

The background of the entire page is a dark blue map. It shows a network of thin white lines representing land parcels or property boundaries. A prominent, winding white line represents a river or waterway, flowing from the top center towards the bottom right. The map is dense with these parcel lines, creating a complex, grid-like pattern interspersed with the river's course.

Cross River Rail Project

Monthly Environmental Report

February 2023

Table of Contents

EXECUTIVE SUMMARY	3
NON-COMPLIANCE EVENTS.....	7
DEFINITIONS	8
1. INTRODUCTION	9
1.1. BACKGROUND	9
1.2. PROJECT DELIVERY	9
1.3. REPORTING FRAMEWORK	11
1.4. MONTHLY ENVIRONMENT REPORT ENDORSEMENT	11
2. COMPLIANCE REVIEW	11
2.1. RELEVANT PROJECT WORKS	11
2.2. KEY ENVIRONMENTAL ELEMENTS	13
2.2.1. <i>Noise</i>	13
2.2.2. <i>Vibration</i>	14
2.2.3. <i>Air Quality</i>	15
2.2.4. <i>Water Quality</i>	17
2.2.5. <i>Erosion and Sediment Control</i>	20
2.3. COMPLAINTS MANAGEMENT	21
2.4. NEW UPCOMING PROJECT WORKS	22
2.5. NON-COMPLIANCE EVENTS	24
APPENDIX A RIS MONTHLY REPORT	25
APPENDIX B TSD MONTHLY REPORT	26

Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for February 2023 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. 13 (March 2022)*. Plus, 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 CBUG 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 13 covering full scope of RIS works is effective from 14 March 2022. TSD – CEMP Revision 11 covering full scope of TSD works is effective from 24 November 2022.
5.	Compliance and Incident management – Non-compliance events, notifications and reporting.	Yes	No Non-Compliance Events (NCEs) occurred in February 2023.

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 predictive noise modelling and complaint response. Noise monitoring confirmed project requirements were met. Refer to Appendix A (Table 4). TSD – Noise monitoring was undertaken to validate predicted noise modelling. Noise monitoring confirmed project requirements were met. Refer to Appendix B (Table 3 and Section 3.2).
	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 occurred at RNA and Yeronga Station. The results met the requirements of the endorsed CEMP. Refer to Appendix A (Table 5 and Section 3.1.3). TSD – Vibration monitoring was not triggered for the reporting period.

Imposed Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
12.	Property damage – relating to ground movement.	Yes	<p>RIS – Vibration modelling has been undertaken for Relevant Project Works, and Property Damage Sub-plans have been developed and implemented. Pre-condition surveys have been completed at heritage, commercial and residential buildings at RNA, Northern Corridor and Dutton Park to Salisbury stations.</p> <p>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 February 2023.</p>
13.	Air quality – Works must aim to achieve air quality goals for human health and nuisance.	Yes	<p>Air quality monitoring met Project air quality project requirements.</p> <p>RIS – Contractor confirmed they continued to meet the requirements under Condition 13 and the OEMP. Refer to Appendix A (Tables 7, 8 and 9 and Section 3.1.8, plus Figures 1, 2, 3 and 4).</p> <p>TSD – Refer to Appendix B (Tables 4.2 and 5 plus Section 3.3).</p>
14.	Traffic and transport – Works must minimise adverse impacts on road safety and traffic flow.	Yes	Traffic Management Plans are covered in the CEMPs. Sub-plans for all active worksites have been reviewed by the EM.
15.	<p>Water quality – Works must not discharge groundwater from the construction site above the relevant environmental values and water quality objectives.</p> <p>Monitor and report on water quality in accordance with CEMP and Sub-plans.</p>	Yes	<p>Monitoring and reporting on groundwater and surface water quality was undertaken in accordance with RIS and TSD Water Quality Management Plans.</p> <p>RIS – No groundwater discharges occurred during December.</p> <p>Post-rainfall monitoring occurred at Breakfast Creek, Moolabin Creek and Rocky Water Holes Creek. See Appendix A (Section 3.1.13 and Tables 10) for further details.</p> <p>Routine surface water monitoring occurred in the receiving waters in accordance with ongoing baseline monitoring requirements.</p> <p>TSD – Active discharge of groundwater occurred from Roma Street, Albert Street, Woolloongabba and Boggo Road worksites. Monitoring results of groundwater quality prior to discharge is consistent with the pre-construction water quality levels.</p>

			<p>Surface water discharges occurred at the Northern Portal worksite on 22 occasions and one occasion at the Southern Portal. The monitoring results demonstrated surface water discharges met project water quality discharge criteria.</p> <p>Post-rainfall / routine monitoring occurred in receiving waters of the Northern Portal, Roma Street, Albert Street, Woolloongabba and Boggo Road sites due to a rainfall event. See Appendix B (Section 3.5 and Table 8) for further details.</p> <p>Refer to Appendix B (Table 6) for ground water monitoring results.</p> <p>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 is 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 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.	N/A	N/A

Non-Compliance Events

There were no NCEs raised in February 2023.

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 13 was endorsed in March 2022 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.

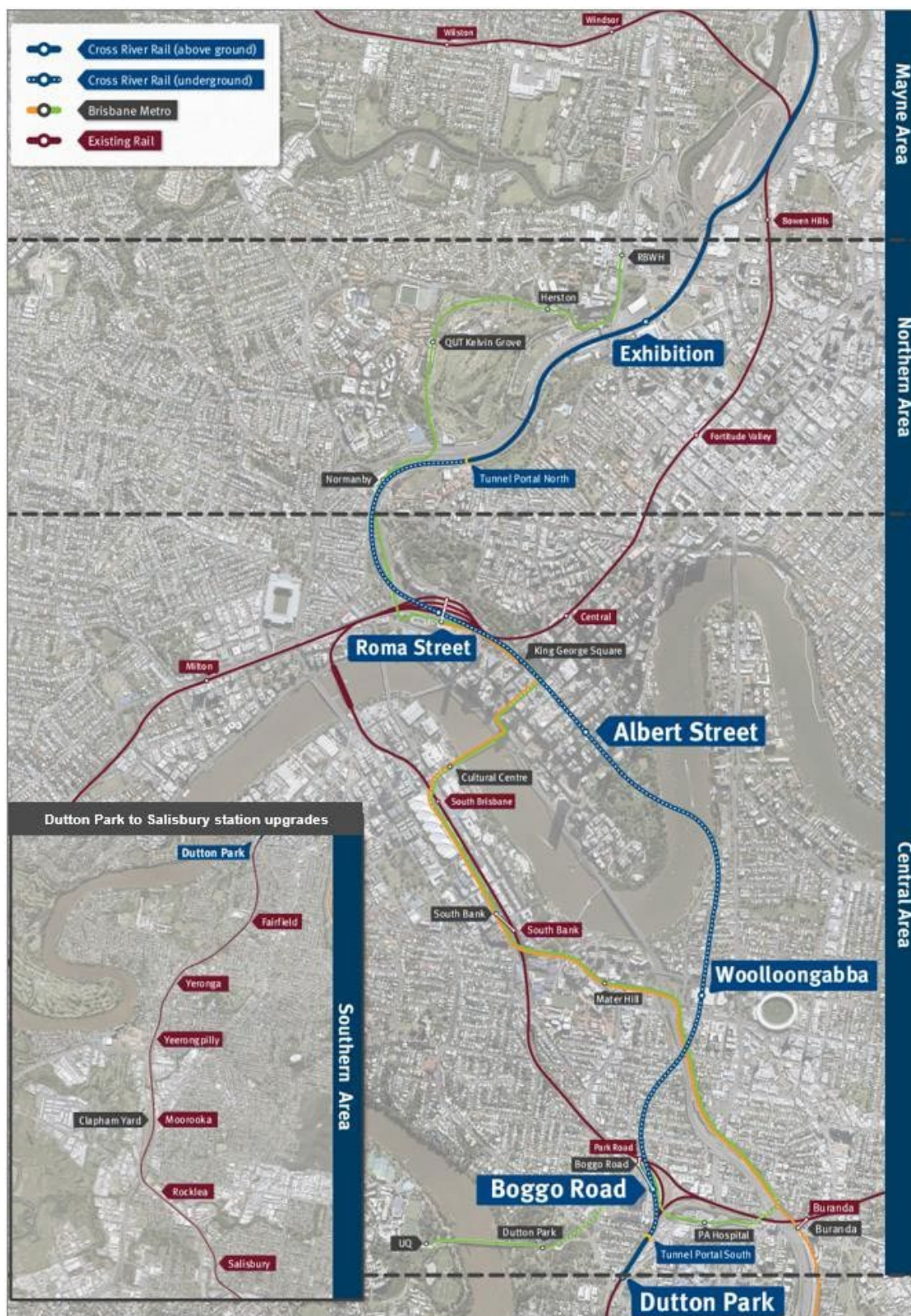
The two main delivery packages which require reporting under the Coordinator-General's imposed conditions are:

- 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 areas and delivery packages are shown in the figure below.



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, is 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 February 2023:

Area	Project Works
Mayne Area	Mayne Yard North – <ul style="list-style-type: none">• BR08 (Breakfast Creek Bridge) temporary support works for Pier 3 and 4 completed, piling of Pier 3 scheduled for 06th Mar '23 and centre span girder lifts scheduled for 14th Apr '23;• Civil scope for Shunt Road and vehicle access road continuing incl drainage, CSR and earthworks; and• QR requested modifications in Mayne Yard North continuing – currently focusing on RPZ changes. Mayne Yard East / West – <ul style="list-style-type: none">• Mayne Yard East entry road removals and demolition of redundant facilities has commenced;• BR11/13 (vehicle access tripod bridge over future CRR lines) road barrier installation continues;• BR12 (pedestrian bridge from Bowen Hills Station to MY-West) truss structure installation during current EXT-18 SCAS; and• Sewer underbore at Campbell Street completed.
Northern Area	RNA/ Northern Corridor – <ul style="list-style-type: none">• RIS-N-9C switch into Stg 2 alignment over new BR44 viaduct allows Station to commence;• Demolition of redundant QR embankment, underpath and bridge structure has commenced during EXT-18 SCAS;• Museum Link shotcrete wall complete;• IS-N-9C switch into Stage 2 (EXT-18 SCAS);• Rock pitching in front of Victoria Park Feeder Station completed; and• Access into Northern Portal for initial survey, investigation and planning works. Northern Portal – <ul style="list-style-type: none">• Interface slab pours at the top of the dive structure;• Back filling on top of the portal roof;

Central Area

- Site demobilisation and removal of temporary support; and
- Watermain installation.

Roma Street –

- Station cavern – Installation of span 5 mezzanine beam segments complete;
- Station Building – Continued FRP works for perimeter and internal walls (B1-L0); and
- Services building – Completed L2 slab, L2 to L3 precast panel installation.

Albert Street –

- Lot 1 – slipform FRP works at cycle 7 complete, columns cast complete to B7 slab level, and upper props destressed;
- Lot 2 – Cavern arch pours 100% complete, Mezzanine beam installation commenced, BoH north pouring of B6 walls and stairs to B5 slab;
- Lot 3 – Continuing perimeter wall FRP works from B1 to B1 upper; continuing steel fixing for internal lift core jump form pours to L0; continuing steel fixing for two internal walls (B4-B1 upper).

Woolloongabba –

- SW5 and SW3 External wall pours continue to progress;
- Mechanical and electrical services ongoing on B9, B8, B7, B6, B4 & B3;
- Ceiling and partitions in progress on B9, B7, B4, B3, B2 and B1;
- Mechanical and electrical services continued in north and South Cavern BOH
- Station platform culverts installation;
- Goods lift commissioned by Kone;
- Platform culvert topping slab poured in North and South Caverns and part way through station box; and
- Retaining wall works ongoing to southern boundary adjacent to the busway.

Tunnel fitout –

- Bracket installation commenced in B2G in MC01;
- Ongoing Walkway construction;
- Completion of rail installation in A2R MC01; and
- Cable trays and bracket installation in cross passages.

Boggo Road –

- Concrete to in-situ structure at 66% complete;
- Reinforcement to in-situ structure 73% complete;
- platform installation from southern end commenced;
- FRP of southern BoH continuing; and
- Precast Vierendeel installation ongoing.

Southern Portal –

- Internal tunnel wall and slab works ongoing;
- Firewall FRP and liner wall shotcreting works ongoing;
- Ongoing FRP works to western and Eastern abutment;
- Boggo Road Bridge pylon pre-assembly works completed; and
- Sewer property connection complete in Railway Terrace northern connection remains. Bypass pumping ongoing.

Southern Area

Dutton Park –

- CSR Scope including UTX's during possession windows;
- Cope St Noise barrier work continuation;
- Continuation of piling works for Cope Street retaining walls and noise walls;
- Commence piling works on Kent Street, ready for piling works in February 2023;
- Continued demolition of Platform 01 following asbestos removal; and
- Drainage scope installation.

Fairfield Station –

- Station re-opened to the public on 9 February;

- Continue with station building fit-out works;
- Structural concrete slabs for station entry areas, stair 1 suspended slab;
- Mildmay St gravity wall Stage 2 continuation;
- Lift 2 and 3 glazing completed, lift shafts water-tight;
- Lift 1 precast walls and lid installed; glazing commenced;
- Lift 2 – lift construction commenced late Feb; and
- Stair 1 and Equity St entry canopy structure installed, roofing completed and fitout underway.

Yeronga Station –

- Station buildings, ticket office, bicycle shelter opened to the public;
- Testing and commissioning of permanent power and downstream sub-boards, lighting, lifts, and mechanical items; and
- Testing and commissioning of ROS systems back to the QR network.

Clapham Yard –

- BR93 (Moolabin Creek Track Bridge) Stage 1 complete (except walkways and Northern relieving slab pending unknown service relocation);
- BR94 (Chale Street Bridge) Southern Span 2, FRP scope and RSS wall RW640 completed with deck pours and barrier installation continuing;
- HV relocation to Underground (along Chale St) has commenced; and
- Landscaping of available areas completed.

Rocklea Station –

- Continued inground services throughout platform areas – PL1 and PL2/3;
- Continued FRP work for structural foundations for the overpass, lift pits, stair foundations, canopy foundations; and
- Excavation and FRP for DG retaining wall.

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 assess external monitoring and determine compliance with the project's noise requirements, the project applies recommended façade attenuation corrections, which considers receiver property type.

In the Northern Area, noise monitoring was undertaken at sensitive places along Gregory Terrace near the Northern Portal where concrete works were occurring on site. The TSD contractors reported that the project noise requirements have been met during this reporting month. Monitoring results for the

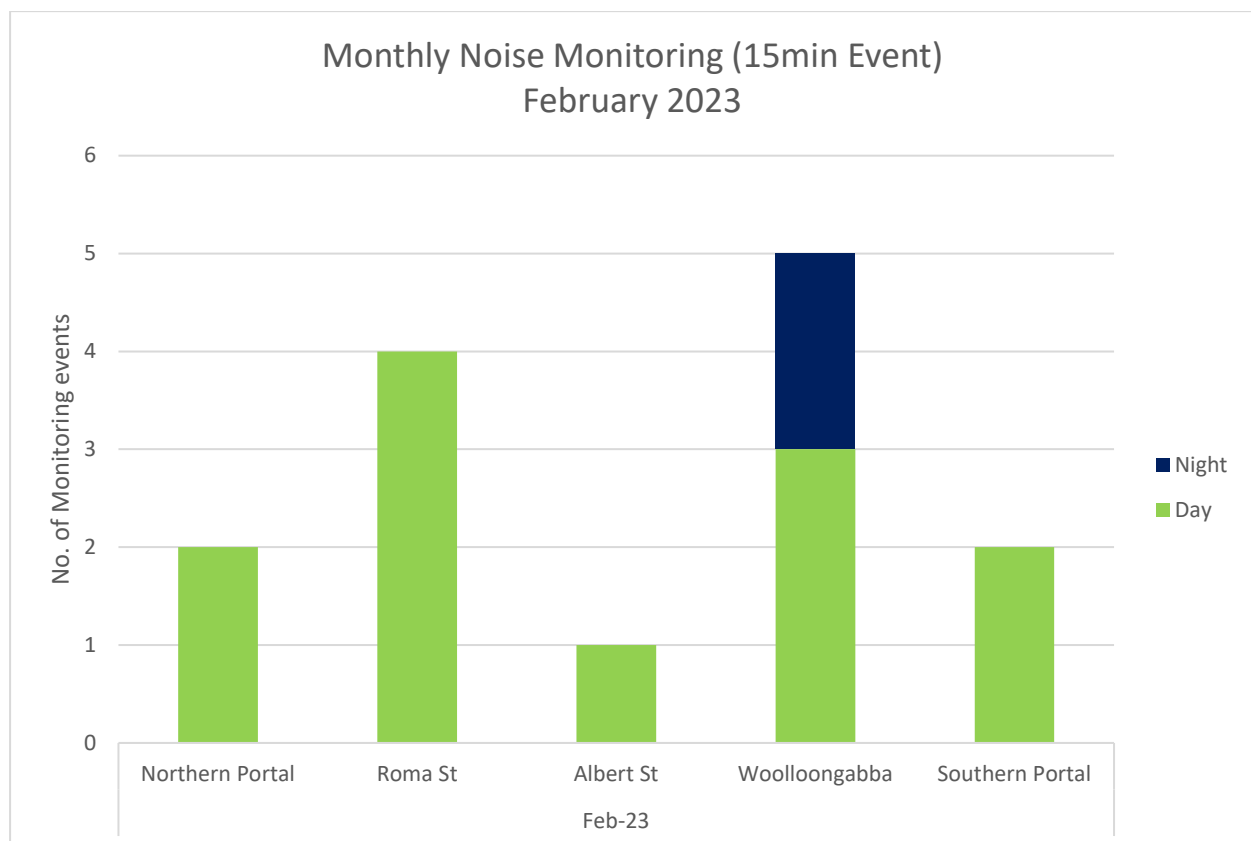
Northern area are detailed in **Appendix B** (Table 3).

Additionally, noise monitoring was conducted in response to a complaint received at Exhibition during rock breaking works, during both standard and extended working hours. The RIS contractors reported that the project noise requirement was met. Monitoring results are detailed in **Appendix A** (Table 4).

In the Central Area, noise monitoring was undertaken for both model verification and construction monitoring at sensitive places for locations in proximity to Roma Street, Woolloongabba, Albert Street and Southern Portal worksites. The TSD contractors reported that the project noise requirements have been met during this reporting month. Monitoring results for the Central Area are detailed in **Appendix B** (Table 3).

In the Southern Area, noise monitoring was conducted for model verification at sensitive places near the Southern/Dutton Park area involving works with a hydraulic hammer during standard hours. The RIS contractors reported that the project noise requirement was met. Monitoring results are detailed in **Appendix A** (Table 4).

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



2.2.2. Vibration

In the Northern Area, vibration monitoring was undertaken at the foundation of the State heritage listed John MacDonald Stand inside a storeroom. Rock breaking works occurred during the monitoring period with reading peaks of 1.08mm/s, the recorded peak was attributed to the demolition of the existing bridge. The RIS contractor reported that the vibration requirements have been met and the monitoring results are as detailed in **Appendix A** (Table 5).

In the Southern Area, vibration monitoring was undertaken at the Yeronga Commuter Car Park on Fairfield Road. The construction team initially advised that an 8T vibratory roller was required to

complete the works, however the works were instead completed with a whacker packer. This accounts for the variance between predicted vibration and the maximum recorded vibration levels for the works. The RIS contractors reported that the vibration requirements have been met and the monitoring results are as detailed in Appendix A (Table 5).

No vibration monitoring was triggered or required in February 2023 for TSD sites.

2.2.3. Air Quality

2.2.3.1. Dust Deposition

Dust deposition monitoring was conducted at Mayne, Northern, Central and Southern Areas. Results met the project air quality goal¹ for all active worksites.

At the RNA worksite, the measured dust deposition level of 153 mg/m²/day exceeded the goal of 120 mg/m²/day. These elevated levels were primarily due to the dust deposition gauge being relocated much closer to the works, as per recommendation by the Project Certified Air Quality Professional (CAQP) from the vacant block next to the apartments at 6 Tufton Street to the RNA Showgrounds, to mitigate ongoing data loss due to repeated vandalism. The dust deposition gauge was relocated to the fence line, directly above project works which primarily consisted of rock break and cut and fill works associated with Stage 2 demolition works. The scale, duration and intensity of the activities was consistent with the activities reviewed as part of the predictive air quality assessment.

It is noted that the project team continues to actively implement a range of dust mitigation measures at the site. This includes erosion control, dust suppression using water carts, using stabilized access points and utilising the street sweepers as required. There were no complaints from nearby sensitive receptors regarding air quality from the RNA works during the monitoring period. Dust deposition results are detailed in **Appendix A** (Table 7 and Figure 1) and **Appendix B** (Table 4.2).

Despite the exceedance of the air quality goal, Unity continues to meet the requirements under Imposed Condition 13 and the OEMP.

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

Air Quality – Dust Deposition Monitoring			
Area	Worksite	Monitoring Location	Comments
Mayne Area	Mayne Yard	Mayne Yard East	- Results met air quality goal
Northern Area	RNA / Exhibition	RNA Showgrounds	- Exceedance of the goal recorded however an investigation confirmed UNITY were implementing mitigation measures to reduce potential impacts meeting Project Outcome requirements.
	Northern Portal	Northern Portal (near Brisbane Girls Grammar School)	- Results met air quality goal
	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

Central Area	Southern Portal	Dutton Park Station	- Results met air quality goal
		PA Hospital - Central Energy Unit along Kent Street	- Results met air quality goal
	Roma Street	Roma Street Station	- Results met air quality goal
	Woolloongabba	Russian Orthodox Cathedral	- Results met air quality goal
		Woolloongabba Busway	- Results met air quality goal
Southern Area	Dutton Park	Dutton Park	- Results met air quality goal
	Clapham Yard	Clapham Yard	- Results met air quality goal

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

2.2.3.2. Particulate Matter and Total Suspended Particulates

Monitoring for particulate matter (PM₁₀) and total suspended particulates (TSP) was conducted at Northern, Central and Southern Area worksites. Results met the project goals at all active worksites.

In the Central Area, air quality monitoring units located at Woolloongabba and Boggo Road experienced technical difficulties throughout the monitoring period. As soon as practicable the units were inspected, and the problems were resolved. Nearby DES Air Quality Stations in South Brisbane and Woolloongabba were reviewed and demonstrated compliant PM₁₀ levels during these outage periods.

In the Southern Area, the DMP from Mayne Yard East was relocated to Clapham Yard to minimise the chance of further data loss. This was approved by the Project CAQP as particulates monitoring was not triggered for the scope of Work at Mayne Yard East during the reporting period. After installation, there was a three-day data loss period at Clapham Yard associated with battery issues from the 1st to the 3rd of February. The Clapham Yard DMP had no further data issues from 4th of February for the remainder of the reporting period.

In the absence of particulates data at Mayne Yard East, Unity undertook an investigation to provide supplementary information to confirm the RIS scope of works met the project outcomes set out by the CGCR and the OEMP. Particulates results are detailed in **Appendix A** (Section 3.1.8 and Figures 3 and 4) and **Appendix B** (Table 5).

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

Air Quality – PM₁₀ / TSP Monitoring			
Area	Worksite	Monitoring Location	Comments
Mayne Area	Mayne Yard	Mayne Yard North	- Monitoring not required as per Project's CAQP advice
	Mayne Yard	Mayne Yard East	- Results met air quality goals
Northern Area	RNA / Exhibition	RNA showgrounds	- Results met air quality goals
	Northern Portal	Brisbane Girls Grammar School	- Results met air quality goals
	Albert St	iStay River City and Capri (Corner of Mary Street and Albert Street)	- Results met air quality goals

Central Area	Boggo Rd / Southern Portal	North-east of Boggo Road worksite	<ul style="list-style-type: none"> - Results met air quality goals - Monitoring unit experienced technical difficulties intermittently during reporting month
	Woolloongabba	Place Park, Woolloongabba	<ul style="list-style-type: none"> - Results met air quality goals - Monitoring unit experienced technical difficulties intermittently during reporting
Southern Area	Clapham Yard	Clapham Yard	<ul style="list-style-type: none"> - Results met air quality goals - Power supply issues prevented data from being recorded between 1-3 February 2023.

2.2.4. Water Quality

Water quality monitoring and reporting was undertaken in accordance with the contractors CEMP and Water Quality Management Plans.

2.2.4.1. Surface Water

During February, active surface water discharges occurred in the Northern and Central Areas. Post-rainfall water quality monitoring occurred in the receiving waters of the in the Mayne, Northern, Central and Southern Areas.

In the Northern Area, water quality monitoring was triggered on twenty-two occasions from the Northern Portal worksite as water used for construction activities and stormwater was treated and actively discharged to the stormwater network. The TSD contractors confirmed the discharge criteria was met on all occasions. See **Appendix B** (Table 7) for further details.

In the Central Area, water quality monitoring was triggered on 15 February at the Southern Portal worksite on one occasion as stormwater was treated and actively discharged to the stormwater network. The TSD contractors confirmed the discharge criteria was met on all occasions. See **Appendix B** (Table 7) for further details.

Post-rainfall monitoring was triggered in receiving waters of Mayne Yard North, Northern Portal, Albert Street, Boggo Road, Roma Street, Woolloongabba, Southern Portal, Clapham Yard and Rocklea worksites due to a rainfall event that occurred across a range of days early in the reporting period that exceeded the trigger to monitor. The midstream location at Breakfast creek that exhibited an increase of more than 5mg/L or 10% Total Suspended Solids (TSS) (whichever is greatest) was still below the off-site discharge limit. Erosion and Sedimental Control measures across the sites were appropriately implemented and there is no evidence to suggest the increase in TSS was project related. Therefore, compliance with Imposed Conditions 15 and 18 were met. See **Appendix A** (Section 3.3.2.1, Table 10 and 11) and **Appendix B** (Table 8) for further details.

Routine surface water quality monitoring was undertaken in the receiving waters of all TSD and RIS worksites in accordance with the Contractor's Water Quality Management Plan. The monitoring results reflect the condition of a broader catchment upstream from the worksites. See **Appendix B** (Table 8) for further details.

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	<ul style="list-style-type: none"> - ESC was implemented in accordance with site specific ESC Plan. - Post-rainfall monitoring undertaken. - Routine in-stream monitoring undertaken in accordance with WQMP.
Northern Area	Exhibition/RNA	No	No	No	<ul style="list-style-type: none"> - ESC was implemented in accordance with site specific ESC Plan.
	Northern Portal	Yes	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken. - Routine in-stream monitoring undertaken in accordance with WQMP. - Active surface water discharge met water quality investigation criteria.
	Northern Corridor	No	No	N/A	<ul style="list-style-type: none"> - ESC was implemented in accordance with site specific ESC Plan.
Central Area	Albert Street	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken. - Routine in-stream monitoring undertaken in accordance with WQMP.
	Boggo Road	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken. - Routine in-stream monitoring undertaken in accordance with WQMP.
	Roma Street	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken. - Routine in-stream monitoring undertaken in accordance with WQMP.
	Woolloongabba	No	Yes	Yes	<ul style="list-style-type: none"> - Post-rainfall monitoring undertaken. - Routine in-stream monitoring undertaken in accordance with WQMP.
	Southern Portal	Yes	Yes	Yes	<ul style="list-style-type: none"> - Active surface water discharge met water quality investigation criteria. - Post-rainfall monitoring undertaken. - Routine in-stream monitoring

					undertaken in accordance with WQMP.
Southern Area	Fairfield Station	No	No	No	- ESC was implemented in accordance with site specific ESC Plan.
	Clapham Yard	No	Yes	No	- Post-rainfall monitoring undertaken. - ESC was implemented in accordance with site specific ESC Plan. - Routine in-stream monitoring undertaken in accordance with WQMP.
	Rocklea Station	No	Yes	No	- Post-rainfall monitoring undertaken. - ESC was implemented in accordance with site specific ESC Plan. - Routine in-stream monitoring undertaken in accordance with WQMP.

2.2.4.2. Groundwater

Groundwater discharge occurred in the Central Area at Albert Street, Boggo Road, Roma Street and Woolloongabba worksites. The groundwater discharge results exceeded relevant water quality objectives (WQO's)² for total nitrogen, ammonia nitrogen, organic nitrogen and oxidised nitrogen. However, these results are consistent with the receiving environment baseline monitoring pre-construction data. The contractor confirmed no changes have occurred onsite to the construction methodologies that would have affected the groundwater results.

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

Groundwater quality monitoring is summarised in the table below:

Groundwater Quality Monitoring			
Area	Worksite	Discharge	Comments
Mayne Area	Mayne Yard North	No	- No groundwater discharges.
	RNA/Exhibition	No	- No groundwater discharges.
Northern Area	Northern Portal	No	- No groundwater discharges.
	Albert Street	Yes	- Discharge of groundwater met Project requirements

Central Area	Boggo Road / Southern Portal	Yes	- Discharge of groundwater met Project requirements
	Roma Street	Yes	- Discharge of groundwater met Project requirements
	Woolloongabba	Yes	- Discharge of groundwater met Project requirements
Southern Area	Clapham Yard	No	- No groundwater discharges.

² The Brisbane River Estuary environmental values and water quality objectives (Basin no 143 – mid-estuary) in the Environmental Protection (Water) Policy 2009

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, Dutton Park, Fairfield, Yeronga, Clapham Yard and Rocklea worksites.

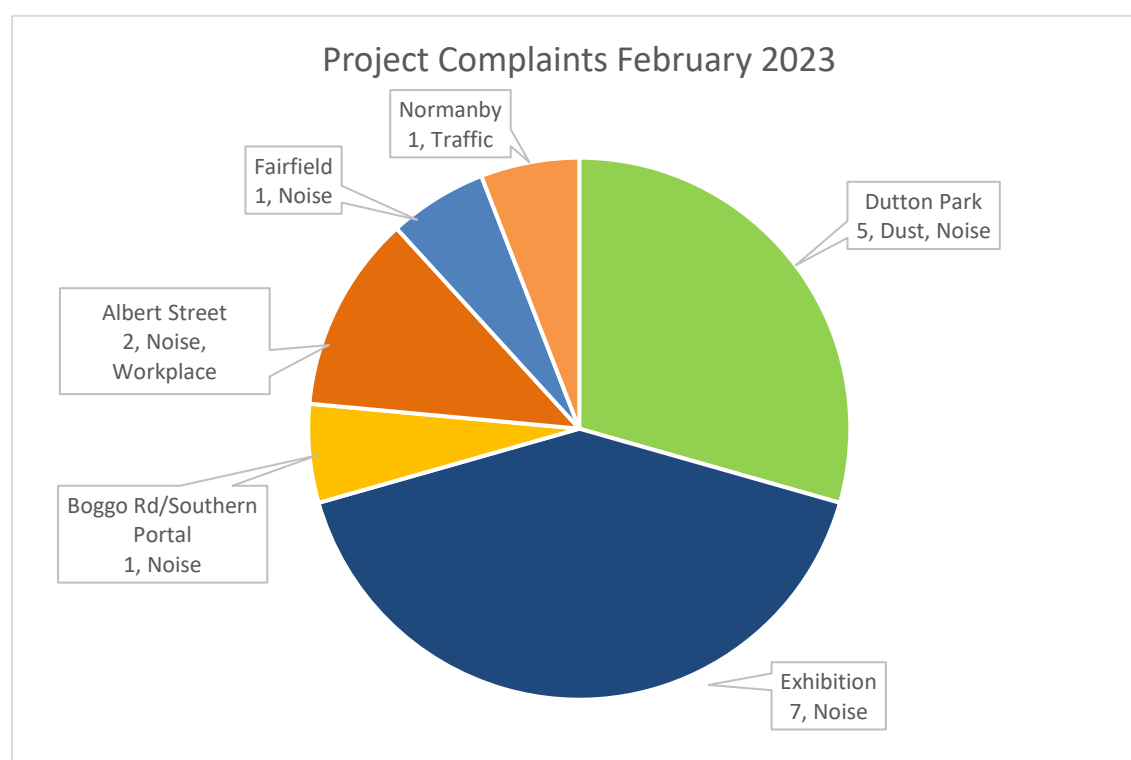
2.3. Complaints Management

A total of seventeen complaints were received during the month, all of which were project related.

RIS works received fourteen complaints during February related to traffic at Normanby, noise at Fairfield, noise at Exhibition and noise and dust at Dutton Park. For further details and breakdown of complaints, refer to **Appendix A** (Table 3) and Figure below.

The TSD works received three complaints related to noise and workplace behaviour at Albert Street, and noise at Peter Doherty Street (Boggo Road). For further details refer to **Appendix B** (Table 10).

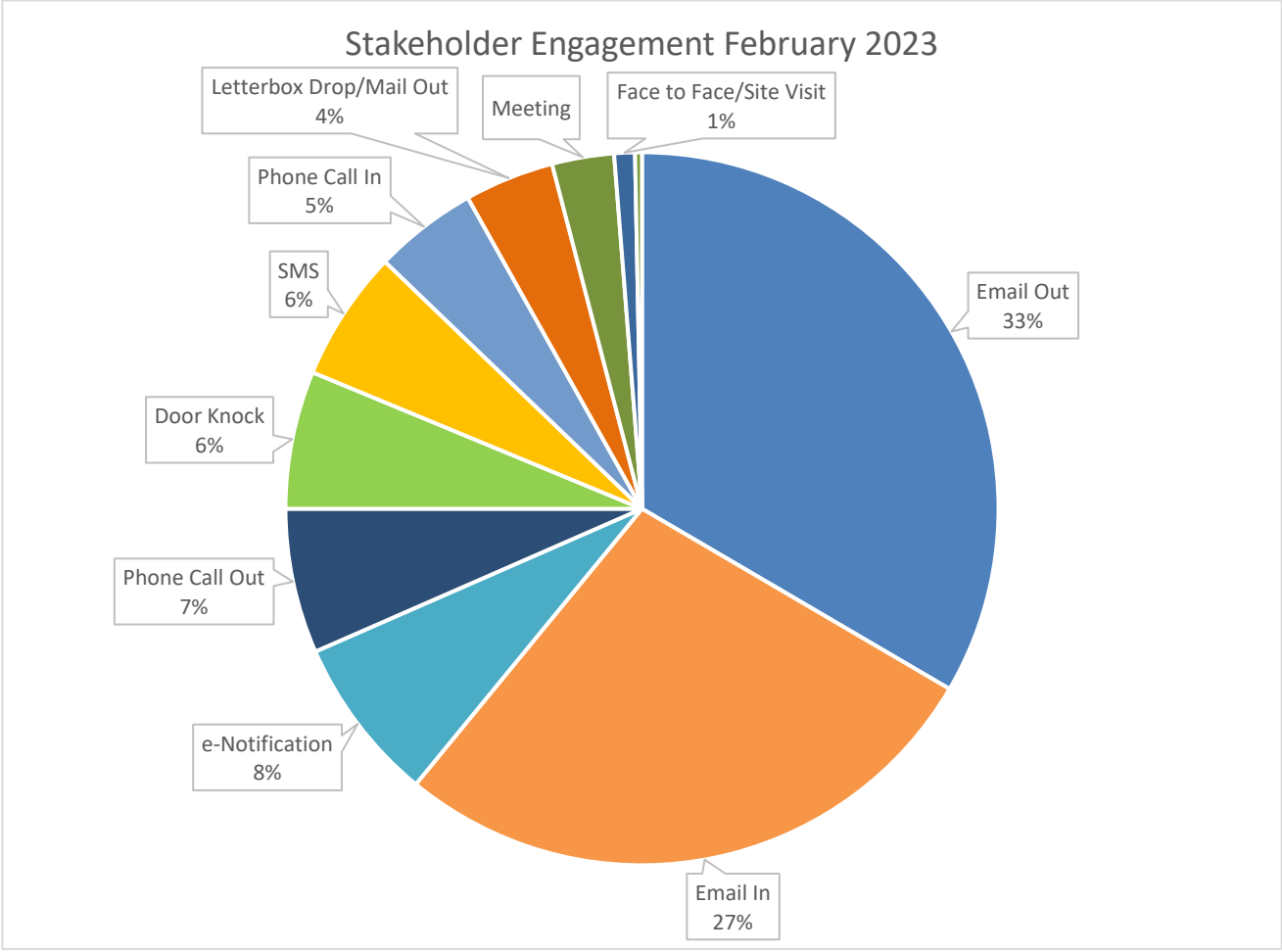
The Project Works complaints summary for the month is provided in the following chart.



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

To close out a complaint, the monitoring data is reviewed (where applicable) against compliance with the CEMP, site environmental management plans and permits, and checks that required community notification has taken place. Contractors have also confirmed that planned mitigation to reduce the impact was implemented. This is reviewed together to verify if project requirements have been met.

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



2.4. New Upcoming Project Works

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

Area	New planned works in the coming months
Mayne Area	Mayne Yard North – <ul style="list-style-type: none"> BR08 (Breakfast Creek Bridge) completion of piling for girder installation in April; Access Road and Shunt Road construction (North of Ferny Grove Flyover); and Cross drainage modifications of pre-load impacted area.
	Mayne Yard East / West – <ul style="list-style-type: none"> SCAS N-7A entry road mods to QR's Western Maintenance Facilities; Complete Demolition of Mayne Eastern facilities; and Commence Earthworks and CSR for new Vehicle Access Road between MY-East and MY-West.
Northern Area	RNA/ Northern Corridor – <ul style="list-style-type: none"> Complete demolition, earthworks and rock removal; Commence inground services including electrical, comms, stormwater, server, and wet fire; Investigation works in preparation of CSR, TFR and drainage scope in Norther Portal Area; Minor civil works (pavements, Earthing and Bonding, footings) around VP FSC; Corridor widening (earthworks and ground retention) North of Bowen Bridge Road, which are now accessible after the SCAS EXT-18; and SCAS EXT-19 planning, predominately rail deflection walls of Bowen Bridge.
	Northern Portal –

Central Area	<ul style="list-style-type: none"> • Defect repairs; • QR pedestrian bridge works; and • Remaining backfill works. <p>Roma Street –</p> <ul style="list-style-type: none"> • Ongoing mezzanine beam installation; • Station building ongoing wall and slab and column pours; • Blockwork in BoH B4; and • Services building pre-cast panel installation and concrete pours. <p>Albert Street –</p> <ul style="list-style-type: none"> • Lot 1 – Ongoing slip form pours (B7-B4), upcoming slip cycle 8 pours; • Lot 2 – Complete BoH (South) FRP works and complete final arch pour; and • Lot 3 – ongoing internal and wall and lift core FRP works. <p>Woolloongabba –</p> <ul style="list-style-type: none"> • Commence the first pour of the platform topping slab in the northern cavern; • Commence mezzanine installation in the station box; • Mobilisation and installation of the jacking cradle onsite in preparation for micro-tunneling works; • Monorails installation to commence installation in Northern cavern; and • Demolition of base of decline ramp. <p>Boggo Road –</p> <ul style="list-style-type: none"> • Concrete wall steel fixing and concrete pours ongoing; and • Delivery and installation of precast mezzanine beams, platform culverts and super-T ongoing. <p>Southern Portal –</p> <ul style="list-style-type: none"> • Ongoing base slab and liner wall FRP works; • Easter SCAS Bridge girder installation; and • Ongoing sewer works at Dutton Street.
Southern Area	<p>Dutton Park –</p> <ul style="list-style-type: none"> • Retaining wall FRP works to Cope St retaining walls; • Closure of Platform 2 (inbound platform) late March in readiness for demolition in April SCAS; • Continue CSR network construction; and • Continue Noise Wall construction at Cope St then move down to Fenton St. <p>Fairfield Station –</p> <ul style="list-style-type: none"> • Continue lift construction, Lift 02, Lift 03; • Complete Stair 01 and entrance area, then switch to temp stage 2C to enable removal of scaffold stairs; • Continue station building construction and fitout; • Equity and Mildmay St finishing work; and • Elec, comms and security cabling, installation of fittings. <p>Yeronga Station –</p> <ul style="list-style-type: none"> • Focusing on finalising defect lists, closeout documentation. <p>Clapham Yard –</p> <ul style="list-style-type: none"> • Northern drainage (in front of Aurizon); • Aurizon fence (on top of RW650); • Light poles footing installation; • Open channel drains, driveways and stone pitching; and • Energex cut-over O/H HV to Underground. <p>Rocklea Station –</p> <ul style="list-style-type: none"> • Continue inground services throughout platform areas; • Continue FRP work for structural foundations for canopy foundations;

- Commence platform slab construction in late March; and
- FRP for DG retaining wall.

2.5 Non-Compliance Events

No new NCEs were 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	Relevant Condition	Gate 1	Gate 2	Gate 3	Gate 4
▲								
☐ Open								
☐ Closed								
CRRDA-001-RIS-001	9/11/19	Noise	Yeronga Station	4, 10, 11	10/11/19	14/11/19	26/11/19	18/12/19
CRRDA-002-TSD-001	27/03/20	ESC	Woolloongabba	4, 15, 18	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-003-TSD-002	27/03/20	ESC	Boggo Rd	4, 15, 18	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-004-TSD-003	28/03/20	Traffic	Boggo Rd	4, 10, 14	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-005-TSD-004	27/03/20	Reporting	Multiple sites	4, 6, 11, 13	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-006-TSD-005	27/03/20	Air Quality	Multiple sites	13	30/03/20	31/03/20	22/04/20	11/06/20
CRRDA-009-RIS-003	6/05/22	ESC	Clapham Yard	4, 15, 18	28/10/22	28/10/22	12/12/22	12/12/22
CRRDA-010-RIS-004	10/05/22	Potential Acid Sulphate Soils Management	Clapham Yard	4, 19	28/10/22	28/10/22	12/12/22	12/12/22
☐ Withdrawn								
CRRDA-007-RIS-002	1/04/20	Air Quality	Multiple sites	13	28/04/20	30/04/20	Withdrawn	
CRRDA-008-TSD-006	8/04/20	Working Hours	Roma Street	4,10	28/04/20	30/04/20	Withdrawn	

Appendix A RIS Monthly Report

Monthly CGCR Report February 2023

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

Table of Contents

1	Progress Summary - Relevant Project Works	3
2	Complaints	6
3	Environmental Monitoring Results	8
3.1	Acoustics	8
3.2	Air Quality	12
3.3	Water Quality	21
4	Compliance Review	26
4.1	Non-Compliance Events	26
4.2	C-EMP Compliance	26
Attachment 1	Imposed Conditions Non-Compliance Event Report (if required)	28
Attachment 2	Monitoring Locations – Noise and Vibration	29
Attachment 3	Monitoring Locations – Air Quality	34
Attachment 4	Monitoring Locations – Surface Water	38

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	Mayne Yard North <ul style="list-style-type: none"> BR08 (Breakfast Creek Bridge) temporary support works for Pier 3 and 4 completed, piling of Pier 3 scheduled for 06th Mar '23 and centre span girder lifts scheduled for 14th Apr '23 Civil scope for Shunt Road and vehicle access road continuing incl drainage, CSR and earthworks QR requested modifications in Mayne Yard North continuing – currently focusing on RPZ changes. Mayne Yard East / West <ul style="list-style-type: none"> Mayne Yard East entry road removals and demolition of redundant facilities has commenced BR11/13 (vehicle access tripod bridge over future CRR lines) road barrier installation continues BR12 (pedestrian bridge from Bowen Hills Station to MY-West) truss structure installation during current EXT-18 SCAS Sewer underbore at Campbell Street completed.
Northern Area	RNA <ul style="list-style-type: none"> RIS-N-9C switch into Stg 2 alignment over new BR44 viaduct allows Station to commence Demolition of redundant QR embankment, underpath and bridge structure has commenced during EXT-18 SCAS Museum Link shotcrete wall complete. Northern Corridor <ul style="list-style-type: none"> RIS-N-9C switch into Stage 2 (EXT-18 SCAS) Rock pitching in front of Victoria Park Feeder Station completed Access into Northern Portal for initial survey, investigation and planning works.
Southern Area	Southern Portal / Dutton Park <ul style="list-style-type: none"> CSR Scope including UTX's during possession windows Cope St Noise barrier work continuation Completion of piling works for Cope Street retaining walls and noise walls Commence piling works on Kent Street, ready for piling works in March 2023 Continued demolition of Platform 01 following asbestos removal Drainage scope installation.
Southern Area	Fairfield Station <ul style="list-style-type: none"> Continue with station building fit-out works Structural concrete slabs for station entry areas, stair 1 suspended slab Mildmay St gravity wall Stg 2 continuation Lift 2 and 3 glazing completed, lift shafts water-tight Lift 1 precast walls and lid installed; glazing commenced Lift 2 – lift construction commenced late Feb Stair 1 and Equity St entry canopy structure installed, roofing completed and fitout underway.
Southern Area	Yeronga Station <ul style="list-style-type: none"> Station buildings, ticket office, bicycle shelter opened to the public Testing and commissioning of permanent power and downstream sub-boards, lighting, lifts, and mechanical items Testing and commissioning of ROS systems back to the QR network.

Area	Project Works
Southern Area	Clapham Yard <ul style="list-style-type: none"> BR93 (Moolabin Creek Track Bridge) Stage 1 complete (except walkways and Northern relieving slab pending unknown service relocation) BR94 (Chale Street Bridge) Southern Span 2, FRP scope and RSS wall RW640 completed with deck pours and barrier installation continuing. HV relocation to Underground (along Chale St) has commenced Landscaping of available areas completed.
Southern Area	Rocklea Station <ul style="list-style-type: none"> Continued inground services throughout platform areas – PL1 and PL2/3 Continued FRP work for structural foundations for the overpass, lift pits, stair foundations, canopy foundations Excavation and FRP for DG retaining wall.

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

UTX – Under Track Crossing

The following table summarises the upcoming Project Works:

Table 2: Summary of upcoming Project Works

Area	Project Works
Mayne Area	<p>Mayne Yard North</p> <ul style="list-style-type: none"> BR08 (Breakfast Creek Bridge) completion of piling for girder installation in April. Access Road and Shunt Road construction (North of Ferny Grove Flyover) Cross drainage modifications of pre-load impacted area. <p>Mayne Yard East / West</p> <ul style="list-style-type: none"> SCAS N-7A entry road mods to QR's Western Maintenance Facilities Complete Demolition of Mayne Eastern facilities Commence Earthworks and CSR for new Vehicle Access Road between MY-East and MY-West.
Northern Area	<p>RNA</p> <ul style="list-style-type: none"> Complete demolition Commence earthworks and rock removal Commence inground services including electrical, comms, stormwater, sewer, and wet fire. <p>Northern Corridor</p> <ul style="list-style-type: none"> Investigation works in preparation of CSR, TFR and drainage scope in Northern Portal Area Minor civil works (pavements, Earthing and Bonding, footings) around VP FSC Corridor widening (earthworks and ground retention) North of Bowen Bridge Road, which are now accessible after the SCAS EXT-18. SCAS EXT-19 planning, predominately rail deflection walls of Bowen Bridge.
Southern Area	<p>Southern Portal / Dutton Park</p> <ul style="list-style-type: none"> Retaining wall FRP works to Cope St retaining walls Closure of Platform 2 (inbound platform) late March in readiness for demolition in April SCAS Continue CSR network construction Continue Noise Wall construction at Cope St then move down to Fenton St.
Southern Area	<p>Fairfield Station</p> <ul style="list-style-type: none"> Continue lift construction, Lift 02, Lift 03 Complete Stair 01 and entrance area, then switch to temp stage 2C to enable removal of scaffold stairs Continue station building construction and fitout Equity and Mildmay St finishing work Elec, comms and security cabling, installation of fittings.
Southern Area	<p>Yeronga Station</p> <ul style="list-style-type: none"> Focusing on finalising defect lists, closeout documentation.
Southern Area	<p>Clapham Yard</p> <ul style="list-style-type: none"> Northern drainage (in front of Aurizon) Aurizon fence (on top of RW650) Light poles footing installation Open channel drains, driveways and stone pitching Energex cut-over O/H HV to Underground.
Southern Area	<p>Rocklea Station</p> <ul style="list-style-type: none"> Continue inground services throughout platform areas – PL1 and PL2/3 Continued FRP work for structural foundations for the canopy foundations Commence platform slab construction in late March FRP for DG retaining wall.

2 Complaints

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

Table 3: Summary of Complaints

Date Received	Location	Issue	Project Works / Activity source of the concern	Reporting Period	Complaint Detail	Unity Response	Status
Saturday, 11 February 2023	Dutton Park	Dust	Station upgrade works	February 2023	Stakeholder emailed to complain about dust at Cope Street worksite.	Team advised the stakeholder that their complaint was passed onto site team immediately. In response to the complaint and to improve dust mitigation, a water cart and street sweeper were deployed and their frequencies were increased during the works.	Closed
Saturday, 11 February 2023	Dutton Park	Dust	Station upgrade works	February 2023	Stakeholder emailed to complain about dust from increased vehicle movements at Cope Street worksite.	Team advised the stakeholder that their complaint was passed onto site team immediately. In response to the complaint and to improve dust mitigation, a water cart and street sweeper were deployed, and their frequencies were increased during the works.	Closed
Sunday, 12 February 2023	Dutton Park	Dust and noise	Station upgrade works	February 2023	Stakeholder emailed to complain about dust and noise from increased vehicle movements at Cope Street worksite.	Team advised the stakeholder that their complaint was passed onto site team immediately. In response to the complaint and to improve dust mitigation, a water cart and street sweeper were deployed, and their frequencies were increased during the works. Team also advised what works were occurring during extended hours and provided information on upcoming works.	Closed
Sunday, 12 February 2023	Dutton Park	Dust	Station upgrade works	February 2023	Stakeholder emailed to complain about dust from increased vehicle movements at Cope Street worksite.	Team advised the stakeholder that their complaint was passed onto site team immediately. In response to the complaint and to improve dust mitigation, a water cart and street sweeper were deployed, and their frequencies were increased during the works.	Closed
Sunday, 12 February 2023	Fairfield	Noise	Station upgrade works	February 2023	Stakeholder emailed about the noise during the weekend SCAS, and extended hours works.	Team advised what works were occurring during extended hours and provided information on upcoming works.	Closed
Wednesday, 15 February 2023	Dutton Park	Noise	Station upgrade works	February 2023	Stakeholder called to complain about the noise generated from the Cope Street worksite, specifically the use of the vac truck.	The team attended site with the Supervisor, Area Manager and Environment Team and discussed what improvements could be made on site. Agreed to increase water cart frequency in the area.	Closed

Date Received	Location	Issue	Project Works / Activity source of the concern	Reporting Period	Complaint Detail	Unity Response	Status
Monday, 20 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Stakeholder attended site to complain about the noise generated from rock breaking behind Tufton street.	Team attempted to contact the complainant on several occasions. Team emailed the stakeholder the details of the works again and dropped off formable ear plugs in the complainants' letter box.	Closed
Monday, 20 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Nearby resident complained about the use of the rock breaker at night-time near Tufton Street, Bowen Hills.	Team discussed the work activities over the coming days and advised when rock breaking was due to be completed. Team offered formable ear plugs and the offer was accepted.	Closed
Monday, 20 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Nearby resident complained about the use of the rock breaker at night-time near Tufton Street, Bowen Hills.	Team discussed the work activities over the coming days and advised when rock breaking was due to be completed. Team offered formable ear plugs and the offer was accepted.	Closed
Tuesday, 21 February 2023	Normanby	Traffic	EXT_018 SCAS	February 2023	Stakeholder called to complain about truck and dogs using the access gate adjacent to Energex. They advised the trailers had blocked the pedestrian path and the public had to walk around the trailer on Bowen Bridge Road.	The team spoke with the Area Manager and requested trucks do not double up in this location. Additional traffic control was put in place to assist pedestrians.	Closed
Tuesday, 21 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Nearby resident complained about the use of the rock breaker at night-time near Tufton Street, Bowen Hills.	Team discussed the work activities over the coming days and advised when rock breaking was due to be completed. Team offered formable ear plugs and the offer was accepted.	Closed
Tuesday, 21 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Nearby resident complained about the use of the rock breaker at night-time near Tufton Street, Bowen Hills.	Team discussed the work activities over the coming days and advised when rock breaking was due to be completed. Team offered formable ear plugs and the offer was rejected as the complainant already had some.	Closed
Wednesday, 22 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Stakeholder called to complain about rock breaking activities at Tufton Street behind QLD Newspapers building.	Team provided an overview of the works. Advised that rock breaking activities in this area should be minimal moving forward. Team added the stakeholder to the project database to receive future updates.	Closed
Wednesday, 22 February 2023	Exhibition	Noise	EXT_018 SCAS	February 2023	Stakeholder called to complain about rock breaking activities at Tufton Street behind QLD Newspapers building.	Team provided an overview of the works. Advised that rock breaking activities in this area should be minimal moving forward. Team dropped off formable ear plugs and a respite voucher in the stakeholder's letter box.	Closed

3 Environmental Monitoring Results

The below section summarises the monitoring results to be reported in accordance with Imposed Condition 6(b)(i).

Acoustics

Imposed Condition 11(b) 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 (C-EMP) 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.

Complaint-based noise monitoring because of Project Works was triggered during the reporting period.

3.1.2 Noise Monitoring Results

Table 4 Summary of Noise Monitoring Data

Location	Receiver Type Details	Type of Monitoring	Work Hours	Monitoring date and time	Noise Type	Purpose of Monitoring	Predictive model (dBA)	Performance Goal 1 (dBA) (Condition 11(a), Table 2, LA _{10/eq} 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 For interpretation, please refer to section Error! Reference source not found.
Exhibition	Residential	Attended - Outdoors	Standard Hours Extended Hours	Tuesday, 21 February 2023	Intermittent	Complaint Response	88	Standard Hours Work 65 (Outdoors) (55dBA + 10dBA façade reduction) Extended Hours Works 52 (Outdoors) (42dBA + 10dBA façade reduction)	Standard Hours Work 85 (Outdoors) (65dBA + 20dBA) Extended Hours Work 72 (Outdoors) (52dBA + 20dBA)	83	81	Yes	Yes Goal 1 only	Monitoring was completed approximately 10m from the works area. The closest residential receiver was approximately 17m away from the works. Rock breakers/ hydraulic hammers (7.5T, 3T and 1T) were the dominant noise sources. Monitoring was assessed against standard and extended hours performance goals as the complaints related to extended hours, however monitoring was undertaken during standard hours. Works notice covered these works.
Southern	Residential	Attended - Outdoors	Standard Hours	Saturday, 25 February 2023	Intermittent	Construction Monitoring at Sensitive Places – Model Verification	75	Standard Hours Work 65 (Outdoors) (55dBA + 10dBA façade reduction)	Standard Hours Work 85 (Outdoors) (65dBA + 20dBA)	74	71	Yes	Yes Goal 1 only	Monitoring was completed approximately 26m from the noise source (hydraulic hammer) behind a noise wall. The closest residential receiver was about 4 – 5m from the works. The hydraulic hammer was 780kg and fitted to a 14T excavator and was hammering out an existing concrete retaining wall within the rail corridor. Works notice covered these works.

- 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 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, several 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.

² Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

3.1.3 Vibration Monitoring

Vibration monitoring to validate the predictive model was triggered for:

- The use of an 8T vibratory roller for asphaltting works in the Yeronga Commuter Carpark in proximity of residential buildings
- The use of hydraulic hammers (1T, 3T and 7.5T) at the RNA Showgrounds in proximity to State heritage listed buildings (Royal International Convention Centre and John MacDonald Stand).

The results are presented in the below Table.

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

Vibration monitoring to address property damage was not triggered by the predictive assessment.

3.1.4 Vibration Monitoring Results

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	Vibration intensive equipment	Maximum predicted vibration level (mm/s)	Shortest distance between Equipment and Sensitive Place (m) @Time of Monitoring"	Maximum recorded vibration level (mm/s)	Vibration goal for receiver (mm/s)	Exceedance of vibration limit?	Comments
Yeronga Commuter Car Park (Fairfield Road)	01/02/2023 to 09/02/2023	Standard Hours	376 Fairfield Road, Yeronga	Residential – According to BS7385	Construction Monitoring at Sensitive Places – Model Verification	Whacker Packer	3.82mm/s	~7m	2.08mm/s	10mm/s	No	Monitor was installed along the fence line of the nearest residential sensitive receiver ~7m from the work area. The construction team advised an 8T vibratory roller was required to complete the works. However, the roller was not required to complete the works and instead completed the works with a whacker packer. This accounts for the variance between the predicted vibration and the maximum recorded vibration levels.
John MacDonald Stand	01/02/2023 to 28/02/2023	24 hours/ 7days	Royal International Convention Centre and John MacDonald Stand	Heritage – DIN4150 Group 3	Construction Monitoring at Sensitive Places – Model Verification	7.5T, 3T and 1T rock breakers/ hydraulic hammers	1.2mm/s	32m	1.08	3mm/s State heritage building	No	Monitor was installed at the John MacDonald Stand within a store room at the building's foundation. The monitor was approximately 49 – 50m from the hammer (predicted 1.2mm/s) and 31.7m from the façade (predicted 2mm/s). The recorded peak of 1.08mm/s can be attributed to the hammer being used during the bridge demo during the EXT_018 SCAS.

3.1.5 Interpretation

The RIS scope of works continues to achieve the outcomes set out by the Imposed Conditions and OEMP.

3.1.6 Noise Monitoring

3.1.6.1 Complaints Response

One (1) round of noise monitoring in response to complaints received about Project Works associated with the EXT_018 SCAS.

Noise monitoring of hydraulic hammer attachments during an approved rail possession was undertaken externally at Bowen Hills.

Monitoring was undertaken during Standard Work Hours; however, the complaint was for Extended Hours Works. The measured LA₁₀ reading confirmed the Extended Hours Noise Goal + 20 dBA was not exceeded.

3.1.6.2 Model Verification

One (1) round of noise monitoring of noise intensive activities associated with an approved rail possession was carried out during Standard Work Hours. Monitoring was undertaken to validate the noise modelling outputs.

The monitoring was undertaken externally at a residential place adjacent to the Works but not obstructed by the rail corridor noise wall. The closest residential receiver was located behind the noise wall panels.

Noise monitoring confirmed that the actual noise emissions are consistent with the predicted noise emissions. Providing assurance to the Project Team that the predictive noise modelling can be used as a reliable tool to guide community engagement prior to and during Project Works.

Since:

- The Works were authorised to proceed under Imposed Condition 10 as they were carried out during Surface Works Standard Hours and Extended Works Hours (approved rail possession), and
- DAP engagement had also occurred with the level of consultation as per the requirements of Imposed Condition 11(c).

The RIS scope of works continues to achieve the outcomes set out by the CGCR and OEMP.

3.1.7 Vibration Monitoring

3.1.7.1 Model Verification

3.1.7.1.1 Yeronga Commuter Carpark Results

Vibration monitoring during asphaltting works at the Yeronga Commuter Carpark on Fairfield Road was undertaken along the fence line of the nearest sensitive residential place. This location was selected as it was the closest receiver to the work area.

The peak reading of 2.08mm/s was associated with the use of a whacker packer. Initially the construction team advised that an 8T vibratory roller was required to complete the works, however they were able to complete the asphaltting using the whacker packer.

No exceedances of the vibration goal were recorded.

3.1.7.1.2 John MacDonald Stand Results

Vibration monitoring during rock breaking works at the RNA Showgrounds was undertaken at the foundation of the State heritage John MacDonald Stand inside a storeroom. This location was selected based on the outcomes of predictive assessments.

Rock breaking activities were undertaken as part of Stage 2 demolition during the EXT_018 SCAS. The peak reading of 1.08mm/s is attributed to the rock breaking during the existing bridge demolition.

No exceedances of the revised vibration goal were recorded.

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

Air Quality

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

Visual monitoring was undertaken during routine environmental inspections. A total of 28 inspections were undertaken by the Environment Team across Mayne Yard, RNA Showgrounds, Northern Corridor, Southern Area, Fairfield Station, Yeronga Station, Clapham Yard and Rocklea Station.

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	Inactive DDG was decommissioned on 10 December 2021 following the completion of earthworks
Dust Deposition Gauge	Dutton Park	AQ-08	8 July 2022	Active
TSP / PM ₁₀ Monitor	Mayne Yard North (Eastern Air Shed)	Mayne Yard North	26 August 2022	Inactive as of 11 May 2022 CAQP confirmed that the Mayne Yard DMP can be temporarily decommissioned following the completion of Mayne Yard North earthworks. DMP was reinstated for Mayne Yard East Works on 26 August 2022 – see below
TSP / PM ₁₀ Monitor	Mayne Yard East (Eastern Air Shed)	Mayne Yard East	26 August 2022	Inactive DMP was relocated to Clapham Yard to prevent further data loss Particulates monitoring was not triggered for the scope of works undertaken during the reporting period
TSP / PM ₁₀ Monitor	Clapham Yard (Eastern Air Shed)	Clapham Yard	9 August 2021	Active
TSP / PM ₁₀ Monitor	RNA (Western Air Shed)	RNA	25 August 2020	Active

3.1.8 Dust results

As passive dust deposition gauges (DDG) are analysed monthly, results span:

- Mayne Yard, RNA and Dutton Park:
 - 11 January 2023 to 9 February 2023
- Clapham Yard
 - 16 January 2023 to 14 February 2023

The results are detailed below and compared against Imposed Condition 13(b).

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 Grafton Street (E Mayne) (mg/m ² /day)	AQ-06– Clapham Yard (mg/m ² /day)	AQ-08 – Dutton Park (mg/m ² /day)
120	153	27	43	60
Total Rainfall during Period (mm)	25.0	16.6	102.4	34.6

Note: Results recorded in red indicate an exceedance of the CGCR Goal

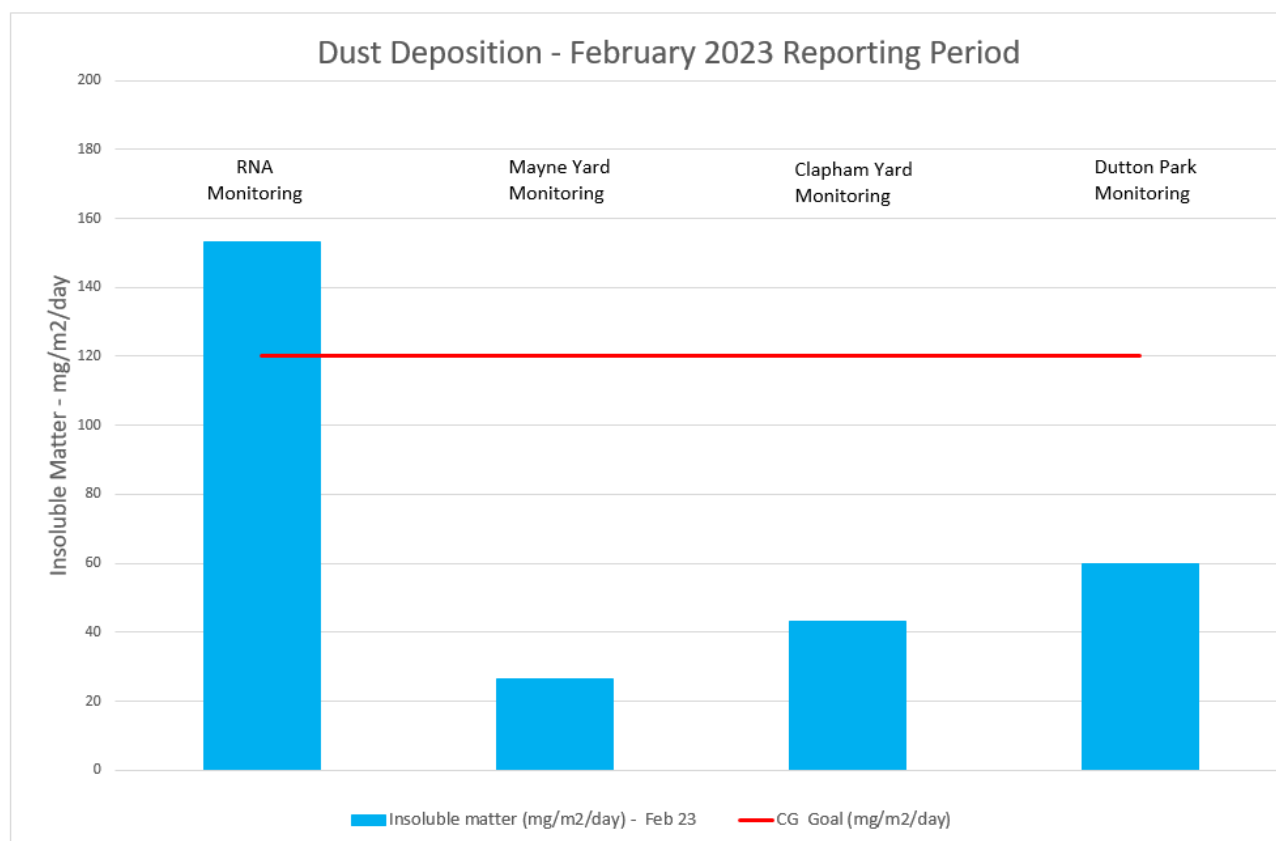


Figure 1 Air Quality Monitoring (Deposited Dust) Results

3.1.8.1 Interpretation

3.1.8.1.1 RNA Elevated Results

A predictive air quality assessment was carried out by the Project's certified air quality professional (CAQP) prior to Relevant Project Works commencing.

The assessment triggered dust deposition monitoring during Stage 2 demolition and bulk earthworks, and it was recommended the DDG be located in the vacant block next to the 6 Tufton Street apartments. The DDG was previously placed in this location however the results were frequently invalidated due to repeated vandalism. In consultation with the CAQP, the DDG was relocated to within the RNA Showgrounds to reduce data loss due to vandalism.

The RNA DDG is located on the fence line delineating the construction area boundary from the RNA Showgrounds directly above the rock breaking site (refer to Attachment 3). It is noted that the DDG is therefore located closer to dust emission sources than the nearest receptor (Royal International Convention Centre), acknowledging that the separation distance between the gauge and the nearest receptor is approximately 23m.

During the monitoring period (11 January – 9 February 2023), construction works at RNA consisted primarily of rock breaking and cut and fill works associated with Stage 2 demolition works. Both activities were undertaken near the DDG during standard hours and extended hours.

The scale, duration and intensity of the aforementioned activities was consistent with the activities reviewed as part of the predictive air quality assessment.

The measured dust deposition level of 153 mg/m²/day is 128% of the air quality goal of 120 mg/m²/day, and therefore has been recorded as an exceedance.

A wind rose was completed (refer to Figure 2) to ascertain the predominant winds during the measurement period and whether abnormal wind conditions occurred during the period.

The wind rose confirmed that:

- The DDG was downwind of the Project Works 62% of the time, and
- Wind conditions were light to gentle (according to the Beaufort Scale) during the majority (98%) of the measurement period.

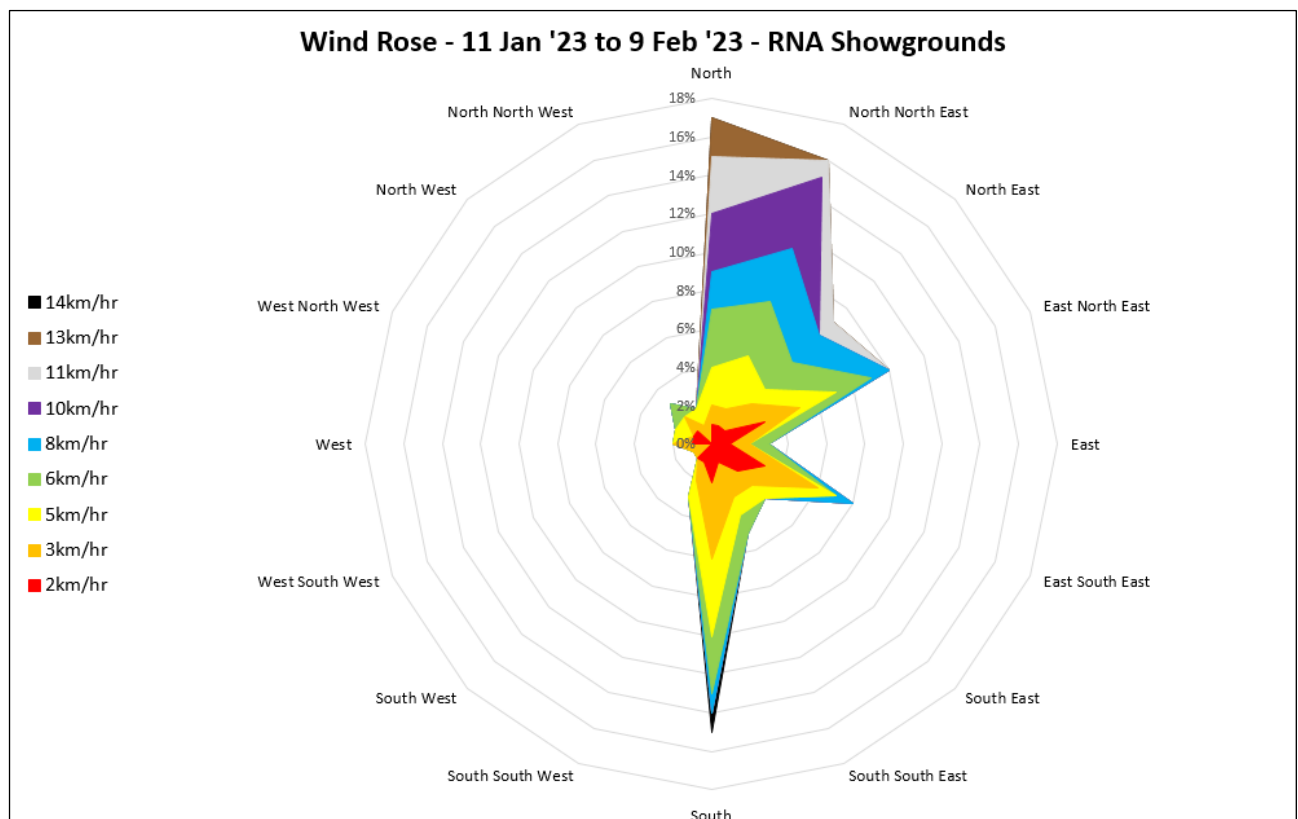


Figure 2 RNA Wind Rose During DDG Measurement Period

During the reporting period there were no other activities in the vicinity of the RNA Showgrounds that would have produced dust emissions above the predicted levels for the Stage 2 demolition and cut and fill activities.

It is therefore concluded that the exceedance of the Air Quality Goal for the reporting period is likely attributable to Project Works. The location of the dust deposition gauge at the RNA worksite is located immediately adjacent to the project site. This location was selected to be representative of the work area for the site while ensuring the security of the dust deposition gauge.

The dust deposition gauge at this location provides limited representation of the sensitive receptors adjacent the site due to the gauges proximity to the worksite and specifically the rock breaking activities undertaken.

It is however noted that the Project Team is actively implementing the following to manage dust emission from the RNA worksite:

- Dust suppression (hose spraying during rock breaking and water carts spraying throughout site)
- Erosion control (geofabric placed on exposed batters)
- Stabilised access points (minimising tracking onto roads)
- Street sweepers on rotation as required and frequency increased during EXT_018 SCAS.

During the reporting period there were no complaints from nearby sensitive receptors regarding air quality for the RNA Works.

Finally, despite the recorded exceedance of the CGCR Goal, the Project continues to meet their requirements under Imposed Condition 13 and the OEMP.

3.1.9 Particulates Results

3.1.9.1 Air Quality Monitoring Stations

UNITY had two (2) active air quality monitoring stations in place for the reporting period as detailed in Table 6.

3.1.9.2 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 installed on-site as per AS/NZS 3850 1.1 following consultation with UNITY air quality professionals. The results are represented in the below figures.

Due to the ongoing data recording issues at Clapham Yard the DMP installed at Mayne Yard East was relocated to Clapham Yard to minimise the chance of further data loss. This approach was approved by the Project CAQP as particulates monitoring was not triggered for the scope of works at Mayne Yard East during the reporting period. Deposited Dust monitoring was deemed sufficient for the scope of works.

There was a 3-day data loss period at Clapham Yard associated with battery issues from 1 – 3 February 2023, as represented in Figure 3 Air Quality Monitoring (TSP) Results and Figure 4 below.

The Mayne Yard East DMP was relocated on 1 February and installed by the UNITY Environment Team. The following day the DMP could not be remotely accessed to check the data recording and a UNITY Environment Team member attended site and confirmed that the new larger battery pack had blown the fuses and as a result data was not recorded. UNITY's air quality equipment supplier sent a technician to Clapham Yard who assessed the DMP and replaced the larger battery with a smaller one. As the issue was

not rectified until after midday the total data recorded did not meet the minimum exposure period requirement (18 hours over a 24-hour period, or 75%), therefore the data for 3 February 2023 was deemed invalid.

The Clapham Yard DMP had no further data issues from 4 February for the remainder of the reporting period.

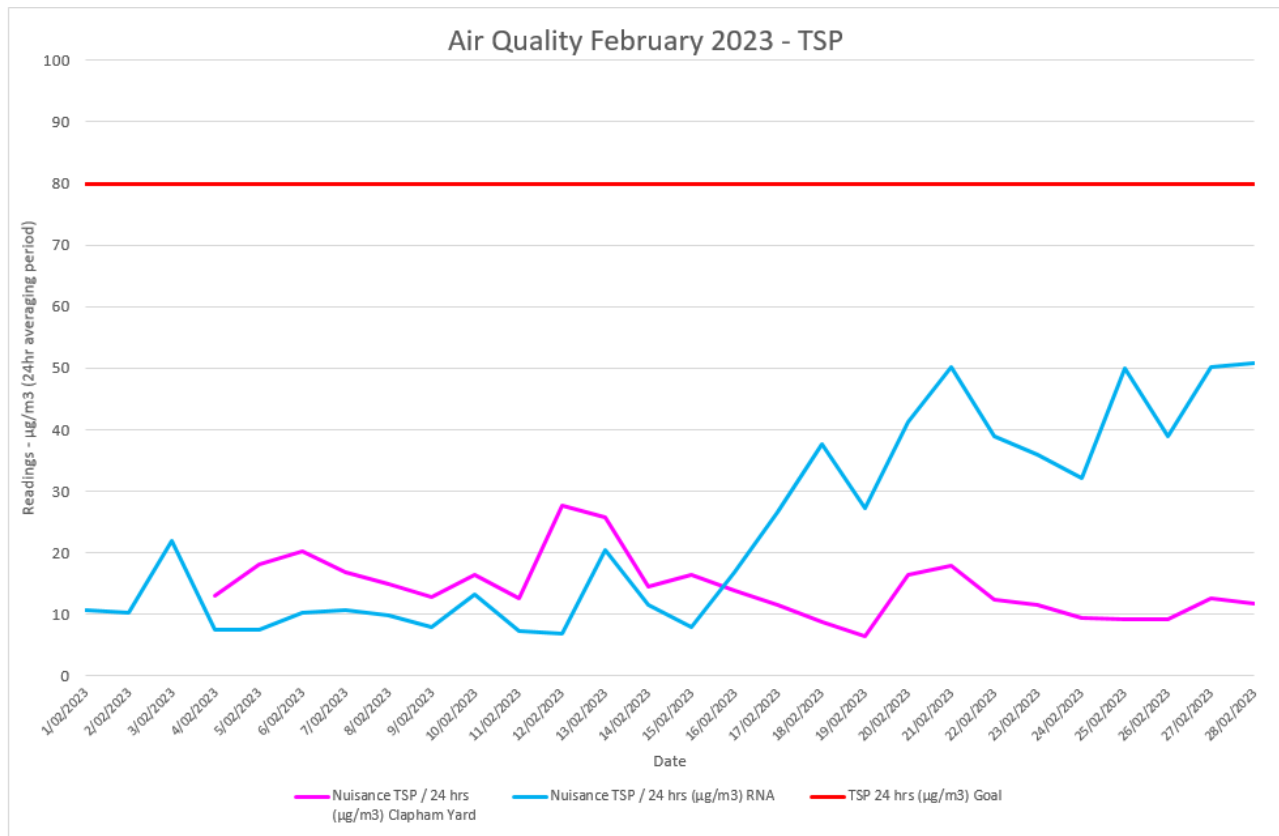


Figure 3 Air Quality Monitoring (TSP) Results

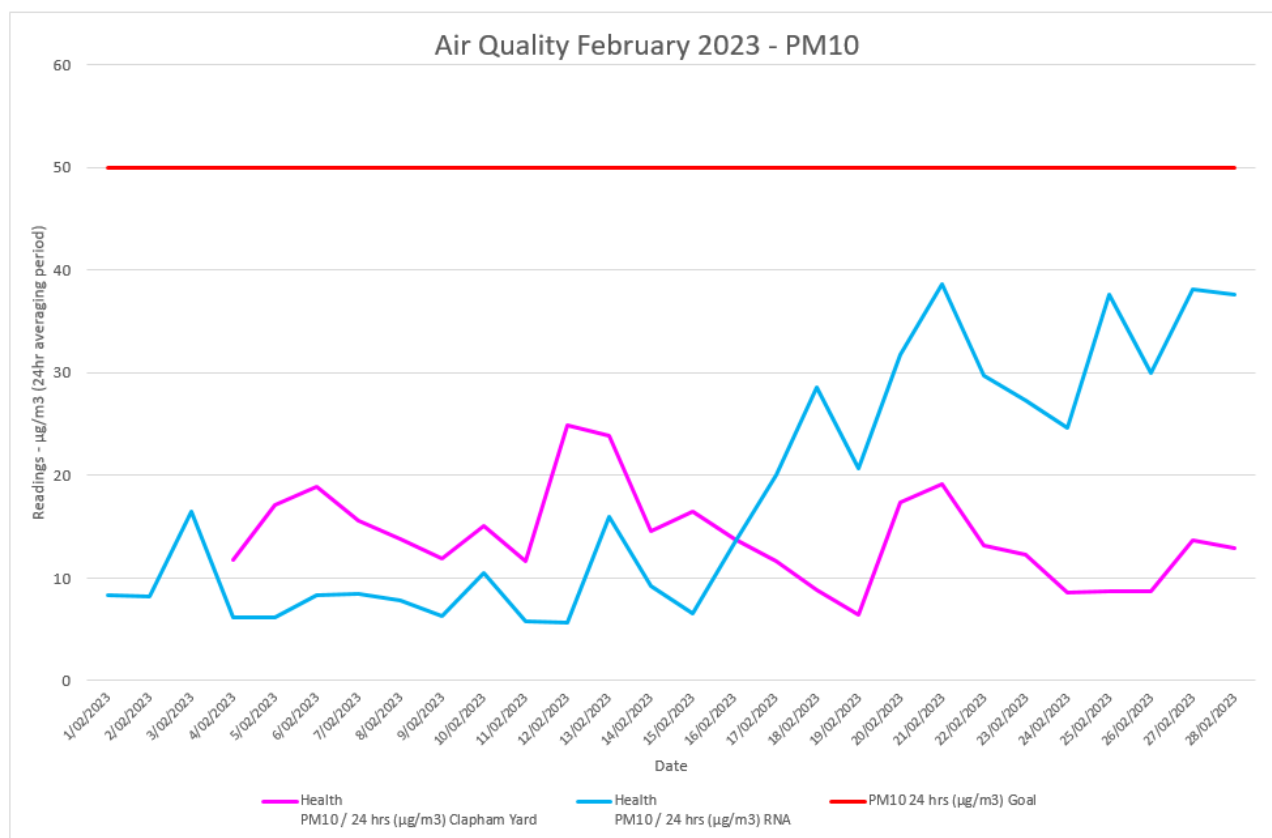


Figure 4 Air Quality Monitoring (PM10) Results

3.1.10 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 have 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 was 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 North (Eastern Air Shed)	23 April 2020	11 May 2022	Period 1 (to 23 April 2021) 358 over 365 days Period 2 (24 April 2021 to 25 April 2022) 364 over 365 days Period 3 (26 April 2022 to 11 May 2022) 3 days over 47 days	Period 1 98% over 365 days Period 2 99% Over 365 days Period 3 17% Over 47 days	Applicable for Period 1 Data capture met minimum data capture requirements Applicable for Period 2 Data capture has met minimum data capture requirements Applicable for Period 3 Data capture has not met minimum data capture requirements
TSP / PM ₁₀ Monitor	Mayne Yard East (Eastern Air Shed)	26 August 2022	Not yet decommissioned	Period 1 (Started 26 August 2022) 122 days over 156 days	Period 1 78% Over 156 days	Not yet applicable for Period 1 Data capture has not yet met minimum data capture requirements
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 (12 June 2021 to 12 June 2022) 290 over 365 days Period 3 (Started 13 June 2022) 185 over 202 days	Period 1 86% over 365 days Period 2 79% Over 365 days Period 3 92% Over 202 days	Applicable for Period 1 Data capture met minimum data capture requirements Applicable for Period 2 Data capture met minimum data capture requirements Not yet applicable for Period 3 Data capture has not yet met 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	Clapham Yard (Eastern Air Shed)	1 February 2021	Not yet decommissioned	Period 1 (to 31 January 2022) 326 over 364 days Period 2 (started 01 February 2022) 190 over 365 days Period 3 25 over 27 days	Period 1 90% over 364 days Period 2 57% Over 365 days Period 3 93% Over 27 days	Applicable for Period 1 Data capture met minimum data capture requirements Applicable for Period 2 Data capture did not meet the minimum data capture requirements Not yet applicable for Period 3 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 North	Mayne Yard East	RNA	Clapham Yard
TSP 90 µg/m ³		Period 1	8 µg/m ³	11 µg/m ³	Not yet applicable	18 µg/m ³	8 µg/m ³
		Period 2	-	10 µg/m ³	-	15 µg/m ³	16 µg/m ³
		Period 3	-	Not applicable	-	Not yet applicable	Not yet applicable
PM ₁₀ 25 µg/m ³		Period 1	5 µg/m ³	7 µg/m ³	Not yet applicable	11 µg/m ³	5 µg/m ³
		Period 2	-	7 µg/m ³	-	10 µg/m ³	14 µg/m ³
		Period 3	-	Not yet applicable	-	Not yet applicable	Not yet applicable

3.1.11 Interpretation

3.1.11.1 Particulates Results

External ambient air quality was collected for total suspended particulates (TSP) and particulate matter less than 10µm (PM₁₀).

TSP is one of the indicators for which the Coordinator General has imposed a goal of 80µg/m³ (over an averaging period of 24 hours) the project must aim to achieve under Imposed Condition 13(a).

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

These stations have been installed on-site as per AS/NZS 3850 1.1 following consultation with UNITY Certified Air Quality Professionals (CAQP).

During the reporting period:

- None of the particulate results exceeded their relevant goals for TSP and PM₁₀ at Mayne Yard, RNA and Clapham Yard
- There were no complaints received associated with air quality concerns during the reporting period for the sites of Mayne Yard, RNA and Clapham Yard.

3.1.11.2 Mayne Yard East February Interpretation

In the absence of particulates data for the reporting period at Mayne Yard East, UNITY has undertaken an investigation to provide supplementary information to confirm the RIS scope of works has met the project outcomes set out by the CGCR and the OEMP.

3.1.11.2.1 UNITY Works

During the reporting period Mayne Yard East Works consisted of bored piling, FRP Works and installation of precast panels for the pedestrian overpass. None of the completed activities are associated with excessive dust generation.

The Mayne Yard East site is almost entirely capped with a small, vegetated stockpile area which has remained undisturbed since UNITY took ownership of the work area.

3.1.11.2.2 Meteorological Conditions

As shown in the wind rose below (refer Figure 5) the predominant winds during the reporting period were from a south easterly direction. As a result, any potential dust generated from UNITY works would have

travelled north-west away from the sensitive receptors located east of Mayne Yard East on Abbotsford Road.

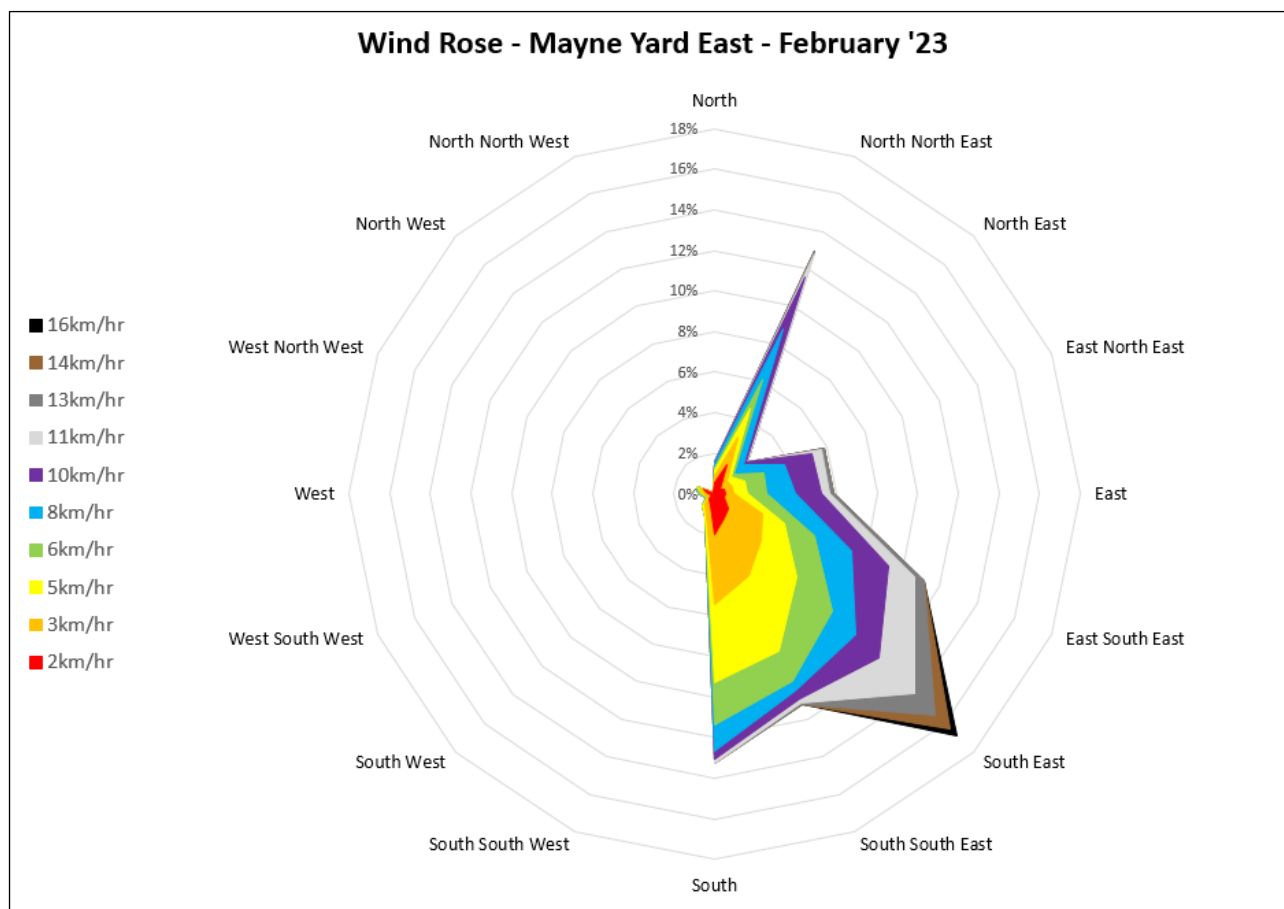


Figure 5 Mayne Yard East February 2023 Wind Rose

3.1.11.2.3 Air Quality Complaints

During the reporting period, no air quality complaints were received for works associated with Mayne Yard East from nearby sensitive receivers.

Therefore, despite the absence of particulates data for the reporting period, the RIS scope of works has met the project outcomes set out by the CGCR and OEMP.

Water Quality

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

Imposed 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*.

Imposed 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 Imposed Condition 15(a) was not triggered during the reporting period. There were no groundwater discharges during the reporting period.

Water quality monitoring to demonstrate compliance with Condition 15(b) and Condition 18 was triggered during the reporting period. Post rainfall response monitoring was undertaken.

3.1.12 Rainfall Records

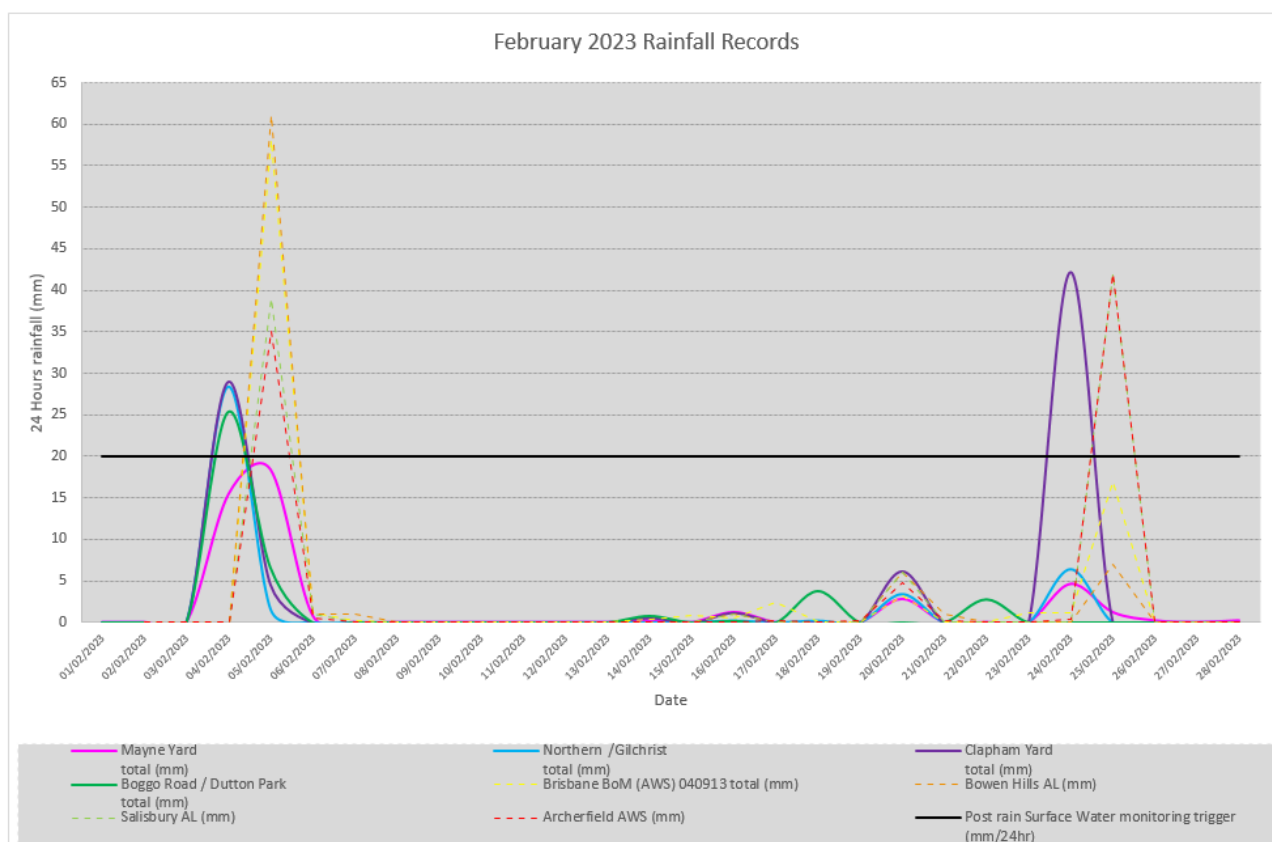


Figure 6 February 2023 Rainfall Records

3.1.13 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.

Post rainfall monitoring was triggered as per Condition 15(b) and Condition 18.

Table 10 Post Rainfall Monitoring Results

Date	Location	Waterway	Tide	Discharge Criteria ²				TSS Delta
				Turbidity (NTU) Nil until Turbidity / TSS correlation achieved ³	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	change of 5mg/L or 10% increase (whichever is the greatest)
15 February 2023	SW-1 (upstream)	Breakfast Creek	Ebb tide	Field: 13.2 Lab: 10.2	18	63	7.4	Yes Refer to 3.1.13.1 for further details
15 February 2023	SW-2 (midstream)	Breakfast Creek	Ebb tide	Field: 62.6 Lab: 55.0	52	59	7.3	
15 February 2023	SW-3 (downstream)	Breakfast Creek	Ebb tide	Field: 57.5 Lab: 50.5	57	58	7.4	
15 February 2023	SW-5 (upstream)	Moolabin Creek	N/A	Field: 19.16 Lab: 16.1	18	Not tested	6.8	No Conditions better downstream than upstream
15 February 2023	SW-6 (downstream)	Moolabin Creek	N/A	Field: 18.69 Lab: 14.1	12	Not tested	6.8	
15 February 2023	SW-7 (upstream)	Rocky Water Holes Creek	N/A	Field: 39.2 Lab: 31.9	20	Not tested	6.8	Yes Refer to 3.1.13.1 for further details
15 February 2023	SW-8 (downstream)	Rocky Water Holes Creek	N/A	Field: 52.3 Lab: 33.9	18	Not tested	6.8	

3.1.13.1 Post Rainfall Monitoring Results Interpretation

The post rainfall monitoring event identified that water quality was visually more turbid than baseline conditions throughout the system at all monitoring locations.

Where in situ monitoring was carried out, downstream water quality data exhibited >10% increase in turbidity (NTU). Further investigation was required to ascertain whether this change in water quality is related to released water from the Project Works.

Therefore, a detailed review of the data was required to ascertain whether:

- The source of the increased turbidity could be reasonably attributed solely to the Project Works; and
- If so, had the Project implemented all reasonable and practicable measures to minimise environmental impacts.

The assessment found that the storm event size was above the design criteria for the controls required for the Mayne Yard and Clapham Yard Works. The entire rainfall event was between 2EY and 1EY with microbursts exceeding 2EY at Mayne Yard and 0.2EY over a 30-minute period at Clapham Yard.

The Site Specific Erosion and Sediment Control Plans (ESCP) for both sites were developed by suitably qualified persons consistent with the Guidelines for Best Practice Erosion and Sediment Control (IECA 2008) as per Imposed Condition 18.

² Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

³ 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.

Additionally, site inspections prior to the rainfall event (13 February 2023) identified that all controls required by the approved the ESCPs were implemented and fully functional.

Therefore, the RIS scope of works were compliant with Imposed Conditions 15 and 18.

3.1.14 Routine Surface Water Monitoring Results

During the reporting period, UNITY undertook one (1) round of surface water quality monitoring which aligns with 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.

Table 11 Routine Surface Water Monitoring Results

Date	Location	Waterway	Tide	Turbidity (NTU)	TSS (mg/L)	DO (%)	pH (pH unit)
10 February 2023	SW-1 – Upstream of Mayne Yard	Breakfast Creek	Marine conditions	Field: 5.45 Lab: 5.0	6	75	7.7
10 February 2023	SW-2 – Adjacent to Mayne Yard	Breakfast Creek	Falling brackish to marine conditions	Field: 5.23 Lab: 6.1	8	108	8.1
10 February 2023	SW-3 – Downstream of Mayne Yard	Breakfast Creek	Falling brackish to marine conditions	Field: 5.21 Lab: 5.8	<5	114	8.0
10 February 2023	SW-4 – Downstream of Northern Corridor	Barrambin / York's Hollow	Not applicable – non-tidal environment	Field: 9.98 Lab: 10.1	17	56	6.8
10 February 2023	SW-5 – Upstream rail corridor	Moolabin Creek	Not applicable – non-tidal environment	Field: 13.05 Lab: 15.5	8	Not tested	Not tested
10 February 2023	SW-6 – Downstream of rail corridor	Moolabin Creek	Not applicable – non-tidal environment	Field: 4.64 Lab: 5.5	<5	76	7.0
10 February 2023	SW-6A – Downstream of rail corridor	Moolabin Creek	Not applicable – non-tidal environment	Field: N/A Lab: N/A	Not tested	Not tested	Not tested
10 February 2023	SW-7a – Upstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: 2.88 Lab: 2.9	<5	101	7.9
10 February 2023	SW-7 – Upstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: 3.08 Lab: 3.4	<5	43	7.0
10 February 2023	SW-8 – Downstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: 4.27 Lab: 3.4	<5	86	6.9
10 February 2023	SW-8A – Downstream of rail corridor	Rocky Water Holes Creek	Not applicable – non-tidal environment	Field: N/A Lab: N/A	Not tested	Not tested	Not tested
10 February 2023	SW-9 – Downstream of rail corridor	Stable Swamp Creek	Not applicable – non-tidal environment	Field: 54.7 Lab: 46.4	24	57	6.9

3.1.14.1 Results Interpretation

Surface water monitoring locations SW-6A and SW-8A were not able to be tested due to inaccessibility. However upstream and downstream locations have been tested in both Moolabin and Rocky Water Holes Creeks which provide adequate representation of wet season conditions.

The conditions at SW-09 (Stable Swamp Creek) were not consistent with previous bi-annual monitoring undertaken at this location. The water turbidity was visibly higher than previous monitoring sessions (refer to Figure 7 and Figure 8 below). During monitoring there were no obvious indicators of what activities contributed to the increased turbidity.

UNITY is not currently undertaking works at sites which discharge to this water body, therefore the increased turbidity cannot be attributed to RIS Works.



Figure 7 SW-09 27 June 2022



Figure 8 SW-09 10 February 2023

3.1.15 Groundwater Discharge Monitoring Results

Groundwater discharge monitoring was not triggered during the reporting period.

3.1.16 Surface Water Discharge Monitoring

Surface water discharge monitoring was not triggered during the reporting period.

Table 12 Surface Water Discharge Results

Date	Location	Waterway	Discharge Criteria ⁴			
			Turbidity (NTU) Nil until Turbidity / TSS correlation achieved ⁵	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
Nil – Not Triggered						

⁴ Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

⁵ 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.

4 Compliance Review

Non-Compliance Events

The below section summarises the events to be reported in accordance with Imposed Condition 5 and Imposed Condition 6(b)(ii). 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 13 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
N/A for reporting period					

C-EMP Compliance

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

Table 14 C-EMP and relevant Subplans monitoring requirements – Compliance Status for the reporting period

Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with C-EMP / 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, PM ₁₀ , and deposited dust was also undertaken TSP, PM ₁₀ monitoring was carried out for two active Worksites	Compliant Compliant Compliant	Not Applicable
Air Quality	Complaint's response	Moderate to High	Yes – visual monitoring undertaken during inspection	Compliant	Not Applicable
Noise	Buffer distance tests based on the outcomes of the predictive assessment based / risk profile of activities	Moderate to High	Yes – attended outdoor monitoring undertaken	N/A	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 – attended outdoor monitoring undertaken for EXT_018 SCAS complaints	N/A	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 – monitoring triggered for Yeronga asphaltting Works and RNA Stage 2 demolition Works	Compliant	Not Applicable
Vibration	Complaint's response	Moderate to High	Not triggered No complaints	N/A	Not Applicable

Aspect	Monitoring requirement	Activities risk profile	Monitoring undertaken	Compliance status with C-EMP / Subplan	Effect of the non-compliance
Water Quality	Bi-Annual monitoring	N/A	Wet season monitoring completed during reporting period Dry Season monitoring to be completed between May – September 2023	Compliant	Not Applicable
Water Quality	Post Rainfall	Moderate to High	Yes – one monitoring event (7 locations) undertaken 15 February 2023	Compliant	Not Applicable
Water Quality	Dewatering	Moderate to High	Not triggered No dewatering to stormwater	Compliant	Not Applicable

Attachment 1 Imposed Conditions Non-Compliance Event Report (if required)

Attachment 2 Monitoring Locations – Noise and Vibration



Figure 9 RNA February 2023 Vibration Monitoring

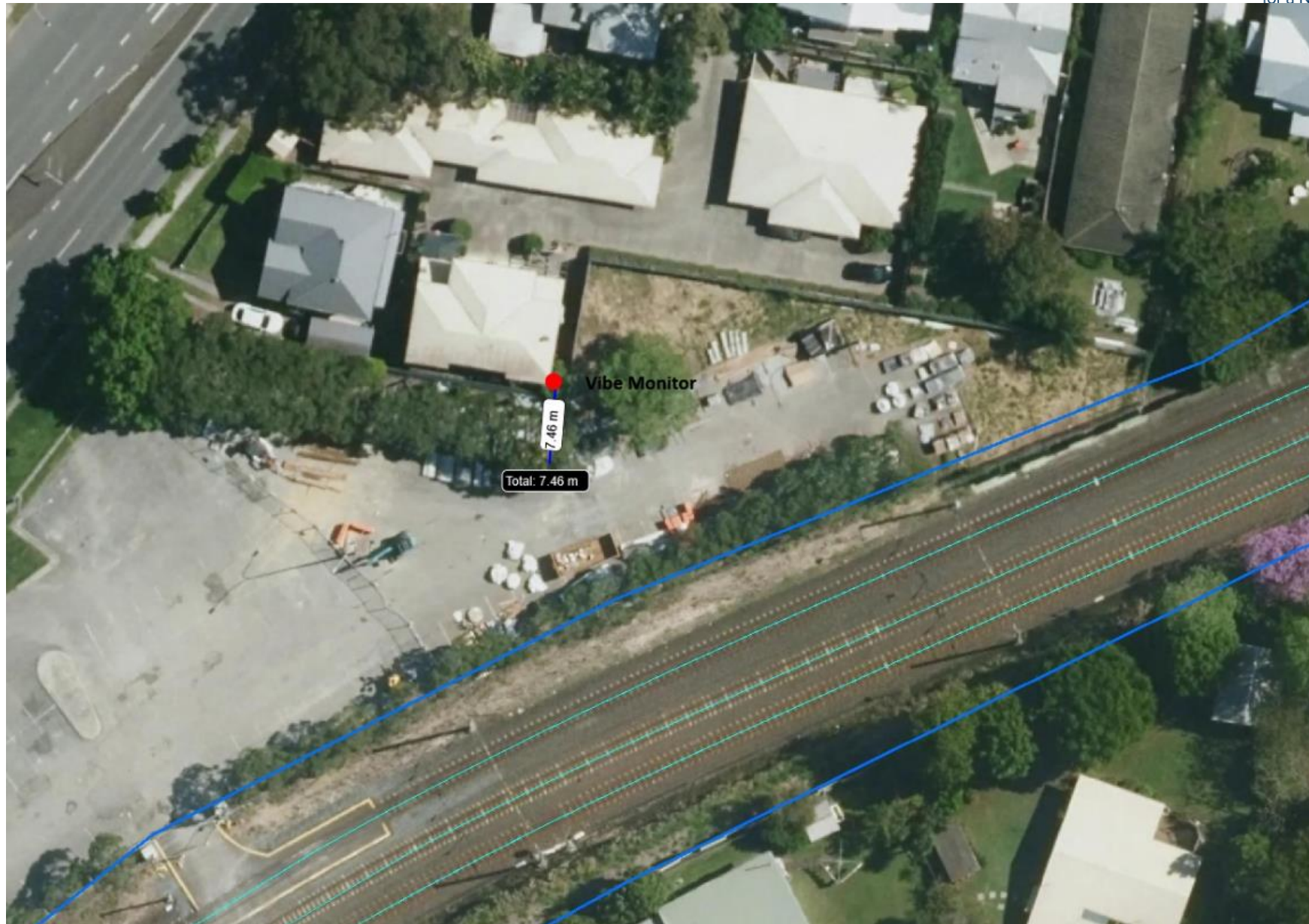


Figure 10 Yeronga February 2023 Vibration Monitoring



Figure 11 Complaint Response Monitoring Location

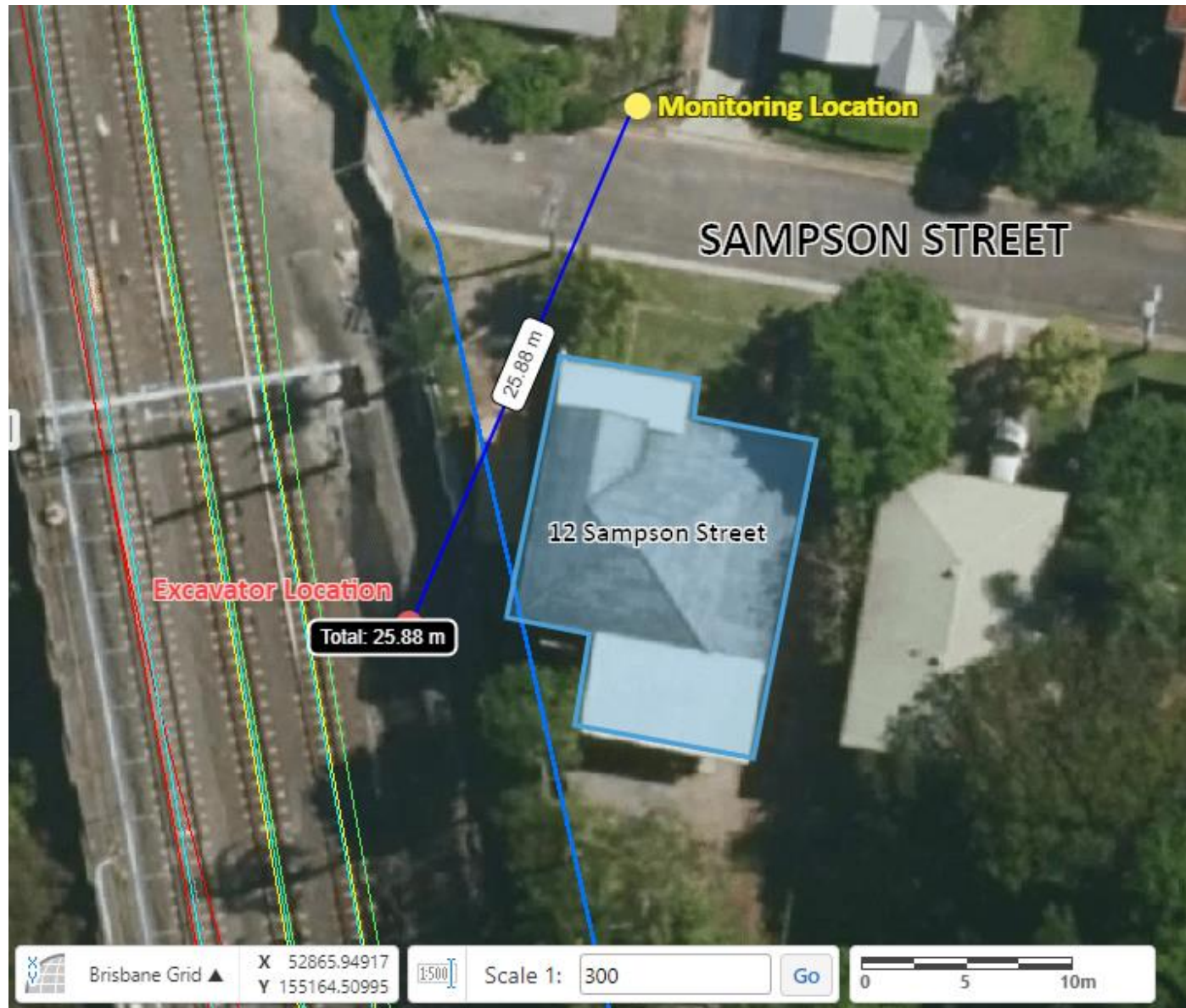
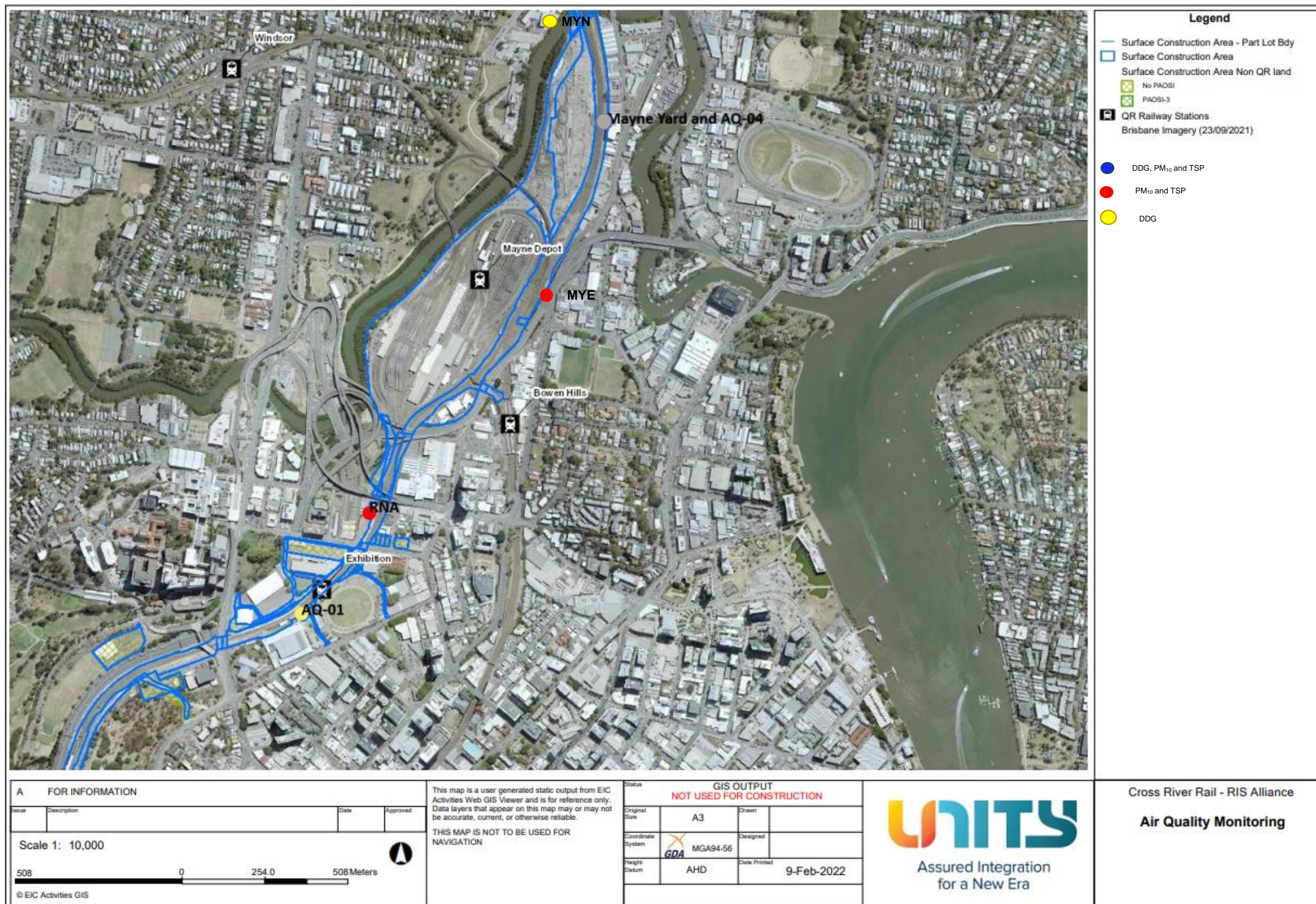
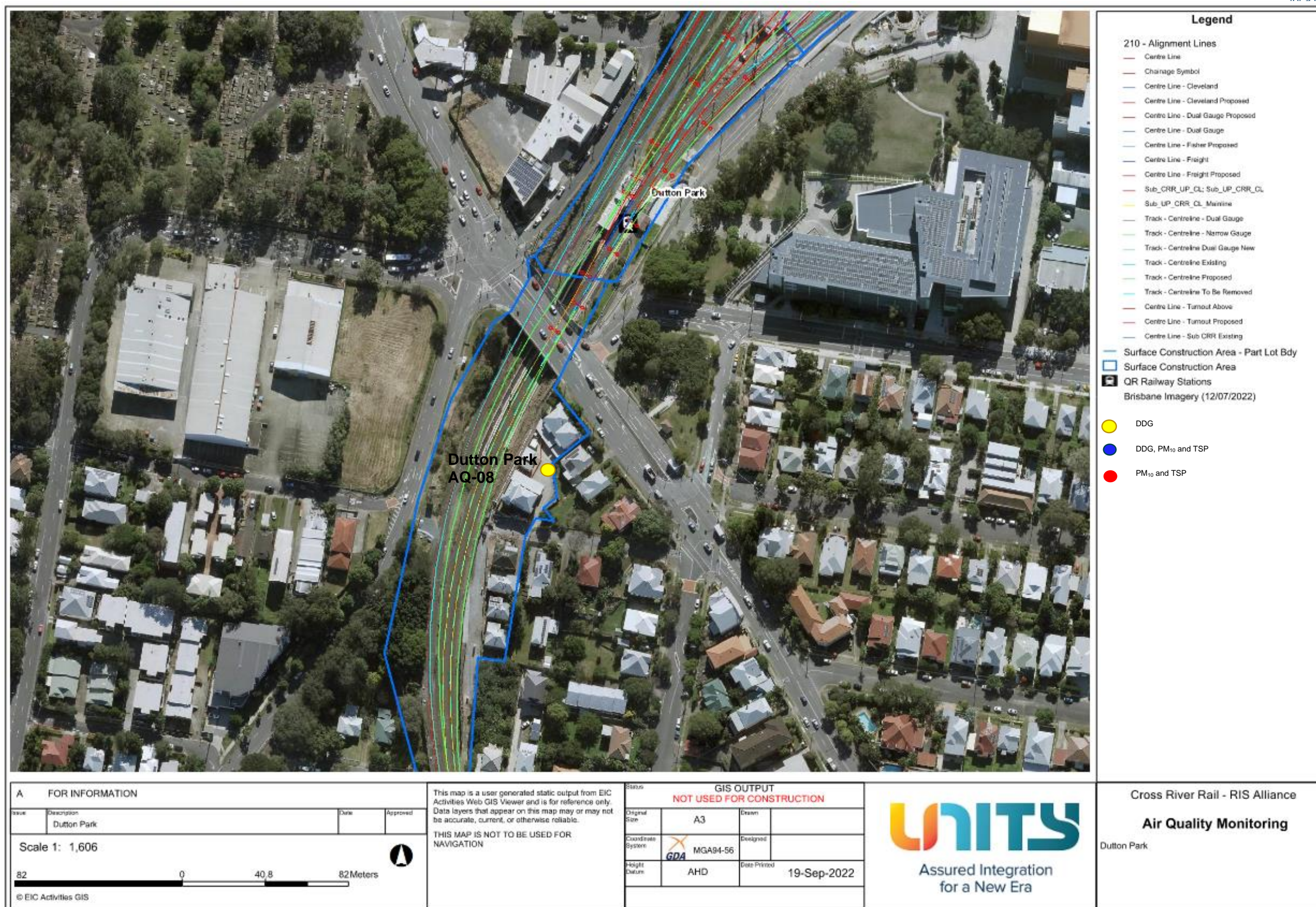
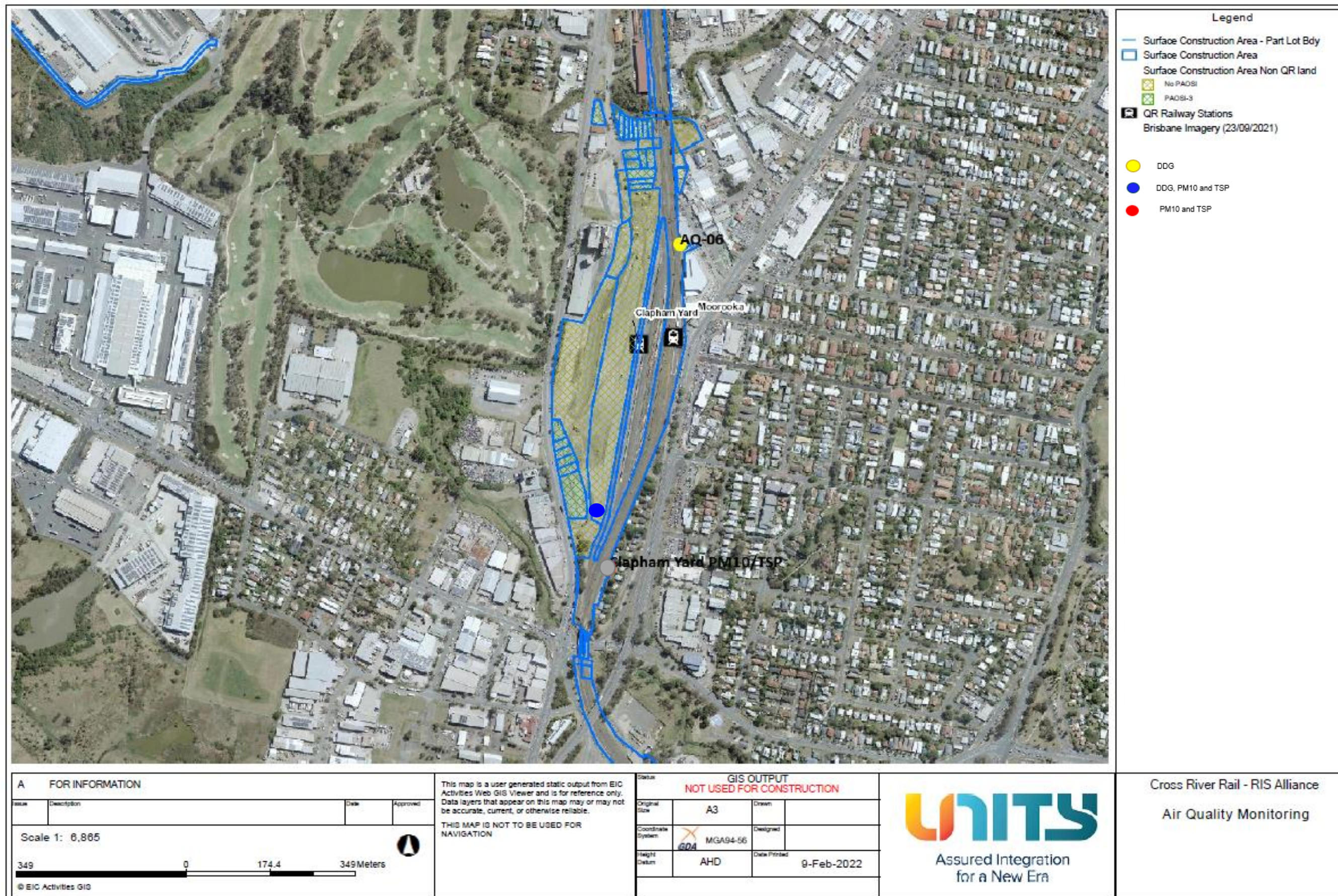


Figure 12 Southern Noise Monitoring February 2023

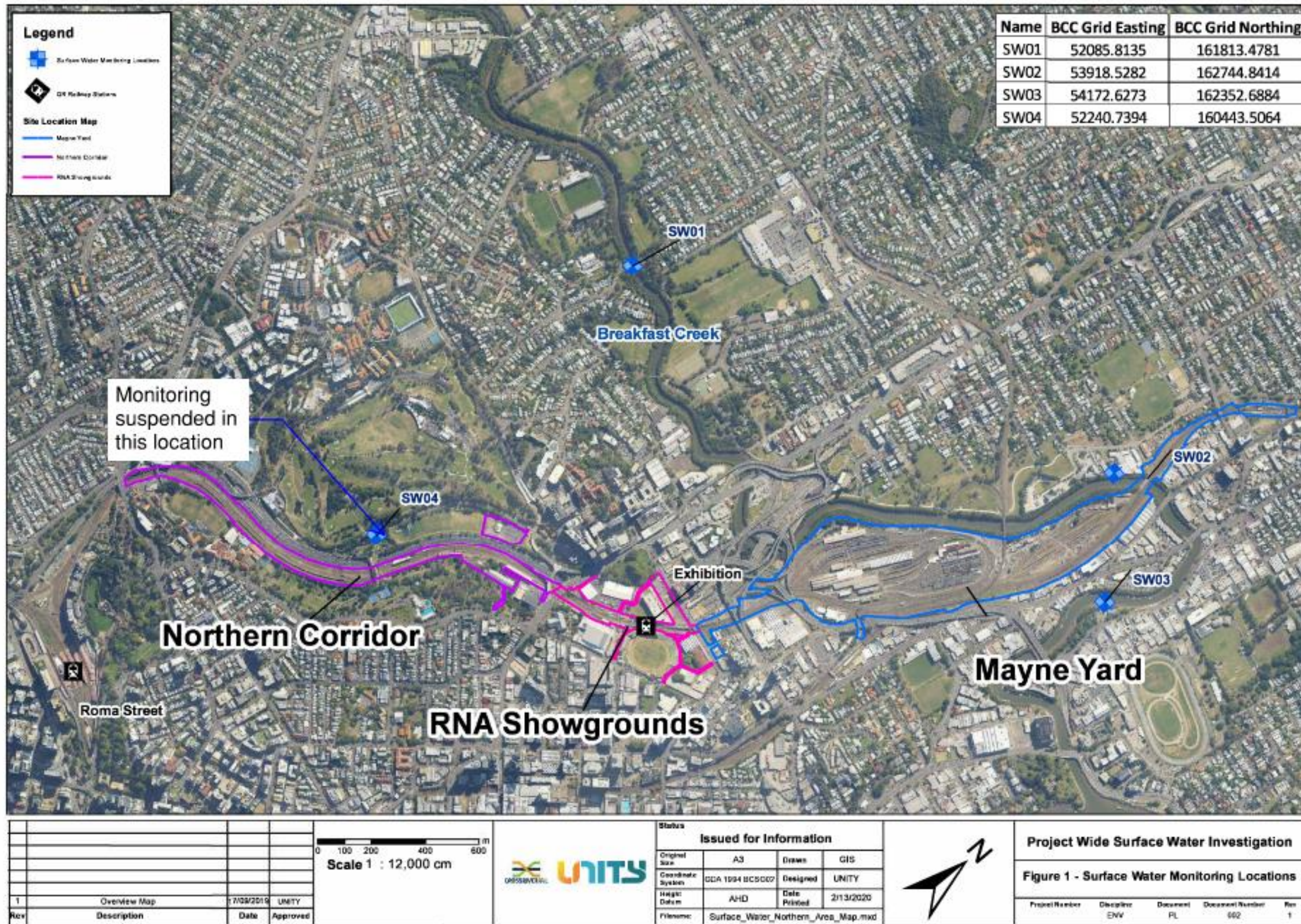
Attachment 3 Monitoring Locations – Air Quality

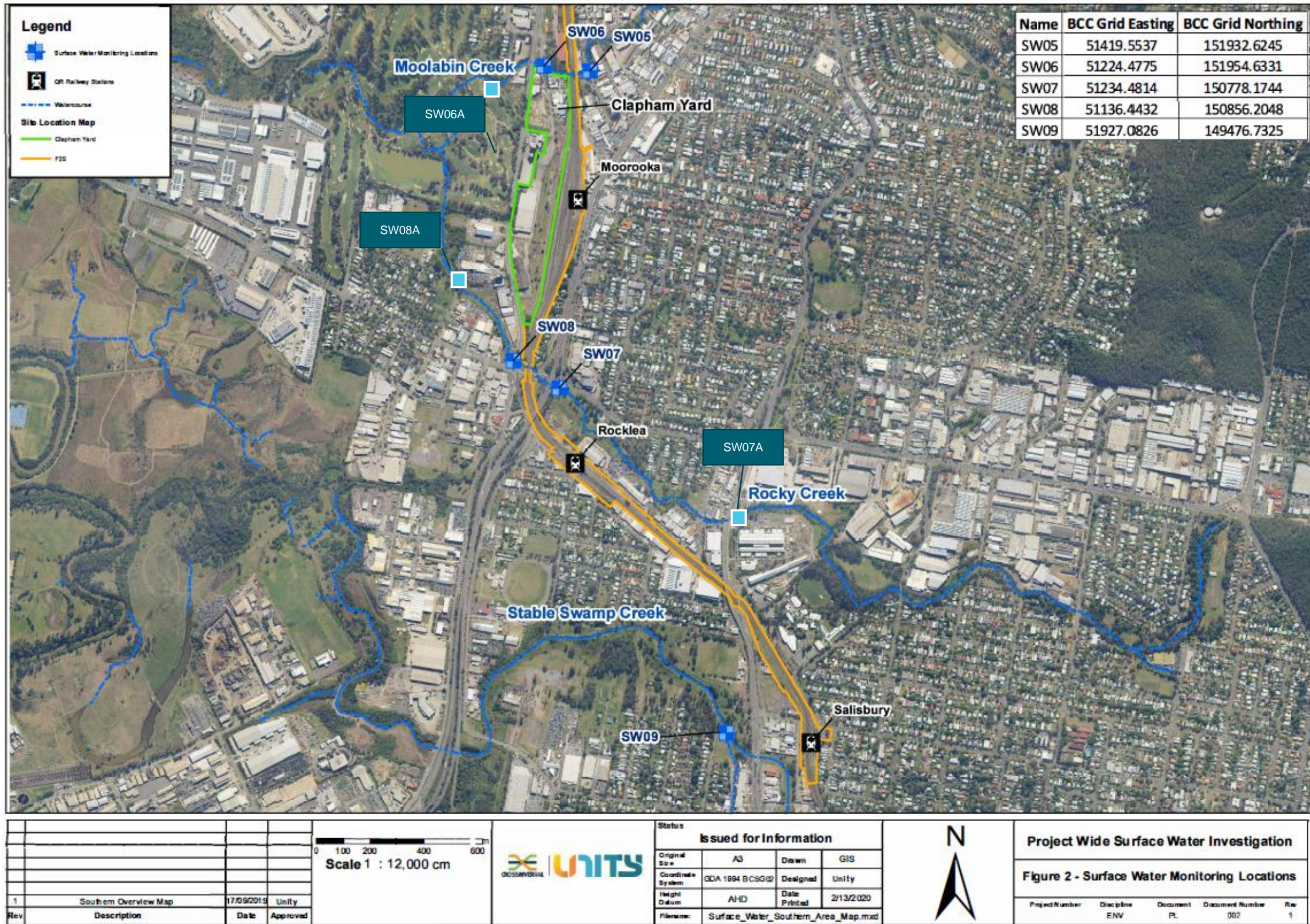






Attachment 4 Monitoring Locations – Surface Water





Appendix B TSD Monthly Report

COORDINATOR-GENERAL'S MONTHLY REPORT: FEBRUARY 2023

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.

No vibration monitoring was triggered or required in February 2023. Noise monitoring was conducted on fifteen (15) occasions during February 2023. Each noise monitoring event that was undertaken 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 February 2023. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on twenty-three (23) occasions. Each monitoring event confirmed project requirements were adhered to. One (1) round 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 11).
5.	Compliance and Incident management – Non-compliance events, notifications, and reporting.	Yes	Nil non-compliances occurred during the monitoring period (refer to Section 4).
6.	Reporting – Monthly and Annual reporting.	Yes	All reporting requirements are completed in accordance with Imposed Condition 6.
7.	Environmental Monitor – engaged and functions resumed.	Yes	An Environmental Monitor (EM) is appointed to the Project, and CBGU is committed to working collaboratively to aid the EM's functions under Imposed Condition 7.
8.	Community Relations Monitor – engaged and functions resumed.	Yes	A Community Relations Monitor (CRM) is appointed to the Project, and CBGU is committed to working collaboratively to aid the CRM's functions under Imposed Condition 8.
9.	Community engagement plan – developed and endorsed by Environmental Monitor.	Yes	A Community Engagement Plan (CEP) has been developed and implemented in accordance with Imposed Condition 9. The CEMP has been endorsed with the CEP.
10.	Hours of work – works undertaken during approved hours.	Yes	CBGU project works have been conducted in accordance with the approved hours of work.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
11.	Noise – Work must aim to achieve internal noise goals for human health and well-being.	Yes	CBGU project work has aimed to achieve internal noise goals for human health and well-being. Where internal noise levels have been unable to be measured, suitable noise reductions have been applied in accordance with Imposed Condition 11. Noise monitoring data is provided within Section 3.2.
	Vibration – Works must aim to achieve vibration goals for cosmetic damage, human comfort and sensitive building contents.	Yes	CBGU project work has aimed to achieve vibration goals for cosmetic damage, human comfort and sensitive buildings. Vibration monitoring data is provided within Section 3.1.
12.	Property damage relating to ground movement	Yes	The management of potential impacts relating to property damage has been completed in accordance with Imposed Condition 12.
13.	Air quality – Works must aim to achieve air quality goals for human health and nuisance.	Yes	CBGU project works have aimed to achieve air quality goals. Air quality monitoring data is provided within Section 3.3.
14.	Traffic and transport – Works must minimise adverse impacts on road safety and traffic flow.	Yes	CBGU project works have been conducted in a manner that has minimised adverse impacts on road safety and traffic flow.
15.	Water quality – Works must not discharge surface water and groundwater from the construction site above the relevant environmental values and water quality objectives.	Yes	CBGU has prepared and manages processes to ensure water quality is managed in accordance with Imposed Condition 15.
16.	Water resources – evaluate potential impact, plan works, implement controls and monitor the inflow of groundwater associated with drawdown.	Yes	CBGU project works are managed in accordance with Imposed Condition 16.
17.	Surface water – Must be designed to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event and constructed to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.	Yes	Design of the CBGU Project works considers the requirements of Imposed Condition 17.
18.	Erosion and sediment control – Provisions for erosion and sediment control must be consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS52.	Yes	CBGU has prepared and manages processes to ensure erosion & sediment control is managed in accordance with Imposed Condition 18.

CG Condition	Requirement Summary	Compliance Met (Yes/No/NA)	Comment
19.	Acid Sulfate Soils managed as per the <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.
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.
22.	Flood Water – Temporary emission to allow the release of Flood Waters to high flow receiving waters.	Yes	CBGU project works have been conducted in accordance with the provisions available to manage floodwaters.

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 Reports acknowledges instances that exist that these goals may not be achieved.

No vibration monitoring was triggered or required in February 2023. 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)
-----	------------	-----------------	-------------	----------	---	-------------------------------------	-----------------------------	----------------------	--

Nil

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 where these goals may not be achieved.

Noise monitoring was conducted on fifteen (15) occasions during February 2023. 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.	2/02/2023	12:31:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Demolition works	Railway	60	72.7	50	701.	Yes
2.	6/02/2023	1:20:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Demolition works	Construction	60	82.8 ^[3]	50	80.8	Yes
3.	6/02/2023	1:56:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	External	Concrete works	Traffic	67	71	57	68.1	Yes
4.	7/02/2023	10:12:00 AM	Railway Terrace (Southern Portal)	Construction Monitoring at Sensitive Places	External	Utility works	Construction	49	61.9	42	59.6	Yes
5.	7/02/2023	10:46:00 AM	Stanley Street (Woolloongabba Precinct)	Model Verification	External	Concrete works	Construction and traffic	72	68.6	62	65.9	Yes

No.	Date	Time (AM / PM)	Location (Street Name) (Construction Precinct)	Purpose of Monitoring	Internal or External ^[3] Monitoring	Activity	Dominant Noise Source	Noise Goal LA10 ^[1]	Noise level LA10	Noise Goal LAeq ^[2]	Noise level LAeq	Adhered to Project Requirements (Yes / No)
6.	7/02/2023	11:20:00 AM	Reid street (Woolloongabba Precinct)	Model Verification	External	Concrete works	Traffic	62	61.4	52	59.4	Yes
7.	7/02/2023	1:57:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Concrete works	Construction	72	69.2	62	67.5	Yes
8.	9/02/2023	1:15:00 PM	Roma Street (Roma Street Precinct)	Construction Monitoring at Sensitive Places	Internal	Demolition works	Railway	60	72.8	50	70.4	Yes
9.	16/02/2023	2:20:00 PM	Stanley Street (Woolloongabba Precinct)	Model Verification	External	Concrete works	Traffic	72	71.5	62	68.7	Yes
10.	24/02/2023	8:35:00 PM	Stanley Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Utility works	Construction	62	73.4	52	70.9	Yes
11.	24/02/2023	8:55:00 PM	Gibbon Street (Woolloongabba Precinct)	Construction Monitoring at Sensitive Places	External	Utility works	Construction	62	73.1	52	70.7	Yes
12.	25/02/2023	1:52:00 PM	Peter Doherty Street (Southern Portal)	Construction Monitoring at Sensitive Places	External	Bridge construction	Construction	59	66.3	57	63	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.	28/02/2023	10:48:00 AM	Gregory Terrace (Northern Portal)	Construction Monitoring at Sensitive Places	External	Concrete works	Construction	62	70.5	52	67.3	Yes
14.	28/02/2023	11:06:00 AM	Gregory Terrace (Northern Portal)	Construction Monitoring at Sensitive Places	External	Concrete works	Construction	62	85.1 ^[3]	52	81.6	Yes
15.	28/02/2023	1:36:00 PM	Albert Street (Albert Street Precinct)	Construction Monitoring at Sensitive Places	External	Concrete works	Construction	72	67.3	62	65.8	Yes

- [1] Intermittent noise goal (LA10)

- [2] Continuous noise goal (LAeq)

- [3] Condition 11(c) implemented

- 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 that exist that these goals may not be achieved. Dust deposition monitoring was performed in February 2023. The dust deposition gauges results for the reporting period are detailed below, and all monitoring data adhered to project requirements.

Table 4.2: 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	12.90	Air quality monitoring was performed during the reporting period. All results adhered to project requirements.
Roma Street Precinct				12.90	
Albert Street Precinct (North)				27.59	
Albert Street Precinct (South)				24.14	
Woolloongabba Precinct (North)				20.62	
Woolloongabba Precinct (South)				37.93	
Boggo Road Precinct (North)				34.48	
Boggo Road Precinct (South)				37.93	
Southern Portal (South)				17.24	
Southern Portal (East)				10.34	

3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particles (TSP) and particulate matter less than 10µm (PM10) monitoring were conducted during February 2023.

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 February 2023. 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	PM10	Woolloongabba		Albert		Boggo Road		Northern Portal	
	Project Goal ^[1]	Project Goal	TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
	(µg/m ³ /24 hr)									
01-Feb-23	80	50	12.12	11.91	19.35	14.13	9.42	9.39	11.58	11.53
02-Feb-23	80	50	8.78	8.65	17.63	12.93	4.58	4.58	7.51	7.49
03-Feb-23	80	50	12.71	12.46	19.35	14.08	– ^[3]	– ^[3]	11.45	11.40
04-Feb-23	80	50	13.17	12.87	15.08	11.29	– ^[3]	– ^[3]	11.86	11.77
05-Feb-23	80	50	9.12	8.99	12.87	11.45	3.96	3.93	9.48	9.44
06-Feb-23	80	50	– ^[2]	– ^[2]	23.07	17.23	4.62	4.60	8.11	8.06
07-Feb-23	80	50	– ^[2]	– ^[2]	22.38	16.29	6.19	6.16	7.05	7.02
08-Feb-23	80	50	8.20	8.04	17.25	12.93	5.42	5.40	7.00	6.97
09-Feb-23	80	50	8.12	8.02	17.00	12.73	– ^[3]	– ^[3]	5.82	5.80
10-Feb-23	80	50	10.70	10.52	17.62	13.64	3.85	3.81	9.32	9.28
11-Feb-23	80	50	7.97	7.79	18.74	13.60	5.41	5.38	9.21	9.19
12-Feb-23	80	50	10.88	10.70	10.69	9.73	5.68	5.65	9.76	9.72
13-Feb-23	80	50	18.70	18.49	27.65	21.66	10.69	10.67	17.23	17.17
14-Feb-23	80	50	14.12	14.05	24.13	18.72	5.90	5.90	13.62	13.58
15-Feb-23	80	50	10.90	10.77	18.97	15.01	– ^[3]	– ^[3]	8.83	8.80
16-Feb-23	80	50	7.53	7.39	27.61	19.15	2.79	2.74	7.79	7.74
17-Feb-23	80	50	5.90	5.74	25.48	16.81	3.88	3.88	6.43	6.39
18-Feb-23	80	50	5.54	5.41	13.15	9.53	3.55	3.54	5.39	5.37

Date	TSP	PM10	Woolloongabba		Albert		Boggo Road		Northern Portal	
	Project Goal ^[1]	Project Goal	TSP	PM 10	TSP	PM 10	TSP	PM 10	TSP	PM 10
	(µg/m ³ /24 hr)									
19-Feb-23	80	50	5.60	5.50	6.86	5.87	– ^[3]	– ^[3]	5.05	5.02
20-Feb-23	80	50	8.93	8.79	20.19	14.73	– ^[3]	– ^[3]	6.90	6.89
21-Feb-23	80	50	10.49	10.38	24.46	18.43	4.34	4.33	9.14	9.12
22-Feb-23	80	50	9.06	8.93	17.22	13.30	5.43	5.43	7.78	7.76
23-Feb-23	80	50	8.77	8.63	16.88	12.82	5.46	5.44	7.76	7.73
24-Feb-23	80	50	6.22	6.08	17.82	13.46	– ^[3]	– ^[3]	5.62	5.60
25-Feb-23	80	50	6.27	6.19	11.35	8.95	2.57	2.56	5.03	5.01
26-Feb-23	80	50	6.65	6.52	7.85	6.84	3.49	3.47	7.00	6.98
27-Feb-23	80	50	8.10	7.92	18.77	13.66	4.67	4.66	7.40	7.37
28-Feb-23	80	50	6.84	6.58	13.72	9.84	3.37	3.36	4.73	4.70

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

[2] The Woolloongabba air quality unit experienced technical difficulties on the 06th & 07th of February. The monitoring unit was inspected as soon as practicable, and the problem was resolved. A nearby (South Brisbane) DES Air Quality Station demonstrated compliant air quality during this outage period. These results are provided below. Low levels were also consistently monitored throughout the month when the unit was operating.

[3] The Boggo Road air quality unit experienced technical difficulties intermittently in February. The monitoring unit was inspected as soon as practicable, and the problem was resolved. A nearby (Woolloongabba) DES Air Quality Station demonstrated compliant air quality during this outage period. These results are provided below. Low levels were also consistently monitored throughout the month when the unit was operating.

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

- Brisbane CBD: PM10 daily Maximum average: **27.9 µg/m³/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/2/2023&timeframe=month>)
- South Brisbane: PM10 daily Maximum average: **28.8 µg/m³/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/2/2023&timeframe=month>)
- Woolloongabba: PM10 daily Maximum average: **37 µg/m³/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/2/2023&timeframe=month>).

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

Particle PM₁₀ at Brisbane CBD, 1–28 February 2023 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

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

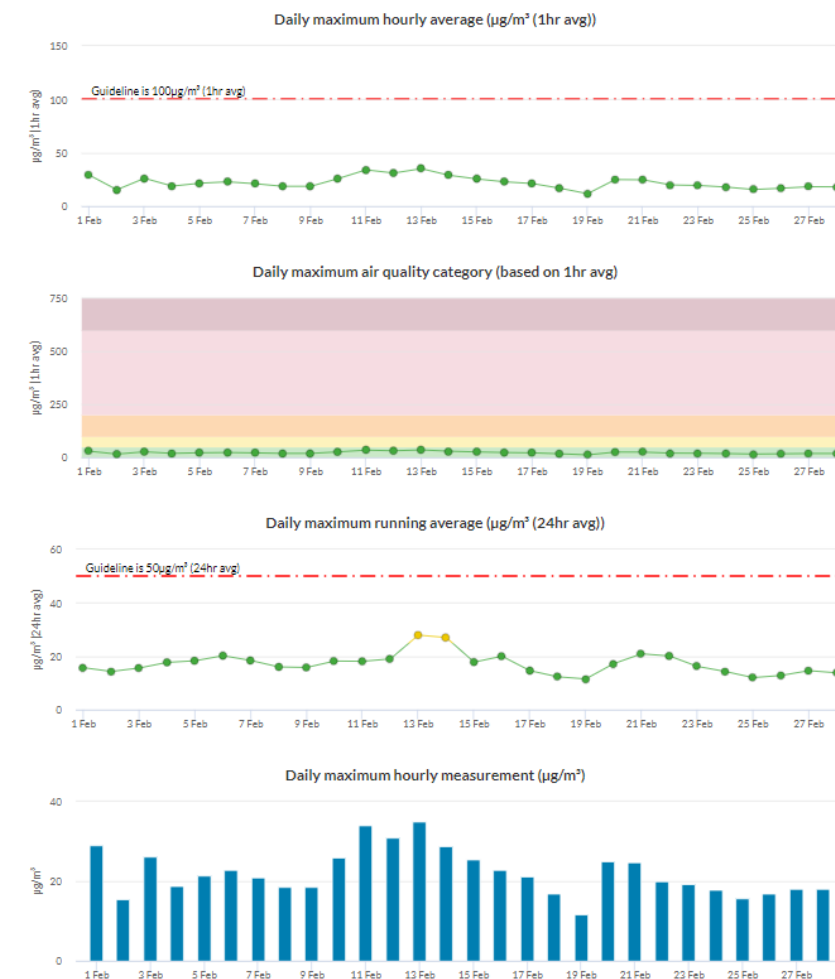


Figure 1: Brisbane CBD – DES Station - PM10 graph for February 2023 (reproduction from the DES website).

Particle PM₁₀ at South Brisbane, 1-28 February 2023 [about Particle PM₁₀](#)

[South Brisbane station overview](#)

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

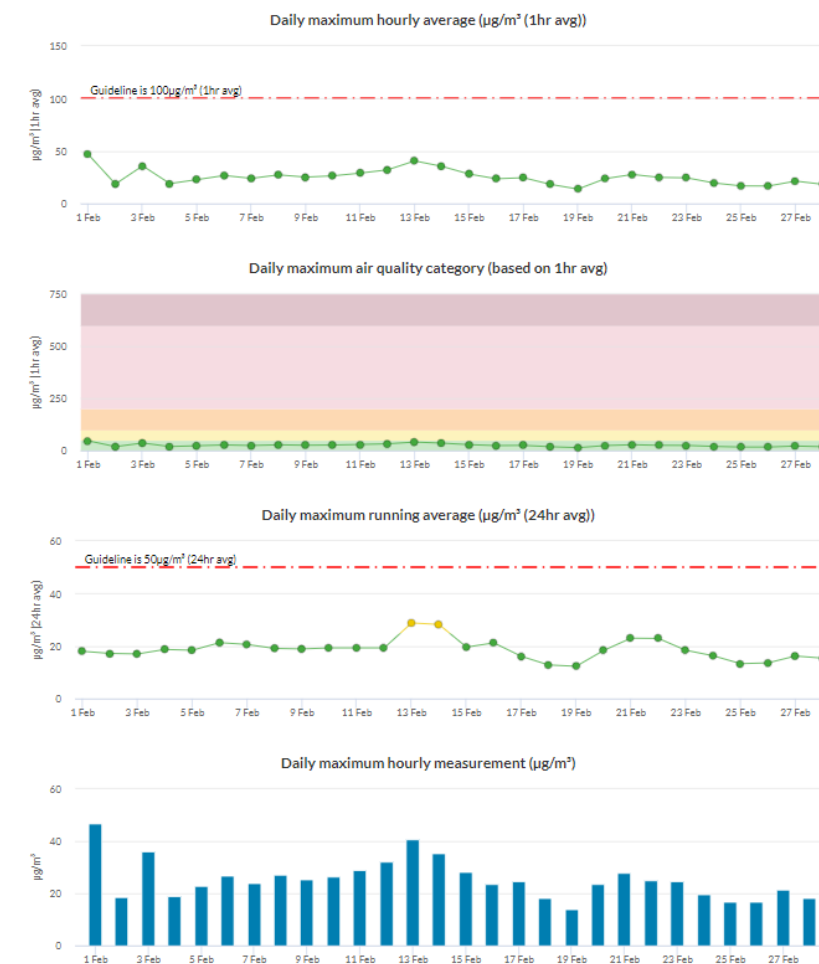


Figure 2: South Brisbane – DES Station - PM10 graph for February 2023 (reproduction from the DES website).

Particle PM₁₀ at Woolloongabba, 1–28 February 2023 [about Particle PM₁₀](#)

[Woolloongabba station overview](#)

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

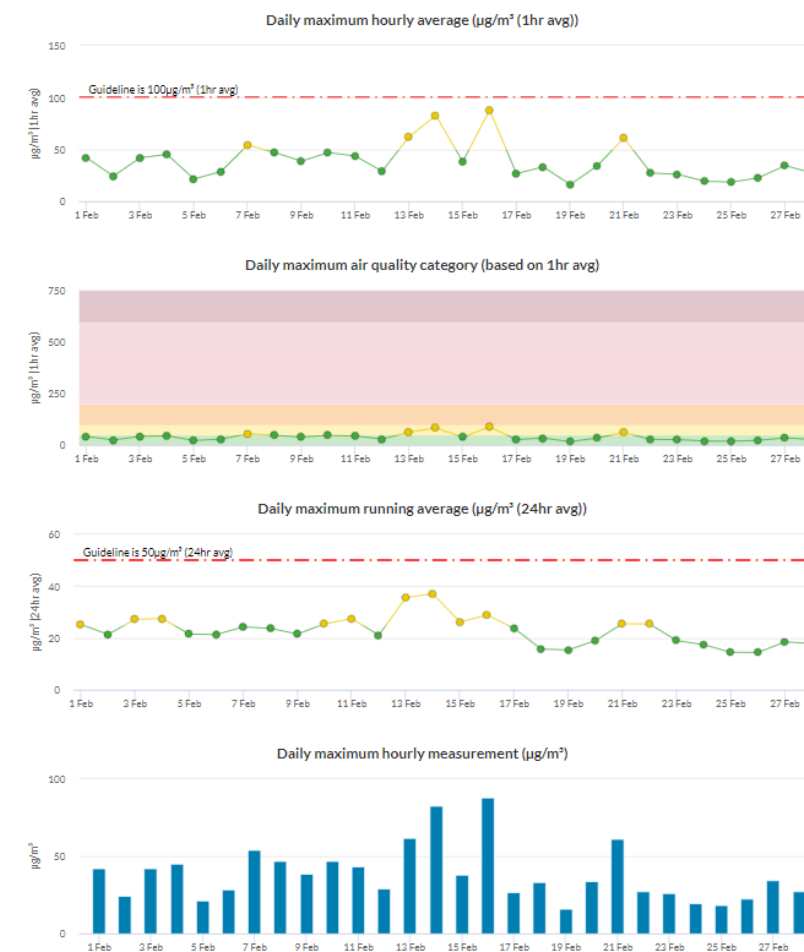


Figure 3: Woolloongabba – DES Station - PM10 graph for February 2023 (reproduction from the DES website).

3.4 Water Quality – Discharge

CBGU undertook four (4) water quality monitoring events prior to the release (groundwater and surface water) from the site.

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) ^[4]	Total phosphorus (µg/L)	Filterable Reactive phosphorus (µg/L) ^[3]	Chlorophyll a (µg/L)	Dissolved oxygen (%) ^[2]	
Albert Street	11/02/2023	7.73	<5	0.43	380	430	300	1100	20	<10	<1	87.14	Yes
Boggo Road	14/02/2023	7.60	<5	0.50	<10	770	400	1200	<10	<10	<1	85.93	Yes
Roma Street	15/02/2023	7.39	<5	0.58	80	450	300	800	160	<10	<1	84.56	Yes
Woolloongabba	15/02/2023	7.39	<5	3.17	20	390	300	700	140	<10	2.00	100.04	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] All results adhere to Project requirements in that site practices are designed to aim to achieve the water quality objectives. 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] All results adhere to Project requirements in that site practices aim to achieve the water quality objectives. These samples identified results generally consistent with pre-construction conditions, and no external influences were introduced by construction activity.
- [4] Total nitrogen levels adhered to project requirements in that site practices are designed to aim to achieve the water quality objectives. The results are mostly below that of the receiving environment. They are also considered abnormal compared to results from previous months, and are influenced by external factors (e.g., high rainfall events, overloaded sewage systems, fertilising natural areas, etc) rather than related to construction activities.
- 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 Poned/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	1/02/2023	8.13	5.08	Yes
2.	Northern Portal	2/02/2023	8.09	4.10	Yes
3.	Northern Portal	3/02/2023	8.14	8.26	Yes
4.	Northern Portal	4/02/2023	8.03	10.46	Yes
5.	Northern Portal	6/02/2023	8.04	3.32	Yes
6.	Northern Portal	7/02/2023	8.02	1.88	Yes
7.	Northern Portal	8/02/2023	8.01	4.23	Yes
8.	Northern Portal	9/02/2023	8.06	26.40	Yes
9.	Northern Portal	10/02/2023	8.04	12.73	Yes
10.	Northern Portal	11/02/2023	8.07	3.24	Yes
11.	Northern Portal	13/02/2023	8.17	2.81	Yes
12.	Southern Portal	14/02/2023	8.19	7.69	Yes
13.	Northern Portal	15/02/2023	8.08	32.08	Yes
14.	Northern Portal	16/02/2023	8.09	28.30	Yes
15.	Northern Portal	17/02/2023	8.08	18.90	Yes

16.	Northern Portal	18/02/2023	8.05	7.37	Yes
17.	Northern Portal	20/02/2023	8.12	5.55	Yes
18.	Northern Portal	21/02/2023	8.12	4.11	Yes
19.	Northern Portal	22/02/2023	8.28	27.50	Yes
20.	Northern Portal	23/02/2023	6.72	18.70	Yes
21.	Northern Portal	24/02/2023	8.31	9.96	Yes
22.	Northern Portal	25/02/2023	7.96	4.07	Yes
23.	Northern Portal	27/02/2023	8.12	6.13	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 February 2023, CBGU JV undertook one (1) round of surface water sampling at five (5) site locations (upstream and downstream). A rain event that occurred on the 14th of February triggered post-rainfall sampling at all precincts.

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
Northern Portal	Upstream	15/02/2023	Monthly/Post rain	15.85	569	101.2	7.73
Northern Portal	Downstream	15/02/2023	Monthly/Post rain	53.9	421	55.2	7.46
Roma Street	Upstream	15/02/2023	Monthly/Post rain	3.49	36600	83.96	7.85
Roma Street	Downstream	15/02/2023	Monthly/Post rain	2.97	36300	84.73	7.81
Albert Street	Upstream	15/02/2023	Monthly/Post rain	5.58	34800	79.88	7.93
Albert Street	Downstream	15/02/2023	Monthly/Post rain	4.74	34800	77.46	7.9
Woolloongabba	Upstream	15/02/2023	Monthly/Post rain	7.91	32800	98.45	7.8
Woolloongabba	Downstream	15/02/2023	Monthly/Post rain	11.25	5530	101.09	7.86
Boggo Road ^[1]	Downstream	15/02/2023	Monthly/Post rain	46.3	408	81.84	6.6

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

4 Non-Compliances

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

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

Table 9: Non-Compliance Events 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
-------------	---------------------------------------	--	---------------------	---	-----------------

Nil

5 Complaints

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

During February 2023, three (3) 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.	6/02/2023	Albert Street (Albert Street Precinct)	Workforce Behaviour	A stakeholder contacted the Project regarding worker behaviour. CBGU investigated the event and reminded the workforce of employee expectations.	Closed
2.	26/02/2023	Peter Doherty (Southern Area)	Noise	A stakeholder contacted the Project regarding noise generated from the Southern Area Worksite during extended work hours. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU reviewed the circumstances and monitoring confirmed works adhered to the Project's noise requirements, and the works undertaken were consistent with the community notification.	Closed
3.	28/02/2023	Albert Street (Albert Street Precinct)	Noise	A stakeholder contacted the Project regarding noise generated from the Albert Street Worksite during extended work hours. CBGU provided the stakeholder with an overview of the works occurring and their duration. CBGU also outlined the mitigation measures used to alleviate potential impacts and ensure compliance. CBGU reviewed the circumstances and monitoring confirmed works adhered to the Project's noise requirements, and the works undertaken were consistent with the community notification.	Closed