

Cross River Rail Project

Monthly Environmental Report

December 2019



Executive Summary

This monthly report has been produced for Project Works undertaken on site for December 2019 for the Rail, Integration and Systems (RIS), and Tunnel, Stations and Development (TSD) packages. This monthly report addresses the obligations outlined in the Coordinator-General's change report – condition change (hours of works) 2019 (CGCR, October 2019) and the Project's Outline Environmental Management Plan.

The Construction Environmental Management Plans (CEMPs) prepared for the Relevant Project Works being delivered by both Unity Alliance (RIS Contractor) and CBGU JV (TSD Contractor) were endorsed by the Environmental Monitor on 23 August 2019 and submitted to the Coordinator General in accordance with Condition 4 (a) and 4 (b) respectively.

The following Project Works were completed in December 2019 –

Mayne Area -

- Continued Rail Enabling Works;
- Continued Geotechnical, Contaminated land and Acid Sulfate Soils (ASS) investigations; and
- Utilities / Underground services identification.

Northern Area -

- Continued Rail Enabling Works;
- Continued Geotechnical, Contaminated land and ASS investigations;
- Utilities / Underground services identification;
- Demolition of Queensland Rail (QR) Bogie Shed;
- Site establishment of the Main Site Office at Herston; and
- Preparation works for the construction of the main access into the Northern Corridor for the Pulse and Unity Consortia through Victoria Park.

Central Area -

- Site establishment and clearance, including vegetation removal, fencing and utility works;
- Continued geotechnical works and soil and contaminated land investigations;
- Internal soft strip and demolition of buildings (Albert Street and Roma Street);
- Piling preparation and piling across the sites; and
- Excavation in and around the tunnel shaft.

Southern Area -

- Geotechnical, Contaminated land and ASS investigations; and
- Utilities / Underground services identification along the corridor and within the project footprint.

Key applicable environmental elements

Noise – Attended noise monitoring was undertaken during geotechnical investigation works near Brisbane Girls Grammar School. Validation monitoring was completed with results being recorded within the performance goals. This monitoring confirmed the predictive modelling completed for relevant project works was accurate and correct. Noise monitoring was also undertaken at the Albert Street and Roma Street sites in December indicating compliance with the nominated noise goals.

Air Quality – Two dust deposition monitoring gauges were established in December 2019. One monitoring location was established in Victoria Park and the second in the RNA showgrounds. The first monthly results will be available in January monthly report. Air quality observations continued at the two existing Transurban Air Quality Monitoring Stations (external to the Project) near the northern corridor at East Victoria Park and Eastern Centenary Pool. The monitoring station at Victoria Park recorded

minor exceedances in the month of December 2019. DES air quality results recorded at monitoring stations located in the Brisbane CBD and South Brisbane, also reported minor exceedances during the nominated period. These results have been largely influenced by regional bush fire events which occurred during this period. Some air quality monitoring was undertaken by the TSD Contractor, which returned levels within the performance goals, noting the above-mentioned bushfire events.

Erosion and Sediment Control – an Erosion and Sediment Control Plan (ESCP) has been prepared for the Victoria Park Access Road works. This Plan has been endorsed by the Environmental Monitor prior to the works commencing. Additional individual ESCPs have also been prepared for the permanent sites (Boggo Road, Woolloongabba Station, Albert Street and Roma Street).

Compliance

There were none (0) Non-Compliance Events (NCE) reported during the month. All corrective and preventative actions associated with the November NCE Report (Noise at Lake Street, Yeronga Station) has now been closed out.

A compliance table against each condition is presented in **Section 3** of the report.

Complaints:

A total of eleven complaints were received in the month of December. None of these complaints resulted in a non-compliance event. Some complaints addressed two aspects, for example, one caller complained about noise and dust in the one call.

- Six complaints were received for Albert St activities relating to dust - none resulted in a non-compliance event; one also referred to noise impacts
- Three asbestos concerns / complaints relating to Albert St site activities and health concerns – none resulted in a non-compliance event; and
- Three other complaints relating to other activities at Albert Street (exposed wall of the Sebel building and faulty lighting on walkway)
- One compliant relating to night-time noise from utilities activities at Roma St.

The key planned Project Works for the coming months include:

Mayne Area –

- Continued Rail Enabling Works; and
- Continued environmental monitoring and site investigations to inform design.

Northern Area -

- Continued site establishment at Herston Avenue and RNA Showgrounds;
- Continued access road works at Victoria Park;
- Continued environmental monitoring and site investigations to inform design;
- Demolition of BTS Building and QR Storage Shed; and
- Cattle Bridge demolition at RNA Showgrounds.

Central Area -

- Roma Street - continued site establishment, site preparation and demolition work on going including shaft area preparation for commencement of shaft excavation in early 2020;
- Albert Street – continued site preparation, geotechnical work and building removal including piling preparation. Demolition of Lot 2 completed, and site preparation for piling pad and acoustic shed;
- Woolloongabba – site establishment and piling pad preparation with continued piling to prepare for shaft decline excavation from early 2020; and

- Boggo Road - site clearance activities, site office set up and piling preparations.

Southern Area -

- Continued environmental monitoring and site investigations to inform design.

Monthly Reporting

The Delivery Authority identified deficiencies in the October and November reports from CBGU JV. Most of this information is now included in the December 2019 report, in Appendix C.

The Environment Monitor endorsement letter is provided in **Appendix A**.

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1. Definitions

Table 1: Definitions

Acronym	Definition
ARI	Average Recurrence Interval - The average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.
CEMP(s)	The Project's Construction Environmental Management Plan
CG	Coordinator-General
CGCR	Coordinator-General's Change Report
CGER	Coordinator-General's Evaluation Report
Community Relations Monitor	The Community Relations Monitor engaged in accordance with Imposed Condition 8
Contractor	The Contractors appointed to design, construct and commission the Project
Coordinator-General	The corporation sole preserved, continued and constituted under section 8 of the SDPWO Act
CRR	Cross River Rail
EIS	Environmental Impact Statement
EMP	Environmental Management Plan (refers to the OEMP, CEMP, COEMP including any Project sub-plans)
Environmental Monitor	The Environmental Monitor engaged in accordance with Imposed Condition 7
ETCS	European Train Control Systems
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MRTS52	Transport and Main Roads Specifications MRTS52 Erosion and Sediment Control
NCE	Non-Compliance Event
OEMP	The Project's Outline Environmental Management Plan
Project	The Cross River Rail Project
Project Works	As defined in the Imposed Conditions
Proponent	The Cross River Rail Delivery Authority
QR	Queensland Rail
RfPC	Requests for Project Change
RIS	Rail Integration and Systems
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
Sub-plan	Any sub-plan to an EMP
The Authority	The Cross River Rail Delivery Authority
TSD	Tunnel, Stations and Development

2. Introduction

2.1 Background

The Cross River Rail Project (the Project) is a declared coordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The CRR EIS was evaluated by the Coordinator-General who recommended the Project proceed, subject to Imposed Conditions and recommendations. Since the evaluation of the EIS, five Requests for Project Change (RfPCs) have been evaluated by the Coordinator-General. The CRR Project, as currently evaluated by the Coordinator-General, including the RfPCs, is referred to as the Evaluated Project.

The Coordinator-General has imposed conditions on the Project that apply throughout the design, construction and commissioning phases. These are referred to as the Imposed Conditions. In addition, the Coordinator-General has approved the Project's Outline Environmental Management Plan (OEMP) which outlines the environmental management framework for the Project. The OEMP includes Environmental Outcomes and Performance Criteria which must be achieved for the Project.

Imposed Conditions 5 and 6 nominate the compliance and reporting requirements for the Project. This monthly report addresses these requirements.

2.2 Project Delivery

The Delivery Authority is responsible for planning and delivering the Project.

The two main delivery packages which require reporting under the Coordinator General's imposed conditions are:

- **Tunnel, Stations and Development (TSD)** being delivered by CBGU JV; and
- **Rail, Integration and Systems (RIS)** being delivered by Unity Alliance.

The Delivery Authority has appointed separate Contractors to deliver TSD and RIS packages. CBGU JV is delivering TSD package while RIS package is being delivered by the Unity Alliance.

The Project is geographically divided into four areas as identified in **Figures 1 and 2** –

- Mayne Area
- Northern Area
- Central Area
- Southern Area

During initial Project Delivery phase, the Project has established environmental management plans and secured some of the secondary environmental approvals in addition to enabling works.

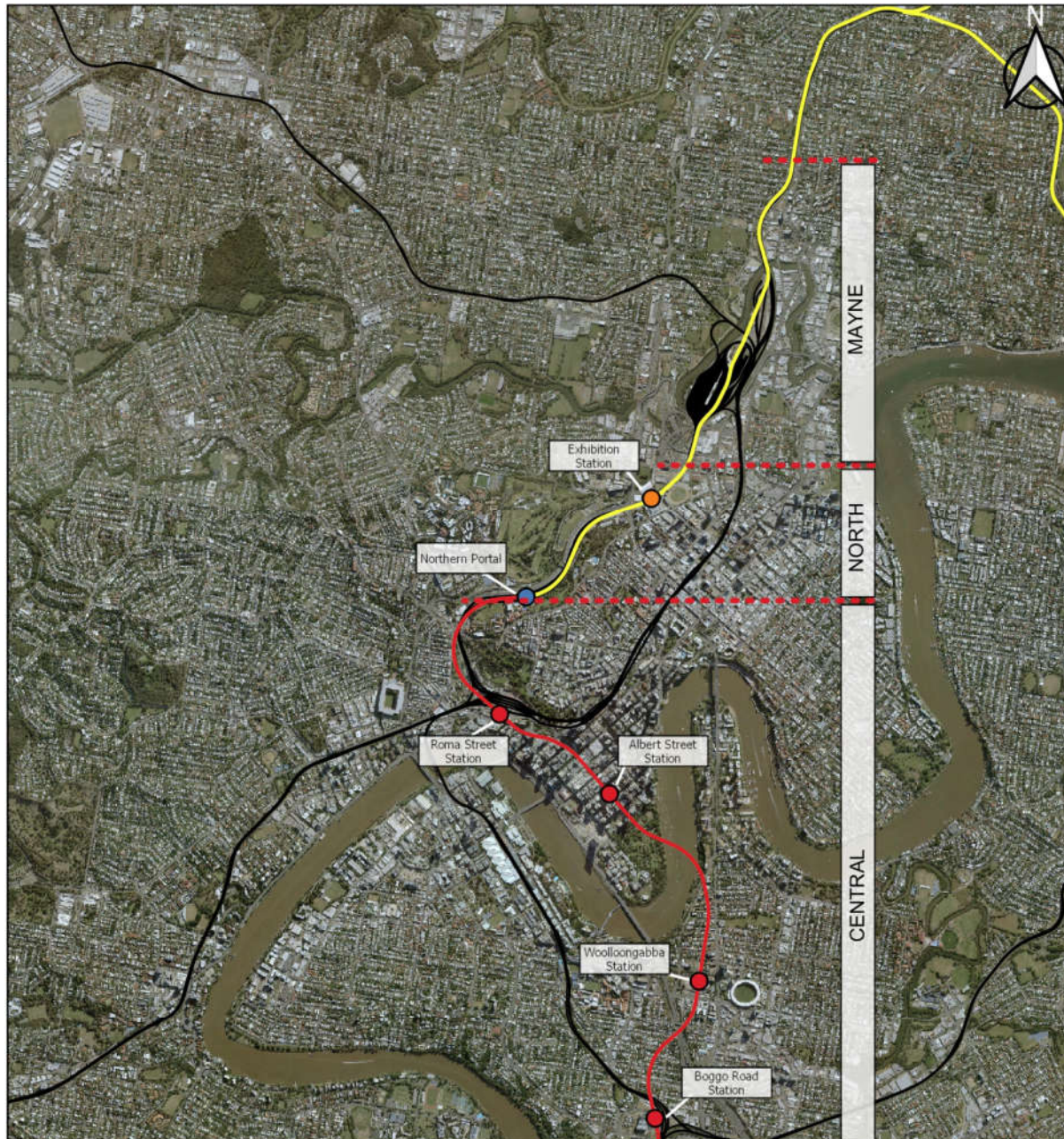








Figure 1 : Project Geographical Areas - North

Legend

- | | | |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  Above Ground Alignment |  Above Ground Station |  Tunnel Portal |
|  Tunnel Alignment |  Underground Station |  Existing Railway Network |

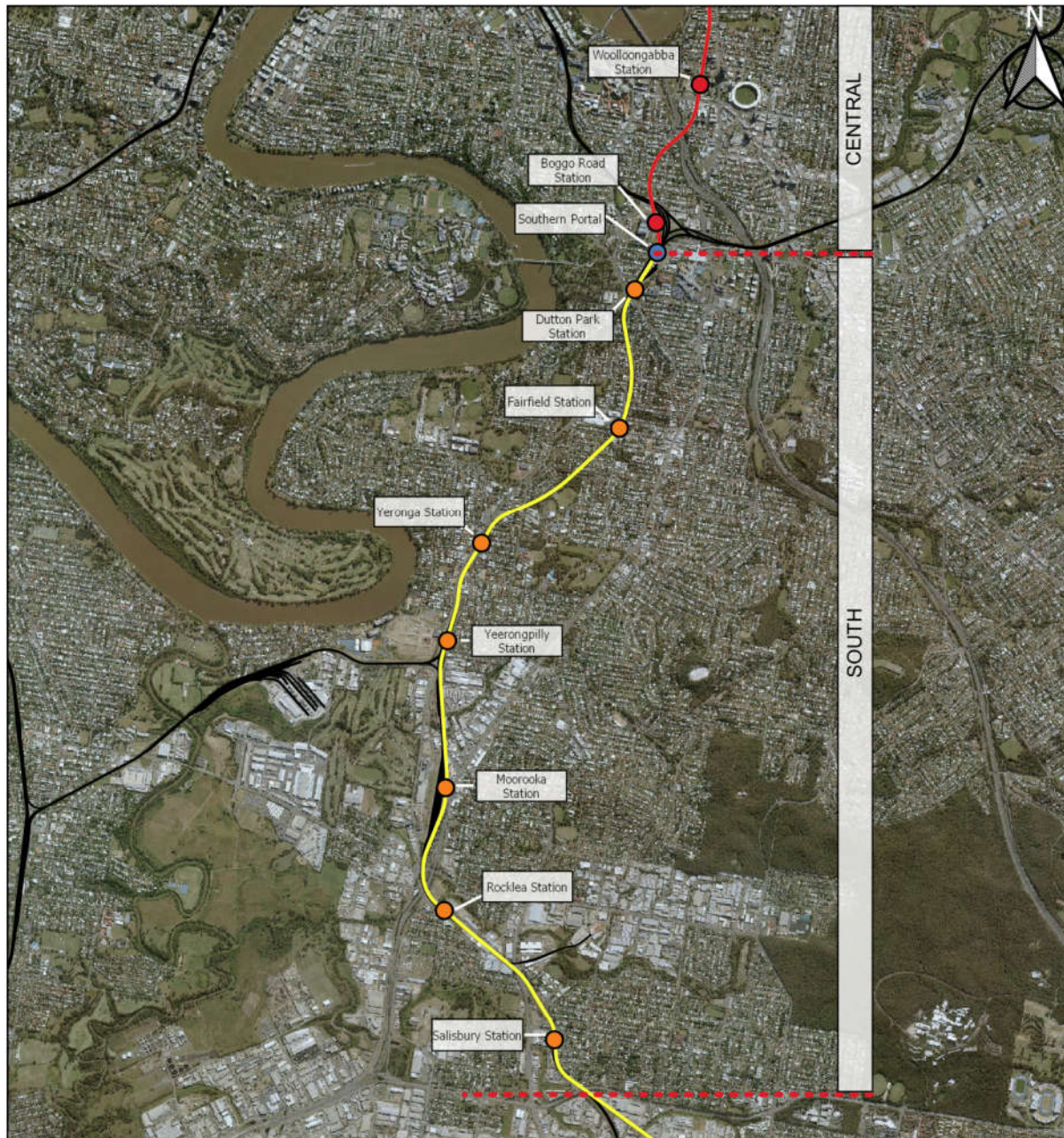








Figure 2: Project Geographical Areas - South

Legend

- | | | |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  Above Ground Alignment |  Above Ground Station |  Tunnel Portal |
|  Tunnel Alignment |  Underground Station |  Existing Railway Network |

2.3 Reporting Framework

This report has been prepared to comply with Conditions 6 and 7 of the Coordinator-General Change Report (CGCR) and include:

- Monitoring data and associated interpretation of the results required by the imposed conditions or Construction Environmental Management Plan (CEMP);
- Details of any Non-Compliance Event (NCE), including incidents, corrective actions and preventative actions; and
- Details of any complaints, including description, responses and corrective actions.

Reporting on environmental elements will be captured in these monthly environmental reports and the annual environmental reports, which will be endorsed by the Environmental Monitor.

3. Compliance with Imposed Conditions

This Monthly Report has been reviewed and endorsed by Environmental Monitor as per Condition 7 of the Coordinator-General Change Report (CGCR) (**Appendix A**).

Compliance against Imposed Conditions are provided in **Table 2** below and detail is provided in **Appendices B and C**.

Table 2: Compliance Status – CG Imposed Conditions

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	General conditions – compliance with the Project Changes relevant to the Contractor's scope	Yes	Ongoing
2.	Outline Environmental Management Plan – timely submittal to the Coordinator General including required sub plans	Yes	No further amendments to the OEMP proposed
3.	Design - achievement of the Environmental Design Requirements	NA	
4.	Construction Environmental Management Plan – all relating to Relevant Project Works	Yes	RIS – CEMP endorsed for Enabling and Advanced Works TSD – CEMP Rev 0 endorsed for Site Establishment, Demolition, Investigation Works and Piling. Revision 3 submitted to the CG on 14 Jan 2020 and will be effective from 11 February 2020.
5.	Compliance and Incident management - Non-compliance events, notifications and reporting	NA	
6.	Reporting – Monthly and Annual reporting	Yes	Missing data from Oct and Nov are provided within
7.	Environmental Monitor - engaged and functions resumed	Yes	Ongoing
8.	Community Relations Monitor - engaged and functions resumed	Yes	Ongoing
9.	Community engagement plan - developed and endorsed by Environmental Monitor	Yes	CEMPs endorsed with Community Engagement Plan
10.	Hours of work – works undertaken during approved hours	Yes	All works were undertaken during approved 'Hours of work'
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being	Yes	Refer to Appendix B
	Vibration - Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	RIS - No monitoring required for the works as identified in the vibration assessment TSD – No vibration monitoring undertaken, just noise
12.	Property damage relating to ground movement	Yes	No specific management plan required due to low risk construction works
13.	Air quality - Works must aim to achieve air quality goals for human health and nuisance.	Yes	Refer to Appendix B

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
14.	Traffic and transport - Works must minimise adverse impacts on road safety and traffic flow.	Yes	TSD - Traffic Management Plan covered in CEMP
15.	Water quality - Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	RIS – No monitoring required for the works based on water quality risk assessment TSD, one discharge event occurred in December.
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown	NA	
17.	Surface water - Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	NA	
18.	Erosion and sediment control - Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	TSD - CEMP covers Erosion and Sedimentation Control Plan and individual site plans have been prepared. RIS – Erosion and Sediment Control Plan for Victoria Park access road was endorsed by Environmental Monitor.
19.	Acid sulfate soils managed as per the <i>Queensland Acid Sulfate Soil Technical Manual</i> .	Yes	TSD - CEMP covers Acid Sulfate Soils Management Plan RIS – Not applicable for Relevant Project Works
20.	Landscape and open space – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria park	Yes	RIS – Victoria Park Access Road works have been designed to minimise impacts on local vegetation. Minor clearing works were undertaken in December.
21.	Worksite rehabilitation – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	NA	

Total Non-Compliance Events Reports:

The total number of Non-Compliance Events reported which affected imposed conditions in December was zero (0).

Appendix A – Environmental Monitor Endorsement Letter

Appendix B – RIS Monthly Report

Monthly CGCR Report – December 2019

**Cross River Rail – Rail, Integration and Systems
Alliance**

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1 Progress Summary

1.1 Summary of Works

The following *Project Works* continued in December 2019

- Enabling works within the Northern Corridor (College Road to Bowen Bridge Road)
- Geotechnical, Contaminated land and Acid Sulphate Soils along the corridor length
- Utilities / Underground services identification along the corridor and within the project footprint.

The following *Project Works* started in December 2019

- Site establishment of the Main Site Office at Herston.
- Preparation works for the construction of the main access into the Northern Corridor for the Pulse and Unity Consortia through Victoria Park.

1.2 Progress Photos



Plate 1: View from time lapse camera installed on the top of the QIMR Berghofer Medical Research Institute building 300 Herston Road, Herston

2 Non-Compliance Events

The below section summarises the events to be reported in accordance with condition 5 and condition 6(b)(ii) of the CGCR.

A Non-Compliance Event is defined as Project Works that do not comply with the Imposed Conditions.

2.1 Non- Compliance Events Summary

Table 1: Summary of Non-Compliance Events

Event Title	Location, Date and time of event	Date the Event was Formally Notified to CG/IEM	Conditions Affected	Date the Event Report Formally Sent to CG/IEM	Status of Event
None for this reporting period					

3 Complaints

The below section summarises the complaints to be reported in accordance with condition 6(b)(iii) of the CGCR.

Table 2: Summary of Complaints

Date	Location	Issue	CGCR Non-Compliance	Status
None for this reporting period				

4 Environmental Monitoring Results

The below section summarises the monitoring results to be reported in accordance condition 6(b)(i) of the CGCR.

4.1 Acoustics

Condition 11(b) of the CGCR requires that during construction, monitoring and reporting on noise and vibration in accordance with the Noise and Vibration Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

Attended Noise monitoring was undertaken on 10 December 2019 during geotechnical investigation near Brisbane Girls Grammar School.

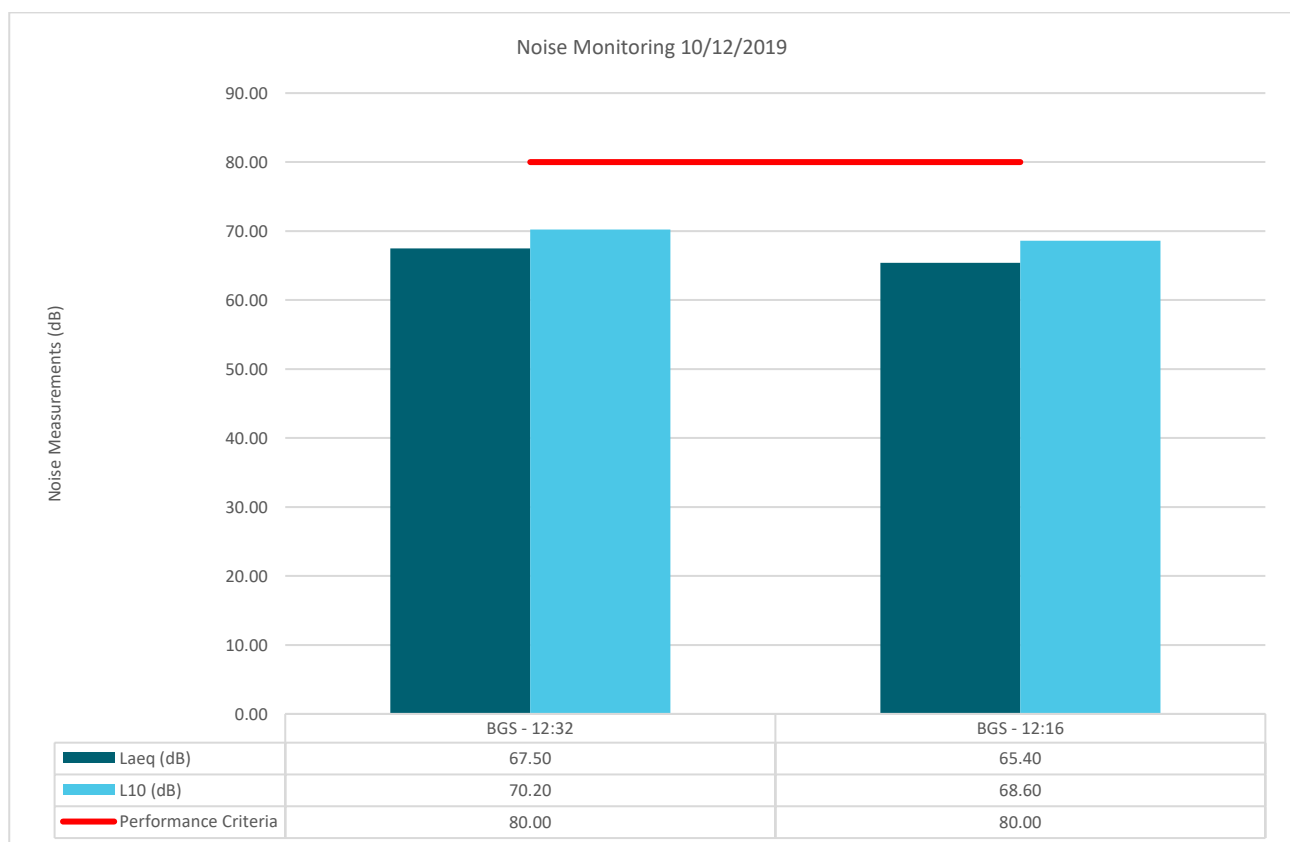
The attended noise monitoring consisted of monitoring construction Noise monitoring near Sensitive Places during times when relevant Project Works were occurring.

Noise monitoring because of complaints was not triggered. No noise complaints occurred during the works.

Vibration monitoring was not undertaken. Neither the predictive model nor complaints triggered the need to undertake vibration monitoring.

Vibration monitoring was not undertaken. No complaints triggered the need to undertake vibration monitoring.

4.1.1 Noise monitoring Results



4.1.2 Interpretation

Attended Noise Monitoring validated the predictive model that the Performance Criteria would not be exceeded by the Relevant Project Works.

4.1.3 Vibration Monitoring Results

Nil for this reporting period as Vibration monitoring has not been triggered

4.1.4 Interpretation

Nil for this reporting period

4.2 Air Quality

Condition 13(b) of the CGCR requires that during construction, monitoring and reporting on air quality in accordance with the Air Quality Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

Visual Monitoring was undertaken during routine environmental inspections. A Total of six (6) inspections were undertaken. No issues were identified that required corrective actions to be raised.

4.2.1 Dust results

Unity Alliance established one (1) passive dust deposition gauge in Victoria Park and one (1) passive dust deposition gauge in the RNA showgrounds in mid-December 2019, despite the ongoing predicted low impact nature of the Relevant Project Works.

Since passive dust deposition gauges are analysed on a monthly basis, results are not available at the time this report is being written.

Visual Monitoring was also undertaken as part of the weekly inspections.

Water carts were on site, no signs of dust leaving the project boundaries were recorded.

4.2.2 Interpretation

Standard dust mitigation measures (water cart) were effective at managing air quality.

4.2.3 Particulates results

Unity Alliance has not yet established particulates monitoring stations due to the predicted low impact nature of the Relevant Project Works.

Transurban Queensland operates the Legacy Way tunnel in accordance with conditions established by the Queensland Co-ordinator General.

Transurban has engaged third parties to establish External Ambient Air Quality Monitoring Stations along their footprint. Two of the monitoring stations are located near the Northern Corridor Area, within 1km from where the works occurred.

They are

- East Victoria Park (E1) which is located approximately 300m due north from the northern corridor, and
- Eastern Centenary Pool (E2) which is located approximately 150m due east from the northern corridor.

External Ambient Air Quality data is collected for Carbon monoxide (CO), Nitrogen dioxide (NO₂), Particulate matter less than 10 µm (PM₁₀), and Particulate matter less than 2.5 µm (PM_{2.5}).

PM₁₀ is one of the indicator for with the Coordinator General has imposed a goal of 50 µg/m³ (over an averaging period of 24 hours) the project must aim to achieve under Condition 13(a) of the CGCR.

The same goal has been imposed on the Cross River Rail Project.

At the time this report is being written, validated air quality data for the month of December for the Legacy Way tunnel is not available.

The below graph has been prepared using available online data from the Legacy Way website. The data used on this webpage is collected by third parties using equipment which is not controlled by Transurban Queensland and as such may be subject to faults or errors by third parties, external weather or environmental events, or server access issues. (<https://brisbanenetwork.linkt.com.au/sustainability/legacy-way-air-quality-information/?type=external&date=2019-12-21#graphs>).

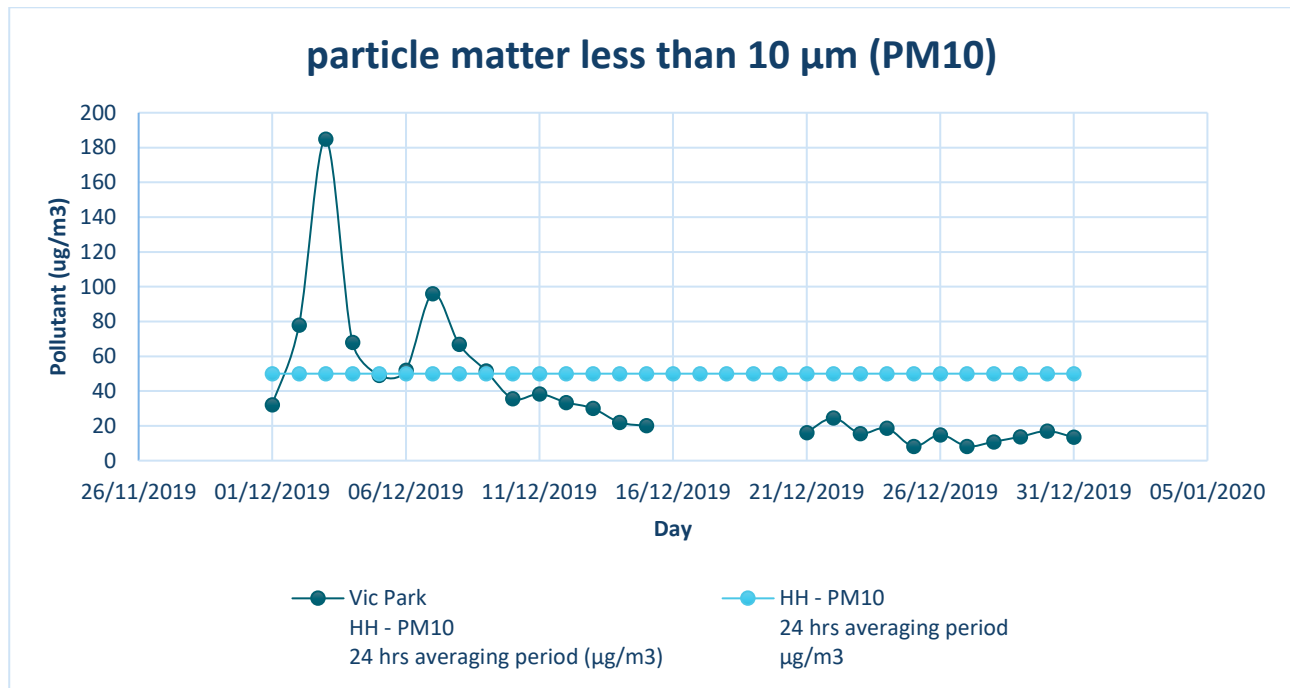


Figure 1: Transurban QLD Legacy Way (Spring Hill) - PM10 graph for December 2019 (reproduction from the online data accessed 16 December 2019 and 20 January 2020)

4.2.4 Interpretation

The following exceedances were recorded for the month of December for PM₁₀ near the northern corridor.

Parameter	Location	Time Period	Value of Exceedance	Date of Exceedance
PM10 (µg/m³)	Spring Hill (Victoria Park)	24 hours	78	02/12/2019
			185	03/12/2019
			68	04/12/2019
			52	06/12/2019
			96	07/12/2019
			67	08/12/2019
			52	09/12/2019

Unity also reviewed the DES air quality results for PM10 from other stations in Brisbane for the reporting period. The results were as follows:

- Brisbane CBD: PM₁₀ daily Maximum average: **130.4 µg/m³** with seven (7) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/12/2019&timeframe=month>)
- South Brisbane (Woolloongabba): PM₁₀ daily Maximum average: **195.3 µg/m³** with eight (8) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/12/2019&timeframe=month>)

The graphical representation of the DES air quality data is presented in the below charts.

Particle PM₁₀ at Brisbane CBD, 1–31 December 2019 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

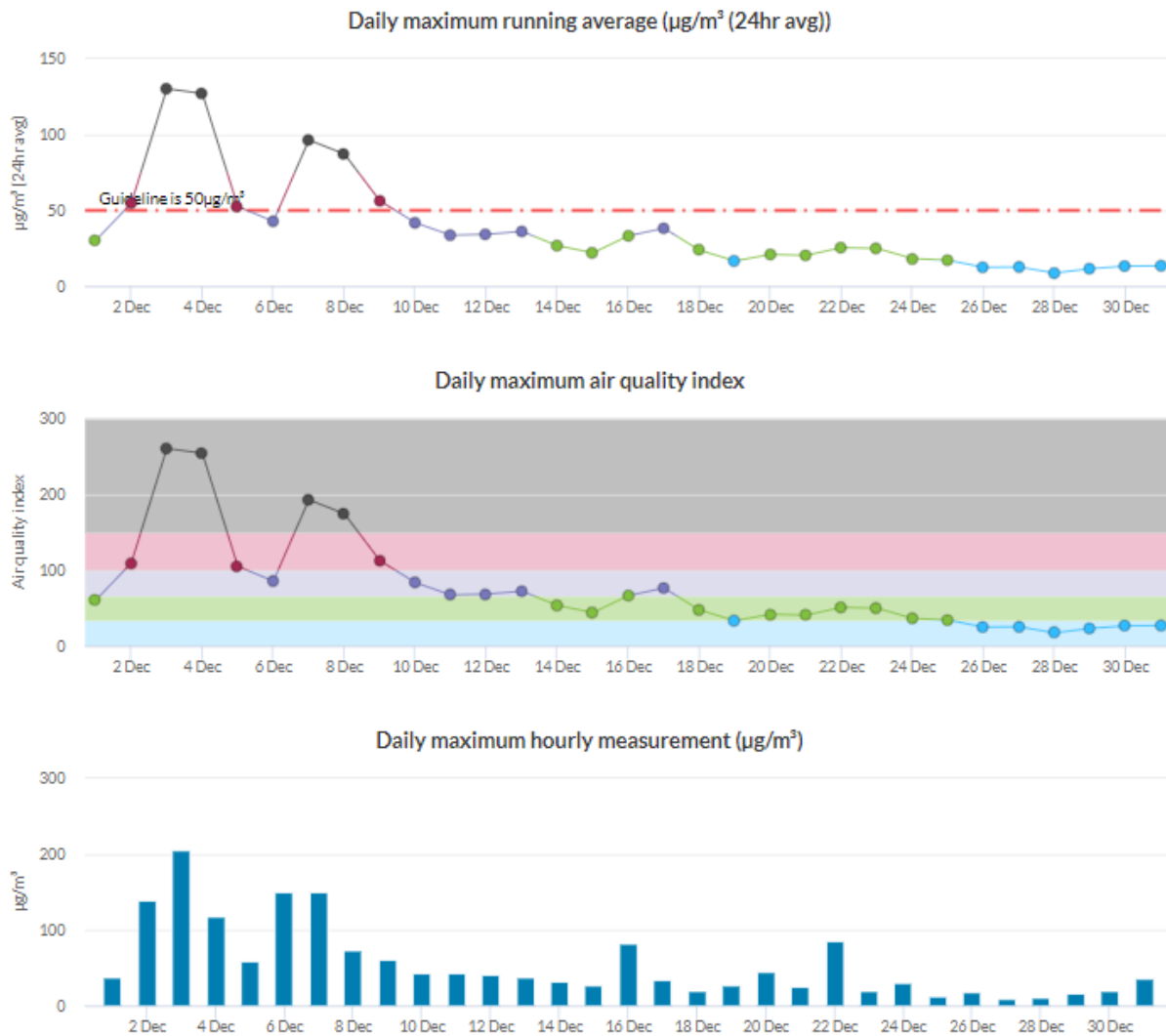


Figure 2: Brisbane CBD – DES Station - PM₁₀ graph for December 2019 (reproduction from the DES website accessed 20 January 2020)

Particle PM₁₀ at Woolloongabba, 1–31 December 2019 [about Particle PM₁₀](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

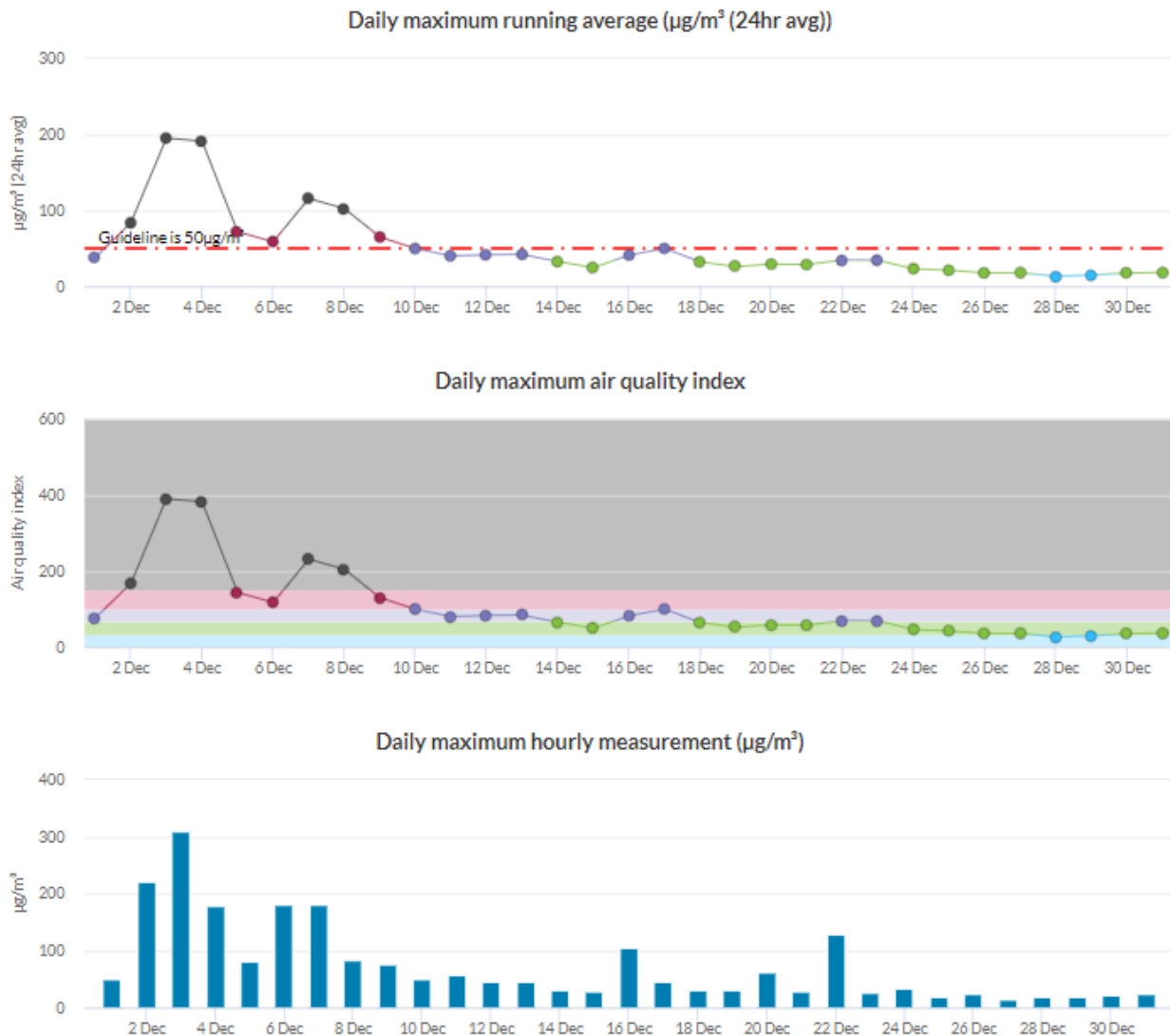


Figure 3: South Brisbane – DES Station - PM₁₀ graph for December 2019 (reproduction from the DES website accessed 20 January 2020)

The consistency of the PM₁₀ goal exceedances (order of magnitude, day, duration) at stations located away from the direct zone of influence from the works confirms that the exceedances of the PM₁₀ air quality goal over a 24hours averaging period is not relating to Unity's works.

Brisbane had experienced elevated particulate concentration during December due to regional scale events, namely bush fires which may have had a significant impact on reported particulate concentrations.

Ambient air quality measurements may be influenced by external events outside of Unity's control (e.g. road traffic, dust storms, fires).

4.3 Water Quality – Surface Water

Condition 15(a) requires that discharges of surface water and groundwater from Project Works must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no.143 – mid0-estuary) in the Environment Protection (Water) Policy 2009.

Condition 15(b) of the CGCR requires that during construction, monitoring and reporting on water quality in accordance with the Water Quality Management Plan, a sub-plan of the Construction Environmental Management Plan occurs.

Water Quality monitoring to demonstrate compliance with Condition 15(a) was not triggered. There were no discharges either active (e.g. dewatering through pumping, sediment basin release) or passive (through temporary or permanent stormwater drainage) from site.

4.3.1 Discharge Monitoring

Nil for this reporting period

4.3.2 Interpretation

Nil for this reporting period

5 Good News Stories

No Non-Compliance event occurred during the reporting period.

Attachment 1 CGCR Non-Compliance Event Report (if required)

None for this reporting period.

Appendix C – TSD Monthly Report (Extracts from Progress Report)

7.5 Environment – Project Approvals

- Site activities proceeded during December 2019 in accordance with CEMP (Rev 0). CEMP (Rev 0) covers upcoming works in January 2020, including Roma Street Shaft and Woolloongabba Station Box excavation.
- On 19 December 2019, a workshop was held involving with CBGU, Pulse Partnerships, Independent Environmental Monitor (IEM) & CRRDA to close comments relating to CEMP (Rev 3). At this workshop all comments and non-compliances were discussed and resolved. CEMP (Rev 3) was then submitted to the IEM for endorsement on 20 Dec 2019, and CBGU considers the CEMP was suitable for endorsement on the 20 December 2019. Correspondence has been issued to CRRDA to confirm the CEMP (Rev 3) will be effective for use once endorsed, in accordance with Project Approval Condition 4 (g).
- Regulatory approvals are progressing according to the below schedule.

Table 38 Approvals & Permits Schedule

Approval / Permit / Licence	Regulatory Authority	Responsibility / Timeframe	Items approved	Scheduled Approval
Completed (Last Month)				
Nil				
Upcoming				
Heritage Exemption Certificate #3	DES	Environment and Sustainability Manager 36 BD	Working on a Queensland heritage place (General tunnelling beneath heritage places)	20 Mar 2020 (To be prepared)
Soil Disposal Permits (for ongoing works)	DES	Environment and Sustainability Manager 15 BD	Removal of contaminated material from site	TBC – Contamination determined by soil analysis (EMR sites)
Waste Levy Exemption	DES	Environment and Sustainability Manager 20 BD	Removal of contaminated material from site	TBC – reliant on soil analysis (above). No exemption required for clean material.

7.7 Environmental Management

- Site activities were conducted throughout December 2019 in accordance with the Construction Environmental Management Plan (CEMP) Rev 0.
- Environment monitoring and inspections were completed as required by the CEMP throughout the monitoring period.
- CBGU experienced nil incidents or non-compliances throughout the reporting period. A response was provided to the Independent Environmental Monitor (IEM) on 20 December 2019 in reply to a Potential Non-Compliance Event (NCE) relating to the installation of Dust Deposition Gauges (DDGs). CBGU maintains the view that this was not a NCE for the reasons outlined in CBGU formal response, commence.
- Heritage and Contamination Investigations occurred within project precinct areas, and Cross River Rail Delivery Authority (CRRDA) were appropriately notified of two unexpected finds (below):
 - A small stone artefact unexpectedly discovered during heritage investigation at Albert St Lot 2 on 17 Dec 2019; and
 - Contamination sampling at Albert St Lot 2 uncovered previously unknown concentrations of contaminants of potential concern (CoPC) above the Health-based Investigation Levels for Residential A (HILA).
- Inductions, toolbox talks and prestart presentations were conducted as works progress.
- Environmental controls were maintained and further installed prior to the Christmas Shutdown Period.

Complaints Summary

Complaints received are summarised below – noting that overall, none of the complaints identified any non-compliance with project obligations:

Date	Issue	Stakeholder	Summary of Feedback	Response Within
2/12/19	Dust	Anonymous via Brisbane City Council	Concern about dust from demolition works at the Albert Street site. Response provided to BCC outlining the dust mitigation measures in place.	Within 1 hour
2/12/19	Dust	Anonymous via Brisbane City Council	Concern about dust from demolition works at the Albert Street site. Response provided to BCC outlining the dust mitigation measures in place.	Within 1 hour
2/12/19	Dust	Turquoise Kebab	Concern about dust from demolition works at the Albert Street site. Response provided to stakeholder outlining the dust mitigation measures in place. Team worked with site supervisor to modify methods and increase dust suppression. Stakeholder subsequently acknowledged it was very windy and could see that changes had been made.	Immediate
5/12/19	Construction impacts	Absentee owner, Festival Towers	Stakeholder owns multiple units at Festival Towers and is concerned about construction impacts, particularly air quality (dust and asbestos) and noise. Response provided to stakeholder outlining the mitigation measures being used to manage and reduce construction impacts for nearby residents. <i>Note: Stakeholder lives interstate and has raised concerns following recent media reports.</i>	Immediate
6/12/19	Asbestos management	Resident, Oaks Apartments	Concern following recent media reports about the management of asbestos at the Albert Street site. Response provided outlining the control measures used during the removal of asbestos containing materials. Air quality monitoring is ongoing at the site and there has been no non-compliances.	Immediate
7/12/19	Dust and asbestos management	Absentee owner, Festival Towers	Concern about dust and associated health impacts from demolition work at the Albert Street site. Response provided to stakeholder outlining the measures in place to mitigate dust and safely remove asbestos containing materials.	Within 1 hour

Date	Issue	Stakeholder	Summary of Feedback	Response Within
7/12/19	Dust and asbestos management	Resident, Mantra Midtown	Concern about dust from demolition works at the Albert Street site. Response provided to stakeholder outlining the measures in place to mitigate dust and safely remove asbestos containing materials.	Next business day
10/12/19	Noise from night works	Anonymous – Roma Street	Community member approached supervisor onsite regarding noise from utility location works on Roma Street. Supervisor referred them to the community hotline number. No call received. As the community member was believed to be a guest of Abbey Apartments, follow-up and update provided to hotel management the next day.	Not applicable
12/12/19	Water from storm event	Flight Centre – Albert Street	Water ingress on the side of the building adjoining the Albert Street site during the storm overnight. Project representatives inspected the impacted area of the property the same day. Project team also working with property owner regarding issue (see below).	Within 1 hour
13/12/19	Building impacts	The Sebel – Albert Street	Concerns relating to the wall of their building post-demolition activities not being protected from weather events. Project has advised that the treatment of the side of the building is the responsibility of the property owner however we will assist with access to wall through site as construction allows.	
29/12/19	Lighting in pedestrian gantry	Anonymous	Feedback received that lights were faulty in the Albert Street pedestrian gantry. Site Supervisor contacted and arrangements made for an electrician to attend site. Fault rectified the same day.	Same Day

October, November & December 2019 Monthly Report Summary

Monitoring Summary

October 2019

Noise monitoring was conducted on 11 occasions during October 2019. Each noise monitoring event confirmed project requirements were adhered to. Ambient air quality monitoring was conducted at the Roma Street precinct site during October 2019. Air quality monitoring confirmed project requirements were adhered to. No vibration or water quality monitoring was necessary during the period.

November 2019

Noise Monitoring was conducted on 23 occasions during November 2019. Ambient air quality monitoring was also performed during November 2019. Vibration monitoring was conducted on 4 occasions. Each monitoring event (noise, air, and vibration) confirmed project requirements were adhered to. No water quality monitoring was necessary during the period.

December 2019

Noise Monitoring was conducted on 6 occasions during December 2019. Ambient air quality monitoring was also performed during December 2019. Vibration monitoring was conducted on 1 occasion. Water quality monitoring was conducted on 1 occasion during December 2019. Each monitoring event (noise, air, and vibration) confirmed project requirements were adhered to.

Environmental Monitoring Results

Monitoring data is provided below in accordance condition 6(b)(i) of the Coordinator General Change Report.

Vibration

No vibration monitoring was necessary during October 2019, vibration monitoring was conducted on 4 occasions in November 2019 and vibration monitoring was conducted once during December 2019. Vibration monitoring is detailed in the table below.

Table 1: Vibration Monitoring Data

Date	Time	Location	Activity	Average Vibration levels	Max Vibration Level	Adhered to Project Requirements (Yes / No)
October						
Nil monitoring required						
November						
11/11/2019 to 13/11/2019	NA	Albert Street	Demolition	0.2 mm/s	0.71 mm/s	Yes
21/11/2019 to 22/11/2019	NA	Albert Street	Demolition	0.1mm/s	0.71 mm/s	Yes
22/11/2019	13:20	Woolloongabba	Site Establishment	0.1 mm/s	0.18 mm/s	Yes
29/11/2019 to 04/12/2019	NA	Boggo Rd Site	Site Establishment	0.1 mm/s	0.72 mm/s	Yes
December						
01/12/2019 to 04/12/2019	NA	Albert Street	Demolition	0.1 mm/s	0.74 mm/s	Yes

Noise

Attended Noise monitoring was undertaken 11 times through out October 2019, 23 times through out November 2019, 6 times through out December 2019. Noise monitoring data is provided in the table below.

Table 2: Noise Monitoring Data

Date	Time	Location	Activity	Noise level LA10 ^[1]	Noise level LAeq ^[2]	Adhered to Project Requirements (Yes / No)
October						
10/10/2019	12:17	Cnr Albert & Mary	Site Establishment	91.1	87.8	Yes
10/10/2019	12:38	Albert St	Site Establishment	91.7	84.4	Yes
14/10/2019	8:59	Roma Street - Adj Parkland Blvd	Site Establishment	71.5	69.0	Yes
16/10/2019	8:30	Albert St	Site Establishment	75.0	72.8	Yes
18/10/2019	8:26	Albert St	Site Establishment	95.9	92.6	Yes
18/10/2019	8:53	Albert St	Site Establishment	95.7	91.2	Yes
18/10/2019	9:23	Albert Street	Site Establishment	88.4	83.9	Yes
21/10/2019	8:23	Roma Street - Adj Parkland Blvd	Site Establishment	69.8	67.6	Yes
21/10/2019	9:46	Roma Street - Adj Parkland Blvd	Site Establishment	69.9	67.8	Yes
21/10/2019	10:32	Roma Street - Adj Parkland Blvd	Site Establishment	77.1	79.9	Yes
23/10/2019	12:37	Roma Street - Adj Parkland Blvd	Site Establishment	70.6	68.3	Yes
November						
5/11/2019	14:29	Rawnsley Street	Site Establishment	52.2	50.8	Yes

7/11/2019	8:16	Mary Street	Demolition	65.8	76.5	Yes
7/11/2019	8:40	Mary Street	Demolition	67.7	66.4	Yes
8/11/2019	9:00	Joe Baker Street	Site Establishment	86.7	81.9	Yes
11/11/2019	9:45	Joe Baker Street	Site Establishment	81.7	79.6	Yes
11/11/2019	10:15	Joe Baker Street	Site Establishment	85.2	81.7	Yes
11/11/2019	12:15	Joe Baker Street	Site Establishment	67.8	63.2	Yes
12/11/2019	12:09	Esk Lane	Demolition	80.9	76.9	Yes
12/11/2019	12:47	Esk Lane	Demolition	82.7	79.4	Yes
12/11/2019	14:08	Roma Street - Adj Parkland Blvd	Site Establishment / Demolition	76.6	73.6	Yes
13/11/2019	8:05	Peter Doherty Street	Site Establishment	69.3	66.4	Yes
14/11/2019	14:19	Cnr Albert & Mary Street	Demolition	74.0	70.8	Yes
14/11/2019	15:29	Roma Street - Adj Parkland Blvd	Site Establishment / Demolition	84.7	81.4	Yes
19/11/2019	9:15	Roma Street - Adj Parkland Blvd	Site Establishment	79.6	76.5	Yes
19/11/2019	9:34	George Street	Site Establishment	72.6	69.5	Yes
19/11/2019	10:16	George St	Demolition	79.8	75.8	Yes
22/11/2019	10:05	Peter Doherty Street	Site Establishment	72.2	72.5	Yes
22/11/2019	8:40	Vulture Street	Site Establishment	72.5	67.2	Yes
22/11/2019	9:00	Vulture Street	Site Establishment	72.3	68.3	Yes
22/11/2019	9:55	Mary Street.	Demolition	71.4	70.3	Yes

25/11/2019	15:50	Roma Street - Adj Parkland Blvd	Demolition	78.2	75.2	Yes
27/11/2019	14:58	Albert Street	Demolition	86.3	81.8	Yes
27/11/2019	15:20	Albert Street	Demolition	73.5	71.2	Yes
December						
2/12/2019	8:44	Albert Street	Demolition	75.5	73.2	Yes
2/12/2019	9:04	Albert Street	Demolition	76.3	73.6	Yes
2/12/2019	9:28	Albert Street	Demolition	77.1	77.1	Yes
7/12/2019	1:39	Roma Street	Demolition	69.6	66.4	Yes
7/12/2019	2:08	Roma Street	Demolition	74.3	71.5	Yes
7/12/2019	2:53	Roma Street	Demolition	73.9	71.9	Yes

- [1] Intermittent noise goal (LA10)

- [2] Continuous noise goal (LAeq)

Air

October

Visual Monitoring was undertaken during routine environmental inspections. No issues were identified that required corrective actions to be raised. Air quality monitoring was also completed at the commencement of site establishment at Roma Street. Monitoring data is provided in the table below.

Table 3: October Air Quality Monitoring Data

Location	Project Wide Air Quality Criteria & Goals ^[3]			Monitoring results	Comments
	Criterion	Air Quality Indicator	Level		
Roma St Precinct/ Northern Portal	Nuisance	Deposited dust	120 mg/m ² /day	93.24 mg/m ² /day	Air quality monitoring was performed during the reporting period. All construction related monitoring adhered to project requirements.
Albert St Precinct				NA	Air quality monitoring not yet necessary
Woolloongabba Precinct				NA	Air quality monitoring not yet necessary
Boggo Rd Precinct/ Southern Portal				NA	Air quality monitoring not yet necessary

[3] Project works must aim to achieve construction air quality goals. The *Coordinator-General Change Report – Whole of Project Refinements 2019* acknowledges instances exist that these goals may not be achieved.

CBGU JV also reviewed the DES air quality results for PM₁₀ from other stations in Brisbane for the reporting period. The results were as follows:

- Brisbane CBD: PM₁₀ daily Maximum average: **47.9 µg/m³** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/10/2019&timeframe=month>)
- South Brisbane: PM₁₀ daily Maximum average: **54.6** with one (1) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/10/2019&timeframe=month>)

- Woolloongabba: PM₁₀ daily Maximum average: **60.6 µg/m³** with two (2) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/12/2019&timeframe=month>)

The graphical representation of the DES air quality data is presented in the below charts (refer to Figure 1-3).

The consistency of the PM₁₀ goal exceedances (order of magnitude, day, duration) at stations located away from the direct zone of influence from the works confirms that the exceedances of the PM₁₀ air quality goal over a 24hours averaging period is not relating to CBGU JV's works.

Brisbane had experienced elevated particulate concentration during October 2019 due to regional scale events, namely bush fires which likely had a significant impact on reported particulate concentrations.

Ambient air quality measurements can be influenced by external events outside of CBGU JV's control (e.g. road traffic, dust storms, fires).

Particle PM₁₀ at Brisbane CBD, 1–31 October 2019 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

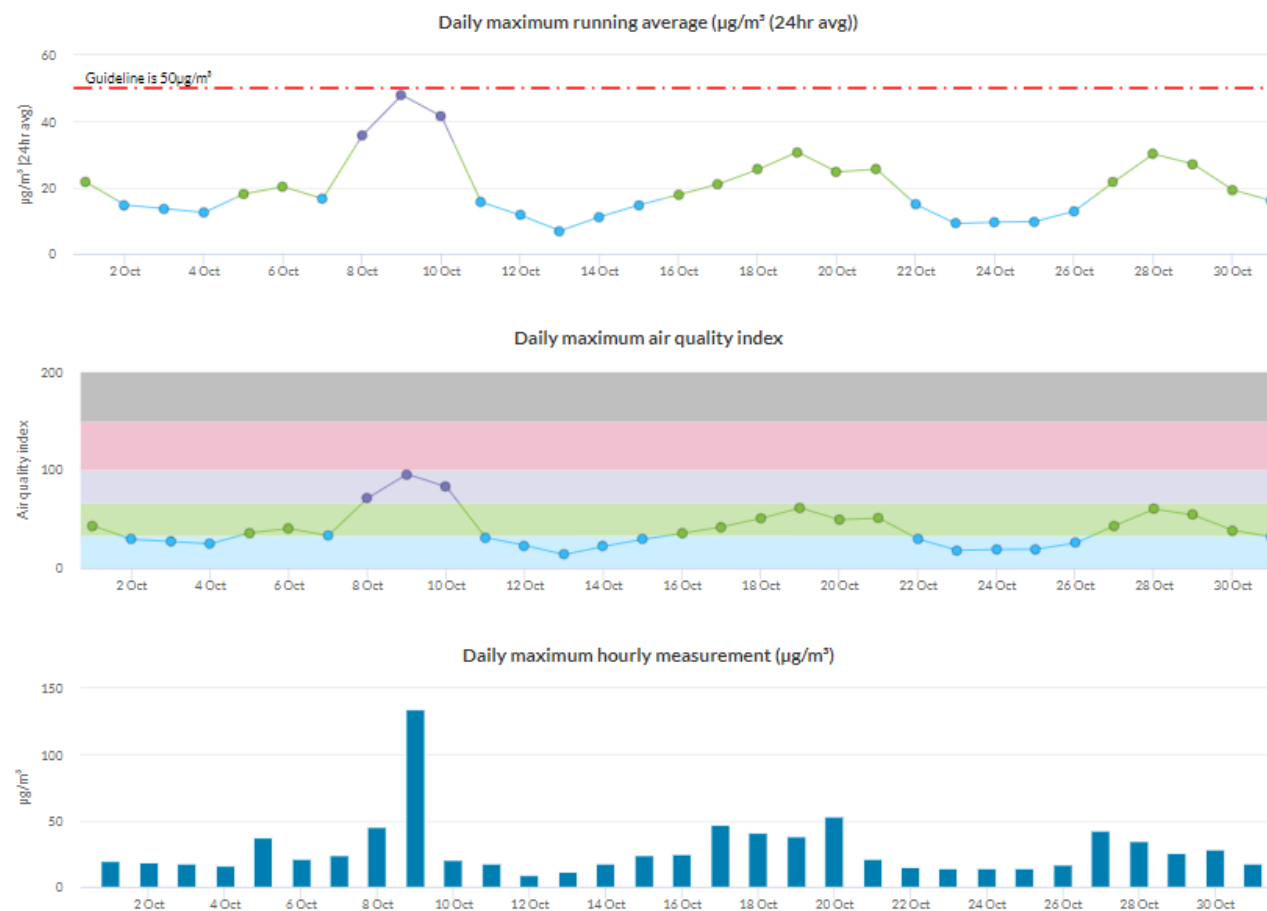


Figure 1: Brisbane CBD – DES Station - PM₁₀ graph for October 2019 (reproduction from the DES website accessed January 2020)

Particle PM₁₀ at South Brisbane, 1–31 October 2019 [about Particle PM₁₀](#)

[South Brisbane station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

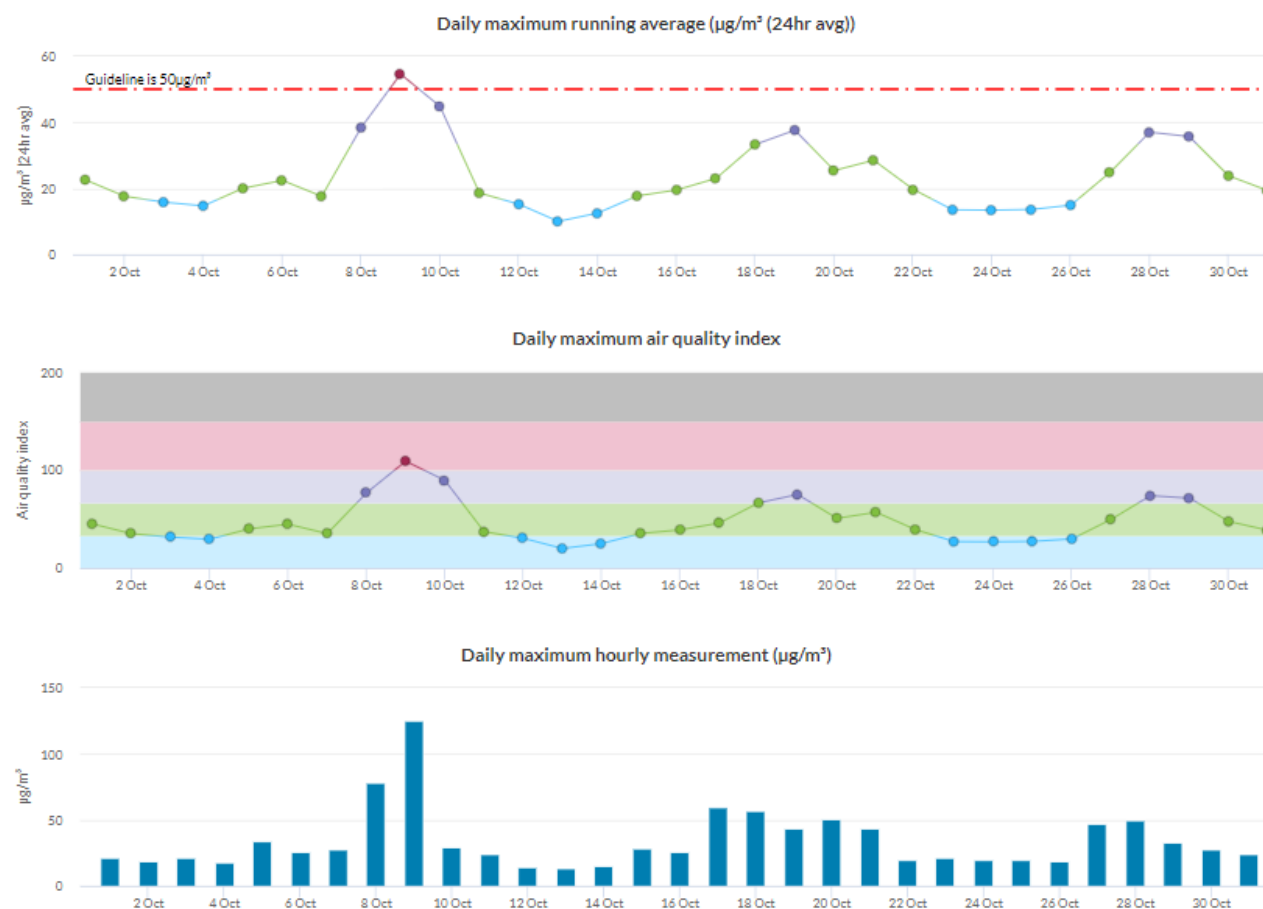


Figure 2: South Brisbane – DES Station - PM₁₀ graph for October 2019 (reproduction from the DES website accessed January 2020)

Particle PM₁₀ at Woolloongabba, 1–31 October 2019 [about Particle PM₁₀](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 50 µg/m³ (24hr avg).

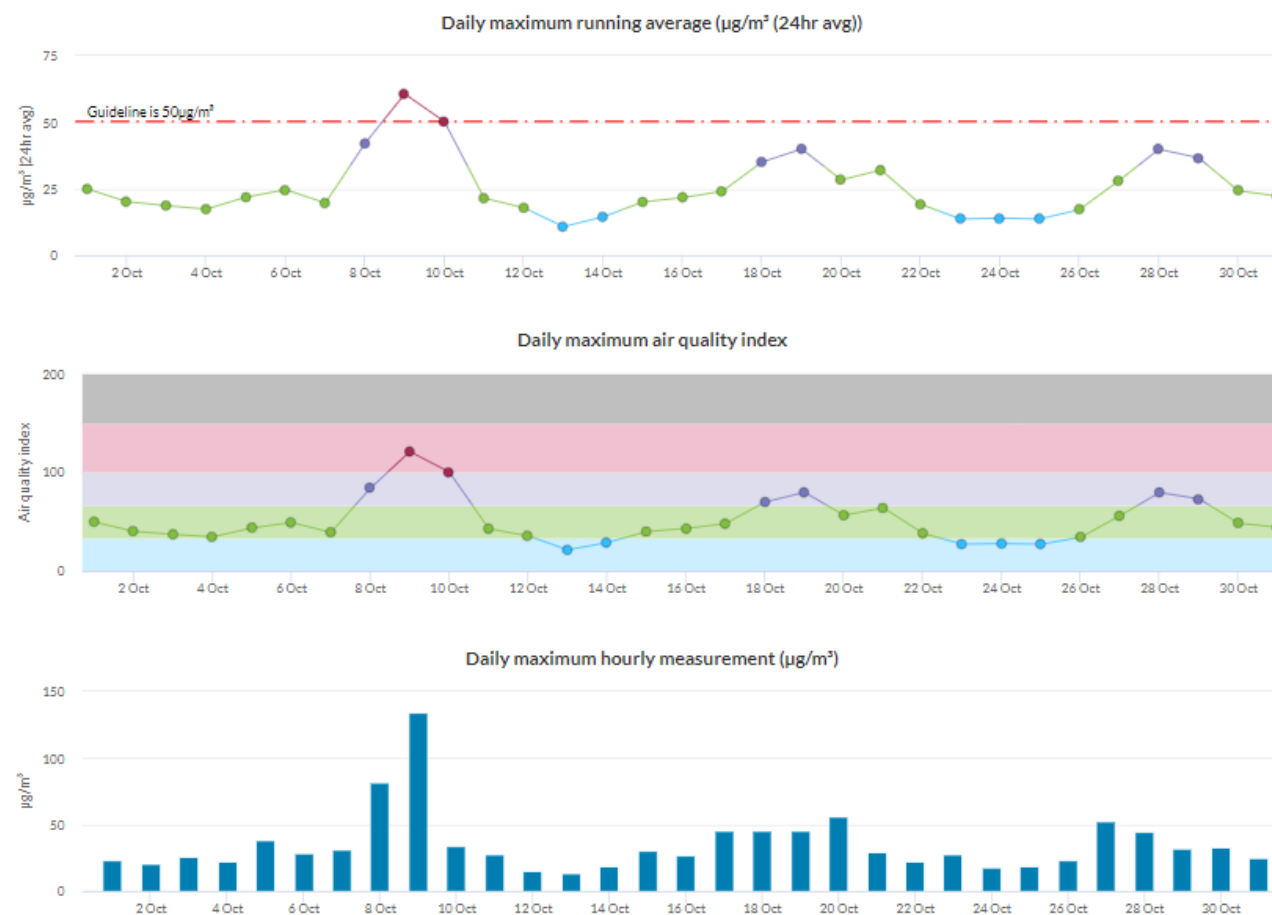


Figure 3: Woolloongabba – DES Station - PM₁₀ graph for October 2019 (reproduction from the DES website accessed January 2020)

November

Visual Monitoring was undertaken during routine environmental inspections. No issues were identified that required corrective actions to be raised. Monitoring data is provided in the table below.

Table 4: November Air Quality Monitoring Data

Location	Project Wide Air Quality Criteria & Goals ^[3]			Monitoring results	Data Summary
	Criterion	Air Quality Indicator	Level		
Roma St Precinct/ Northern Portal	Nuisance	Deposited dust	120 mg/m ² /day	93.33mg/m ² /day	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring adhered to project requirements.</i>
Albert St Precinct				NA	<i>Air quality monitoring not yet necessary</i>
Woolloongabba Precinct				NA	<i>Air quality monitoring not yet necessary</i>
Boggo Rd Precinct/ Southern Portal				NA	<i>Air quality monitoring not yet necessary</i>

[3] Project works must aim to achieve construction air quality goals. The *Coordinator-General Change Report – Whole of Project Refinements 2019* acknowledges instances exist that these goals may not be achieved.

CBGU JV also reviewed the DES air quality results for PM₁₀ from other stations in Brisbane for the reporting period. The results were as follows:

- Brisbane CBD: PM₁₀ daily Maximum average: **127.3 µg/m³** with twelve (12) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/10/2019&timeframe=month>)
- South Brisbane: PM₁₀ daily Maximum average: **152.7 µg/m³** with twelve (12) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/10/2019&timeframe=month>)
- Woolloongabba: PM₁₀ daily Maximum average: **172.1 µg/m³** with twelve (12) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/12/2019&timeframe=month>)


The graphical representation of the DES air quality data is presented in the below charts (refer to Figure 1-3).


The consistency of the PM₁₀ goal exceedances (order of magnitude, day, duration) at stations located away from the direct zone of influence from the works confirms that the exceedances of the PM₁₀ air quality goal over a 24hours averaging period is not relating to CBGU JV's works.

Brisbane had experienced elevated particulate concentration during November 2019 due to regional scale events, namely bush fires which likely had a significant impact on reported particulate concentrations.

Ambient air quality measurements can be influenced by external events outside of CBGU JV's control (e.g. road traffic, dust storms, fires).

Particle PM₁₀ at Brisbane CBD, 1–30 November 2019 [about Particle PM₁₀](#)

 Brisbane CBD station overview

 The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

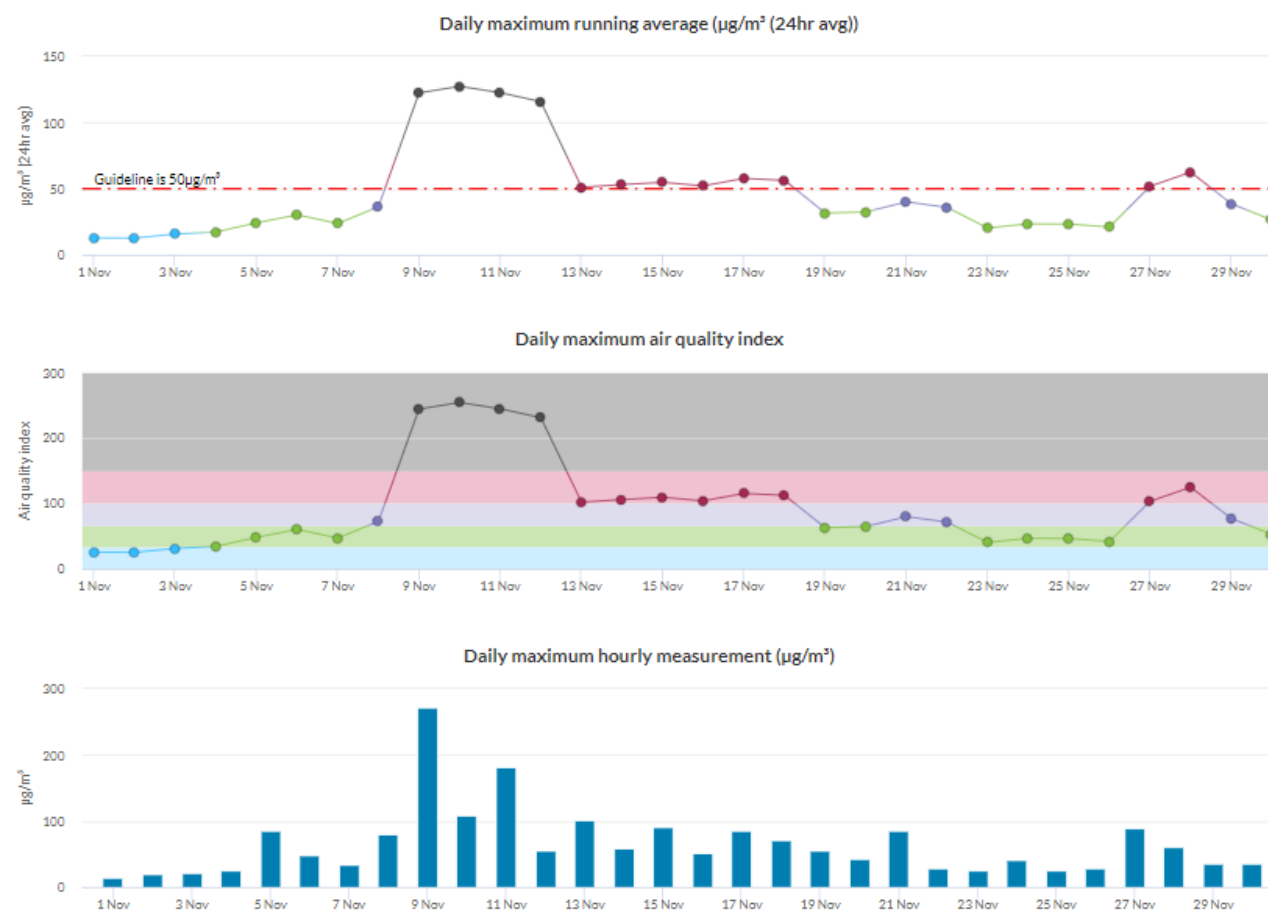
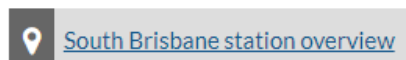


Figure 4: Brisbane CBD – DES Station - PM₁₀ graph for November 2019 (reproduction from the DES website accessed January 2020)

Particle PM10 at South Brisbane, 1–30 November 2019 [about Particle PM10](#)



The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

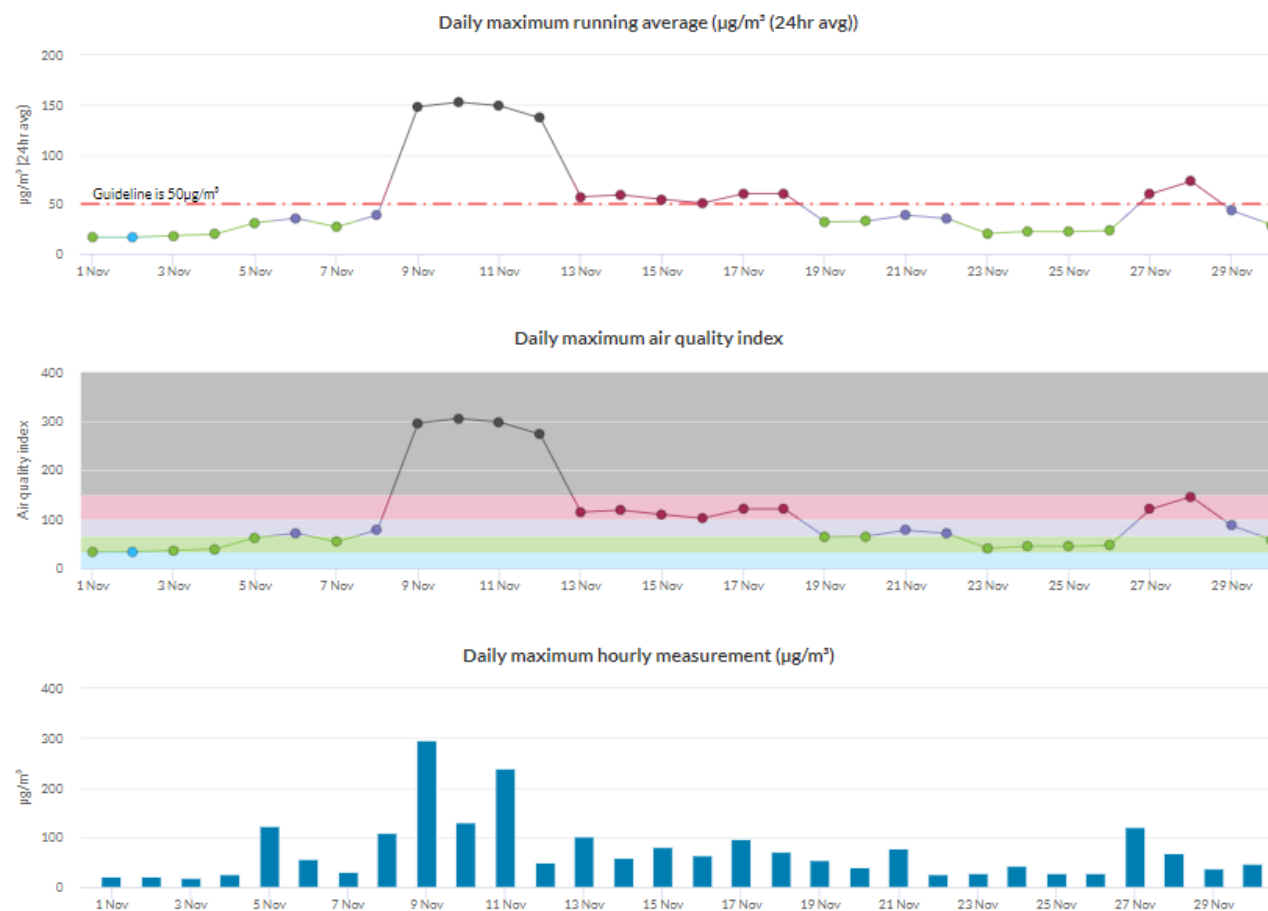


Figure 5: South Brisbane – DES Station - PM10 graph for November 2019 (reproduction from the DES website accessed January 2020)

Particle PM₁₀ at Woolloongabba, 1–30 November 2019 [about Particle PM₁₀](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

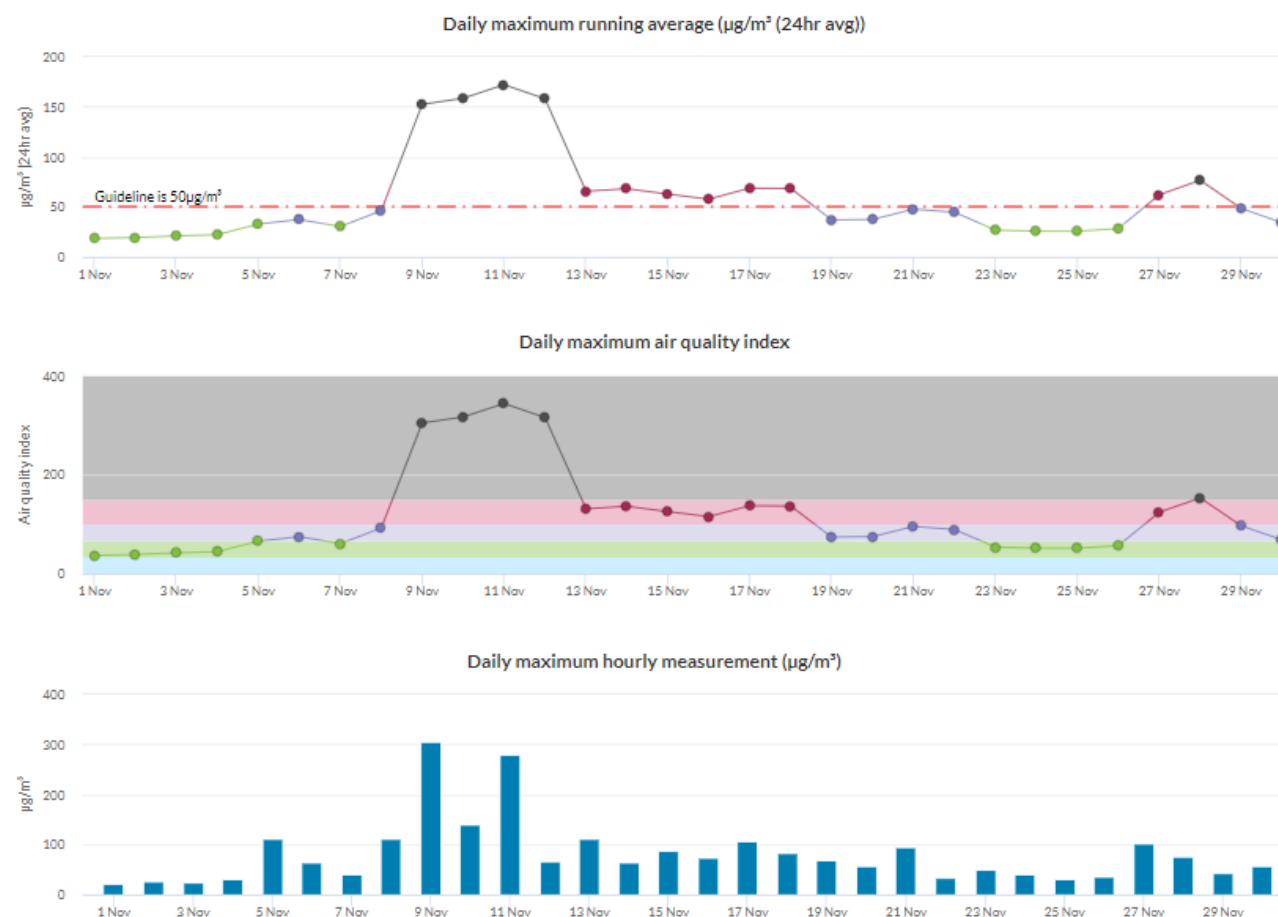


Figure 6: Woolloongabba – DES Station - PM₁₀ graph for November 2019 (reproduction from the DES website accessed January 2020)

December

Visual Monitoring was undertaken during routine environmental inspections. No issues were identified that required corrective actions to be raised. Monitoring data is provided in the table below.

Table 5: December Air Quality Monitoring Data

Location	Project Wide Air Quality Criteria & Goals ^[3]			Monitoring results	Data Summary
	Criterion	Air Quality Indicator	Level		
Roma St Precinct/ Northern Portal	Nuisance	Deposited dust	120 mg/m ² /day	20 mg/m ² /day	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>
Albert St Precinct				NA	<i>Air quality monitoring not yet necessary</i>
Woolloongabba Precinct				26.67 mg/m ² /day 33.33 mg/m ² /day	<i>Air quality monitoring was performed in two locations during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>
Boggo Rd Precinct/ Southern Portal				33.33 mg/m ² /day	<i>Air quality monitoring was performed during the reporting period. All construction related monitoring events adhered to the requirements of the Coordinator-General Imposed Conditions.</i>

[3] Project works must aim to achieve construction air quality goals. The *Coordinator-General Change Report – Whole of Project Refinements 2019* acknowledges instances exist that these goals may not be achieved.

CBGU JV also reviewed the DES air quality results for PM₁₀ from other stations in Brisbane for the reporting period. The results were as follows:

- Brisbane CBD: PM₁₀ daily Maximum average: **130.4 µg/m³** with seven (7) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/12/2019&timeframe=month>)
- South Brisbane: PM₁₀ daily Maximum average: **186.2 µg/m³** with eight (7) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/12/2019&timeframe=month>)
- Woolloongabba: PM₁₀ daily Maximum average: **195.3 µg/m³** with eight (8) daily exceedances of the 50 µg/m³ (24hr avg). (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/12/2019&timeframe=month>)

The graphical representation of the DES air quality data is presented in the below charts (refer to Figure 1-3).

The consistency of the PM₁₀ goal exceedances (order of magnitude, day, duration) at stations located away from the direct zone of influence from the works confirms that the exceedances of the PM₁₀ air quality goal over a 24hours averaging period is not relating to CBGU JV's works.

Brisbane had experienced elevated particulate concentration during December 2019 due to regional scale events, namely bush fires which likely had a significant impact on reported particulate concentrations.

Ambient air quality measurements can be influenced by external events outside of CBGU JV's control (e.g. road traffic, dust storms, fires).

Particle PM₁₀ at Brisbane CBD, 1–31 December 2019 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

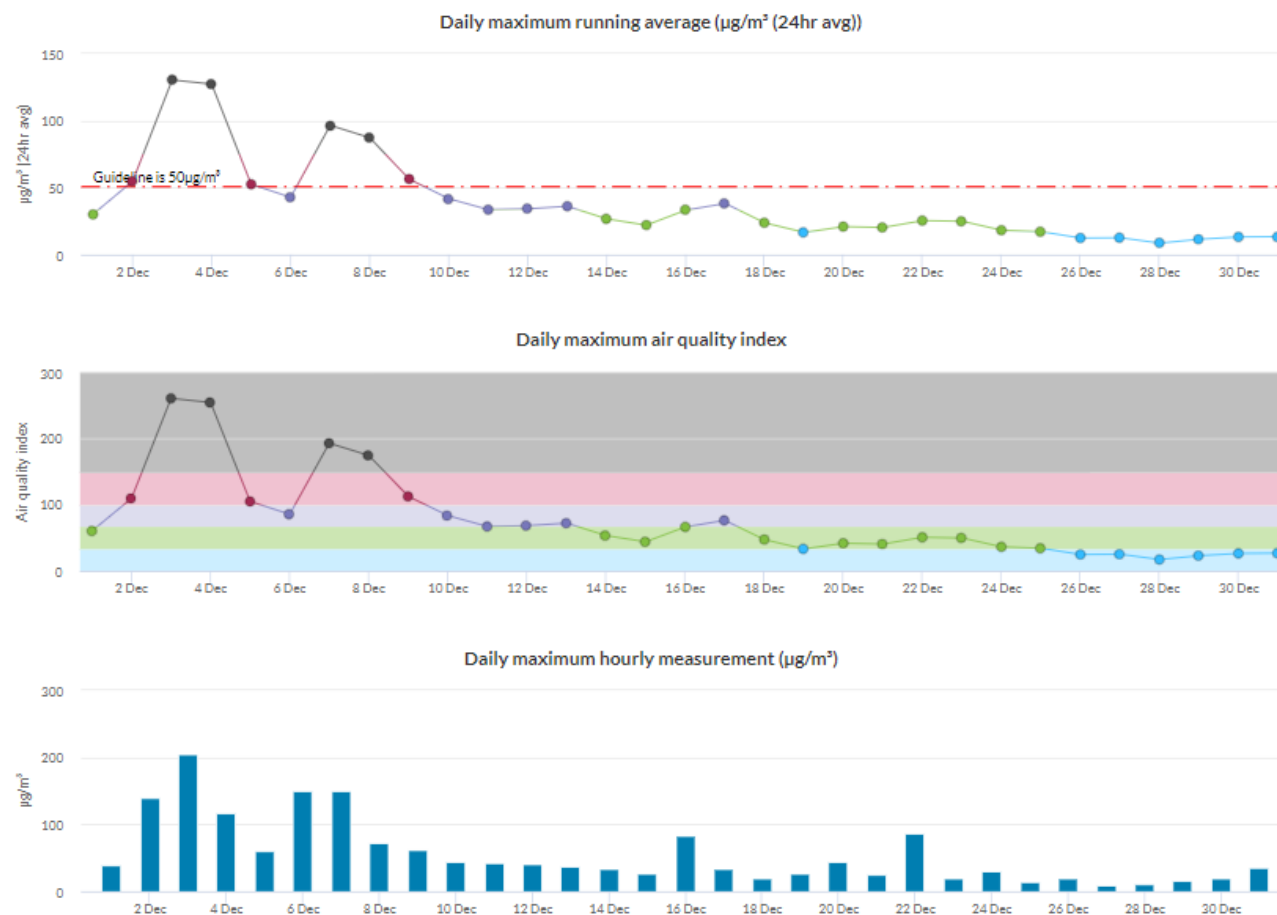


Figure 7: Brisbane CBD – DES Station - PM₁₀ graph for December 2019 (reproduction from the DES website accessed January 2020)

Particle PM₁₀ at South Brisbane, 1–31 December 2019 [about Particle PM₁₀](#)

 [South Brisbane station overview](#)

 The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

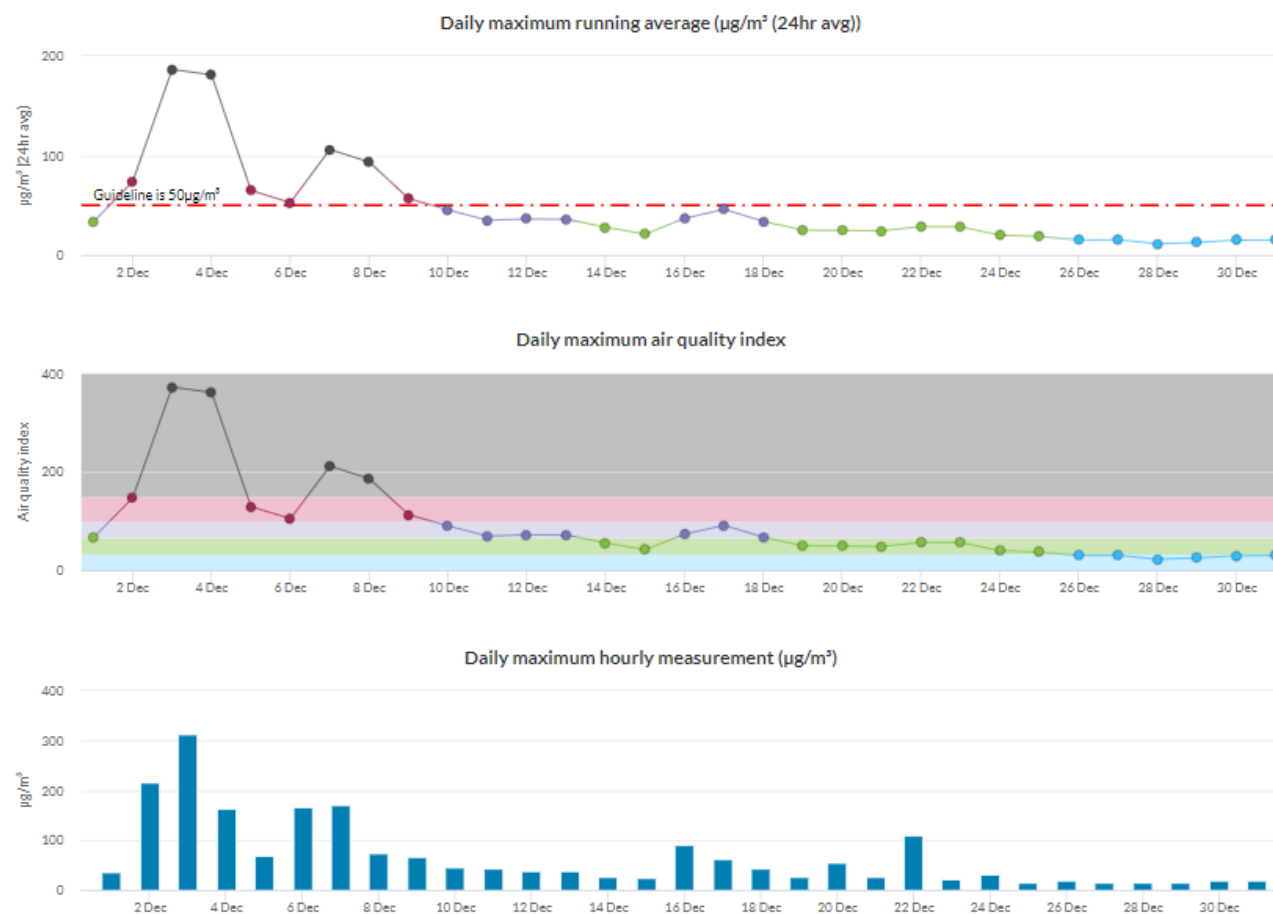


Figure 8: South Brisbane – DES Station - PM₁₀ graph for December 2019 (reproduction from the DES website accessed January 2020)

Particle PM10 at Woolloongabba, 1–31 December 2019 [about Particle PM10](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 50µg/m³ (24hr avg).

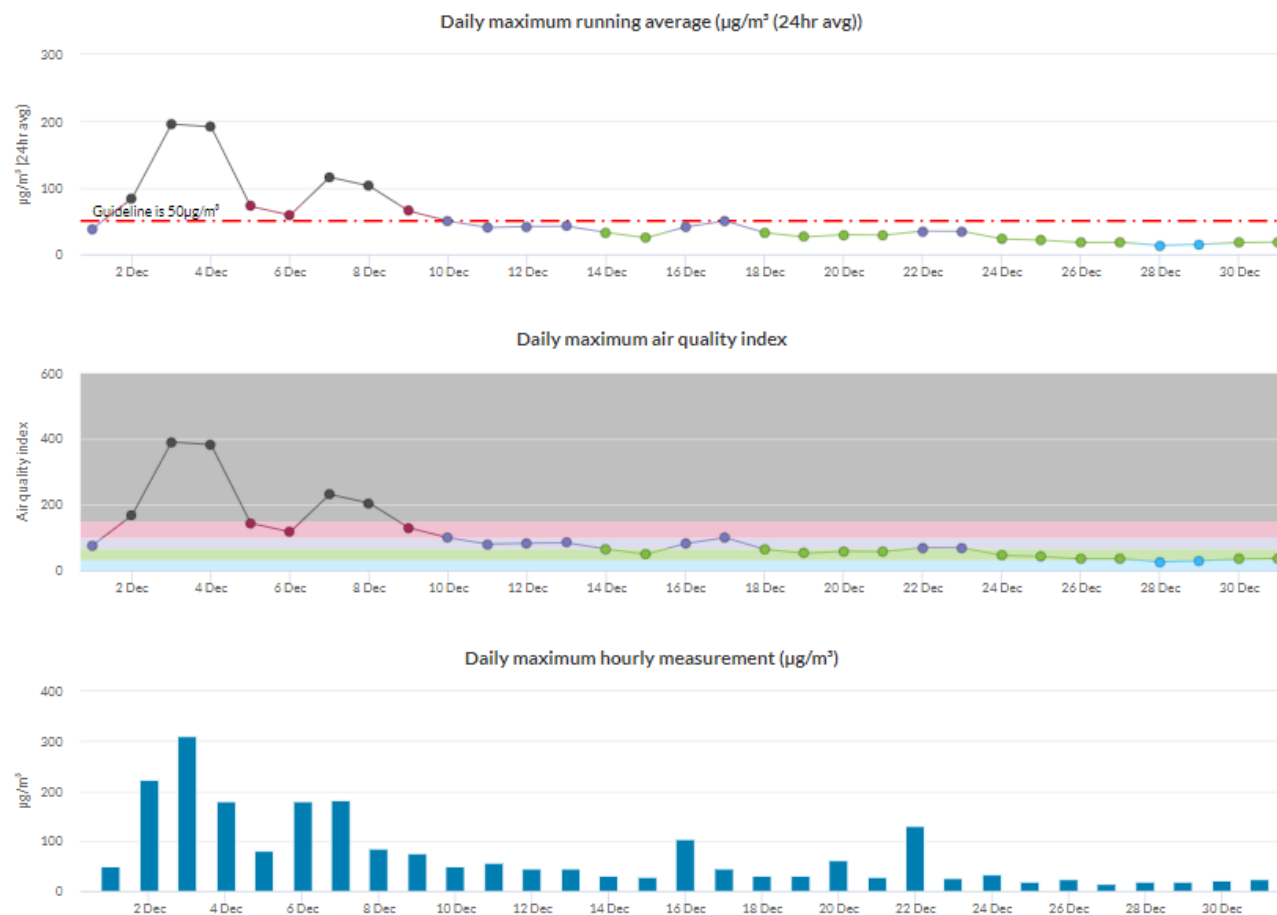


Figure 9: Woolloongabba – DES Station - PM10 graph for December 2019 (reproduction from the DES website accessed January 2020)

Water Quality

Nil water quality monitoring was necessary during October or November 2019. Water Quality monitoring commenced in December 2019 with one single event. Water quality monitoring data is provided in the table below.

Table 6: Summary of Water Quality Monitoring Results

Location	Date	Water Quality Parameter											Adhered to Project Requirements (Yes / No)
		Turbidity	Suspended solids	Chlorophyll a	Total nitrogen	Oxidised N	Ammonia N	Organic N	Total phosphorus	Filterable reactive phosphorus (FRP)	Dissolved oxygen	pH	
October													
Nil for this reporting period													
November													
Nil for this reporting period													
December													
Woolloongabba	18/12/19	7.8	11	<2	1.1	0.5	0.30	0.2	<0.01	<0.01	95.3%	6.85	Yes

Non-Compliances

A Non-Compliance Event is defined as Project Works that do not comply with project requirements. Nil non-compliances occurred during the monitoring periods.

Non- Compliance Events Summary

Table 7: Non-Compliance Events

Event Title	Location, Date and time of event	Date the Event was Formally Notified to CG/IEM	Conditions Affected	Date the Event Report Formally Sent to CG/IEM	Status of Event
October					
Nil for this reporting period					
November					
Nil for this reporting period					
December					
Nil for this reporting period					

Complaints

October

1 complaint was received during the month relating to construction noise during standard hours. It was investigated and responded to. Nil non-compliances were recorded.

November

5 complaints were received during the month. The complaints related to dust or noise. All were investigated and responded to. Nil non-compliances were recorded.

December

8 complaints were received during the month. The complaints related to dust or noise. All were investigated and responded to. Nil non-compliances were recorded.

Appendix D - Non-Compliance Event Reports

None applicable for December 2019