

The background of the entire page is a dark blue map of the Cross River area. The map shows a complex network of roads, including major highways and local streets, as well as several large bodies of water. The text is overlaid on this map in a light blue color.

Cross River Rail Project

Monthly Environmental Report

October 2021

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APPENDIX A RIS MONTHLY REPORT

APPENDIX B TSD MONTHLY REPORT

Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for October 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 – no. 11 (July 2021)* 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 for each:

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 covering full scope of RIS works is effective from 29 April 2021. TSD – CEMP Revision 8 covering full scope of TSD works is effective from 9 June 2021.
5.	Compliance and Incident management – Non-compliance events, notifications and reporting.	Yes	There was no non-compliance event (NCEs) in October 2021. Refer to Section 2.5 of this report.

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
6.	Reporting – Monthly and Annual reporting.	Yes	This MER, including RIS and TSD Monthly Reports, has 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 met project noise requirements at Sensitive Places. RIS – Noise monitoring was undertaken to validate predicted noise modelling. Noise monitoring confirmed the contractor met project requirements. Refer to Appendix A (Sections 3.1.2 and 3.1.4, and Table 4) . TSD – Refer to Appendix B (Section 3.2 and Table 3) .
	Vibration – Project Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	Vibration monitoring met project vibration requirements at Sensitive Places. RIS – Vibration monitoring was undertaken to validate predicted vibration modelling. Monitoring results met project goals. Refer to Appendix A (Sections 3.1.3 and Table 5) . TSD – Vibration monitoring was undertaken to validate predicted vibration modelling. The TSD contractor confirmed the monitoring results met project goals. Refer to Appendix B (Section 3.1 and 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

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			residential buildings at RNA, Northern Corridor and Fairfield to Salisbury stations. TSD – Vibration modelling has been prepared and is ongoing. Where required, building condition survey reports are completed for heritage and residential buildings. No enquiries relating to property damage were received during October.
13.	Air quality – Works must aim to achieve air quality goals for human health and nuisance.	Yes	Air quality monitoring met Project air quality goals. RIS – Refer to Appendix A (Sections 3.2, Tables 7, 8 and 9, and Figures 1, 2 and 3) . TSD – Refer to Appendix B (Sections 3.3.1 and 3.3.2, and Tables 4 and 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 and implemented on site.
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. The results of monitoring and subsequent site investigation determined elevated turbidity in receiving waters not to be related to Project Works. TSD – In October, active discharge of groundwater occurred from Roma Street and Boggo Road worksites. Monitoring results of groundwater quality prior to discharge is consistent with the pre-construction water quality levels. Active discharge of surface water occurred at the Northern Portal worksite on 4 occasions. Results met water quality discharge criteria. Post-rainfall monitoring was triggered for Brisbane River, York's Hollow and Norman Creek. The water quality results reflect the condition of the broader catchment The

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			<p>monitoring indicates that there were no offsite impacts related to Project Works.</p> <p>Routine in stream monthly monitoring met project water quality requirements.</p> <p>Refer to Appendix B (Table 6) for ground water monitoring results. Refer to Appendix B (Tables 7 and 8) for surface water monitoring results.</p>
16.	Water resources – Evaluate potential impact, plan works, implement controls and monitor inflow of groundwater associated with drawdown.	Yes	<p>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 potential inflow rates into excavations during construction has been undertaken.</p> <p>TSD – Inflow of groundwater into the worksites is being continuously monitored to validate the predictive modelling.</p>
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	The construction of a temporary access road through Victoria Park was undertaken under a Heritage Exemption Certificate approved by the Department of Environment and Science (DES) on 24 June 2021. Consideration has been taken to minimise loss of trees and the area of

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
			park impacted during these temporary works.
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 NCEs raised in October 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	<i>State Development and Public Works Organisation Act 1971</i>
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, several Requests for Project Change (RfPC) submissions have been evaluated by the Coordinator-General. RfPC 11 was endorsed in July 2021 by the Coordinator-General.

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.

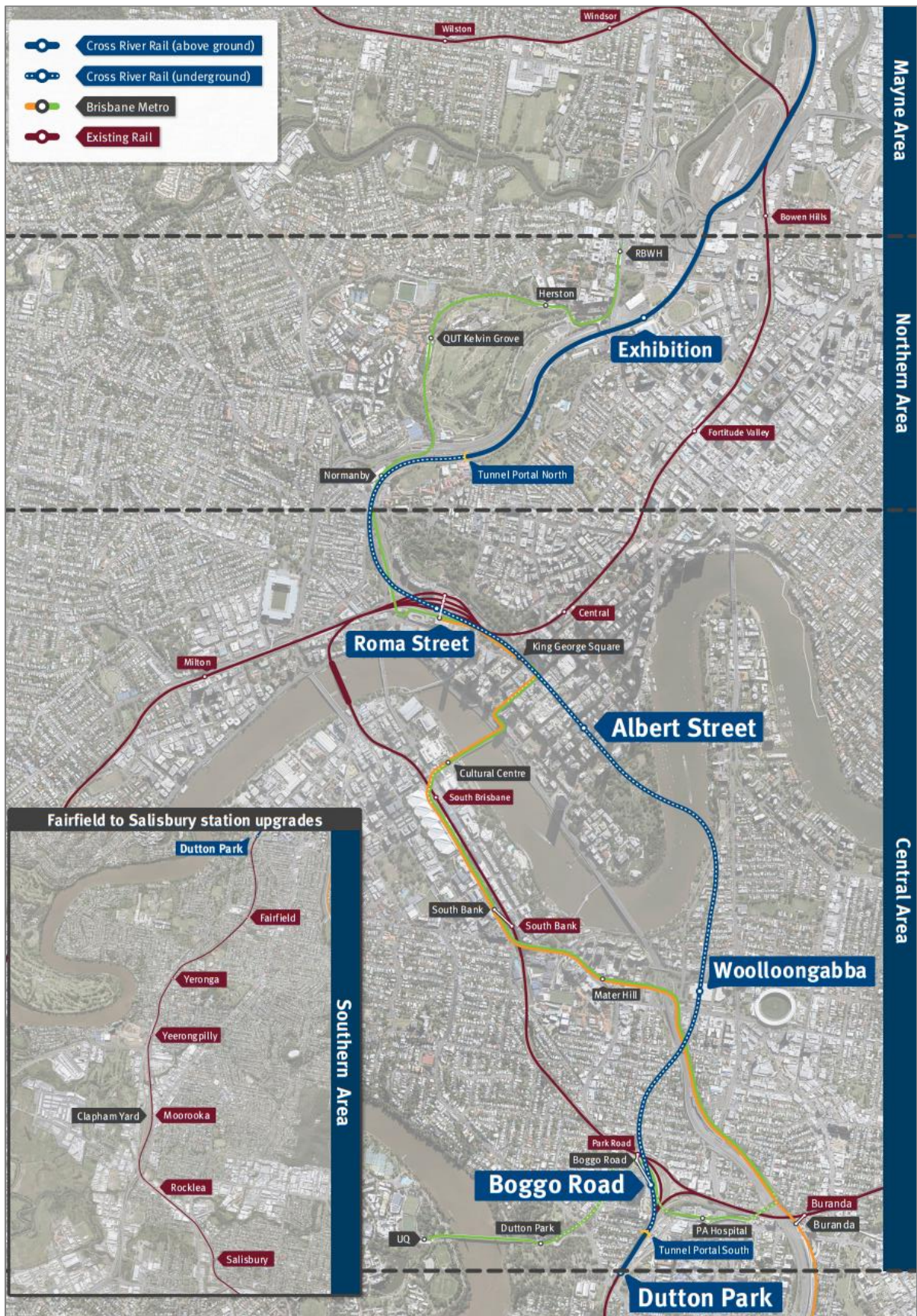
The two main delivery packages which require reporting under the Coordinator-General's imposed conditions are:

- 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.



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 MER 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 October 2021:

Area	Project Works
Mayne Area	Mayne Yard North – <ul style="list-style-type: none">• Civil scope including stabling yard fence installation, drainage works, combined services routes (CSR) and capping continue;• Under-bore under suburban lines commenced, driver platform form-reo-pour (FRP) and structural steel scope commenced, security fencing installation continued. Ballast, sleeper and rail placement Road 9–11 commenced,• OHLE structure installation ongoing;• Tripod Bridge (BR11/13) blade wall FRP continuing;• Crew Change Building roofing and cladding commenced;• Graffiti Removal Facility – in-ground services and FRP scope continued;• BR08 temporary works rock platform continues; and• Pre wet season audit on Erosion and Sediment Control management by external Certified Professional in Erosion and Sediment Control (CPESC) completed.
Northern Area	Northern Corridor – <ul style="list-style-type: none">• Rock excavation for western corridor widening 90% complete;• Piling on Bowen Bridge pier protection complete;• Pier protection at O'Connell Terrace Bridge nearing completion; and• Retaining wall RW260 FRP works ongoing. RNA – <ul style="list-style-type: none">• BR43 western viaduct FRP works ;• Rock excavation for drainage scope; and• Retaining wall (RW210-1) installation. Northern Portal – <ul style="list-style-type: none">• TBM extraction box excavation and retention works complete;• Ongoing capping beam pours and deck units installation; and

Area	Project Works
	<ul style="list-style-type: none"> Ongoing excavation of dive structure.
Central Area	Roma Street – <ul style="list-style-type: none"> Services building excavation complete; Station building excavation and retention works in progress at bench 8 and 10 of 15; Cavern invert slab pours and waterproofing ongoing; and Inner Northern Busway (INB) pile cap construction and excavation in progress with 1 of 9 columns cut.
	Albert Street – <ul style="list-style-type: none"> Lot 1 – station box excavation and ground retention continues; Lot 2 – station adits water proofing works ongoing and northern heading excavation nearing completion (~92%); and Lot 3 – excavation continuing (~33% complete), ongoing ground retention with row 4 anchors installed and shotcreting on TSW1 wall.
	Woolloongabba – <ul style="list-style-type: none"> Station jump form system lift 10 completed in late October; Climbtrack system on external walls now up to B2 Level; Southern cavern headwall permanent lining complete and 10 of 11 permanent lining arch sections complete; TBM #1 (Else) progressing from Roma Street Station cavern towards the Northern Portal completing 1933 rings by the end of October; and, TBM #2 (Merle) progressing from Roma Street Station towards the Northern Portal completing 1700 rings by the end of October;
	Boggo Road – <ul style="list-style-type: none"> Ongoing wall formwork installation and steel fixing in the southern end of the station box; Cavi drain and invert works complete; Cavern headwall complete; and Cavern waterproofing works ongoing.
	Southern Portal – <ul style="list-style-type: none"> Capping beam construction ongoing (68% complete); Detailed excavation and shotcrete within cut and cover trough; Sewer and stormwater micro tunnelling towards Shaft 1 on Railway Tce and Shaft 8 on Kent St ongoing from; Pier protection works for the Freight Flyover ongoing (SCAS 72); and, Middle Road Closure (SCAS 73) complete.
Southern Area	Dutton Park – <ul style="list-style-type: none"> Retaining wall capping beam pours ongoing; and Commenced excavation for shotcrete works.
	Yeronga Station – <ul style="list-style-type: none"> Platform 1 inground hydraulics; Installation in inground pits, conduits and hydraulic services; Platform 1 and 2/3 lifts pits and overpass pile cap FRP works; and Pedestrian overpass lift.
	Clapham Yard – <ul style="list-style-type: none"> Earthworks continues with ongoing material import for core embankment construction.

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.

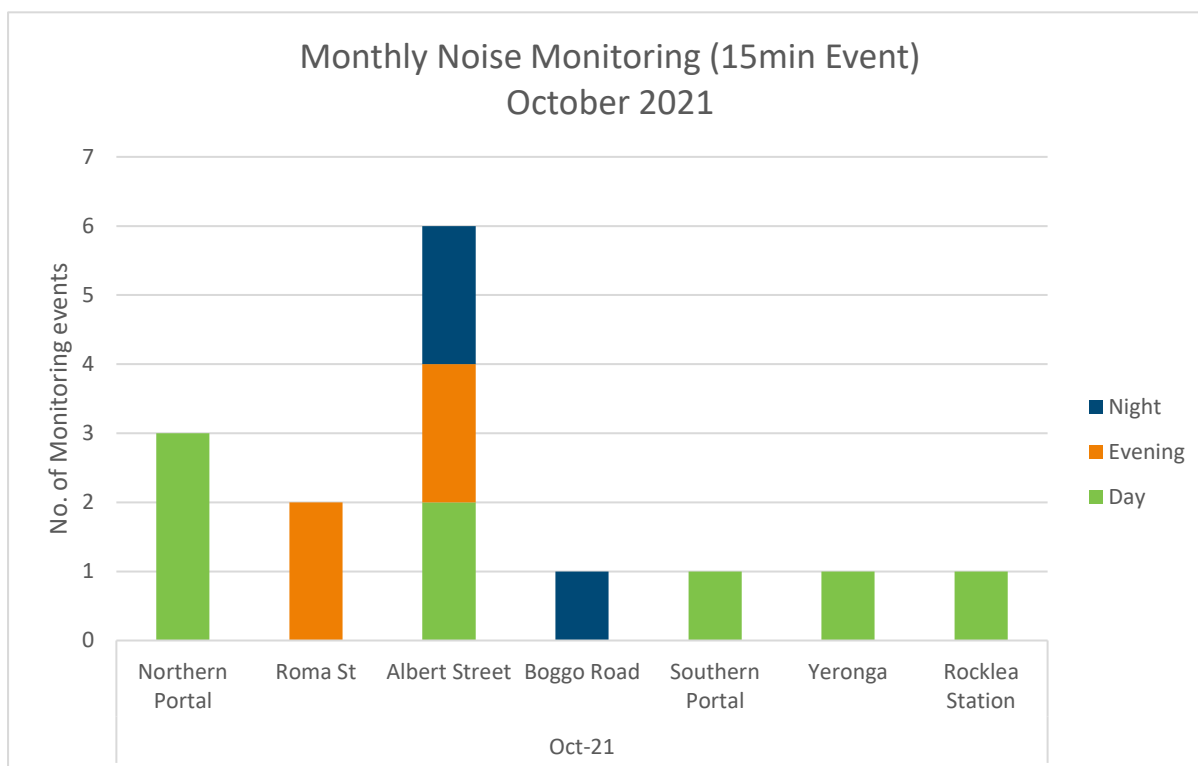
Where internal monitoring was not possible, contractors have undertaken external monitoring at nominated locations. To determine compliance with the project's noise requirements and to calibrate modelled predictions the project applies recommended façade attenuation corrections, which consider receiver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

In the Northern Area, noise monitoring was undertaken to validate the predictive model during excavation works at the Northern Portal during standard hours. Noise monitoring was also undertaken in response to a complaint during rock-breaking at RNA Showgrounds. Noise levels met project requirements. 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 the predictive model during a crane lift for the pedestrian overpass at Yeronga and during use of a vacuum truck at Rocklea during extended hours. Monitored noise levels met project requirements. Noise monitoring in response to complaints was not triggered. Monitoring results for the Southern Area are detailed in Table 4, **Appendix A**.

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



2.2.2. Vibration

Vibration monitoring in Mayne and Southern Areas was not triggered.

In the Northern Area, vibration monitoring took place to validate predictive modelling for TBM tunnelling in Petrie Terrace and excavation at the Northern Portal. The reported results met the project's nominated goals. Vibration monitoring results for the Central Area are detailed in **Appendix B** (Table 2). In the Central Area, vibration monitoring took place to validate predictive modelling for tunnelling at Roma Street, controlled blasting activities at Albert Street, and micro tunnelling and piling works in the southern portal. The 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, Northern, Central and Southern Area worksites. In all cases dust deposition results met the project air quality goal¹.

A summary of dust deposition monitoring is provided in the table below.

¹ CG air quality goal for dust deposition - 120µg/m² (over an averaging period of 30 days).

Air Quality – Dust Deposition Monitoring			
Area	Worksite	Monitoring Location	Comments
Mayne Area	Mayne Yard	Mayne Yard	- 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 had not been received at the completion of the report. Results to be reported in next month's report.
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 had not been received at the completion of the report. Results to be reported in next month's report.
	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.
	Yeronga Station	Yeronga Station	- Results met air quality goal.

2.2.3.2. Particulate Matter and Total Suspended Particulates

Monitoring for particulate matter (PM₁₀) and total suspended particulates (TSP) was conducted at Mayne, Northern, Central and Southern Area worksites. There was one complaint received in the Northern area that was determined not to be related to Project Works. See Appendix A, Section 3.2.3 for further detail.

The Woolloongabba air quality unit experienced technical difficulties in September and was not functioning throughout October. To ensure that there was a period of monitoring for the Woolloongabba site during October. The Boggo Road mobile monitor was relocated to the Woolloongabba site on 21 October 2021. TSP and PM₁₀ data that was reported from the Woolloongabba site was compliant with project air quality goals. The review of nearby DES air quality monitoring stations (South Brisbane) demonstrated PM₁₀ levels between 1-20 October were compliant with project air quality goals with the exception of 16 Oct which recorded an exceedance above air quality goal. The PM₁₀ exceedance was also recorded at nearby DES air quality monitoring stations (Brisbane CBD and Woolloongabba) indicating an impacted footprint of the greater Brisbane area. A replacement air quality monitor for the Woolloongabba site has been procured and will be installed during the November reporting period.

The Albert Street air quality unit experienced a technical fault and stopped functioning between 2-5 and between 8-20 October. A review of the nearby DES air quality monitoring stations (Brisbane CBD) demonstrated PM₁₀ levels between 2-5 and between 8-20 October were compliant with project air quality goals with the exception of 16 Oct as mentioned above. The PM₁₀ exceedance was also

recorded at nearby DES air quality monitoring stations (South Brisbane and Woolloongabba) indicating a wider Brisbane airshed event that impacted air quality.

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.
Northern Area	RNA / Exhibition	Lanham Yard	- Results met air quality goals.
	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. - Monitoring unit experienced a technical fault with no results between 2-5 and between 8-20 October.
	Boggo Rd / Southern Portal	North-east of Boggo Road worksite	- Results met air quality goals.
	Roma St	Roma Street Station	- Results met air quality goals.
	Woolloongabba	Place Park, Woolloongabba	- Results met air quality goals. - Monitoring unit installed on 21 October. No results recorded prior to the 21 October for the month
Southern Area	Clapham Yard	Clapham Yard	- Results met air quality goals.

2.2.4. Water Quality

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

2.2.4.1. Surface Water

Post rainfall monitoring was triggered in receiving waters at Mayne, Northern, Central and Southern Area worksites on 12 and 14 October 2021, and active surface water discharges occurred from the Northern Portal site for dewatering purposes once treated to meet water quality objectives.

At Mayne Yard post rainfall monitoring in receiving waters at Breakfast Creek identified that water quality exceeded water quality investigation criteria² of 50mg/L for total suspended solids (TSS) at both upstream and downstream locations on 14 October 2021. TSS results at the downstream monitoring location was 10% greater than the upstream monitoring location resulting in further site investigation that determined elevated TSS could not be reasonably related to project works. It was confirmed that there were no discharges from site during this event. TSS results at monitoring location SW01 were 175% and 119 % lower than results at SW03 on 12 and 14 October, respectively. With SW01 being the downstream location in these instances due to an incoming tide. Whilst the TSS results are the

² Department of Transport and Main Roads Specifications MRTS51 Environmental Management July 2020, Table 8.2.2 – Water Quality Investigation Criteria.

highest recorded post rainfall in nearly 24 months of monitoring, a review conducted by Unity Alliance of available background data along the Brisbane River demonstrated that readings more than 50NTU are not uncommon, particularly at the start of the wet season. Therefore, it was determined that these results could not be reasonably related to project works. See Appendix A, Section 3.3.5.2 for further details.

At the Northern Portal, post rainfall monitoring in receiving waters at York's Hollow identified an exceedance of the water quality investigation criteria at both upstream and downstream locations on 14 October 2021. The TSS results at the downstream monitoring location was less than the results from the upstream monitoring location. The monitoring locations reflect the condition of a broader catchment upstream from the site, thus, it was determined the elevated TSS could not be reasonably related to project works. Active dewatering via pumping was undertaken and the monitoring results met the water quality investigation criteria.

At Central Area sites, post rainfall monitoring was undertaken in receiving waters at relevant upstream and downstream locations along the Brisbane River. For Boggo Road and Southern Portal sites, post rainfall monitoring was undertaken in receiving waters at Norman Creek. Monitoring results met water quality investigation criteria.

In the Southern Area at Clapham Yard, post rainfall monitoring was undertaken in receiving waters upstream and downstream at Moolabin Creek and Rocky Water Holes Creek. Monitoring results met water quality investigation criteria.

Routine monitoring was undertaken in the receiving waters of all TSD worksites in accordance with Water Quality Management Plan. Results are detailed in **Appendix B** (Table 8).

For RIS worksites, routine monitoring in receiving waters is undertaken biannually in accordance with the Water Quality Management Plan and was not undertaken during October.

Surface water quality monitoring is summarised in the table below:

Surface Water Quality Monitoring					
Area	Worksite	Discharge	Post-Rain Monitoring	Routine Monitoring	Comments
Mayne Area	Mayne Yard North	No	Yes	No	- Post-rainfall monitoring undertaken in accordance with WQMP.
Northern Area	Northern Portal	Yes	Yes	Yes	- Active surface water discharge met water quality investigation criteria. - Post rainfall monitoring undertaken in accordance with WQMP. - Routine monitoring undertaken in accordance with the WQMP.
Central Area	Albert Street	No	Yes	Yes	- Post-rainfall monitoring undertaken in accordance with WQMP. - Routine monitoring undertaken in accordance with the WQMP.
	Boggo Road	No	Yes	Yes	- Post-rainfall monitoring undertaken in accordance with WQMP. - Routine monitoring undertaken in accordance with the WQMP.

Surface Water Quality Monitoring					
Area	Worksite	Discharge	Post-Rain Monitoring	Routine Monitoring	Comments
	Roma Street	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken in accordance with WQMP. - Routine monitoring undertaken in accordance with the WQMP.
	Woolloongabba	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken in accordance with WQMP. - Routine monitoring undertaken in accordance with the WQMP.
	Southern Portal	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken in accordance with WQMP. - Routine monitoring undertaken in accordance with the WQMP.
Southern Area	Clapham Yard	No	Yes	No	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken in accordance with WQMP.

2.2.4.2. Groundwater

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

Groundwater discharge occurred in the Central Area at Roma Street and Boggo Road worksites. Two groundwater discharges from September at Albert St and Woolloongabba have been included in this report as the laboratory results were not available in September report. Groundwater discharge results exceeded the Project's water quality objectives (WQO's)³ for total nitrogen, ammonia nitrogen, oxidised nitrogen, organic nitrogen, and dissolved oxygen. These results, however, are consistent with the receiving environment 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	Yes	<ul style="list-style-type: none"> - Groundwater discharge occurred in September and was reported in October. - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions.

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

Groundwater Quality Monitoring			
Area	Worksite	Discharge	Comments
	Boggo Road / Southern Portal	Yes	<ul style="list-style-type: none"> - Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions.
	Roma Street	Yes	<ul style="list-style-type: none"> - Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions.
	Woolloongabba	Yes	<ul style="list-style-type: none"> - Groundwater discharge occurred in September and was reported in October. - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions.
Southern Area	Clapham Yard	No	<ul style="list-style-type: none"> - 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 Portal, RNA Showgrounds, Roma Street, Albert Street, Woolloongabba, Boggo Road, Southern Portal, Yeronga, Fairfield, and Clapham Yard worksites.

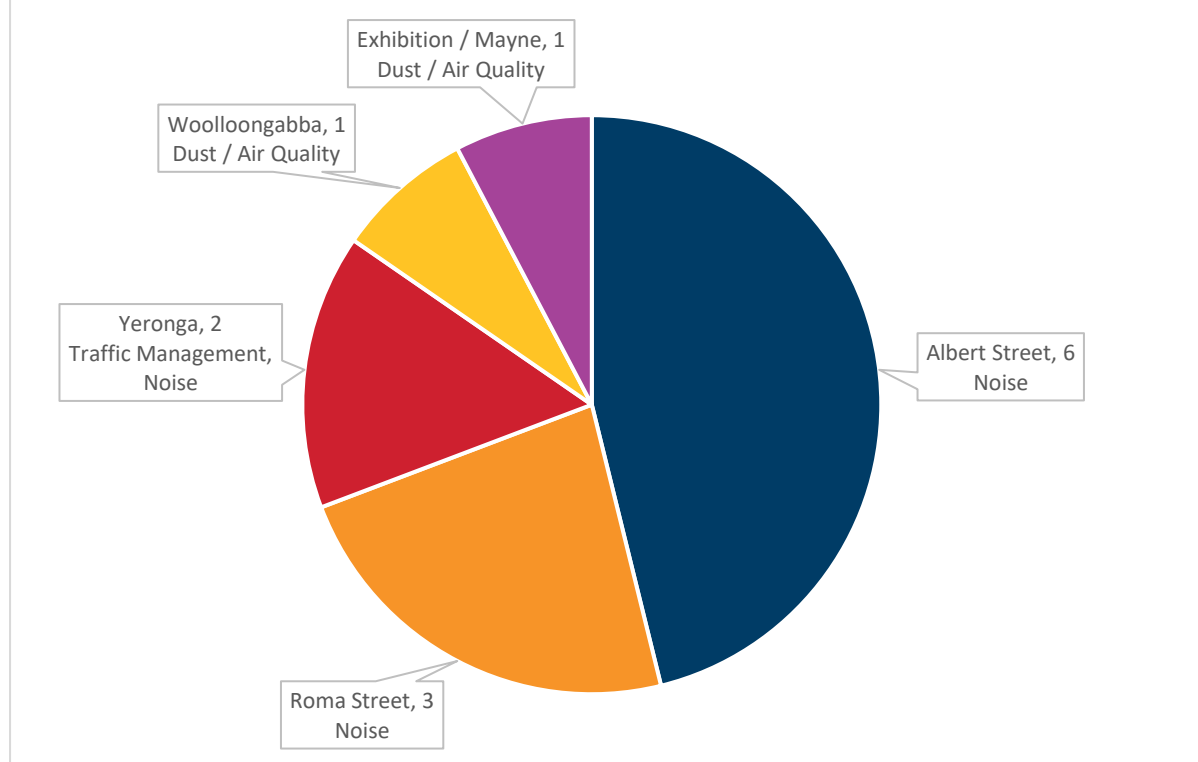
2.3. Complaints Management

A total of 13 complaints were received during the month, of which all were related to Project Works.

RIS works received 3 complaints this month related to works at Yeronga, and Exhibition and Mayne worksites. For further details on close-out of complaints refer to **Appendix A**, Table 3.

TSD activities received 10 complaints related to project works at Albert Street, Roma Street and Woolloongabba worksites. Of these, 9 complaints are documented within Appendix B Table 10, in addition there was one other complaint received by the Delivery Authority that had been provided to a Member of Parliament. There was The Project Works complaints summary for the month is provided in the following chart.

Project Works Complaints Summary October 2021

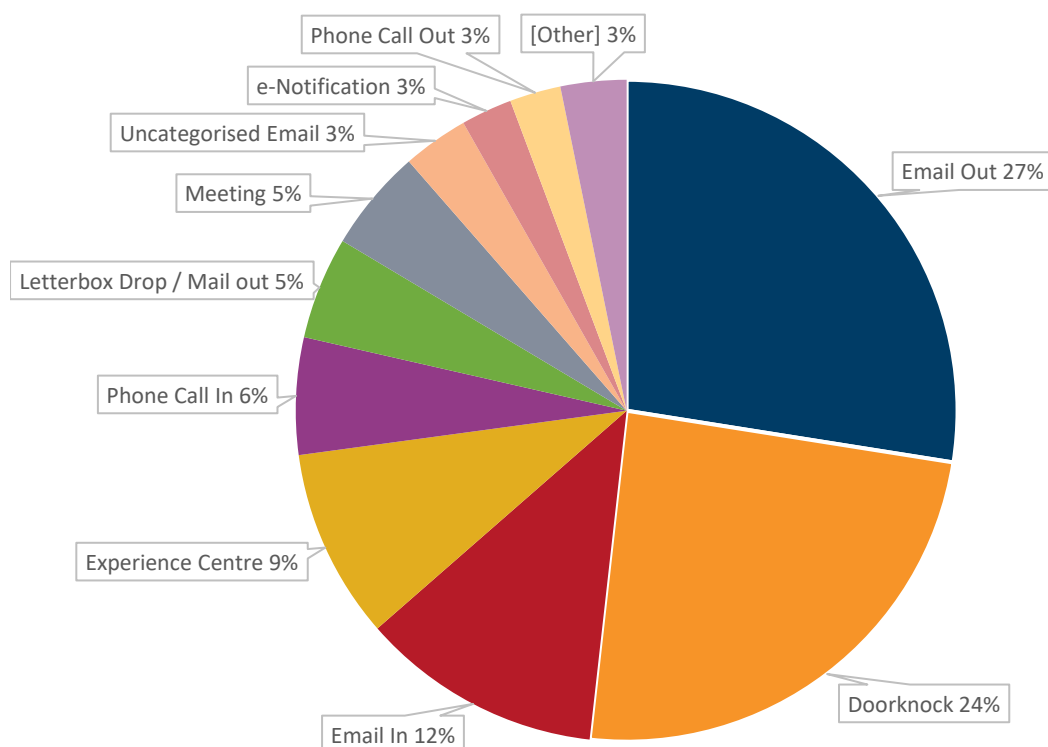


Where attended noise monitoring was undertaken in response to a complaint, the contractor confirmed on all occasions that works undertaken at the time of the complaint adhered to project requirements. In some instances, previous attended noise monitoring data, representative of the relevant construction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

Stakeholder Engagement October 2021



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
<ul style="list-style-type: none"> Mayne Area 	<p>Mayne Yard North –</p> <ul style="list-style-type: none"> Commence establishment of crib facilities for building scope under Ferny Grove Flyover; Graffiti Removal Facility FRP scope nearing completion Graffiti Removal Facility structural steel erection will commence mid-November Crew Change Building internal walls and flooring to commence yard – signaling and pneumatic foundation construction, Road 6 to 8 construction; and Piling for temporary jetty for Breakfast Creek Bridge.
Northern Area	<p>Northern Corridor –</p> <ul style="list-style-type: none"> Retaining wall RW260-1 OHLE foundations installation; and Normanby sewer relocation. <p>RNA/Exhibition –</p> <ul style="list-style-type: none"> Rock excavation for western corridor widening; Retaining wall RW210-1 installation; and Drainage works. <p>Northern Portal –</p> <ul style="list-style-type: none"> Installation of ventilation system in deck units in early November Completion of capping beams on cut and cover extent in November

Area	New planned works in the coming months
	<ul style="list-style-type: none"> Breakthrough of TBM #1 and TBM #2 in late-November and mid-December respectively.
Central Area	<p>Roma Street –</p> <ul style="list-style-type: none"> Adit blasting scheduled in November Recommence invert slab works on upline alignment; and, INB underpinning pile cutting ongoing in November <p>Albert Street –</p> <ul style="list-style-type: none"> Lot 1 – third row of props to be installed in December Lot 2 – commence permanent lining of adits in mid-November and commence bench blasting in December; and Lot 3 – calbah stair installation in November <p>Woolloongabba –</p> <ul style="list-style-type: none"> TBM backups and conveyor systems to be completely removed by mid-December; and Jump form lift 15 before end of year, 2 lifts will remain in the new year Jan 2022. <p>Boggo Road –</p> <ul style="list-style-type: none"> Cavern permanent lining to commence in late November; and Wall 2 and wall 10 concrete pours planned for November <p>Southern Portal –</p> <ul style="list-style-type: none"> Rail delivery for Up Sub planned for mid-November; SCAS 27 -28 Nov – Freight flyover protection works, signaling cable haul & commissioning, removal of OHLE on forklane, etc. Christmas SCAS 18 December – 4 Jan.
Southern Area	<p>Yeronga Station –</p> <ul style="list-style-type: none"> Platform 1, 2 and 3 FRP and slab works; Installation of inground pits, conduits and hydraulic services; Platform 1 and 2/3 lifts pits and overpass pile cap FRP; Pedestrian overpass lifting activities. <p>Clapham Yard –</p> <ul style="list-style-type: none"> Piling for retaining walls RW260 and RW265; Drainage works; Office extensions; Vegetation removal in Moolabin Creek under Riverine Protection Permit.

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

Monthly CGCR Report – October 2021

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

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1 Progress Summary - Relevant Project Works

The following Project Works were undertaken during the reporting period:

Table 1: Summary of Project Works completed during the reporting period

Area	Project Works
Mayne Area	<ul style="list-style-type: none"> Mayne Yard North <p>Crew Change Building roofing and cladding commenced</p> <p>Graffiti Removal Facility – in-ground services and FRP scope continued</p> <p>Stabling Yard: drainage completed, capping placement Road 6–11 completed, hydraulic and CSR scope continued, under-bore under Suburban Lines commenced, driver platform FRP and structural steel scope commenced, security fencing installation continued, ballast, sleeper and rail placement Road 9–11 commenced, OHLE structure installation ongoing.</p> <p>Shunt Road bulk earthworks completed</p> <p>Tripod Bridge (BR11/13) – blade wall FRP continuing</p> <p>Pre wet season audit on Erosion and Sediment Control management by external Certified Professional in Erosion and Sediment Control (CPESC)</p>
Northern Area	<ul style="list-style-type: none"> RNA <p>Pier Protection at O'Connell Terrace RC21 nearing completion with one wall remaining in extended SCAS#8 (early November)</p> <p>BR43 FRP on pile caps and blade walls nearing completion</p> <p>Falsework for Pier 1–4 completed and FRP on post tensioned decking commenced</p> <p>BR43/44 off-shore structural steel construction completed and members in transit to Brisbane</p> <p>Drainage scope through RNA (Stage 1) continuing, Sneyd Street Drainage commenced</p> <p>Remove and replace and rock excavation for RW210-1 completed and FRP for RW210-2 commenced.</p> <ul style="list-style-type: none"> Northern Corridor <p>FRP pile cap scope on Bowen Bridge Pier Protection (RC22/23) completed</p> <p>Drainage works south of Bowen Bridge completed</p> <p>Rock excavation for western corridor widening 90% completed</p> <p>Retaining Wall RW260 FRP continuing.</p>
Southern Area	<ul style="list-style-type: none"> Yeronga Station <p>Completion of Platform piling</p> <p>Installation of overpass frangible pier and Platform 2 support Pier</p> <p>FRP Lift Shaft 2</p> <p>Completion of Platform 1 inground hydraulics</p> <ul style="list-style-type: none"> Clapham Yard <p>Earthworks continued</p> <p>Pre wet season audit on Erosion and Sediment Control management by external Certified Professional in Erosion and Sediment Control (CPESC)</p>

Acronyms:

CIP – Cast in Situ Piles
 CSR – Combined Services Route
 DL – Drainage Line
 FRP – Form Reo Pour
 HV – High Voltage
 OHLE – Overhead Line Equipment
 OTV – On Track Vehicle
 PUP – Public Utility Plant
 RNA - Royal National Agricultural and Industrial Association of Queensland
 R&R – Remove and Replace
 RSS - Reinforced Soil Slopes
 RW – Retaining Wall
 SCAS - Scheduled Corridor Access Schedule

The following table summarises the upcoming Project Works:

Table 2: Summary of upcoming Project Works

Area	Project Works
Mayne Area	<ul style="list-style-type: none"> • Mayne Yard North <p>RSS walls RW110/120/125 for Tripod Bridge BR11/13 to commence Graffiti Removal Facility FRP scope nearing completion Graffiti Removal Facility structural steel erection will commence mid-November Crew Change Building internal walls and flooring to commence Yard – Signalling and pneumatic foundation construction, Road 6 to 8 Construction</p>
Northern Area	<ul style="list-style-type: none"> • RNA <p>Continue FRP BR43 scope, blade walls and viaduct post-tensioning FRP Commence RW210-1 RSS wall installation Continue drainage at Southern section (Stage 1).</p> <ul style="list-style-type: none"> • Northern Corridor <p>Complete retaining wall RW260 Complete western corridor detailed rock excavation Commence OHLE foundations through corridor.</p>
Southern Area	<ul style="list-style-type: none"> • Yeronga Station <p>Works to support the partial reopening of Yeronga Station Yeronga Station Platform 1, 2 and 3 FRP slab works Yeronga Station installation in inground pits, conduits and hydraulic services Yeronga Station Platform 1 and 2/3 lifts pits and overpass pile cap FRP. New Pedestrian Overpass Lifting activities</p> <ul style="list-style-type: none"> • Clapham Yard <p>Continue earthworks scope Commence office extensions Commence drainage Commence piling for retaining walls RW260 and RW265 Decommissioning of existing sidings.</p>

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 3: Summary of Complaints

Date	Location	Issue	Activity source of the concern	Period	Unity Response	Status
07/10/21	Yeronga	Noise	Noise Extended Hours of Work	October 21	<p>The stakeholder contacted the project team to advise that trucks were idling on Lake Street.</p> <p>The Stakeholder advised that the noise of the idling trucks waiting to come on site combined with the level of their UHF radio was audible from their property.</p> <p>The Stakeholder requested that trucks be turned off, and UHF radios volume reduced if possible.</p> <p>The Project Team advised the stakeholder that a reminder to turn off vehicles and manage UHF radios noise levels where safe to do so will be issued to all working crews (day and night shift).</p>	Closed
21/10/21	Yeronga	Construction Traffic	Traffic Management Surface Works – Standard Hours	October 21	<p>The stakeholder contacted the project team to advise that they experienced delays accessing / leaving their property because of traffic control management set-up on Lake Street associated with the Yeronga Station Platform 1 piling work.</p> <p>The Stakeholder also referenced historic issues with parking and noise from construction.</p> <p>The Project Team contacted the stakeholder to advise them their complaint had been passed onto the Site Team.</p> <p>The Site Team confirmed they would address issues raised with subcontractors directly and at pre-starts, as well as investigate anything additional UNITY can do to prevent driveway access being adversely affected during the remaining scope of works at Yeronga station.</p> <p>The Project Team also provided an overview of upcoming and remaining works to completion.</p>	Closed

Date	Location	Issue	Activity source of the concern	Period	Unity Response	Status
28/10/21	Exhibition / Mayne	Air Quality	Rock breaking Surface Works – Standard Hours	October 21	<p>The stakeholder contacted the project team at approximately 11.30 am to advise that they observed dust coming from the rail corridor near Lanham Street. The Stakeholder stated that the dust was being generated by rock breaking activities.</p> <p>The project team contacted the Site Manager who confirmed that rock breaking was occurring.</p> <p>The Site Manager also confirmed that the wind speeds had increased late morning and they had arranged for additional dust suppression during the rock breaking activities as well as additional general dust management over the broader worksite to respond to the change in weather conditions.</p> <p>The Environment Team also reviewed the air quality results and the weather patterns for the period ranging from 7 am to 12 pm.</p> <p>Whilst the validated data showed an increase for the particulate (TSP / PM₁₀) monitoring results between 11 am and 12 pm none of the data exceeded the air quality goals for nuisance or dust even over 5- and 15-minutes averaging periods (noting the goals are for 24 hours averages).</p> <p>The weather records also indicate that starting at around 11 am there was a slight increase in wind speeds, however they still remained within the light breeze classification under the Beaufort Scale.</p>	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 the Relevant Project Works during the reporting period for:

- Lifting activities at Yeronga Station using a 200t crane located on Lake Street
- Use of vacuum excavation trucks for OHLE mast foundations at Rocklea.

Whilst complaint-based noise monitoring because of Project Works was triggered at Yeronga, the complaint was received after the Relevant Project Works were completed and therefore was not carried out.

The Noise monitoring results are presented in Table 4.

3.1.2 Noise monitoring Results

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

The results from noise monitoring are assessed against two performance goals.

The first performance goal (herein referred to as Performance Goal 1), is determined as per Condition 11(a), Table 2, LA₁₀ noise goals.

The second performance goal (herein referred to as Performance Goal 2), is determined as per (Condition 11(c), using Table 2 LA₁₀ noise goal and adding + 20dBA.

An exceedance (predicted or measured) of either of these performance goals does not necessarily represent a potential or actual Non-Compliance Event.

Indeed, if the Project Works are authorised to proceed under Imposed Condition 10 and the Directly Affected Person (DAP) engagement process has occurred as per Imposed Condition 11 (c), then Project Works that are predicted to generate noise above the noise goal + 20dBA can proceed.

The purpose of these two performance goals is to inform:

- The extent of management measures that can reasonably and practically be implemented during the execution of the Relevant Project Works to minimise impact to DAPs, and
- Extent and type of consultation with DAPs prior to and leading up to the Relevant Project Works commencing.

The community, stakeholders, and DAP consultation and engagement process which is based on the outcomes of the predictive modelling is presented in Attachment 6.

Attachment 6 must be read in conjunction with the Noise and Vibration Management sub-plan (C-EMP sub-plan) with a focus on Attachment 1 and 2 of the sub-plan.

Table 4: 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 1 (dBA) (Condition 11(a), Table 2, LA ₁₀ noise goals)	Performance Goal 2 (dBA) – (Condition 11(c), Table 2 LA ₁₀ noise goal + 20dBA)	Measured LA ₁₀ (dBA)	Measured LA _{eq} (dBA)	DAP engagement prior to works	Is performance Goal exceeded?	Comments
Residential 2 Lake Street Yeronga	Attended Outdoors ¹	Standard Hours and Extended Work Hours Monitoring undertaken Saturday 09 October 2021 08:45	Intermittent	Construction Monitoring at Sensitive Places Model Verification	77 (outdoors)	Standard Hours 65 (Outdoors) (AS2107 maximum design level [45dBA] + 10dBA + 10dBA façade reduction) ² Extended Work Hours 52 (Outdoors) (42dBA + 10dBA façade reduction) ²	Standard Hours 85 (Outdoors) (65 + 20dBA) Extended Work Hours 72 (Outdoors) (52 + 20dBA)	71 (outdoors)	68 (outdoors)	Yes Standard and case by case	Standard Hours Exceedance of Performance Goal 1 No Exceedance of Performance Goal 2 Extended Work Hours Exceedance of Performance Goal 1 No Exceedance of Performance Goal 2	200 T crane lift Yeronga Station For interpretation, please refer to 3.1.4.13.1.4.1
Residential 2 Annie Street Rocklea	Attended Outdoors ¹	Extended Hours of Works Monitoring undertaken Sunday 17 October 2021 10:21	Intermittent	Construction Monitoring at Sensitive Places Model Verification	61 (outdoors)	Extended Work Hours 52 (Outdoors) (42dBA + 10dBA façade reduction) ²	Extended Work Hours 72 (Outdoors) (52 + 20dBA)	64 (outdoors)	62 (outdoors)	Yes Standard	Extended Work Hours Exceedance of Performance Goal 1 No Exceedance of Performance Goal 2	Vacuum Truck Rocklea station For interpretation, please refer to 3.1.4.1

- 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 Queensland¹.
 - 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 required during the reporting period based on the predictive vibration assessments for specific activities.

Table 5 Summary of Vibration 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 predicted vibration Level (mm/s)	Maximum recorded vibration Level (mm/s)	Vibration goal for receiver (mm/s)	Exceedance of vibration limit?	Comments
Old Museum	11/10/21 - 13/10/21	N/A	State Heritage Cosmetic Damage	Heritage Structure (DIN4150-3 Group 1)	Construction Monitoring at Sensitive Places - Model Verification	1.3mm/s at 122 m offset	0.3mm/s at 122 m offset	20-40mm/s (Property Damage Sub-plan)	No exceedance	Rock breaking (2T hammer) for RW210 box out
Old Museum	11/10/21 - 13/10/21	Surface works Standard Hours	Commercial receiver Human comfort	Commercial	Construction Monitoring at Sensitive Places - Model Verification	1.3mm/s at 122 m offset	0.3mm/s at 122 m offset	Transient vibration 11(e): 2mm/s 11(g): 10mm/s	No exceedance	Rock breaking (2T hammer) for RW210 box out

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

3.1.4 Interpretation

3.1.4.1 Noise Monitoring²

3.1.4.1.1 200T Crane Lift Yeronga

Noise monitoring of noise intensive activities associated with lifting activities at Yeronga Station during an approved rail possession was undertaken externally. Monitoring was carried out at the sensitive place identified as being likely to experience the highest noise levels during the works. The sensitive place was identified as residential DAPs and comprises of an apartment / townhouse complex.

Monitoring was undertaken during standard construction hours (Saturday day) to inform whether the works were likely to exceed noise goals + 20dBA on Sunday day (non-standard working hours).

No lifting operations occurred at night.

The measured LA10 readings were compliant with the Imposed Conditions for works during standard hours. The LA10 readings exceeded the noise goal + 20dBA for works during non-standard working hours.

The works were however authorised to proceed under Imposed Condition 10 as they were carried out during extended works hours (approved road possession and rail possession). DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11 (c).

Mitigation measures proactively implemented by the project included scheduling of works during daytime only with respite periods throughout the day (Saturday and Sunday).

Finally, 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.

3.1.4.1.2 Vacuum excavations -Rocklea

Noise monitoring of vacuum excavation works at the Rocklea Station during extended working hours was undertaken externally.

Noise monitoring was carried out at the façade of the affected sensitive place. The sensitive place was identified as a residential DAP.

Monitoring was undertaken during extended working hours to inform whether the works were exceeding the noise goals + 20dBA.

The measured LA₁₀ readings were compliant with the Imposed Conditions for works during extended working hours.

The works were authorised to proceed under Imposed Condition 10 as they were carried out under an approved rail corridor possession. DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11 (c).

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 Rock breaking – RNA Showgrounds

Vibration monitoring during rock breaking works at the RNA Showgrounds was undertaken at the foundation of the State heritage listed Old Museum located off Gregory Terrace. This location was selected based on the outcomes of predictive assessments. The measured readings were compliant with the revised vibration limits based on building specific vibration goals presented in the latest revision of the endorsed Property Damage Sub-Plan (Revision 09).

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

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 19 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.

Table 6: Summary of Air Quality monitoring devices

Monitoring Device Installed by UNITY	Area	Name	Date Installed	Status for the Reporting Period
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	1 February 2021	Active
Dust Deposition Gauge	Yeronga Station	AQ-07	12 August 2021	Active
TSP / PM ₁₀ Monitor	Mayne Yard (Eastern Air Shed)	Mayne Yard	23 April 2020	Active
TSP / PM ₁₀ Monitor	Clapham Yard (Eastern Air Shed)	Clapham Yard	9 August 2021 – New Location	Active
TSP / PM ₁₀ Monitor	RNA (Western Air Shed)	RNA	25 August 2020	Active

3.2.1 Dust results

As passive dust deposition gauges are analysed monthly, results span from 13 September 2021 to 10 October 2021.

The results are detailed below and complied with Imposed Condition 13(b) of the CGCR.

Table 7 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 (mg/m ² /day)	AQ-07– Yeronga Station (mg/m ² /day)
120	40	47	27	43
Total Rainfall during Period	14.4	15.2	13.6	41.0

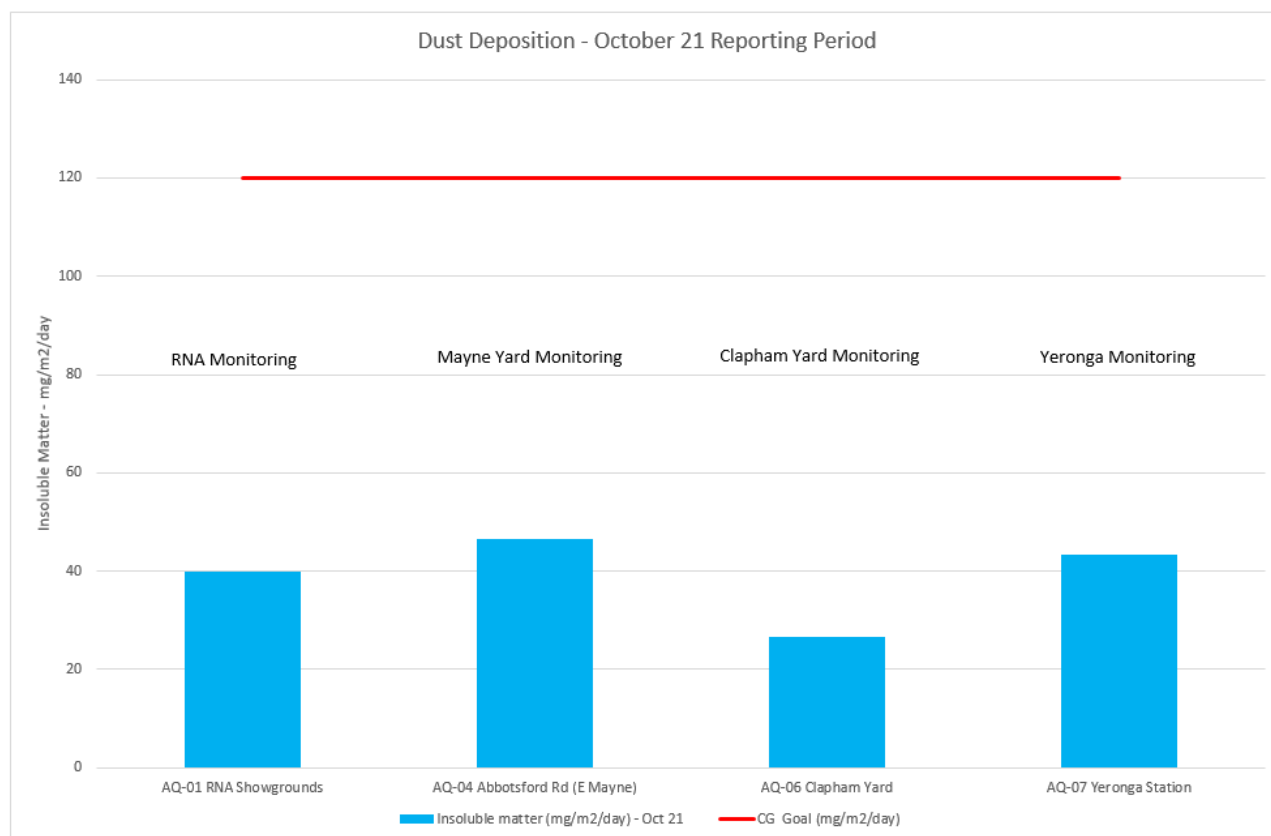


Figure 1 Air Quality Monitoring (Deposited Dust) Results

3.2.2 Particulates results

3.2.2.1 Air Quality Monitoring Stations

Unity had three (3) active air quality monitoring stations set up for the reporting period as detailed in Table 6.

3.2.2.2 Monitoring results – Reporting Period

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 $\mu\text{g}/\text{m}^3$ (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 $\mu\text{g}/\text{m}^3$ (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.

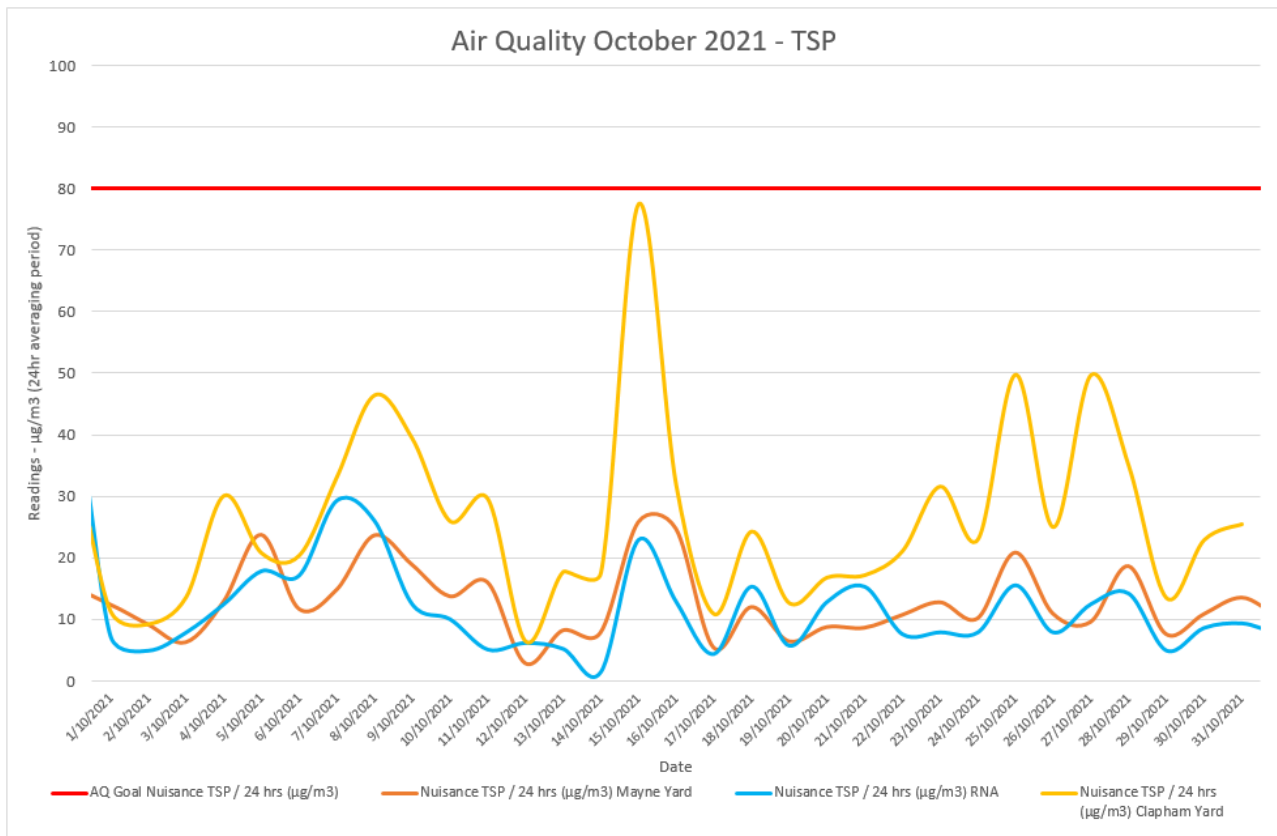


Figure 2 Air Quality Monitoring (TSP) Results

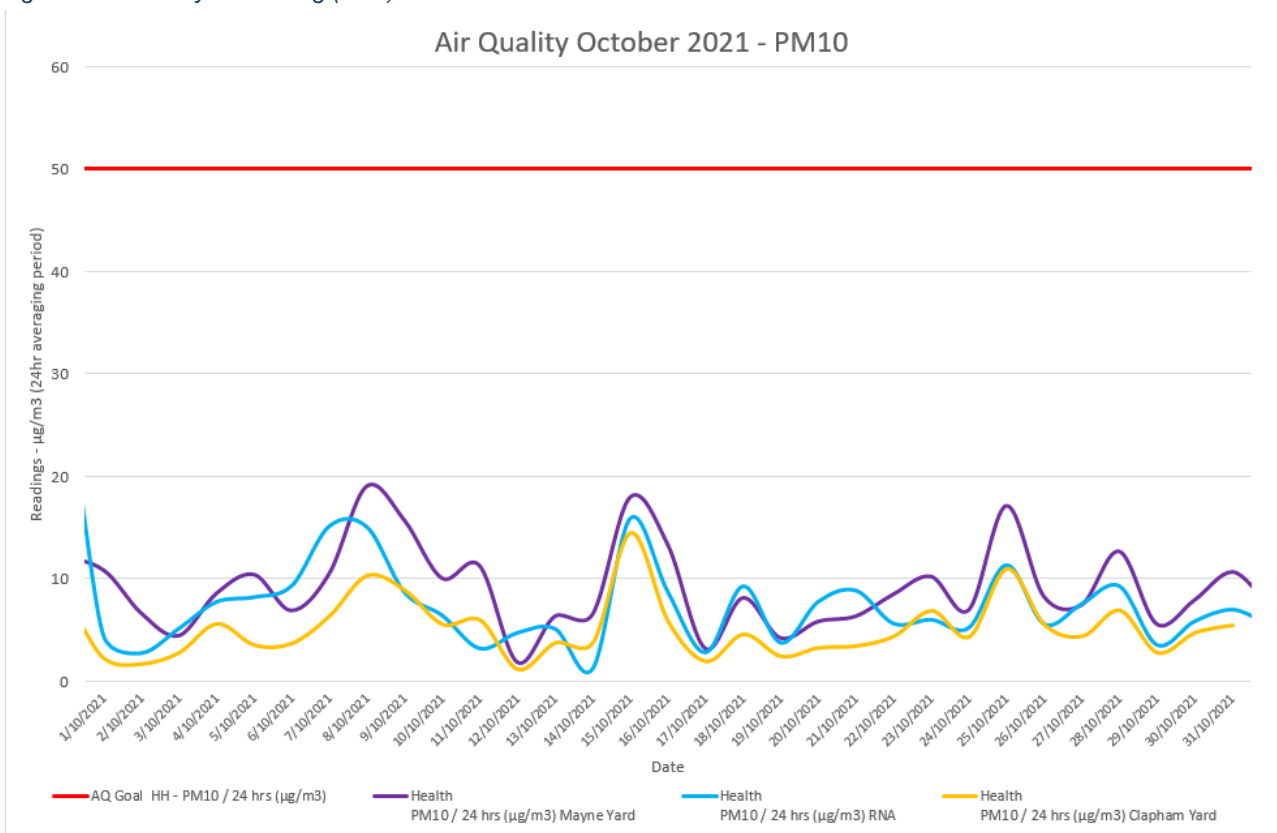


Figure 3 Air Quality Monitoring (PM₁₀) Results

3.2.2.3 Monitoring results – Annual averaging

Imposed Condition 13 (a) sets annual average air quality goals for TSP (Human health) and PM₁₀ (Human health).

The below table summarises where TSP and PM₁₀ monitoring has been carried out over the last 12 months.

The National Environment Protection (Ambient Air Quality) measure Technical paper No.5 provides guidance and procedures for uniform data recording and handling.

(<https://www.nepc.gov.au/system/files/resources/9947318f-af8c-0b24-d92804e4d3a4b25c/files/aaqprctp05datacollection200105final.pdf>).

For air quality data to be officially reported, as per section 4.5 of Technical Paper No. 5, the minimum data capture would be 75% of the year or 274 days.

“It is essential that data loss is kept to an absolute minimum. For representative monitoring data and for credible compliance assessment it is desirable to have data capture rates higher than 95%. 75% data availability is specified as an absolute minimum requirement for data completeness”.

In some instances, Relevant Project Works, which triggered TSP and PM₁₀ monitoring were carried out for less than 274 days (e.g. at the Northern Corridor). In such instances the annual averages are still reported but are indicative only as data capture did not meet the 75% data capture requirements of *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 5 – Data Collection and Handling*.

Table 8: Summary of Air Quality monitoring devices over 12 months

Monitoring Device Installed by UNITY	Area	Date Installed	Date Decommissioned	Number of Days data was captured over 365 days period	Data capture over an annual period	Annual performance reporting
TSP / PM ₁₀ Monitor	Northern Corridor (Eastern Air Shed)	23 April 2020	13 January 2021	260 over 365 days	71% over 365 days	<i>Indicative only</i> Data capture did not meet the minimum data capture requirements
TSP / PM ₁₀ Monitor	Mayne Yard (Eastern Air Shed)	23 April 2020	Not yet decommissioned	Period 1 (to 23 April 2021) 358 over 365 days Period 2 (starting 24 April 2021) 191 over 191 days	Period 1 98% over 365 days Period 2 100% Over 191 days	Applicable for Period 1 Data capture met minimum data capture requirements Not Applicable for Period 2 Data capture has not yet met the minimum data capture requirements

Monitoring Device Installed by UNITY	Area	Date Installed	Date Decommissioned	Number of Days data was captured over 365 days period	Data capture over an annual period	Annual performance reporting
TSP / PM ₁₀ Monitor	RNA (Western Air Shed)	11 June 2020	Not yet decommissioned	Period 1 (to 11 June 2021) 314 over 365 days Period 2 (starting 12 June 2021) 143 over 143 days	Period 1 86% over 365 days Period 2 100% Over 143 days	Applicable for Period 1 Data capture met minimum data capture requirements Not Applicable for Period 2 Data capture has not yet met the minimum data capture requirements
TSP / PM ₁₀ Monitor	Clapham Yard (Eastern Air Shed)	1 February 2021	Not yet decommissioned	235 (over 270 days)	87% over 270 days	Not Applicable Data capture has not yet met the minimum data capture requirements

The below table summarises the applicable and indicative annual data results for TSP and PM₁₀ against the performance goals imposed under Condition 13(a). Results in *italic* are indicative only.

Table 9 Annual Performance Results

Air Quality Indicator	Goal	Period	Northern Corridor	Mayne Yard	RNA	Clapham Yard
TSP	90 µg/m ³	Period 1	<i>8 µg/m³</i>	11 µg/m ³	18 µg/m ³	Not applicable
		Period 2	-	Not applicable	Not applicable	-
PM ₁₀	25 µg/m ³	Period 1	<i>5 µg/m³</i>	7 µg/m ³	11 µg/m ³	Not applicable
		Period 2	-	Not applicable	Not applicable	-

3.2.3 Interpretation

During the reporting period:

- None of the particulate results exceeded their relevant goals
- There was no evidence of dust being generated and leaving the site boundaries
- There was one complaint received associated with air quality concerns nearby the RNA showgrounds.

For the latter, the Project Team investigated whether the complaint was likely related to Project Works by undertaking a review of the validated air quality data and weather conditions on the day of the complaint (28 October) and leading up to the complaint.

The Stakeholder was located due east from the Project Works subject of the of the complaint (rock breaking in the rail corridor north of O'Connell Terrace).

The complaint was received by the Project Team at approximately 11.30 am.

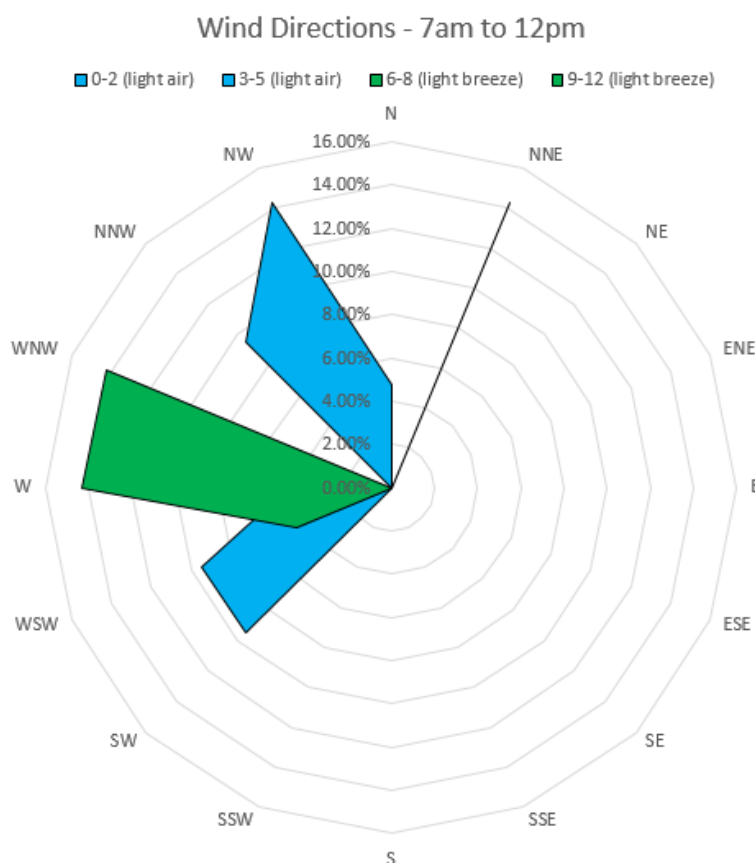
Whilst the validated data showed an increase for the particulate (TSP / PM₁₀) monitoring results between 11 am and 12 pm none of the data exceeded the air quality goals for nuisance or dust even over 5- and 15-minutes averaging periods (noting the goals are for 24 hours averages).

The weather records also indicate that starting at around 11am the worksites experienced a slight increase in wind speeds, they however remained within the light breeze classification under the Beaufort Scale.

The stakeholder was located downwind of the Project Works at Clapham Yard for 81% of the time between 7am and 12 pm.

The predominant winds however ranged from light air (52%) to light breeze (48%) under the Beaufort Scale.

Dust suppression activities were also increased to cater for the changes in meteorological conditions.



The RIS scope of works has met the project outcomes set out by the CGCR and OEMP.

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. The rain events recorded during the reporting period at Mayne Yard and Clapham Yard had the potential to result in run-off being generated from these two active worksites on 12 and 14 October 2021

There were no active surface water discharges (e.g. dewatering through pumping, sediment basin release) to receiving waters.

3.3.1 Rainfall Records

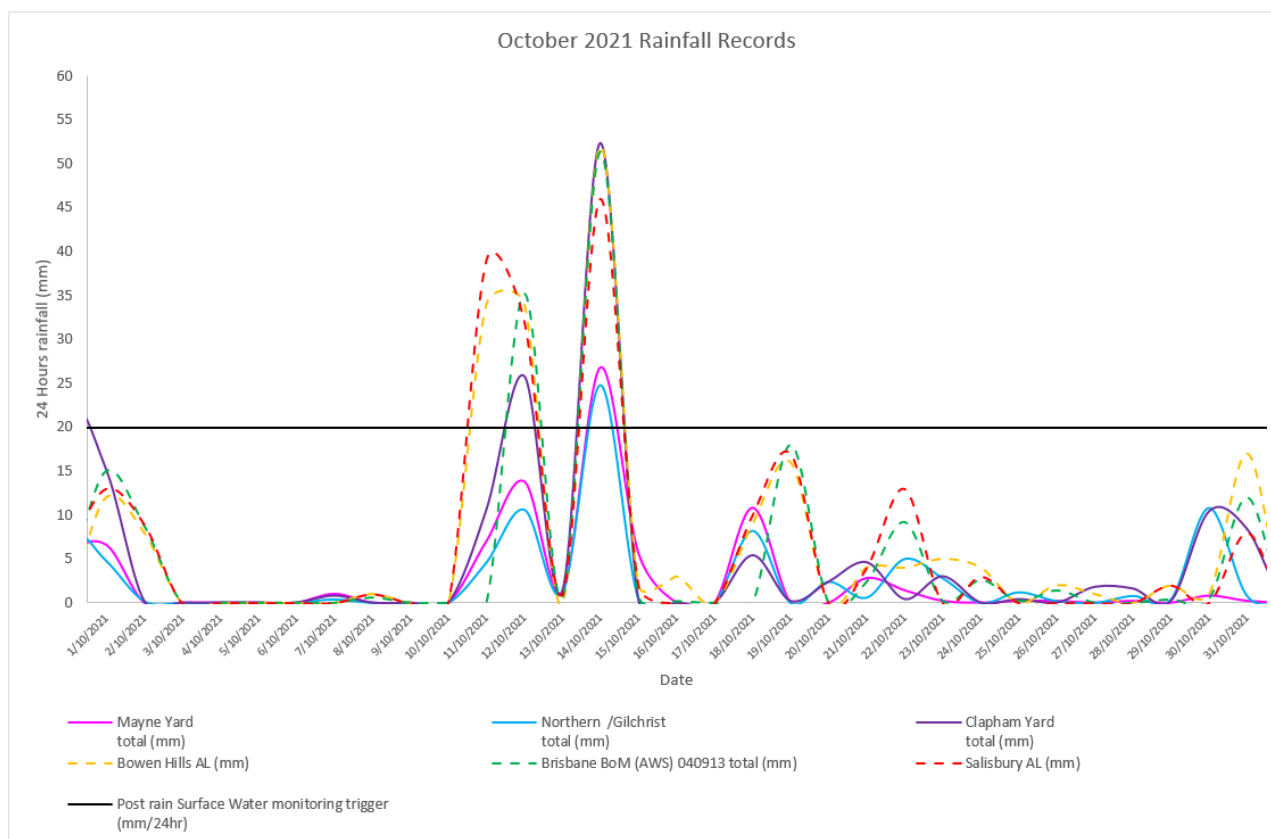


Figure 4 Rainfall Records

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 of a higher intensity may cause run-off which would also trigger post-rain monitoring consistent with the C-EMP.

In-situ post rainfall monitoring triggered during the reporting period as follows:

- 12 October 2021:
 - 25.8mm of rain recorded at Clapham Yard (10.6mm the day prior) and
 - 13.8 mm of rain recorded at Mayne Yard (7mm the day prior).
- 14 October 2021
 - 52.4 mm of rain recorded at Clapham Yard and
 - 26.8 mm of rain recorded at Mayne Yard.

Table 10: Surface Water Discharge Monitoring Results

Date	Location	Waterway	Tide	Discharge Criteria ³			
				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
12/10/21	Clapham Yard	Moolabin Creek (SW-05 - upstream)	N/A	Field: 25 Lab: 13	<5	No data	6.8
12/10/21	Clapham Yard	Moolabin Creek (SW-06 - downstream)	N/A	Field: 31 Lab: 22.5	18	No data	7.8
12/10/21	Clapham Yard	Rocky Water Holes Creek (SW-07 - upstream)	N/A	Field: 29 Lab: 19	10	No data	6.8
12/10/21	Clapham Yard	Rocky Water Holes Creek (SW-08 – downstream)	N/A	Field: 29 Lab: 20	12	No data	7.2
14/10/21	Clapham Yard	Moolabin Creek (SW-05 - upstream)	N/A	Field: 34 Lab: 25	10	No data	7.0
14/10/21	Clapham Yard	Moolabin Creek (SW-06 - downstream)	N/A	Field: 49 Lab: 30	16	No data	7.1
14/10/21	Clapham Yard	Rocky Water Holes Creek (SW-07 - upstream)	N/A	Field: 63 Lab: 39	20	No data	7.0
14/10/21	Clapham Yard	Rocky Water Holes Creek (SW-08 – downstream)	N/A	Field: 81 Lab: 42	23	No data	7.1
12/10/21	Mayne Yard	Breakfast Creek (SW-01)	Rising Freshwater to Brackish conditions	In Field: 27 Lab: 13	8	No data	7.4
12/10/21	Mayne Yard	Breakfast Creek (SW-02)	Rising Freshwater to Brackish conditions	In Field: 15 Lab: 12	10	No data	7.0
12/10/21	Mayne Yard	Breakfast Creek (SW-03)	Rising Freshwater to Brackish conditions	In Field: 17 Lab: 13	22	No data	7.3

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 discharges the RIS Scope of Works has experienced, there is no correlation available. 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			
				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
14/10/21	Mayne Yard	Breakfast Creek (SW-01)	Rising Freshwater to Brackish conditions	In Field: 131 Lab: 70	62	No data	7.1
14/10/21	Mayne Yard	Breakfast Creek (SW-02)	Rising Freshwater to Brackish conditions	In Field: 163 Lab: 101	111	No data	7.0
14/10/21	Mayne Yard	Breakfast Creek (SW-03)	Rising Freshwater conditions	In Field: 197 Lab: 126	136	No data	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 did not undertake routine surface water monthly monitoring. A review of the data sample has identified that over 12 months of continuous data collection has occurred with a total of over 18 monitoring events. The frequency of background monitoring has therefore been reduced to bi-annually, with the next sampling round to be undertaken during the wet season (October to March). This reduction of monitoring frequency is acceptable to continue informing the Dis-1 Credit for the ISCA 'Excellent Rating' the Project is pursuing.

3.3.5 Interpretation

3.3.5.1 Moolabin Creek and Rocky Water Holes Creek Results

The two post rainfall monitoring events identified that water quality was visually more turbid at both downstream locations.

Whilst this was supported by the turbidity readings collected in situ, the laboratory results for Total Suspended Solids (TSS) confirmed that in both instances of post rainfall monitoring TSS results at the downstream monitoring location were more than 10% greater than the upstream results.

For Moolabin Creek the TSS results difference between the upstream and downstream results were also greater than 5mg/L.

Consistent with Table 2 of the Waterways and Water Quality Management subplan when TSS results downstream of the Project Works exhibit of change of 5mg/L or 10% increase (whichever is the greatest) further investigation is required to ascertain whether this change in water quality is related to released water from the Project Works.

The following information was collected during the monitoring events:

- It was confirmed that no discharge from site occurred at either creek.
- Moolabin Creek

- A series of non-project related sediment sources exist in the immediate vicinity of the Project Works.
- They include
 - Unconsolidated sediment along the bed and banks of the Moolabin Creek channel
 - Channelised or steep overland flow paths that create localised increases of velocity for run-off entering the creek, subsequently remobilising unconsolidated sediments
- Rocky Water Holes Creek
 - A series of non-project related sediment sources exist in the immediate vicinity of the Project Works. They include
 - In stream scours and non-stabilised bed and banks upstream of the Project Works
 - Accumulated debris along the concrete channel of Rocky Water Holes Creek near Muriel Avenue which get remobilised after rain events
- Unity Alliance has investigated a suitable safely accessible alternative location within 50 to 100 m of the Project Works. There were none identified.

Therefore, the source of the increased turbidity cannot not be reasonably accredited to the Project Works.

Compliance with Imposed Conditions 15 and 18 was met.

3.3.5.2 Breakfast Creek Results

The two post rainfall monitoring events identified that water quality was visually more turbid at all three sampling points.

At the time of both monitoring events the tide was rising and therefore SW01 was the downstream monitoring location for the purpose of assessing potential impacts associated with Mayne Yard Project Works. SW03 was the upstream monitoring location.

The following information was collected during the monitoring events:

- It was confirmed that no discharge from site at occurred.
- All erosion and sediment control measures at Mayne Yard were installed in accordance with the current site ESC-P and were functional
- TSS results at monitoring location SW01 were 175% and 119 % lower than results at SW03 on 12 and 14 October respectively.
Whilst the TSS results are the highest recorded post rainfall in nearly 24 months of monitoring carried by Unity Alliance., Unity reviewed available background data along the Brisbane River ranging from February 2017 to May 2019.
- The review of these data confirmed that turbidity readings more than 50NTU are not uncommon, particularly at the start of the wet season.
- It is therefore concluded that the water quality variation between the monitoring locations upstream and downstream of the Project Works is representative of temporal and seasonal variations naturally experienced by this system.

Therefore, the source of the increased turbidity cannot not be reasonably accredited to the Project Works.

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 11 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 12 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 is undertaken as part of routine inspections. Monitoring for TSP, PM10, and deposited dust was also undertaken	Compliant	Not Applicable
Air Quality	Complaint's response	Moderate to High	Review of the validated air quality data at RNA following one complaint	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	Complaint's response	Moderate to High	Yes, for the rock breaking works at the RNA Showground Site	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	Complaint's response	Moderate to High	Not triggered – no complaints	Compliant	Not Applicable
Water Quality	Monthly monitoring	N/A	Not triggered	Compliant	Not Applicable

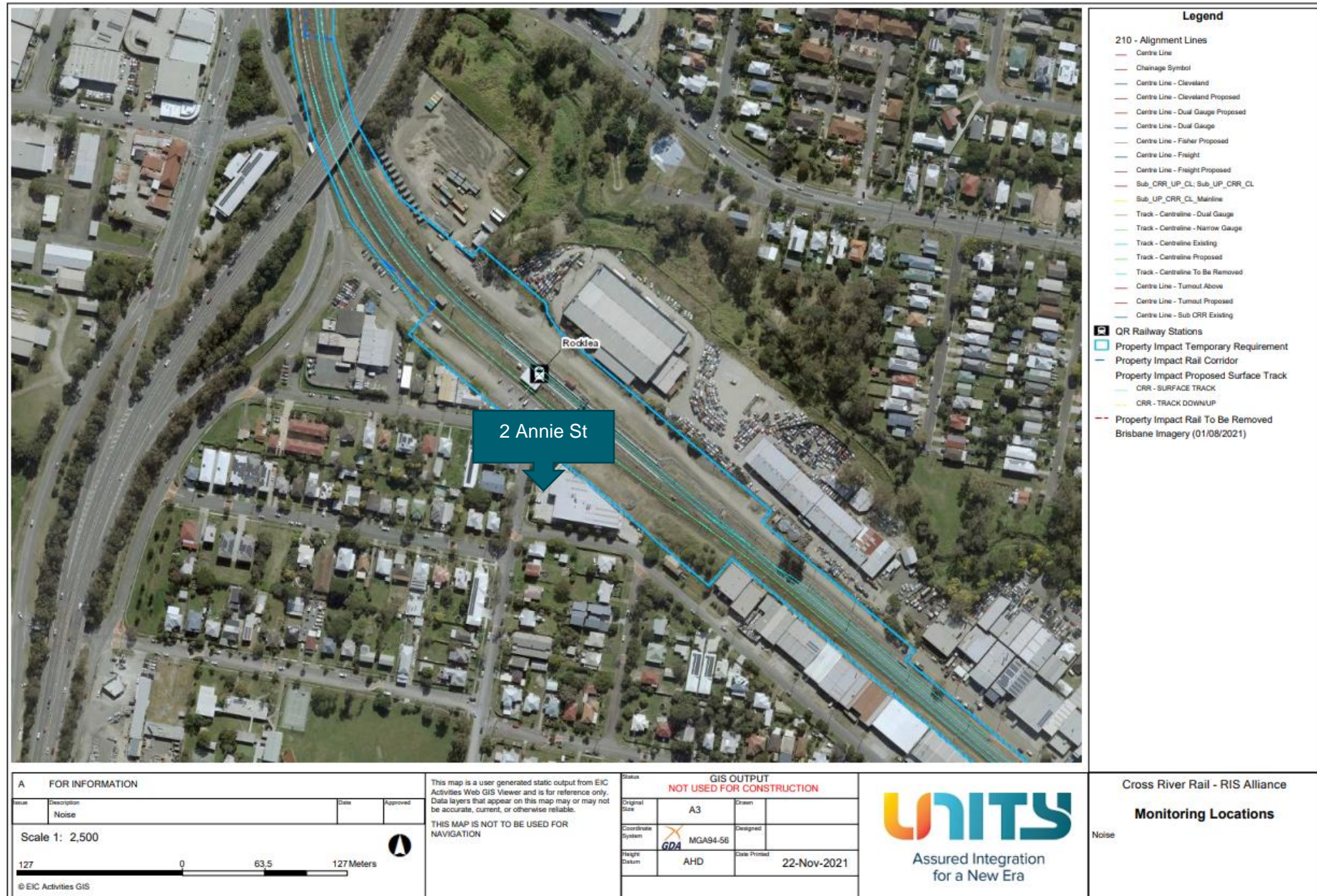
Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with CEMP / Subplan	Effect of the non-compliance
Water Quality	Post Rainfall	Moderate to High	Triggered	Compliant	Not Applicable
Water Quality	Dewatering	Moderate to High	Not triggered – no dewatering to receiving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

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

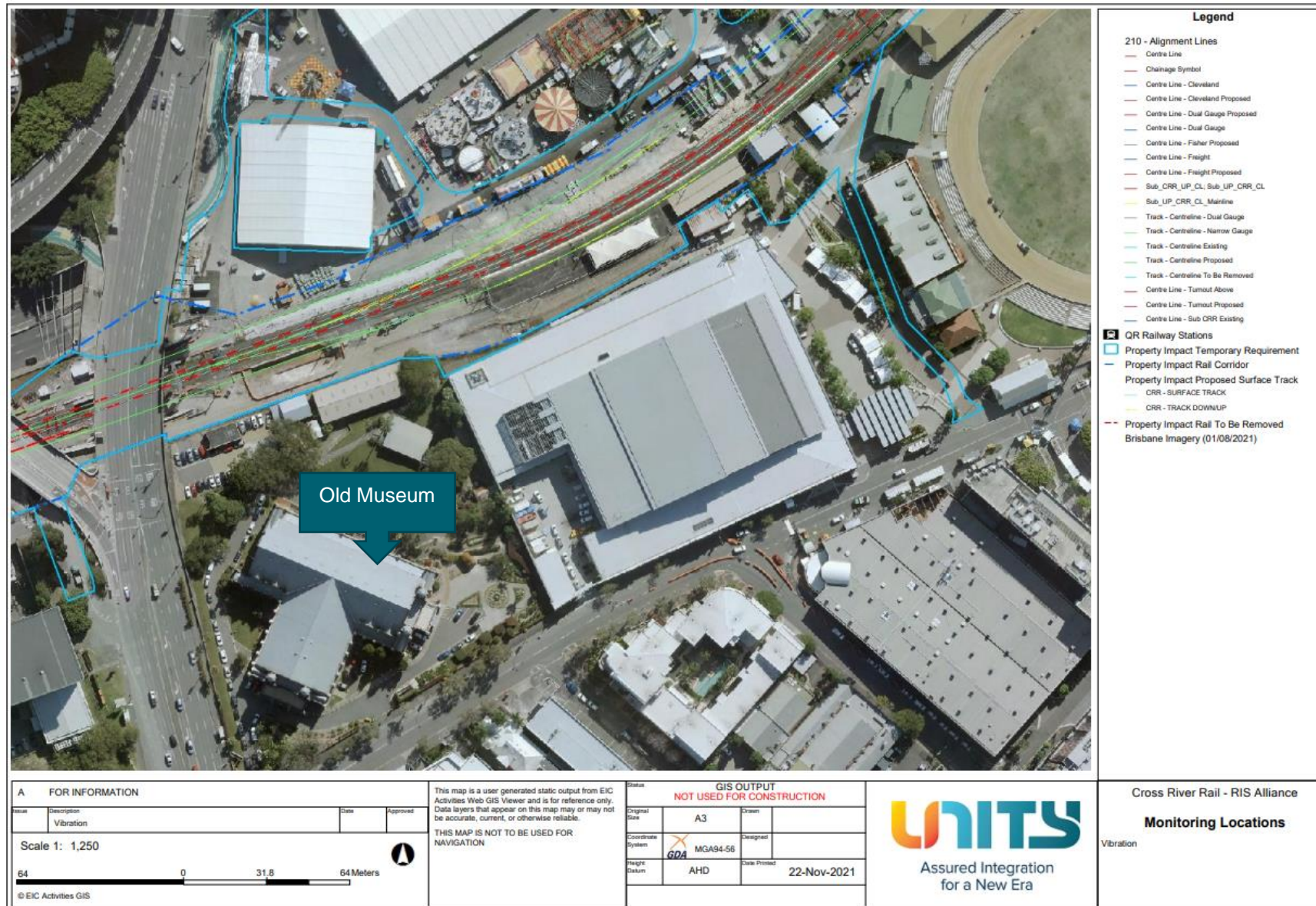
None for this reporting period.

Attachment 2 Monitoring Locations – Noise

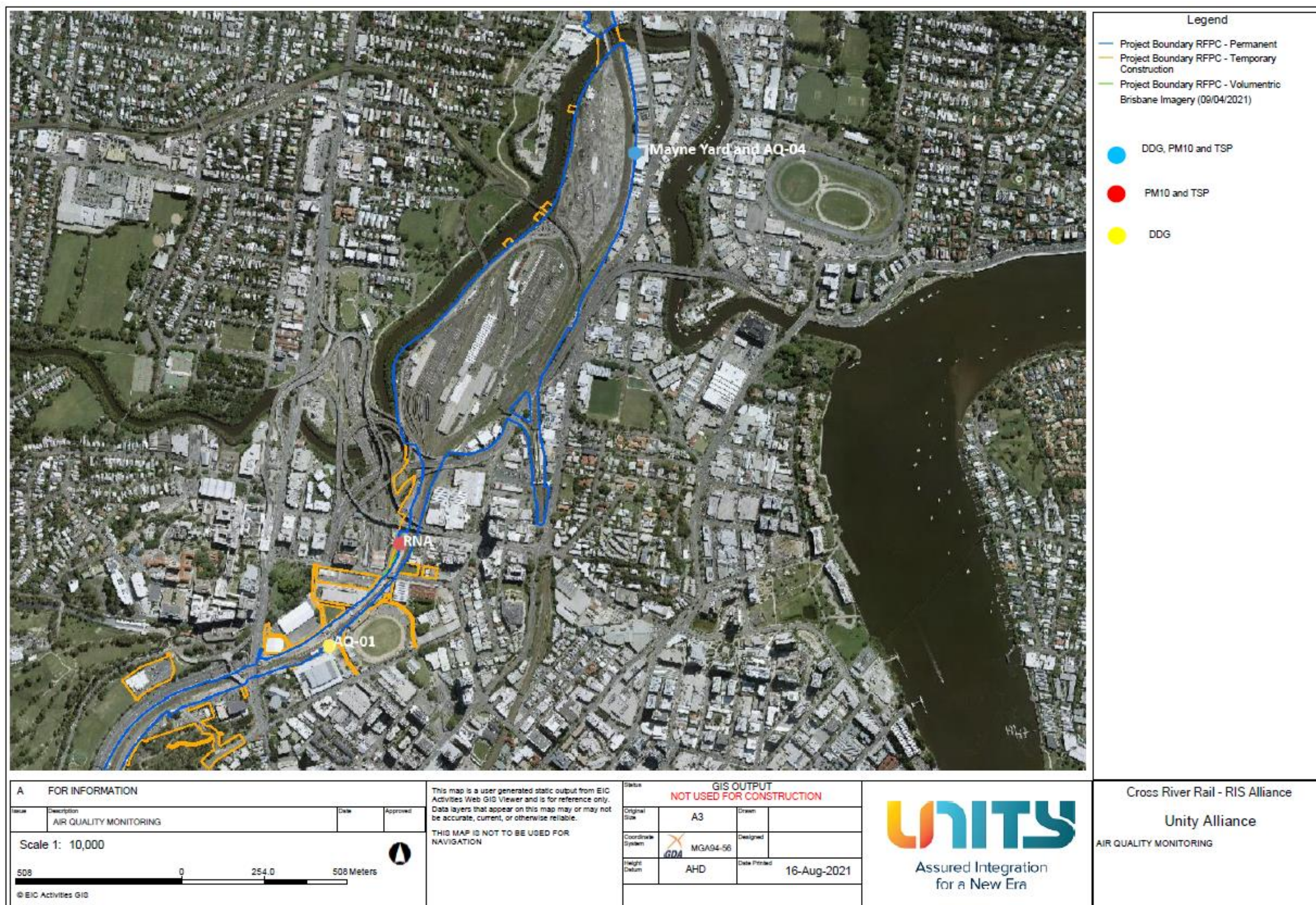


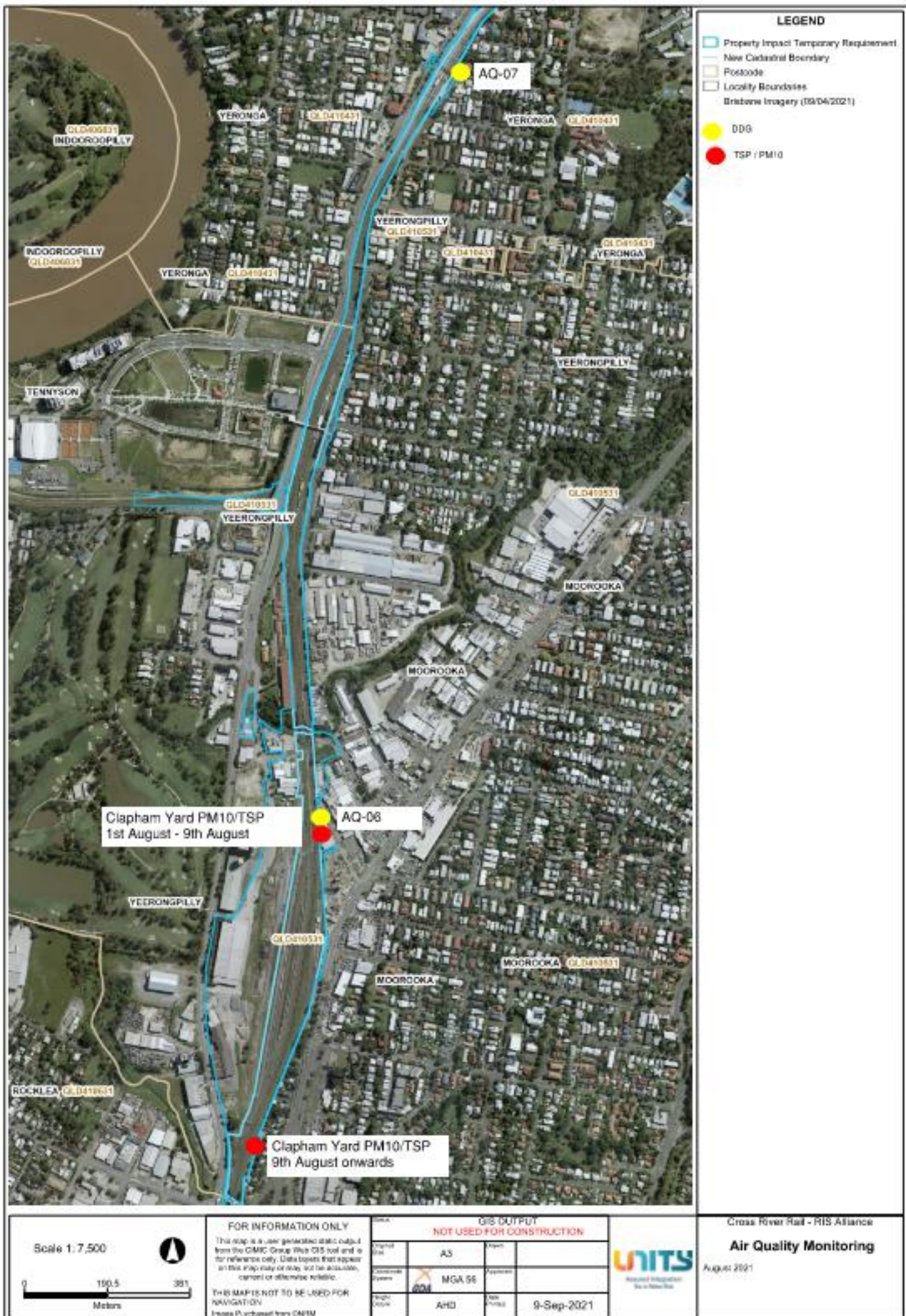


Attachment 3 Monitoring Locations – Vibration

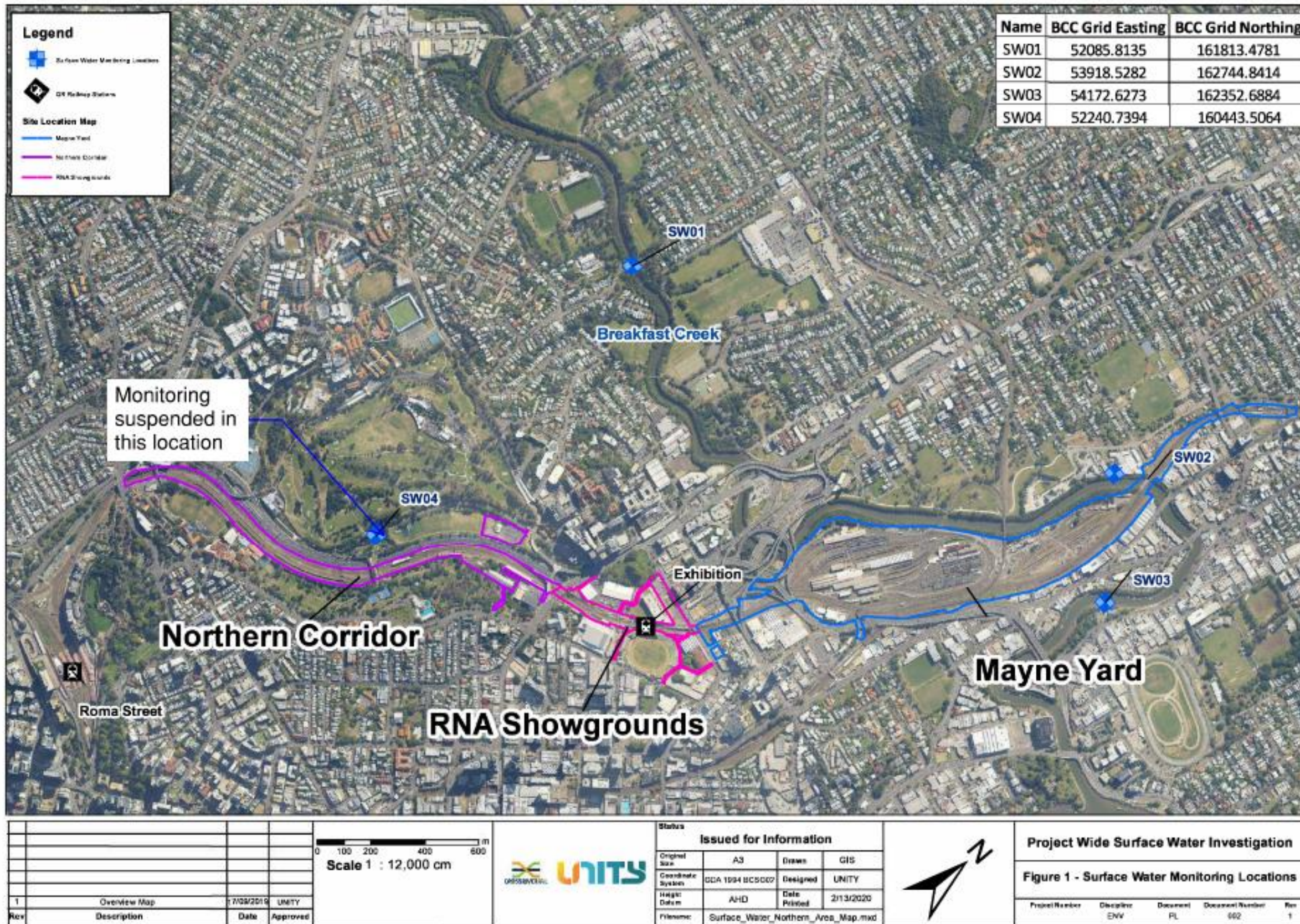


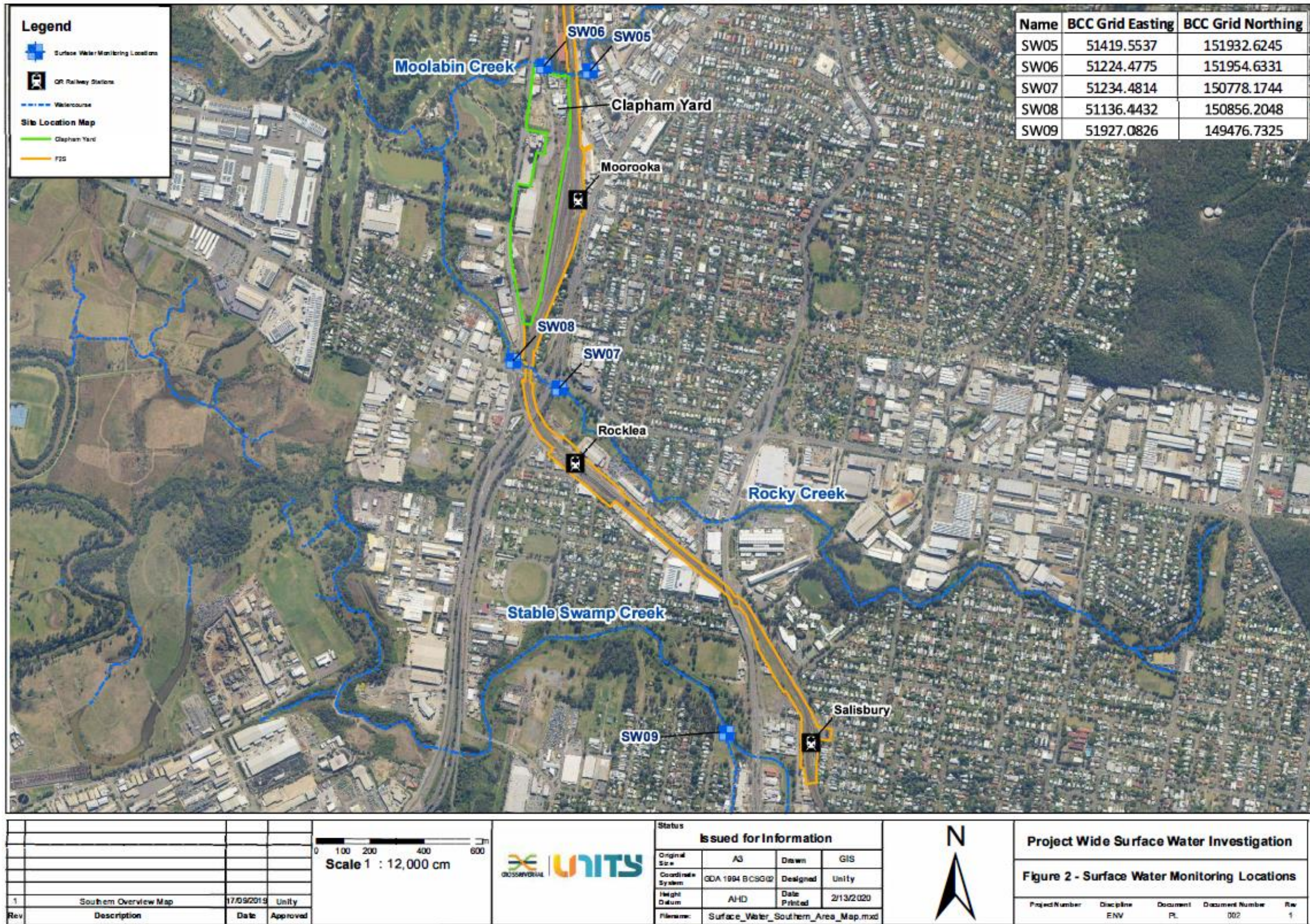
Attachment 4 Monitoring Locations – Air Quality



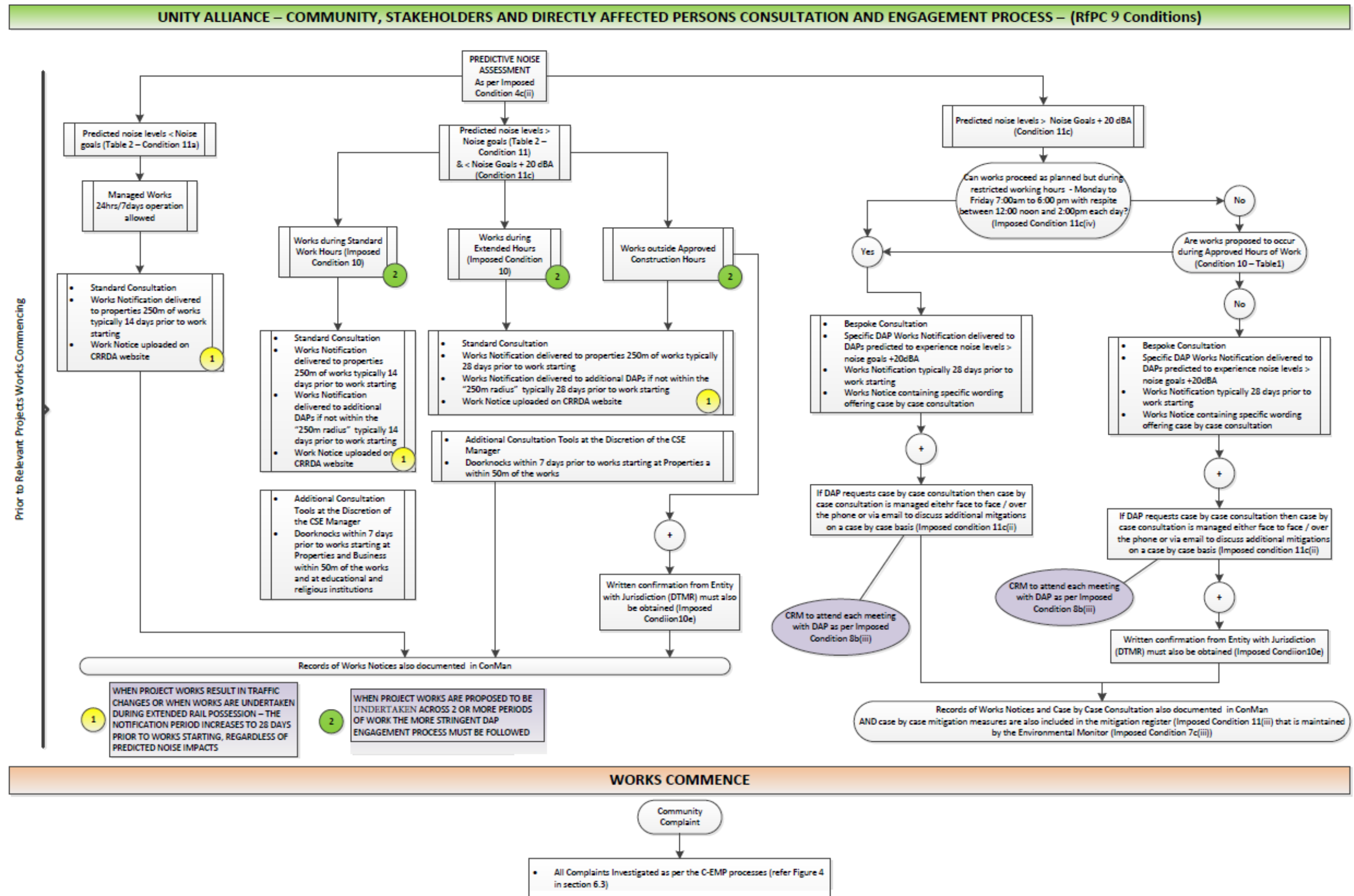


Attachment 5 Monitoring Locations – Surface Water





Attachment 6 DAP Engagement Process



Appendix B TSD Monthly Report

COORDINATOR-GENERAL'S MONTHLY REPORT: OCTOBER 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 eight (8) occasions, and noise monitoring was conducted on thirteen (13) occasions during October 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 October 2021. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on four (4) occasions. Each monitoring event confirmed project requirements were adhered to. Two (2) rounds of surface water quality monitoring was conducted; the 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 8).
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.
19.	Acid Sulfate Soils managed as per the <i>Queensland Acid Sulfate Soil Technical Manual</i> .	Yes	CBGU has prepared and manages processes to ensure acid sulphate soils are managed in accordance with Imposed Condition 19.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
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.

Eight (8) vibration monitoring sessions were conducted during October 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	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
1.	07/10/2021	9:13:00 AM	12/10/2021	Petrie Terrace (Roma Street Precinct)	0.16	0.52	2	Heritage Structure	Yes
2.	07/10/2021	10:31:00 AM	19/10/2021	Railway Terrace (Southern Area)	0.12	0.26	50	Residential	Yes
3.	07/10/2021	11:36:00 AM	7/10/2021	Gregory Terrace (Northern Portal)	0.48	0.88	50	Structure	Yes
4.	08/10/2021	08:26:00 AM	15/10/2021	Adelaide Street (Roma Street Precinct)	0.11	0.25	2	Heritage Structure	Yes
5.	12/10/2021	10:30:00 AM	12/10/2021	Albert Street (Albert Street Precinct)	-	9.9	50	Controlled Blast	Yes

No.	Start Date	Time (AM/PM)	Finish Date	Location	Average Vibration level (mm/s)	Max Vibration Level (mm/s)	Vibration Goal (mm/s)	Receiver / Goal Type	Adhered to Project Requirements (Yes / No)
6.	13/10/2021	09:43:00 AM	26/10/2021	Petrie Terrace (Northern Area)	0.18	0.72	2	Heritage Structure	Yes
7.	13/10/2021	10:09:00 AM	22/10/2021	Petrie Terrace (Northern Area)	0.14	0.36	20	Residential	Yes
8.	19/10/2021	12:17:00 PM	25/10/2021	Kent Street (Southern Area)	0.12	0.44	0.5	Commercial	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 thirteen (13) occasions during October 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	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
1.	1/10/2021	8:37:00 AM	Albert Street (Albert street Precinct)	Construction Monitoring at Sensitive Places	External	Ground stabilisation, Concrete works, and Cranage	Construction	72	76.5	62	75.6	Yes
2.	7/10/2021	11:43:00 AM	Greggory Terrace (Northern Area)	Construction Monitoring at Sensitive Places	External	Excavation	Construction and Road Traffic	62	70.6	52	67.8	Yes
3.	7/10/2021	11:59:00 AM	Greggory Terrace (Northern Area)	Construction Monitoring at Sensitive Places	External	Excavation	Construction and Road Traffic	62	70.2	52	67.2	Yes
4.	7/10/2021	12:35:00 PM	Greggory Terrace (Northern Area)	Construction Monitoring at Sensitive Places	External	Excavation	Construction and Road Traffic	62	68.3	52	66.3	Yes
5.	12/10/2021	7:16:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation	Construction	50	56.4	40	53.8	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	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
6.	12/10/2021	7:46:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Excavation	Construction	50	48.2	40	45.9	Yes
7.	12/10/2021	10:30:00 AM	Albert Street (Albert Street Precinct)	Controlled blasting	External	Controlled Blasting	Construction	-	-	130 ^[3]	115 ^[3]	Yes
8.	19/10/2021	12:59:00 PM	Peter Doherty Street (Southern Area)	Construction Monitoring at Sensitive Places	External	Piling	Construction	72	65.5	62	64.3	Yes
9.	25/10/2021	11:06:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Craneage	Construction	59	65.5	52	61.9	Yes
10.	26/10/2021	11:30:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Craneage	Construction	59	59.2	52	57.4	Yes
11.	27/10/2021	5:40:00 AM	Peter Doherty Street (Boggo Road Precinct)	Construction Monitoring at Sensitive Places	External	Concrete Works	Road Traffic and Construction	59	61.9	52	59.7	Yes
12.	27/10/2021	6:37:00 PM	Adelaide Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Spoil Haulage	Construction	67	64.8	57	63.4	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	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
13.	27/10/2021	7:23:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Excavation and Spoil Haulage	Construction	67	69.4	57	67.9	Yes

- [1] Intermittent noise goal (LA10)

- [2] Continuous noise goal (LAeq)

- [3] Blasting is measured in dB Linear Peak.

- Note: 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.

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 October 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/m ² /day)	Comments
	Criterion	Air Quality Indicator	Goal (mg/m ² /day)		
Northern Portal	Nuisance	Deposited dust	120	_[2]	Air quality monitoring was performed during the reporting period. All results adhered to project requirements.
Roma Street Precinct				_[2]	
Albert Street Precinct (North)				48.39	
Albert Street Precinct (South)				29.03	
Woolloongabba Precinct (North)				23.33	
Woolloongabba Precinct (South)				56.67	
Boggo Road Precinct (North)				30.00	
Boggo Road Precinct (South)				100.00	
Southern Portal (South)				36.67	
Southern Portal (East)				50.00	

- [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.
- [2] At the completion of this report the Northern Portal and Roma Street Deposited dust results had not be received from the Laboratory. Due to high volume of samples received this month the laboratory was delayed in providing results. The results will be reported in next month's report.

3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particulates (TSP) and particulate matter less than 10µm (PM10) monitoring was conducted during October 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 October 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 ^[1]	PM10 Project Goal	Woolloongabba ^[2]		Albert ^[2]		Boggo Road ^[3]		Northern Portal	
			TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
			(µg/m3/24 hr)							
01-October-21	80	50	-	-	13.00	13.00	6.19	6.18	8.20	8.16
02-October-21	80	50	-	-	-	-	7.44	7.40	9.85	9.75
03-October-21	80	50	-	-	-	-	7.33	7.31	10.57	10.52
04-October-21	80	50	-	-	-	-	13.74	13.69	20.06	19.90
05-October-21	80	50	-	-	-	-	3.51	3.44	5.20	5.07
06-October-21	80	50	-	-	13.00	13.00	3.80	3.74	6.17	6.03
07-October-21	80	50	-	-	8.78	8.78	7.27	7.26	11.81	11.73
08-October-21	80	50	-	-	-	-	12.98	12.96	20.16	20.09
09-October-21	80	50	-	-	-	-	9.8	9.77	15.82	15.77
10-October-21	80	50	-	-	-	-	5.65	5.65	9.48	9.42
11-October-21	80	50	-	-	-	-	8.30	8.28	11.97	11.91
12-October-21	80	50	-	-	-	-	2.09	2.07	5.20	5.18
13-October-21	80	50	-	-	-	-	3.84	3.83	7.80	7.77
14-October-21	80	50	-	-	-	-	4.91	4.91	7.62	7.55
15-October-21	80	50	-	-	-	-	12.48	12.43	19.67	19.51
16-October-21	80	50	-	-	-	-	5.02	4.97	7.68	7.54
17-October-21	80	50	-	-	-	-	4.10	4.04	5.25	5.16
18-October-21	80	50	-	-	-	-	7.13	7.12	11.27	11.19

Date	TSP Project Goal ^[1]	PM10 Project Goal	Woolloongabba ^[2]		Albert ^[2]		Boggo Road ^[3]		Northern Portal	
			TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
			(µg/m3/24 hr)							
19-October-21	80	50	-	-	-	-	10.26	10.24	13.88	13.84
20-October-21	80	50	-	-	-	-	8.02	8.00	11.39	11.30
21-October-21	80	50	5.49	5.40	13.74	13.30	7.32	7.30	8.16	8.10
22-October-21	80	50	10.44	10.35	17.17	16.70	-	-	11.35	11.33
23-October-21	80	50	11.11	11.03	16.80	16.32	-	-	10.79	10.77
24-October-21	80	50	13.78	13.47	26.58	25.54	-	-	13.60	13.48
25-October-21	80	50	21.32	21.20	23.36	22.80	-	-	21.48	21.41
26-October-21	80	50	14.73	14.58	22.43	21.63	-	-	14.12	14.05
27-October-21	80	50	8.66	8.56	15.01	14.53	-	-	8.62	8.57
28-October-21	80	50	11.53	11.42	15.90	15.33	-	-	11.16	11.10
29-October-21	80	50	14.29	14.10	18.66	18.06	-	-	14.65	14.57
30-October-21	80	50	15.93	15.77	26.39	25.74	-	-	15.17	15.11
31-October-21	80	50	8.96	8.83	16.54	16.02	-	-	10.07	9.98

- [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.
- [2] A technical fault occurred in relation to the Woolloongabba and Albert air quality units whereby they ceased functioning for several days in October 2021. The fault is being addressed. A nearby (Southern Brisbane) DES Air Quality Stations demonstrated compliant air quality during October 2021, these results are provided below. Low levels were also consistently monitored throughout the month when the unit was operating. Two (2) replacement have been procured and will be installed during the November reporting period.
- [3] On the 22 October 2021, the Boggo Road air quality unit was moved to the Woolloongabba location to capture particulate data for the remainder of the reporting period.

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: PM₁₀ daily Maximum average: **60.4 µg/m³/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/10/2021&timeframe=month>)
- South Brisbane: PM₁₀ daily Maximum average: **60.5 µg/m³/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/10/2021&timeframe=month>)
- Woolloongabba: PM₁₀ daily Maximum average: **61.7 µg/m³/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/10/2021&timeframe=month>)

The consistency of the PM₁₀ goal exceedances (order of magnitude, day, duration) of the DES air quality stations confirms that the exceedances of the PM₁₀ air quality goal over a 24hours averaging period are not relating to CBGU JV's works.

Brisbane had experienced elevated particulate concentration during the 14-16th October 2021 due to regional-scale events, which likely had a significant impact on reported particulate concentrations.

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

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

Particle PM₁₀ at Brisbane CBD, 1–31 October 2021 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

The guideline for Particle PM₁₀ is 100µg/m³ (1hr avg) and 50µg/m³ (24hr avg).

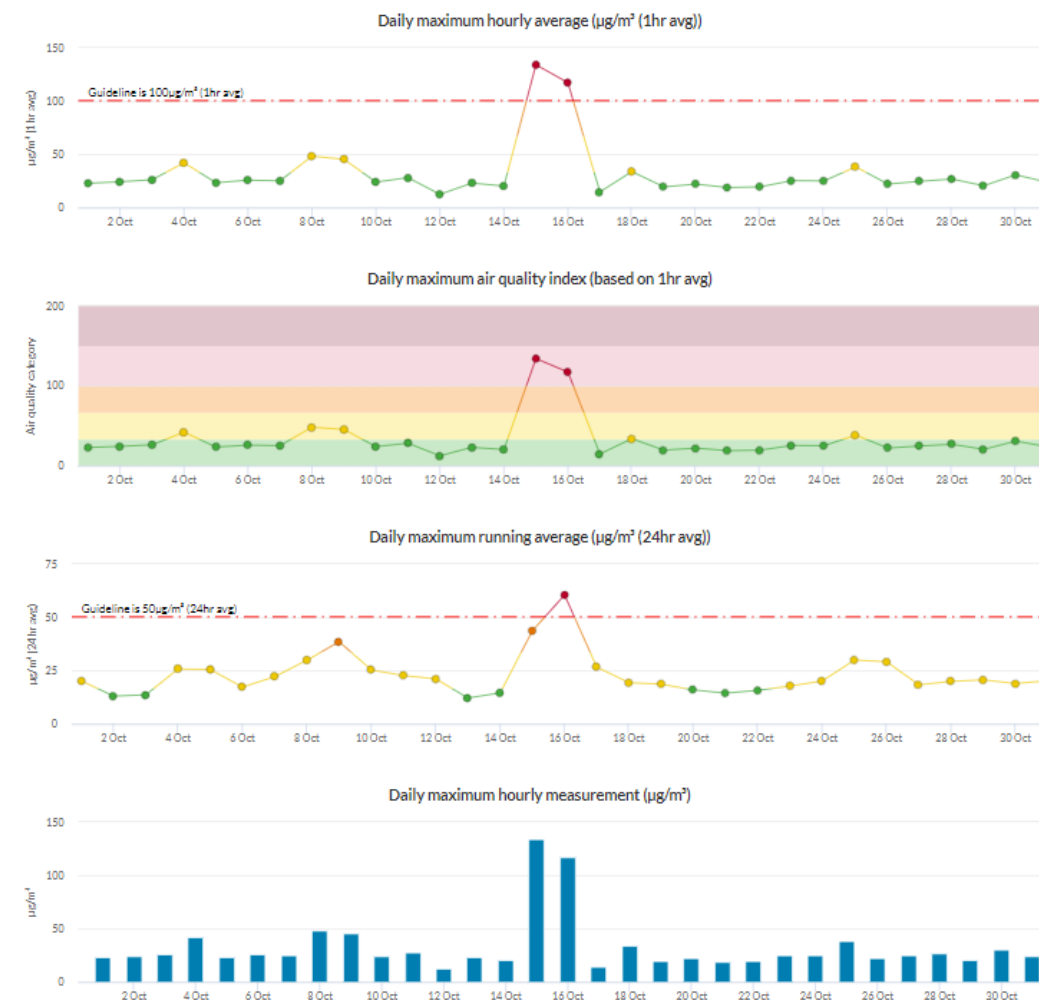


Figure 1: Brisbane CBD – DES Station - PM₁₀ graph for October 2021 (reproduction from the DES website).

Particle PM10 at South Brisbane, 1–31 October 2021 [about Particle PM10](#)

[South Brisbane station overview](#)

The guideline for Particle PM₁₀ is 100µg/m³ (1hr avg) and 50µg/m³ (24hr avg).

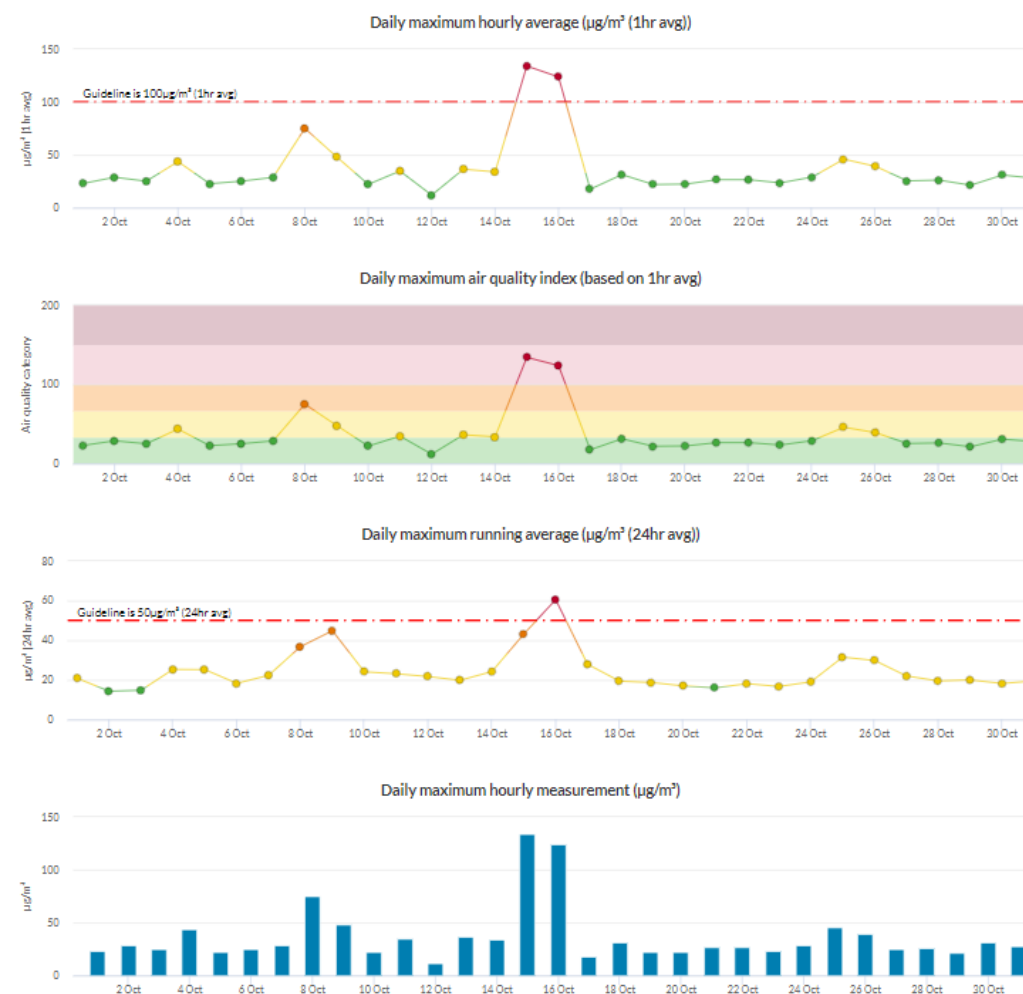


Figure 2: South Brisbane – DES Station - PM10 graph for October 2021 (reproduction from the DES website accessed).

Particle PM10 at Woolloongabba, 1–31 October 2021 [about Particle PM10](#)

[Woolloongabba station overview](#)

The guideline for Particle PM₁₀ is 100µg/m³ (1hr avg) and 50µg/m³ (24hr avg).

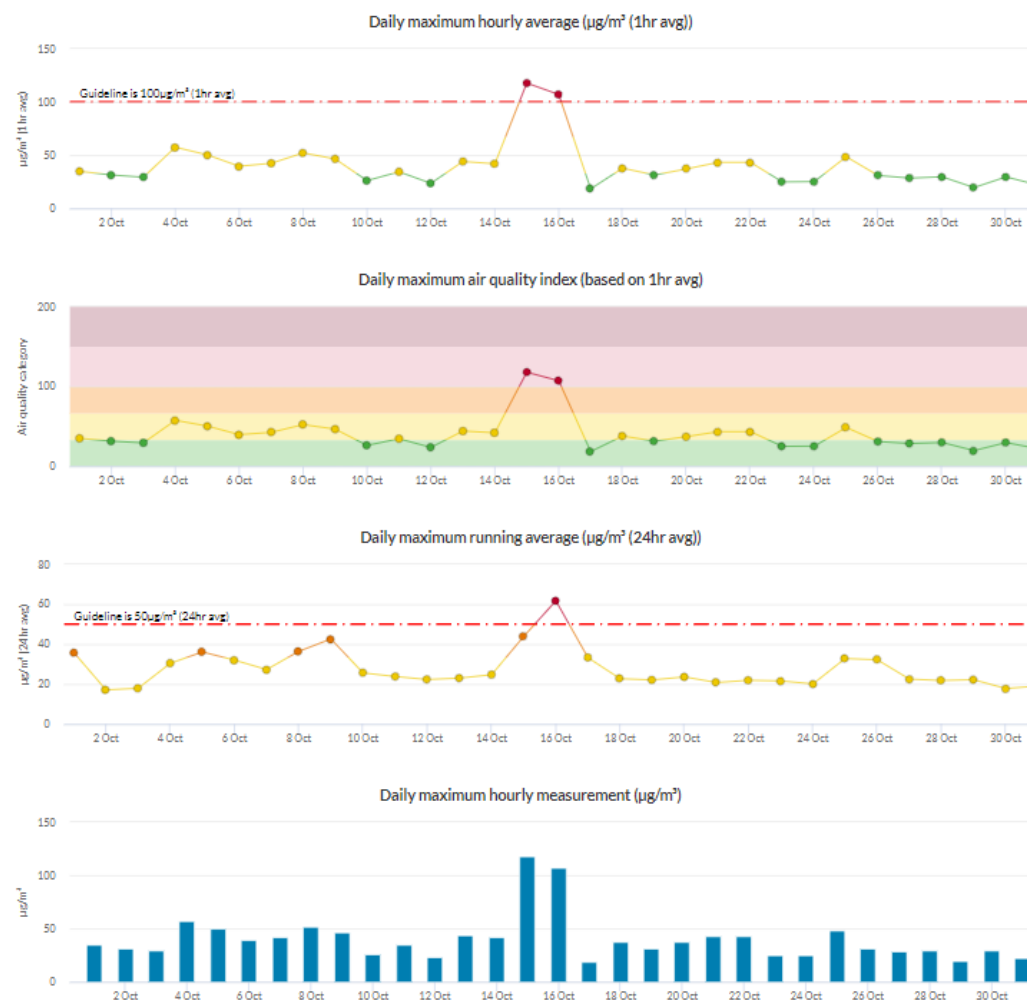


Figure 1: Woolloongabba – DES Station - PM10 graph for October 2021 (reproduction from the DES website).

3.4 Water Quality – Discharge

CBGU undertook four (4) water quality monitoring events prior to the release (groundwater and surface water) from the site. Two (2) samples were taken at the end of September but are therefore covered within this October reporting period.

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	30/09/2021	7.26	<5	0.29	1,330.00	820.00	800.00	2,900.00	40.00	<10	<1	90.23	Yes
Woolloongabba	30/09/2021	7.95	12	10.06	340.00	300.00	1,800.00	2,400.00	100.00	<10	<1	78.10	Yes
Roma Street	1/10/2021	7.80	<5	0.50	400.00	680.00	300.00	1,400.00	<10	<10	<1	94.40	Yes
Boggo Road	5/10/2021	7.14	<5	1.86	<10	450.00	600.00	1,000.00	60.00	<10	<1	102.88	Yes

- [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

Discharged ponded/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.	Northern Portal	12/10/2021	7.05	25.70	Yes
2.	Northern Portal	12/10/2021	7.05	25.70	Yes
3.	Northern Portal	22/10/2021	7.33	28.20	Yes
4.	Northern Portal	23/10/2021	7.27	28.20	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 October 2021, CBGU JV undertook two (2) rounds of surface water sampling at five (5) site 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 also 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	12/10/2021	Monthly/Post Rain	35.60	35,000	89.19	7.84
Roma Street	Downstream	12/10/2021	Monthly/Post Rain	32.90	35,300	89.08	7.86
Northern Portal	Upstream	12/10/2021	Monthly/Post Rain	51.80	401	53.25	6.43
Northern Portal	Downstream	12/10/2021	Monthly/Post Rain	47.80	344	61.73	6.45
Woolloongabba	Upstream	13/10/2021	Monthly/Post Rain	16.94	38,000	95.40	7.78
Woolloongabba	Downstream	13/10/2021	Monthly/Post Rain	18.57	38,200	93.08	7.74
Albert Street	Upstream	13/10/2021	Monthly/Post Rain	11.39	36,100	87.43	7.69
Albert Street	Downstream	13/10/2021	Monthly/Post Rain	9.94	35,800	88.59	7.76
Boggo Road ^[1]	Downstream	13/10/2021	Monthly/Post Rain	11.20	12,500	48.86	7.12
Roma Street	Upstream	14/10/2021	Post Rainfall	18.43	32,500	94.40	7.89
Roma Street	Downstream	14/10/2021	Post Rainfall	18.02	31,900	_[2]	7.88
Northern Portal	Upstream	14/10/2021	Post Rainfall	178.00	311	79.88	7.49
Northern Portal	Downstream	14/10/2021	Post Rainfall	167.00	306	78.67	7.32

Location	Upstream / Downstream	Date	Purpose of Monitoring	Turbidity (NTU)	EC (μS/cm)	Dissolved oxygen (%)	pH
Boggo Road ^[1]	Downstream	15/10/2021	Post Rainfall	30.30	999	76.25	7.50
Woolloongabba	Upstream	15/10/2021	Post Rainfall	13.37	31,300	89.76	7.73
Woolloongabba	Downstream	15/10/2021	Post Rainfall	24.70	27,100	93.25	7.84
Albert Street	Upstream	15/10/2021	Post Rainfall	11.15	31,000	86.26	7.71
Albert Street	Upstream	15/10/2021	Post Rainfall	9.38	31,000	88.59	7.75

- [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.
- [2] The Roma Street – Downstream dissolved oxygen sample was sent to the laboratory for analysis. Due to an error in analyses of the sample the laboratory was not able to provide results for this sample.

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 this Month

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
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Nil

5 Complaints

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

During October 2021, nine (9) 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.	12/10/2021	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 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, and the works undertaken were consistent with the community notification.	Closed
2.	14/10/2021	(Woolloongabba Precinct)	Air Quality	A stakeholder contacted the Project regarding dust from the Woolloongabba 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.	Closed

No.	Date	Location	Description of Issue	Responses	Status of Event
				CBGU also reviewed the circumstances and applied additional mitigation. Brisbane had experienced elevated particulate concentration during the 14-16th October 2021 due to regional-scale events.	
3.	15/10/2021	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>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.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements, and the works undertaken were consistent with the community notification.</p>	Closed
4.	15/10/2021	Albert Street (Albert Street Precinct)	Construction Works	<p>A stakeholder contacted the Project regarding construction works.</p> <p>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.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.</p>	Closed
5.	16/10/21	Albert Street (Albert Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Albert Street precinct.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements, and the works undertaken were consistent with the community notification.</p>	Closed
6.	18/10/21	Albert Street (Albert Street Precinct)	Construction Works	<p>A stakeholder contacted the Project regarding construction works.</p> <p>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.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements.</p>	Closed
7.	19/10/21	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
				<p>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.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements, and the works undertaken were consistent with the community notification.</p>	
8.	21/10/21	North Quay (Roma Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Roma Street precinct.</p> <p>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.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements, and the works undertaken were consistent with the community notification.</p>	Closed
9.	26/10/21	Roma Street (Roma Street Precinct)	Noise	<p>A stakeholder contacted the Project regarding noise from the Roma Street precinct.</p> <p>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.</p> <p>CBGU also reviewed the circumstances and monitoring confirmed works adhered to project noise requirements, and the works undertaken were consistent with the community notification.</p>	Closed