Suburban Rail Loop East
Early Works
Air Quality Monthly Report

19 February 2024 – 18 March 2024

Document Information

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Contents

Glossary

µg/m^3 – 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_{10} – Particulate matter with an aerodynamic diameter of 10 micrometres (µm) or less. PM_{10} 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 Box Hill, the TARP was implemented on 13 days during the reporting period. Dust was suppressed using water carts and hoses, and dust generation from spoil haulage was mitigated by street sweeping and requiring trucks to cover loads prior to leaving the site.
- In Burwood, the TARP was implemented on two days during the reporting period. Dust was suppressed using water carts and hoses, and dust generation from spoil haulage was mitigated by street sweeping and requiring trucks to cover loads prior to leaving the site. A new air quality monitor at Burwood was commissioned on 20 February 2024 on the western boundary of the site (Monitor 4 – Site 4 – West).
- In Monash, the TARP was implemented on 15 days during the reporting period. A water cart and hose were used during earthworks, and soil binder was used on exposed soil to suppress dust over the Labour Day long weekend.
- In Clayton, the TARP was implemented on six days during the reporting period. A water cart and hose were used during earthworks, and soil binder was applied to exposed soil to suppress dust over the Labour Day long weekend.
- In Heatherton, the TARP was implemented on 10 days during the reporting period. A water cart was used proactively and reactively where dust had the potential or was being generated, and a soil binder was reapplied over exposed surfaces. A new air quality monitor at Heatherton was commissioned on 22 February 2024 at the south-west boundary of the site (SS17).

Further explanation is provided in Section 3 regarding these observations.

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 19 February 2024 and 18 March 2024 in accordance with SRL East EMF and EPRs AQ1 and AQ2. Laing O'Rourke is delivering the Early Works as Managing Contractor (MC). Early Works for SRL East commenced at Burwood in May 2023, Box Hill in June 2023, Monash and Heatherton in October 2023, and Clayton in December 2023.

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_{10}, have the potential to impact human health. PM_{10} refers to particles with an aerodynamic diameter of 10 µm or less.

Measured PM_{10} concentrations may be compared to air quality objectives that are defined in the ERS which is a tool under the *Environment Protection Act 2017*. The ERS sets out the air quality objectives for PM_{10} which are measured over a 24-hour averaging period. 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 implement mitigations on site to reduce dust impacts, and review 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, moving underground services, ground improvement works (such as at the Stabling Facility at Heatherton) 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.

This report does not include monitoring related to asbestos containing material removal, which is monitored and reported separately.

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

- Glen Waverley
- 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 (µg/m^3)	Median Concentration (µg/m^3)	Days TARP Implemented in the Month
Representative Background[1]					
Alphington	PM_{10}	24-hour	44.5	26.6	-
Dandenong	PM_{10}	24-hour	43.8	27.6	-
Box Hill					
Site Office	PM_{10}	24-hour	40.2	28.1	13
East of Market Street	PM_{10}	24-hour	48.3	29.6	
Burwood					
Corner of McComas Grove and Sinnott Street	PM_{10}	24-hour	35.0	24.3	2
16 McComas Grove	PM_{10}	24-hour	23.3	15.6	
Site 4 – West	PM_{10}	24-hour	37.8	23.8	
Site 4 – East	PM_{10}	24-hour	49.4	28.4	
Monash					
Site Office	PM_{10}	24-hour	61.3	31.8	15
Clayton					
CL69 – SiteHive 1[2]	PM_{10}	24-hour	53.5	28.2	6
Heatherton					
SSY - South[3]	PM_{10}	24-hour	67.2	49.3	10
Site Office	PM_{10}	24-hour	53.2	33.9	
SS17	PM_{10}	24-hour	78.6	38.4	

[1] The EPA monitoring station at Dandenong is used as the representative control site for Cheltenham and Heatherton. The EPA monitoring station at Alphington is used as the representative control site for Clayton, Monash, Glen Waverley, Burwood and Box Hill.

[2] See Section 3.4 for map of monitoring location.
[3] See Section 3.5 for map of monitoring location.

1. Introduction

1.1. Suburban Rail Loop East

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, Monash and Heatherton in October 2023, and Clayton in December 2023. Laing O'Rourke is delivering the Early Works as MC. Early Works include:

- Road modifications
- Moving underground services
- 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 includes investigative works, protective works, utility relocations and installations, ground improvement works (such as at the Stabling Facility at Heatherton) and minor road modifications, were subject to a separate approval process under Clause 52.30 of the 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 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 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 EES and the Minister's Assessment, dated 5 August 2022.

The EMF requires the MC to develop and implement an EAQDMP. As part of implementing this plan, the MC is required to conduct monitoring of PM_{10} concentrations and measure wind speed and direction at each Early Works construction site and at a representative control site. The EAQDMP also includes a 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_{10} 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. 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_{10} have the potential to impact human health. PM_{10} 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 ERS which is a tool under the *Environment Protection Act 2017*. The air quality objectives defined in the ERS informed the objectives for air quality for the Project, noting that the ambient air ERS is not a compliance standard that one can pollute up to. The ERS does not provide an indicator or objective for nuisance dust.

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_{10} which are measured over a 24-hour averaging period, as reproduced below in Table 2.

Table 2: Ambient air quality objectives for PM_{10}.

Indicator	Air Quality Objective (µg/m^3)	Averaging Period
Particles as PM_{10} (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. 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_{10}	Alphington EPA monitoring station
Box Hill – East of Market Street	13 Jul 2023	Latitude -37.818073° Longitude: 145.1232°	PM_{10}	Alphington EPA monitoring station
Burwood – 16 McComas Grove	18 May 2023	Latitude: -37.851494° Longitude: 145.1116°	PM_{10}	Alphington EPA monitoring station
Burwood – Site 4 – West	16 February 2024	Latitude: -37.850521° Longitude: 145.11009°	PM_{10}	Alphington EPA monitoring station
Burwood – Site 4 – East	20 February 2024	Latitude: -37.850586° Longitude: 145.11188	PM_{10}	Alphington EPA monitoring station
Burwood – Corner of McComas Grove and Sinnott Street	18 May 2023	Latitude: - 37.852413° Longitude: 145.11163°	PM_{10}	Alphington EPA monitoring station
Monash – Site Office	16 October 2023	Latitude: -37.9024° Longitude: 145.13815°	PM_{10}	Alphington EPA monitoring station
Clayton - CL69 – SiteHive 1	2 December 2023	Latitude: -37.922485 Longitude: 145.11914	PM_{10}	Alphington EPA monitoring station
Heatherton – SSY – South	29 May 2023	Latitude: -37.955917° Longitude: 145.10239°	PM_{10}	Dandenong EPA monitoring station
Heatherton – SSY – Site Office	22 January 2024	Latitude: -37.95401° Longitude: 145.10062°	PM_{10}	Dandenong EPA monitoring station
Heatherton – SSY- SS17	22 February 2024	Latitude: -37.953739° Longitude: 145.097595°	PM_{10}	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, fog 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 the 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. Air Quality monitoring devices are located in accordance with AS/NZS 3580.1.1-2016: Methods for sampling and analysis of ambient air (the Standard). This Standard specifies that locations must be representative of the location being monitored, which in this case is offsite receptors. Specifically, Section 7 of the Standard emphasises that locations should not be unduly influenced by immediate surroundings. Locating a monitoring device too close to the works results in increased readings as the space for air quality pollutants (i.e. dust) to dissipate is not representative of emissions at the offsite receptors. Therefore, depending on the location of the works on site and the monitoring device, the device may be moved to best represent impacts to offsite receptors, while also maintaining security and safe access.

- 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_{10} over the monthly period. The data included in this report have been verified by the MC and relevant subject matter experts.

3. Results

Data are provided in graphical form below to visually present 24-hour averages of PM_{10} dust concentration over the monthly period for each active construction site. Where the TARP has been implemented 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.

Table 4: Box Hill PM_{10} results.

Monitor Number	Monitoring Location	Max Daily PM_{10} Concentration (µg/m^3)	Median Daily PM_{10} Concentration (µg/m^3)	Days TARP Implemented in the Month
-	Representative Background - Alphington	44.5	26.6	-
1	Site Office	40.2	28.1	13
2	East of Market Street	48.3	29.6	

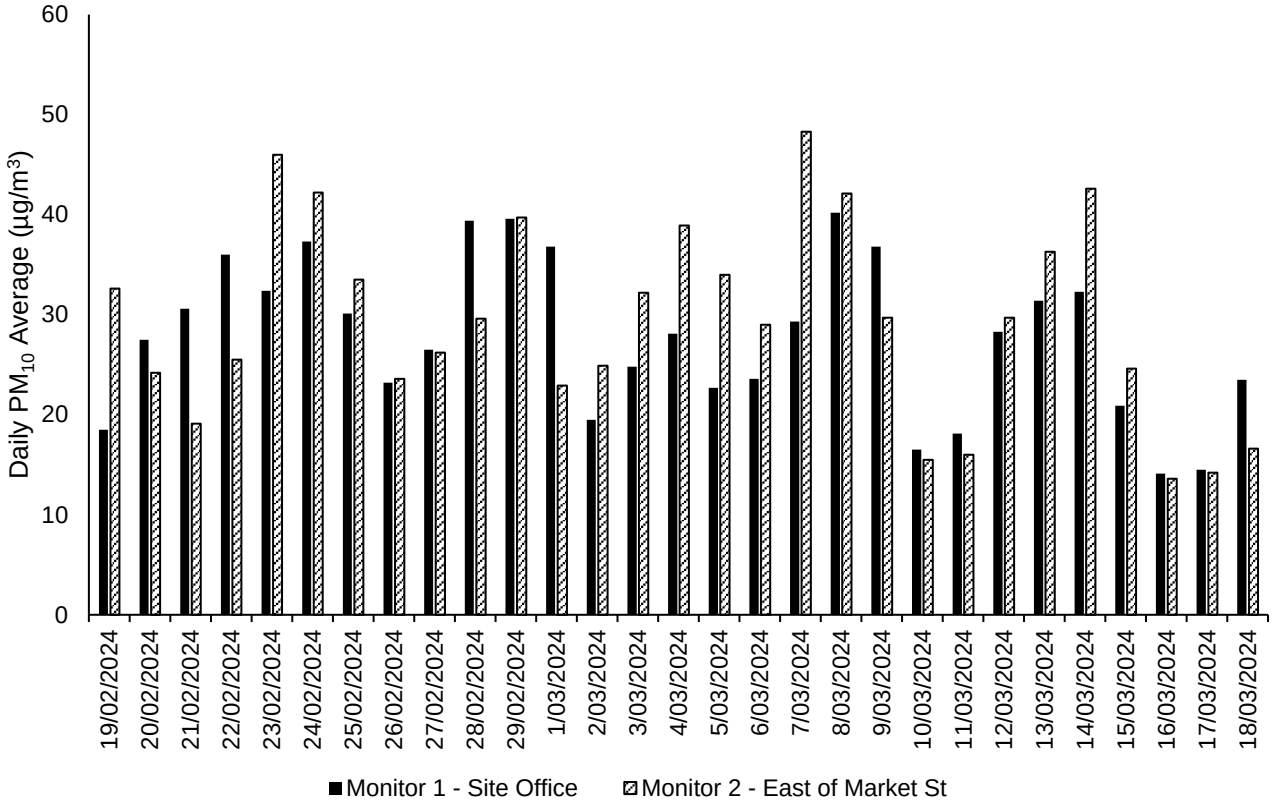

Figure 2: Box Hill PM_{10} daily averages

3.1.1. Analysis

The maximum daily average PM_{10} concentrations were 40.2 µg/m^3 (n = 29)[4] and 48.3 µg/m^3 (n = 29)[5] at the monitoring stations located at the Site Office (Monitor 1) and East of Market Street (Monitor 2) respectively. These daily average PM_{10} concentration readings reflect that, for the majority of the time, the air quality is generally good as represented in Figure 2.

The TARP was implemented on 13 days during the reporting period. Dust was suppressed using water carts and hoses. Dust generation from spoil haulage was mitigated by street sweepers visiting the site regularly and requiring trucks to cover loads prior to leaving the site.

Visual air inspections support this data as no dust was observed to be leaving the site boundaries. This reporting period demonstrates the MC's proactive response to dust control and maintaining air quality in the Box Hill precinct.

[4] n = the number of days of monitoring data captured in the monitoring period for Monitor 1
[5] n = the number of days of monitoring data captured in the monitoring period for Monitor 2

3.2. Burwood

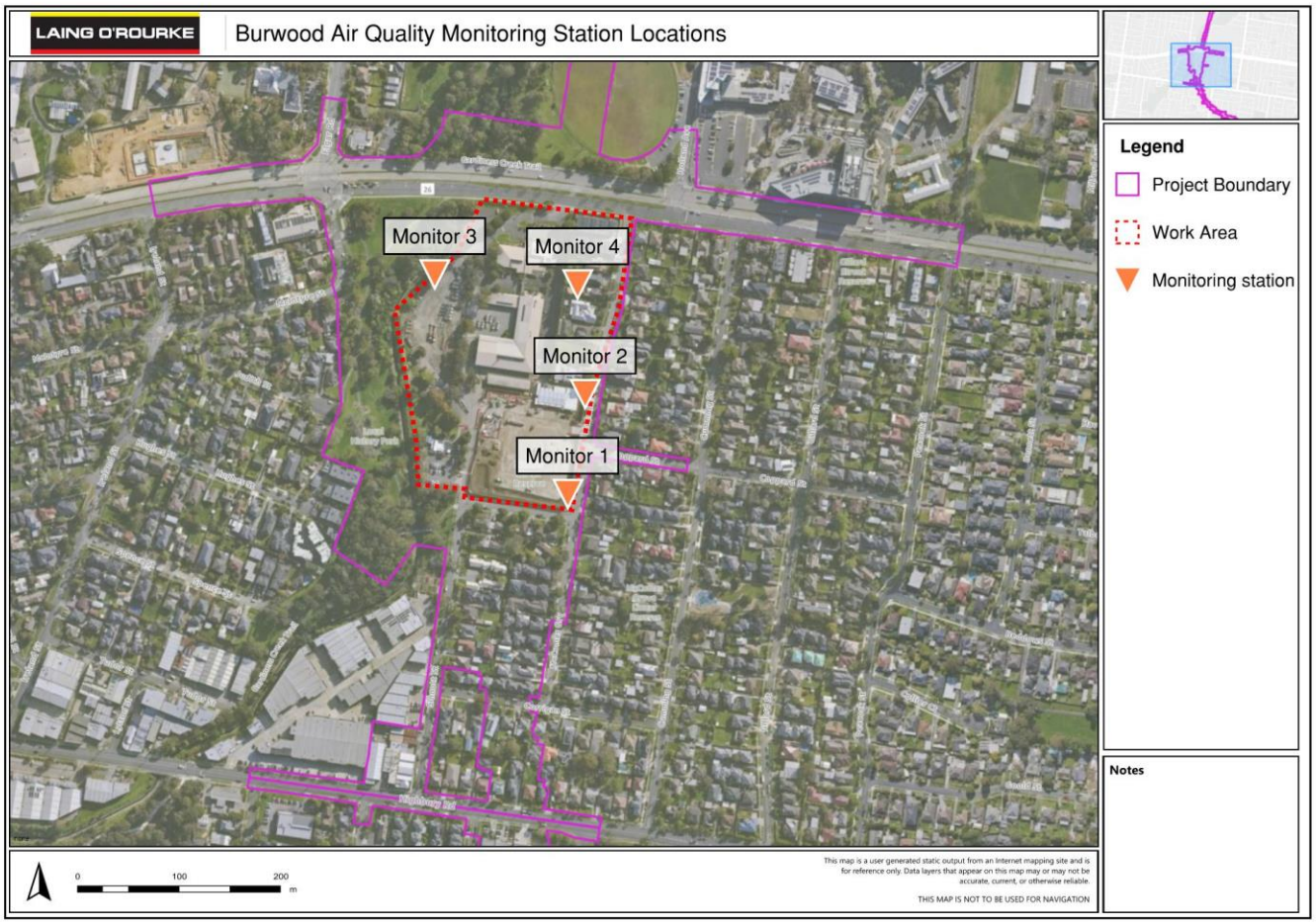

Figure 3: Burwood air quality monitoring stations.

Table 5: Burwood PM_{10} results.

Monitor Number	Monitoring Location	Max Daily PM_{10} Concentration (µg/m^3)	Median Daily PM_{10} Concentration (µg/m^3)	Days TARP Implemented in the Month
-	Representative Background - Alphington	44.5	26.6	-
1	Corner of McComas Grove and Sinnott Street	35.0	24.3	2
2	16 McComas Grove	23.3	15.6	
3	Site 4 – West	37.8	23.8	
4	Site 4 – East	49.4	28.4	

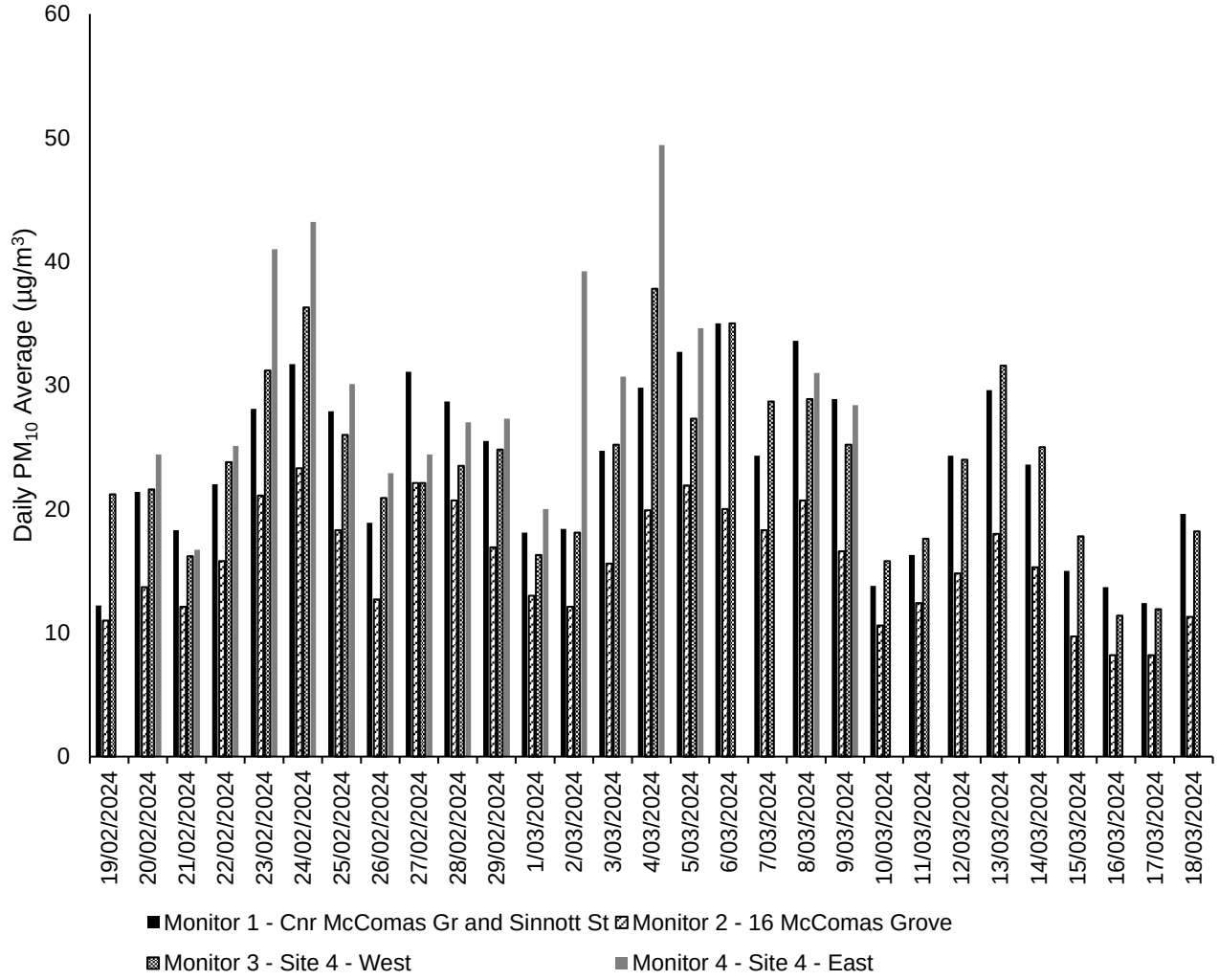

Figure 4: Burwood PM_{10} daily averages

3.2.1. Analysis

The maximum daily average PM_{10} concentrations were 35.0 µg/m^3 (n = 29), 23.3 µg/m^3 (n = 29), 37.8 µg/m^3 (n = 29) and 49.4 µg/m^3 (n = 17) at the monitoring stations at the corner of McComas Grove and Sinnott Street (Monitor 1), at 16 McComas Grove (Monitor 2), Site 4 – West (Monitor 3), and Site 4 – East (Monitor 4), respectively.

A new air quality monitor was commissioned on 20 February 2024 on the eastern boundary of the site (Monitor 4 – Site 4 – East). Data from Monitor 4 was absent for twelve days during the reporting period, largely due to the monitor being stolen on 10 March 2024.

The TARP was implemented on two days during the reporting period. Dust was suppressed by use of water carts and hoses. Dust generation from spoil haulage was mitigated by requiring trucks to cover loads prior to leaving the site.

Visual air inspections support this data as no dust was observed to be leaving the site boundaries. This demonstrates the MC's proactive response to dust control and maintaining air quality in the Burwood precinct.

3.3. Monash

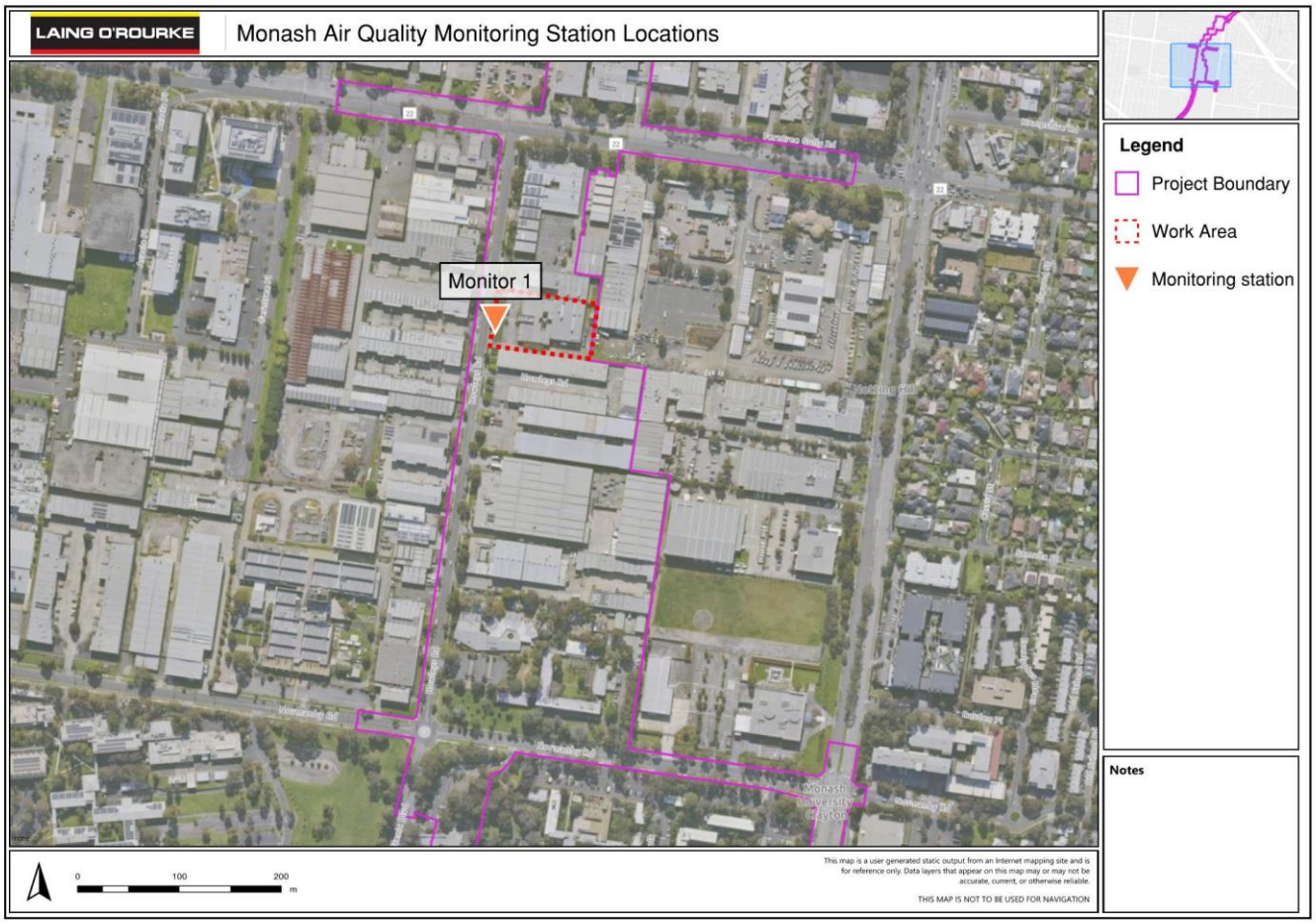

Figure 5: Monash air quality monitoring stations.

Table 6: Monash PM_{10} results.

Monitor Number	Monitoring Location	Max Daily PM_{10} Concentration (µg/m^3)	Median Daily PM_{10} Concentration (µg/m^3)	Days TARP Implemented in the Month
-	Representative Background - Alphington	44.5	26.6	-
1	Site Office	61.3	31.8	15

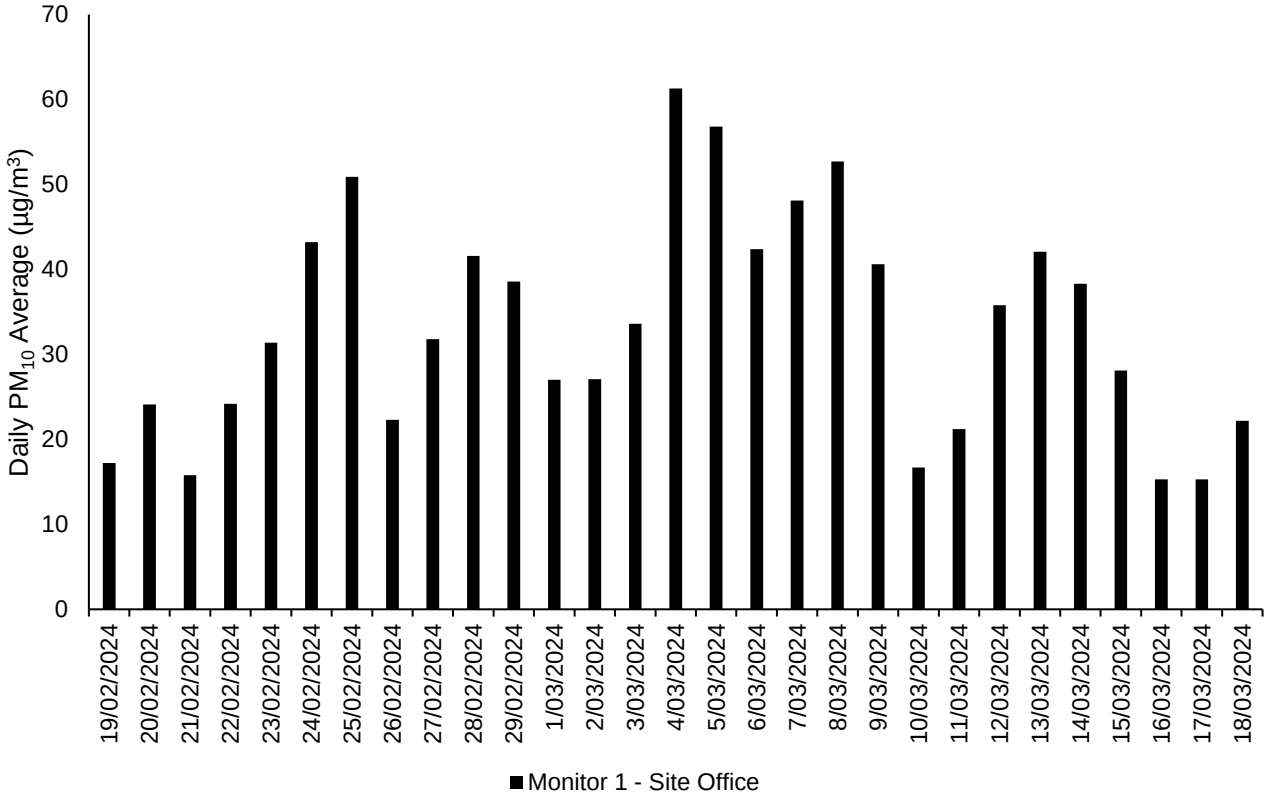

Figure 6: Monash PM_{10} daily averages

3.3.1. Analysis

The maximum daily average PM_{10} concentration was 61.3 µg/m^3 (n = 29) at the monitoring station at Site Office (Monitor 1).

The TARP was implemented on 15 days during the reporting period. This was a result of exposed soil present across most of the site from concrete removal works, as well as excavation works at the western portion of the site which resulted in the exposure of the underlying soils adjacent to the monitoring device. The proximity of works to the monitor resulted in an increase in peaks for this period.

As proactive mitigation measures, a water cart and handheld hose were continuously used during soil works. Additionally, soil binder was implemented across exposed soil on site to help with dust suppression for the site shutdown over the Labour Day long weekend from 9 March 2024 to 11 March 2024. When the TARP was triggered, an additional hose was utilised to help suppress dust until PM_{10} concentrations returned to normal levels. The water cart was present as both a proactive and reactive implementation in response to dust on site.

3.4. Clayton

Figure 7: Clayton air quality monitoring stations.

Table 7: Clayton PM_{10} results.

Monitor Number	Monitoring Location	Max Daily PM_{10} Concentration (µg/m^3)	Median Daily PM_{10} Concentration (µg/m^3)	Days TARP Implemented in the Month
-	Representative Background - Alphington	44.5	26.6	-
1	CL69 – SiteHive 1	53.5	28.2	6

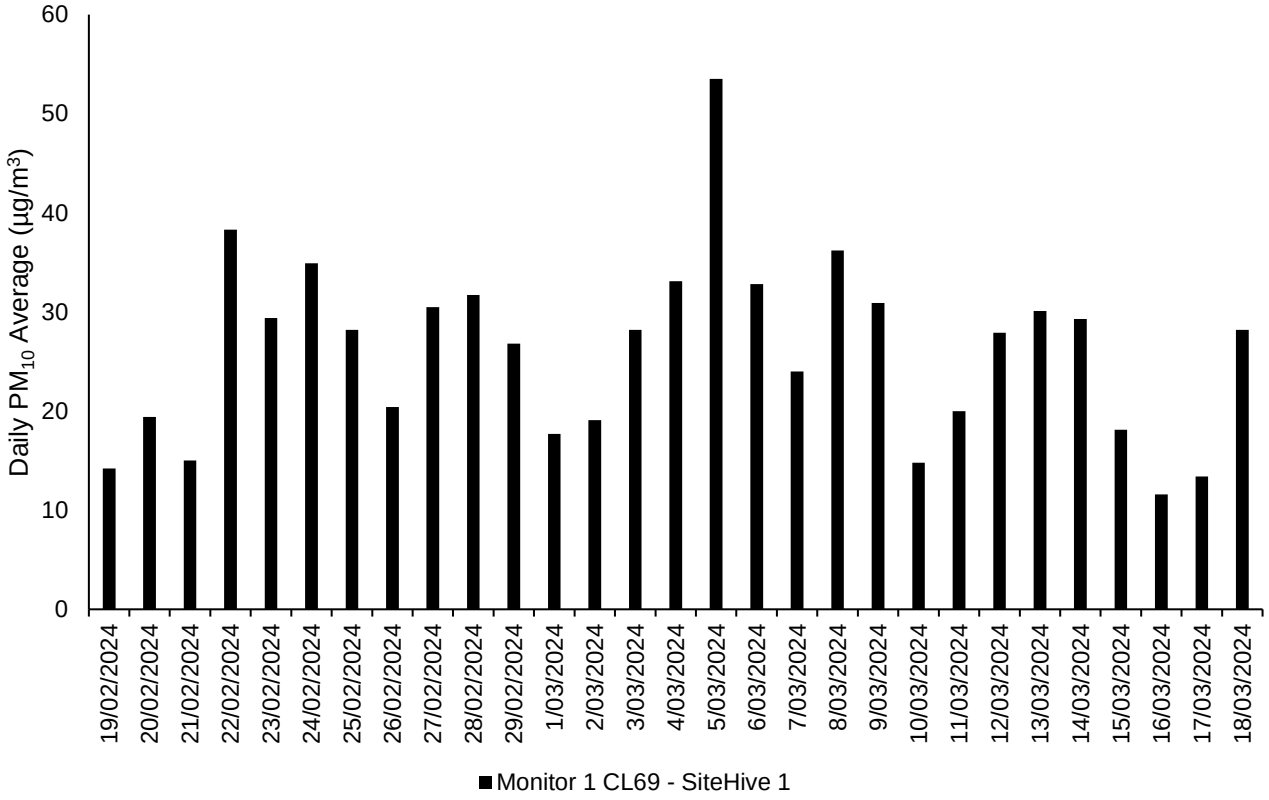

Figure 8: Clayton PM_{10} daily averages

3.4.1. Analysis

The maximum daily average PM_{10} concentration was 53.5 µg/m^3 (n = 29) at the monitoring station at CL69 SiteHive 1 (Monitor 1). The second highest PM_{10} concentration for the reporting period was 38.3 µg/m^3.These daily average PM_{10} concentration readings reflect that for the majority of the time the air quality is generally good, as represented in Figure 8.

The TARP was implemented on six of the days during this reporting period. The majority of implementations were due to high wind speeds and exposed soil from the demolition works along Clayton and Madeleine Roads. For the exposed soil, soil binder was implemented to help with dust suppression during site shutdown for the Labour Day long weekend from 9 March 2024 to 11 March 2024. The spikes in air quality during the reporting period were caused by the high wind levels and demolition progressing, increasing the total area of exposed soils on site. Proactive measures for dust impact mitigation, when weather permitted, included hosing down the work areas prior to works commencing for the day.

3.5. Heatherton

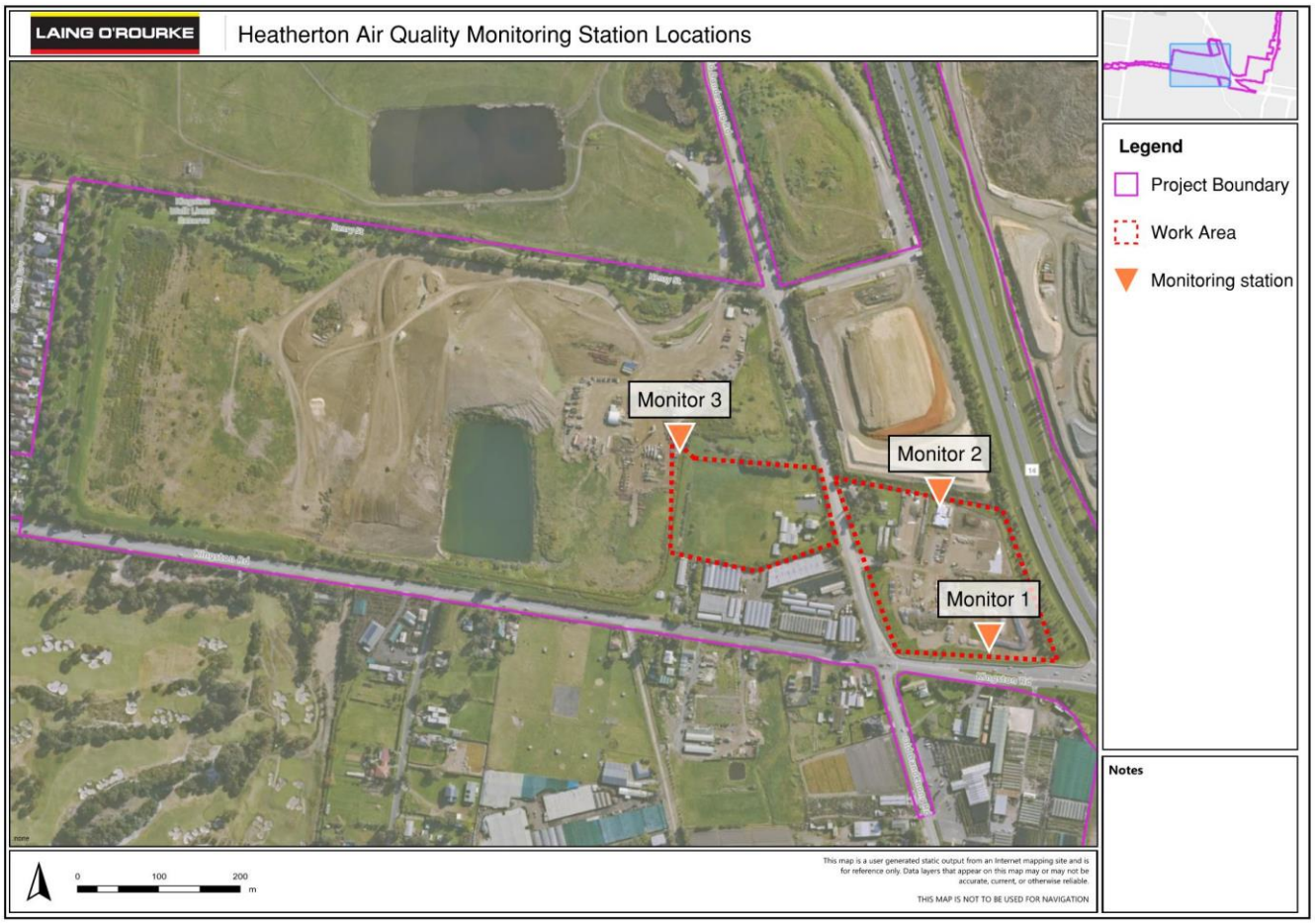

Figure 9: Heatherton air quality monitoring stations.

Table 8: Heatherton PM_{10} results.

Monitor Number	Monitoring Location	Max Daily PM_{10} Concentration (µg/m^3)	Median Daily PM_{10} Concentration (µg/m^3)	Days TARP Implemented in the Month
-	Representative Background - Dandenong	43.8	27.6	-
1	SSY - South	67.2	49.3	10
2	Site Office	53.2	33.9	
3	SS17	78.6	38.4	

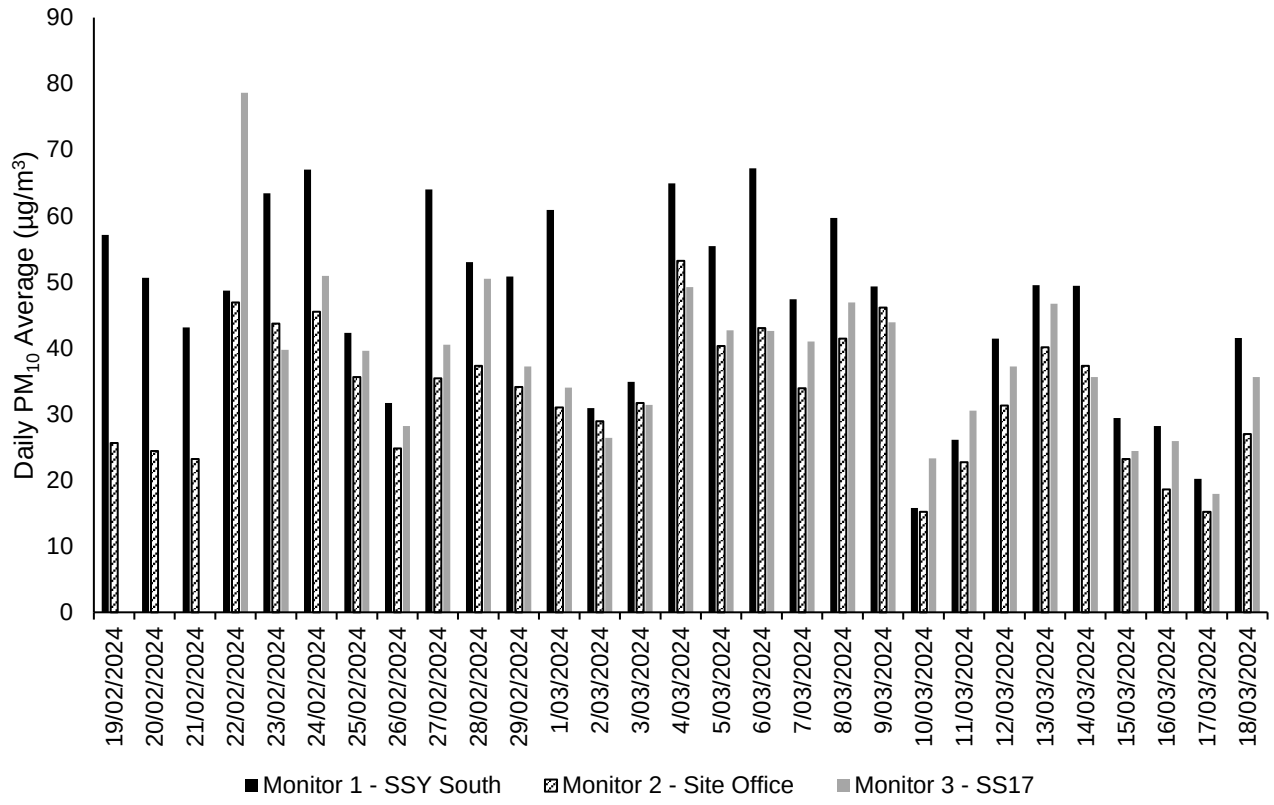

Figure 10: Heatherton PM_{10} daily averages

3.5.1. Analysis

Both Initial Works and Early Works are being undertaken concurrently at Heatherton. The close proximity of these works means there is a strong possibility Initial Works are contributory factors to air quality conditions at the site. 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 levels are within a safe and allowable range.

The maximum daily average PM_{10} concentrations were 67.2 µg/m^3 (n = 29), 53.2 µg/m^3 (n = 29) and 78.6 µg/m^3 (n = 29) at the monitoring stations at SSY South (Monitor 1), Site Office (Monitor 2) and SS17 (Monitor 3) respectively. The TARP was implemented on 10 days of the reporting period.

A high dust reading recorded by Monitor 3 on 22 February 2024 (78.6 µg/m^3) was caused by a technical issue when a new air quality monitoring device was installed at the site, and is not representative of air quality conditions at the site.

Throughout this reporting period there were a range of works being undertaken at the site, some of which are not subject to the reporting requirements of this document. These included earthworks associated with site establishment and the safe removal of contaminated materials. High wind speeds were experienced throughout the reporting period, contributing elevated PM_{10} readings to the data.

It is further noted that the Heatherton site is located in an industrialised area with several neighbouring properties undertaking earthworks with large areas of exposed soil. On days where there is a northerly wind direction, visible airborne dust generated off-site has been observed to be blown onto the Heatherton site, contributing to elevated onsite monitoring results. This suggests project works were not the sole source of airborne dust generation in the localised area over the reporting period.

Where dust was being generated by the activities associated with the site establishment works, Level 1 and 2 TARP were triggered and appropriate dust suppression controls were employed. Over the reporting period, the water cart was used proactively and reactively where dust had the potential to be/was being generated (excavations or exposed surfaces). Soil binding agent has been resprayed over exposed surfaces. The location of monitoring devices in proximity to work areas and receptors has also been assessed.

3.6. Meteorological Conditions

Table 9: Daily weather observations for Melbourne (Olympic Park), Victoria 19 February 2024 –18 March 2024. Data Source BOM.

Statistic	Min Temperature (°C)	Max Temperature (°C)	Maximum Wind Gust Direction	Maximum Wind Gust Speed (km/h)	Relative Humidity @ 9:00 AM (%)
Mean	16.4	27.4	N/A	N/A	64.2
Lowest	11.7	19.9	SE	24	35.0
Highest	22.8	37.6	N	57	84.0

Table 10: Daily rain data for Melbourne (Olympic Park), Victoria 19 February 2024 –18 March 2024. Data Source BOM.

Statistic	Rain (mm)
Daily Low	0.0
Daily High	3.8
Total	5.4

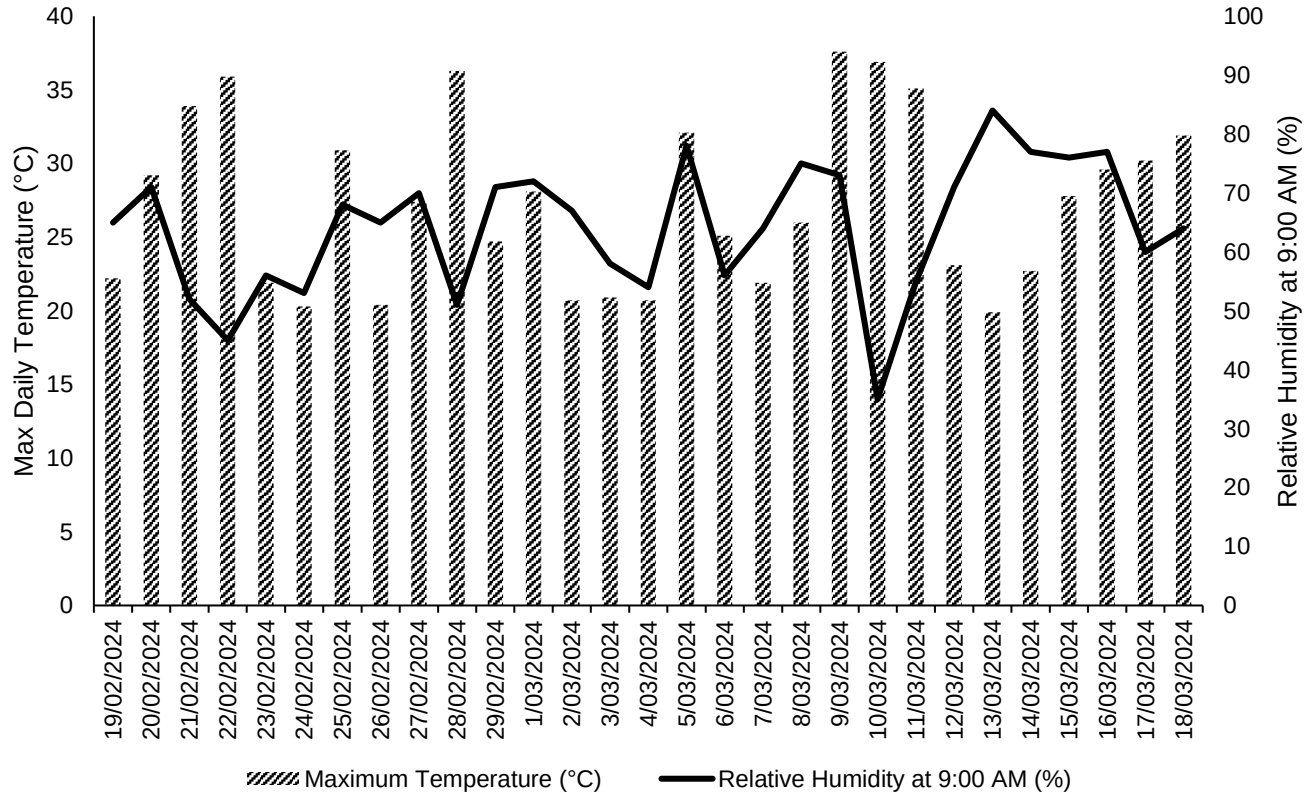

Figure 11: Daily relative humidity and temperature observations for Melbourne (Olympic Park), Victoria 19 February 2024 –18 March 2024. Data Source BOM.

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 19 February 2024 to 18 March 2024 are shown in Table 11.

Data capture statistics were 100% for all parameters at all stations for the reporting period, except for Burwood. The downtime on the Site 4 – East monitor on March 6 and 7 is attributable to the monitor being deactivated and moved to a safe location during demolition works at the monitoring location. Additionally, the monitor was stolen on 10 March 2024. A replacement unit is being procured.

Table 11: Air quality monitoring, data capture summary

Location	Parameter	Averaging Period	Collected Periods	Available Periods	Data Capture
Box Hill – Site Office	PM_{10}	24-hours	29	29	100%
Box Hill – East of Market Street	PM_{10}	24-hours	29	29	100%
Burwood – 16 McComas Grove	PM_{10}	24-hours	29	29	100%
Burwood – Corner of McComas Grove and Sinnott Street	PM_{10}	24-hours	29	29	100%
Burwood – Site 4 - West	PM_{10}	24-hours	29	29	100%
Burwood – Site 4 - East	PM_{10}	24-hours	17	28	61%
Glen Waverley - Cnr Myrtle St & Montclair Av	PM_{10}	24-hours	29	29	100%
Monash – Site Office	PM_{10}	24-hours	29	29	100%
Clayton - CL69 – SiteHive 1	PM_{10}	24-hours	29	29	100%
Heatherton – SSY – South	PM_{10}	24-hours	29	29	100%
Heatherton – SSY – Site Office	PM_{10}	24-hours	29	29	100%
Heatherton – SSY – SS17	PM_{10}	24-hours	26	26	100%

4.2. Data Validation

Data contained in this report has been validated against performance and calibration requirements for each instrument.

Table 12: 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 Street	HEX-000339	19 Apr 2023	19 Apr 2025
Burwood – 16 McComas Grove	HEX-000385	29 Aug 2023	29 Aug 2025
Burwood – Corner of McComas Grove and Sinnott Street	HEX-000308	03 Apr 2023	03 Apr 2025
Burwood – Site 4 - East	HEX-000487	12 Dec 2023	12 Dec 2025
Burwood – Site 4 - West	HEX-000489	06 Dec 2023	06 Dec 2025
Glen Waverley - Cnr Myrtle St & Montclair Av	HEX-000477	12 Dec 2023	12 Dec 2025
Monash – Site Office	HEX-000418	29 Aug 2023	29 Aug 2025
Clayton - CL69 – SiteHive 1	HEX-000139	22 Nov 2023	22 Nov 2025
Heatherton – SSY – South	HEX-000050	21 Apr 2023	21 Apr 2025
Heatherton – SSY – Site Office	HEX-000317	13 Dec 2023	13 Dec 2025
Heatherton – SSY – SS17	HEX-000350	12 Dec 2023	12 Dec 2025