Air Quality Bulletin

Central Queensland

December 2024

Queensland Government

Prepared by: Air Quality Monitoring
Department of the Environment, Tourism
Science and Innovation.

The Department of the Environment, Tourism, Science and Innovation acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Owners and custodians of the land. We recognise their connection to land, sea and community, and pay our respects to Elders past and present.

The department is committed to respecting, protecting and promoting human rights, and our obligations under the Human Rights Act 2019.

Cover artwork by Navada Currie,
Mununjali and Kabi Kabi woman at Gilimbaa.

June 2025

Disclaimer

This document has been prepared with all due diligence and care, based on the best available information at the time of publication. The department holds no responsibility for any errors or omissions within this document.

Any decisions made by other parties based on this document are solely the responsibility of those parties. Information contained in this document is from a number of sources and, as such, does not necessarily represent government or departmental policy.

The Queensland Government is committed to providing accessible services to Queenslanders from all culturally and linguistically diverse backgrounds. If you have difficulty in understanding or accessing this document, you can contact us for assistance and we will arrange for this publication to be made available in an alternative format.

Introduction

Air quality monitoring gathers information on the quality of the air environment. The objectives of the monitoring are to check compliance with ambient air quality guidelines, identify long-term trends in air quality, investigate local air quality concerns, and assess the effectiveness of air quality management strategies.

In Central Queensland, air quality monitoring was carried out by the Queensland Government at seven sites in the Gladstone region, two sites in Moranbah, and one site in Mackay, Emerald, Blackwater and Bluff during December 2024.

Air pollutants monitored included nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, benzene, toluene, total xylenes, formaldehyde, PM_{10} and $PM_{2.5}$ (particles with diameters less than 10µm and 2.5µm respectively) and visibility-reducing particles. The air pollutants monitored at Central Queenland sites are shown in Table 1. Site locations are shown in Figure 24 at the end of this bulletin.

The monitoring site in central Gladstone (Memorial Park) uses an open-path monitoring method. Pollutant measurements at this site are the average concentration over the light path running from the Gladstone Entertainment Centre to Memorial Park (see Figure 24).

The Moranbah (East) site on Utah Drive was established in March 2011 to assess the impact of coal mining operations on the community. In July 2020 a second Moranbah (West) site on Cunningham Way was commissioned to further assess mining impacts.

The Blackwater and Bluff monitoring sites were established in February 2019 and November 2020 respectively to also assess the impact of coal mining operations. The Emerald site was established in February 2020 to obtain information on particle levels in an inland community not impacted by mining activities.

Reporting protocol

Data presented in this bulletin are based on clock hours. Hourly or other averages are constrained to start and finish on a clock hour.

Air quality summary graphs

The maximum recorded level for each day is used to show the day-to-day variation in air quality. Figures 1 to 18 summarise the air quality data for the Gladstone region sites and figures 19 to 23 summarise the air quality data for the Mackay and Inland Central Queensland sites.

Air quality summary tables

Tables 4 to 17 present monthly summaries of air quality data for the preceding 12 months. These tables show the month-to-month variation in air quality. A monthly entry is given when at least three-fifths of the maximum possible number of observations during the month are available. When data is not available for the entire month, due to equipment malfunction or other reason, this is indicated by the abbreviation ‘n.d.’ (no data). A dash is inserted when less than three-fifths of the data are available. Where no data is recorded, the reason for the low data availability is summarised in Table 18 at the end of this bulletin.

Guidelines

Air quality measurements are compared against air quality objectives contained in the Queensland Environmental Protection (Air) Policy 2019 and the Environmental Protection (Air) Amendment Policy 2024 (in force from September 2024) (EPP (Air)) to assess whether pollutant levels could harm health and wellbeing. The EPP (Air) visibility objective is used to assess the impact of visibility-reducing particles on visual air quality. The relevant guidelines are shown in the air quality summary table for each pollutant.

Table 1. Air pollutants monitored at Central Queensland sites.

		Nitrogen dioxide	Sulfur dioxide	Carbon monoxide	Ozone	Benzene	Toluene	Total xylenes	Formaldehyde	PM_{10}	$PM_{2.5}$	Visibility-reducing particles
Gladstone region	Targinie	✓	✓							✓	✓	✓
	Boat Creek	✓	✓							✓	✓	✓
	Clinton	✓	✓							✓	✓	✓
	Auckland Point									✓		
	Memorial Park	✓	✓		✓	✓	✓	✓	✓			
	South Gladstone	✓	✓							✓	✓	✓
	Boyne Island	✓	✓	✓						✓	✓	✓
Mackay	West Mackay									✓	✓	✓
Inland Central Queensland	Moranbah (East)									✓	✓	
	Moranbah (West)									✓	✓	
	Blackwater									✓	✓	
	Bluff									✓		
	Emerald									✓	✓	

Compliance with air quality guidelines - Gladstone region

During December, measured pollutant levels did not exceed EPP (Air) air quality objectives at the Queensland Government air monitoring sites in the Gladstone region.

Table 2. Number of occasions during December when measured levels exceeded EPP (Air) objectives for nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, benzene, toluene, xylenes, formaldehyde, PM_{10}, $PM_{2.5}$ and visibility-reducing particles at the Queensland Government air monitoring sites in the Gladstone region.

Air Pollutant	Averaging period	Exceedances
Nitrogen dioxide	*EPP (Air)*	
	Annual	0
	1-hour	0
Sulfur dioxide	*EPP (Air)*	
	24-hour	0
	1-hour	0
Carbon monoxide	*EPP (Air)*	
	8-hour	0
Ozone	*EPP (Air)*	
	4-hour	0
	1-hour	0
Benzene	*EPP (Air)*	
	Annual	0
Toluene	*EPP (Air)*	
	Annual	0
	24-hour	0
Xylenes	*EPP (Air)*	
	Annual	0
	24-hour	0
Formaldehyde	*EPP (Air)*	
	24-hour	0
PM_{10}	*EPP (Air)*	
	Annual	0
	24-hour	0
$PM_{2.5}$	*EPP (Air)*	
	Annual	0
	24-hour	0
Visibility-reducing particles (refers to protecting aesthetic environment, not health and wellbeing).	*EPP (Air)* 1-hour	0

Compliance with air quality guidelines - Mackay and inland Central Queensland.

During December, measured pollutant levels, with the exception of visibility-reducing particles and PM_{10}, did not exceed EPP (Air) air quality objectives at the Queensland Government air monitoring sites in Mackay, Moranbah, Emerald, Blackwater and Bluff.

Visibility at the West Mackay monitoring site fell below the EPP (Air) 1-hour objective of 20km for a single one-hour period on 30 December during very light north-easterly winds. While a specific source of the particles could not be determined, the short-lived nature of the event indicates dust or smoke generated from a localised source in the vicinity of the monitoring station was the likely cause of the exceedance.

Over the 12-month period ending December 2024, the EPP (Air) annual average PM_{10} objective was exceeded at the Moranbah (West) monitoring site. Monitoring indicates that a range of particle sources contributed to this exceedance, including erosion of dry ground surfaces by strong winds, local activities such as vehicle movements on unsealed roads close to the monitoring site, dust from coal mining operations and bushfire smoke events.

Table 3. Number of occasions during December when measured levels exceeded EPP (Air) objectives for $PM_{2.5}$, PM_{10}, and visibility-reducing particles at Queensland Government air monitoring sites in Mackay, Moranbah, Emerald, Blackwater and Bluff.

Pollutant	**Averaging period**	**Exceedences**
PM_{10}	*EPP (Air)*	
	Annual	1
	24-hour	0
$PM_{2.5}$	*EPP (Air)*	
	Annual	0
	24-hour	0
Visibility-reducing particles (refers to protecting aesthetic environment, not health and wellbeing).	*EPP (Air)* 1-hour	1

Measured ambient concentrations - Gladstone region

Nitrogen dioxide

Figure 1. Ambient concentrations of nitrogen dioxide at Targinie, Boat Creek and Clinton sites. Daily maximum 1-hour average concentrations (ppm), December 2024.

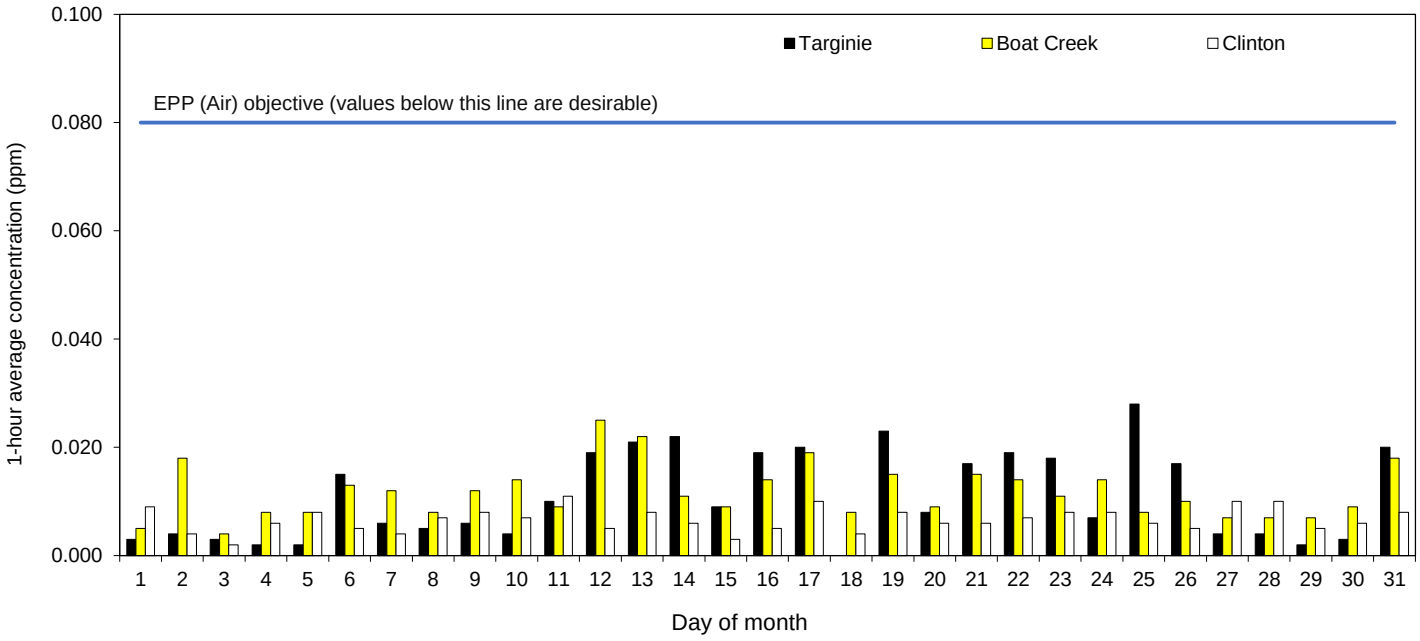


Figure 2. Ambient concentrations of nitrogen dioxide at Memorial Park, South Gladstone and Boyne Island sites. Daily maximum 1-hour average concentrations (ppm), December 2024.

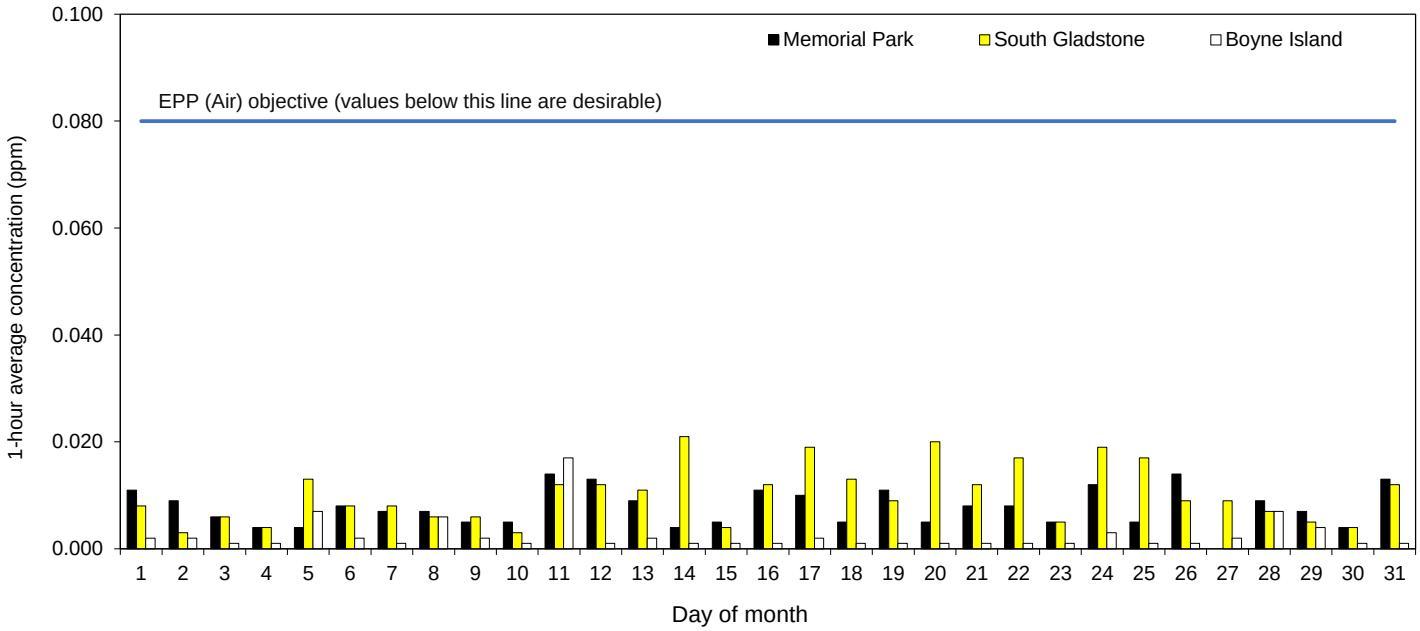


Table 4. Ambient concentrations of nitrogen dioxide. Annual average and monthly maximum 1-hour concentrations (ppm), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Targinie													
Annual average:	0.004												
Maximum 1-hour		0.034	0.026	0.026	0.025	0.035	0.035	0.040	0.035	0.037	0.043	0.023	0.028
% I.A.		100	95	100	100	100	100	99	81	99	99	99	99
Boat Creek													
Annual average:	0.005												
Maximum 1-hour		0.026	0.017	0.021	0.022	0.031	0.030	0.030	0.029	0.025	0.026	0.022	0.025
% I.A.		100	85	100	96	100	99	99	99	99	100	99	100
Clinton													
Annual average:	0.004												
Maximum 1-hour		0.027	0.014	0.034	0.015	0.021	0.028	0.025	0.028	0.018	0.029	0.016	0.011
% I.A.		99	100	100	100	99	99	98	99	99	99	99	100
Memorial Park													
Annual average:	0.004												
Maximum 1-hour		0.024	0.012	0.020	0.017	0.022	0.030	0.031	0.028	0.023	0.034	0.017	0.014
% I.A.		98	94	99	97	100	98	100	99	63	98	97	97
South Gladstone													
Annual average:	0.004												
Maximum 1-hour		0.018	0.013	0.021	0.016	0.020	0.027	0.028	0.025	0.031	0.031	0.019	0.021
% I.A.		98	99	100	100	99	100	99	100	99	100	100	99
Boyne Island													
Annual average:	0.001												
Maximum 1-hour		0.004	0.005	0.005	-	0.010	0.012	0.034	0.023	0.021	0.016	0.018	0.017
% I.A.		99	99	100	55	95	98	99	99	99	100	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Amendment Policy 2024 air quality objectives for nitrogen dioxide are an annual average of 0.015ppm and a 1-hour average of 0.080ppm.

Sulfur dioxide

Figure 3. Ambient concentrations of sulfur dioxide at Targinie, Boat Creek and Clinton sites. Daily 24-hour average concentrations (ppm), December 2024.

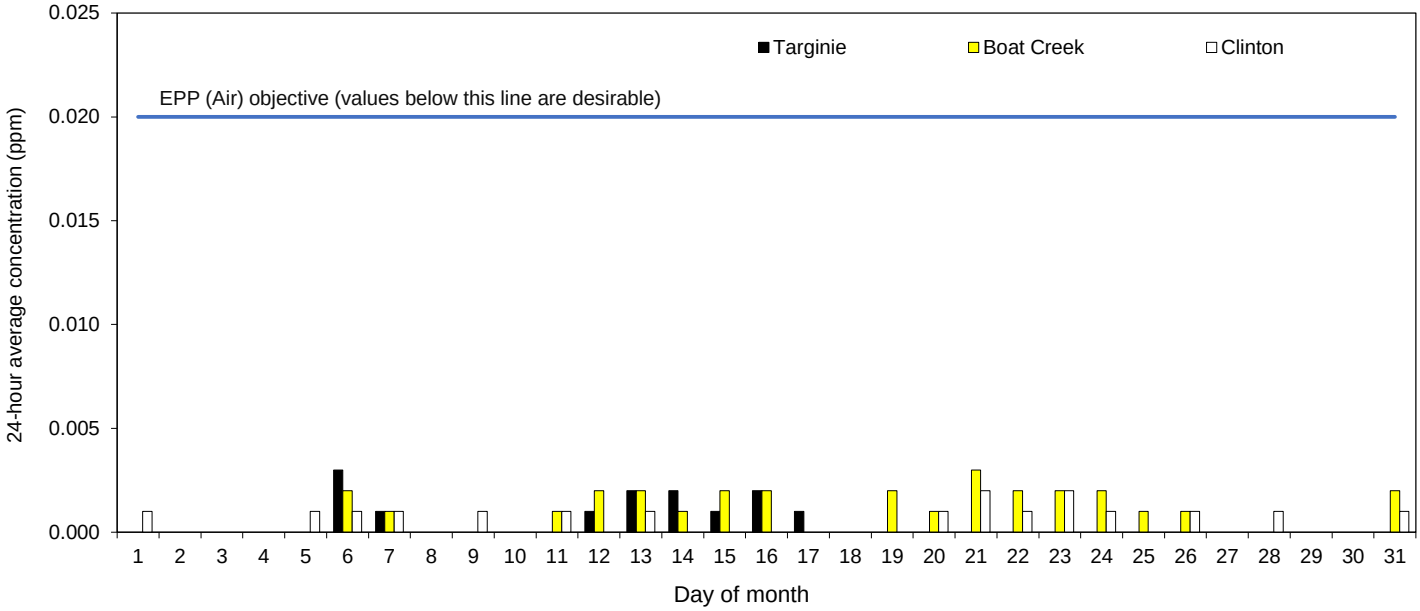


Figure 4. Ambient concentrations of sulfur dioxide at Memorial Park, South Gladstone and Boyne Island sites. Daily 24-hour average concentrations (ppm), December 2024.

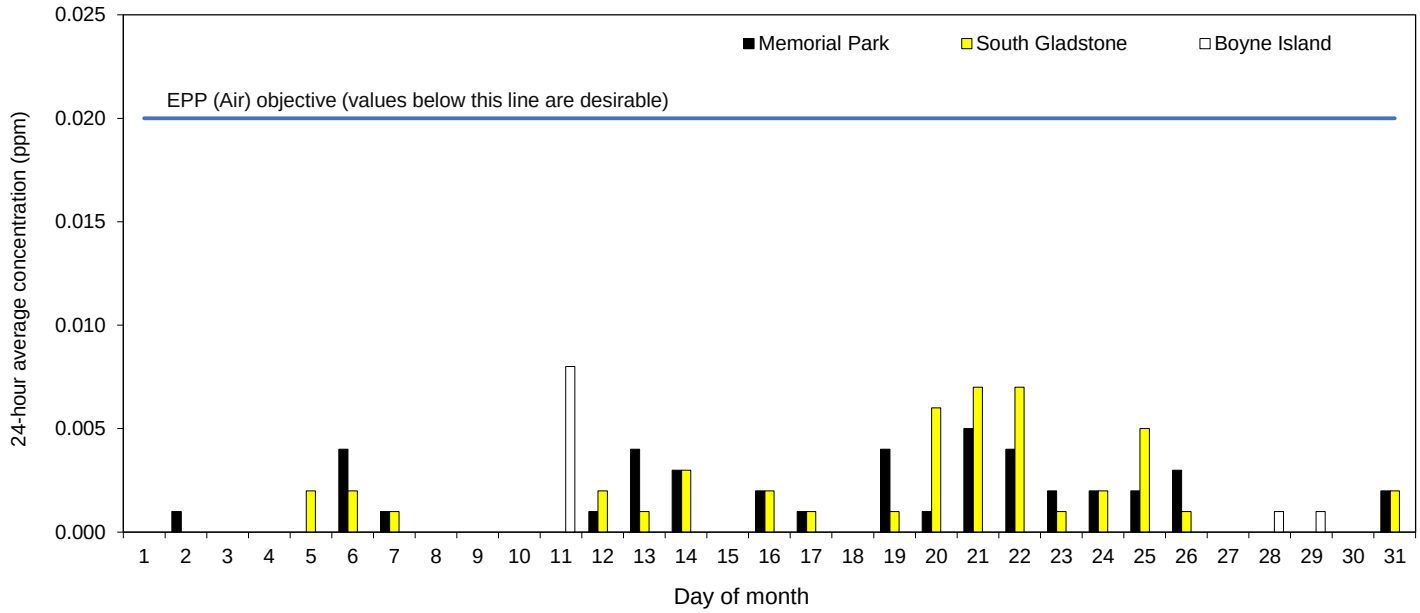


Figure 5. Ambient concentrations of sulfur dioxide at Targinie, Boat Creek and Clinton sites. Daily maximum 1-hour average concentrations (ppm), December 2024.

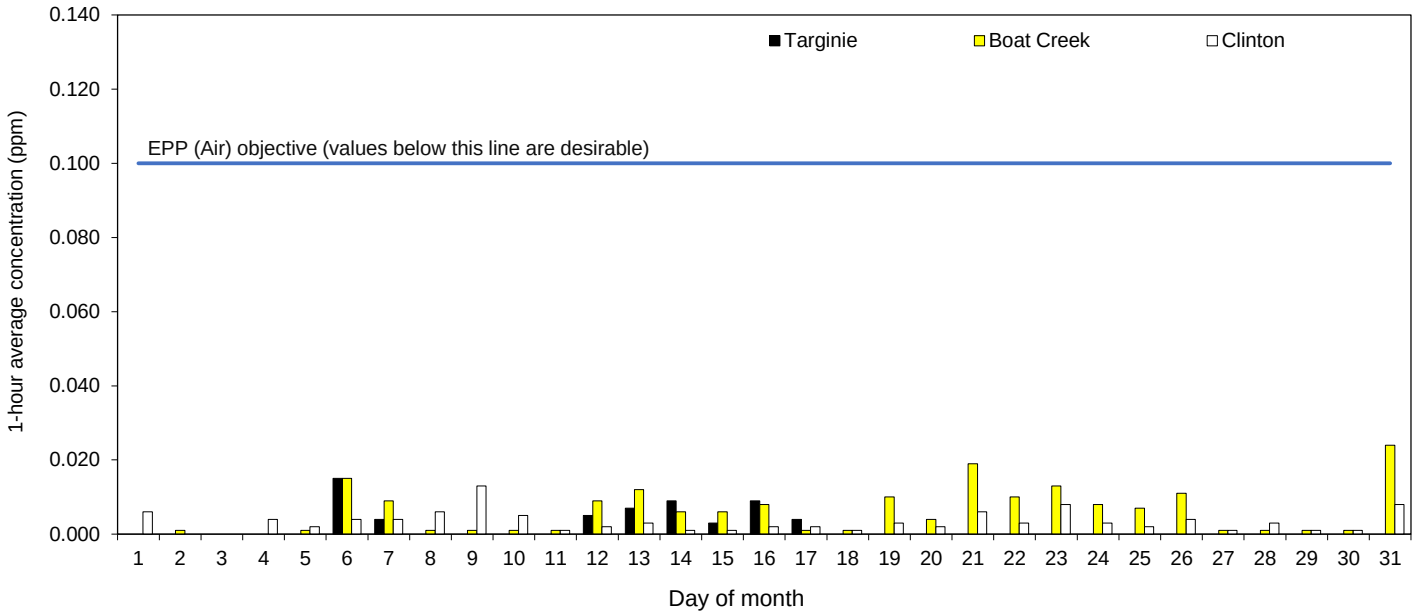


Figure 6. Ambient concentrations of sulfur dioxide at Memorial Park, South Gladstone and Boyne Island sites. Daily maximum 1-hour average concentrations (ppm), December 2024.

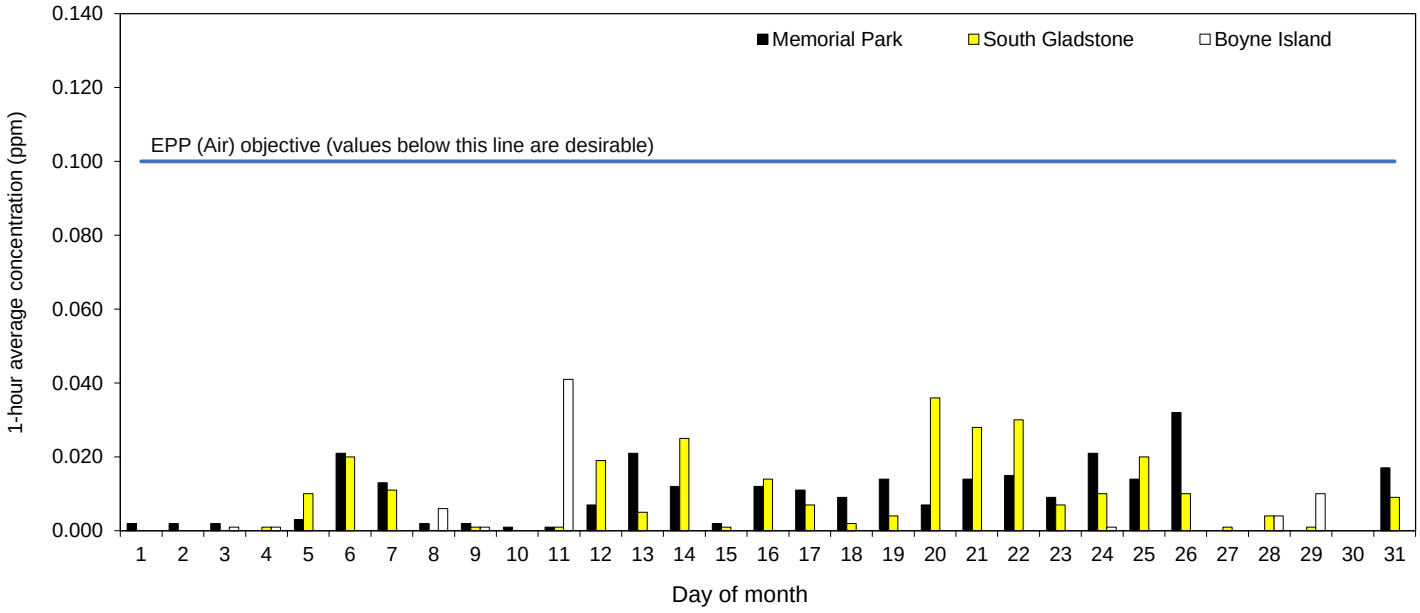


Table 5. Ambient concentrations of sulfur dioxide. Annual average and monthly maximum 24-hour and 1-hour average concentrations (ppm), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Targinie													
Annual average:	0.002												
Maximum 24-hour		0.005	0.006	0.010	0.005	0.005	0.008	0.005	0.004	0.004	0.005	0.004	0.003
Maximum 1-hour		0.023	0.026	0.032	0.023	0.025	0.028	0.022	0.028	0.020	0.024	0.024	0.015
% I.A.		100	61	100	100	68	92	99	89	99	100	99	60
Boat Creek													
Annual average:	0.001												
Maximum 24-hour		0.007	0.005	0.004	0.004	0.005	0.003	0.004	0.006	0.004	0.002	0.003	0.003
Maximum 1-hour		0.035	0.022	0.033	0.032	0.039	0.025	0.034	0.043	0.019	0.022	0.026	0.024
% I.A.		99	85	100	99	100	99	99	99	99	100	98	100
Clinton													
Annual average:	0.001												
Maximum 24-hour		0.001	0.002	0.001	0.003	0.001	0.003	0.004	0.003	0.002	0.003	0.001	0.002
Maximum 1-hour		0.005	0.015	0.005	0.012	0.007	0.021	0.013	0.028	0.020	0.023	0.008	0.013
% I.A.		99	99	99	100	99	99	98	99	99	99	100	100
Memorial Park													
Annual average:	0.002												
Maximum 24-hour		0.004	0.006	0.006	0.007	0.007	0.006	0.006	0.007	0.006	0.005	0.004	0.005
Maximum 1-hour		0.018	0.024	0.040	0.028	0.034	0.032	0.055	0.035	0.028	0.051	0.032	0.032
% I.A.		96	94	97	90	100	96	100	99	63	98	97	97
South Gladstone													
Annual average:	0.002												
Maximum 24-hour		0.006	0.009	0.010	0.003	0.005	0.004	0.003	0.004	0.011	0.011	0.009	0.007
Maximum 1-hour		0.033	0.041	0.063	0.029	0.036	0.038	0.033	0.032	0.070	0.052	0.047	0.036
% I.A.		99	99	100	99	99	100	96	100	99	100	100	100
Boyne Island													
Annual average:	0.001												
Maximum 24-hour		<0.001	0.001	0.001	0.001	<0.001	0.002	0.003	0.006	0.004	0.005	0.005	0.008
Maximum 1-hour		0.002	0.012	0.005	0.003	0.001	0.020	0.019	0.029	0.022	0.020	0.034	0.041
% I.A.		99	99	100	99	99	98	99	99	99	100	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Amendment Policy 2024 air quality objectives for sulfur dioxide are a 24-hour average of 0.020ppm and a 1-hour average of 0.100ppm.

Carbon monoxide

Figure 7. Ambient concentrations of carbon monoxide at Boyne Island site. Daily maximum 8-hour average concentrations (ppm), December 2024.

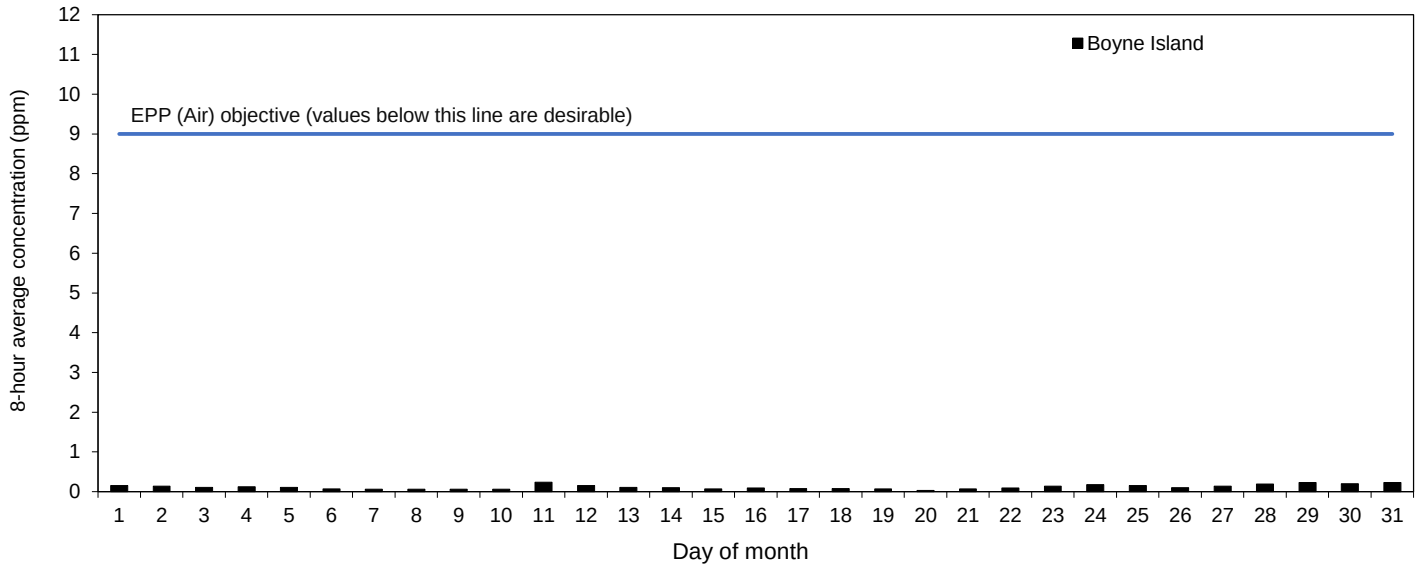


Table 6. Ambient concentrations of carbon monoxide. Monthly maximum 8-hour average concentrations (ppm), January 2024 to December 2024.

Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region												
Boyne Island												
Maximum 8-hour	0.09	0.13	0.1	0.11	0.16	0.22	0.18	0.22	0.24	0.15	0.17	0.24
% I.A.	99	99	100	99	99	100	99	96	99	100	97	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objective for carbon monoxide is an 8-hour average of 9ppm.

Ozone (photochemical oxidants)

Figure 8. Ambient concentrations of ozone at Memorial Park site. Daily maximum 8-hour average concentrations (ppm), December 2024.

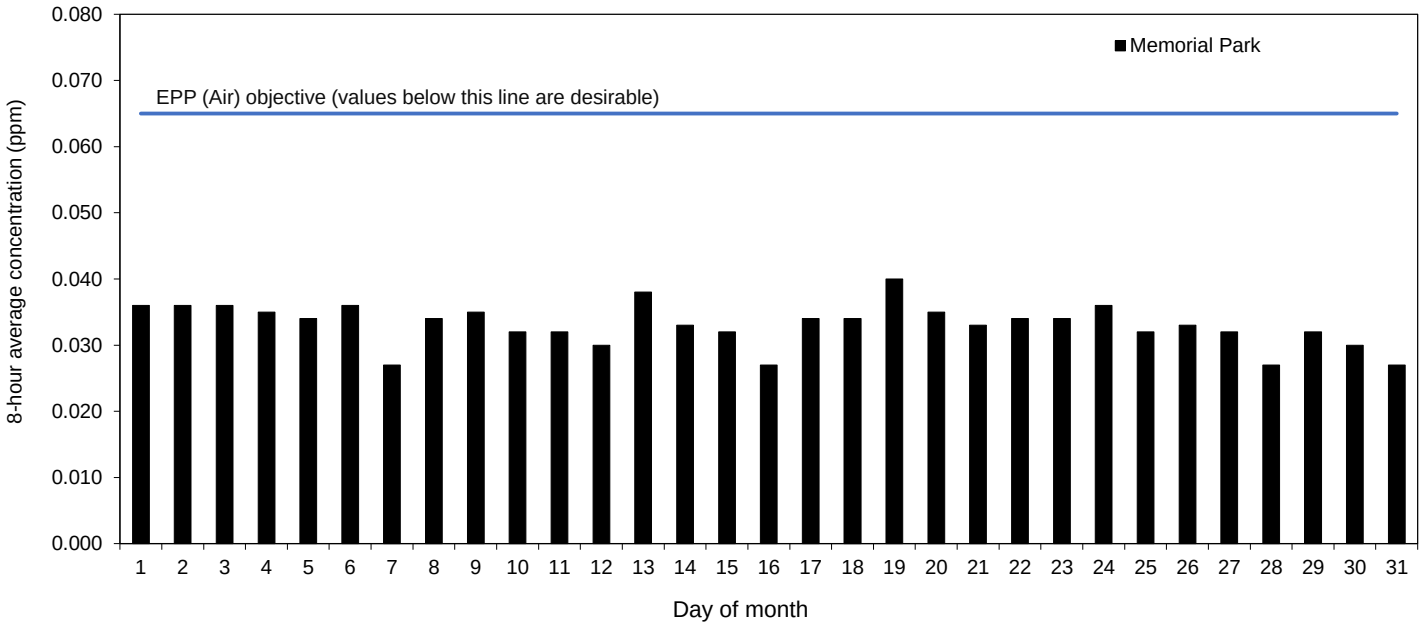


Table 7. Ambient concentrations of ozone. Monthly maximum 8-hour average concentrations (ppm), January 2024 to December 2024.

Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region												
Memorial Park												
Maximum 8-hour	0.027	0.019	0.021	0.022	0.020	0.028	0.036	0.040	0.044	0.049	0.033	0.042
% I.A.	96	94	97	90	100	94	100	99	63	98	97	97

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Amendment Policy 2024 air quality objective for ozone is an 8-hour average of 0.065ppm.

Benzene

Figure 9. Ambient concentrations of benzene at Memorial Park site. Daily 24-hour average concentrations (ppb), December 2024.

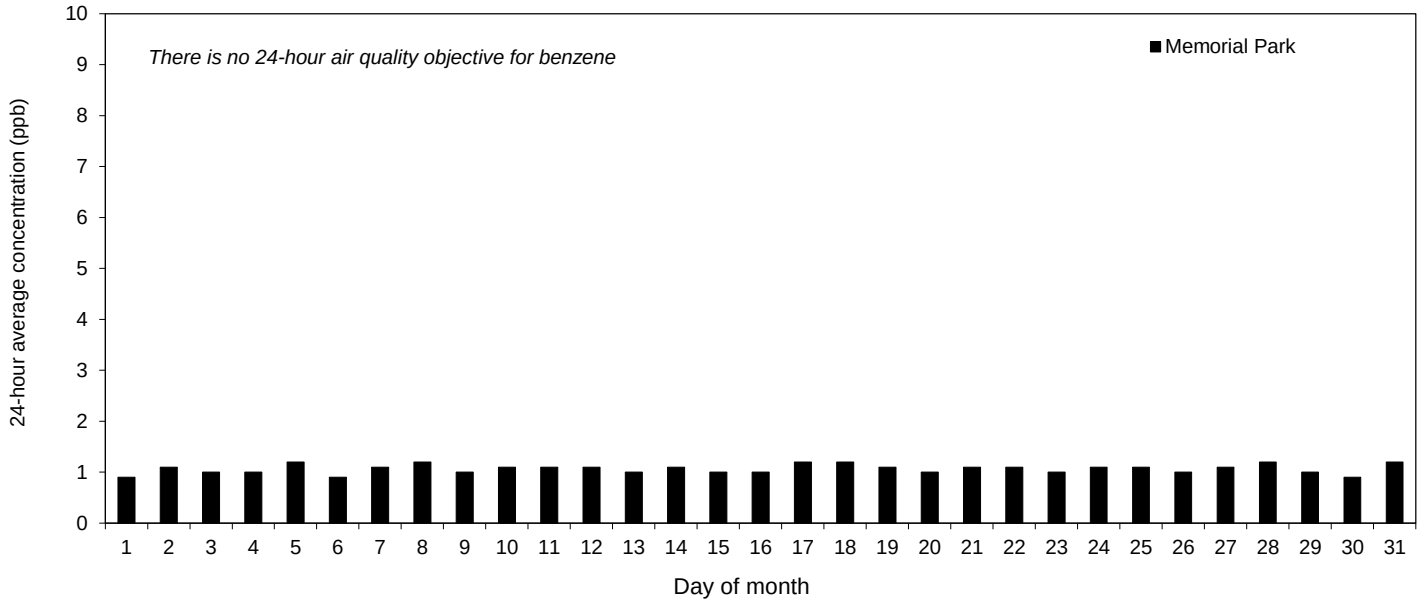


Table 8. Ambient concentrations of benzene. Annual average and monthly maximum 24-hour concentrations (ppb), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Memorial Park													
Annual average:	1.1												
Maximum 24-hour		1.3	1.5	1.3	1.4	1.4	1.4	1.3	1.3	-	1.5	1.2	1.2
% I.A.		97	100	98	90	99	96	95	81	58	97	99	97

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objective for benzene is an annual average of 0.002ppm (2ppb).

Toluene

Figure 10. Ambient concentrations of toluene at Memorial Park site. Daily 24-hour average concentrations (ppb), December 2024.

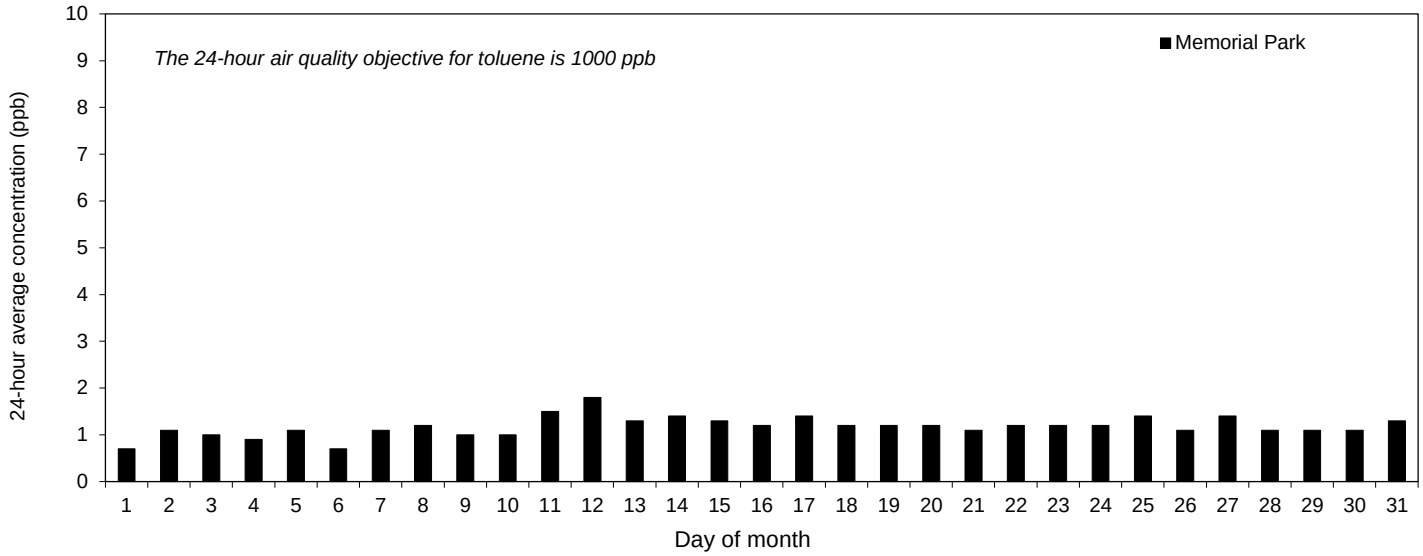


Table 9. Ambient concentrations of toluene. Annual average and monthly maximum 24-hour concentrations (ppb), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Memorial Park													
Annual average:	1.1												
Maximum 24-hour		1.3	1.3	1.3	1.6	1.7	1.9	2.0	-	-	1.7	1.9	1.8
% I.A.		94	100	86	81	78	72	84	25	19	97	99	98

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objectives for toluene are an annual average of 0.1ppm (100ppb) and a 24-hour average of 1ppm (1000ppb).

Total xylenes

Figure 11. Ambient concentrations of total xylenes at Memorial Park site. Daily 24-hour average concentrations (ppb), December 2024.

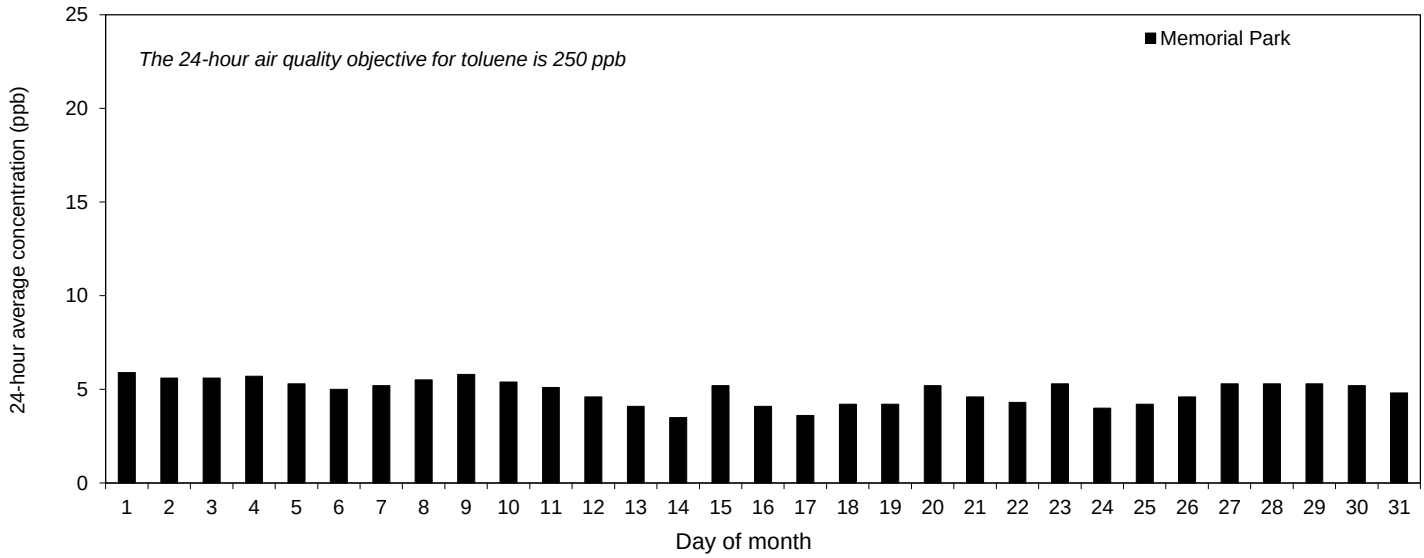


Table 10. Ambient concentrations of total xylenes. Annual average and monthly maximum 24-hour concentrations (ppb), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Memorial Park													
Annual average:	5.0												
Maximum 24-hour		5.7	6.2	5.4	6.0	5.8	5.2	6.5	6.8	-	6.6	5.7	5.9
% I.A.		93	92	90	86	96	81	94	79	57	97	99	98

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objectives for total xylenes are an annual average of 0.2 ppm (200 ppb) and a 24-hour average of 0.25 ppm (250 ppb).

Formaldehyde

Figure 12. Ambient concentrations of formaldehyde at Memorial Park site. Daily 24-hour average concentrations (ppb), December 2024.

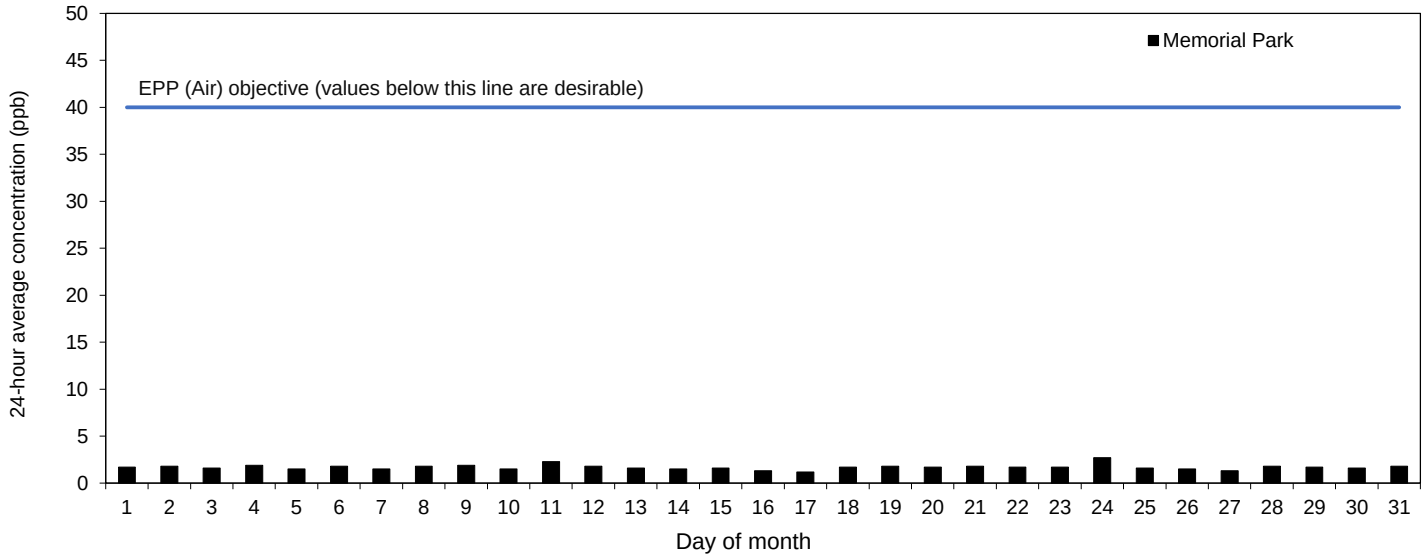


Table 11. Ambient concentrations of formaldehyde. Monthly maximum 24-hour concentrations (ppb), January 2024 to December 2024.

Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region												
Memorial Park												
Maximum 24-hour	3.0	2.6	3.0	3.0	3.0	3.0	2.6	2.7	-	2.0	2.2	2.7
% I.A.	95	100	94	89	99	95	94	90	59	96	98	96

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objective for formaldehyde is a 24-hour average of 0.04ppm (40ppb).

PM_{10}

Figure 13. Ambient concentrations of PM_{10} at Targinie, Boat Creek and Clinton sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

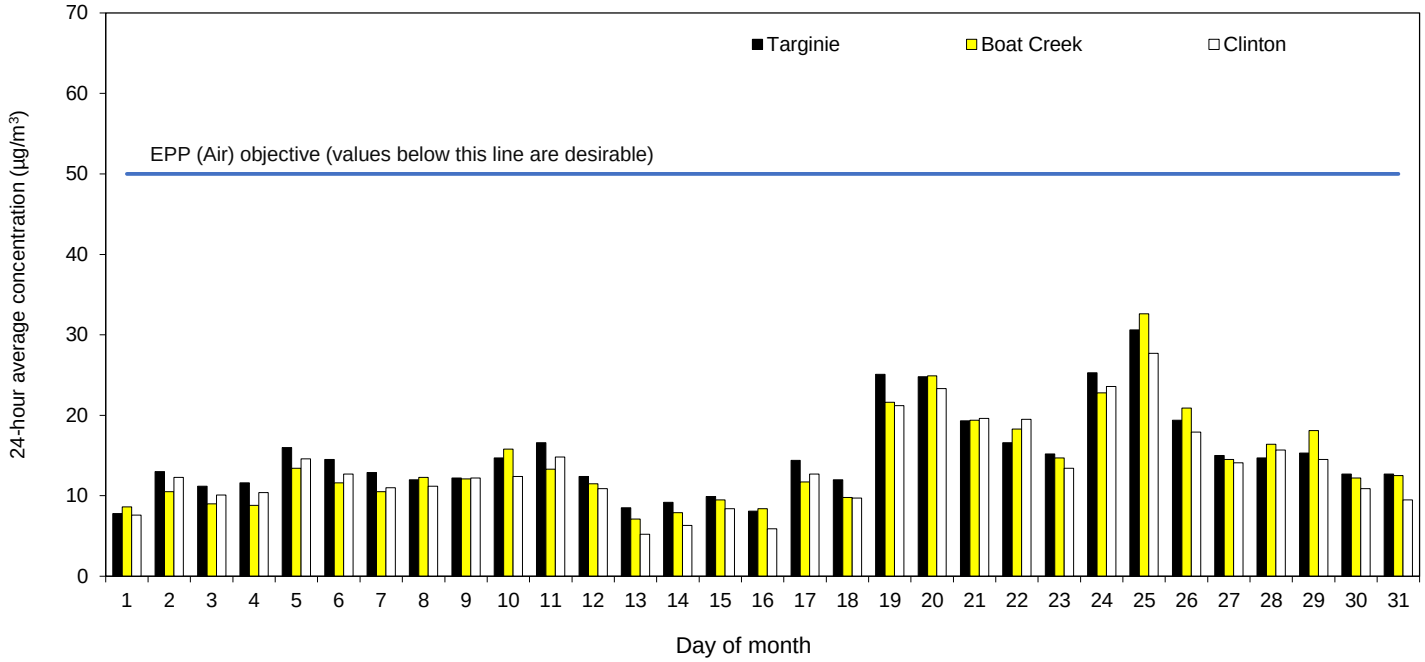


Figure 14. Ambient concentrations of PM_{10} at Auckland Point, South Gladstone and Boyne Island sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

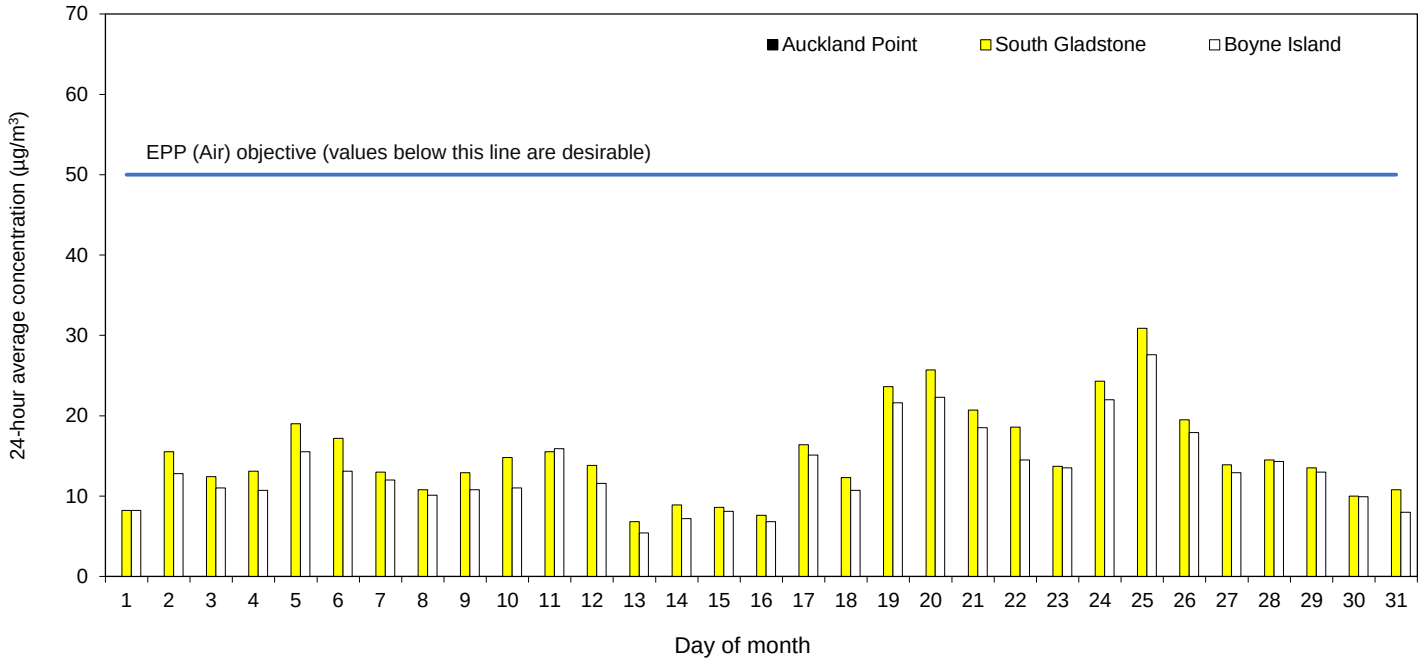


Table 12. Ambient concentrations of PM_{10}. Annual average and monthly maximum 24-hour concentrations (µg/m^3), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Targinie													
Annual average:	13.0												
Maximum 24-hour		22.6	21.0	24.4	19.8	17.5	13.7	18.9	22.4	-	28.7	19.1	30.6
% I.A.		100	91	100	100	100	100	100	85	18	100	90	100
Boat Creek													
Annual average:	15.5												
Maximum 24-hour		26.5	25.7	25.5	24.5	22.7	19.2	23.4	25.6	33.0	29.8	21.4	32.6
% I.A.		100	85	100	99	100	99	99	99	99	89	90	100
Clinton													
Annual average:	15.0												
Maximum 24-hour		23.8	20.5	54.9	110.8	22.0	19.4	18.1	28.5	43.5	30.3	20.0	27.7
% I.A.		95	92	77	100	100	100	99	100	100	100	100	100
Auckland Point													
Annual average:	18.6												
Maximum 24-hour		33.7	33.9	32.6	59.7	35.6	22.0	30.6	33.4	-	n.d.	n.d.	n.d.
% I.A.		100	99	100	100	100	100	99	99	7	0	0	0
South Gladstone													
Annual average:	16.1												
Maximum 24-hour		36.3	26.2	25.5	27.0	20.0	16.9	19.9	35.4	51.5	37.1	27.4	30.9
% I.A.		99	99	100	100	100	100	99	100	99	100	100	100
Boyne Island													
Annual average:	13.9												
Maximum 24-hour		25.5	21.7	22.0	21.6	19.0	24.1	16.3	31.6	32.4	27.9	19.3	27.6
% I.A.		100	100	100	100	100	100	99	99	99	100	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objectives for PM_{10} are an annual average of 25µg/m^3 and a 24-hour average of 50µg/m^3.

$PM_{2.5}$

Figure 15. Ambient concentrations of $PM_{2.5}$ at Targinie, Boat Creek and Clinton sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

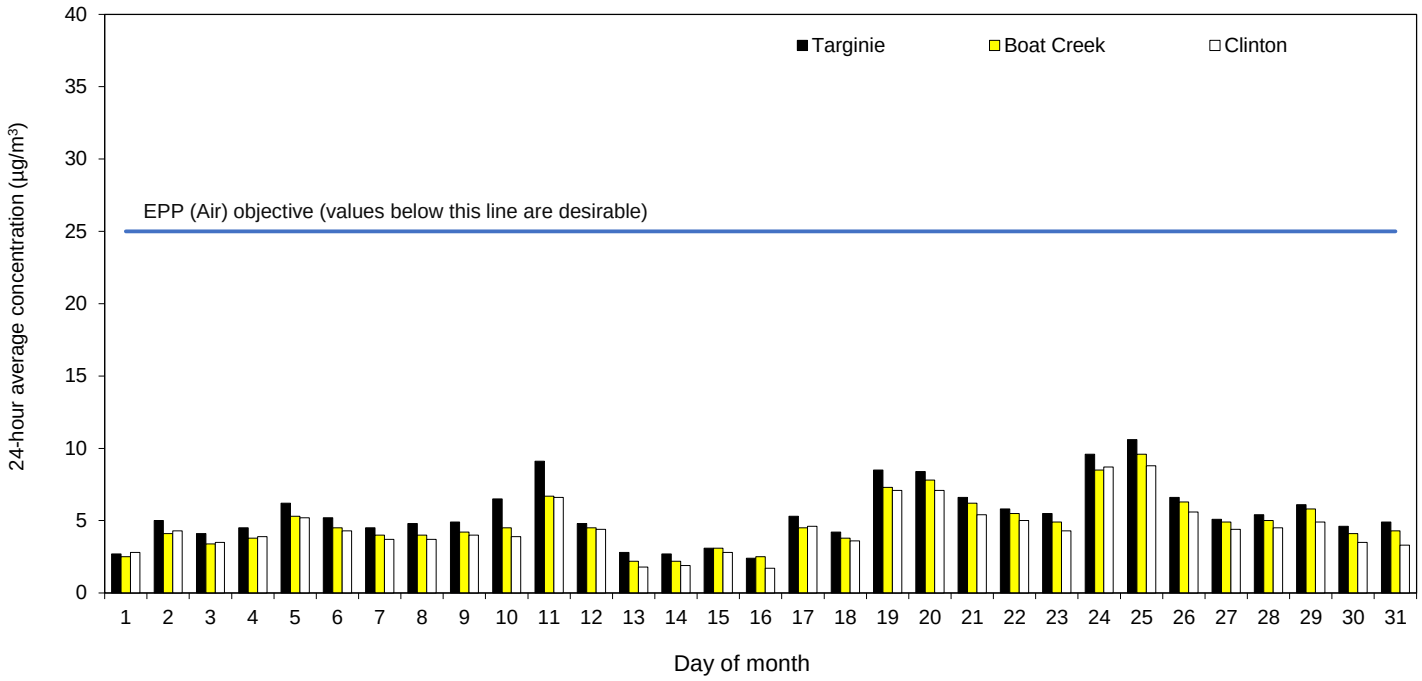


Figure 16. Ambient concentrations of $PM_{2.5}$ at South Gladstone and Boyne Island sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

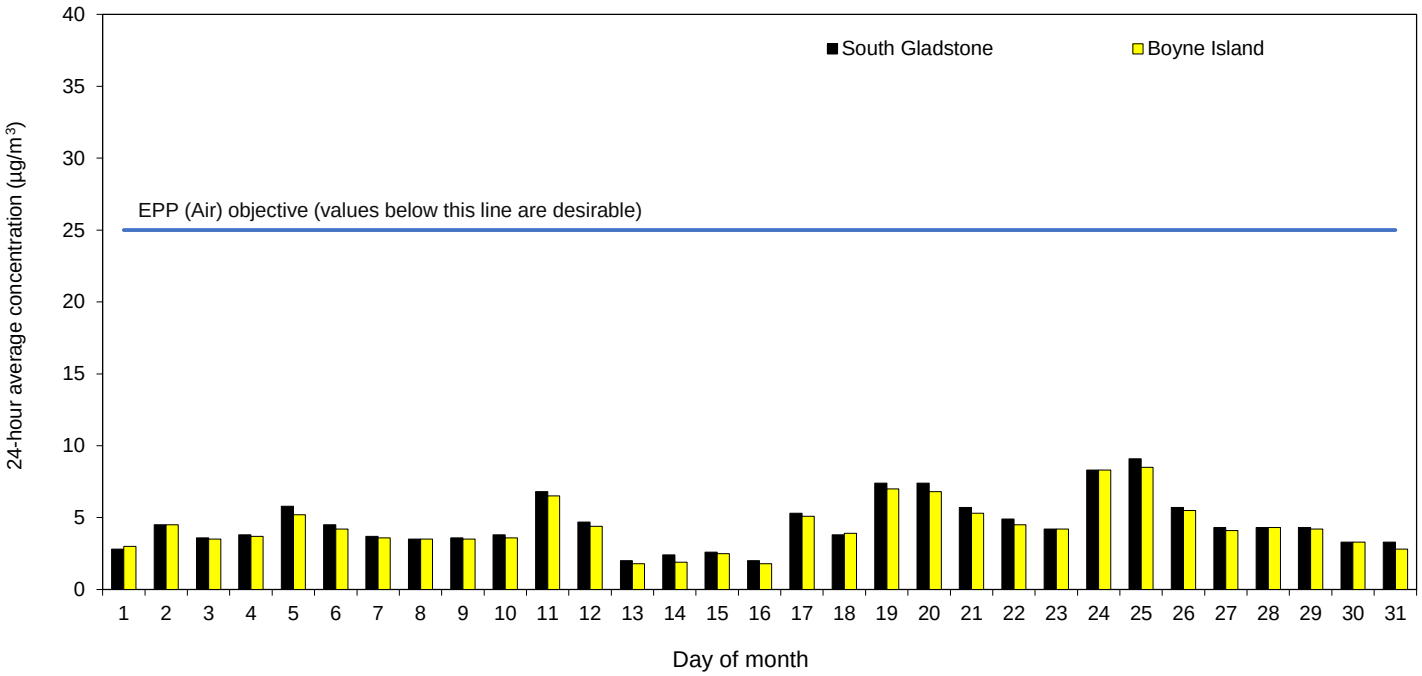


Table 13. Ambient concentrations of $PM_{2.5}$. Annual average and monthly maximum 24-hour concentrations (µg/m^3), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region													
Targinie													
Annual average:	4.9												
Maximum 24-hour		8.6	7.0	7.5	6.7	6.3	5.0	6.8	14.5	-	12.2	9.3	10.6
% I.A.		100	91	100	100	100	100	100	85	18	100	90	100
Boat Creek													
Annual average:	5.3												
Maximum 24-hour		9.6	7.7	8.8	7.5	7.3	5.6	10.6	12.2	13.0	10.2	8.6	9.6
% I.A.		100	85	100	99	100	99	99	99	99	89	90	100
Clinton													
Annual average:	5.4												
Maximum 24-hour		9.7	6.9	7.9	7.9	6.5	11.5	6.4	17.0	17.5	10.6	9.4	8.8
% I.A.		95	92	77	100	100	100	99	100	100	100	100	100
South Gladstone													
Annual average:	5.6												
Maximum 24-hour		10.4	7.8	8.8	7.4	7.2	8.7	7.1	14.2	14.0	10.6	9.5	9.1
% I.A.		99	99	100	100	100	100	99	100	99	100	100	100
Boyne Island													
Annual average:	5.3												
Maximum 24-hour		10.4	7.1	8.4	6.8	6.8	14.3	6.3	13.5	12.0	9.9	7.2	8.5
% I.A.		100	100	100	100	100	100	99	99	99	100	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objectives for $PM_{2.5}$ are an annual average of 8µg/m^3 and a 24-hour average of 25µg/m^3.

Visibility-reducing particles

Figure 17. Ambient concentrations of visibility-reducing particle levels at Targinie, Boat Creek and Clinton sites. Daily maximum 1-hour average light scattering coefficient (B_{sp}) values (Mm^{-1}), December 2024.

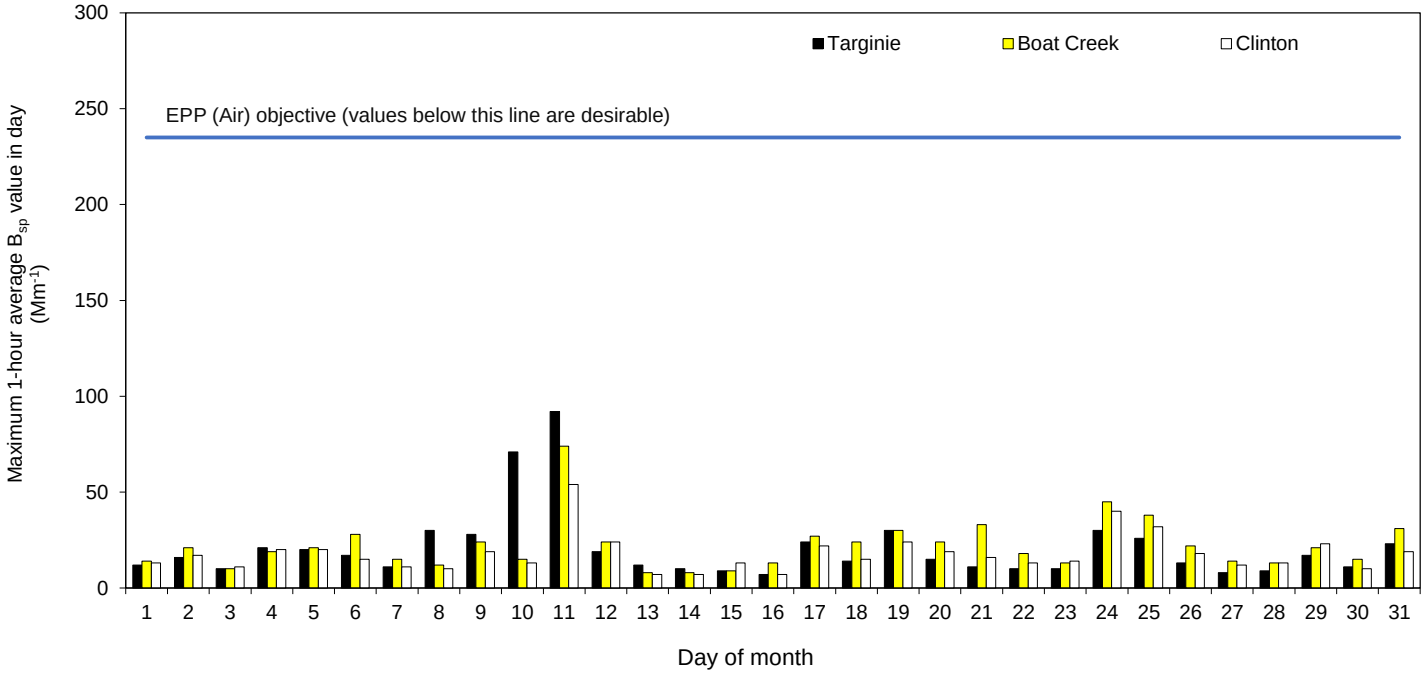


Figure 18. Ambient concentrations of visibility-reducing particle levels at South Gladstone and Boyne Island sites. Daily maximum 1-hour average light scattering coefficient (B_{sp}) values (Mm^{-1}), December 2024.

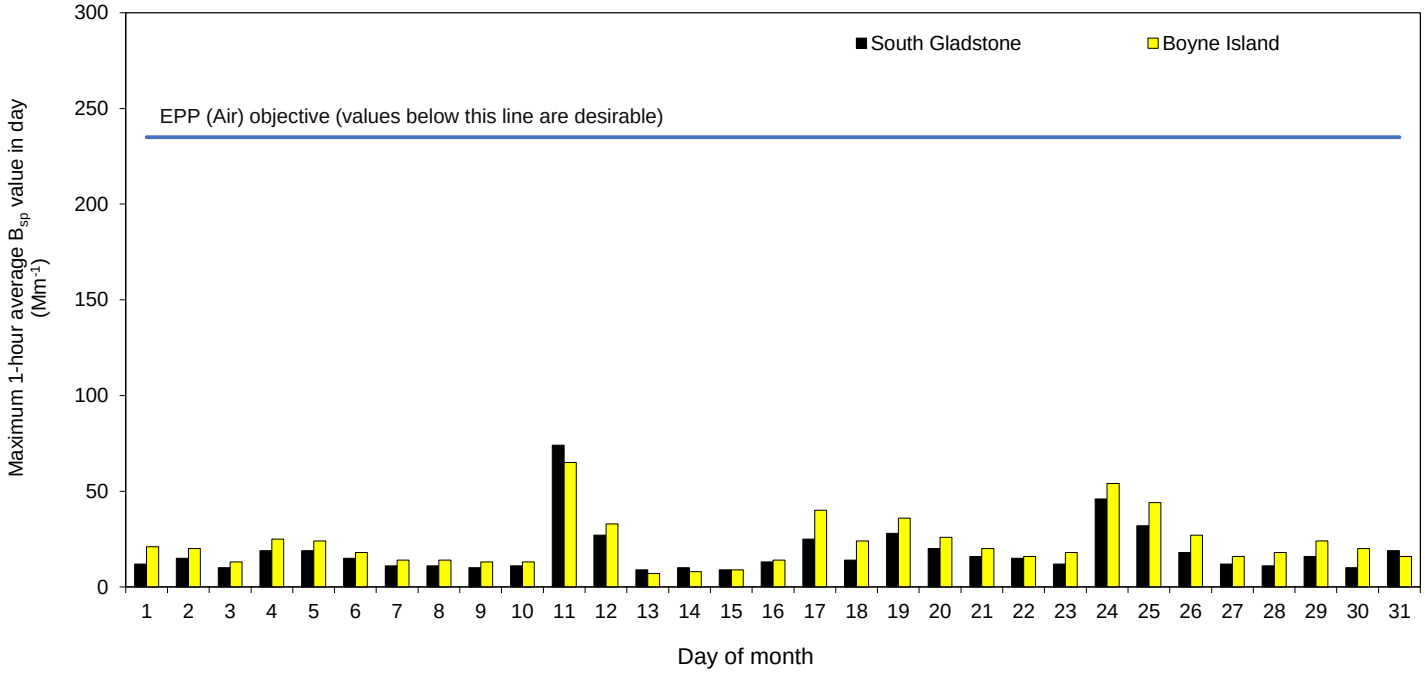


Table 14. Ambient visibility-reducing particle levels. Monthly maximum 1-hour light scattering coefficient (B_{sp}) values (Mm^{-1}), January 2024 to December 2024.

Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gladstone region												
Targinie												
Maximum 1-hour	69	31	52	31	35	53	183	297	167	83	39	92
% I.A.	100	96	100	100	100	100	99	90	99	100	99	100
Boat Creek												
Maximum 1-hour	78	33	35	27	28	42	139	109	100	78	75	74
% I.A.	100	85	100	99	100	99	99	99	99	100	99	100
Clinton												
Maximum 1-hour	34	42	86	85	120	191	90	423	97	66	77	54
% I.A.	99	100	100	100	99	99	98	99	99	100	100	100
South Gladstone												
Maximum 1-hour	51	27	29	51	277	66	43	174	160	45	68	74
% I.A.	100	99	100	100	100	100	99	100	99	100	100	100
Boyne Island												
Maximum 1-hour	41	27	52	40	32	206	67	326	95	42	40	65
% I.A.	100	100	100	99	99	92	98	99	99	100	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objective for visibility-reducing particles is 20km visibility. This equates to light scattering coefficient values of $235Mm^{-1}$ or less.

Measured ambient concentrations - Mackay, Moranbah, Emerald, Blackwater and Bluff

PM_{10}

Figure 19. Ambient concentrations of PM_{10} at West Mackay, Moranbah (East) and Moranbah (West) sites. Daily 24-hour average concentrations ($\mu g/m^3$), December 2024.

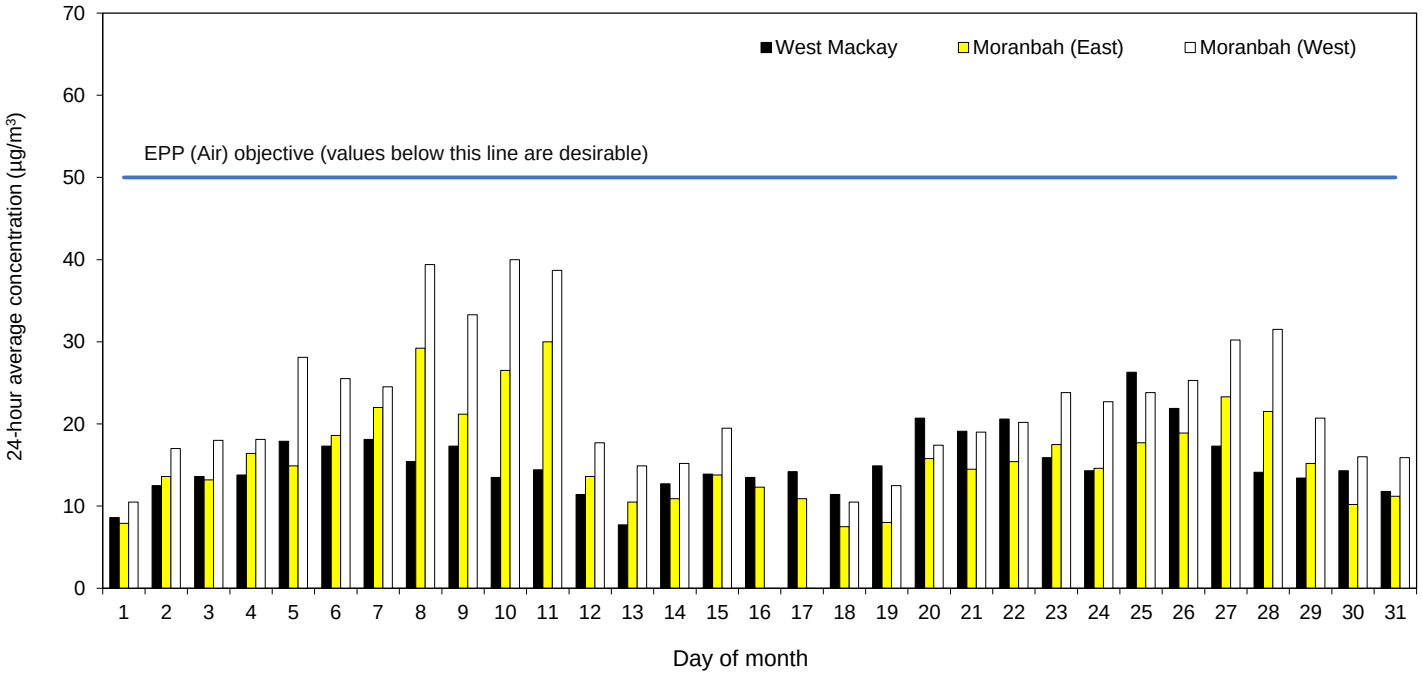


Figure 20. Ambient concentrations of PM_{10} at Emerald, Blackwater and Bluff sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

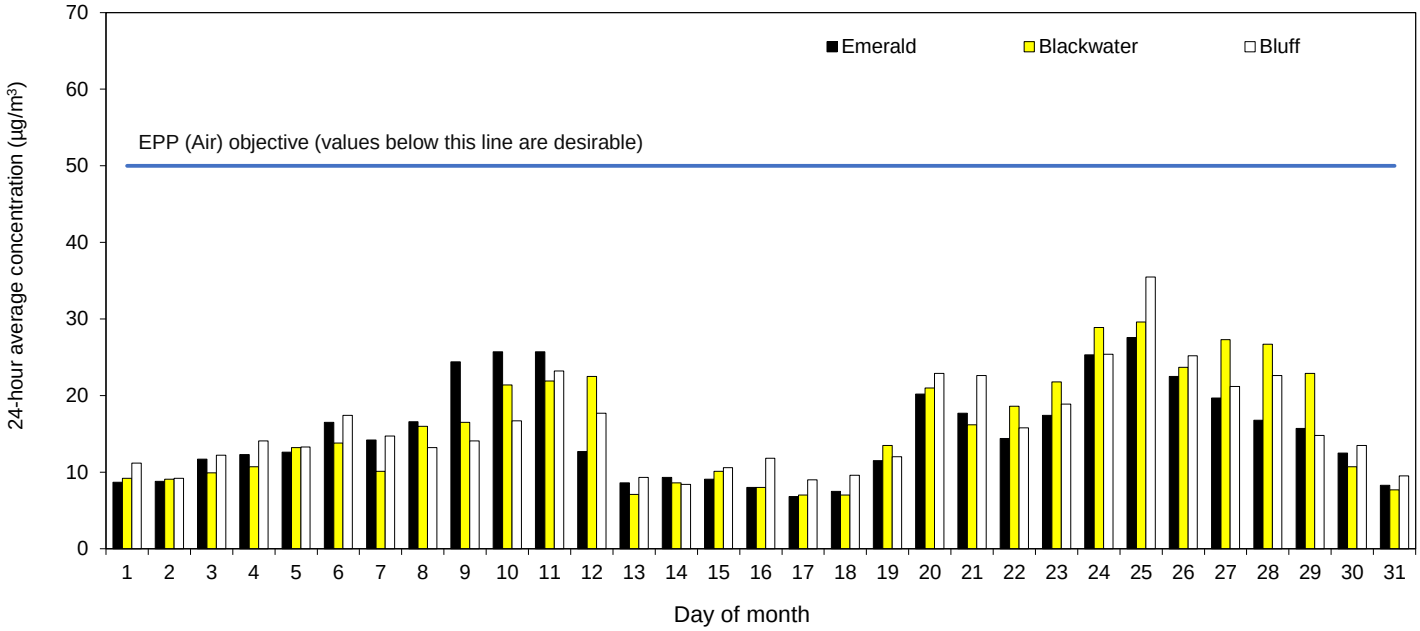


Table 15. Ambient concentrations of PM_{10}. Annual average and monthly maximum 24-hour and 1-hour average concentrations (µg/m^3), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mackay													
West Mackay													
Annual average:	17.2												
Maximum 24-hour		35.6	24.0	27.5	23.8	21.8	25.5	24.8	23.0	35.4	33.9	30.0	26.3
% I.A.		98	100	100	100	100	100	100	100	100	100	99	100
Inland Central Queensland													
Moranbah (East)													
Annual average:	21.9												
Maximum 24-hour		26.2	22.3	24.7	36.4	36.5	63.5	43.3	69.8	124.3	43.0	38.6	30.0
% I.A.		100	100	100	100	100	100	100	100	100	100	67	100
Moranbah (West)													
Annual average:	27.9												
Maximum 24-hour		32.8	29.8	40.0	43.3	47.4	72.7	50.4	64.7	101.8	64.3	64.7	40.0
% I.A.		97	100	100	100	78	88	100	100	99	100	100	96
Emerald													
Annual average:	16.9												
Maximum 24-hour		26.2	18.9	23.0	17.4	25.5	35.9	22.1	28.2	64.1	26.0	37.4	27.6
% I.A.		100	65	93	100	100	100	100	100	99	100	100	100
Blackwater													
Annual average:	16.7												
Maximum 24-hour		28.4	25.0	36.7	29.5	21.1	43.6	33.6	31.3	45.9	31.5	40.3	29.6
% I.A.		100	100	100	99	100	100	100	100	100	99	99	100
Bluff													
Annual average:	19.6												
Maximum 24-hour		33.1	34.4	68.0	35.0	30.7	82.9	25.1	38.4	52.3	31.7	34.8	35.5
% I.A.		84	99	100	100	100	100	100	100	99	96	78	97

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objectives for PM_{10} are an annual average of 25µg/m^3 and a 24-hour average of 50µg/m^3.

$PM_{2.5}$

Figure 21. Ambient concentrations of $PM_{2.5}$ at West Mackay, Moranbah (East) and Moranbah (West) sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

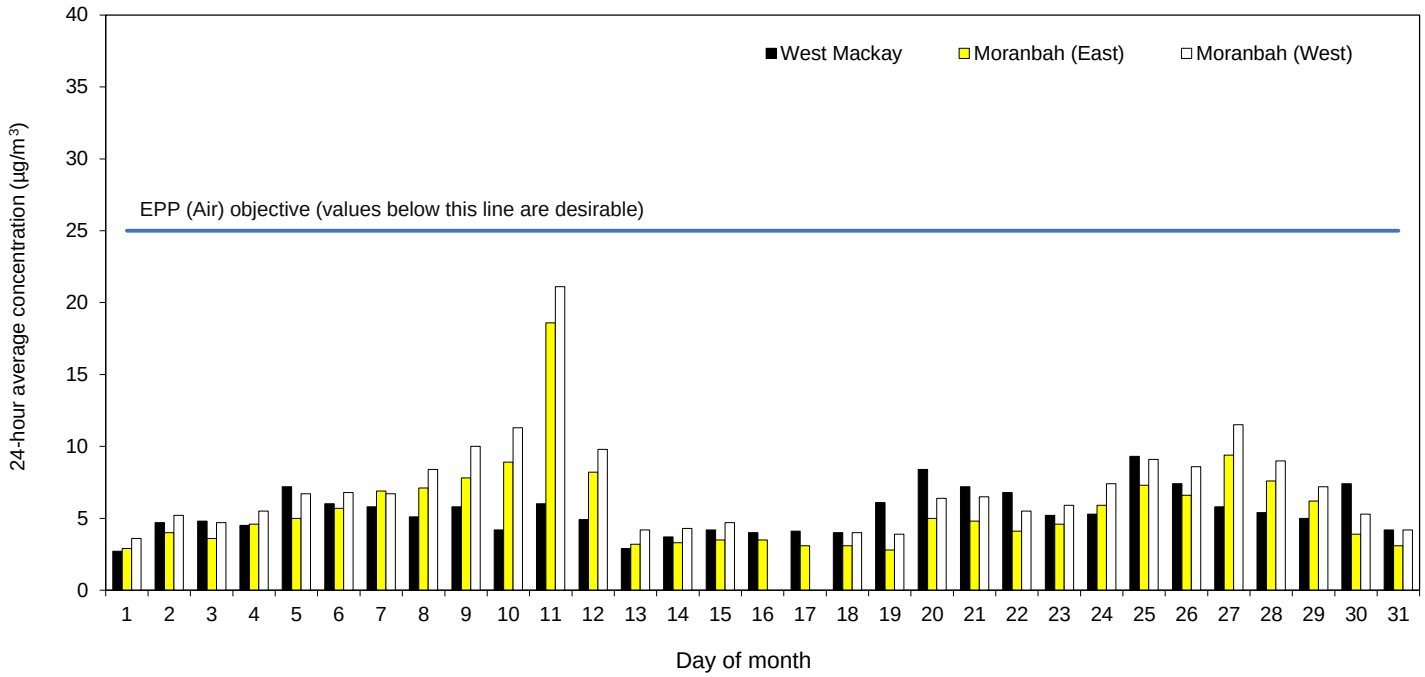


Figure 22. Ambient concentrations of $PM_{2.5}$ at Emerald and Blackwater sites. Daily 24-hour average concentrations (µg/m^3), December 2024.

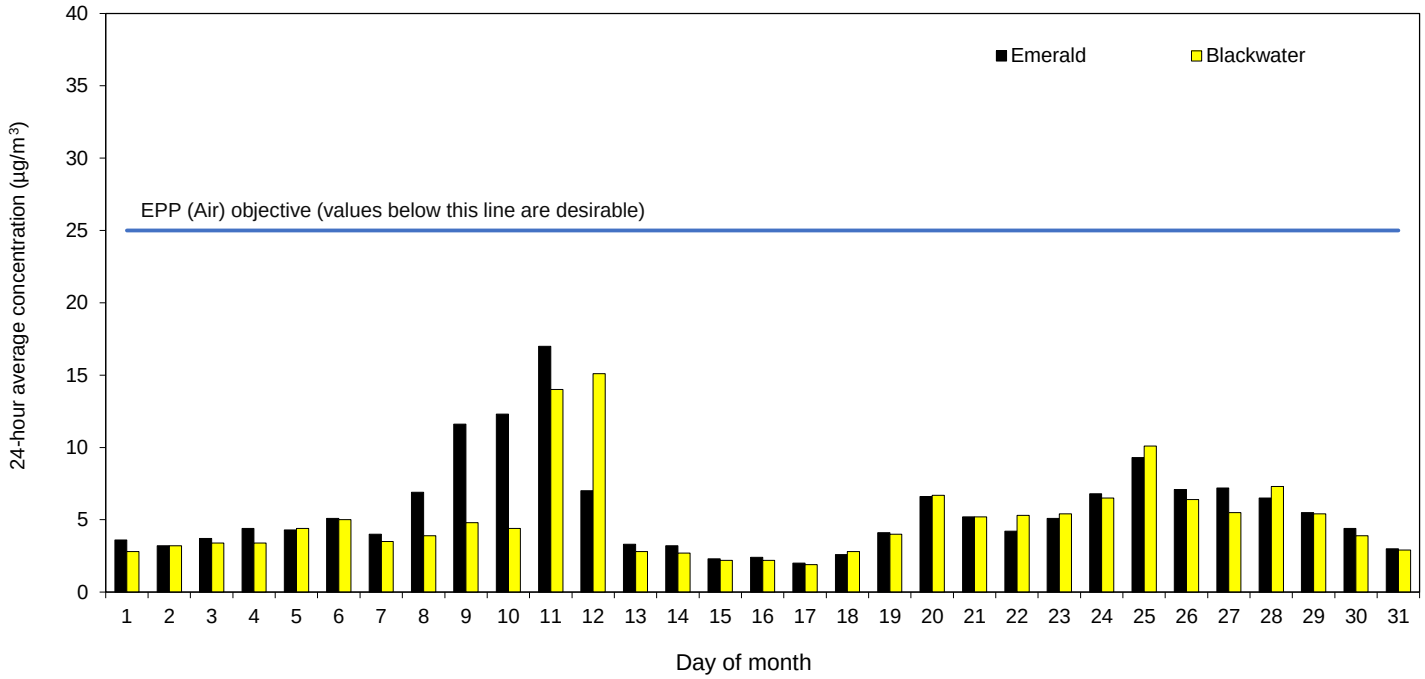


Table 16. Ambient concentrations of $PM_{2.5}$. Annual average and monthly maximum 24-hour concentrations (µg/m^3), January 2024 to December 2024.

Site		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mackay													
West Mackay													
Annual average:	6.0												
Maximum 24-hour		10.6	7.9	9.6	8.2	7.3	9.5	9.7	11.7	11.2	10.7	10.8	9.3
% I.A.		98	100	100	100	100	100	100	100	100	100	99	100
Inland Central Queensland													
Moranbah (East)													
Annual average:	6.1												
Maximum 24-hour		8.3	6.6	6.8	6.8	5.8	9.1	6.8	40.6	53.3	14.8	24.3	18.6
% I.A.		100	100	100	100	100	100	100	100	100	100	67	100
Moranbah (West)													
Annual average:	6.9												
Maximum 24-hour		9.0	7.2	7.8	6.8	6.7	10.9	8.9	11.9	25.9	16.1	40.3	21.1
% I.A.		97	100	100	100	78	88	100	100	99	100	100	96
Emerald													
Annual average:	6.0												
Maximum 24-hour		10.8	6.7	11.2	5.7	5.7	8.8	11.1	13.2	47.0	13.1	21.8	17.0
% I.A.		100	65	93	100	100	100	100	100	99	100	100	100
Blackwater													
Annual average:	5.3												
Maximum 24-hour		13.9	7.9	16.6	5.9	5.3	6.4	5.6	10.3	19.2	14.3	16.1	15.1
% I.A.		100	100	100	99	100	100	100	100	100	99	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objectives for $PM_{2.5}$ are an annual average of 8µg/m^3 and a 24-hour average of 25µg/m^3.

Visibility-reducing particles

Figure 23. Ambient concentrations of visibility-reducing particle levels at West Mackay site. Daily maximum 1-hour average light scattering coefficient (B_{sp}) values (Mm^{-1}), December 2024.

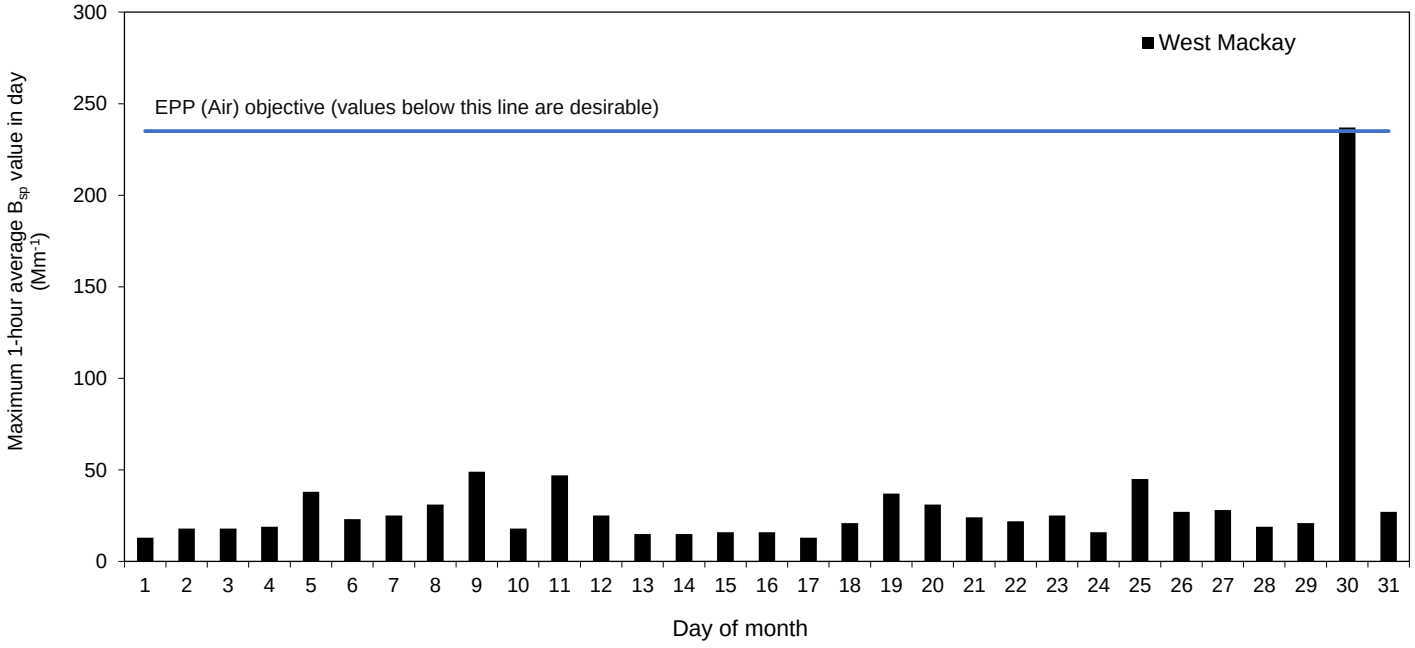


Table 17. Ambient visibility-reducing particle levels. Monthly maximum 1-hour light scattering coefficient (B_{sp}) values (Mm^{-1}), January 2024 to December 2024.

Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mackay												
West Mackay												
Maximum 1-hour	46	93	54	37	53	165	138	176	100	160	163	237
% I.A.	98	100	100	100	100	100	100	100	100	100	99	100

% I.A. indicates instrument availability. - indicates less than three-fifths of the data are available. n.d. indicates no data are available.

The Environmental Protection (Air) Policy 2019 air quality objective for visibility-reducing particles is 20km visibility. This equates to light scattering coefficient values of $235Mm^{-1}$ or less.

Data availability

When required, Table 18 summarises the reasons for data availability below the minimum criteria for reporting at Central Queensland monitoring sites.

Table 18. Reasons for low data availability at Central Queensland ambient air monitoring sites during December 2024.

Station	Air Pollutant	Cause
Auckland Point	PM_{10}	Offline due to Auckland Hill redevelopment works preventing access to maintain station equipment.

Related air quality information

Current hourly air quality data is available online at https://apps.des.qld.gov.au/air-quality/.

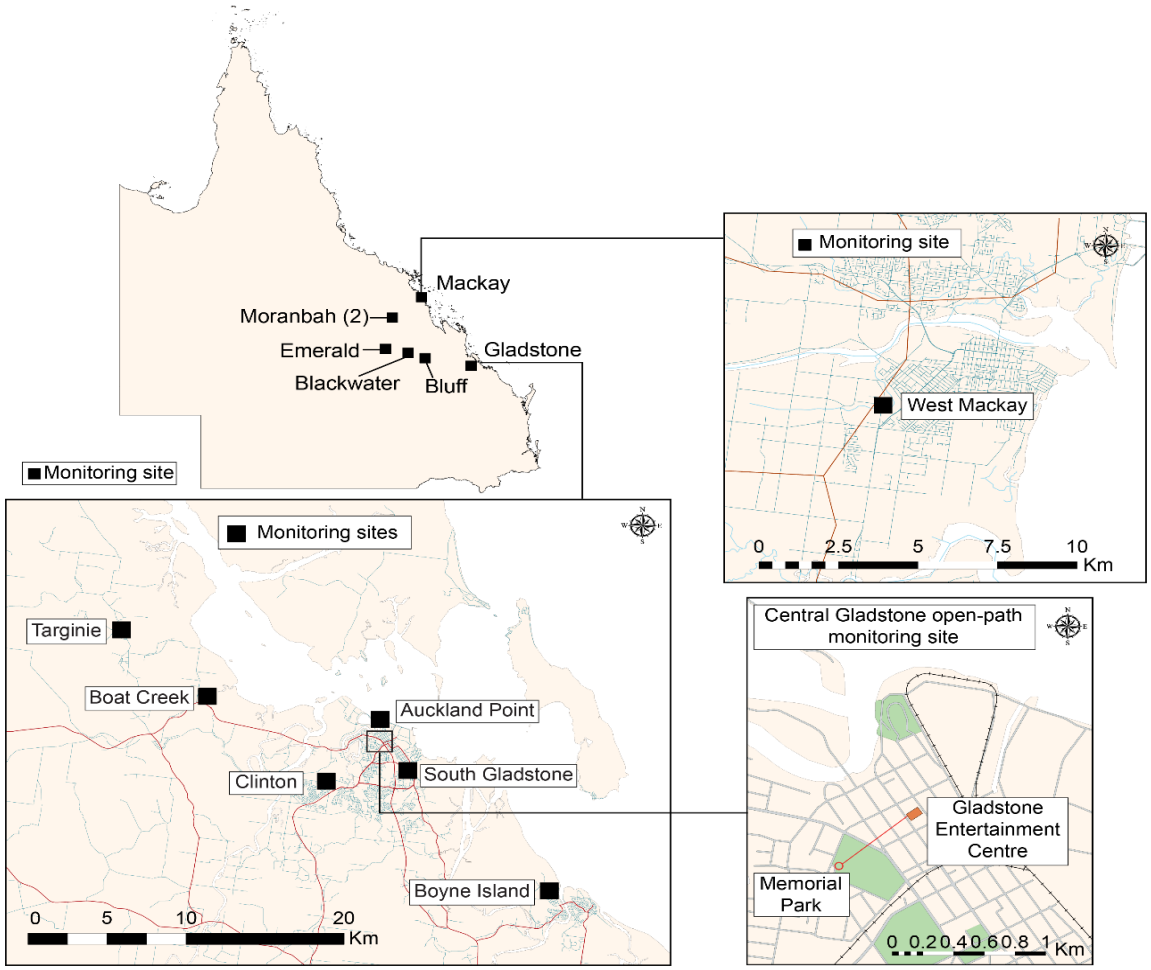
Additional information on air quality monitoring and related issues is also available from the above website.

Further information

For further information about the data presented in this bulletin or related publications, contact:

Air Quality Monitoring
Coastal and Air Unit
Science Division
Department of the Environment, Tourism, Science and Innovation
Ecosciences Precinct
41 Boggo Rd
DUTTON PARK QLD 4102
Telephone (07) 3170 5477
Email: air.sciences@detsi.qld.gov.au

Figure 24. Central Queensland ambient air quality monitoring station locations.



This Page is Intentionally Blank

The Department of the Environment, Tourism, Science and Innovation acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Owners and custodians of the land.

We recognise their connection to land, sea and community, and pay our respects to Elders past and present.

Queensland Government