Cross River Rail Project

Monthly Environmental Report

March 2021

CROSSRIVERRAIL

Queensland Government

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Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for March 2021 for the Rail, Integration and Systems (RIS), and Tunnel, Stations and Development (TSD) packages. The report addresses the obligations outlined in the Coordinator-General's change report – *Coordinator-General's change report – design refinements and condition changes 2020 (July 2020)* and the individual contractor's Construction Environmental Management Plans (CEMPs) which have been developed generally in accordance with the Project's Outline Environmental Management Plan (OEMP). The Cross River Rail Delivery Authority (Delivery Authority), as the Proponent of the Cross River Rail Project, is required to submit a monthly report to the Coordinator-General to demonstrate compliance with the imposed conditions.

Section 1 of this report provides a background to the project and the Coordinator-General's conditions. Section 2 provides a review of the contractor's reports contained in **Appendix A** (RIS Monthly Report) and **Appendix B** (TSD Monthly Report).

The Environmental Monitor (EM) has reviewed and endorsed this MER. This endorsement follows ongoing and new document reviews, and surveillance across the relevant project worksites.

The CEMPs prepared by both Unity Alliance (RIS Contractor) and CBGU JV on behalf of Pulse (TSD Contractor) for their Relevant Project Works were endorsed by the EM and submitted to the Coordinator-General in accordance with Condition 4 (a) and 4 (b) respectively.

The table below presents a summary of compliance status against each condition with a short comment against each condition:

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
1.	**General conditions** – compliance with the Project Changes relevant to the contractor's scope	Yes	The CEMP and site management plans are in accordance with the Project Changes.
2.	**Outline Environmental Management Plan** – timely submission to the Coordinator-General including required sub-plans	Yes	OEMP dated June 2020 is effective for the reporting period.
3.	**Design** – achievement of the Environmental Design Requirements	NA	Ongoing progress with design packages.
4.	**Construction Environmental Management Plan** – all relating to Relevant Project Works.	Yes	RIS – CEMP Revision 10 (previously Revision 9) has been updated to include all remaining additional scope of works and EM endorsement. Revision 10 was submitted to the OCG on 31 March 2021 and will be in effect from 29 April 2021. TSD – CEMP Revision 7 for tunnelling and ongoing activities in the Central area was endorsed by the EM, submitted to the Coordinator-General in June and became effective on 5 July 2020.

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
5.	**Compliance and Incident management** – Non-compliance events, notifications and reporting.	Yes	There were no non-compliance events (NCEs) raised in March 2021. Refer to Section 2.5 of this report.
6.	**Reporting** – Monthly and Annual reporting.	Yes	This MER including RIS and TSD Monthly Reports have been submitted in accordance with the conditioned requirements. Refer to **Appendix A** and **Appendix B**.
7.	**Environmental Monitor (EM)** – engaged and functions resumed.	Yes	Ongoing weekly site inspections and document reviews continue to take place.
8.	**Community Relations Monitor (CRM)** – 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** – Project Works undertaken during approved hours.	Yes	Project Works have been undertaken in accordance with project requirements. This has been achieved through Standard working hours, Extended work hours and Managed Work.
11.	**Noise** – Project Works must aim to achieve internal noise goals for human health and well-being.	Yes	Noise monitoring following predictive modelling met project noise requirements at Sensitive Places. RIS – Refer to **Appendix A (Table 2** and **Section 3.1.4)**. TSD – Refer to **Appendix B (Table 3)**.
	Vibration – Project Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Vibration monitoring following predictive vibration assessments met project requirements at Sensitive Places. RIS - Refer to **Appendix A (Table 3)** and **Section 3.1.4.** TSD – Refer to **Appendix B (Table 2)**.
12.	**Property damage** – relating to ground movement.	Yes	RIS – Predictive vibration modelling has been undertaken for Relevant Project Works and Property Damage Sub-plans have been developed and implemented. Pre-condition surveys have been completed at heritage, commercial and residential buildings at RNA, Northern Corridor and Fairfield to Salisbury stations.

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			TSD – Vibration modelling has been prepared and is ongoing. Where required, building condition survey reports are completed for heritage and residential buildings.
13.	**Air quality** – Works must aim to achieve air quality goals for human health and nuisance.	Yes	Project Works met air quality goals. RIS – Refer to **Appendix A (Table 5**, and **Figures 1, 2 and 3)**. TSD – Refer to **Appendix B (Table 4** and **Table 5)**.
14.	**Traffic and transport** – Works must minimise adverse impacts on road safety and traffic flow.	Yes	Traffic Management Plans covered in the CEMPs and Sub-plans for all active worksites have been reviewed by the EM.
15.	**Water quality** – Works must not discharge groundwater from the construction site above the relevant environmental values and water quality objectives. Monitor and report on water quality in accordance with CEMP and Sub-plans.	Yes	Monitoring and reporting on groundwater and surface water quality was undertaken in accordance with RIS and TSD Water Quality Management Plans. RIS – No groundwater discharges occurred for the month. Post-rainfall monitoring was triggered at Mayne Yard and Clapham Yard. Surface water monitoring results for Breakfast Creek, Moolabin Creek and Rocky Water Holes Creek confirmed off-site discharges met project discharge criteria. Refer to **Appendix A (Table 6** and **Section 3.3.5)** for post-rainfall monitoring results. Refer to **Appendix A (Table 7** and **Section 3.3.4)** for routine surface water monitoring results. TSD – One groundwater discharge from Woolloongabba worksite was inconsistent with water quality objectives however consistent with pre-construction water quality levels. No external influences were introduced by the construction activities. Refer to **Appendix B (Table 6)** for ground water monitoring results. Refer to **Appendix B (Table 7** and **Table 8)** for surface water monitoring results.
16.	**Water resources** – Evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown.	Yes	RIS – There will be no sustained groundwater extraction involved in the RIS scope of works so predictive modelling of groundwater drawdown is not required. Collection of hydrological data to model

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			potential inflow rates into excavations during construction has been undertaken. TSD – Inflow of groundwater into the worksites is being continously monitored to validate the predictive modelling.
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.	Yes	Contractors continue to consider this condition in their site planning and design.
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	Site specific ESC plans for all active work sites have been reviewed by the EM and implemented on site.
19.	**Acid sulfate soils** – managed as per the Queensland Acid Sulfate Soil Technical Manual.	Yes	Acid Sulfate Soil Management Plans have been prepared and implemented for all active worksites.
20.	**Landscape and open space** – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria Park.	Yes	Sewer relocation works in Victoria Park completed under the Site Environmental Plan and the Department of Environment and Science (DES) approved Heritage Exemption Certificates. The work area has been reinstated and stabilised.
21.	**Worksite rehabilitation** – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	NA	N/A

Non-Compliance Events

There were no NCE's raised in March 2021.

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	Construction Environmental Management Plan
CGCR	Coordinator-General's Change Report
CRM	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
DES	Department of Environment and Science
EIS	Environmental Impact Statement
EM	The Environmental Monitor engaged in accordance with Imposed Condition 7
ESC	Erosion and sediment control
IECA	International Erosion Control Association
Imposed condition/s	A condition/s imposed by the Coordinator-General under section 54B of the SDPWO Act for the Project
MER	Monthly Environment Report
MRTS52	Transport and Main Roads Specifications MRTS52 Erosion and Sediment Control
NCE	Non-Compliance Event
OEMP	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
RfPC	Request for Project Change
RIS	Rail, Integration and Systems
SDPWO Act	*State Development and Public Works Organisation Act 1971*
Sub-plan	Any sub-plan of the CEMP
The Delivery Authority	The Cross River Rail Delivery Authority
TSD	Tunnel, Stations and Development

1. Introduction

1.1. 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 Environmental Impact Statement (EIS) was evaluated by the Coordinator-General who recommended the Project proceed, subject to Imposed Conditions and recommendations. Since the evaluation of the EIS, a number of Requests for Project Change (RfPC) submissions have been evaluated by the Coordinator-General. RfPC 8 is applicable for the works that took place in March 2021.

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 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.

1.2. Project Delivery

The Delivery Authority is responsible for planning and delivering the Project. The Project established environmental management plans and secured some of the secondary environmental approvals in addition to enabling works.

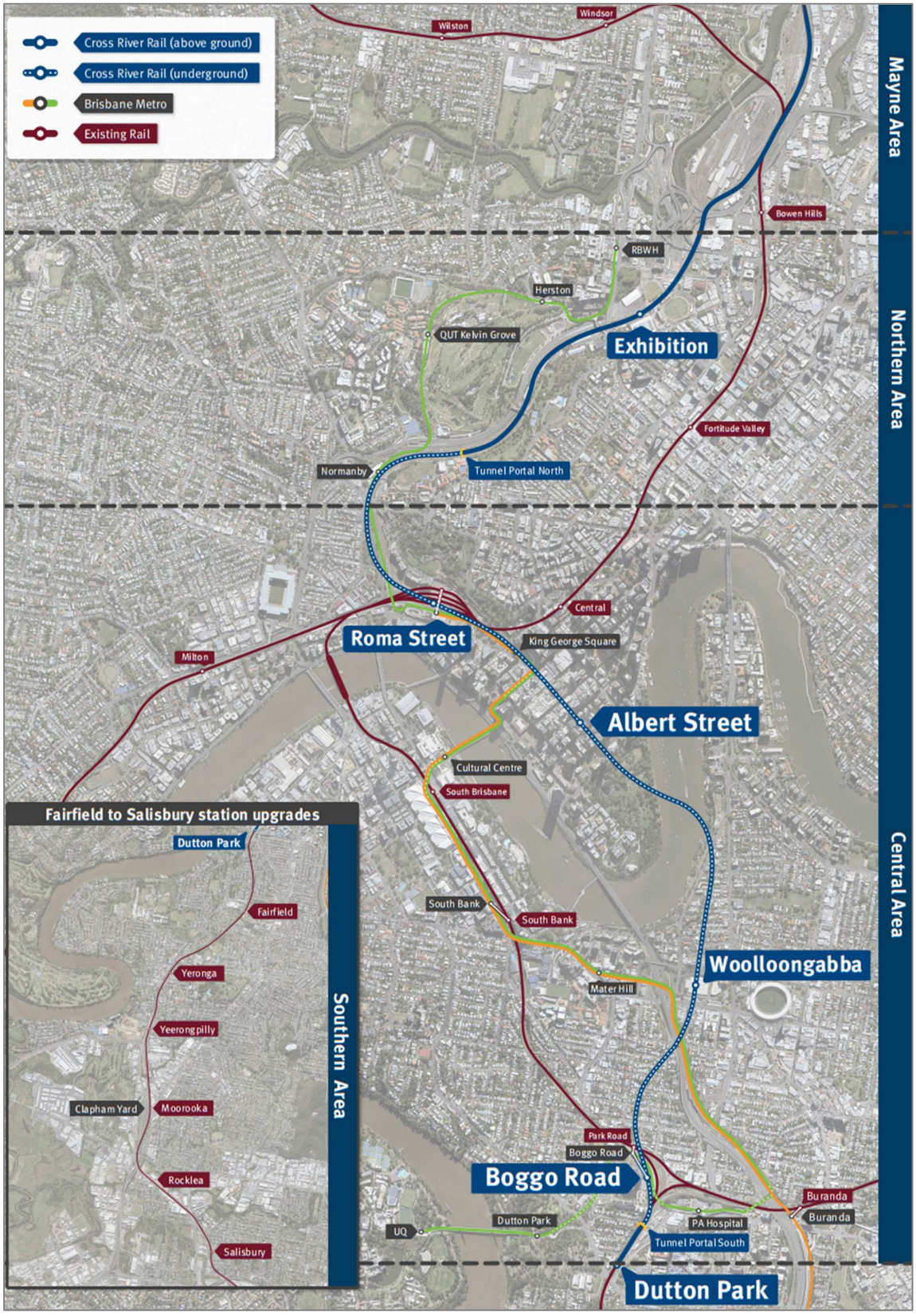
The two main delivery packages which require reporting under the Coordinator-General's imposed conditions are:

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

The Project is geographically divided into four areas:

- Mayne Area;
- Northern Area;
- Central Area; and
- Southern Area.

These are shown in the figure over.


Cross River Rail (above ground)
Cross River Rail (underground)
Brisbane Metro
Existing Rail
Mayne Area
Northern Area
Central Area
Southern Area
Wilston
Windsor
Bowen Hills
RBWH
Herston
QUT Kelvin Grove
Exhibition
Fortitude Valley
Normanby
Tunnel Portal North
Central
Roma Street
King George Square
Milton
Albert Street
Cultural Centre
South Brisbane
South Bank
South Bank
Woolloongabba
Mater Hill
Park Road
Boggo Road
Boggo Road
Buranda
Buranda
PA Hospital
Tunnel Portal South
Dutton Park
UQ
Dutton Park
Fairfield to Salisbury station upgrades
Dutton Park
Fairfield
Yeronga
Yeerongpilly
Clapham Yard
Moorooka
Rocklea
Salisbury

1.3. Reporting Framework

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

- monitoring data and associated interpretation of the results required by the imposed conditions and Construction Environmental Management Plan (CEMP);
- details of any NCE's, including incidents, corrective actions and preventative actions; and
- details of any complaints, including description, responses, and corrective actions.

Reporting on environmental elements captured in each monthly environmental report, including the annual environmental report, will be reviewed and endorsed by the EM.

1.4. Monthly Environment Report Endorsement

This MER has been endorsed by the EM and the endorsement provided to the Coordinator-General.

2. Compliance Review

This Monthly Environment Report has been reviewed and endorsed by the EM as per Imposed Condition 7 of the CGCR.

2.1. Relevant Project Works

The following Project Works were undertaken in March 2021:

Area	Project Works
Mayne Area	• **Mayne Yard North** – stormwater drainage works; earthworks for new combined services route alignment; auger ground improvement piling for reinforced soil structure walls and pier protection piling.
Northern Area	• **Northern Corridor** – piling preparation and piling works at Bowen Bridge Road overpass and pier protection works under O'Connell Terrace. • **RNA** – line drilling and rock excavation; pier protection and soil nail installation; Public Utility Plant (PUP) relocations (communications, electrical); western platform demolition; bridge (BR43) ground retention works complete; BR43 piling preparation and piling works. • **Northern Portal** – permanent piling and sewer main relocation ongoing; and site establishment including installation of site offices.
Central Area	• **Roma Street** – cavern heading excavation continues; ongoing bench and adit blasting and excavation; services building excavation and ground retention continues; station building piling and capping beam construction continues; and stormwater main diversion underway.
	• **Albert Street** – station box excavation and rock bolt installation continues, 'row 2' props fabricated and ready for install and Mantra underpinning of pile toes ongoing on Lot 1. ATA1 collar complete, cavern heading excavation towards the south completed, adit excavation towards Lot 1 commenced and cavern heading excavation towards the north continues Lot 2. Piling is ongoing on Lot 3.
	• **Woolloongabba** – TBM #1 (Else) completed 292 rings by the end of March; TBM #2 (Merle) completed 43 rings and final gantries being installed; continuous slab pouring occurring within the station box; and fabrication of tunnel lining has commenced.
	• **Boggo Road** – excavation and retention work in the station box continues; tunnel excavation commenced underneath canopy tubes; and pouring of underground primary structure commenced.

Area	Project Works
	• **Southern Portal** – continued piling works for portal structure; Telstra and NBN completed cable haulage and commenced fibre cut-overs; continued Kent Street stormwater drainage installation; continued Combined Services Route (CSR) installation during railway possessions and continued CSR routes in the rail corridor triangle along the suburban lines to Dutton Park and Cleveland lines to Buranda.
Southern Area	• **Dutton Park** – early works continuing at Cope Street, Dutton Park. • **Yeronga Station** – site establishment; retaining wall demolition; and enabling works for track lowering. • **Rocklea Station** – OHLE mast and foundation installation. • **Clapham Yard** – enabling works, stockpiling of imported fill; and geotechnical, contaminated land and acid sulfate soil investigations.

2.2. Key Environmental Elements

2.2.1. Noise

The Coordinator-General's conditions establish a framework for managing the impacts of noise. The Imposed Conditions do not establish noise limits. Compliance with the Imposed Conditions noise requirements involves demonstrating the implementation of the endorsed CEMP and associated Noise and Vibration Management Plan. This establishes the management measures to be applied which aims to achieve the identified noise goals as far as reasonably practicable. The CEMP also includes requirements for the provision of the required community notifications of upcoming work, potential impacts, and how the project team can be contacted in relation to any potential impacts. For Project Works where potential noise impacts are modelled to be above the noise goal but below the noise goal plus 20dBA, this work is authorised where the endorsed CEMP and associated Noise and Vibration Management Plan is being implemented, including communicating construction activities to potential and actual Directly Affected Persons (DAPs). For Project Works where potential noise impacts are predicted to be more than 20dBA above the relevant noise goal, specific engagement is required with DAPs for these works.

Where internal monitoring was not possible, contractors have undertaken external monitoring at nominated locations. To determine compliance with the project's noise requirements and to calibrate modelled predictions the project applies recommended façade attenuation corrections, which consider receiver property type.

In the Northern Area, noise monitoring was undertaken to validate predictive modelling at sensitive places during excavation and ground support works at the Northern Portal during standard hours. Results indicated that project requirements were met. Noise monitoring in response to complaints was not triggered. Monitoring results for the Northern Area are detailed in Table 3, **Appendix B.**

In the Central Area, noise monitoring was undertaken to validate predictive modelling at sensitive places close to the project worksites and in response to noise complaints. Monitoring results for the Central Area are detailed in Table 3, **Appendix B**. The TSD contractors reported that the project noise requirements have been met during this reporting month.

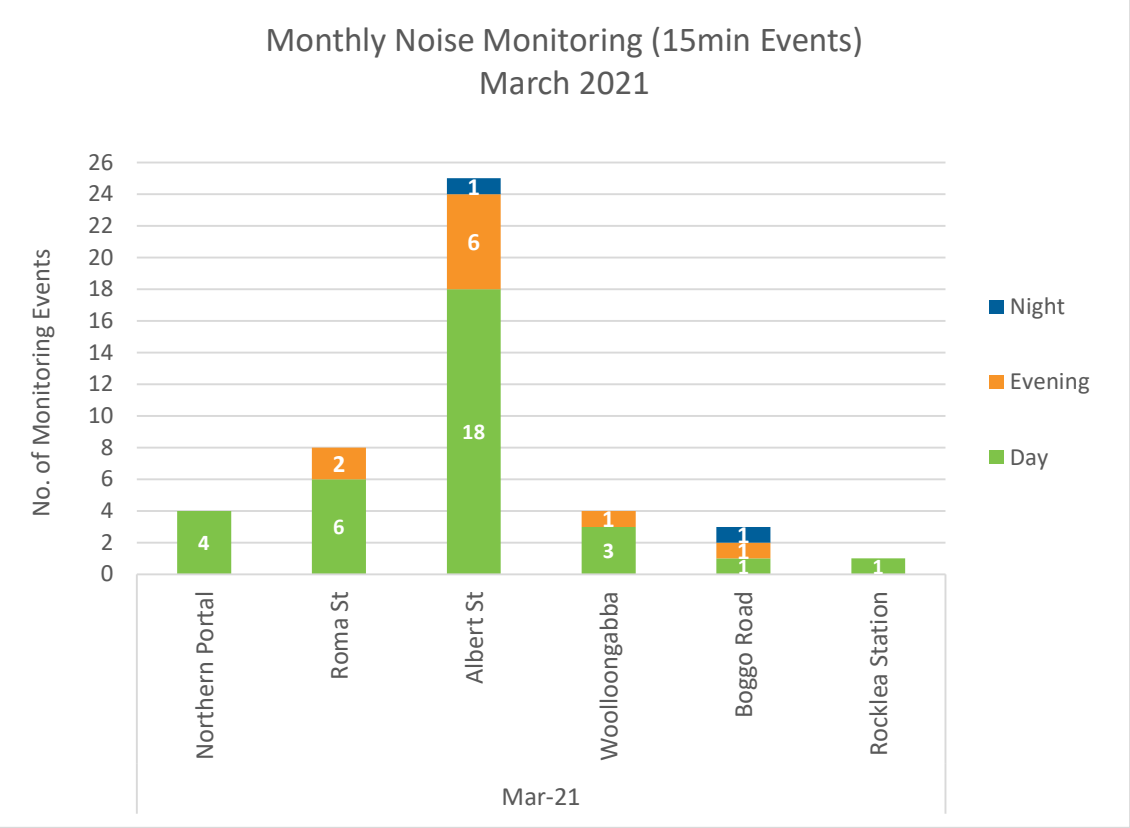
In the Southern Area, noise monitoring was undertaken to validate predictive modelling at Sensitive Places during overhead line equipment mast installation at Rocklea Station outside standard hours. Noise levels met project requirements. Noise monitoring in response to complaints was not triggered. Monitoring results for the Southern Area are detailed in Table 2, **Appendix A**.

Examples of noise management measures on the sites include:

- purpose built noise barriers on the sites or site boundary;
- change in plant type, such as at Boggo Road/Southern area where an almost silent sheet piling;
- machine had been sourced in place of one with a much higher sound power level;

- acoustic spoil sheds;
- positioning of equipment on site to maximise the effects of the site layout and barriers such as the spoil shed itself or other workshops; and
- noise blankets, such as those applied on the Woolloongabba site to further mitigate noise from tonal plant and equipment.

A summary of noise monitoring events for the month is provided in the chart below.



2.2.2. Vibration

In the Northern Area, vibration monitoring was undertaken during western platform demolition and piling works south of O'Connell Terrace at the John MacDonald Stand, between The RNA Members Stand and Ernest Baynes Stand, and between the Community Swimming Club Café and Machinery Hill Stands. Results confirmed compliance with building specific vibration limits outlined in the Property Damage Sub-plan. Vibration monitoring results are detailed in **Appendix A** (Table 3).

In the Central Area, vibration monitoring took place to validate predictive modelling for tunnelling, piling, excavation and controlled blasting activities at Roma Street, Woolloongabba, Boggo Road and the Albert Street worksites. One vibration complaint was received from works occurring at Roma Street. The contractor reported results met the project's nominated goals. Vibration monitoring results for the Central Area are detailed in **Appendix B** (Table 2).

2.2.3. Air Quality

2.2.3.1. Dust Deposition

Dust deposition monitoring was conducted at Mayne Yard, Northern and Central Area worksites from mid-February 2021 to mid-March 2021. Clapham Yard dust deposition monitoring was conducted from the commencement of the import of fill from 1 February 2021 to 6 March 2021. All worksites met the

project dust deposition air quality goal[1]. A summary of dust deposition monitoring is provided in the table below.

Air Quality – Dust Deposition Monitoring			
Area	**Worksite**	**Monitoring Location**	**Comments**
Mayne Area	Mayne Yard	Mayne Yard East	- Results met air quality goal.
Northern Area	RNA / Exhibition	RNA Showgrounds	- Results met air quality goal.
	Northern Portal	Northern Portal (near Brisbane Girls Grammar School)	- Results met air quality goal.
Central Area	Albert Street	Mary Street	- Results met air quality goal.
		Elizabeth Street	- Results met air quality goal.
	Boggo Road	Quarry Street (north of the site)	- Results met air quality goal.
		Peter Doherty Street/Leukemia Foundation	- Results met air quality goal.
	Southern Portal	Dutton Park Station	- Results met air quality goal.
		PA Hospital - Central Energy Unit along Kent Street	- Results met air quality goal.
	Roma Street	Roma Street Station	- Results met air quality goal.
	Woolloongabba	Russian Orthodox Cathedral	- Results met air quality goal.
		Woolloongabba Busway	- Results met air quality goal.
Southern Area	Clapham Yard	Clapham Yard East	- Results met air quality goal.

2.2.3.2. Particulate Matter and Total Suspended Particulates

Monitoring for particulate matter (PM_{10}) and total suspended particulates (TSP) was conducted at Mayne Yard, Northern, Central and Southern Area worksites during the reporting period. All worksites met project air quality goals for human health and nuisance.

The Mayne Yard monitoring unit experienced a power failure for two days from 3 to 5 March and the RNA monitoring unit experienced a power failure for two days from 1 to 3 March. Power issues have since been rectified. The Boggo Road air quality unit experienced a technical fault and stopped functioning on 1 March 2021 and between 4 to 8 March 2021, requiring specialist repairs. The nearby (Brisbane CBD) DES air quality monitoring station demonstrated PM_{10} and TSP levels in March 2021 were compliant with project air quality goals.

A summary of particulate monitoring is provided in the table below.

Air Quality – PM_{10} / TSP Monitoring			
Area	**Worksite**	**Monitoring Location**	**Comments**
Mayne Area	Mayne Yard	Mayne Yard North	- Results met air quality goals. - Power failure 3 to 5 March
Northern Area	RNA / Exhibition	Lanham Yard	- Results met air quality goals. - Power failure 1 to 3 March

[1] CG air quality goal for dust deposition - 50µg/m^3 (over an averaging period of 24 hours).

Air Quality – PM_{10} / TSP Monitoring			
Area	**Worksite**	**Monitoring Location**	**Comments**
	Northern Portal	Brisbane Girls Grammar School	- Results met air quality goals.
Central Area	Albert St	iStay River City and Capri (Corner of Mary Street and Albert Street)	- Results met air quality goals.
	Boggo Rd / Southern Portal	North-east of Boggo Road worksite	- Results met air quality goals. - The monitoring unit experienced a technical fault and stopped functioning on 1, 4, 5, 6, 7 and 8 March.
	Roma St	Roma Street Station	- Results met air quality goals.
	Woolloongabba	Place Park, Woolloongabba	- Results met air quality goals.
Southern Area	Clapham Yard	Clapham Yard	- Results met air quality goals.

2.2.4. Water Quality

Monitoring and reporting on water quality was undertaken in accordance with the Project's Water Quality Management Plans.

2.2.4.1 Surface Water

Routine monitoring was undertaken at the receiving waters of active worksites in accordance with Water Quality Management Plans.

Post-rainfall monitoring was triggered at Mayne Yard and Clapham Yard following rainfall events on 9 March 2021, 15 to 18 March 2021 and 20 to 24 March 2021, and at Clapham Yard following a rainfall event on 12 March 2021. Results from post-rainfall monitoring in receiving waters at Breakfast Creek, Moolabin Creek and Rocky Water Holes Creek met project water quality discharge criteria[2].

Active surface water discharge (dewatering by pumping) occurred at the Northern Portal site during the month and the surface water discharge results met project water quality discharge criteria. Post-rainfall monitoring was triggered at the Northern Portal site following a rainfall event that exceeded 44mm over 24 hrs (TSD CEMP) on 22 to 23 March 2021. Post-rainfall monitoring in receiving waters at York's Hollow met project water quality discharge criteria.

Active surface water discharge (dewatering by pumping) was undertaken in the Central Area at the Roma Street and Boggo Road worksites. Surface water discharge results met project water quality discharge criteria. Post-rainfall monitoring was triggered at Central Area worksites following a rainfall event that exceeded 44mm over 24 hrs (TSD CEMP) on 22 to 23 March 2021. Post-rainfall monitoring in receiving waters at Norman Creek and the Brisbane River met project water quality discharge criteria.

Surface water quality monitoring is summarised in the table below:

[2] Guidelines for Best practice Erosion and Sediment Control (International Erosion and Sediment Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52 – Erosion and Sediment Control.

Surface Water Quality Monitoring					
Area	**Worksite**	**Discharge**	**Post-Rain Monitoring**	**Routine Monitoring**	**Comments**
Mayne Area	Mayne Yard North	Yes	Yes	Yes	- Passive surface water discharge. - Post-rainfall monitoring met project water quality discharge criteria.
Northern Area	Northern Portal	Yes	Yes	Yes	- Active surface water discharge monitoring met project water quality discharge criteria. - Post-rainfall monitoring met project water quality discharge criteria.
Central Area	Albert Street	No	Yes	Yes	- No surface water discharges. - Post-rainfall monitoring met project water quality discharge criteria.
	Boggo Road / Southern Portal	Yes	Yes	Yes	- Active surface water discharge monitoring met project water quality discharge criteria. - Post-rainfall monitoring met project water quality discharge criteria.
	Roma Street	Yes	Yes	Yes	- Active surface water discharge monitoring met project water quality discharge criteria. - Post-rainfall monitoring met project water quality discharge criteria.
	Woolloongabba	No	Yes	Yes	- No surface water discharges. - Post-rainfall monitoring met project water quality discharge criteria.
Southern Area	Clapham Yard	Yes	Yes	Yes	- Passive surface water discharge. - Post-rainfall monitoring met project water quality discharge criteria.

2.2.4.1. Groundwater

There were no groundwater discharges at Mayne, Northern or Southern Area worksites.

Groundwater discharge occurred in the Central Area at the Woolloongabba worksite. The groundwater discharge results reported for the month exceeded the Project's Water Quality Objectives (WQO's)[3] for total nitrogen, oxidised nitrogen, ammonia nitrogen, organic nitrogen, total phosphorus, dissolved

[3] The Brisbane River Estuary environmental values and water quality objectives (Basin no 143 – mid-estuary) in the Environmental Protection (Water) Policy 2009.

oxygen and filterable reactive phosphorous. This result however was consistent with the receiving environments baseline monitoring pre-construction data.

Groundwater Quality Monitoring			
Area	**Worksite**	**Discharge**	**Comments**
Mayne Area	Mayne Yard North	No	- No groundwater discharges.
Northern Area	RNA/Exhibition	No	- No groundwater discharges.
	Northern Portal	No	- No groundwater discharges.
Central Area	Albert Street	No	- No groundwater discharges.
	Boggo Road / Southern Portal	No	- No groundwater discharges.
	Roma Street	No	- No groundwater discharges.
	Woolloongabba	Yes	- Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions and no external influences were introduced by construction activity.
Southern Area	Clapham Yard	No	- No groundwater discharges.

2.2.5. Erosion and Sediment Control

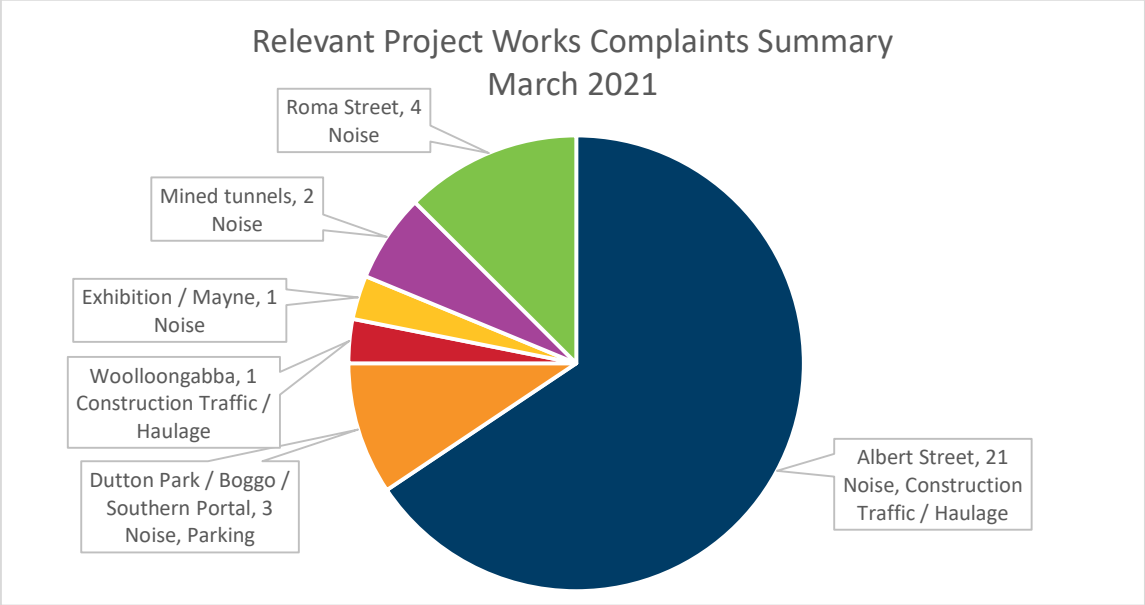
Site specific Erosion and Sediment Control (ESC) Plans have been prepared, updated, and implemented at Mayne Yard, Northern Corridor, RNA Showgrounds, Roma Street, Albert Street, Woolloongabba, Boggo Road, the Southern Portal and Clapham Yard.

2.3. Complaints Management

A total of 34 complaints were received during the month, of which two were not related to Project Works.

RIS works received one complaint related to noise levels from piling works from the RNA/Exhibition worksite out of standard hours. Noise modelling confirmed that noise levels were predicted to be below the noise goal at the sensitive receiver during the approved rail possession.

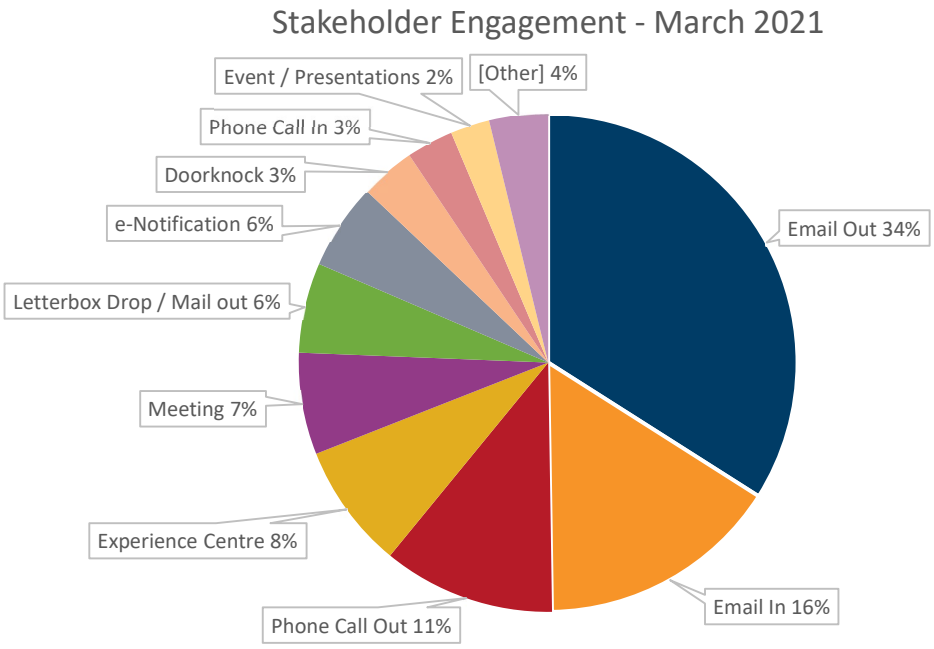
TSD activities received 31 complaints related to works at the Roma Street, Albert Street, Woolloongabba and Boggo Road worksites and along the tunnel alignment and one complaint for the RIS work in the Northern Area. The Relevant Project Works related complaints summary for the month is provided in the following chart.



Where attended noise monitoring was undertaken in response to a complaint, the contractor confirmed on all occasions that works undertaken at the time of the complaint adhered to project requirements. In some instances, previous attended noise monitoring data, representative of the relevant construction activities was used to confirm the works adhered to the project noise requirements.

To close out a complaint the monitoring data is reviewed (where applicable), against compliance with the CEMP, site environmental management plans and permits, and checks that required community notification has taken place. Contractors have also confirmed that planned mitigation to reduce the impact was implemented. This is reviewed together to verify if project requirements have been met. For further details on close-out of complaints refer to **Appendix A,** Table 1 and **Appendix B,** Table 10.

For scheduled out of hours works, community notification was provided, as well as regular project updates. Stakeholder engagement undertaken on the project during the month is summarised in the chart below:



2.4. New Upcoming Project Works

The key new planned Project Works for the coming months include:

Area	New planned works in the coming months
Mayne Area	**Mayne Yard North** – bridge (BR11/13) piling; OHLE foundation works; installation of lighting tower foundations; Breakfast Creek bridge platform works; graffiti removal facility and crew facility building.
Northern Area	• **Northern Corridor** – completion of Normanby drainage and sewer work; piling for Bowen Bridge and ICB pier protection; installation of OHLE foundations; signal foundations and signaling hut installation. • **RNA/Exhibition** – drainage works; sacrificial retaining wall installation; form, reo, pour concrete (FRP) for BR43; and FRP and services works for new RNA substation and switch room. • **Northern Portal** – pile anchors and ground anchors to be installed in April; capping beam and portal beam construction to commence in April; and commissioning of TBM retrieval gantry crane in April - May.
Central Area	• **Roma Street** – Station building tower crane installation and excavation to commence in April; and INB underpinning to commence in April. • **Albert Street** – second row or props to be installed in April and blasting to commence in May on Lot 1; 24-hour tunnelling will continue within the acoustic enclosure on Lot 2; and capping beam construction and station box excavation to commence on Lot 3 in April-May. • **Woolloongabba** – 24/7 excavation operations with TBMs and road headers (including rock hammering); continuous spoil haulage; and large concrete deliveries for back of house and station building structures construction. • **Boggo Road** – ongoing excavation of station box and northern cavern beneath the canopy tubes; delivery of roadheader to site and fencing along Boggo Rd busway in April; and installation of second tower crane in May.

Area	New planned works in the coming months
	• **Southern Portal** – continue utility relocation and Scheduled Corridor Access System (SCAS) works including Easter SCAS 2-8 April; and ongoing piling and earthworks.
Southern Area	• **Yeronga Station** – track works (removal, reinstatement, installation of dual gauge track); new Platform 1 retaining wall and preparation works for temporary scaffold overpass. • **Clapham Yard** – demolition of buildings; site establishment works; geotechnical, contaminated land and acid sulfate soil investigations; and service identification.

2.5 Non-Compliance Events

No new NCEs have been raised this month. The summary of NCEs to date is shown in the table below.

Status	Date of event	Category	Area as on the Report	Conditions affected	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
⊞ **Open**									
⊟ **Closed**									
CRRDA-001-RIS-001	11/09/19	Noise	Yeronga Station	4, 10, 11	11/10/19	14/11/19	26/11/19	18/12/19	01/10/20
CRRDA-002-TSD-001	27/03/20	ESC	Woolloongabba	4, 15, 18	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-003-TSD-002	27/03/20	ESC	Boggo Rd	4, 15, 18	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-005-TSD-004	27/03/20	Reporting	Albert St, Boggo Rd, Roma St, Woolloongabba	4, 6, 11, 13	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-006-TSD-005	27/03/20	Air Quality	Albert St, Boggo Rd, Roma St, Woolloongabba	13	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
CRRDA-004-TSD-003	28/03/20	Traffic	Boggo Rd	4, 10, 14	30/03/20	31/03/20	22/04/20	06/11/20	31/05/20
⊟ **Withdrawn**									
CRRDA-007-RIS-002	04/01/20	Air Quality	Mayne Yard, Victoria Park, Yeronga, Fairfield	13	28/04/20	30/04/20	Withdrawn		
CRRDA-008-TSD-006	04/08/20	Working Hours	Roma Street	4,10	28/04/20	30/04/20	Withdrawn		

Gate 1 - EM notification to contractor. NCE confirmed
Gate 2 - 48 hour NCE notification submitted to CG
Gate 3 - 14 day report submitted
Gate 4 - 14 day report uploaded to CRR website
Gate 5 - Records of mitigation / preventative measures submitted to the CG — Complete

Throughout construction activities, events and incidents are routinely investigated to verify compliance with the Imposed Conditions and to verify that management and mitigation measures are implemented in accordance with CEMP and sub-plans.

Appendix A – RIS Monthly Report

Appendix B – TSD Monthly Report

Appendix A – RIS Monthly Report

Monthly CGCR Report – March 2021

Cross River Rail – Rail, Integration and Systems Alliance

Assured Integration for a New Era

Table of Contents

1 Progress Summary

1.1 Summary of Project Works

The following *Project Works* continued in March 2021:

- Mayne Yard North
  - Stormwater drainage works
  - Mayne Yard Suburban Line Earthworks for Combined Services Route alignment
  - Ground improvement piling and piling preparation works
  - Auger ground improvement piling for Reinforced Soil Structures walls
- Northern Corridor
  - Piling preparation works and piling works
- RNA Showgrounds
  - Line drilling, rock excavations, pier protection and soil nail installation
  - Western Platform demolition
  - Piling preparation and piling works
- Fairfield to Salisbury (F2S)
  - Yeronga site establishment
  - Enabling works for Yeronga track lowering
- Clapham Yard
  - Geotechnical and CLASS (Contaminated land and acid sulphate soil) investigations
  - Stockpiling of imported fill

The following *Project Works* started in March 2021:

- Mayne Yard North
  - No new works started in March 2021
- Northern Corridor
  - No new works started in March 2021
- RNA Showgrounds
  - Ground stabilisation works
- F2S
  - Yeronga retaining wall demolition
- Clapham Yard
  - Enabling Works

The following *Project Works* are proposed in April 2021:

- Mayne Yard North
  - OHLE foundation works
- Northern Corridor
  - No new works proposed in April 2021

- RNA
  - Sacrificial retaining wall installation
- F2S
  - New platform retaining wall FRP
  - Track lowering - Yeronga
- Clapham Yard
  - Demolition preparation works

2 Complaints

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

Table 1: Summary of Complaints

Date	Location	Issue	Activity source of the concern	Period	Unity Response	Status
03/03/21	Gregory Terrace	Driver Behaviour	Truck haulage	March 2021	Unity investigated the trucking company reported by the stakeholder and it was confirmed that neither Unity nor its subcontractors use the company involved. It was therefore concluded that this complaint was not related to Unity works.	Closed
9/03/21	RNA	Noise	Piling and rock breaking	March 2021	The complaint was received after the piling and rock breaking works were completed. Unity was therefore unable to undertake monitoring in response to this complaint. However, Unity investigated the complaint. It was determined the complaint related to Project Works having been undertaken at RNA. The works were undertaken during a scheduled rail shutdown (SCAS). A review of the out of hours works permit for the works confirmed that predictive noise modelling for this Sensitive Place had occurred. Noise levels were predicted to be 32dBA (LA_{10}), internal at this Sensitive Place, that is 10dBA less than the Noise Goals. Therefore, the Project Works were predicted to be Managed Works and being under an approved rail possession were authorised to proceed up to 24 hours per day, for the duration of the possession. It is therefore concluded the works were compliant with the relevant Imposed Conditions. This receiver has been added to the distribution list for all works at RNA.	Closed

3 Environmental Monitoring Results

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

3.1 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 (CEMP) occurs.

3.1.1 Noise Monitoring

Attended noise monitoring was triggered based on the predictive noise assessments for:

- Overhead line equipment mast installation (Rocklea Station – Standard and Non-standard hours)

In accordance with the CEMP, attended outdoors monitoring was undertaken to validate the predictive assessment.

Monitoring was undertaken in order to confirm that the model was accurate and that works could continue to proceed as planned.

Complaint-based noise monitoring was not triggered. One (1) complaint related to noise occurred during the reporting period but Unity did not undertake noise monitoring as detailed in Table 1.

3.1.2 Noise monitoring Results

The below table summarises the noise monitoring results for reporting period.

Table 2: Summary of Noise Monitoring Data

Location and Receiver Type Details	Type of Monitoring	Working Hours	Noise Type	Purpose of Monitoring	Predictive model LA_{10} (dBA)	Performance Goal (dBA) (Condition 11(a), Table 2, LA_{10} noise goals)	Performance Goal (dBA) – (Condition 11(c), Table 2 LA_{10} noise goal + 20dBA))	Measured LA_{10} (dBA)	Measured LA_{eq} (dBA)	Is performance Goal exceeded?	Comments
Brooke Street, Rocklea Commercial	Attended – Outdoors[1]	Out of Standard Hours Sunday 21/03/2021 10:25	Intermittent	Construction Monitoring at Sensitive Places - Model Verification	69	52 (Outdoors) (42dBA default goal + 10dBA façade reduction)[2]	72 (Outdoors) (52+ 20dBA)	59	56	No exceedance	Overhead Line equipment mast installation For interpretation, please refer to section 3.1.4.1.1

- Note (1) - Monitoring Method
  - Note 2 of Imposed Condition 11 Table 2 states *Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (PFNC) apply*.
  - The monitoring was undertaken to validate the model therefore external noise measurements are appropriate to determine the impact of construction noise.
- Note (2) – Façade Attenuation
  - Note 2 of Imposed Condition 11 Table 2 states *Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (PFNC) apply*.
  - The PFNC guideline can no longer be accessed. The Department of Environment and Science (DES) website still states this guideline is under review and is yet to release an alternative guideline
  - Former revisions of the PFNC, in particular Table 7 stated the following regarding typical noise reductions through the building façade:
    - 5 dB – Window wide open
    - 10 dB – Partially closed
    - 20 dB – single glazed, closed
    - 25 dB – Thermal double glazing, closed
  - The RfPC-4 Technical Report considered that all receptors had closed external single glazing for the assessment of construction noise impacts.
  - The Queensland Ombudsman assessed this assumption for the Airport Link Project and recommended that 10dB be adopted for major infrastructure projects in Queensland[1].
  - Additionally, a number of acoustic studies have shown that 10 dB is a suitable assumption for open windows. Most importantly this requirement only applies to temporary rail works within the project footprint and does not apply to long term operational rail noise exposure.
  - Accordingly, it is considered appropriate to consider a 10 dB reduction on this basis. This assumption can be used for predictive modelling and for noise measurements, where indoor noise measurements are not practicable.

[1] https://www.ombudsman.qld.gov.au/ArticleDocuments/218/Airport_Link_Ombudsman_Statement.pdf.aspx, pages 208-210, Section 9.8.6

3.1.3 Vibration Monitoring

Vibration monitoring was triggered during the reporting period based on the predictive vibration assessments for specific activities.

Complaint-based vibration monitoring was not triggered. No complaints related to vibration occurred during the reporting period.

Table 3 Summary of Vibration Monitoring Data

Location	Date (Start and Finish)	Time of day	Closest DAP / Sensitive Place	Receiver Type (table 3 – Imposed Condition 11(e))	Purpose of Monitoring	Maximum vibration Level recorded (mm/s)	Vibration goal for receiver (mm/s)	Exceedance of vibration limit?	Comments
John MacDonald Stand	01/03/21-07/03/21	N/A	John MacDonald Stand	Heritage - DIN4150 Group 3	Construction Monitoring at Sensitive Places - Model Verification	0.28	3-10mm/s (Property Damage Sub-plan)	No Exceedance	Western Platform Demolition and Piling Works For interpretation, please refer to section 3.1.4.2.1
RNA Members Stand and Ernest Baynes Stand	03/03/21-04/03/21	N/A	RNA Members Stand and Ernest Baynes Stand	Heritage - DIN4150 Group 1	Construction Monitoring at Sensitive Places - Model Verification	0.48	20-40mm/s (Property Damage Sub-plan)	No Exceedance	Western Platform Demolition and Piling Works For interpretation, please refer to section 3.1.4.2.2
Community Swimming club Café and Machinery Hill Stands including cattleman's box	06/03/21-07/03/21	N/A	Community Swimming club Café and Machinery Hill Stands including cattleman's box	Heritage - DIN4150 Group 1	Construction Monitoring at Sensitive Places - Model Verification	0.31	20-40mm/s (Property Damage Sub-plan)	No Exceedance	Western Platform Demolition and Piling Works For interpretation, please refer to section 3.1.4.2.3

3.1.4 Interpretation

3.1.4.1 Noise Monitoring[2]

3.1.4.1.1 Overhead Line Equipment Mast Installation – Rocklea Station

Noise monitoring of mast installation works at Rocklea Station was undertaken externally at the nearest DAP (Brooke Street, Rocklea - Single-storey wooden building), approximately 20m from the façade of the building (closer to the works). Monitoring was undertaken during non-standard construction hours. The measured LA_{10} readings were compliant with the Imposed Conditions for works during standard and non-standard working hours.

There were no noise complaints received during the execution of the works.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

3.1.4.2 Vibration Monitoring

3.1.4.2.1 Platform Demolition and Piling works – John MacDonald Stand

Vibration monitoring during station demolition and piling works was undertaken inside of the John Macdonald Stand. The measured readings were compliant with the revised vibration limits presented in the endorsed Property Damage Sub-Plan rev 04.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

3.1.4.2.2 Platform Demolition and Piling works – RNA Members Stand and Ernest Baynes Stand

Vibration monitoring during station demolition and piling works was undertaken between the RNA Members Stand and the Ernest Baynes Stand. The measured readings were compliant with the revised vibration limits presented in the endorsed Property Damage Sub-Plan rev 04.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

3.1.4.2.3 Platform Demolition and Piling works – Community Swimming club Café and Machinery Hill Stands including cattleman's box

Vibration monitoring during station demolition and piling works was undertaken between the Community Swimming club Café and Machinery Hill Stands including cattleman's box. The measured readings were compliant with the revised vibration limits presented in the endorsed Property Damage Sub-Plan rev 04.

Therefore, the RIS scope of works achieved the outcomes set out by the CGCR and OEMP.

3.2 Air Quality

Imposed 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 CEMP occurs.

Visual monitoring was undertaken during routine environmental inspections. A total of 21 inspections were undertaken by the environment team across Mayne Yard, RNA Showgrounds, Yeronga Station, Clapham Yard and the Northern Corridor.

UNITY has installed the following air quality monitoring devices, therefore data collected from these devices, when active, is reported on in the monthly report regardless of the Project Works occurring.

[2] All free field measurements are undertaken in accordance with the latest revision of the Noise Measurement Manual from the Department of Environment and Science (DES) reference ESR/2016/2195

Table 4: Summary of Air Quality monitoring devices

Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Month of March
Dust Deposition Gauge	RNA Showgrounds	AQ-01	13 December 2019	Active
Dust Deposition Gauge	Mayne Yard (Eastern Air Shed)	AQ-04	13 February 2020	Active
Dust Deposition Gauge	Clapham Yard (Eastern Air Shed)	AQ-06	01 February 2021	Active
TSP / PM_{10} Monitor	Mayne Yard (Eastern Air Shed)	UNI324	23 April 2020	Active (power failure between 3 and 5 March)
TSP / PM_{10} Monitor	Clapham Yard (Eastern Air Shed)	UNI327	01 February 2021	Active
TSP / PM_{10} Monitor	RNA (Western Air Shed)	UNI319	25 August 2020	Active (power failure between 1 and 3 March)

3.2.1 Dust results

As passive dust deposition gauges are analysed on a monthly basis, results span from 12 February 2021 to 12 March 2021, with the exception of AQ-06 where results were for the duration of 1 February 2021 to 6 March 2021.

The dust deposition gauges result for the reporting period are detailed below and complied with Imposed Condition 13(b) of the CGCR.

Table 5 Dust deposition gauge results for the reporting period

CGCR Goal ($mg/m^2/day$)	AQ-01 - RNA Showgrounds ($mg/m^2/day$)	AQ-04 Abbotsford Rd (E Mayne) ($mg/m^2/day$)	AQ-06– Clapham yard Showgrounds ($mg/m^2/day$)
120	73	13	13
Total Rainfall during Period	82	80	76

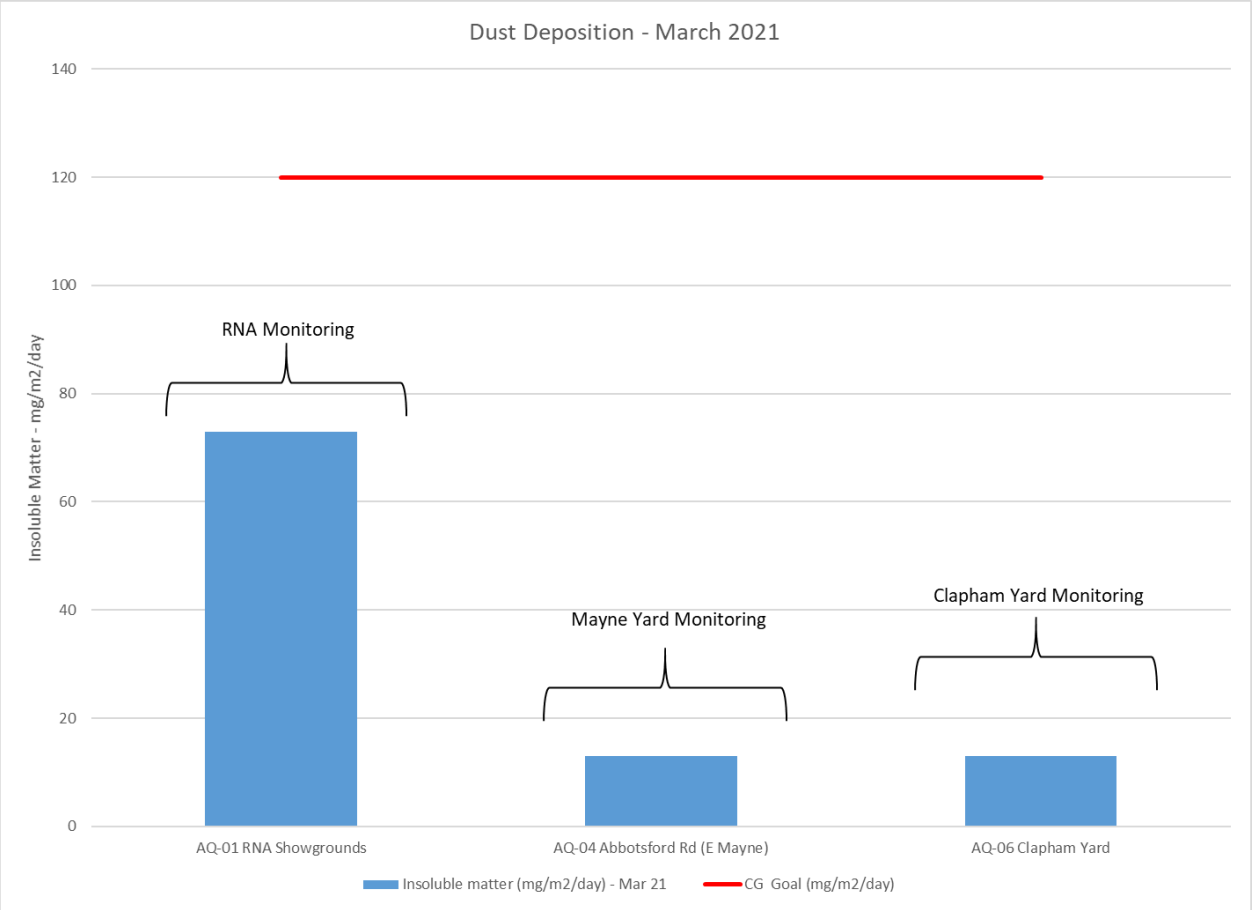


Figure 1 Air Quality Monitoring (Deposited Dust) 12 February 2021 – 12 March 2021 Results

3.2.2 Interpretation

3.2.3 Particulates results

3.2.3.1 Air Quality Monitoring Stations

Unity had three (3) operational air quality monitoring stations set up for the reporting period. The RNA station suffered a power failure for two (2) days from 1 March 2021. The Mayne Yard station suffered a power failure for two (2) days from 3 March 2021. These issues have now been rectified.

3.2.3.2 Monitoring results

External ambient air quality data was collected for total suspended particles (TSP), and particulate matter less than 10 µm (PM_{10}).

TSP is one of the indicators for which the Coordinator-General has imposed a goal of 80 µg/m^3 (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

PM_{10} is one of the indicators for which the Coordinator-General has imposed a goal of 50 µg/m^3 (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

These stations have been set up on site as per AS/NZS 3850 1.1 following consultation with UNITY air quality professionals.

The results are represented in the below figures.

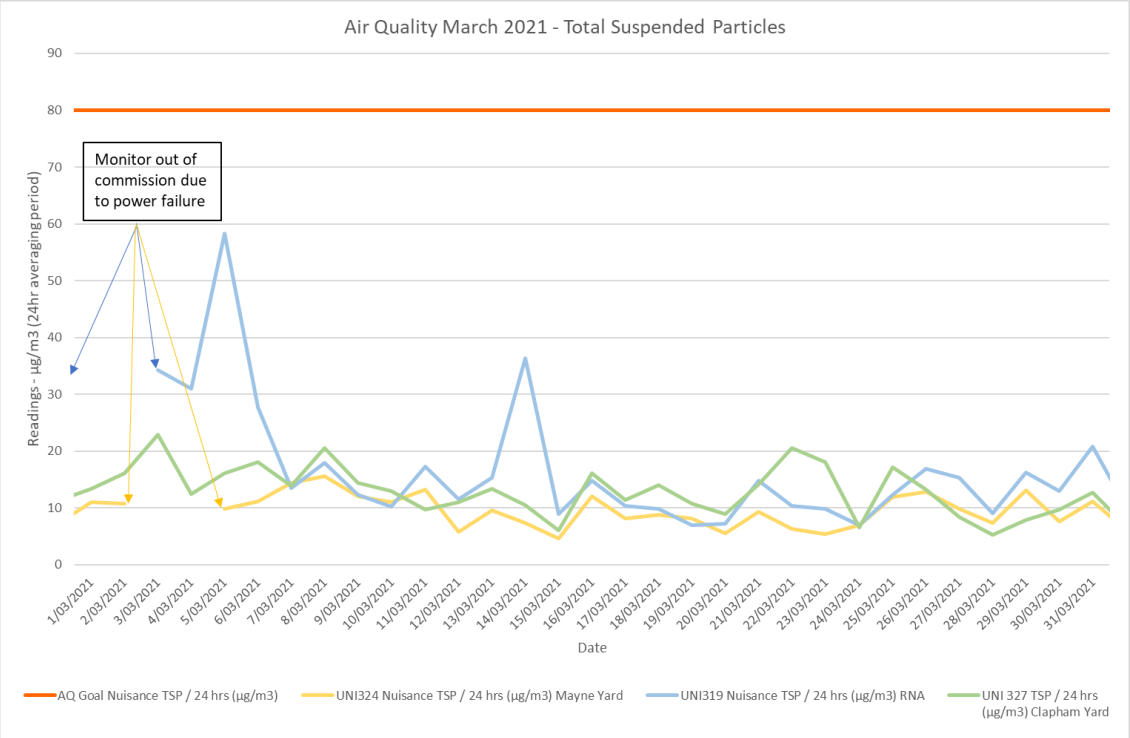


Figure 2 Air Quality Monitoring (TSP) - March 2021 Results

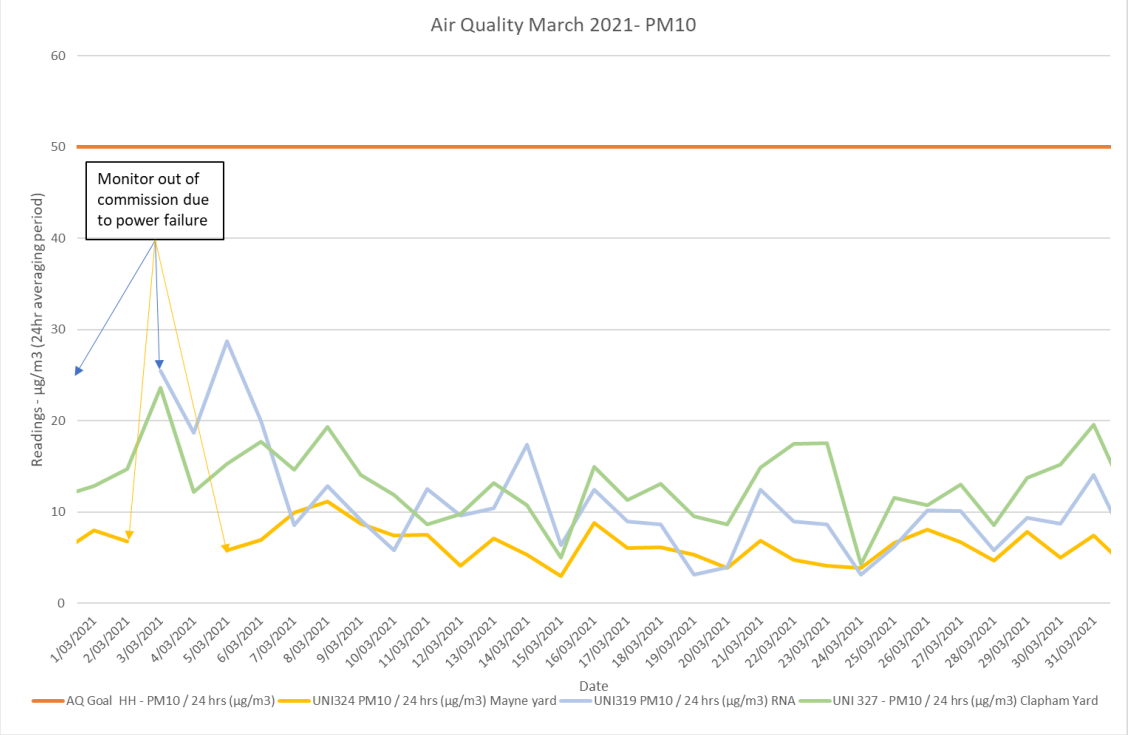


Figure 3 Air Quality Monitoring (PM_{10}) - March 2021 Results

3.3 Water Quality

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 CEMP, occurs.

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

Condition 15(a) requires that discharges of groundwater from Project Works within Moolabin Creek, Yeerongpilly – Oxley Creek catchment must comply with the Oxley Creek - Lowland freshwater environmental values and water quality objectives (Basin no.143 (part) – including all tributaries of the creek) in the *Environment Protection (Water) Policy 2009*.

Water quality monitoring to demonstrate compliance with Condition 15(a) was not triggered during the reporting period. There were no groundwater discharges.

Water quality monitoring to demonstrate compliance with Condition 15(b) and Condition 18 was triggered:

- There were passive discharges through type 2 and 3 ESC devices during March associated with rain events:
  - 9 March 2021 - A rain event occurred which generated run-off from the active worksite of Mayne Yard and Clapham Yard triggered a post-rain monitoring event at these locations.
  - 12 March 2021 - A rain event occurred which generated run-off from the active worksite of Clapham Yard triggered a post-rain monitoring event at this location. This was a localised rain event to the South of site and monitoring was not triggered at Mayne Yard.
  - 15-18 March 2021 - A rain event occurred which generated run-off from the active worksites of Mayne Yard and Clapham Yard triggering a post-rain monitoring event at these locations.
  - 20-24 March 2021 - A rain event occurred which generated run-off from the active worksites of Mayne Yard and Clapham Yard triggering a post-rain monitoring event at these locations.

There were no active surface water discharges during March (e.g. dewatering through pumping, sediment basin release).

In-situ physico-chemical parameters results for all monitoring undertaken during the reporting period are presented below.

3.3.1 Rainfall Records

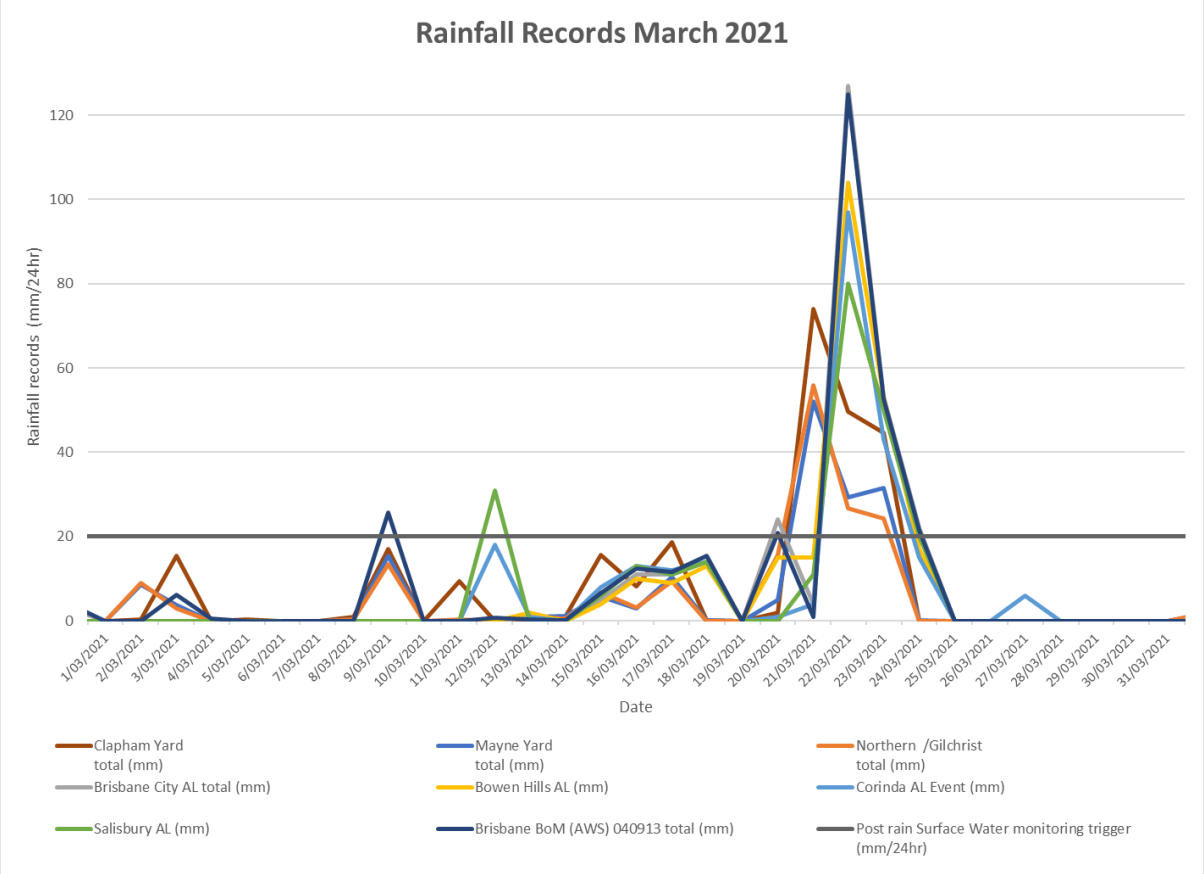


Figure 4 Rainfall – March 2021 Results

3.3.2 Surface Water Discharge Monitoring / Post Rainfall Monitoring Results

Post rainfall monitoring is triggered typically following any rainfall event exceeding 20 to 25 mm over 24 hours, however storm events during the high-risk period of the year (November to March) of lesser amounts but higher intensity may cause run-off which would also trigger post rain monitoring consistent with the C-EMP.

Post rainfall monitoring was triggered during the reporting period at the active worksites of Mayne Yard and Clapham yard

The results of monitoring at the relevant waterways are presented in the below. When results are in red, they exceed / do not meet the Project discharge criteria for compliance with Imposed Conditions 15 and 18.

Table 6: Surface Water Discharge Monitoring Results

Date	Location	Waterway	Tide	Discharge Criteria[3]	Date	Location	Waterway
				Turbidity (NTU) Nil until Turbidity / TSS correlation achieved[4]	TSS (mg/L) 50	DO (%) Nil	pH (pH Unit) Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
09/03/21	Mayne Yard	Breakfast Creek (SW-01)	Rising Brackish to marine conditions	In Field:19 Lab: 13	8	92	7.0
09/03/21	Mayne Yard	Breakfast Creek (SW-02)	Rising Brackish to marine conditions	In Field: 18 Lab: 14	12	93	7.3
09/03/21	Mayne Yard	Breakfast Creek (SW-03)	Rising Brackish to marine conditions	In Field: 20 Lab: 16	20	99	7.7
09/03/21	Clapham Yard	Moolabin Creek (SW-05)	N/A	Field: 21 Lab: 19	7	80	6.7
09/03/21	Clapham Yard	Moolabin Creek (SW-06)	N/A	Field: 32 Lab: 26	8	79	7.3
09/03/21	Clapham Yard	Rocky Water Holes Creek (SW-07)	N/A	Field: 36 Lab:28	6	71	6.9
09/03/21	Clapham Yard	Rocky Water Holes Creek (SW-08)	N/A	Field: 35 Lab:27	14	67	7.0
12/03/21	Clapham Yard	Moolabin Creek (SW-05)	N/A	Field: 8 Lab: 9	6	86	6.9
12/03/21	Clapham Yard	Moolabin Creek (SW-06)	N/A	Field: 8 Lab: 10	9	86	7.1
12/03/21	Clapham Yard	Rocky Water Holes Creek (SW-07)	N/A	Field: 17 Lab: 15	11	60	6.8
12/03/21	Clapham Yard	Rocky Water Holes Creek (SW-08)	N/A	Field: 22 Lab: 15	15	72	7.2
18/03/21	Mayne Yard	Breakfast Creek (SW-01)	Rising Brackish to marine conditions	In field: 9 Lab: 9	<5	91	7.1
18/03/21	Mayne Yard	Breakfast Creek (SW-02)	Rising Brackish to marine conditions	In Field: 10 Lab: 10	7	85	7.6

[3] Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

[4] Correlations are typically run on the source water (i.e. basins) not the receiving system where there is a dilution component of potentially diffuse sources of sediments from non-Project related areas. Due to the very limited amount of discharged the RIS Scope of Works has experienced, there is no correlation available for Mayne Yard. Typically, a minimum of 20 data points is used to determine TSS / in field turbidity correlation for site waters.

Date	Location	Waterway	Tide	Discharge Criteria[3]	Date	Location	Waterway
				Turbidity (NTU) Nil until Turbidity / TSS correlation achieved[4]	TSS (mg/L) 50	DO (%) Nil	pH (pH Unit) Stable pH reading; and General sites: 6.5 – 8.5, or Wallum/Acidic Ecosystems: 5.0 – 7.0
18/03/21	Mayne Yard	Breakfast Creek (SW-03)	Rising Brackish to marine conditions	In Field: 9 Lab:10	7	96	7.5
18/03/21	Clapham Yard	Moolabin Creek (SW-05)	N/A	Field: 8 Lab: 11	<5	77	6.9
18/03/21	Clapham Yard	Moolabin Creek (SW-06)	N/A	Field: 12 Lab: 15	<5	69	7.0
18/03/21	Clapham Yard	Rocky Water Holes Creek (SW-07)	N/A	Field: 16 Lab: 19	<5	68	6.9
18/03/21	Clapham Yard	Rocky Water Holes Creek (SW-08)	N/A	Field: 17 Lab: 19	<5	68	6.9
24/03/21	Mayne Yard	Breakfast Creek (SW-01)	Rising Brackish to marine conditions	In Field: 16 Lab: 15	14	96	7.4
24/03/21	Mayne Yard	Breakfast Creek (SW-02)	Rising Brackish to marine conditions	In Field: 21 Lab: 21	25	94	7.0
24/03/21	Mayne Yard	Breakfast Creek (SW-03)	Rising Brackish to marine conditions	In Field: 19 Lab: 19	21	95	7.0
24/03/21	Clapham Yard	Moolabin Creek (SW-05)	N/A	Field: 22 Lab: 23	8	89	7.1
24/03/21	Clapham Yard	Moolabin Creek (SW-06)	N/A	Field: 13 Lab: 16	<5	80	6.9
24/03/21	Clapham Yard	Rocky Water Holes Creek (SW-07)	N/A	Field: 21 Lab: 26	7	86	7.2
24/03/21	Clapham Yard	Rocky Water Holes Creek (SW-08)	N/A	Field: 27 Lab: 29	19	80	7.1

3.3.3 Groundwater Discharge Monitoring Results

Groundwater discharge monitoring was not triggered during the reporting period.

3.3.4 Routine Surface Water Monitoring Results

During the reporting period, UNITY undertook one (1) round of routine surface water monthly monitoring. This monitoring is being undertaken as it may inform the Dis-1 Credit for the ISCA 'Excellent Rating' the Project is pursuing. The results are presented in Table 7.

Table 7 Routine Surface Water Monitoring Results

Date	Location	Waterway	Tide	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH Unit)
18/03/21	SW 1 – Upstream of Mayne Yard	Breakfast Creek	Rising Brackish to marine conditions	In field: 9 Lab: 9	<5	91	7.1
18/03/21	SW 2 – Adjacent to Mayne Yard	Breakfast Creek	Rising Brackish to marine conditions	In Field: 10 Lab: 10	7	85	7.6
18/03/21	SW 3 – Downstream of Mayne Yard	Breakfast Creek	Rising Brackish to marine conditions	In Field: 9 Lab:10	7	96	7.5
	SW 4 – Downstream of Northern Corridor	Barrambin / York's Hollow	Reduced to monitoring biannually as 12 months of data have been collected and there are no active Project Works that may discharge at this location				
18/03/21	SW 5 – Upstream rail corridor	Moolabin Creek	Not applicable – non tidal environment	Field: 8 Lab: 11	<5	77	6.9
18/03/21	SW 6 – Downstream rail corridor	Moolabin Creek	Not applicable – non tidal environment	Field: 12 Lab: 15	<5	69	7.0
18/03/21	SW 7 – Upstream Rail corridor	Rocky Water Holes Creek	Not applicable – non tidal environment	Field: 16 Lab: 19	<5	68	6.9
18/03/21	SW 8 – Downstream Rail corridor	Rocky Water Holes Creek	Not applicable – non tidal environment	Field: 17 Lab: 19	<5	68	6.9
18/03/21	SW 9 – Downstream Rail corridor	Stable Swamp Creek	Not applicable – non tidal environment	Field: 11 Lab: 14	<5	87	7.1

3.3.5 Interpretation

3.3.5.1 9 March 2021 Post Rainfall Monitoring

Post rainfall monitoring undertaken following the 9 March 2021 rainfall events confirmed off-site discharges from Mayne Yard and Clapham Yard met the discharge criteria at the relevant receiving waters of Breakfast Creek, Moolabin Creek and Rocky Water Holes Creek.

Therefore, compliance with Imposed Conditions 15 and 18 was met.

3.3.5.2 12 March 2021 Post Rainfall Monitoring

Post rainfall monitoring undertaken following the 12 March 2021 rainfall events confirmed off-site discharges from Clapham Yard met the discharge criteria at the relevant receiving waters of Moolabin Creek and Rocky Water Holes Creek.

Therefore, compliance with Imposed Conditions 15 and 18 was met.

3.3.5.3 15-18 March 2021 Post Rainfall Monitoring

Post rainfall monitoring undertaken following the 15-18 March 2021 rainfall events off-site discharges from Mayne Yard and Clapham Yard met the discharge criteria at the relevant receiving waters of Breakfast Creek, Moolabin Creek and Rocky Water Holes Creek.

Therefore, compliance with Imposed Conditions 15 and 18 was met.

3.3.5.4 20-24 March 2021 Post Rainfall Monitoring

Post rainfall monitoring undertaken following the 20-24 March 2021 rainfall events confirmed off-site discharges from Mayne Yard and Clapham Yard met the discharge criteria at the relevant receiving waters of Breakfast Creek, Moolabin Creek and Rocky Water Holes.

Therefore, compliance with Imposed Conditions 15 and 18 was met.

4 Compliance Review

4.1 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 (NCE) is defined as Project Works that do not comply with the Imposed Conditions.

4.1.1 Non - Compliance Events Summary

Table 8 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					

4.2 CEMP Compliance

The below table summarises compliance status with the CEMP and monitoring requirements of relevant sub-plans for the reporting period.

Table 9 CEMP and relevant Subplans monitoring requirements – Compliance Status for the reporting period

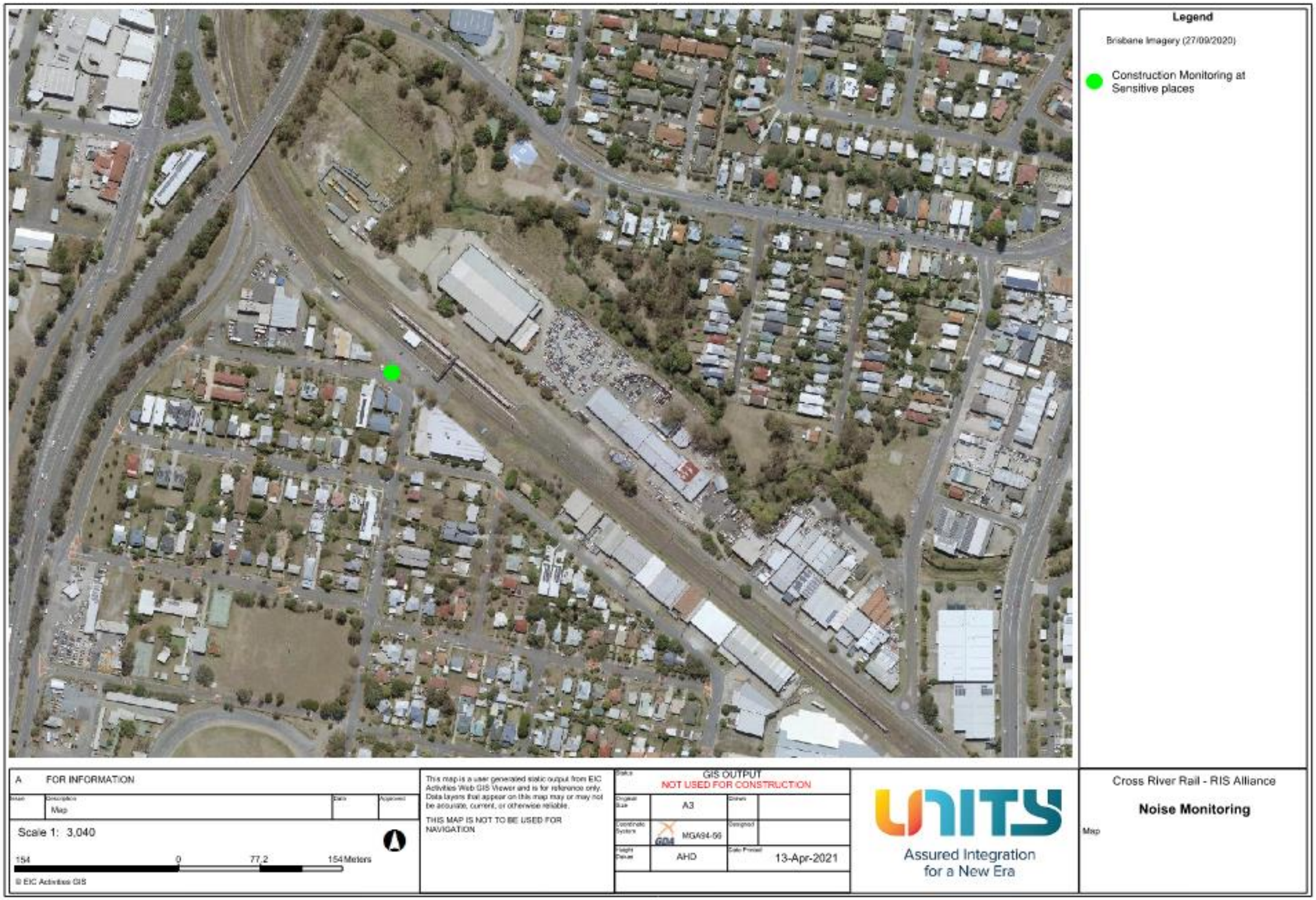
Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with CEMP / Subplan	Effect of the non-compliance
Air Quality	Visual monitoring program + Additional particulate monitoring as required based on the outcomes of the predictive assessment / risk profile	Moderate to High	Yes – visual monitoring undertaken as part of routine inspections Monitoring for TSP, PM10 and deposited dust also undertaken	Compliant	Not Applicable
Air Quality	Complaints response	Moderate to High	Not triggered – no complaints	Compliant	Not Applicable
Noise	Buffer distance tests based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Yes	Compliant	Not Applicable
Noise	Plant noise audits for noisy plant to validate models input as required	Moderate to High	No	N/A	Not Applicable
Noise	Complaints response	Moderate to High	Not triggered – Unity was only made aware of a noise complaint from 09 March 2021 after the works were completed so monitoring was unable to be undertaken.	Compliant	Not Applicable
Vibration	Construction Monitoring at Sensitive Places / DAPs - Model verification based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Yes	Compliant	Not Applicable
Vibration	Complaints response	Moderate to High	Not triggered – no complaints	Compliant	Not Applicable
Water Quality	Monthly monitoring	N/A	Yes	Compliant	Not Applicable

Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with CEMP / Subplan	Effect of the non-compliance
Water Quality	Post Rainfall	Moderate to High	Yes	Compliant	Not Applicable
Water Quality	Dewatering	Moderate to High	Not triggered – no dewatering to receiving water systems	N/A	Not Applicable

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

None for this reporting period.

Attachment 2 Monitoring Locations – Noise


Legend
Brisbane Imagery (27/09/2020)
Construction Monitoring at Sensitive places
A FOR INFORMATION
Map
Scale 1: 3,040
154 0 77.2 154 Meters
© EIC Activities GIS
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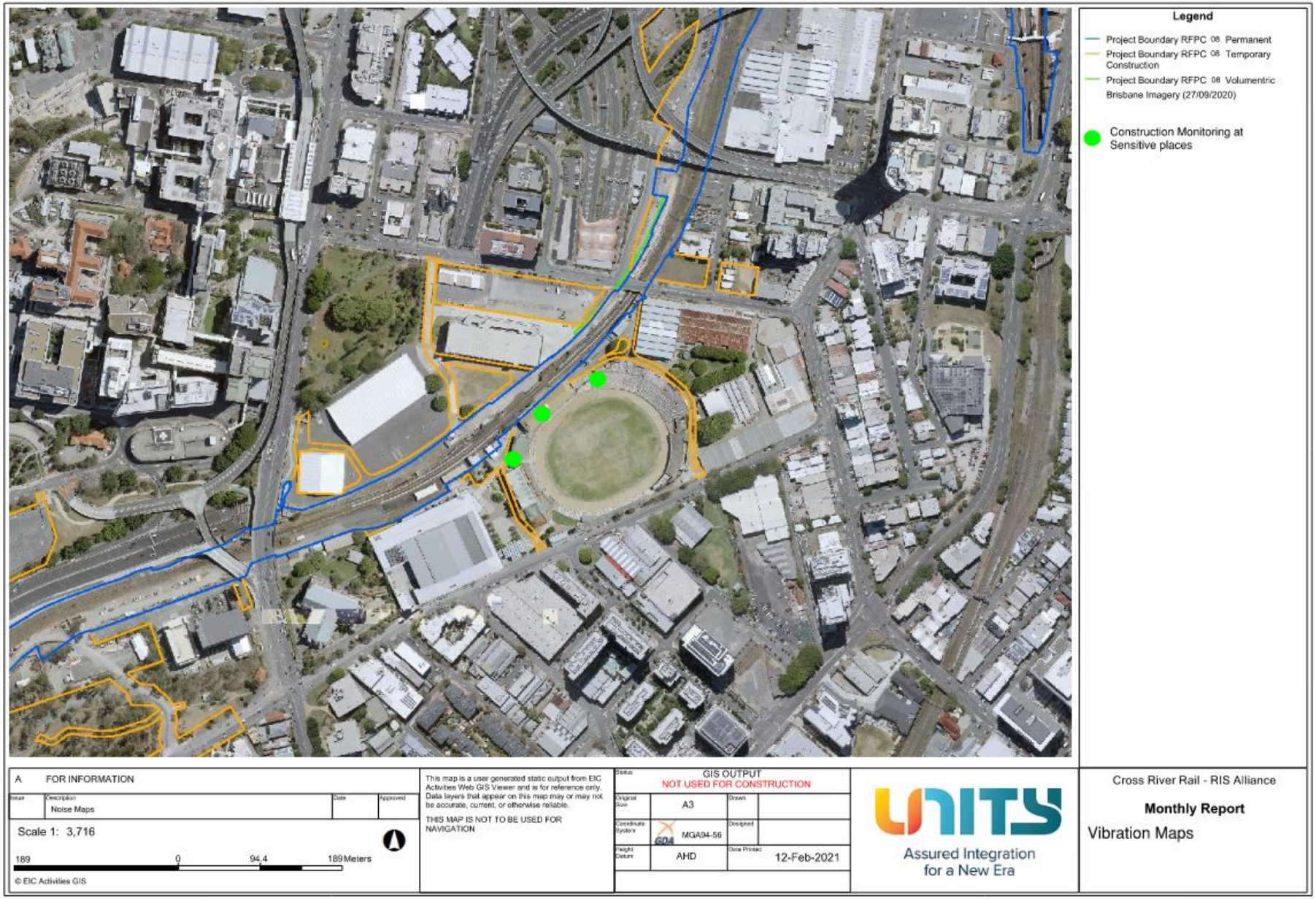
A3
MGA94-56
AHD
13-Apr-2021
Assured Integration
for a New Era
Cross River Rail - RIS Alliance
Noise Monitoring
Map

Attachment 3 Monitoring Locations – Vibration


Legend
Project Boundary RFPC 08 Permanent
Project Boundary RFPC 08 Temporary Construction
Project Boundary RFPC 08 Volumentric
Brisbane Imagery (27/09/2020)
Construction Monitoring at Sensitive places
A FOR INFORMATION
Noise Maps
Scale 1: 3,716
189 0 94.4 189 Meters
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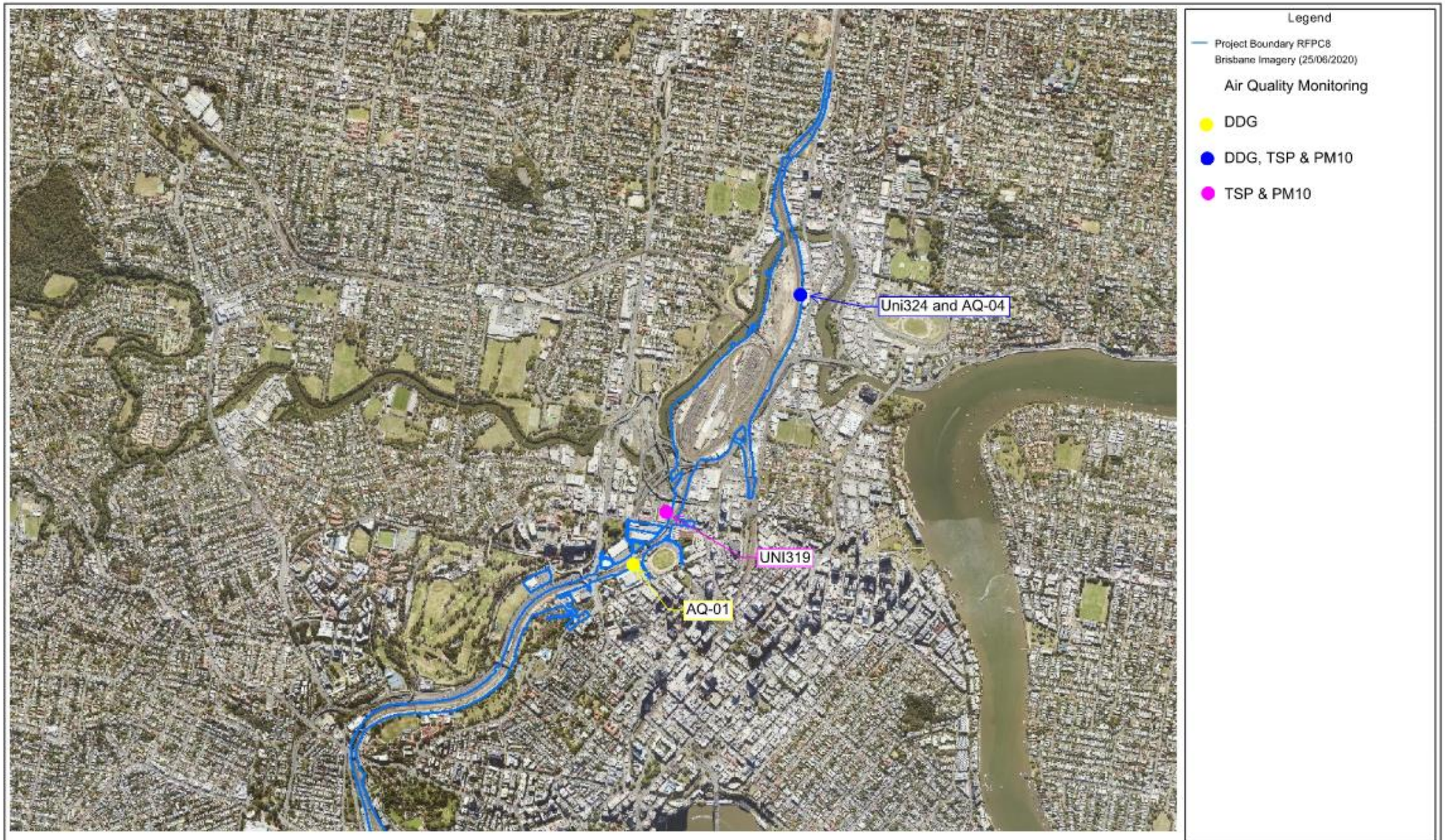
A3
MGA94-56
GDA
AHD
12-Feb-2021
Assured Integration for a New Era
Cross River Rail - RIS Alliance
Monthly Report
Vibration Maps

Attachment 4 Monitoring Locations – Air Quality



A	FOR INFORMATION		
Issue	Description: August 2020	Date	Approved

Scale 1: 20,000

1,016 0 508.0 1,016 Meters

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Status	GIS OUTPUT NOT USED FOR CONSTRUCTION		
Original Size	A3	Drawn	
Coordinate System	GDA MGA94-56	Designed	
Height Datum	AHD	Date Printed	11-Sep-2020

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Air Quality Monitoring locations

Legend

- Project Boundary RFPC- Permanent
- Project Boundary RFPC - Volumetric
- Brisbane Imagery (27/09/2020)
- DDG, TSP and PM10

A	FOR INFORMATION		
Issue	Description	Date	Approved
	Description		

Scale 1: 8,000

406 0 203.2 406 Meters

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Status	GIS OUTPUT NOT USED FOR CONSTRUCTION		
Original Size	A3	Drawn	
Coordinate System	GDA MGA94-56	Designed	
Height Datum	AHD	Date Printed	22-Apr-2021

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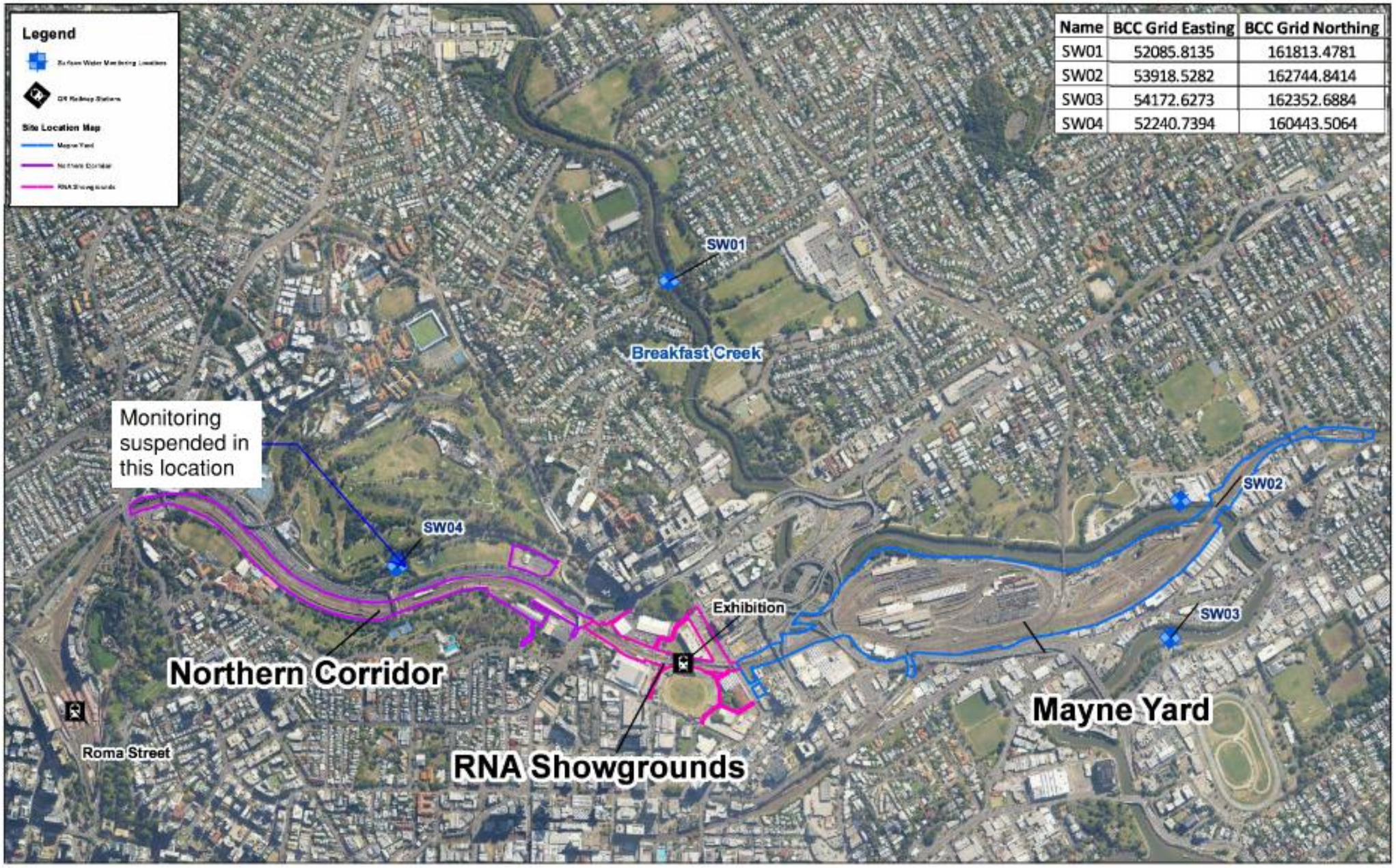
Air Quality Monitoring Stations

Attachment 5 Monitoring Locations – Surface Water



Name	BCC Grid Easting	BCC Grid Northing
SW01	52085.8135	161813.4781
SW02	53918.5282	162744.8414
SW03	54172.6273	162352.6884
SW04	52240.7394	160443.5064

Rev	Description	Date	Approved
1	Overview Map	17/09/2019	UNITY

0 100 200 400 600 m
Scale 1 : 12,000 cm

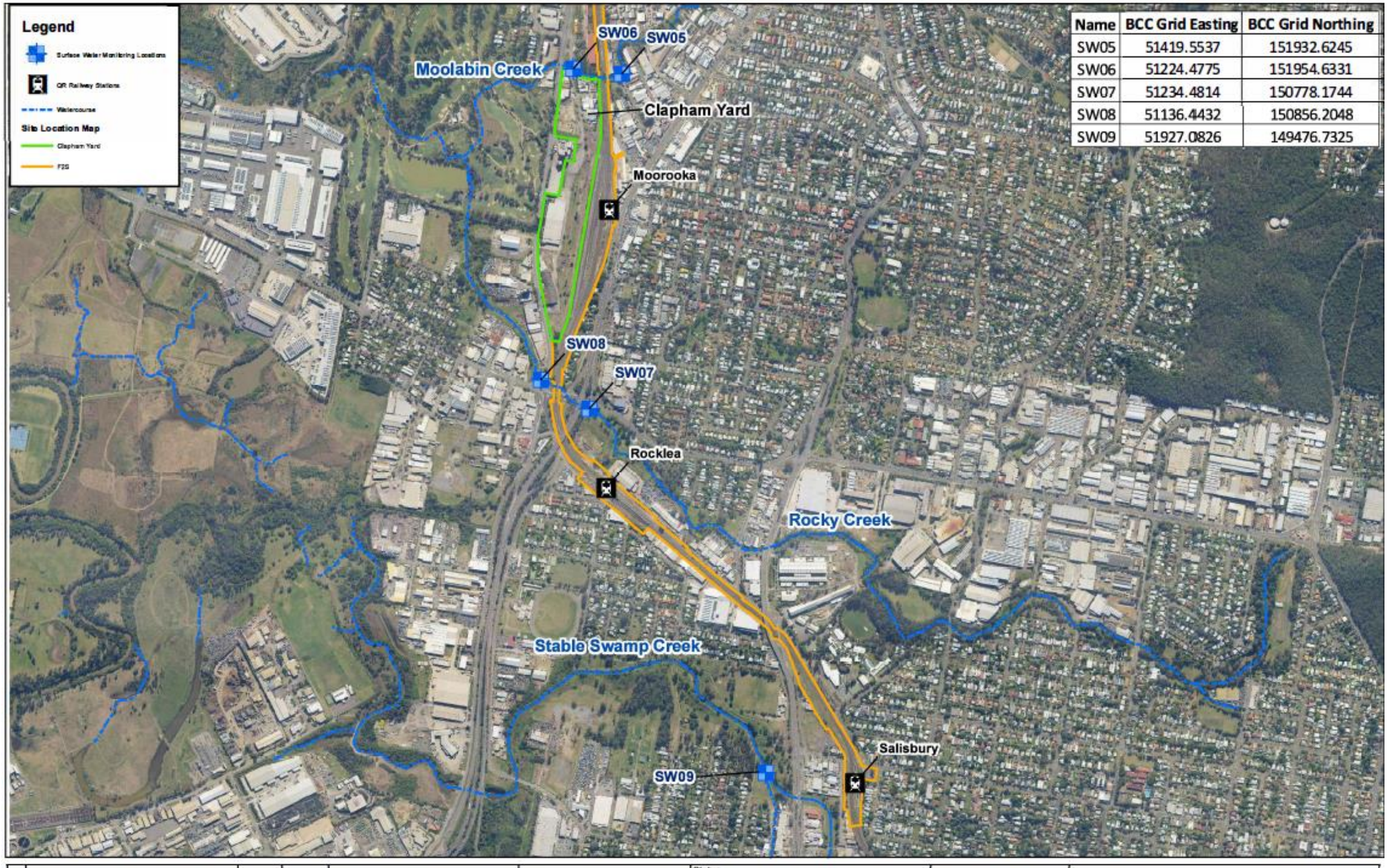
Status: Issued for Information

Original Size	A3	Drawn	GIS
Coordinate System	GDA 1994 BCS007	Designed	UNITY
Height Datum	AHD	Date Printed	2/13/2020
Filename:	Surface_Water_Northern_Area_Map.mxd		

Project Wide Surface Water Investigation

Figure 1 - Surface Water Monitoring Locations

Project Number	Discipline	Document	Document Number	Rev
	ENV	PL	002	1



Name	BCC Grid Easting	BCC Grid Northing
SW05	51419.5537	151932.6245
SW06	51224.4775	151954.6331
SW07	51234.4814	150778.1744
SW08	51136.4432	150856.2048
SW09	51927.0826	149476.7325

Rev	Description	Date	Approved
1	Southern Overview Map	17/09/2019	Unity

0 100 200 400 600 m
Scale 1 : 12,000 cm

Status: Issued for Information

Original Size	A3	Drawn	GIS
Coordinate System	GDA 1994 BCSG02	Designed	Unity
Height Datum	AHD	Date Printed	2/13/2020
Filename:	Surface_Water_Southern_Area_Map.mxd		

N

Project Wide Surface Water Investigation

Figure 2 - Surface Water Monitoring Locations

Project Number	Discipline	Document	Document Number	Rev
	ENV	PL	002	1

Appendix B – TSD Monthly Report

COORDINATOR-GENERAL'S MONTHLY REPORT: MARCH 2021

Prepared in accordance with Coordinator-General Imposed Condition 6 - Reporting.

1. Monthly Monitoring Summary

It is CBGU Joint Venture's intent to aim for the Goals and Objectives relevant to vibration, noise, air quality and water monitoring within the practical extent of delivering the Project.

Vibration monitoring was conducted on twenty-three (23) occasions, and noise monitoring was conducted on forty-four (44) occasions during March 2021. Each vibration and noise monitoring event confirmed works adhered to project requirements.

Ambient air quality monitoring was conducted at Roma Street, Albert Street, Woolloongabba, Boggo Road, Southern Portal and Northern Portal precinct sites during March 2021. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on twenty-four (24) occasions. Each monitoring event confirmed project requirements were adhered to. Two (2) rounds of surface water quality monitoring were conducted; these monitoring events confirmed no impacts were generated by the Project.

2. CG Monthly Report – Compliance Assessment Against Imposed Conditions

Whilst not a requirement of Imposed Condition 6, CBGU offers the below Compliance Status Table as a good-will gesture to demonstrate the Project's ongoing environmental performance.

Table 1: 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	CBGU project works have been conducted in compliance with the Imposed Conditions.
2.	**Outline Environmental Management Plan** – timely submission to the Coordinator-General, including required sub plans.	N/A	The OEMP is not an obligation of the CBGU Joint Venture.
3.	**Design** – the achievement of the Environmental Design Requirements.	Yes	Design and implementation proceeded in accordance with the Environmental Design Requirements.
4.	**Construction Environmental Management Plan** – all relating to Relevant Project Works.	Yes	All CBGU works were conducted in accordance with the Construction Environmental Management Plan (CEMP) (Rev 7).
5.	**Compliance and Incident management** – Non-compliance events, notifications and reporting.	Yes	Nil non-compliances occurred during the monitoring period (refer to Section 4).
6.	**Reporting** – Monthly and Annual reporting.	Yes	All reporting requirements are completed in accordance with Imposed Condition 6.
7.	**Environmental Monitor** – engaged and functions resumed.	Yes	An Environmental Monitor (EM) is appointed to the Project, and CBGU is committed to working collaboratively to aid the EM's functions under Imposed Condition 7.
8.	**Community Relations Monitor** – engaged and functions resumed.	Yes	A Community Relations Monitor (CRM) is appointed to the Project, and CBGU is committed to working collaboratively to aid the CRM's functions under Imposed Condition 8.
9.	**Community engagement plan** – developed and endorsed by Environmental Monitor.	Yes	A Community Engagement Plan (CEP) has been developed and implemented in accordance with Imposed Condition 9. The CEMP has been endorsed with the CEP.
10.	**Hours of work** – works undertaken during approved hours.	Yes	CBGU project works have been conducted in accordance with the approved hours of work.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
11.	**Noise** – Work must aim to achieve internal noise goals for human health and well-being.	Yes	CBGU project work has aimed to achieve internal noise goals for human health and well-being. Where internal noise levels have been unable to be measured, suitable noise reductions have been applied in accordance with Imposed Condition 11. Noise monitoring data is provided within Section 3.2.
	Vibration – Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	CBGU project work has aimed to achieve vibration goals for cosmetic damage, human comfort and sensitive buildings. Vibration monitoring data is provided within Section 3.1.
12.	**Property damage** relating to ground movement	Yes	The management of potential impacts relating to property damage has been completed in accordance with Imposed Condition 12.
13.	**Air quality** – Works must aim to achieve air quality goals for human health and nuisance.	Yes	CBGU project works have aimed to achieve air quality goals. Air quality monitoring data is provided within Section 3.3.
14.	**Traffic and transport** – Works must minimise adverse impacts on road safety and traffic flow.	Yes	CBGU project works have been conducted in a manner that has minimised adverse impacts on road safety and traffic flow.
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	CBGU has prepared and manages processes to ensure water quality is managed in accordance with Imposed Condition 15.
16.	**Water resources** – evaluate potential impact, plan works, implement controls and monitor the inflow of groundwater associated with drawdown.	Yes	CBGU project works are managed in accordance with Imposed Condition 16.
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.	Yes	Design of the CBGU project works considers the requirements of Imposed Condition 17.
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	CBGU has prepared and manages processes to ensure erosion & sediment control is managed in accordance with Imposed Condition 18.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
19.	**Acid Sulfate Soils** managed as per the *Queensland Acid Sulfate Soil Technical Manual.*	Yes	CBGU has prepared and manages processes to ensure acid sulphate soils are managed in accordance with Imposed Condition 19.
20.	**Landscape and open space** – general requirement to minimise impacts on landscapes and open space values and specific requirements around Victoria park	Yes	CBGU project works are designed and implemented in accordance with Condition 20.
21.	**Worksite rehabilitation** – worksites rehabilitated as soon as practicable upon completion of works or commissioning, and in consultation with Brisbane City Council.	Yes	CBGU project works are designed and implemented in accordance with Condition 21.

3. Environmental Monitoring Results

Monitoring data is provided below in accordance with Imposed Condition 6(b)(i).

3.1 Vibration

Vibration requirements (levels) are defined as goals within Imposed Condition 11. The goals are to be aimed for.

The Coordinator-General Change Report acknowledges instances exist that these goals may not be achieved.

Twenty-three (23) vibration monitoring sessions were conducted during March 2021.

All vibration monitoring adhered to project requirements and is detailed in the table below.

Table 2: Vibration Monitoring Data

No.	Start Date	Time (AM/PM)	Finish Date	Location (Street Name) (Construction Precinct)	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
1.	01/03/2021	12:00:00 AM	1/03/2021	Vulture Street (Woolloongabba Precinct)	0.08	0.1	2	Heritage Structure	Yes
2.	02/03/2021	5:42:00 PM	4/03/2021	Hawthorne Street (Woolloongabba Precinct)	0.09	0.1	0.5	Residential	Yes
3.	03/03/2021	3:37:00 PM	6/03/2021	Lockerbie Street (Woolloongabba Precinct)	0.09	0.2	0.5	Residential	Yes
4.	04/03/2021	2:34:00 PM	5/03/2021	Stanley Street (Woolloongabba Precinct)	0.09	0.1	2	Heritage Structure	Yes
5.	08/03/2021	2:58:00 PM	10/03/2021	Lockerbie Street (Woolloongabba Precinct)	0.12	0.2	0.5	Residential	Yes

No.	Start Date	Time (AM/PM)	Finish Date	Location (Street Name) (Construction Precinct)	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
6.	10/03/2021	1:09:00 PM	10/03/2021	Walmsley Street (Woolloongabba Precinct)	0.11	0.2	0.5	Residential	Yes
7.	10/03/2021	4:21:00 PM	12/03/2021	Walmsley Street (Woolloongabba Precinct)	0.08	0.3	0.5	Residential	Yes
8.	11/03/2021	9:19:00 AM	17/03/2021	Mary Street (Albert Street Precinct)	0.13	0.3	50	Residential	Yes
9.	11/03/2021	1:44:00 PM	17/03/2021	Mary Street (Albert Street Precinct)	0.2	0.2	50	Residential	Yes
10.	11/03/2021	1:45:00 PM	17/03/2021	Mary Street (Albert Street Precinct)	0.2	0.2	50	Residential	Yes
11.	11/03/2021	12:14:00 PM	14/03/2021	River Terrace (Woolloongabba Precinct)	0.08	0.1	0.5	Residential	Yes
12.	12/03/2021	10:07:00 AM	12/03/2021	Roma Street (Roma Street Precinct)	-	7.8	10	Heritage Structure (Controlled Blast)	Yes
13.	12/03/2021	2:14:00 PM	15/03/2021	Walmsley Street (Woolloongabba Precinct)	0.07	0.1	0.5	Residential	Yes
14.	15/03/2021	1:31:00 PM	19/03/2021	Walmsley Street (Woolloongabba Precinct)	0.26	0.7	0.5	Residential	Yes
15.	18/03/2021	2:17:00 PM	22/03/2021	Albert Street (Albert Street Precinct)	0.13	0.4	50	Structure	Yes
16.	19/03/2021	10:06:00 AM	24/03/2021	Park Road (Woolloongabba Precinct)	0.08	0.1	0.5	Residential	Yes

No.	Start Date	Time (AM/PM)	Finish Date	Location (Street Name) (Construction Precinct)	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
17.	20/03/2021	7:30:00 AM	20/03/2021	Roma Street (Roma Street Precinct)	-	5.1	10	Heritage Structure (Controlled Blast)	Yes
18.	22/03/2021	7:27:00 AM	25/03/2021	River Terrace (Woolloongabba Precinct)	0.23	0.6	0.5	Residential	Yes
19.	25/03/2021	7:03:00 AM	26/03/2021	Hawthorne Street (Woolloongabba Precinct)	0.10	0.1	0.5	Residential	Yes
20.	25/03/2021	4:48:00 AM	26/0/2021	TMR Busway (Boggo Road Precinct)	0.11	0.3	50	Commercial	Yes
21.	26/03/2021	11:07:00 AM	29/03/2021	Roma Street (Roma Street Precinct)	0.14	5.2	50	Structure	Yes
22.	26/03/2021	7:30:00 AM	26/03/2021	Roma Street (Roma Street Precinct)	-	5.7	10	Heritage Structure (Controlled Blast)	Yes
23.	31/03/2021	7:30:00 AM	31/03/2021	Roma Street (Roma Street Precinct)	-	6.7	10	Heritage Structure (Controlled Blast)	Yes

3.2 Noise

Noise requirements (levels) are defined as goals within Imposed Condition 11. The goals are to be aimed for.

The Coordinator-General Change Reports acknowledge instances exist that these goals may not be achieved.

Noise monitoring was conducted on forty-four (44) occasions during March 2021. All noise monitoring data adhered to project requirements and is provided in the table below.

Table 3: Noise Monitoring Data

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
1.	2/03/2021	5:53:00 PM	Hawthorne Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	Internal	Tunnelling	Construction	42	37.6	35	35.7	Yes
2.	9/03/2021	11:17:00 AM	Victoria Park Bikeway (Northern Portal)	Construction Monitoring at Sensitive Places	External	Excavation and ground support	Construction	62	68.7	52	67	Yes
3.	9/03/2021	7:57:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Utilities works	Construction	67	80.5	57	76.3	Yes
4.	9/03/2021	9:02:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support	General Public	62	65.5	52	67.6	Yes
5.	9/03/2021	9:20:00 PM	Elizabeth Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support	General Public	67	62.3	57	61.2	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
6.	9/03/2021	7:45:00 AM	Joe Baker Street (Boggo Road Precinct)	Model Verification	External	Crane lifting	Construction	77	69.6	67	68	Yes
7.	10/03/2021	7:56:00 AM	Victoria Park Bikeway (Northern Portal)	Construction Monitoring at Sensitive Places	External	Excavation and ground support	Construction	62	71.4	52	67.6	Yes
8.	10/03/2021	8:50:00 AM	Victoria Park Bikeway (Northern Portal)	Construction Monitoring at Sensitive Places	External	Ground support	Construction	62	67.9	52	66.4	Yes
9.	10/03/2021	9:12:00 AM	Victoria Park Bikeway (Northern Portal)	Construction Monitoring at Sensitive Places	External	Ground support	Construction	62	66.1	52	65.5	Yes
10.	11/03/2021	9:28:00 AM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Ground support and excavation	Domestic and construction	55	54.8	45	54.6	Yes
11.	11/03/2021	9:53:00 AM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support and excavation	Construction	72	74.3	62	71.2	Yes
12.	11/03/2021	10:24:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support and excavation	Construction	72	71	62	67.9	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
13.	11/03/2021	10:41:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support and excavation	Construction	72	73.6	62	71	Yes
14.	11/03/2021	7:56:00 PM	Parklands Boulevard (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation	Road traffic and railway line	62	54.3	52	56.1	Yes
15.	11/03/2021	8:24:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation	Road traffic	62	69.5	52	65.4	Yes
16.	12/03/2021	9:08:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation	Domestic and construction	55	59.7	45	58.8	Yes
17.	12/03/2021	9:26:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation	Construction	55	62.4	45	58.3	Yes
18.	12/03/2021	10:07:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled blast	Construction	-	-	130[4]	106.8	Yes
19.	12/03/2021	7:30:00 AM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Controlled blast	Construction	-	-	130[4]	111.3	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
20.	15/03/2021	8:46:00 PM	Walmsley Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	Internal	Tunnelling	Construction	42	47.6	35	46.7	Yes
21.	16/03/2021	12:23:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Tunnelling and excavation	Domestic and construction	55	48.9	45	49.9	Yes
22.	16/03/2021	12:41:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support and excavation	Construction	72	71.1	62	69.2	Yes
23.	17/03/2021	1:28:00 PM	Mary Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation	Construction	55	62.9	45	60.2	Yes
24.	19/03/2021	8:47:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support	Construction	67	74	57	74	Yes
25.	19/03/2021	9:06:00 AM	Roma Street (Roma Street Precinct)	Complaint response	internal	Tunnelling	Construction	55	52.4	45	48.7	Yes
26.	19/03/2021	9:27:00 AM	Roma Street (Roma Street Precinct)	Complaint response	internal	Tunnelling	Construction	60	52	50	47.9	Yes
27.	20/03/2021	7:30:00 AM	Roma Street (Roma Street Precinct)	Supreme Court	External	Construction	Construction	-	-	130[4]	114.7	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
28.	22/03/2021	11:30:00 AM	Llewellyn Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	Internal	Tunnelling	Construction	42	47.8	35	46.5	Yes
29.	24/03/2021	11:31:00 AM	Albert Street (Albert Street Precinct)	Model Verification	Internal	Ground support and excavation	General public	60	43.6	50	45.6	Yes
30.	24/03/2021	11:57:00 AM	Albert Street (Albert Street Precinct)	Model Verification	External	Ground support and excavation	Construction	72	61.8	62	60.6	Yes
31.	24/03/2021	12:26:00 PM	Albert Street (Albert Street Precinct)	Model Verification	Internal	Ground support and excavation	Construction	55	45.2	45	42.2	Yes
32.	25/03/2021	7:09:00 AM	Hawthorne Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	Internal	Tunnelling	Construction	42	36.7	35	33.7	Yes
33.	26/03/2021	10:31:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Ground support	Construction	55	39.3	45	37.4	Yes
34.	26/03/2021	10:57:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support	Construction and general public	67	73.9	57	74.3	Yes
35.	29/03/2021	10:57:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Ground support and excavation	Construction	55	40.1	45	46.3	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
36.	29/03/2021	11:13:00 AM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Ground support and excavation	Construction	55	40.5	45	38.8	Yes
37.	29/03/2021	10:52:00 AM	George Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Ground support and material haulage	Construction and Road traffic	72	73.5	62	70.1	Yes
38.	29/03/2021	10:32:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Utilities works	Construction	59	75.8	52	73.8	Yes
39.	29/03/2021	9:30:00 PM	Peter Doherty Street (Boggo Road Precinct)	Model Verification	External	Tunnelling	Construction	59	62.8	52	60	Yes
40.	29/03/2021	10:56:00 PM	Elliott Street (Boggo Road Precinct	Model Verification	External	Tunnelling	Construction	49	59.2	42	58.3	Yes
41.	29/03/2021	8:00:00 PM	Albert Street (Boggo Road Precinct)	Model Verification	External	Tunnelling	Construction	49	52.1	42	50.1	Yes
42.	31/03/2021	8:08:00 PM	Mary Street (Albert Street Precinct)	Model Verification	Internal	Tunnelling, material haulage and excavation	Construction and office	42	40.9	35	42.3	Yes
43.	31/03/2021	8:50:00 AM	Albert Street (Albert Street Precinct)	Model Verification	External	Tunnelling, material	Construction and traffic	67	63.8	57	62.6	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External [3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10[1]	Noise level LA10[1]	Noise Goal LAeq[2]	Noise level LAeq[2]	Adhered to Project Requirements (Yes / No)
						haulage and excavation						
44.	31/03/2021	9:30:00 PM	Mary Street (Albert Street Precinct)	Model Verification	External	Tunnelling, material haulage and excavation	Construction and traffic	59	64	52	63.1	Yes

- *[1] Intermittent noise goal (LA10)*
- *[2] Continuous noise goal (LAeq)*
- *[3] In accordance with Imposed Condition 11, where internal noise levels were unable to be measured, external noise goals were developed by an acoustic specialist using the following standards: ISO 140-5:1998 Acoustics – Measurement of Sound Insulation in Buildings and of Building Elements, Part 5: Field measurements of airborne sound insulation of façade elements and facades and ISO 354:1985 Acoustics – Measurement of sound absorption in a reverberation room.*
- *[4] Blasting is measured in dB Linear Peak.*

3.3 Air Quality

3.3.1 Deposited Dust Results

Air quality requirements (levels) are defined as goals within Imposed Condition 13. The goals are to be aimed for.

The Coordinator-General Change Report acknowledges instances exist that these goals may not be achieved.

Dust deposition monitoring was performed during March 2021. The dust deposition gauges result for the reporting period are detailed below, and all monitoring data adhered to project requirements.

Table 4: Air Quality Monitoring – Deposited Dust Data

Location	Project Wide Air Quality Goals[1]			Monitoring results (mg/m2/day)	Comments
	Criterion	Air Quality Indicator	Goal (mg/m2/day)		
Northern Portal	Nuisance	Deposited dust	120	58.06	*Air quality monitoring was performed during the reporting period. All results adhered to project requirements.*
Roma Street Precinct				22.58	
Albert Street Precinct (South)				10.71	
Albert Street Precinct (North)				64.29	
Woolloongabba Precinct (North)				16.13	
Woolloongabba Precinct (South)				38.71	
Boggo Road Precinct (North)				16.13	
Boggo Road Precinct (South)				58.06	
Southern Portal (South)				12.90	
Southern Portal (East)				16.13	

- [1] 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.

3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particules (TSP) and particulate matter less than 10µm (PM10) monitoring was conducted during March 2021.

TSP and PM10 are monitored using portable air quality units and nearby Government air quality stations. Targeted monitoring of potential dust-generating activities is conducted by the mobile air quality units and was completed at Albert Street, Woolloongabba, Boggo Road and Northern Portal Precincts during March 2021.

Three (3) Government air quality stations near the Construction Precincts are also utilised.

Table 5: Targeted Air Quality Monitoring – Total Suspended Particles and PM10 Data

Date	TSP Project Goal	PM10 Project Goal	Gabba		Albert		Boggo [1]		Northern Portal	
			TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
	(µg/m3/24 hr)									
01-Mar-21	80	50	3.43	3.33	14.26	14.21	-	-	10.47	10.41
02-Mar-21	80	50	3.55	3.36	18.81	18.74	9.05	9.04	13.39	13.25
03-Mar-21	80	50	3.11	3.07	17.57	17.53	10.1	10.1	14.23	14.2
04-Mar-21	80	50	5.96	5.81	15.50	15.48	-	-	7.08	7.06
05-Mar-21	80	50	7.43	7.37	18.73	18.68	-	-	10.82	10.75
06-Mar-21	80	50	9.43	9.39	21.81	21.75	-	-	11.49	11.42
07-Mar-21	80	50	7.19	7.17	8.13	8.11	-	-	8.70	8.67
08-Mar-21	80	50	7.82	7.80	9.84	9.82	-	-	9.42	9.36
09-Mar-21	80	50	8.46	8.41	12.26	12.21	8.42	8.42	10.37	10.29
10-Mar-21	80	50	8.18	8.09	18.30	18.23	8.24	8.23	9.67	9.56
11-Mar-21	80	50	6.35	6.30	17.75	17.71	6.01	6.00	6.90	6.84
12-Mar-21	80	50	6.71	6.64	12.10	12.06	5.15	5.15	7.02	6.97
13-Mar-21	80	50	9.50	9.44	12.35	12.33	7.32	7.32	11.00	10.95
14-Mar-21	80	50	6.46	6.41	7.47	7.46	5.00	4.99	8.54	8.51
15-Mar-21	80	50	4.81	4.76	10.57	10.53	3.22	3.22	5.74	5.68
16-Mar-21	80	50	7.97	7.92	12.55	12.51	4.71	4.70	11.46	11.39
17-Mar-21	80	50	8.88	8.84	15.32	15.29	5.63	5.63	11.82	11.79

Date	TSP Project Goal	PM10 Project Goal	Gabba		Albert		Boggo [1]		Northern Portal	
			TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
	(µg/m3/24 hr)									
18-Mar-21	80	50	7.04	6.99	25.28	25.25	4.96	4.96	11.4	11.34
19-Mar-21	80	50	5.44	5.37	13.84	13.79	3.35	3.34	7.98	7.88
20-Mar-21	80	50	6.35	6.31	11.81	11.79	4.55	4.55	7.08	7.05
21-Mar-21	80	50	8.85	8.83	11.19	11.18	5.46	5.45	11.39	11.37
22-Mar-21	80	50	7.97	7.95	13.69	13.67	4.59	4.59	9.98	9.95
23-Mar-21	80	50	6.69	6.68	7.37	7.36	4.37	4.37	7.71	7.69
24-Mar-21	80	50	6.63	6.50	9.07	9.00	3.92	3.90	5.23	5.13
25-Mar-21	80	50	7.20	7.07	13.36	13.24	5.05	5.02	6.89	6.71
26-Mar-21	80	50	7.16	7.07	17.23	17.13	5.45	5.40	8.50	8.38
27-Mar-21	80	50	8.73	8.66	15.78	15.72	7.14	7.13	11.45	11.36
28-Mar-21	80	50	7.14	7.10	10.49	10.45	6.46	6.43	9.91	9.83
29-Mar-21	80	50	7.05	6.97	11.65	11.59	7.19	7.18	9.05	8.98
30-Mar-21	80	50	6.51	6.47	8.69	8.64	6.29	6.27	8.34	8.28
31-Mar-21	80	50	7.26	7.21	9.02	8.96	6.20	6.18	9.20	9.11

- [1] Due to a technical fault, the Boggo Road mobile air quality unit stopped functioning on several days in March 2021. The unit has required specialist repair. A nearby (Brisbane CBD) DES Air Quality Station demonstrated compliant air quality during March 2021, these results are provided below. The low levels are also consistent with levels recorded otherwise throughout the month when the unit was operating.

CBGU also utilises three (3) Government air quality monitoring stations to monitor PM10 near to the project sites. The results during this reporting period were as follows:

- Brisbane CBD: PM_{10} daily Maximum average: **22.8 µg/m3/24 hr** (https://apps.des.qld.gov.au/air-quality/chart/?station=cbd&parameter=18&date=1/03/2021&timeframe=month)
- South Brisbane: PM_{10} daily Maximum average: **33.4 µg/m3/24 hr** (https://apps.des.qld.gov.au/air-quality/chart/?station=sbr&parameter=18&date=1/03/2021&timeframe=month)
- Woolloongabba: PM_{10} daily Maximum average: **27.1 µg/m3/24 hr** (https://apps.des.qld.gov.au/air-quality/chart/?station=woo&parameter=18&date=1/03/2021&timeframe=month)

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

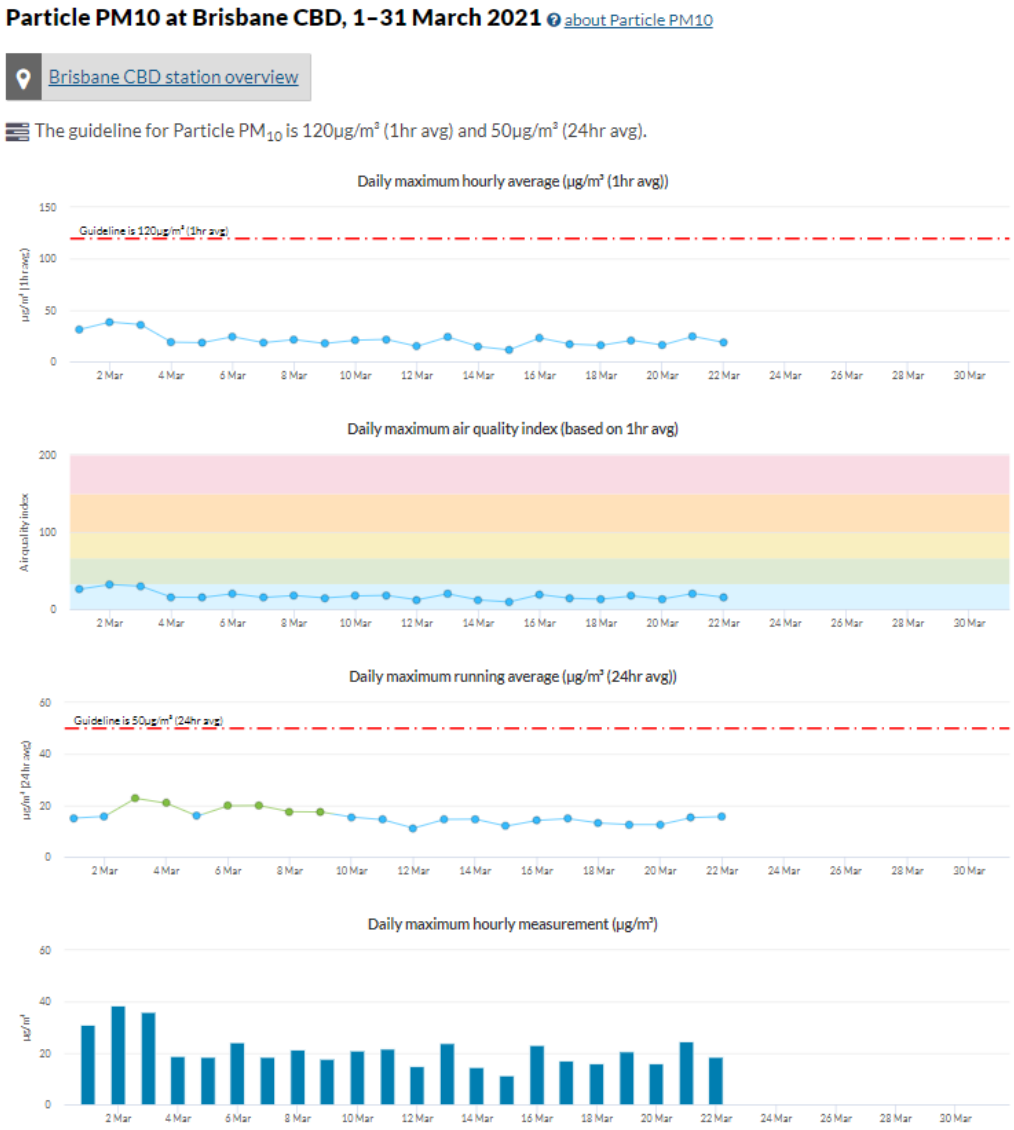


Figure 1: Brisbane CBD – DES Station - PM10 graph for March 2021 (reproduction from the DES website).

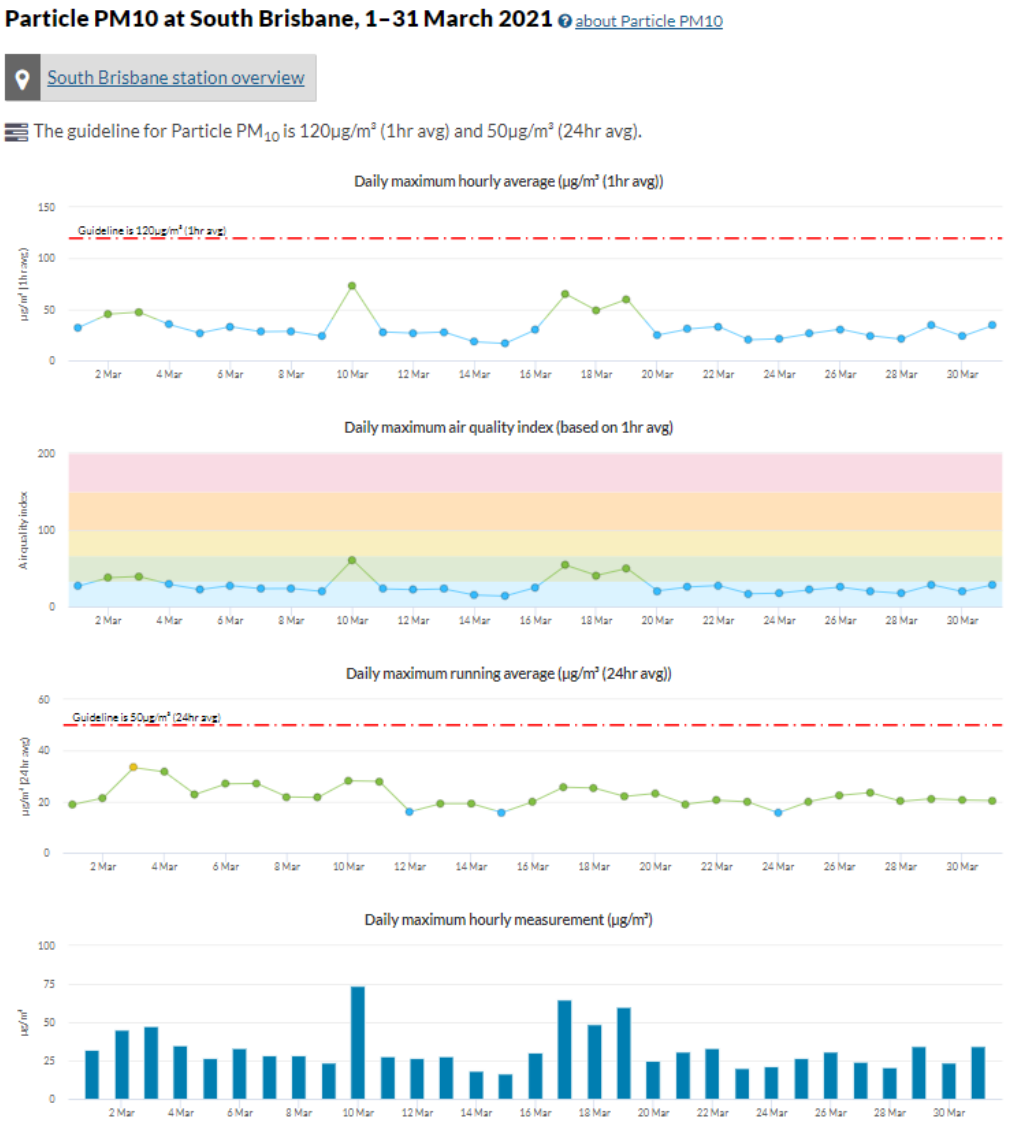


Figure 2: South Brisbane – DES Station - PM10 graph for March 2021 (reproduction from the DES website accessed).

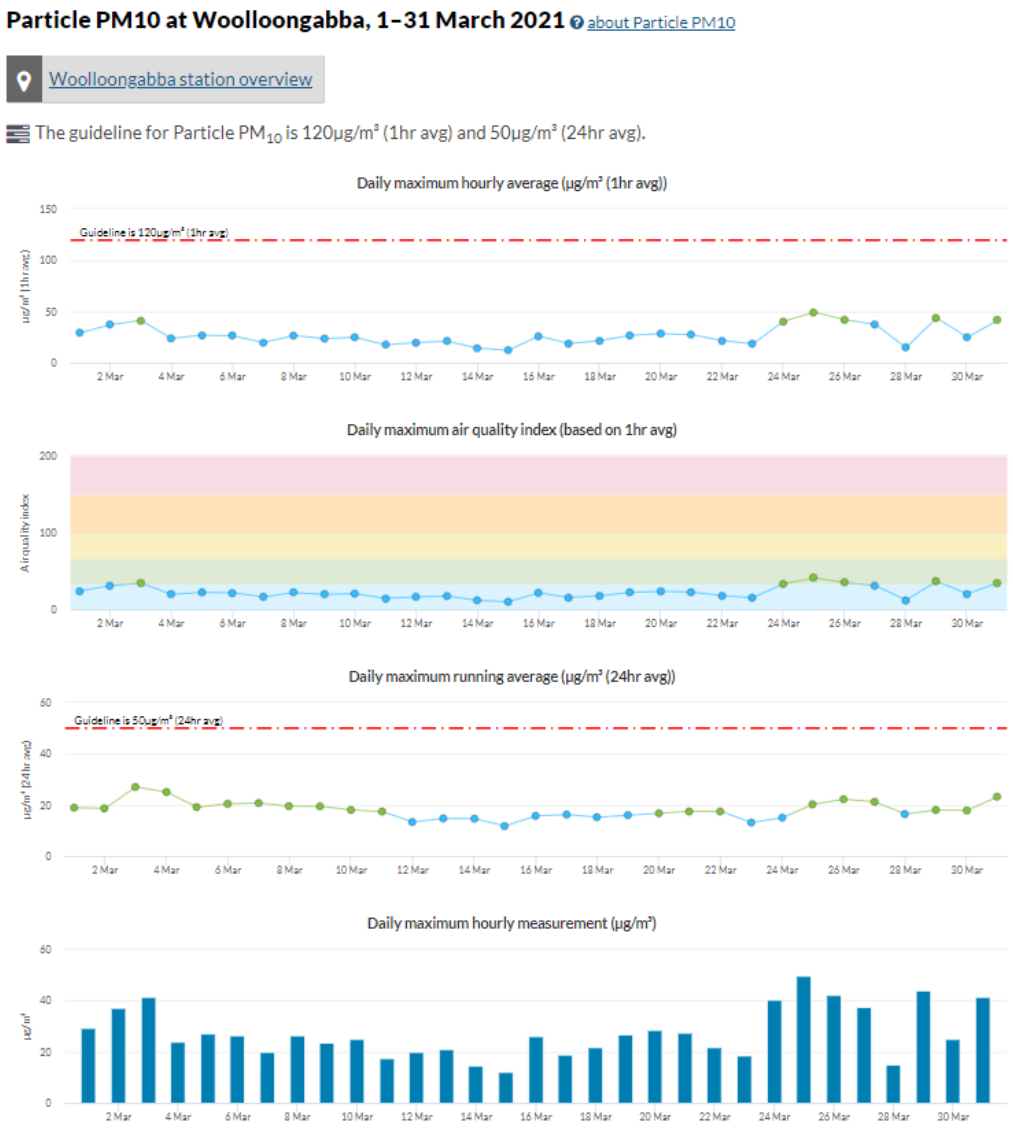


Figure 3: Woolloongabba – DES Station - PM10 graph for March 2021 (reproduction from the DES website).

3.4 Water Quality – Discharge

CBGU undertook twenty-four (24) water quality monitoring events prior to the release (groundwater and surface water) from the site during March 2021.

3.4.1 Groundwater Discharge

Water quality monitoring data is provided in the table below.

Table 6: Groundwater Discharge – Water Quality Monitoring Data

Location	Date	Testing of Water Quality Objectives [1]											Adhered to Project Requirements (Yes / No)
		pH	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia N (µg/L) [3]	Oxidised N (µg/L) [3]	Organic N (µg/L) [3]	Total nitrogen (µg/L) [3]	Total phosphorus (µg/L)	Filterable Reactive phosphorus (FRP) (µg/L)	Chlorophyll a (µg/L)	Dissolved oxygen (%) [2]	
Albert Street	14/02/2021	7.40	6.00	3.66	980.00	80.00	4400.00	5500.00	4870.00	<10	<2	74.78	Yes
Roma Street	15/02/2021	7.95	6.00	0.50	550.00	110.00	200.00	900.00	<10	<10	<1	91.98	Yes
Woolloongabba	1/03/2021	7.70	<5	0.80	40.00	210.00	300.00	500.00	460.00	<10	<1	107.72	Yes
Boggo Road	Groundwater was not discharge from the Boggo Road Precinct this month.												

- [1] The Project's discharge procedure is designed to minimise environmental impact and aim to achieve the water quality objectives. Water quality objectives are defined as goals within the Brisbane River estuary environmental values and water quality objectives document.
- [2] Adhered to project requirements regarding aiming to achieve the water quality objective. The dissolved oxygen samples were acquired prior to discharge from the site. Pumping of the water will have inadvertently aerated the water, thus influencing the dissolved oxygen level.
- [3] Adhered to project requirements regarding aiming to achieve the water quality objective. These samples identified results generally consistent with pre-construction conditions, and no external influences were introduced by construction activity.
- Note: testing of EPP (Water) Quality Objectives are analysed at a NATA accredited laboratory each month (results provided above). Field testing (turbidity, pH) is done regularly during ongoing discharge.

3.4.2 Ponded/Surface Water Discharge

Surface water quality monitoring data is provided in the table below.

Table 7: Surface Water Discharge - Water Quality Monitoring Data

No.	Location	Date	Testing of Water Quality Objectives [1]		Adhered to Project Requirements (Yes / No)
			pH	Turbidity (NTU)	
1.	Boggo Road Precinct	1/03/2021	7.90	1.69	Yes
2.	Roma Street Precinct	1/03/2021	7.40	20.90	Yes
3.	Roma Street Precinct	2/03/2021	6.76	13.95	Yes
4.	Boggo Road Precinct	1/03/2021	7.42	3.10	Yes
5.	Boggo Road Precinct	3/03/2021	8.32	11.30	Yes
6.	Boggo Road Precinct	4/03/2021	7.60	1.07	Yes
7.	Northern Portal	8/03/2021	7.04	5.70	Yes
8.	Boggo Road Precinct	8/03/2021	7.71	2.03	Yes
9.	Roma Street Precinct	10/03/2021	8.43	11.73	Yes
10.	Boggo Road Precinct	10/03/2021	7.12	4.13	Yes
11.	Northern Portal	11/03/2021	7.55	4.82	Yes
12.	Roma Street Precinct	16/03/2021	7.96	21.90	Yes
13.	Roma Street Precinct	18/03/2021	7.76	5.18	Yes
14.	Boggo Road Precinct	15/03/2021	7.50	3.70	Yes
15.	Roma Street Precinct	19/03/2021	8.33	7.62	Yes

16.	Boggo Road Precinct	18/03/2021	7.57	35.20	Yes
17.	Boggo Road Precinct	22/03/2021	7.40	1.00	Yes
18.	Boggo Road Precinct	23/03/2021	7.49	22.60	Yes
19.	Roma Street Precinct	16/03/2021	7.46	1.24	Yes
20.	Roma Street Precinct	18/03/2021	7.62	41.40	Yes
21.	Boggo Road Precinct	15/03/2021	7.10	11.44	Yes

- [1] The Project's discharge procedure is designed to minimise environmental impact and aim to achieve the water quality objectives. All discharges were compliant with *Guidelines for Best Practice Erosion and Sediment Control (IECA, 2008) and* the *Department of Transport and Main Roads' Technical Standard MRTS 52 – Erosion and Sediment Control.*

3.5 Water Quality – Surface Water

During March 2021, CBGU JV undertook two (2) rounds of surface water sampling at five (5) locations (upstream and downstream).

Results from the below-monitoring locations reflect the condition of the broader catchment (not just the influence of the Project). Water quality generally appears good, and water discharge from the Project would not have had an impact on the catchment considering the results provided within section 3.4 above.

Table 8: Offsite Upstream & Downstream Water Quality Data

Location	Upstream / Downstream	Date	Purpose of Monitoring	Turbidity (NTU)	EC (µS/cm)	Dissolved oxygen (%)	pH
Roma Street	Upstream	15/03/2021	Monthly	49.00	28900	82.30	7.8
Roma Street	Downstream	15/03/2021	Monthly	46.40	29100	88.35	8.8
Albert Street	Upstream	15/03/2021	Monthly	15.59	41300	116.96	8.1
Albert Street	Downstream	15/03/2021	Monthly	10.97	41500	115.49	8.1
Woolloongabba	Upstream	15/03/2021	Monthly	16.42	38500	121.03	7.8
Woolloongabba	Downstream	15/03/2021	Monthly	11.54	38700	122.24	8.1
Boggo Road[1]	Downstream	15/03/2021	Monthly	8.41	6300	88.35	7.8
Northern Portal	Upstream	16/03/2021	Monthly	8.01	244	44.78	7.3
Northern Portal	Downstream	16/03/2021	Monthly	57.5	541	64.15	7.1
Roma Street	Upstream	24/03/2021	Post Rainfall	134.00	2169	71.41	7.5
Roma Street	Downstream	24/03/2021	Post Rainfall	159.00	2134	77.46	7.5
Northern Portal	Upstream	24/03/2021	Post Rainfall	12.44	564	66.57	7.3
Northern Portal	Downstream	24/03/2021	Post Rainfall	7.75	2320	93.19	7.3

Location	Upstream / Downstream	Date	Purpose of Monitoring	Turbidity (NTU)	EC (µS/cm)	Dissolved oxygen (%)	pH
Northern Portal	Downstream	24/03/2021	Post Rainfall	184.00	495	49.62	7.3
Albert Street	Upstream	25/03/2021	Post Rainfall	71.80	2700	65.36	7.0
Albert Street	Downstream	25/03/2021	Post Rainfall	63.40	2800	65.36	7.0
Woolloongabba	Upstream	25/03/2021	Post Rainfall	408.00	300	58.09	7.0
Woolloongabba	Downstream	25/03/2021	Post Rainfall	107.00	629	98.04	7.5
Boggo Road[1]	Downstream	25/03/2021	Post Rainfall	37.40	955	73.83	7.3

- [1] Monitoring at the Boggo Rd site occurs at a pipe outlet at the beginning of the surface catchment. There is no upstream/downstream monitoring point as such. The pipe outlet receives water released from the site, as well as a broader stormwater catchment.

4 Non-Compliances

Details of non-compliances are provided in accordance with Imposed Condition 6(b)(ii).

A Non-Compliance Event is defined as project works that do not comply with the Imposed Conditions. Nil non-compliances occurred during the monitoring period.

Table 9: Non-Compliance Events

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

5 Complaints

Reporting of complaints is provided below in accordance with Imposed Condition 6(b)(iii).

During March 2021, thirty (30) complaints relating to the Project were received as detailed in Table 10 below.

Table 10: Summary of Complaints

No.	Date	Location	Description of Issue	Responses	Status of Event
1.	1/03/2021	Albert Street (Albert Street Precinct)	Traffic Management	A stakeholder emailed the Project regarding heavy vehicle parking. CBGU investigated the issue and informed the haulier.	Closed
2.	2/03/2021	Hubert Street (Tunnel alignment)	Noise	A stakeholder called the Project Hotline regarding noise from the tunnel alignment. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
3.	3/03/2021	Annerley Road (Boggo Road Precinct)	Traffic Management and Noise	A stakeholder emailed the Project regarding noise near the Boggo rd precinct. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
4.	3/03/2021	Mary Street (Albert Street Precinct)	Construction Hours and Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
5.	5/03/2021	Mary Street (Albert Street Precinct)	Air Quality	A stakeholder contacted the Project regarding air quality relating to the Albert Street precinct. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
6.	8/03/2021	Cope Street (Boggo Road Precinct)	Traffic Management	A stakeholder contacted the Project regarding heavy vehicle parking. CBGU investigated the issue and informed the sub-contractor about parking heavy vehicles in designated areas.	Closed
7.	8/03/2021	Albert Street (Albert Street Precinct)	Waste	A stakeholder contacted the Project regarding waste from the Albert Street precinct. CBGU investigated the issue and removed the waste immediately.	Closed
8.	8/03/2021	Albert Street (Albert Street Precinct)	Visual Amenity	A stakeholder called the Project Hotline regarding visual amenity. CBGU investigated the issue and erected additional screening.	Closed
9.	12/03/2021	(Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
10.	13/03/2021	Charlotte Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
				CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	
11.	15/03/2021	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
12.	16/03/2021	Roma Street (Roma Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Roma Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
13.	16/03/2021	Park Road (Boggo Road Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Boggo Road precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
14.	17/03/2021	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
15.	18/03/2021	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
16.	19/03/2021	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
17.	19/03/21	Charlotte Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
18.	19/03/2021	Roma Street (Roma Street Precinct)	Noise and Vibration	A stakeholder contacted the Project regarding noise and vibration from the Roma Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise and vibration requirements.	Closed
19.	20/03/2021	Charlotte Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
				CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements. *Note: Non-project related works were also occurring near the intersection of Albert Street and Mary street.*	
20.	22/03/2021	Albert Street (Albert Street Precinct)	Sediment Tracking	A stakeholder contacted the Project regarding sediment tracking from the Albert Street precinct. CBGU reviewed the circumstances and immediately removed traces of sediment, and additional mitigation measures were installed. *Note: Localised flooding was occurring throughout SE QLD, and over 120mm of rainfall had been received within Brisbane CBD within 24hrs.*	Closed
21.	24/03/2021	Hawthorne Street (Woolloongabba Precinct)	Noise	A stakeholder called the Project Hotline regarding noise from the tunnel alignment. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
22.	24/03/2021	Stanley Street (Woolloongabba Precinct)	Traffic Management	A stakeholder called the Project regarding truck movements from the Woolloongabba precinct. CBGU reviewed the circumstances and confirmed the route is an approved haulage route.	Closed
23.	25/03/2021	Albert Street (Albert Street Precinct)	Traffic Management	A stakeholder contacted the Project regarding truck movements from the Albert Street precinct. CBGU reviewed the circumstances and confirmed the route is an approved haulage route.	Closed
24.	27/03/2021	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
25.	27/03/2021	Mary Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
26.	29/03/2021	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
27.	30/03/2021	Roma Street (Roma Street Precinct)	Pedestrian Access	A stakeholder contacted the Project regarding pedestrian access and controls. CBGU has investigated the incident and consulted the stakeholder.	Closed
28.	30/03/2021	Mary Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed
29.	31/03/2021	Alice Street (Albert Street Precinct)	Traffic Management	A stakeholder contacted the Project regarding worker parking. CBGU reviewed the circumstances and reminded workers about designated parking areas.	Closed
30.	31/03/2021	(Roma Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Roma Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Roma Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
31.	31/03/2021	Mary Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise from the Albert Street precinct. CBGU provided the stakeholder with an overview of the works occurring and their duration at the Albert Street precinct. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.	Closed