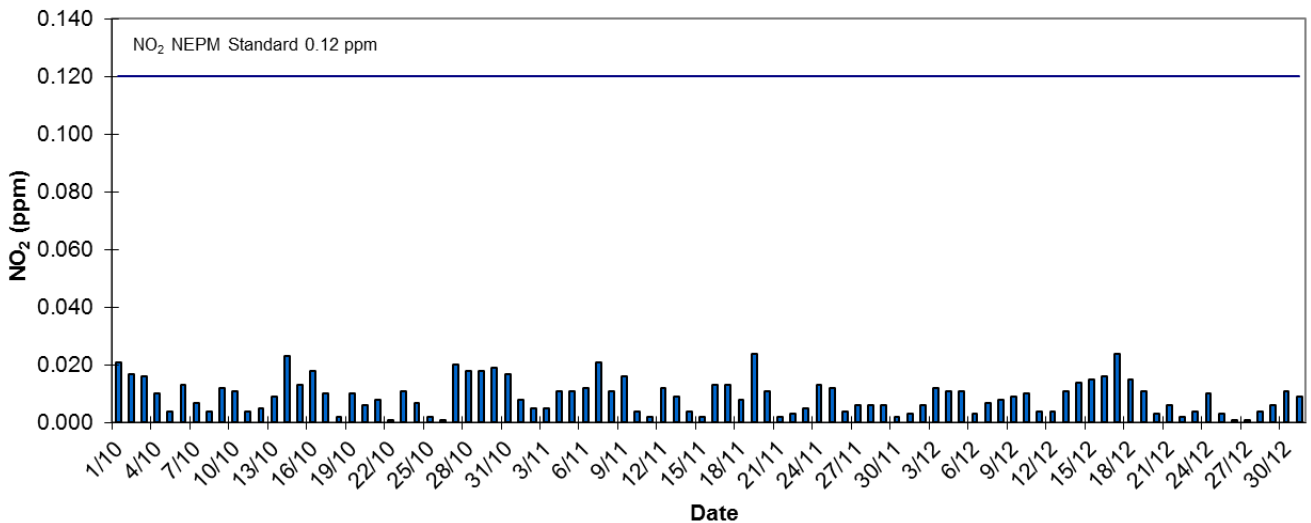
Northern Adelaide 4 Hr Daily Maxima O3 - Quarter 4, 2015



1.2.4 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Northern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
Northern Adelaide: 0
- This is less than the NEPM Goal of once per year.

Northern Adelaide 1 Hr Daily Maxima NO2 - Quarter 4, 2015



1.2.5 Carbon monoxide

- The 8-hour NEPM Standard for carbon monoxide was NOT exceeded at Northern Adelaide this quarter. The concentration is consistently very low hence the 8-hour daily maxima graph is not shown unless a significant event occurs.
- Total NEPM Exceedence days for 2015
Northern Adelaide: 0
- This is less than the NEPM Goal of once per year.

1.3 Eastern Adelaide

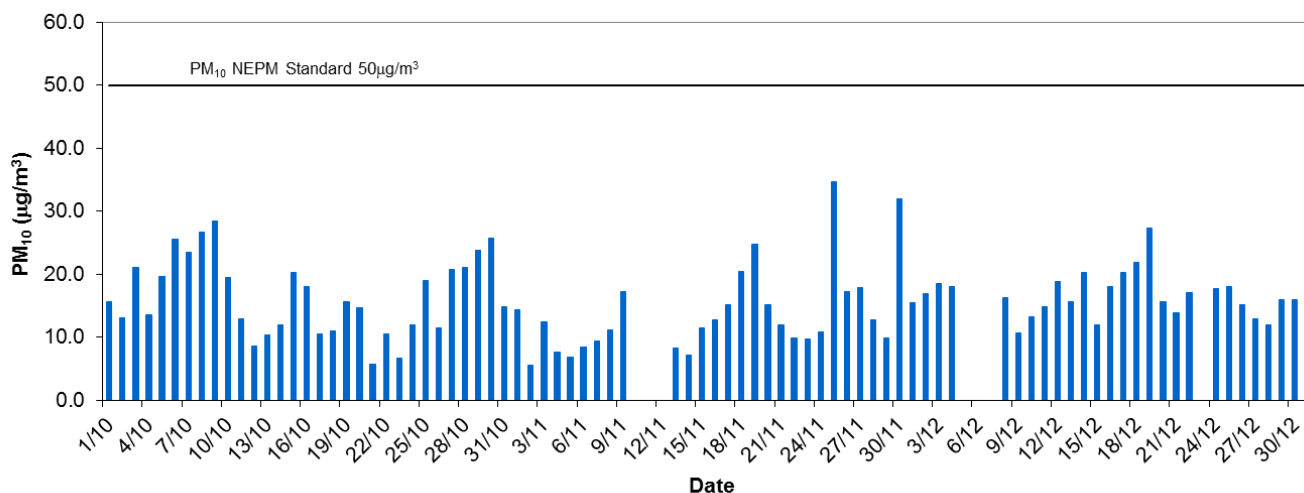
Air quality in Eastern Adelaide was good this quarter.

1.3.1 Particles (PM₁₀)

- The 24-hour NEPM Standard for PM₁₀ particles was NOT exceeded at Eastern Adelaide this quarter.
- NEPM Exceedence days for 2015

Eastern Adelaide: 0

Eastern Adelaide Daily Average PM10 - Quarter 4, 2015



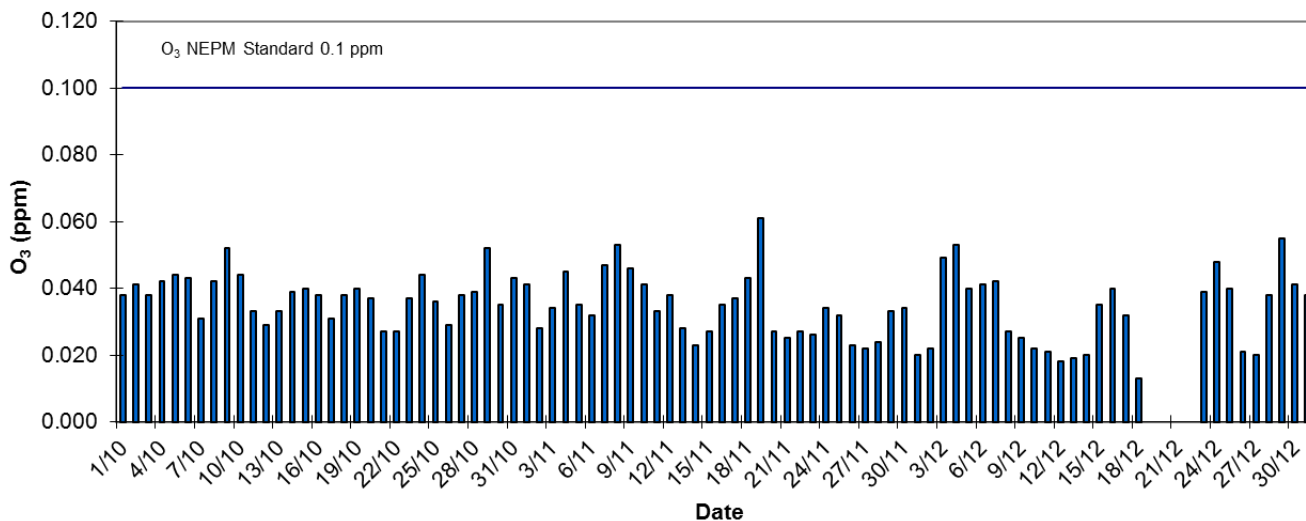
1.3.2 Ozone

- The 1-hour NEPM Standard for ozone was NOT exceeded at Eastern Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Eastern Adelaide: 0

- This is less than the NEPM Goal of once per year.

Eastern Adelaide 1 Hr Daily Maxima O3 - Quarter 4, 2015

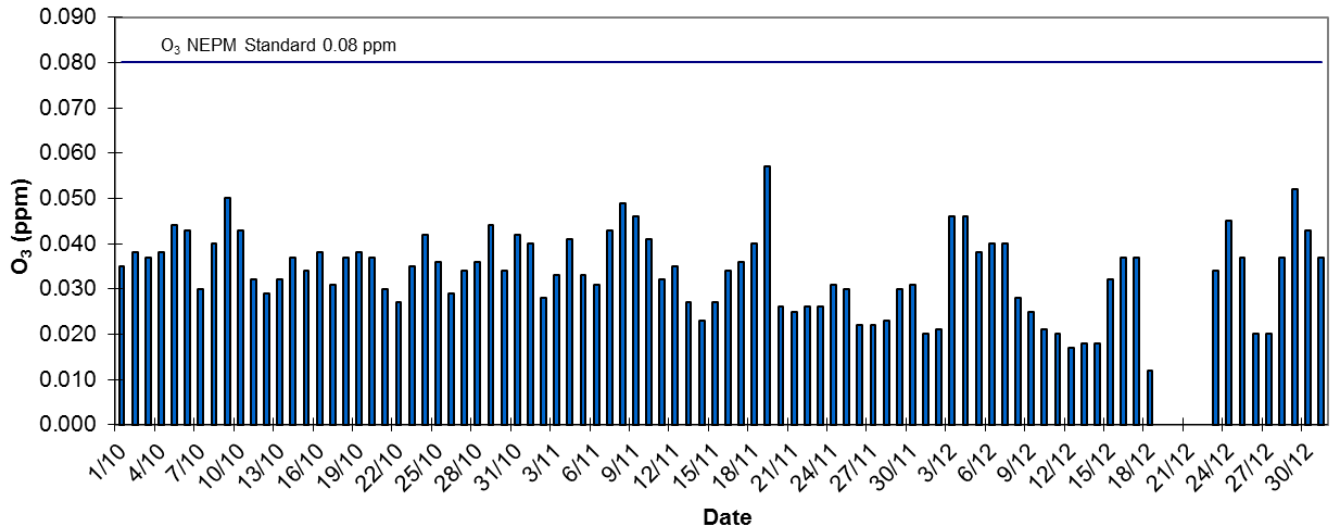


- The 4-hour NEPM Standard for ozone was NOT exceeded at Eastern Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Eastern Adelaide: 0

- This is less than the NEPM Goal of once per year.

Eastern Adelaide 4 Hr Daily Maxima O3 - Quarter 4, 2015



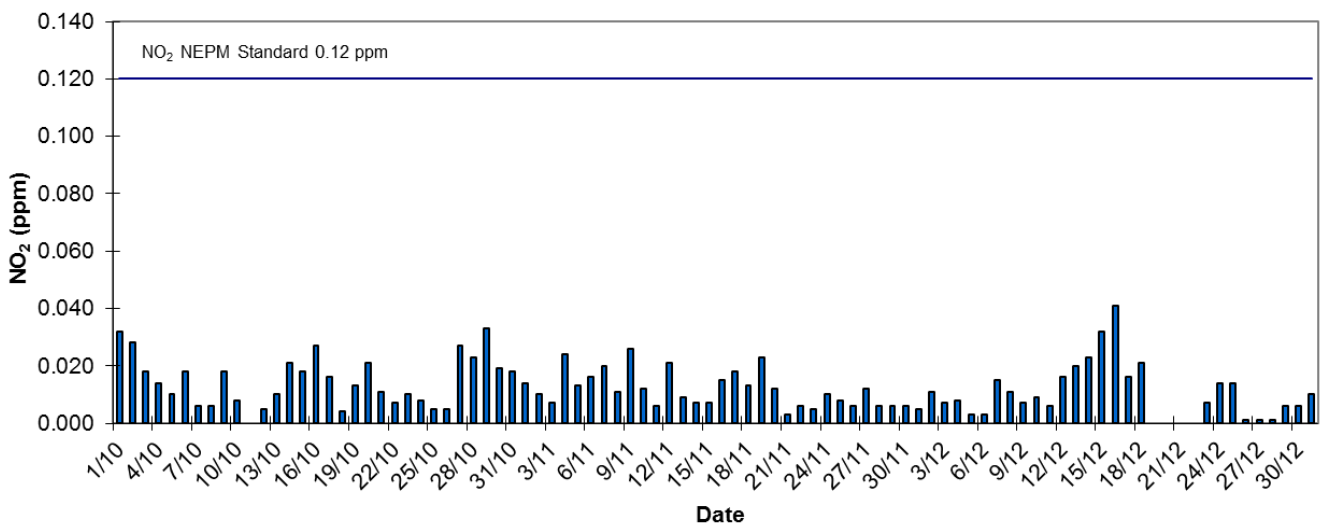
1.3.3 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Eastern Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Eastern Adelaide: 0

- This is less than the NEPM Goal of once per year.

Eastern Adelaide 1 Hr Daily Maxima NO2 - Quarter 4, 2015



1.4 Northwestern Adelaide

Air quality in Northwestern Adelaide was generally good this quarter.

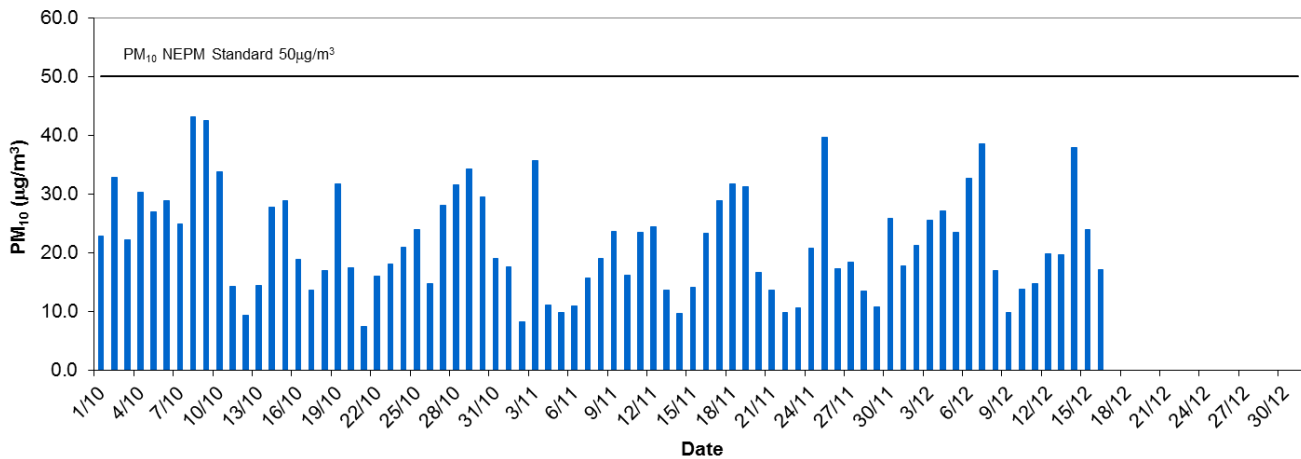
Le Fevre 1

1.4.1 Particles (PM₁₀)

- The 24-hour NEPM Standard for PM₁₀ particles was exceeded on 0 occasions at Le Fevre 1 this quarter. The data gap in December was due to station upgrades that included installation of a PM_{2.5} monitor.
- Total NEPM Exceedence days for 2015

Le Fevre 1¹: 0

Le Fevre 1 Daily Average PM10 - Quarter 4, 2015



Le Fevre 2

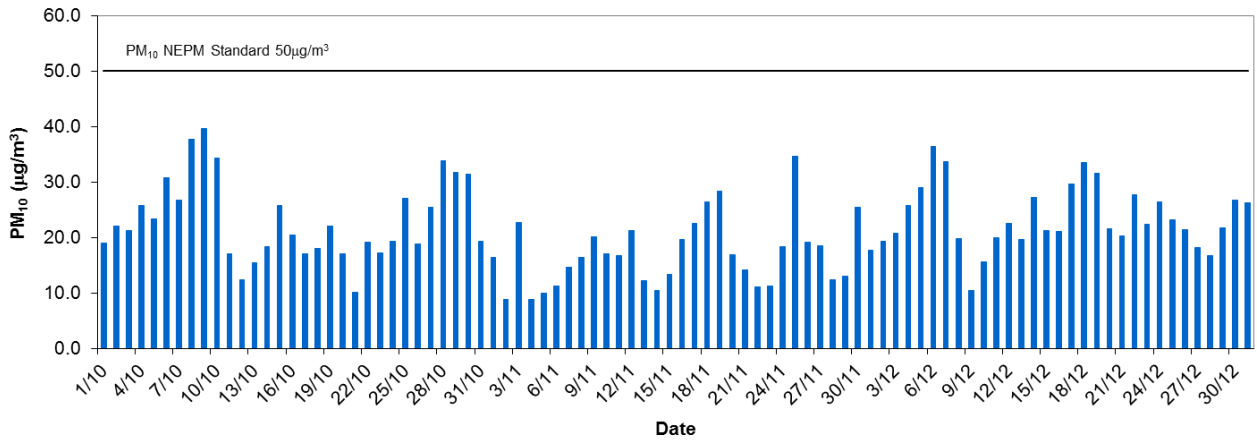
1.4.2 Particles (PM₁₀)

- The 24-hour NEPM Standard for PM₁₀ particles was NOT exceeded at Le Fevre 2 this quarter.
- Total NEPM Exceedence days for 2015

Le Fevre 2: 0

¹ The number provided here is for information/comparison purposes only and does not contribute to the NEPM assessment of the air quality of the region.

Le Fevre 2 Daily Average PM10 - Quarter 4, 2015

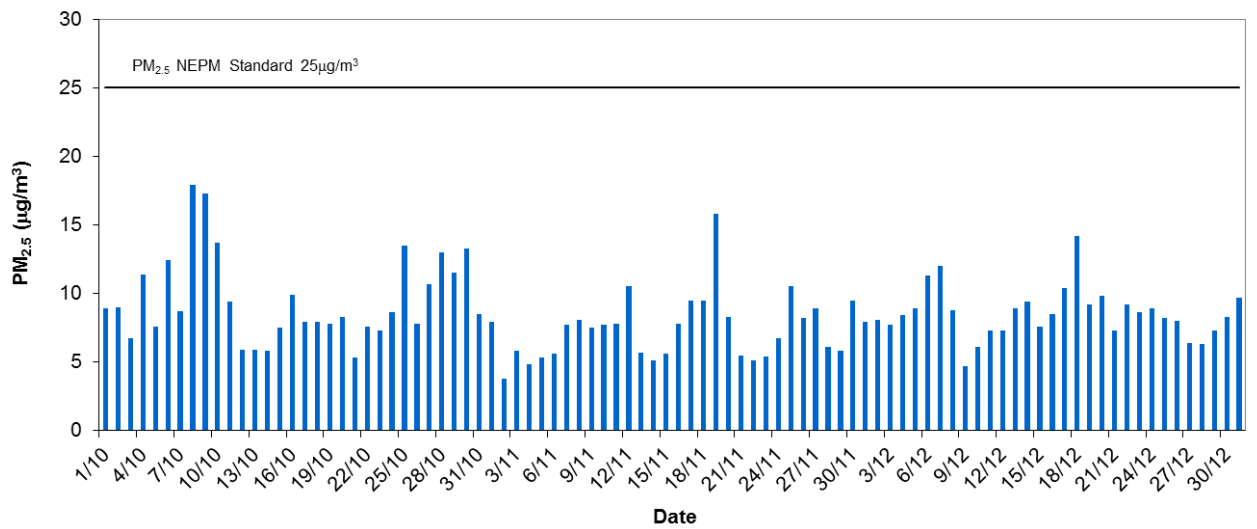


1.4.3 Particles (PM_{2.5})

- The 24-hour NEPM Standard for PM_{2.5} particles was NOT exceeded at Le Fevre 2 this quarter.
- Total NEPM Exceedence days for 2015

Le Fevre 2: 0

Le Fevre 2 Daily Average PM2.5 - Quarter 4, 2015



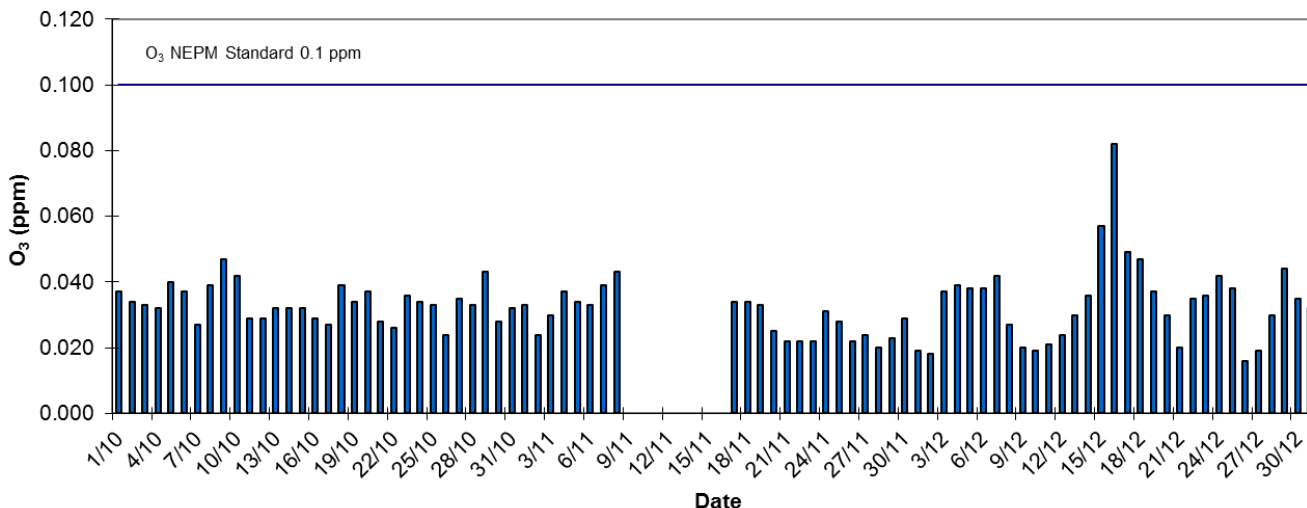
1.4.4 Ozone

- The 1-hour NEPM Standard for ozone was NOT exceeded at Le Fevre 2 this quarter.
- Total NEPM Exceedence days for 2015

Le Fevre 2: 0

- This is less than the NEPM Goal of once per year.

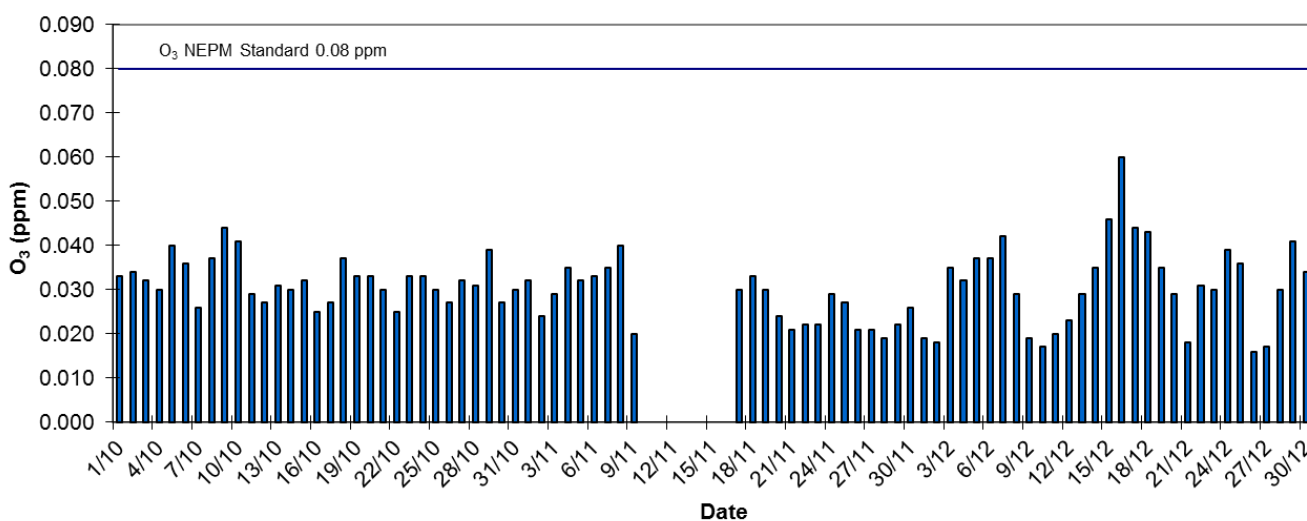
Le Fevre 2 1 Hr Daily Maxima O3 - Quarter 4, 2015



The 4-hour NEPM Standard for ozone was NOT exceeded at Le Fevre 2 this quarter.

- Total NEPM Exceedence days for 2015
 Le Fevre 2: 0
- This is less than the NEPM Goal of once per year.

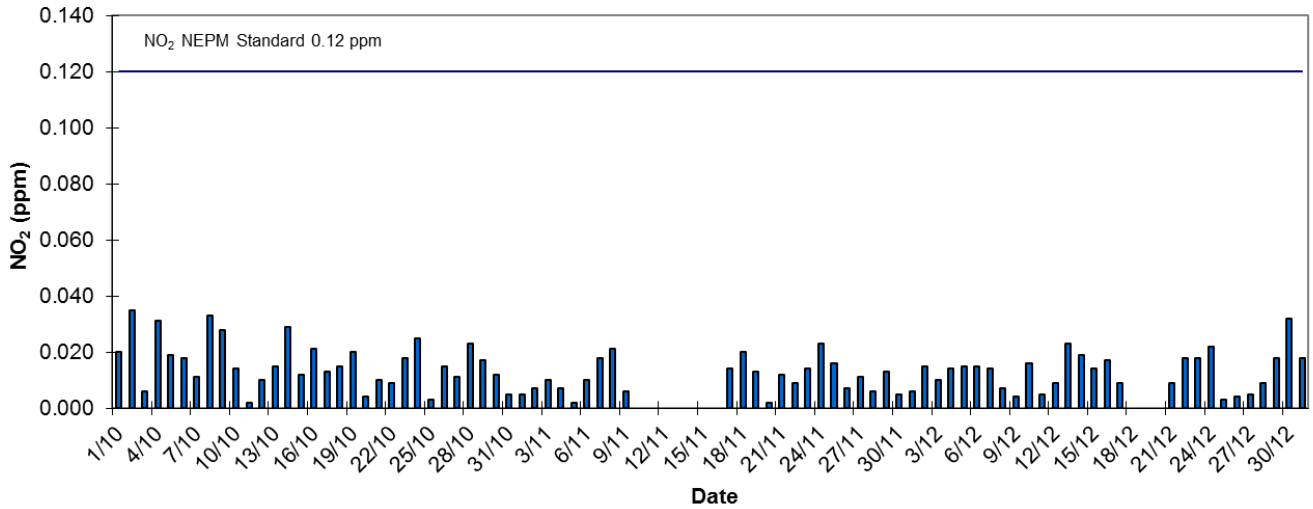
Le Fevre 2 4 Hr Daily Maxima O3 - Quarter 4, 2015



1.4.5 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Le Fevre 2 this quarter.
- Total NEPM Exceedence days for 2015
 Le Fevre 2: 0
- This is less than the NEPM Goal of once per year.

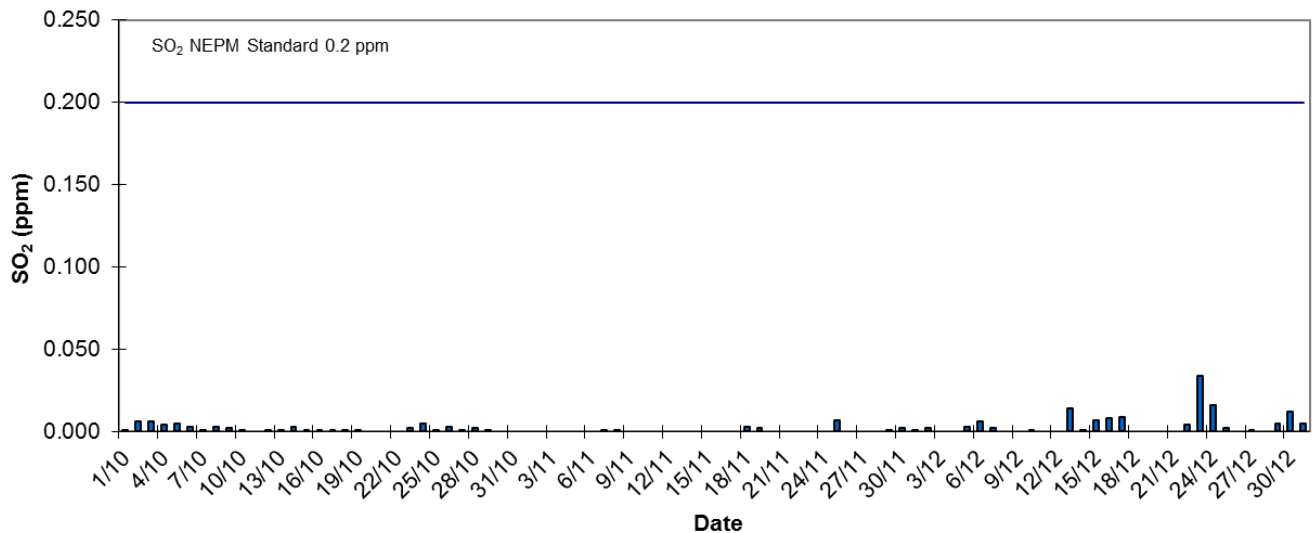
Le Fevre 2 1 Hr Daily Maxima NO2 - Quarter 4, 2015



1.4.6 Sulfur dioxide

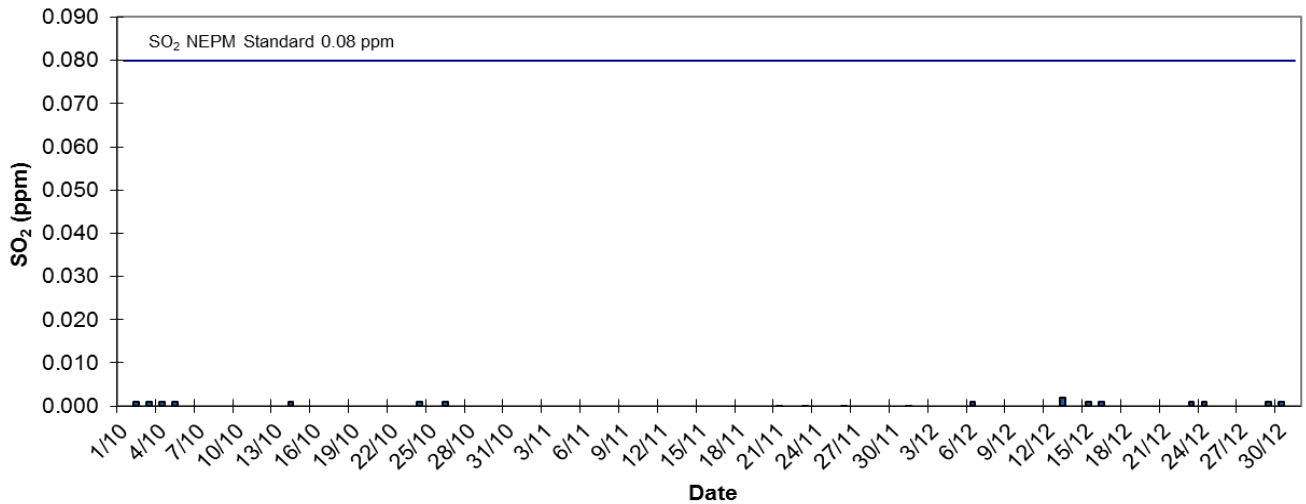
- The 1-hour NEPM Standard for sulfur dioxide was NOT exceeded at Le Fevre 2 this quarter.
- Total NEPM Exceedence days for 2015
 Le Fevre 2: 0
- This is less than the NEPM Goal of once per year.

Le Fevre 2 1 Hr Daily Maxima SO2 - Quarter 4, 2015



- The 24-hour NEPM Standard for sulfur dioxide was NOT exceeded at Le Fevre 2 this quarter.
- Total NEPM Exceedence days for 2015
 Le Fevre 2: 0
- This is less than the NEPM Goal of once per year.

Le Fevre 2 Daily Average SO₂ - Quarter 4, 2015



1.5 Western Adelaide

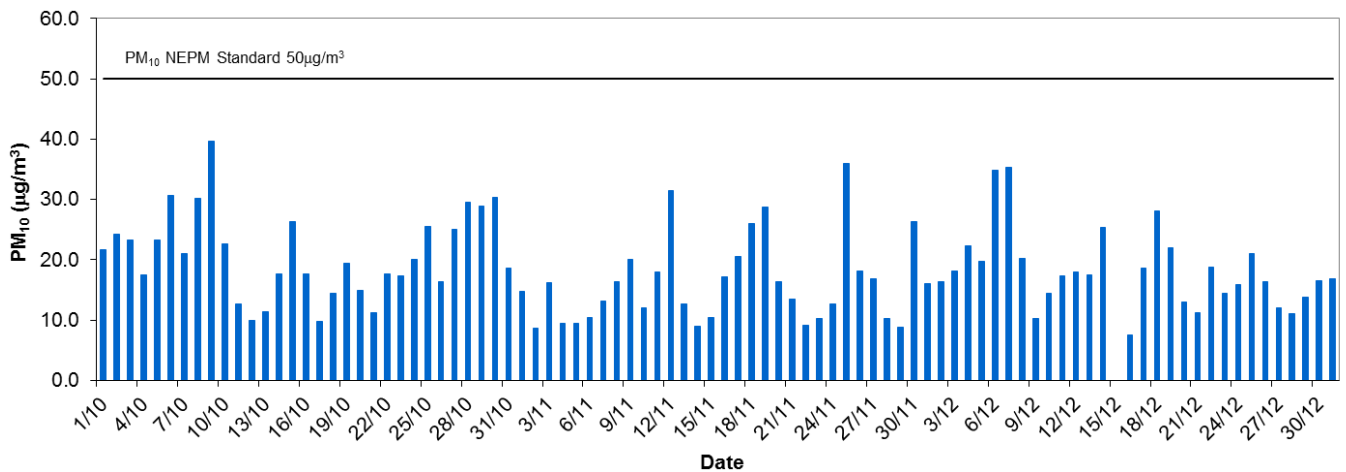
Air quality in Western Adelaide was generally good this quarter.

1.5.1 Particles (PM₁₀)

- The 24-hour NEPM Standard for PM₁₀ particles was NOT exceeded at Western Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Western Adelaide: 0

Western Adelaide Daily Average PM₁₀ - Quarter 4, 2015

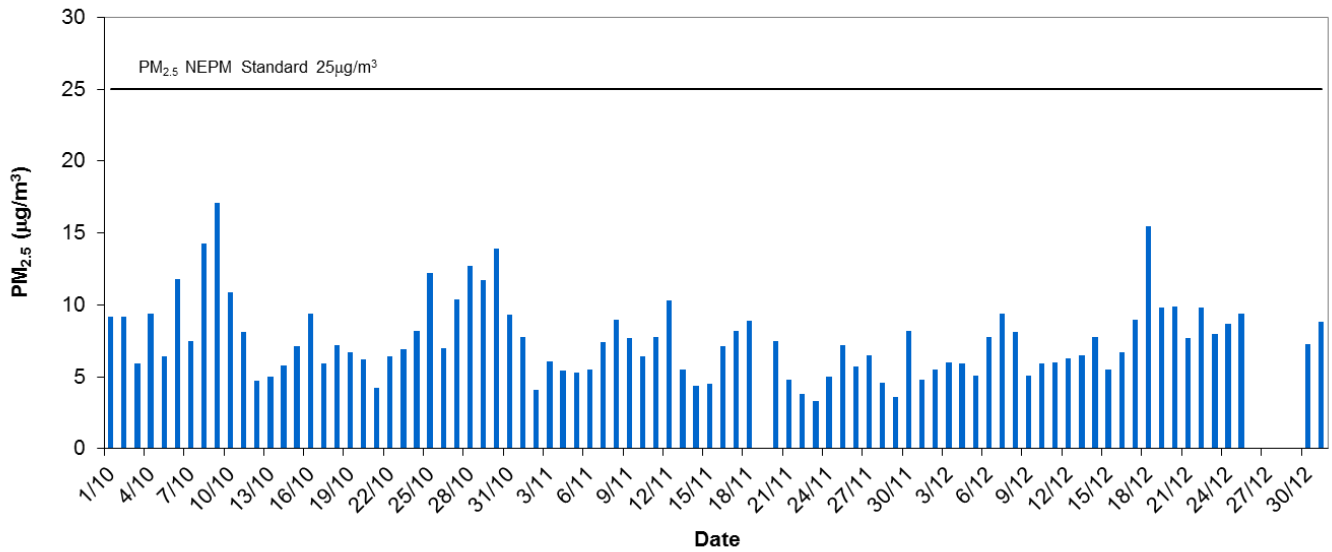


1.5.2 Particles (PM_{2.5})

- The 24-hour NEPM Standard for PM_{2.5} particles was NOT exceeded at Western Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Western Adelaide: 0

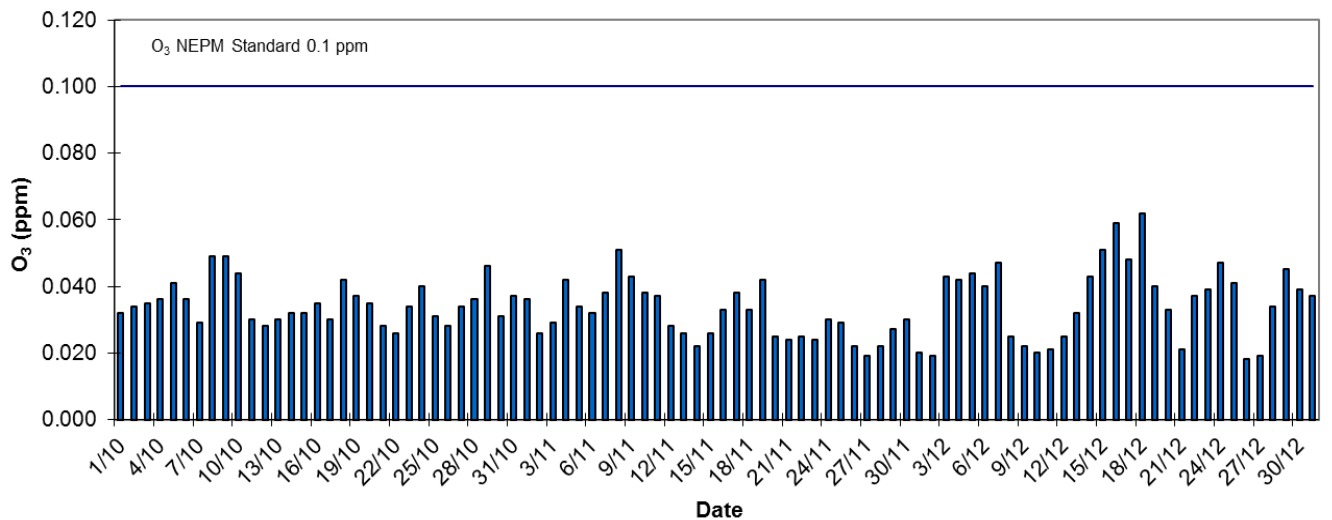
Western Adelaide Daily Average PM2.5 - Quarter 4, 2015



1.5.3 Ozone

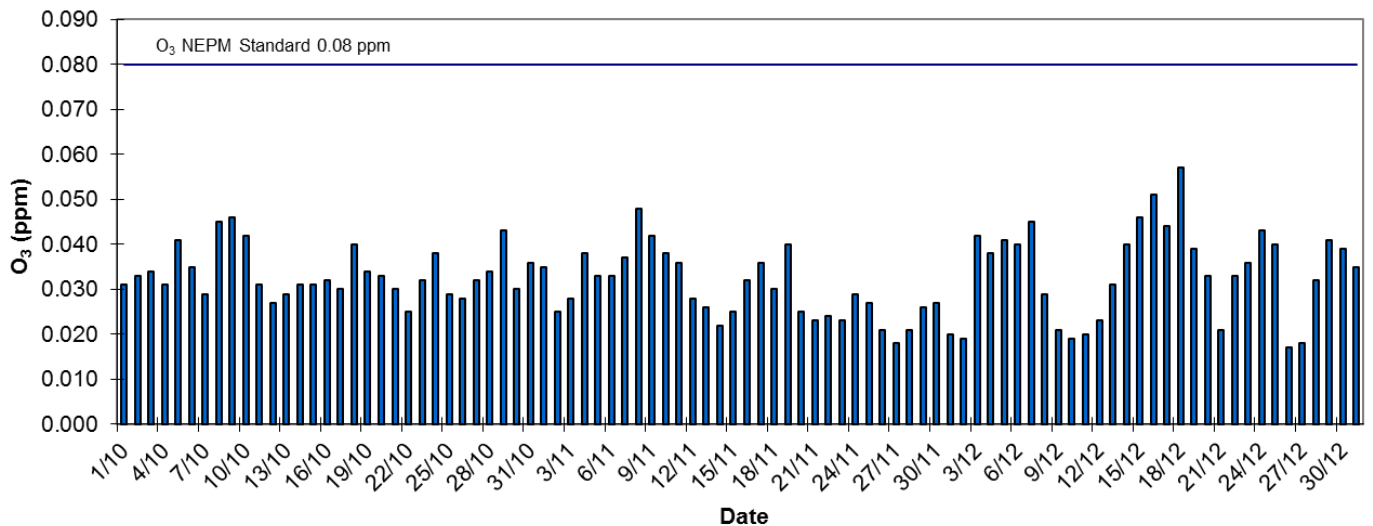
- The 1-hour NEPM Standard for ozone was NOT exceeded at Western Adelaide this quarter.
- Total NEPM Exceedence days for 2015
 Western Adelaide: 0
- This is less than the NEPM Goal of once per year.

Western Adelaide 1 Hr Daily Maxima O3 - Quarter 4, 2015



- The 4-hour NEPM Standard for ozone was NOT exceeded at Western Adelaide this quarter.
- Total NEPM Exceedence days for 2015
 Western Adelaide: 0
- This is less than the NEPM Goal of once per year.

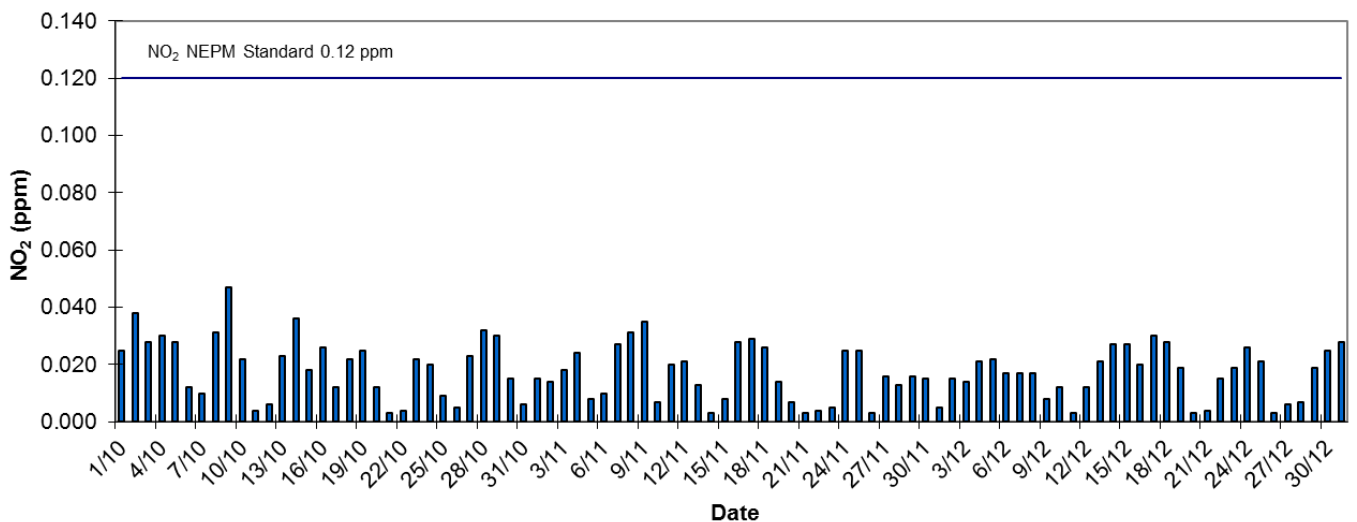
Western Adelaide 4 Hr Daily Maxima O₃ - Quarter 4, 2015



1.5.4 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Western Adelaide this quarter.
- Total NEPM Exceedence days for 2015
Western Adelaide: 0
- This is less than the NEPM Goal of once per year.

Western Adelaide 1 Hr Daily Maxima NO₂ - Quarter 4, 2015



1.6 Northeastern Adelaide

Air quality in Northeastern Adelaide was good this quarter

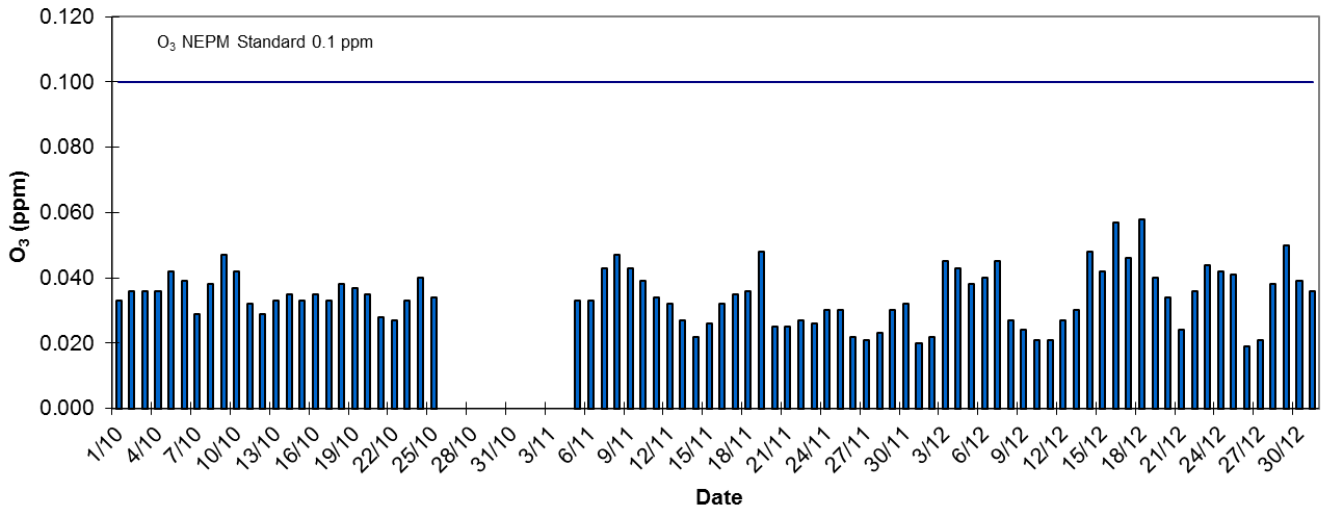
1.6.1 Ozone

- The 1-hour NEPM Standard for ozone was NOT exceeded at Northeastern Adelaide this quarter.
- Total NEPM Exceedence days for 2015

Northeastern Adelaide: 0

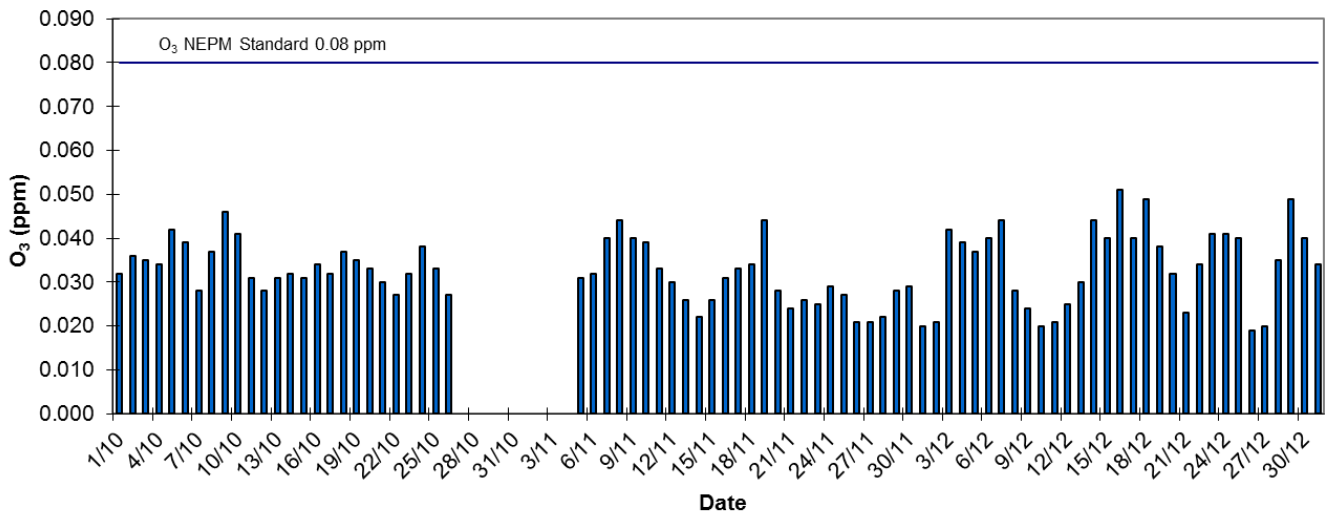
- This is less than the NEPM Goal of once per year.

Northeastern Adelaide 1 Hr Daily Maxima O3 - Quarter 4, 2015



- The 4-hour NEPM Standard for ozone was NOT exceeded at Northeastern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
Northeastern Adelaide: 0
- This is less than the NEPM Goal of once per year.

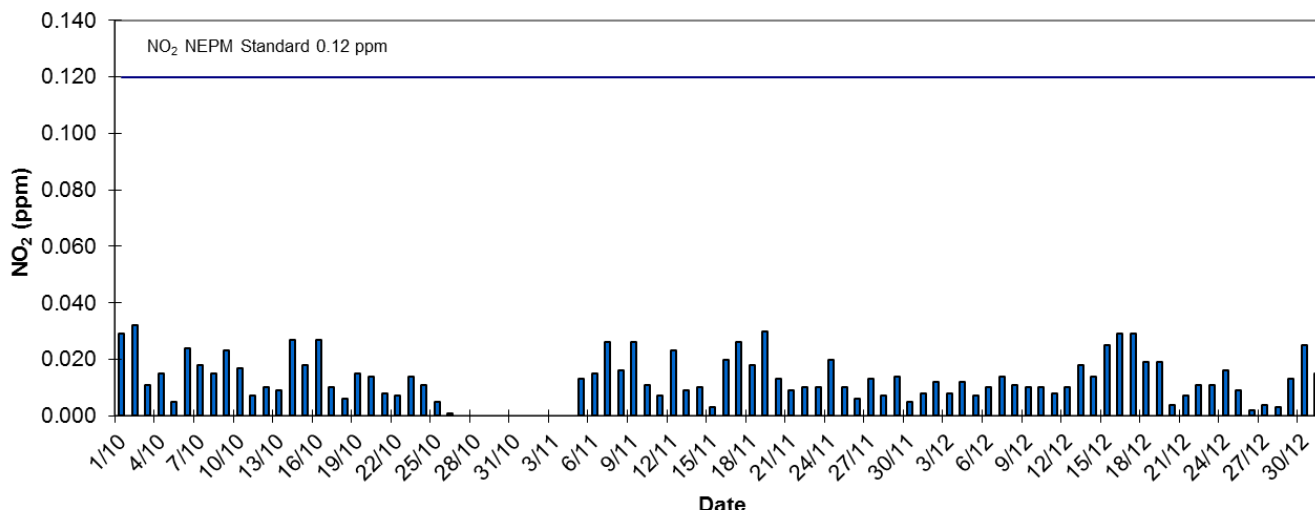
Northeastern Adelaide 4 Hr Daily Maxima O3 - Quarter 4, 2015



1.6.2 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Northeastern Adelaide this quarter.
- Total NEPM Exceedence days for 2015
Northeastern Adelaide: 0
- This is less than the NEPM Goal of once per year.

Northeastern Adelaide 1 Hr Daily Maxima NO2 - Quarter 4, 2015



1.6.3 Sulfur dioxide

Sulfur dioxide is continuously monitored at Northeastern Adelaide. However, the concentration is consistently very low hence the 1-hour daily maxima and daily average graphs are not shown unless a significant event occurs.

1.7 Adelaide CBD

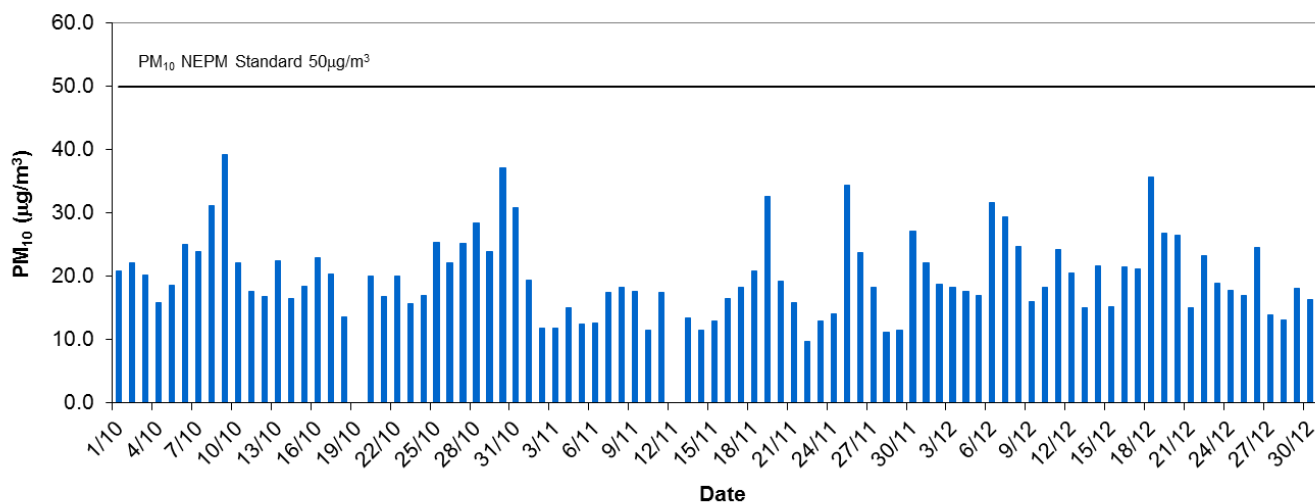
The Adelaide CBD station was established in May 2014. Air quality in Adelaide CBD was generally good this quarter.

1.7.1 Particles (PM10)

- The 24-hour NEPM Standard for PM₁₀ particles was NOT exceeded at Adelaide CBD this quarter.
- Total NEPM Exceedence days for 2015

Adelaide CBD: 0

Adelaide CBD Daily Average PM10 - Quarter 4, 2015

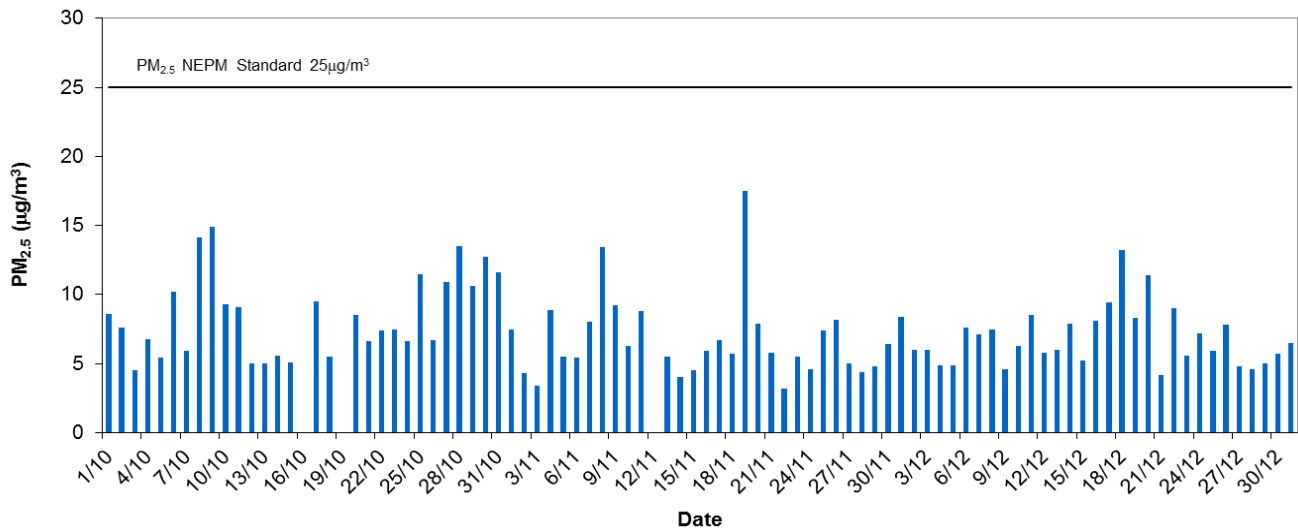


1.7.2 Particles (PM2.5)

- The 24-hour NEPM Standard for PM_{2.5} particles was NOT exceeded at Adelaide CBD this quarter.
- Total NEPM Exceedence days for 2015

Adelaide CBD: 0

Adelaide CBD Daily Average PM2.5 - Quarter 4, 2015



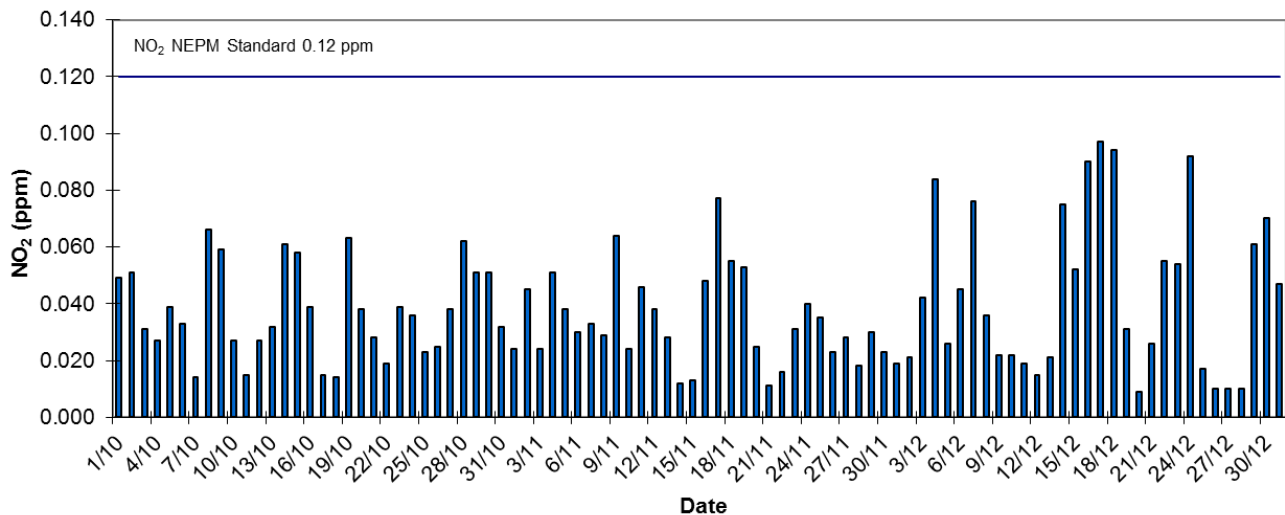
1.7.3 Nitrogen dioxide

- The 1-hour NEPM Standard for nitrogen dioxide was NOT exceeded at Adelaide CBD this quarter.
- Total NEPM Exceedence days for 2015

Adelaide CBD: 0

- This is less than the NEPM Goal of once per year.

Adelaide CBD 1 Hr Daily Maxima NO2 - Quarter 4, 2015



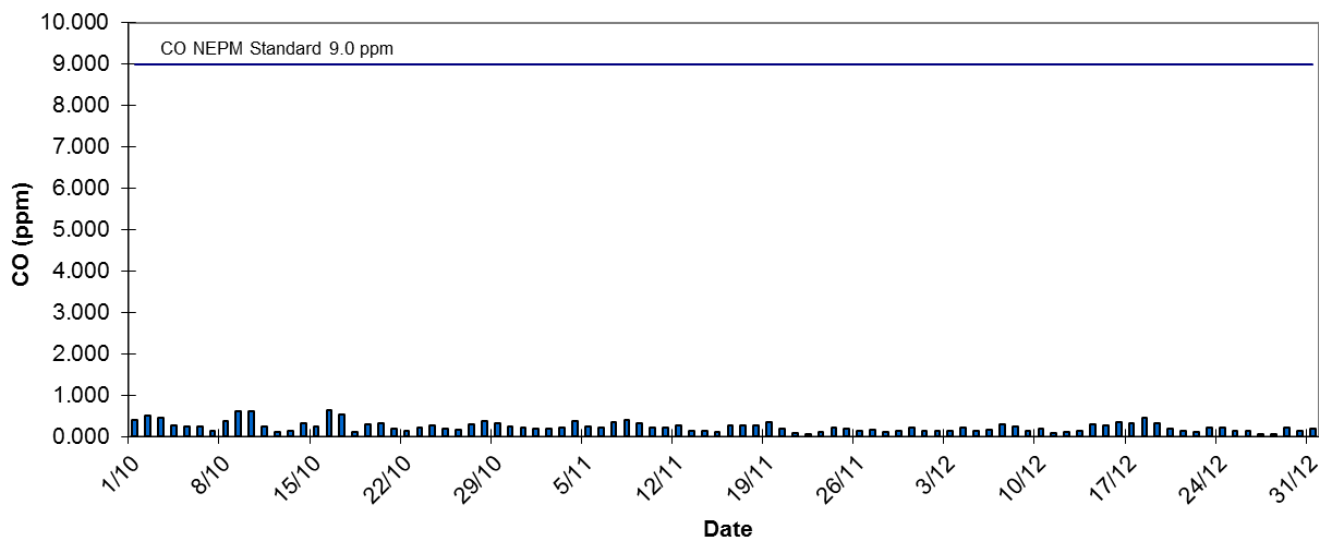
1.7.4 Carbon monoxide

- The 8-hour NEPM Standard for carbon monoxide was NOT exceeded at Adelaide CBD this quarter.
- Total NEPM Exceedence days for 2015

Adelaide CBD: 0

- This is less than the NEPM Goal of once per year.

Adelaide CBD 8 Hr Daily Maxima CO - Quarter 4, 2015



2 Spencer Gulf region

2.1 Port Pirie

Port Pirie is the location of one of the world's largest primary lead smelters which has a major impact on air quality in the area, particularly in regards to lead and sulfur dioxide. Particles are also an issue with industry and domestic solid fuel burning being the main anthropogenic sources. Naturally occurring windblown dust and agricultural sources are also known to affect air quality here.

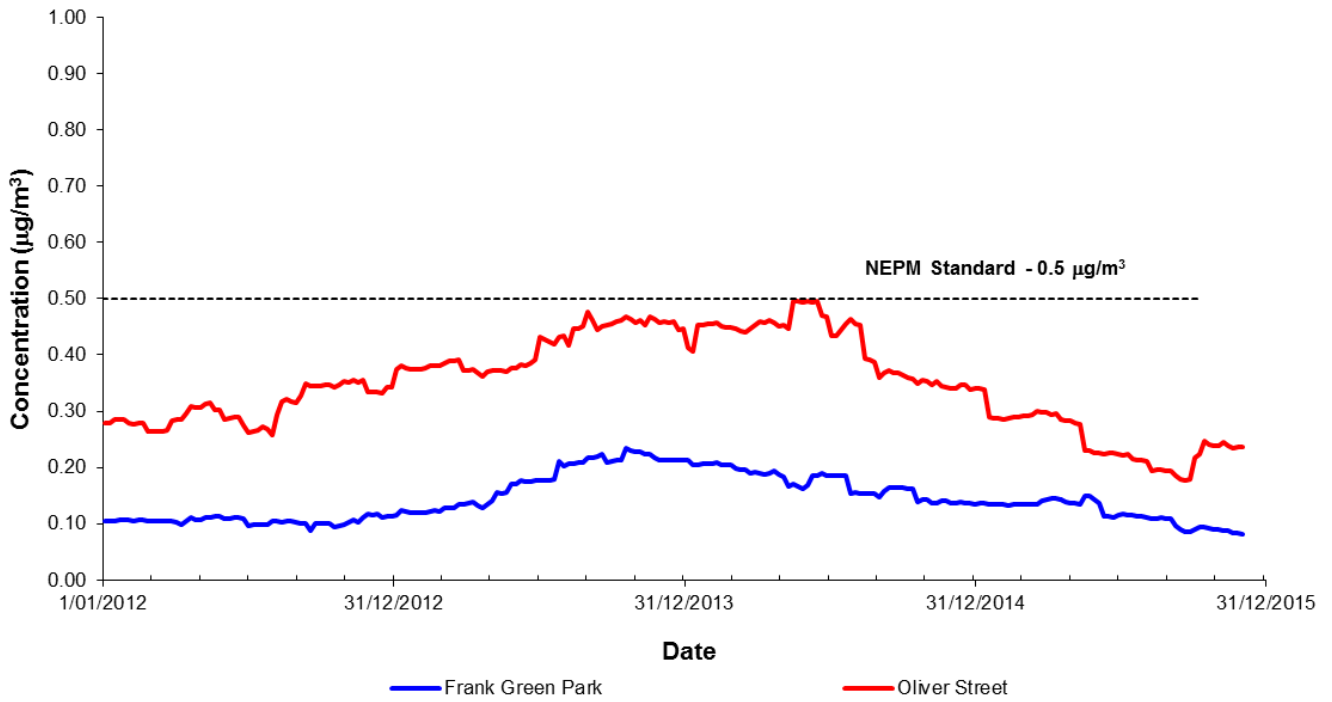
Monitoring is undertaken at 4 sites in Port Pirie. All sites monitor for lead whilst Oliver St also monitors sulfur dioxide and particles as well. Oliver St along with Frank Green Park, report against the Air NEPM with the other two sites, Pirie West Primary and Ellen St, used, historically along with Oliver St, to monitor industry licence targets. These two sites are now used to monitor the trend in concentration of lead over time.

2.1.1 Lead

The rolling annual average of lead in air at Frank Green Park and Oliver Street sites to 26 December 2015 are shown below.

- Since mid-2014 the annual rolling average has been decreasing at Oliver Street.
- Since November 2013 the annual rolling average has been showing a decreasing trend at Frank Green Park.

Pt Pirie Rolling 365 Day Average TSP Lead NEPM Sites - Quarter 4, 2015



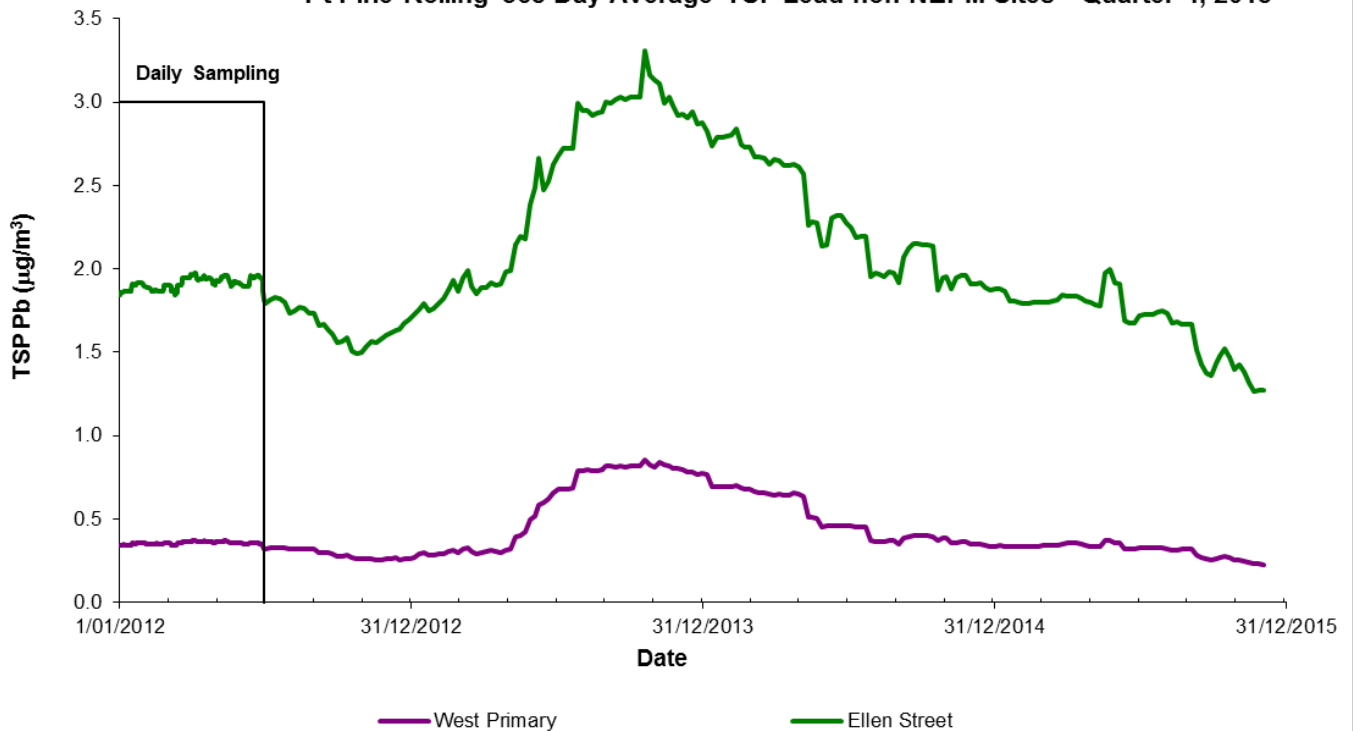
The rolling annual averages of lead in air at the Ellen Street and Pirie West sites to 26 December 2015 are shown below.

- From the end of April 2013 to October 2013 there was a marked increase in rolling annual average values at both sites, however since October 2013 they have been showing a decrease in average values.

Notes:

- Daily sampling was conducted at the Ellen Street and West Primary sites between 28 October 2010 and 30 June 2012 and these data are incorporated into the rolling averages for those sites.
- From 1 November 2011 a 365-day rolling average has been used.

Pt Pirie Rolling 365 Day Average TSP Lead non NEPM Sites - Quarter 4, 2015



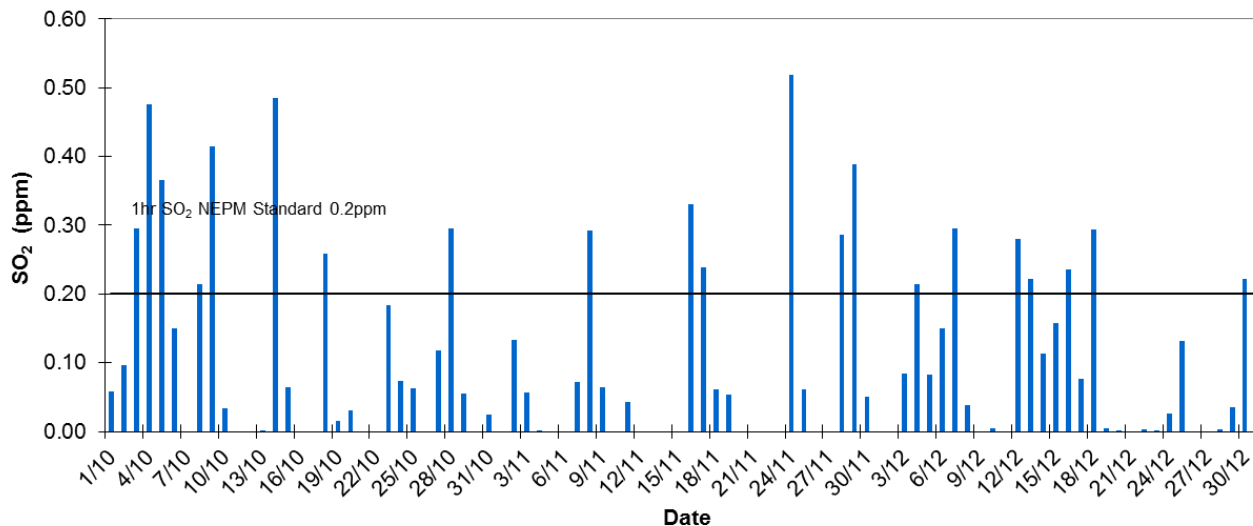
2.1.2 Sulfur dioxide

- The 1-hour NEPM Standard for sulfur dioxide was exceeded on **22** occasions at Pt Pirie this quarter.
- Total NEPM Exceedence days for 2015

Oliver St: **32**

- This is greater than the NEPM Goal of once per year.

Pt Pirie 1 Hr Daily Maxima SO₂ - Quarter 4, 2015

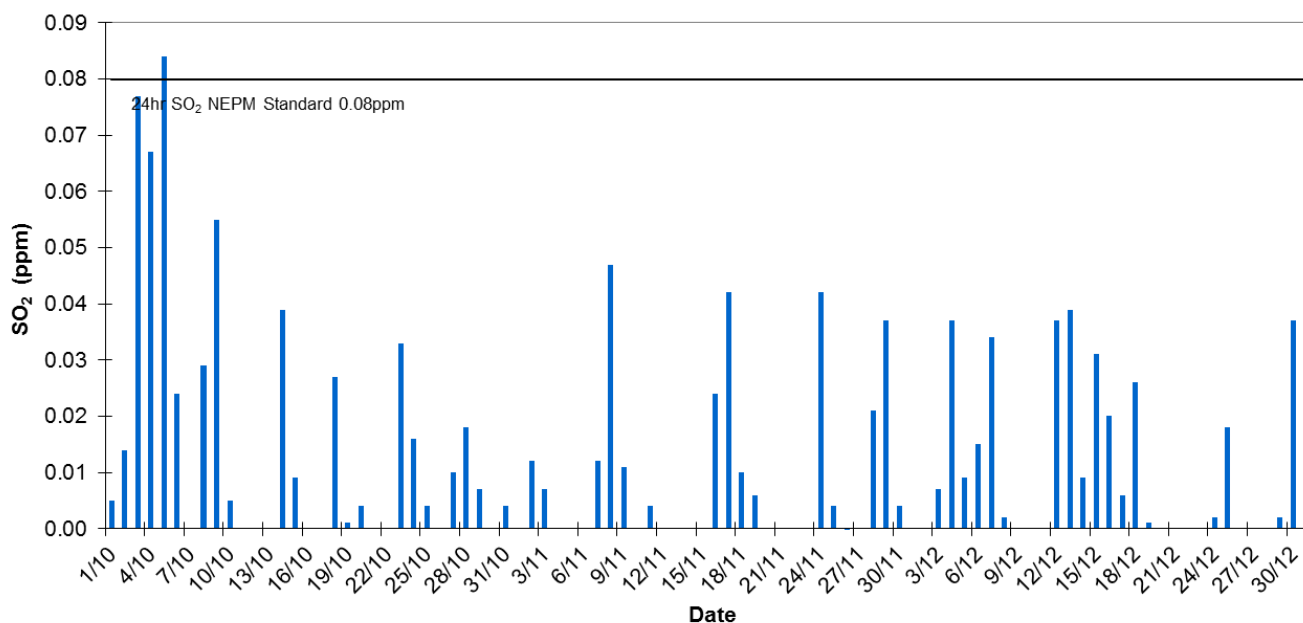


- The 24-hour NEPM Standard for sulfur dioxide was exceeded on **1** occasion at Pt Pirie this quarter.
- Total NEPM Exceedence days for 2015

Oliver St: **1**

- This meets the NEPM Goal of no more than one exceedence day per year.

Pt Pirie Daily Average SO₂ - Quarter 4, 2015



2.1.3 Particles (PM₁₀)

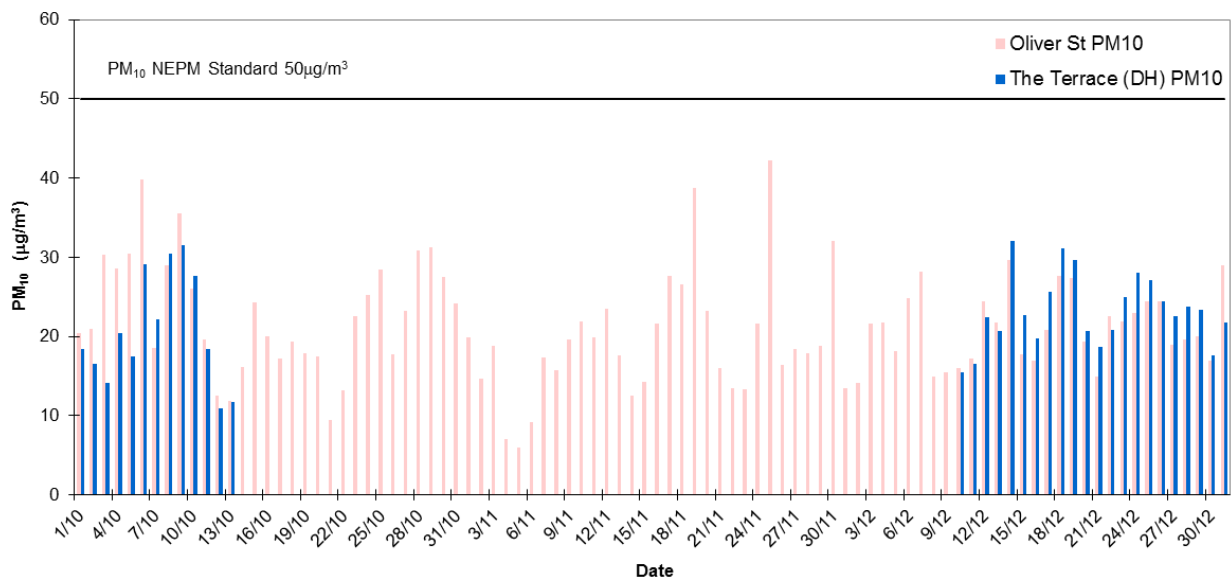
- The 24-hour NEPM Standard for PM₁₀ particles was NOT exceeded at either site this quarter. The EPA operates a station on behalf of Dept of Health (The Terrace).

- Total NEPM Exceedence days for 2015

Oliver St: 1

The Terrace²: 0

Pt Pirie Daily Average PM10 - Quarter 4, 2015



2.2 Whyalla

In Whyalla the major impacts on air quality are particle emissions from the local steelworks. Windblown dust and particles from other natural sources are other factors that affect air quality in Whyalla. Monitoring is undertaken at 2 sites in Whyalla; Schulz Reserve and Walls St. Schulz Reserve reports against the Air NEPM with Walls St monitoring industry licence conditions in conjunction with Schulz Reserve.

2.2.1 Particles (PM₁₀)

- The 24-hour NEPM Standard (PM₁₀) was exceeded on **2** occasions at Walls Street this quarter.

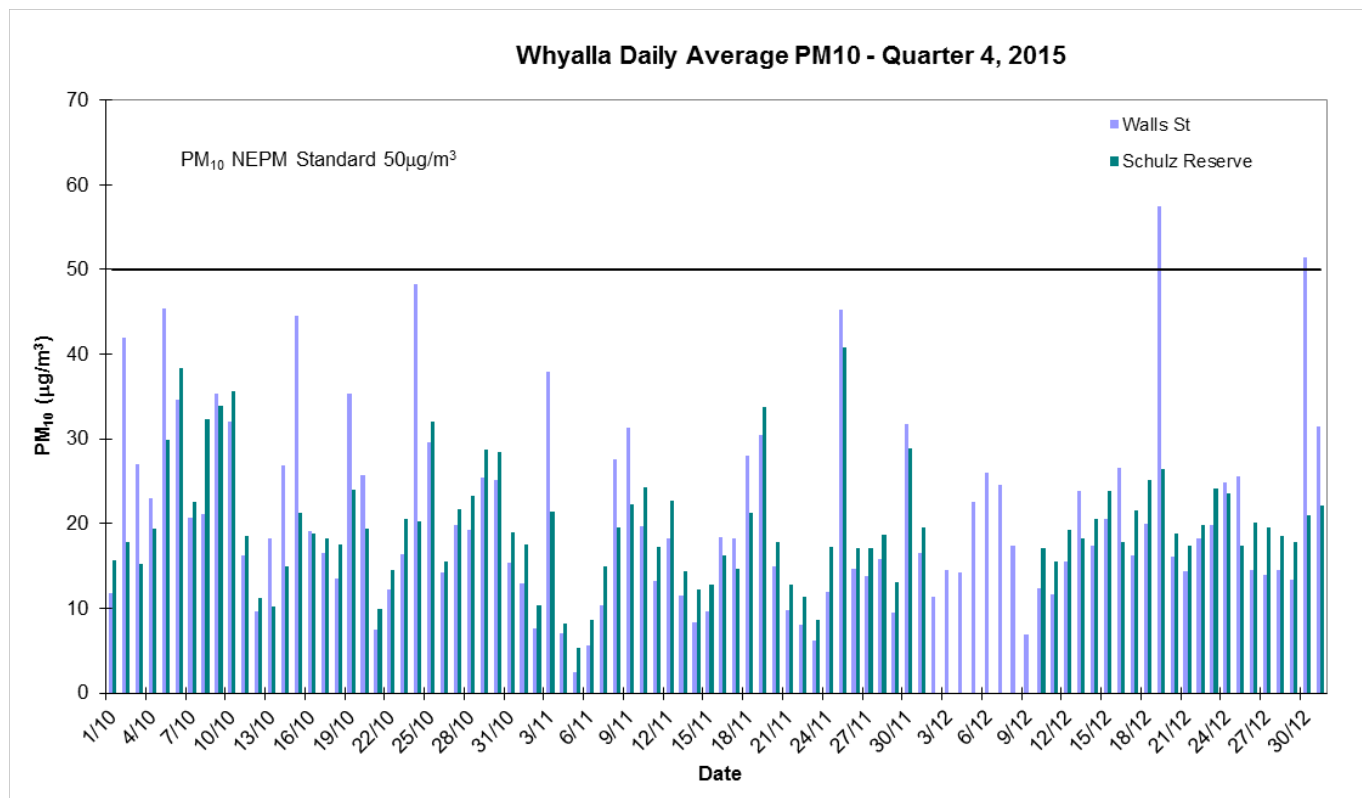
- Total NEPM Exceedence days for 2015

Walls St³: **3**

Schulz Reserve: 0

² The number provided here is for information/comparison purposes only and does not contribute to the NEPM assessment of the air quality of the region.

³ The number provided here is for information/comparison purposes only and does not contribute to the NEPM assessment of the air quality of the region.



Further information

Legislation

[Online legislation](#) is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet
Adelaide Service SA Centre
108 North Terrace
Adelaide SA 5000

Telephone: 13 23 24
Facsimile: (08) 8204 1909
Website: <shop.service.sa.gov.au>
Email: <ServiceSAcustomerservice@sa.gov.au>

General information

Environment Protection Authority
GPO Box 2607
Adelaide SA 5001

Telephone: (08) 8204 2004
Facsimile: (08) 8124 4670
Freecall: 1800 623 445 (country)
Website: <www.epa.sa.gov.au>
Email: <epainfo@epa.sa.gov.au>