



# Suburban Rail Loop East Early Works Air Quality Monthly Report

18 October – 17 November 2023



## Document Information

Document Details	
Issue Date	11/12/2023
Revision Number	C
Status	Issued for Review

## Review and Approval

Revision Number	Prepared By	Verified By	Approved By
A	Kate O'Donnell	Hamish Beshara	Andy Robertson
B	Hamish Beshara	Hamish Beshara	Andy Robertson
C	Hamish Beshara	Hamish Beshara	Andy Robertson

## Revision Control

Revision Number	Change Detail	Date	Comment
A	Draft issued to SRLA	28/11/2023	Issued for Client Review
B	Updated following comments from SRLA	29/11/2023	Issued for Client Review
C	Updated following comments from SRLA	11/12/2023	Issued for Client Review

# Contents

Document Information.....	2
Review and Approval.....	2
Revision Control .....	2
Glossary.....	4
Executive Summary.....	5
<b>1. Introduction.....</b>	<b>7</b>
1.1. Suburban Rail Loop East.....	7
1.2. Environmental Management Framework .....	7
<b>2. Air Quality Monitoring.....</b>	<b>7</b>
2.1. Context .....	7
2.2. Purpose .....	8
2.3. Monitoring Locations .....	8
2.4. Data Limitations and Verification .....	9
<b>3. Results.....</b>	<b>9</b>
3.1. Box Hill.....	9
3.1.1. Results .....	10
3.1.2. Analysis.....	10
3.2. Burwood .....	11
3.2.1. Results .....	11
3.2.2. Analysis.....	12
3.3. Monash.....	12
3.3.1. Results .....	12
3.3.2. Analysis.....	13
3.4. Heatherton.....	13
3.4.1. Results .....	14
3.4.2. Analysis.....	14
3.5. Meteorological conditions .....	15
<b>4. Quality Assurance.....</b>	<b>16</b>
4.1. Data capture .....	16
4.2. Data validation .....	16

## Glossary

**µg** – micrograms. A unit of mass equal to 0.000001 grams.

**µg/m<sup>3</sup>** – micrograms per cubic metre is a unit of measurement used to measure the mass of air pollutants (micrograms) per volume of air (cubic metre) as a concentration.

**Environment Effects Statement (EES)** – In Victoria, environment assessment of the potential environmental impacts or effects of a proposed development under the *Environment Effects Act 1978*.

**Environmental Air Quality and Dust Management Plan (EAQDMP)** – The EAQDMP is environmental management documentation prepared by the MC to manage and monitor air quality impacts during construction of SRL East. It includes the RMMP and TARP and is verified by the IEA.

**Environmental Management Framework (EMF)** – The purpose of the EMF is to provide a transparent and integrated framework to manage environmental effects of the SRL East Project during construction and operation to achieve acceptable environmental outcomes.

**Environmental Performance Requirements (EPRs)** – The EPRs define the environmental outcomes that must be achieved during the design, construction and operation of SRL East and are included within the EMF.

**Environment Protection Authority (EPA)** - Victorian regulator established under the *Environment Protection Act 2017* and which has the statutory objective to protect human health and the environment from the harmful effects of pollution and waste.

**Environmental Reference Standard (ERS)** – The ERS is a tool made under the *Environment Protection Act 2017* to identify and assess environmental values, including air quality, in Victoria.

**Independent Environmental Auditor (IEA)** – The IEA is appointed by the Victorian Government to undertake independent environmental reviews and audits of project activities including assessing compliance with the EMF and EPRs.

**PM<sub>10</sub>** – Particulate matter with an aerodynamic diameter of 10 micrometres (µm) or less. PM<sub>10</sub> particles are small enough to have a potential impact on human health.

**Risk Management and Monitoring Program (RMMP)** – this plan outlines the approach to air quality monitoring and includes instrumental, visual monitoring, TARP and public reporting processes. The RMMP forms part of the EAQDMP.

**Trigger Action Response Protocol (TARP)** – The TARP defines a series of adaptive management measures that are implemented to avoid or mitigate impacts from dust emissions for nearby sensitive receptors in response to the results from monitoring. The TARP forms part of the EAQDMP.

## Executive Summary

### Key Outcomes

Key outcomes arising from the monthly air quality monitoring program:

- In Burwood and Monash, the EPA air quality objective was consistently met throughout the October – November reporting period.
- In Box Hill, one day in the reporting period did not meet the EPA air quality objective. This is attributable to trucks carrying material/spoil along the haul road in proximity to the “East of Market Street” monitoring point.
- In Heatherton, four days in the reporting period did not meet the EPA air quality objective, due to earthworks for site establishment. This report does not include monitoring related to asbestos removal, which is monitored and reported on separately. Monitoring for asbestos particles in the air has consistently found that levels have remained within a safe and allowable range.
- In both Box Hill and Heatherton, visible dust was not observed to pass site boundaries during this period, indicating dust impacts were contained to the construction site.
- On occasions where air quality conditions triggered a TARP response, issues were quickly identified and addressed with dust suppression measures, including the use of a street sweeper and water cart. The air monitors on site are positioned within the site boundaries, therefore measurements are conservative (i.e., higher) in comparison to what is experienced at the receptors. Impacts from dust are mitigated by the distance receptors are from construction activities.

### Purpose of the Report

This report presents the results of the monthly review of the air quality monitoring data for each Suburban Rail Loop (SRL) East Early Works construction site for the period between 18 October 2023 and 17 November 2023, in accordance with SRL East Environmental Management Framework (EMF) and Environmental Performance Requirements (EPRs) AQ1 and AQ2. Early Works for SRL East commenced at Burwood in May 2023, Box Hill in June 2023, and Monash and Heatherton in October 2023. Laing O'Rourke is delivering the Early Works as Managing Contractor (MC).

The MC implements an air quality monitoring program on each site that includes both visual observation and instrumental air quality monitoring. The purpose of the air quality monitors is to measure the concentration of small dust particles in the air near the construction site. These particles, known as PM<sub>10</sub> have the potential to impact human health. PM<sub>10</sub> refers to particles with an aerodynamic diameter of 10 µm or less.

This report compares the measured concentrations to air quality objectives that are defined in the Environment Reference Standard (ERS) which is a tool under the *Environment Protection Act 2017*. The ERS sets out the air quality objectives for PM<sub>10</sub> which are measured over a 24-hour averaging period and are shown in Table 1 below. The objectives are risk-based concentrations that are not intended to be compliance levels, but they assist the MC to understand the risk to human health. When the instrumental monitor and/or visual observations identify a change in site conditions this prompts the MC to take actions on site to reduce dust impacts, and review mitigation measures applied.

### Scope of Reporting

This report does not include works delivered as SRL Initial Works. The SRL Initial Works which include investigative works, protective works, utility relocations and installations, ground improvement works (such as at the Heatherton Stabling Facility) and minor road modifications were subject to a separate approval process under Clause 52.30 of the Victoria Planning Provisions (VPP) and were approved by the Minister for Planning on 19 December 2021. These works are required to comply with Clause 52.30 of the VPP and are not subject to the EMF and EPRs.

No works requiring monitoring (i.e. Early Works) occurred at the following locations during this period:

- Glen Waverley
- Clayton
- Cheltenham.

### Results

The key findings are summarised in Table 1. An analysis of these findings is provided in Section 3.

Table 1: Summary of air quality monitoring results for reporting period.

Location	Parameter	Averaging Period	Max concentration ( $\mu\text{g}/\text{m}^3$ )	EPA Air Quality Objective ( $\mu\text{g}/\text{m}^3$ )	Days Objective Met in the Month
<b>Representative Background<sup>1</sup></b>					
Alphington EPA Station	PM <sub>10</sub>	24-hour	28.7	50	-
Dandenong EPA Station	PM <sub>10</sub>	24-hour	32.6	50	-
<b>Box Hill</b>					
Site Office	PM <sub>10</sub>	24-hour	49.2	50	31/31
East of Market Street	PM <sub>10</sub>	24-hour	50.2	50	30/31
<b>Burwood</b>					
16 McComas Grove	PM <sub>10</sub>	24-hour	25.5	50	31/31
Corner of McComas Grove and Sinnott Street	PM <sub>10</sub>	24-hour	35.8	50	31/31
<b>Monash</b>					
Site Office	PM <sub>10</sub>	24-hour	38.6	50	2/2 <sup>2</sup>
MH108 – Location 1	PM <sub>10</sub>	24-hour	39.0	50	24/24
<b>Heatherton<sup>3</sup></b>					
SSY – North	PM <sub>10</sub>	24-hour	40.9	50	31/31
SSY – South	PM <sub>10</sub>	24-hour	75.4	50	27/31

<sup>1</sup> The EPA monitoring station at Dandenong is used as the representative control site for Heatherton and Cheltenham, and the EPA monitoring station at Alphington is used as the representative control site for all other SRL work sites.

<sup>2</sup> Air quality monitoring was undertaken at the site office location for the first day of works due to inaccessibility to Location 1 at the commencement of works. The two periods of data collected at the site office reflect the day and a half the monitor was active at that location prior to relocation to Location 1.

<sup>3</sup> Refer to Figure 7 for a map of the monitoring locations.



# 1. Introduction

## 1.1. Suburban Rail Loop East

Suburban Rail Loop (SRL) will deliver a 90km rail line linking every major suburban line from the Frankston Line to the Werribee Line via Melbourne Airport, better connecting Victorians to jobs, retail, education, health services and each other. Construction of SRL East from Cheltenham to Box Hill is underway and will connect major employment, health, education and retail destinations in Melbourne's east and south-east. The new underground train line will reduce travel times, connect people travelling on the Gippsland corridor and building it will create up to 8000 direct local jobs. Trains will be running by 2035.

Early Works for SRL East commenced at Burwood in May 2023, Box Hill in June 2023, and Clayton and Heatherston in October 2023. Laing O'Rourke is delivering the Early Works as Managing Contractor (MC). Early Works include:

- road modifications
- utility relocations
- ground improvement works
- tram terminus works, and
- site preparations for tunnel boring machines.

This report does not include works delivered as SRL Initial Works. The SRL Initial Works which include investigative works, protective works, utility relocations and installations, ground improvement works (such as at the Heatherston Stabling Facility) and minor road modifications were subject to a separate approval process under Clause 52.30 of the Victoria Planning Provisions (VPP) and were approved by the Minister for Planning on 19 December 2021. These works are required to comply with Clause 52.30 of the VPP and are not subject to the EMF and EPRs.

## 1.2. Environmental Management Framework

The Environmental Management Framework (EMF) for SRL East (the Project) provides a transparent and integrated framework to manage environmental effects of the Project and includes EPRs that define environmental outcomes that must be achieved during the design, construction, and operation phases of the Project. The EMF is available on the SRL east website at <https://bigbuild.vic.gov.au/library/suburban-rail-loop/planning/srl-east-environmental-management-framework>.

The development of the EMF has been informed by relevant legislation, policy and guidelines, and the specialist impact assessment studies completed for the SRL East Environment Effects Statement (EES) and the Minister's Assessment, dated 5 August 2022.

The EMF requires the MC to develop and implement an Environmental Air Quality and Dust Management Plan (EAQDMP). As part of implementing this plan the MC is required to conduct monitoring of PM<sub>10</sub> concentrations and measure wind speed and direction at each Early Works construction site and at a representative control site. The EAQDMP also includes a Trigger Action Response Protocol (TARP) which defines a set of triggers that prompt actions on site to reduce dust impacts, and review mitigation measures applied. The EMF, and therefore this report, is not applicable to SRL Initial Works activities.

The MC regularly reviews the monitoring data at each site, for the purpose of assessing the effectiveness of EAQDMP implementation. The verified results of the PM<sub>10</sub> monitoring for the applicable monthly period are contained in this report, which will be available to the public, in accordance with the requirements of the EMF.

# 2. Air Quality Monitoring

## 2.1. Context

Maintaining air quality is important for public health, the liveability of our cities and our environment. Overall air quality conditions in Melbourne are good, however like all major cities, there are days where the background concentrations of air pollutants are very high on a regional basis. Sometimes these elevated concentrations are due to regional influences such as windblown continental dust, bushfires or hazard reduction burns. Emissions from traffic, home heating, and industrial emissions across Melbourne can also cause high background concentrations, especially when the weather is calm. Environment Protection Authority (EPA) monitoring stations measure these background levels of pollution that

already exist in the air within the surrounding area. The EPA monitoring station at Dandenong is used as the representative control site for Heatherton and Cheltenham, and the EPA monitoring station at Alphington is used as the representative control site for all other SRL work sites.

Without effective management, construction of the Project has the potential to contribute to these background concentrations which may impact public health. Comparison of SRL East monitoring results with publicly available EPA monitoring data is used by the MC to identify when construction-related activities are impacting local air quality, and conversely when the local air quality results may be influenced by background conditions outside of the influence of the construction site.

Meteorological conditions such as wind direction and speed can impact on the dispersion of particulates in the air and by monitoring these, the MC can respond when conditions on site change. Having records of wind conditions is also helpful for retrospectively identifying the activity that is causing any elevated dust concentrations.

## 2.2. Purpose

The purpose of the air quality monitors is to measure the concentration of small dust particles in the air near the construction site. These particles, known as PM<sub>10</sub> have the potential to impact human health. PM<sub>10</sub> refers to particles with an aerodynamic diameter of 10 µm or less.

The measured concentrations are compared to air quality objectives that are defined in the Environment Reference Standard (ERS) which is a tool under the *Environment Protection Act 2017*. The objectives are risk-based concentrations that are not intended to be compliance levels, but they assist the MC to understand the risk to human health. The ERS sets out the air quality objectives for PM<sub>10</sub> which are measured over a 24-hour averaging period, as reproduced below in Table 2.

Table 2: Ambient air quality objectives for PM<sub>10</sub>.

Indicator	Air Quality Objective (µg/m <sup>3</sup> )	Averaging Period
Particles as PM <sub>10</sub> (maximum concentration)	50	24-hour

The measured concentrations (which include both existing background concentrations and the Project's incremental contribution over a 24-hour period) are presented in Section 3 and compared against the air quality objective. Monitoring is continuous, even when there are no construction-related activities occurring on the site. Periods of time where there are no site activities are classified as 'Out of Hours'. The potential for dust generation from the work sites is much lower when there are no site activities occurring, however dust can still be generated at the work site during "Out of Hours" periods due to wind erosion.

## 2.3. Monitoring Locations

Air quality monitors are located on or adjacent to the Early Works construction sites, to represent local air quality conditions, in positions that enable the MC to adequately measure potential impact of works on local sensitive receivers including residents. This does not include monitoring undertaken as part of the SRL Initial Works as outlined in Section 1.1.

The air quality monitors were installed on the following dates at each of the following locations. The location of these monitors is shown on maps in Section 3 of this Report.

Table 3: Air quality monitoring locations active during reporting period.

Monitoring Location	Date Commissioned	Coordinates	Monitoring Parameters	Representative Control Site
Box Hill – Site Office	07 Jul 2023	Latitude: -37.817863° Longitude: 145.12187°	PM <sub>10</sub>	Alphington EPA monitoring station
Box Hill – East of Market Street	13 Jul 2023	Latitude -37.818073° Longitude: 145.1232°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – 16 McComas Grove	18 May 2023	Latitude: -37.851494° Longitude: 145.1116°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – Corner of McComas Grove and Sinnott Street	18 May 2023	Latitude: - 37.852413° Longitude: 145.11163°	PM <sub>10</sub>	Alphington EPA monitoring station
Monash – Site Office	16 October 2023	Latitude: -37.9024° Longitude: 145.13815°	PM <sub>10</sub>	Alphington EPA monitoring station



Monitoring Location	Date Commissioned	Coordinates	Monitoring Parameters	Representative Control Site
Monash – MH108 – Location 1	25 October 2023	Latitude: -37.902401° Longitude: 145.139465°	PM <sub>10</sub>	Alphington EPA monitoring station
Heatherton – SSY – North <sup>4</sup>	29 October 2023	Latitude: -37.95422° Longitude: 145.10141°	PM <sub>10</sub>	Dandenong EPA monitoring station
Heatherton – SSY – South	29 May 2023	Latitude: -37.955917° Longitude: 145.10239°	PM <sub>10</sub>	Dandenong EPA monitoring station

## 2.4 Data Limitations and Verification

The following limitations apply to this data:

- Meteorological conditions on site can affect measurements made by monitoring devices. For instance, dust measurements can be impacted by rainfall and/or humidity (with water droplets in the air being mistaken as dust particles). Displaying periods of inclement weather allows reviewers to identify measurements that may have been impacted.
- The monitors that measure dust concentrations and noise are located within the construction site close to the nearest homes. However, the measured levels at the nearest homes and beyond are usually less than what is measured by the monitor. This is due to the monitor being located closer to the noise and dust source due to security requirements for the monitoring equipment.
- Monitors have been placed to record air quality and airborne noise at each site, however monitors may need to be moved as works progress.
- Breaks in data availability may occur due to sensor outages, instrument errors, technical issues or removal of sensors during non-working periods to ensure the security of the equipment.

Data are provided in tabular and graphical form in Section 3 to visually present 24-hour averages of PM<sub>10</sub> over the monthly period. The data included in this report have been verified by the Managing Contractor and relevant subject matter expert.

## 3. Results

Data are provided in graphical form below to visually present 24-hour averages of PM<sub>10</sub> dust concentration over the monthly period for each active construction site. Where results exceed the ambient air quality objectives as presented in Table 2 due to works occurring on the construction sites, an analysis is presented for discussion.

### 3.1. Box Hill

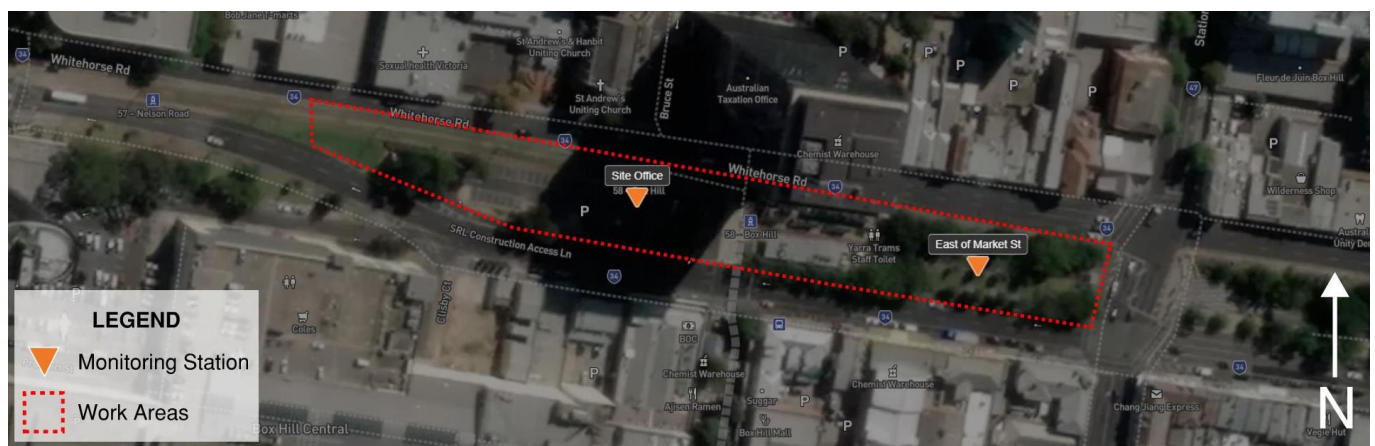


Figure 1: Box Hill air quality monitoring stations.

<sup>4</sup> Refer to Figure 7 for a map of the monitoring locations.

### 3.1.1. Results

Table 4: Box Hill PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	EPA Air Quality Objective (µg/m <sup>3</sup> )	Days Objective Met in the Month
-	Representative Background	28.7	50	N/A
1	Site Office	49.2	50	31/31
2	East of Market Street	50.2	50	30/31

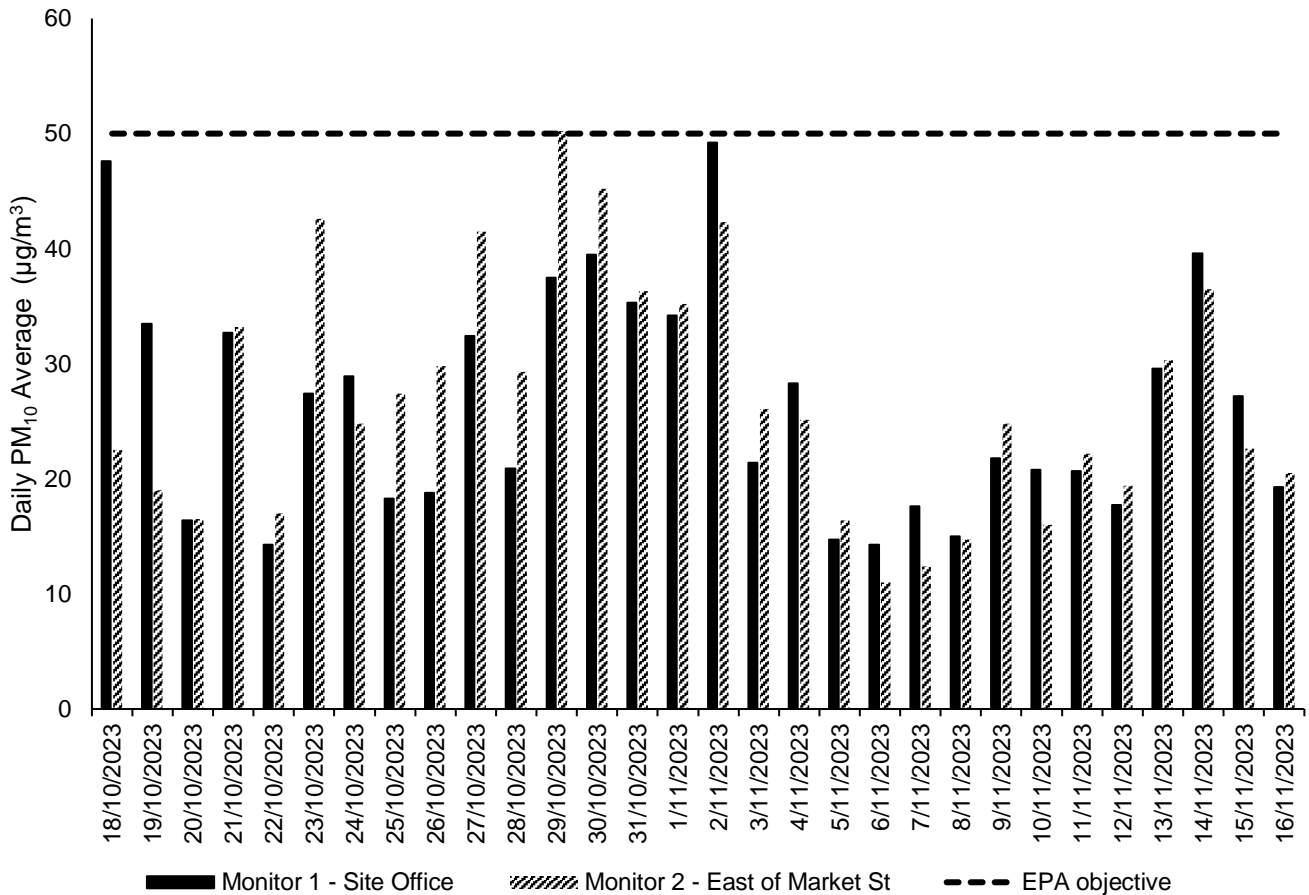


Figure 2: Box Hill PM<sub>10</sub> daily averages

### 3.1.2. Analysis

The maximum daily average PM<sub>10</sub> concentrations were 49.2 µg/m<sup>3</sup> (n = 31)<sup>5</sup> and 50.2 µg/m<sup>3</sup> (n = 31) at the monitoring stations at the Box Hill Site Office (Monitor 1) and east of Market Street (Monitor 2), respectively. The EPA air quality objective was met on 30 of the 31 days of the reporting period.

On the day where the EPA air quality objective was not met, it was identified that dust was being generated by the activities associated with the tram terminus works underway. Numerous movements of trucks carrying material/spoil along the haul road were in proximity to the “East of Market St” monitoring point. The monitoring station is located near the works and vehicle movements due to site constraints, therefore, dust readings at this site are conservative and over represent the air quality conditions at receivers. Level 1 and 2 TARP levels were triggered for the dust events and dust suppression controls employed, including use of a water cart where dust was being generated (earthworks or exposed surfaces) and the deployment of a street sweeper along the designated haul road and Whitehorse Road. These controls were employed periodically throughout the day with frequency increasing for drier days and where more significant dust generating activities were occurring. Additionally, dust suppression polymer was applied to the site prior to a site shutdown period.

<sup>5</sup> n = the number of days of monitoring data captured in the monitoring period

### 3.2. Burwood

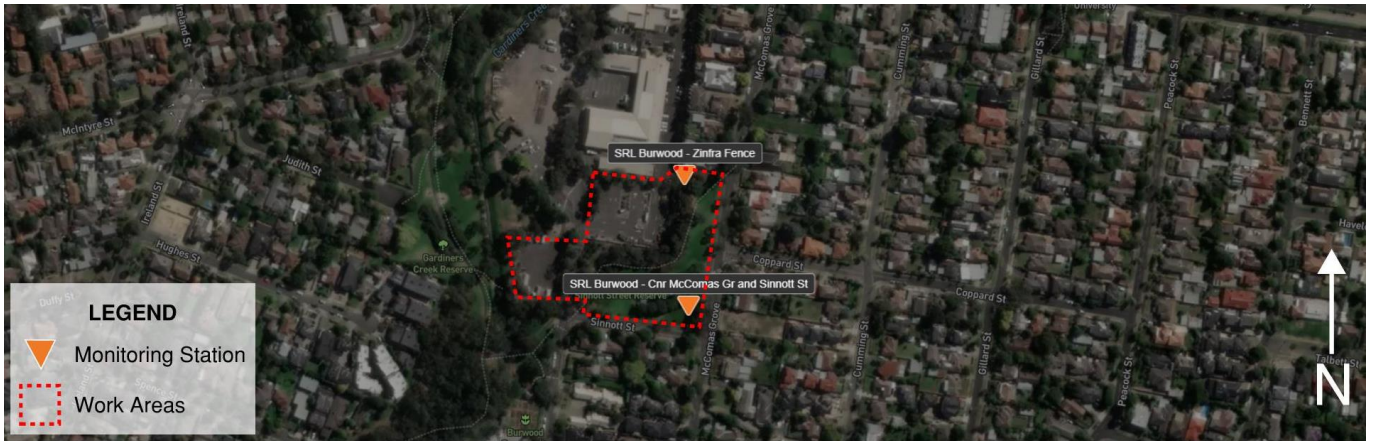


Figure 3: Burwood air quality monitoring stations.

#### 3.2.1. Results

Table 5: Burwood air quality monitor PM<sub>10</sub> percentiles

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	EPA Air Quality Objective (µg/m <sup>3</sup> )	Days Objective Met in the Month
-	Representative Background	28.7	50	N/A
1	Corner of McComas Grove and Sinnott Street	35.8	50	31/31
2	16 McComas Grove	25.5	50	31/31

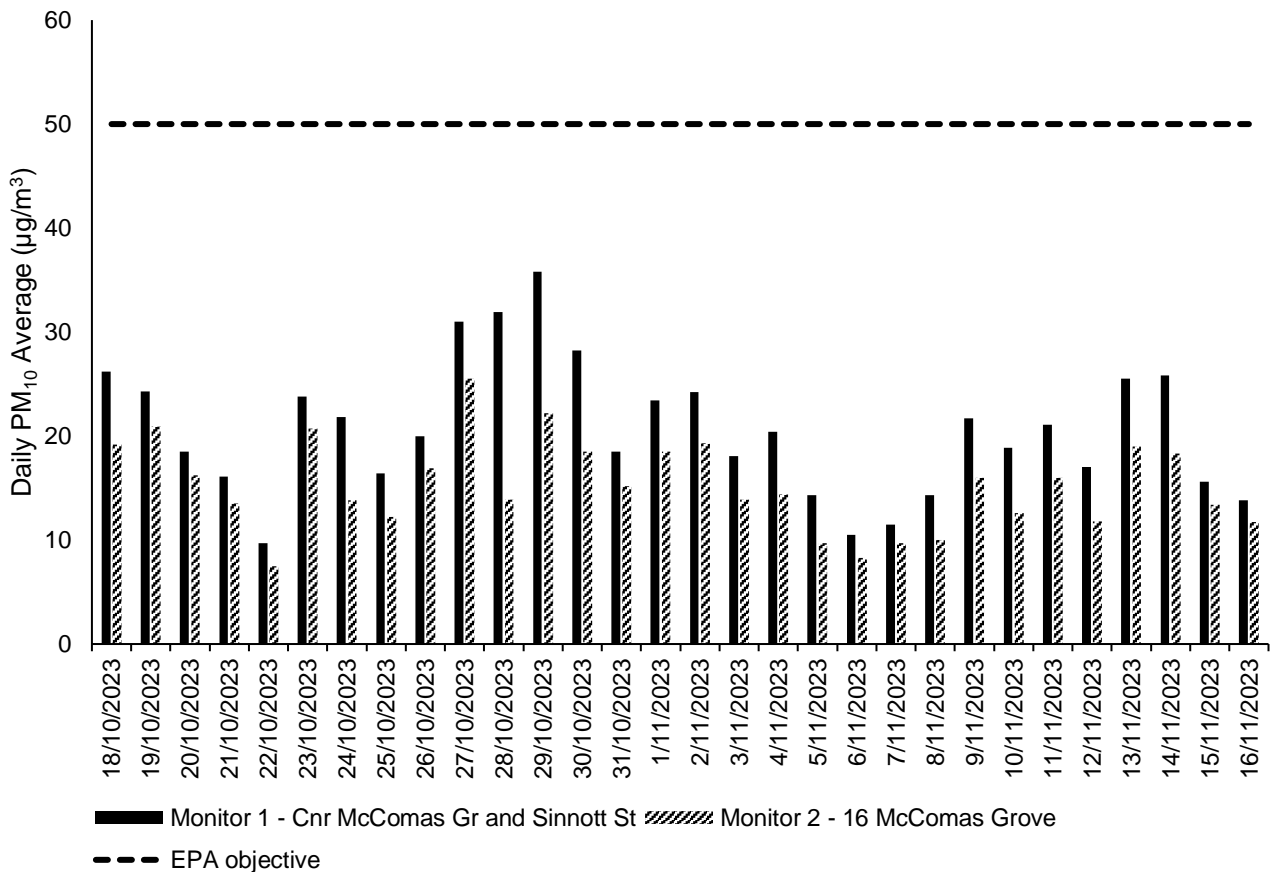


Figure 4: Burwood PM<sub>10</sub> daily averages

### 3.2.2. Analysis

During the October – November monitoring period, the Burwood air quality monitoring stations recorded maximum daily (24 hr) average PM<sub>10</sub> concentrations of 35.8 µg/m<sup>3</sup> (n = 30)<sup>6</sup> and 25.5 µg/m<sup>3</sup> (n = 23) at the monitoring stations at the corner of Sinnott Street and McComas Grove, and at the north-eastern corner of the site at 16 McComas Grove, respectively. The EPA air quality objective was consistently met during the reporting period. This is attributable to frequent dust suppressive activities being undertaken on the site, including dampening down exposed areas and application of dust binding agents to the site during lockdown periods.

## 3.3. Monash



Figure 5: Monash air quality monitoring stations.

### 3.3.1. Results

Table 6: Monash PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	EPA Air Quality Objective (µg/m <sup>3</sup> )	Days Objective Met in the Month
-	Representative Background	28.7	50	N/A
1	Site Office	38.6	50	2/2
2	MH108 – Location 1	39.0	50	24/24

<sup>6</sup> n = the number of days of monitoring data captured in the monitoring period



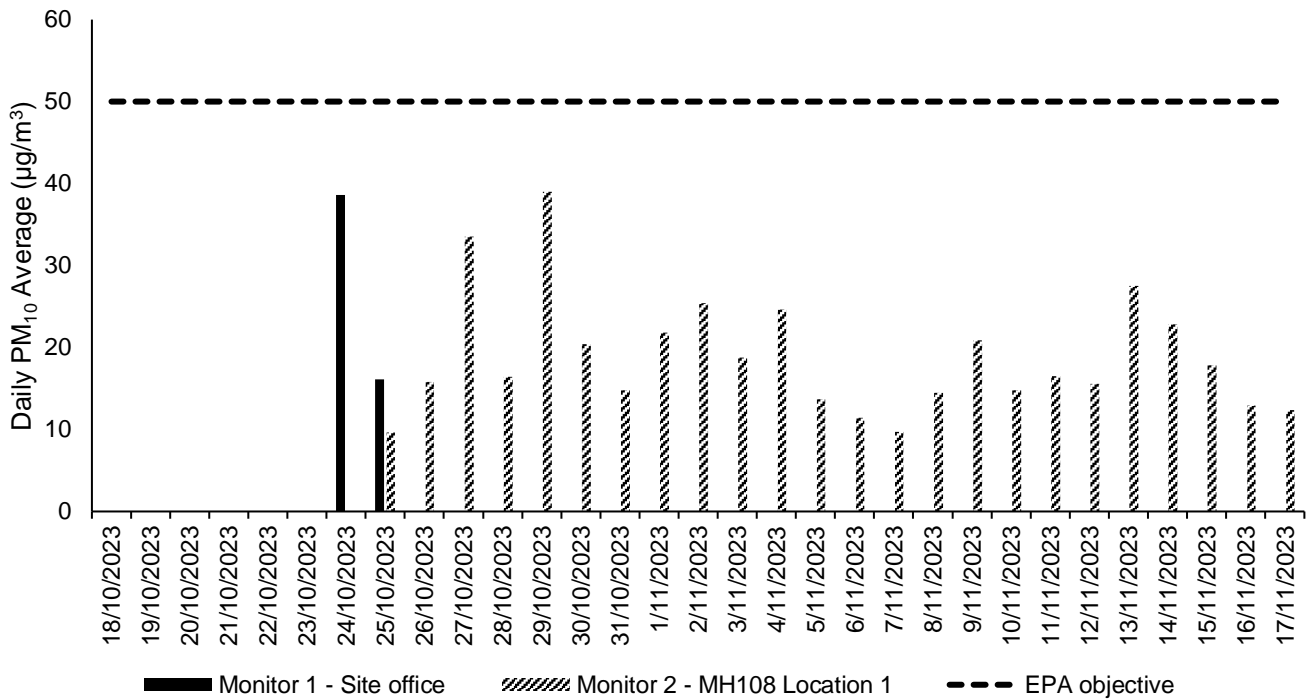


Figure 6: Monash PM<sub>10</sub> daily averages

### 3.3.2. Analysis

During the October – November monitoring period, the Monash air quality monitoring station recorded maximum daily (24 hr) average PM<sub>10</sub> concentrations of 38.6 µg/m<sup>3</sup> (n = 2) and 39.0 µg/m<sup>3</sup> (n = 24) at the monitoring stations at the front and back corners of 20-24 Howleys Road, respectively. These measurements were captured by the same device, which was moved from the “Site Office” location to the “MH108 Location 1” on October 25 due to inaccessibility to Location 1 at the commencement of works. This monitoring station is now situated where it will be permanently located at Location 1.

An additional SiteHive location will be placed at the front of the property and named “MH108 Location 2,” which will be commissioned in December 2023. The MC has been conducting regular air quality inspections and recording observations, during which visual air quality impacts generated from site have not been identified.

The EPA air quality objective was consistently met during the reporting period.

### 3.4. Heatherton



Figure 7: Heatherton air quality monitoring stations.



### 3.4.1. Results

Table 7: Heatherton PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	EPA Air Quality Objective (µg/m <sup>3</sup> )	Days Objective Met in the Month
-	Representative Background	32.6	50	N/A
1	SSY - North	40.9	50	31/31
2	SSY - South	75.4	50	27/31

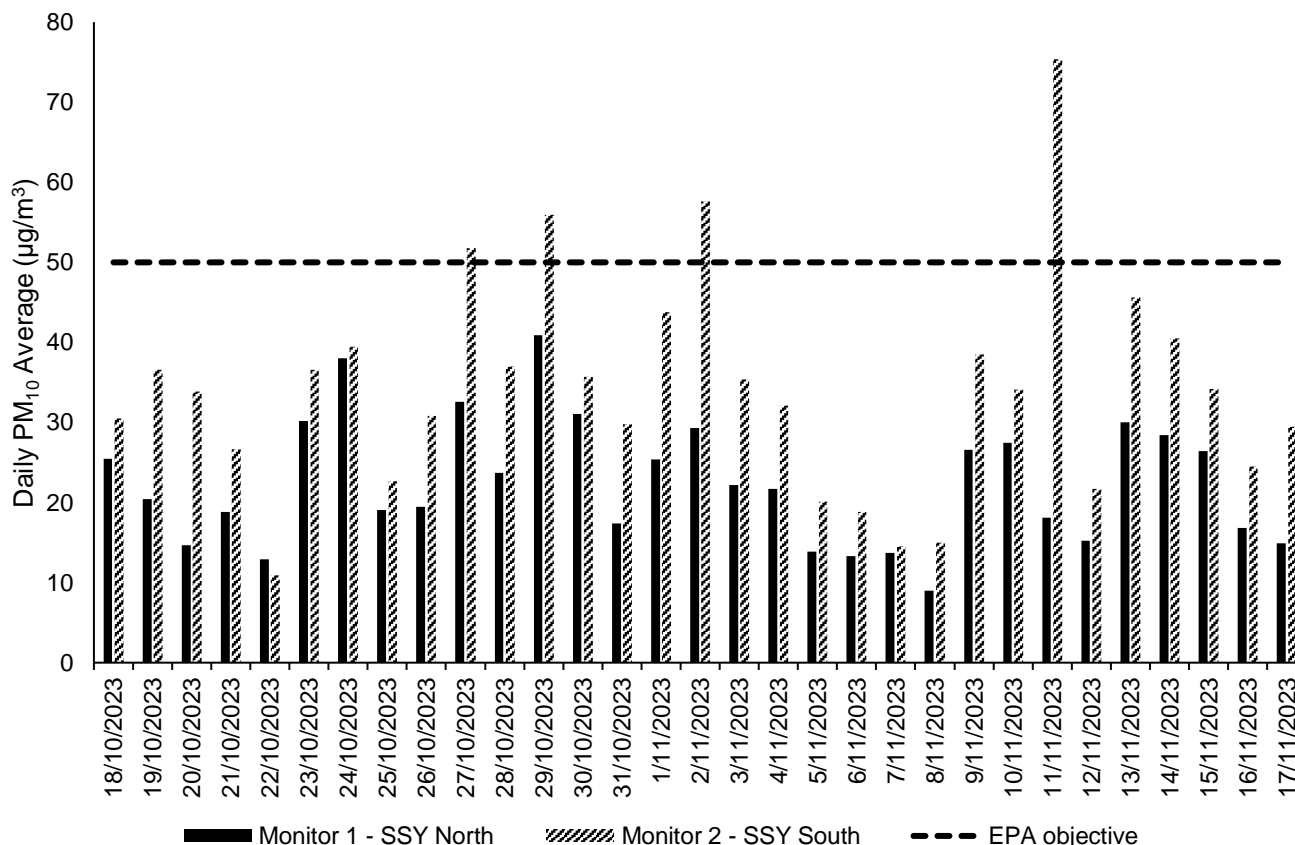


Figure 8: Heatherton PM<sub>10</sub> daily averages

### 3.4.2. Analysis

**Notes for the Heatherton site:** Both Initial Works and Early Works are being undertaken concurrently at Heatherton. The close proximity of these works means that there is a strong possibility that Initial Works are contributory factors to any air quality conditions that do not meet EPA objectives. Initial Works are not subject to the EMF.

This report does not include monitoring related to asbestos removal, which is monitored and reported on separately. Monitoring for asbestos particles in the air has consistently found that levels remained within a safe and allowable range.

During the October – November monitoring period, the Heatherton air quality monitoring stations recorded maximum daily (24 hr) average PM<sub>10</sub> concentrations of 40.9 µg/m<sup>3</sup> (n = 31) at the north monitoring station and 75.4 µg/m<sup>3</sup> (n = 31) at the monitoring station to the south of the Heatherton Site located at 180 Old Dandenong Road. The EPA air quality objective was met on 27 of the 31 days of the reporting period.

On the four days where the EPA air quality objective was not met, there were a range of works being undertaken at the site, some of which are not subject to the reporting requirements of this document (see explanatory note above). These included earthworks associated with site establishment and the safe removal of contaminated materials. The analysis of the works being undertaken on these days identified that the dust generating works were occurring near the southern monitoring station, however no visible dust clouds were observed to pass the boundary of the site, indicating that dust was contained within the site. It was determined that the location of the monitoring station was not consistent with the Australian

Standards for the correct siting of monitoring equipment to deliver accurate air quality results, and it was subsequently moved to a more representative location as work progressed. The spikes reflected in Figure 8 reflect the days where works were conducted closest to the monitoring station prior to its relocation.

Additionally, on occasions where air quality conditions triggered a TARP response, the environmental team was notified and water carts were mobilised to suppress the dust.

No community complaints or enquiries were received regarding outdoor air quality on the dates where the objectives were not met.

### 3.5. Meteorological conditions

Table 8: Daily weather observations for Melbourne (Olympic Park), Victoria October 18 – November 17 2023. Data Source BOM.

	Temperature		Daily Rain Total	Maximum Wind Gust		Relative Humidity @ 9:00 AM
	Min (°C)	Max (°C)	mm	Dir	Speed (km/h)	%
Mean	12.0	21.4				64.2
Lowest	7.3	13.4	0	N	57	47
Highest	18.8	33.1	8.8	N	57	82
Total			24.4			

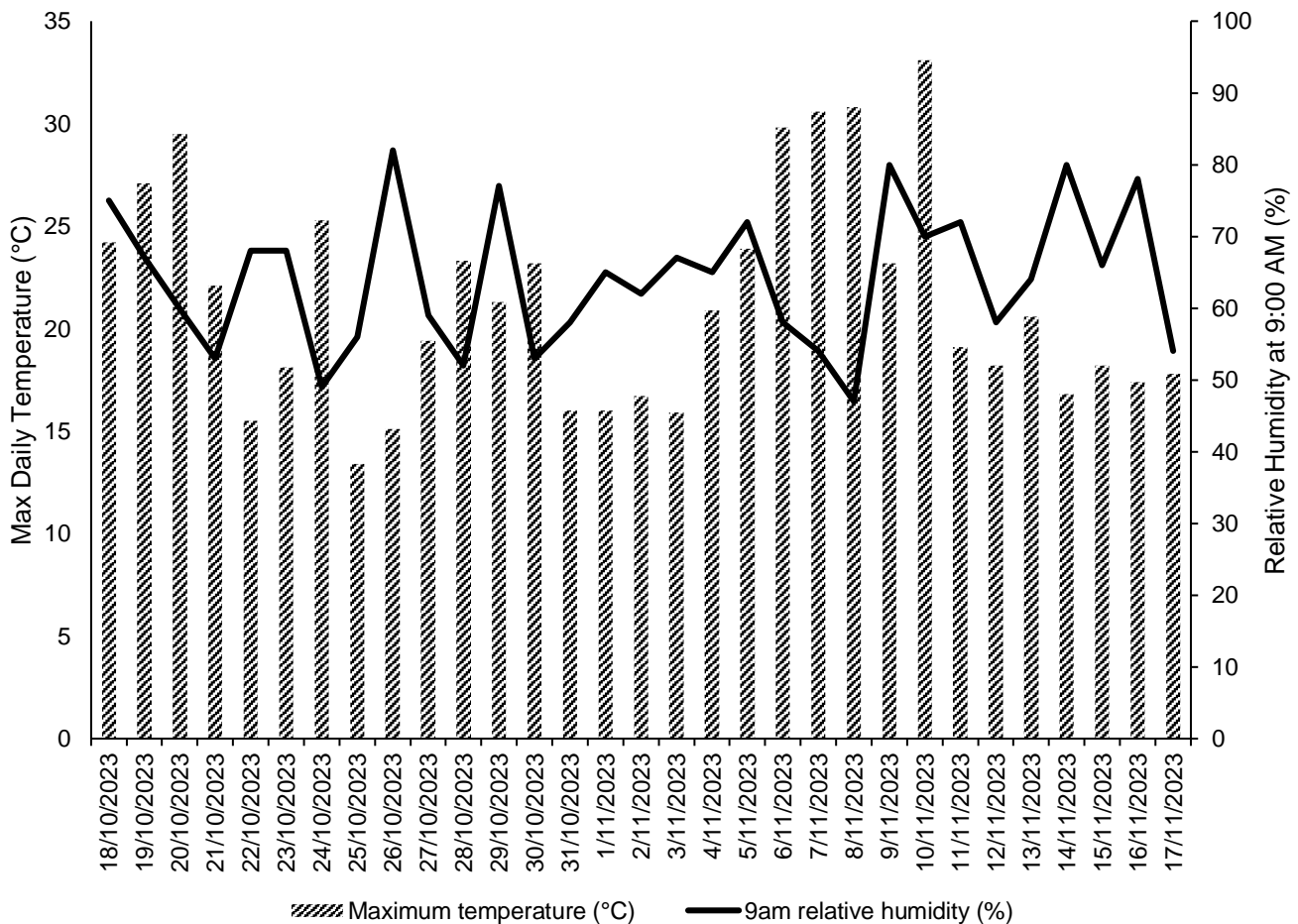


Figure 9: Daily relative humidity and temperature observations for Melbourne (Olympic Park), Victoria October 18 – November 17 2023. Data Source BOM.

## 4. Quality Assurance

### 4.1. Data capture

Data capture is defined as the number of valid data periods collected divided by the number of available data periods. Valid data excludes period where the instrument is unavailable due to calibration and maintenance and excludes periods where the data has been rejected due to quality assurance/data validation procedures.

Data capture statistics for the reporting period 18 October 2023 to 17 November 2023 are shown in Table 9, below. Data capture statistics were 100% for all parameters at all stations for the reporting period. At Monash, 25 days of data were captured as SRL Early Works at this site did not commence until October 24. Air quality monitoring was undertaken at the site office location for the first day of works and the monitor was relocated to a more suitable site the day after. The two periods of data collected at the site office reflect the day and a half the monitor was active at that location. Air quality monitoring was undertaken at the site office location for the first day of works due to inaccessibility to Location 1 at the commencement of works.

Table 9: Air quality monitoring, data capture summary

Location	Parameter	Averaging Period	Collected Periods	Available Periods	Data Capture
Box Hill – Site Office	PM <sub>10</sub>	24-hours	31	31	100%
Box Hill – East of Market St	PM <sub>10</sub>	24-hours	31	31	100%
Burwood – 16 McComas Gr	PM <sub>10</sub>	24-hours	31	31	100%
Burwood – Cnr McComas Gr and Sinnott St	PM <sub>10</sub>	24-hours	31	31	100%
Monash – Site Office	PM <sub>10</sub>	24-hours	2	2	100%
Monash – MH108 – Location 1	PM <sub>10</sub>	24-hours	24	24	100%
Heatherton – SSY – North	PM <sub>10</sub>	24-hours	31	31	100%
Heatherton – SSY – South	PM <sub>10</sub>	24-hours	31	31	100%

### 4.2. Data validation

Data contained in this report has been validated against performance and calibration requirements for each instrument. Data during commissioning, maintenance and calibration periods has been removed from the validated data sets.

Table 10: Monitoring device calibration information.

Location	Device Serial Number	Calibration Date	Calibration Due
Box Hill – Site Office	HEX-000407	29 Aug 2023	29 Aug 2025
Box Hill – East of Market St	HEX-000339	19 Apr 2023	19 Apr 2025
Burwood – 16 McComas Grove	HEX-000385	29 Aug 2023	29 Aug 2025
Burwood – Cnr McComas Gr and Sinnott St	HEX-000308	03 Apr 2023	03 Apr 2025
Monash – Site Office (24/10/2023 – 25/10/2023)	HEX-000418	29 Aug 2023	29 Aug 2025
Monash – MH108 – Location 1	HEX-000418	29 Aug 2023	29 Aug 2025
Heatherton - SSY - North	HEX-000067	21 Feb 2023	21 Feb 2025
Heatherton – SSY – South	HEX-000050	21 Apr 2023	21 Apr 2025