

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

Cross River Rail Project

Monthly Environmental Report

September 2022

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Executive Summary

This Monthly Environmental Report (MER) has been produced for Project Works undertaken on site for September 2022 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 CBGU JV on behalf of Pulse (TSD Contractor) for their Relevant Project Works were endorsed by the EM and submitted to the Coordinator-General in accordance with Condition 4(a) and 4(b) respectively.

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

| Imposed Condition | Requirement Summary | Compliance Met (Yes/No/NA) | Comment |
|-------------------|--|----------------------------|---|
| 1. | General conditions – compliance with the Project Changes relevant to the contractor's scope | Yes | The CEMP and site management plans are in accordance with the Project Changes. |
| 2. | Outline Environmental Management Plan – timely submission to the Coordinator-General including required sub-plans | Yes | OEMP dated June 2020 is effective for the reporting period. |
| 3. | Design – achievement of the Environmental Design Requirements | NA | Ongoing progress with design packages. |
| 4. | Construction Environmental Management Plan – all relating to Relevant Project Works. | Yes | RIS – CEMP Revision 13 covering full scope of RIS works is effective from 14 March 2022. TSD – CEMP Revision 10 covering full scope of TSD works is effective from 28 June 2022. |
| 5. | Compliance and Incident management – Non-compliance events, notifications and reporting. | Yes | There were no non-compliance events (NCEs) in September 2022. Refer to Section 2.5 of this report. |

| Imposed Condition | Requirement Summary | Compliance Met (Yes/No/NA) | Comment |
|-------------------|--|----------------------------|--|
| 6. | Reporting – Monthly and Annual reporting. | Yes | This MER, including RIS and TSD Monthly Reports, has been submitted in accordance with the conditioned requirements. Refer to Appendix A and Appendix B . |
| 7. | Environmental Monitor (EM) – engaged and functions resumed. | Yes | Ongoing weekly site inspections and document reviews continue to take place. |
| 8. | Community Relations Monitor (CRM) – engaged and functions resumed | Yes | Ongoing. |
| 9. | Community Engagement Plan – developed and endorsed by Environmental Monitor. | Yes | CEMPs endorsed with Community Engagement Plan. |
| 10. | Hours of work – Project Works undertaken during approved hours. | Yes | Project Works have been undertaken in accordance with project requirements. This has been achieved through Standard Working Hours, Extended work hours and Managed Work. |
| 11. | Noise – Project Works must aim to achieve internal noise goals for human health and well-being. | Yes | Noise monitoring met project noise requirements at Sensitive Places. RIS – Noise monitoring was not triggered based on the predictive noise assessments for the relevant project works during the reporting period. TSD – Noise monitoring was undertaken to validate predicted noise modelling and for stakeholder enquiries. 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. The results met the requirements of the endorsed CEMP. TSD – Vibration monitoring was not triggered during the reporting period. |
| 12. | Property damage – relating to ground movement. | Yes | 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 |

| Imposed Condition | Requirement Summary | Compliance Met (Yes/No/NA) | Comment |
|-------------------|---|----------------------------|---|
| | | | <p>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 August.</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>An exceedance of the PM₁₀ and TSP goals was recorded on 7 September 2022 at RNA, however the investigation confirmed the RIS scope of works had still met the project outcomes set out by the CG Imposed Conditions and OEMP. See Appendix A Section 3.2.4.1 for more detail.</p> <p>RIS – Refer to Appendix A (Tables 7, 8 and 9 and Section 3.2, plus Figures 1, 2 and 3).</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 | <p>Traffic Management Plans are covered in the CEMPs. Sub-plans for all active worksites have been reviewed by the EM.</p> |
| 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 August.</p> <p>Surface water discharge occurred at Clapham Yard and Fairfield Station during the reporting period. Monitoring results showed the parameters meet the discharge criteria. See Appendix A (Section 3.3.5) for further details.</p> <p>Post-rainfall monitoring occurred at Breakfast Creek, Moolabin Creek and Rocky Water Holes. See Appendix A (Section 3.3.2 and Tables 10 and 11) for further details.</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</p> |

| Imposed Condition | Requirement Summary | Compliance Met (Yes/No/NA) | Comment |
|-------------------|--|----------------------------|--|
| | | | <p>consistent with the pre-construction water quality levels. The Boggo Road sample was misplaced by a third-party during transit to be analysed. The results were expected to be consistent with previous months and testing will proceed next month.</p> <p>Surface water discharges occurred at the Northern Portal worksite on 21 occasions. The monitoring results demonstrated the surface water discharges met project water quality discharge criteria.</p> <p>Post-rainfall monitoring in receiving waters of the Woolloongabba and Albert Street sites occurred due to a localised rainfall event.</p> <p>Routine in stream monthly monitoring met project water quality requirements.</p> <p>Refer to Appendix B (Table 6) for ground water monitoring results.</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) | Yes | Site specific ESC plans for all active work sites have been reviewed by the EM and implemented on site. |

| Imposed Condition | Requirement Summary | Compliance Met (Yes/No/NA) | Comment |
|-------------------|--|----------------------------|---|
| | and the Department of Transport and Main Roads' Technical Standard MRTS52. | | |
| 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. | NA | N/A |

Non-Compliance Events

There were no NCEs raised in September 2022.

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.

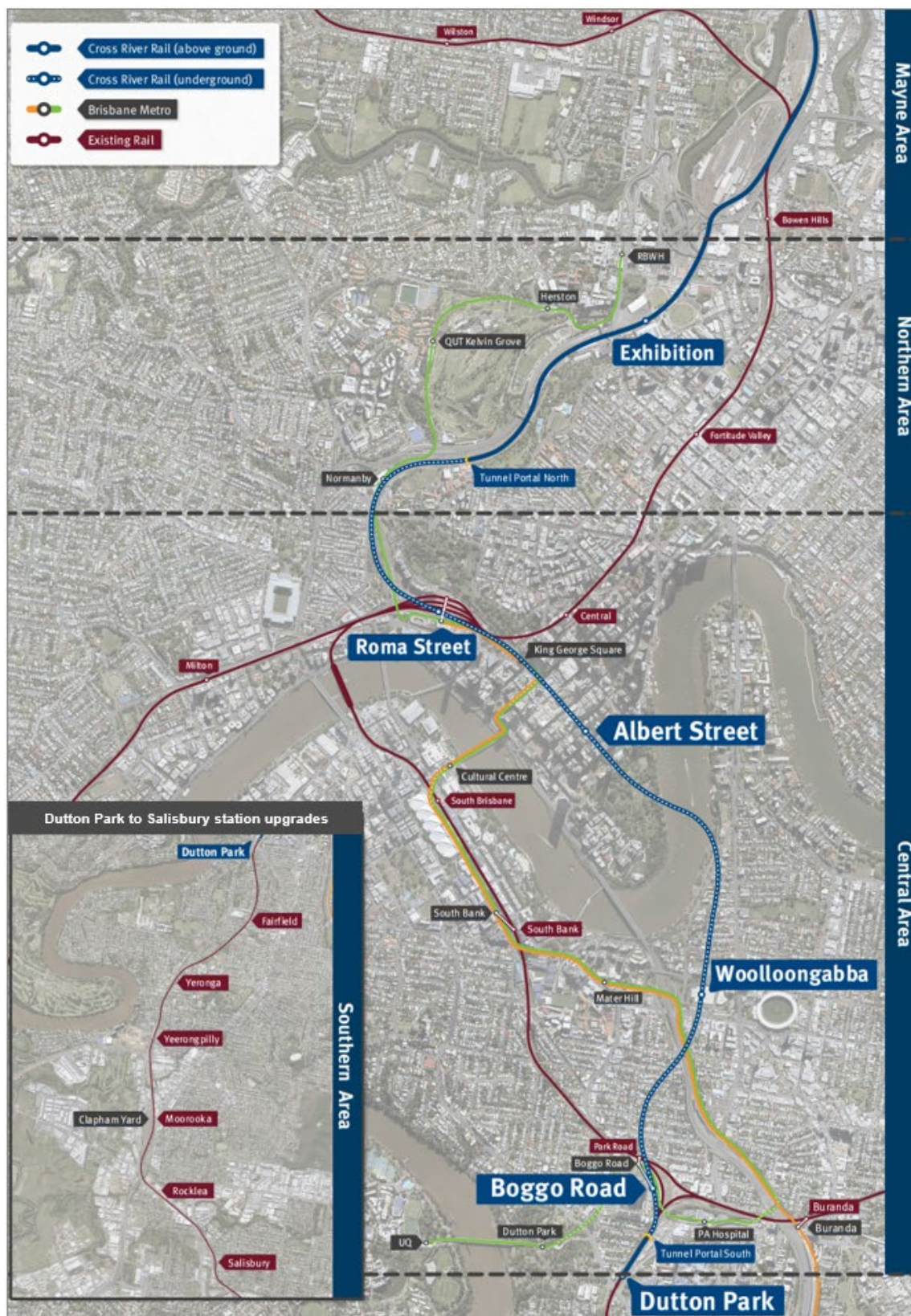
The two main delivery packages which require reporting under the Coordinator-General's imposed conditions are:

- 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 are shown in the figure over.



1.3. Reporting Framework

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

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

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

1.4. Monthly Environment Report Endorsement

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

2. Compliance Review

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

2.1. Relevant Project Works

The following Project Works were undertaken in September 2022:

| Area | Project Works |
|---------------|--|
| Mayne Area | Mayne Yard North – <ul style="list-style-type: none">• Mayne Yard North and associated facilities have been completed by SCAS RIS #44, at the end of July, and is ready for QR acceptance;• Tripod Bridge (BR11/13) incl RSS walls completed, deck units landed and barriers under construction;• Breakfast Ck Bridge (BR08) – RW150 completed and temp works for Super-T installation commenced; and• RW130 – Retaining wall on Eastern side under ICB overpass nearing completion• Demolition of DLP area commenced. |
| Northern Area | RNA/ Northern Corridor – <ul style="list-style-type: none">• Mayne Yard North and associated facilities have been completed by SCAS RIS #44, at the end of July, and is ready for QR acceptance;• Tripod Bridge (BR11/13) incl RSS walls completed, deck units landed and barriers under construction;• Breakfast Ck Bridge (BR08) – RW150 completed and temp works for Super-T installation commenced;• Demolition of DLP area commenced; and• RW130 – Retaining wall on Eastern side under ICB overpass nearing completion. Northern Portal – <ul style="list-style-type: none">• Internal walls and liner walls in progress;• Cavi drain and base slab installation in open trough section ongoing;• stormwater drainage installation; and• Intermediary firewall works ongoing. |
| Central Area | Roma Street – <ul style="list-style-type: none">• Station cavern – ongoing arch pours (22 of 25 complete), BoH slab and wall pours and mobilisation of the mezzanine team onsite; |

| Area | Project Works |
|---------------|--|
| | <ul style="list-style-type: none"> Station Building – B3 Front of House (FoH) slabs and B2 Back of House (BoH) slabs continue; Services building – B2 substructure complete, B1 wall panels complete and ongoing slab FRP works; Platform 2 – structural steel fabrication ongoing; and INB underpinning – commenced services relocation in preparation for infill pour; <p>Albert Street –</p> <ul style="list-style-type: none"> Lot 1 – completed B9 slab, B9 perimeter wall ongoing and slip form module commenced delivery to site; Lot 2 – permanent lining of station cavern ongoing; and Lot 3 – completed 100% of B4 slabs and lift pit walls, completed installation of arch formwork in adits AA3 and AA1. <p>Woolloongabba –</p> <ul style="list-style-type: none"> Dismantling of the jump form system is complete; Ongoing construction of perimeter wall in station box using auto wall climbers; Beam assembly and installation into southern cavern; Busway retaining wall FRP works ongoing; and Blockworks ongoing in B9, B7 and B3. <p>Tunnels –</p> <ul style="list-style-type: none"> Mined tunnel MC01 bearing pad install ongoing, and track build continues from Roma St to Northern Portal; Southern mined downline tunnel – walkway construction commenced; and XP1, XP2 and XP3 end wall FRP commenced. <p>Boggo Road –</p> <ul style="list-style-type: none"> Concrete to in-situ structure at 52% complete; Reinforcement to in-situ structure 60% complete; Precast Vierendeel installation commenced; and B3 permanent bench slab steel fixing commenced. <p>Southern Portal –</p> <ul style="list-style-type: none"> Detailed excavation and shotcrete within cut and cover trough ongoing 90%; Sewer and stormwater manholes completed at shafts 3 and 4. Demolition works commenced ahead of final live connections and reinstatement. Open trough base slab drainage works ongoing; and Continued fabrication of PAH Bridge main bridge girders and pylon on Batam Island, Indonesia. Fabrication 55% complete for first shipment. |
| Southern Area | <p>Dutton Park –</p> <ul style="list-style-type: none"> SCAS preparation & general site access ongoing in readiness for October 1 – 10 SCAS; and Park Road Track Sectioning Cabinet (TSC) Building Foundations completed. <p>Fairfield Station –</p> <ul style="list-style-type: none"> Platform slabs progressing on PL1 & PL2 throughout the month; Finalisation of PL 2/3 canopy structural steel; Blockwork to PL2/3 buildings completed, blockwork retaining walls progressing to PL1; Offsite fit-out & completion of overpass module screens, painting and flooring; and Crane pad preparation for overpass module lifts planned during SCAS 1 – 10 October. |

| Area | Project Works |
|------|--|
| | <p>Yeronga Station –</p> <ul style="list-style-type: none"> • New pedestrian overpass opened to public on 30 September; • Commencement of works on Lift 01, 02 commenced during September; • Station entrance canopies & slabs progressing; and • General station building fit-out completion scope progressing. <p>Clapham Yard –</p> <ul style="list-style-type: none"> • RSS wall construction of BR94 (Chale Street Road over Rail Bridge) commenced; • Drainage outlet at Rocky Water Hole completed; • SEQ Watermain protection completed; • CSR works ongoing; • Retaining Wall RW650 (in front of Aurizon facility) completed; and • Capping along Dual Gauge alignment commenced. <p>Rocklea Station –</p> <ul style="list-style-type: none"> • Station closure occurred as planned on the morning of 12 September; and • Following the closure, services disconnections, asbestos removal, site setup & stockpiling occurred in readiness for major works during the October – 10 SCAS. |

2.2. Key Environmental Elements

2.2.1. Noise

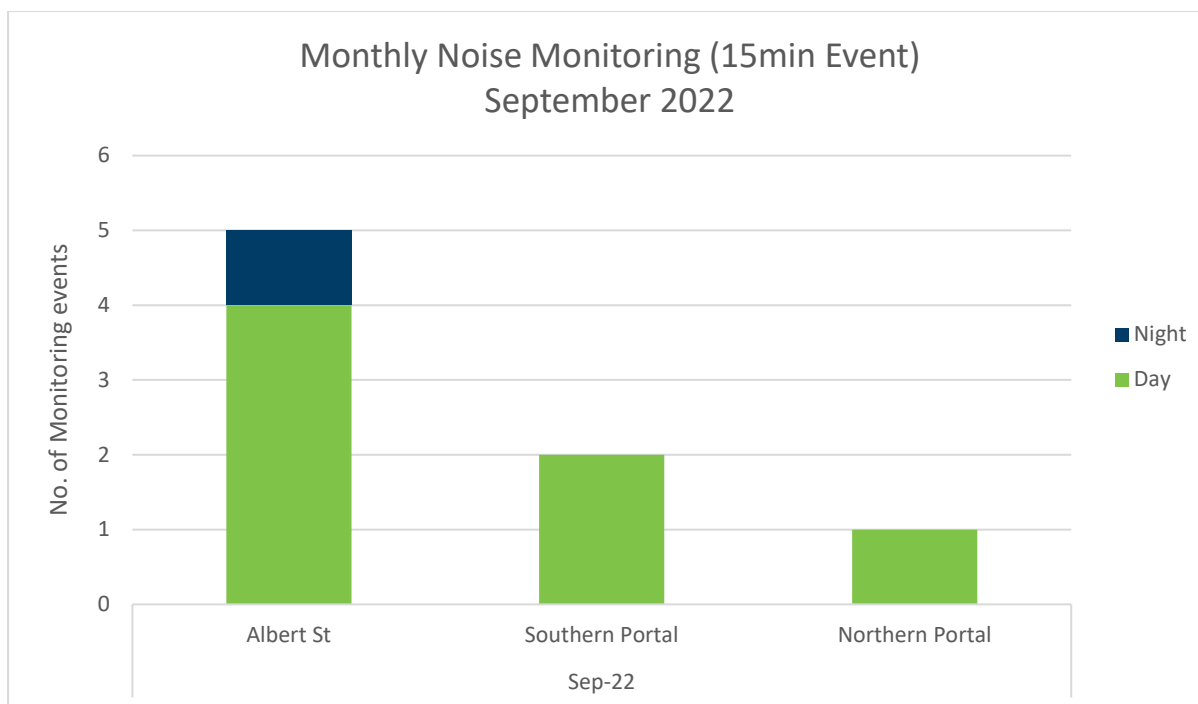
The Coordinator-General's conditions establish a framework for managing the impacts of noise. The Imposed Conditions do not establish noise limits. Compliance with the Imposed Conditions noise requirements involves demonstrating the implementation of the endorsed CEMP and associated Noise and Vibration Management Plan. This establishes the management measures to be applied which aims to achieve the identified noise goals as far as reasonably practicable. The CEMP also includes requirements for the provision of the required community notifications of upcoming work, potential impacts, and how the project team can be contacted in relation to any potential impacts.

For Project Works where potential noise impacts are modelled to be above the noise goal but below the noise goal plus 20dBA, this work is authorised where the endorsed CEMP and associated Noise and Vibration Management Plan is being implemented, including communicating construction activities to potential and actual Directly Affected Persons (DAPs). For Project Works where potential noise impacts are predicted to be more than 20dBA above the relevant noise goal, specific engagement is required with DAPs for these works.

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

In the Central Area, noise monitoring was undertaken to validate predictive modelling at Sensitive Places close to the project worksites and in response to noise complaints. 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).

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 triggered at RNA during the use of a 430kg hammer in close proximity to the State heritage listed John MacDonald Stand. Monitoring results are detailed in **Appendix A** (Table 5). The RIS contractors reported that the project vibration requirements have been met.

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.

Although within the Coordinator Generals deposited dust goal of 120 mg/m²/day, the Dutton Park gauge did record a level of 110 mg/m²/day. This was due to a range of contributing factors including the location of the gauge which is currently placed on the construction area boundary between 15 Cope Street (project area) and 211 Annerley Road (residential receiver). During the monitoring period, construction activities consisted of building demolition and cut and fill earthworks, with many occurring immediately adjacent to the dust gauge. The air quality predictive assessment did not trigger the need to monitor dust deposition at this site, however, Unity have taken a conservative approach and are undertaking the dust deposition during the current construction activities.

No exceedances of dust deposition levels were recorded for the current period and no dust complaints were received. Dust deposition results are detailed in **Appendix A** (Table 7 and Figure 1) and **Appendix B** (Table 4.2).

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

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 | <ul style="list-style-type: none"> - Monitoring was extended beyond Australian Standard exposure period - Results met air quality goal, however, are indicative only |
| Northern Area | RNA / Exhibition | RNA Showgrounds | - Results met air quality goal |
| | Northern Portal | Northern Portal (near Brisbane Girls Grammar School) | - Results met air quality goal |
| Central Area | Albert Street | Mary Street | - Results met air quality goal |
| | | Elizabeth Street | - Results met air quality goal |
| | Boggo Road | Quarry Street (north of the site) | - Results met air quality goal |
| | | Peter Doherty Street/Leukemia Foundation | - Results met air quality goal |
| | Southern Portal | Dutton Park Station | - Results met air quality goal |
| | | PA Hospital - Central Energy Unit along Kent Street | - Results met air quality goal |
| | Roma Street | Roma Street Station | - Results met air quality goal |
| | Woolloongabba | Russian Orthodox Cathedral | - Results met air quality goal |
| | | Woolloongabba Busway | - Results met air quality goal |
| Southern Area | Dutton Park | Dutton Park | - Results met air quality goal |
| | Clapham Yard | Clapham Yard | - Results met air quality goal |

2.2.3.2. Particulate Matter and Total Suspended Particulates

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

The Woolloongabba air quality monitor experienced technical difficulties during the month and the monitor stopped functioning on 1 – 4 September 2022. The monitor was sent away for repairs and a hire unit was installed on 5 September 2022. The review of a nearby DES air quality monitoring station (South Brisbane) demonstrated PM₁₀ and TSP levels during the period when the monitor was down, were compliant with project air quality goals.

The Boggo Road air quality monitor experienced technical difficulties during the month and the monitor stopped functioning on 3 – 4 September 2022. As soon as practicable the unit was inspected and the problem was resolved. The review of a nearby DES air quality monitoring station (South Brisbane) demonstrated PM₁₀ and TSP levels were compliant with project air quality goals during the period when the monitor was down.

Unity has continued to utilise a courtesy rental air quality monitor from the manufacturer whilst the previous Clapham Yard monitor is being assessed by the manufacturer in New South Wales. The rental monitor was installed at Mayne Yard East.

The air quality monitor located at Clapham Yard experienced power failures which coincided with days of lower sun exposure resulting in less than 75% of data collected over a 24-hour period for the following days:

- 1 to 4 September 2022,
- 6 to 10 September 2022, and
- 17, 22 and 23 September 2022.

Therefore, the TSP and PM10 data captured during these days are indicative only. Unity are in the process of implementing an equipment upgrade to better manage the power requirements to ensure consistency of data capture at this station..

The air quality monitor will be relocated in November 2022 to a new location advised by the Certified Air Quality Professional (CAQP).

It is noted that during the reporting period, there were no complaints pertaining to air quality from the Clapham Yard airshed area, the deposited dust results met the Air Quality Goals and significant erosion control (soil binder), and active dust suppression (water carts) were implemented at Clapham Yard.

Unity experienced an exceedance on 7 September 2022 of the TSP and PM₁₀ 24-hr Air Quality Goals at the RNA site. These results were:

- TSP result of 81 µg/m³ (Goal is 80 µg/m³)
- PM10 result of 63 µg/m³ (Goal is 50 µg/m³)

Unity completed a detailed review and investigation into these results, and it was determined that this exceedance was likely related to project works on that day. This was during the extended SCAS (EXT-014). It is however noted that:

- EXT-014 SCAS covered a 10-day period from 01 to 10 September 2022;
- Exceedance of the Air Quality Goals only occurred on one (1) day during the possessions despite the increase in Project Works intensity;
- On the day of the exceedances, the sensitive receivers, which comprise of residential receivers and one commercial receiver on Tufton Street, were upwind of the Project Works;
- There are no sensitive receivers downwind of the works as the site is located adjacent the Clem Jones Tunnel Northern Portal Structure;
- There were no complaints pertaining to air quality matters on the day of the exceedances and during the duration of the extended SCAS.
- For the remainder of the reporting period there were no exceedances of the Air Quality Goals.

Therefore, the RIS scope of works has still met the project outcomes set out by the CG Imposed Conditions and OEMP.

Particulates results are detailed in **Appendix A** (Section 3.2.2 and Figures 2 and 3) and **Appendix B** (Table 5).

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

| Air Quality – PM ₁₀ / TSP Monitoring | | | |
|---|------------|---------------------|--|
| Area | Worksite | Monitoring Location | Comments |
| Mayne Area | Mayne Yard | Mayne Yard North | - Monitoring not required as per Project's CAQP advice |
| | Mayne Yard | Mayne Yard East | - Results met air quality goals |

| Air Quality – PM ₁₀ / TSP Monitoring | | | |
|---|----------------------------|--|--|
| Area | Worksite | Monitoring Location | Comments |
| Northern Area | RNA / Exhibition | RNA showgrounds | <ul style="list-style-type: none"> - Results met air quality goals - Exceedance recorded on 7 September 2022, however, Project Works met project outcomes of the CG Imposed Conditions and the OEMP |
| | Northern Portal | Brisbane Girls Grammar School | <ul style="list-style-type: none"> - Results met air quality goals |
| Central Area | Albert St | iStay River City and Capri (Corner of Mary Street and Albert Street) | <ul style="list-style-type: none"> - Results met air quality goals |
| | Boggo Rd / Southern Portal | North-east of Boggo Road worksite | <ul style="list-style-type: none"> - Results met air quality goals - Monitoring unit experienced a technical fault with no results between 3 – 4 September 2022 |
| | Woolloongabba | Place Park, Woolloongabba | <ul style="list-style-type: none"> - Results met air quality goals - Monitoring unit experienced a technical fault with no results between 1 – 4 September 2022 |
| Southern Area | Clapham Yard | Clapham Yard | <ul style="list-style-type: none"> - Results met air quality goals - Monitoring unit experienced power failures and failed to record at least 75% of data between 1-4, 6-10 and 17, 22 and 23 September 2022. Indicative results only on these days. |

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

Active surface water discharges occurred across the Northern Portal, Fairfield and Clapham Yard worksites through dewatering activities. Post-rainfall water quality monitoring occurred in the receiving waters of the following sites: Albert Street, Woolloongabba and Clapham Yard during the month.

In the Northern Area, water quality monitoring was triggered on 21 occasions from the Northern Portal worksite as water used for construction activities was treated and actively discharged to the stormwater network. The contractor confirmed the discharge criteria was met. See **Appendix B** (Table 7) for further details.

Surface water discharge also occurred at Clapham Yard and Fairfield Station during the reporting period. Monitoring results showed the parameters meet the discharge criteria. See **Appendix A** (Section 3.3.5) for further details.

Post-rainfall monitoring in receiving waters of the Woolloongabba and Albert Street sites occurred due to a localised rainfall event. Downstream locations did not exhibit an increase of more than 10% Total Suspended Solids (TSS) therefore there was no exceedance of the water quality investigation criteria.

Post rainfall monitoring also occurred at Breakfast Creek, Moolabin Creek and Rocky Water Holes. Further investigation was triggered at Moolabin Creek as the downstream results showed an increase

of more than 10% TSS than the upstream measurement. The findings of the investigation concluded that the site ESC measures were appropriately implemented and there is no evidence to suggest the increase in TSS is project related. See **Appendix A** (Section 3.3.2.1 and Table 11) for further details.

Routine surface water quality monitoring was undertaken in the receiving waters of all TSD 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"> - Post-rainfall monitoring undertaken. - ESC was implemented in accordance with site specific ESC Plan. |
| | Northern Portal | Yes | No | Yes | <ul style="list-style-type: none"> - Active surface water discharge met water quality investigation criteria. - Routine in-stream monitoring undertaken in accordance with WQMP. |
| Northern Area | Northern Corridor | No | No | N/A | <ul style="list-style-type: none"> - ESC was implemented in accordance with site specific ESC Plan. |
| | RNA/Exhibition | 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 | No | Yes | <ul style="list-style-type: none"> - Routine in-stream monitoring undertaken in accordance with WQMP. |
| | Roma Street | No | No | Yes | <ul style="list-style-type: none"> - 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 | No | No | Yes | <ul style="list-style-type: none"> - Routine in-stream monitoring undertaken in accordance with WQMP. |

| Surface Water Quality Monitoring | | | | | |
|----------------------------------|-------------------|-----------|----------------------|--------------------|--|
| Area | Worksite | Discharge | Post-Rain Monitoring | Routine Monitoring | Comments |
| Southern Area | Fairfield Station | Yes | No | No | <ul style="list-style-type: none"> - Active surface water discharge met water quality investigation criteria. - ESC was implemented in accordance with site specific ESC Plan. |
| | Clapham Yard | Yes | Yes | No | <ul style="list-style-type: none"> - Active surface water discharge met water quality investigation criteria. - Post-rainfall monitoring undertaken. - ESC was implemented in accordance with site specific ESC Plan. |

2.2.4.2. Groundwater

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

Groundwater discharge occurred in the Central Area at Roma Street, Albert Street, Woolloongabba, and Boggo Road worksites. The Boggo Road sample was misplaced by a third-party during transit to be analysed. The results were expected to be consistent with previous months and testing will proceed next month. Groundwater discharge results exceeded relevant water quality objectives (WQO's)² for total nitrogen, ammonia nitrogen, oxidised nitrogen, organic nitrogen and dissolved oxygen. However, these results are consistent with the receiving environment baseline monitoring pre-construction data except for Albert Street which recorded nitrogen levels above the baseline monitoring pre-construction data. Given the sites are located in highly urbanised inner-city settings, there are many influences on groundwater external to the project. The contractor confirmed no changes have occurred onsite to the construction methodologies that would have affected the groundwater results.

| Groundwater Quality Monitoring | | | |
|--------------------------------|------------------|-----------|---|
| Area | Worksite | Discharge | Comments |
| Mayne Area | Mayne Yard North | No | - No groundwater discharges. |
| Northern Area | RNA/Exhibition | No | - No groundwater discharges. |
| | Northern Portal | No | - No groundwater discharges. |
| Central Area | Albert Street | Yes | <ul style="list-style-type: none"> - Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions except for nitrogen levels that were recorded above the baseline monitoring pre-construction data. |

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

| Groundwater Quality Monitoring | | | |
|--------------------------------|------------------------------|-----------|--|
| Area | Worksite | Discharge | Comments |
| | Boggo Road / Southern Portal | Yes | <ul style="list-style-type: none"> - Groundwater discharge (dewatering). - Sample was misplaced by a third-party during transit to be analysed. The results were expected to be consistent with previous months and testing will proceed next month. |
| | Roma Street | Yes | <ul style="list-style-type: none"> - Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions. |
| | Woolloongabba | Yes | <ul style="list-style-type: none"> - Groundwater discharge (dewatering). - Discharge of groundwater did not meet Project WQO's but was generally consistent with pre-construction conditions |
| Southern Area | Clapham Yard | No | <ul style="list-style-type: none"> - No groundwater discharges. |

2.2.5. Erosion and Sediment Control

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

2.3. Complaints Management

A total of 11 complaints were received during the month all of which were project related.

RIS works received 4 complaints this month related to noise at Yeronga and vibration at Mayne Yard. For further details refer to **Appendix A** (Table 3).

TSD activities received a total of 7 complaints related to noise, worker behaviour, safety and vehicle access from the Albert Street, Roma Street and Boggo Road sites. For further details refer to **Appendix B** (Table 10) and below.

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

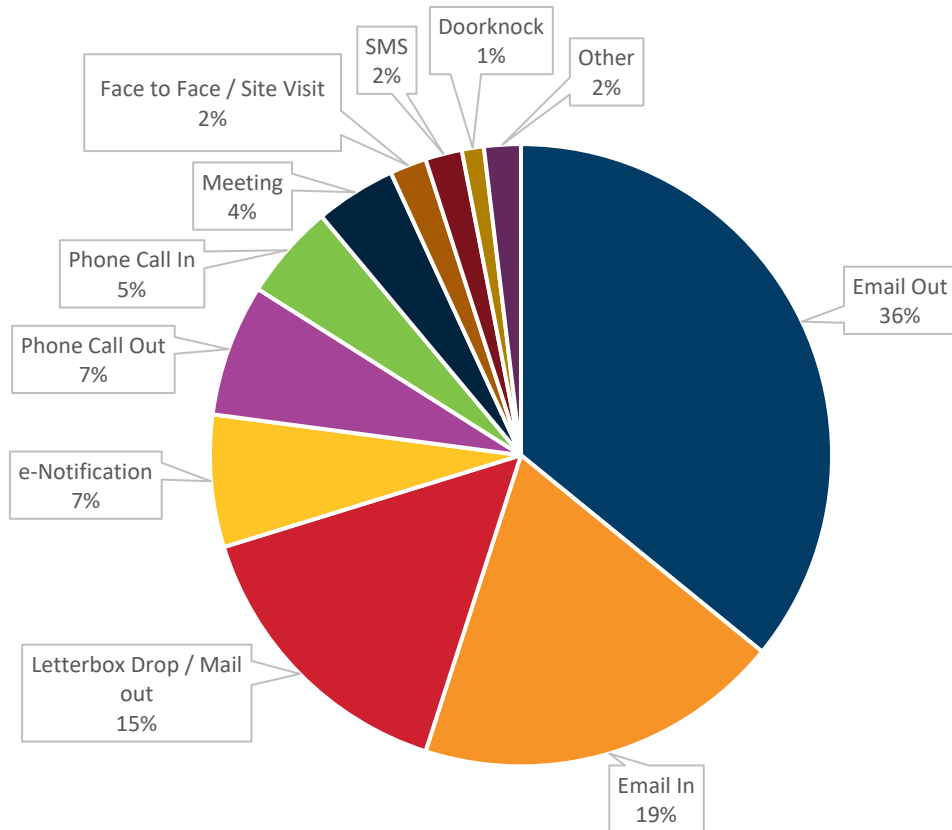


Where attended noise monitoring was undertaken in response to a complaint, the contractor confirmed on all occasions that works undertaken at the time of the complaint adhered to project requirements. In some instances, previous attended noise monitoring data, representative of the relevant construction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

Stakeholder Engagement September 2022



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"> Drainage and pavements of Access Road; Surcharge Load release and commence cross drainage repairs of pre-load introduction post drainage install; Commence soil nailed wall RW115; and BR08 (Breakfast Creek Bridge) landing Span 3 (centre Super T). |
| Northern Area | RNA/ Northern Corridor – <ul style="list-style-type: none"> Completion of demolition; Rock excavation south-eastern area of Ekka Station (not impacted by EXH Stage 2 switch); Service relocations East (between Bowen Bridge Road and Ekka Station); Commence OHLE foundations through the corridor; and Victoria Park Feeder Station handover to HV team by the civil team. Northern Portal – <ul style="list-style-type: none"> Installation of remaining deck units in October; Permanent watermain relocation for QR carwash planned for November; and Completion of MCO1 headwall. |

| Area | New planned works in the coming months |
|---------------|---|
| Central Area | <p>Roma Street –</p> <ul style="list-style-type: none"> • Cavern permanent arch pours and commencement of mezzanine beam installation; • Station building ongoing wall and slab and column pours; • Services building pre-cast panel installation and concrete pours; and • Infill around INB underpinning columns. <p>Albert Street –</p> <ul style="list-style-type: none"> • Lot 1 – commence slip form FRP works from B9; • Lot 2 – complete AS1 shaft shotcrete and blinding; and • Lot 3 – continue pre-fabrication steel delivery and steel fixing of B4 perimeter walls. <p>Woolloongabba –</p> <ul style="list-style-type: none"> • Commence cable trays in Levels B9/B7; • Complete mezzanine units in southern cavern; • Commence Northern cavern mezzanine beam installation; and • Commence SW4 headwall (north cavern arch). <p>Boggo Road –</p> <ul style="list-style-type: none"> • Concrete wall steel fixing and concrete pours ongoing; • Cavern back of house blockwork to commence in September; and • Delivery and installation of precast mezzanine beams ongoing. <p>Southern Portal –</p> <ul style="list-style-type: none"> • Internal roof installation in November in dive structure; • Permanent commissioning of stormwater diversion to occur in early October; • October and November SCAS's; and • Delivery of main girders to Brisbane planned for December. |
| Southern Area | <p>Dutton Park –</p> <ul style="list-style-type: none"> • Planned works in October 1-10 (RIS_TSD_34A); • CSR Scope including UTX-s; • Noise barrier removal; • Fenton Street MRAR works; and • Ensign Ave batter excavation for RW455. <p>Fairfield Station –</p> <ul style="list-style-type: none"> • Planned works in October 1 – 10 SCAS (RIS_TSD_34A); • Installation of new overpass modules 01, 02 & 03; • Installation of Stair 2 structural steel; • Installation of Lift 2 structural steel; • Finalise PL1 canopy structural steel; • Commence PL 2/3 roofing; • Demolition of existing overpass bridge; • FRP various platform slabs; and • Various trades and activities both on and off platform leading toward partial re-opening. <p>Yeronga Station –</p> <ul style="list-style-type: none"> • Planned works in October 1 – 10 SCAS (RIS_TSD_34A); • Open new pedestrian overpass; • Remove existing pedestrian overpass; • Demolition of existing temporary platform slabs; • FRP of infill permanent platform slabs incl coping & tactiles; • Finalise Stair 2 finishing works; |

| Area | New planned works in the coming months |
|------|---|
| | <ul style="list-style-type: none"> Relocation of ticketing equipment & SACID's; and Various trades and activities both on and off platform leading toward reopening. <p>Clapham Yard –</p> <ul style="list-style-type: none"> Commence creek works for drainage outlet in Moolabin Creek; and Continue CSR scope and commence pavements. |

2.5 Non-Compliance Events

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

| Status | Date of event | Category | Area as on the Report | Conditions affected | Gate 1 | Gate 2 | Gate 3 | Gate 4 | Gate 5 |
|---|---------------|---------------|---|---------------------|----------|----------|-----------|----------|----------|
| Open | | | | | | | | | |
| Closed | | | | | | | | | |
| CRRDA-001-RIS-001 | 11/09/19 | Noise | Yeronga Station | 4, 10, 11 | 11/10/19 | 14/11/19 | 26/11/19 | 18/12/19 | 01/10/20 |
| CRRDA-002-TSD-001 | 27/03/20 | ESC | Woolloongabba | 4, 15, 18 | 30/03/20 | 31/03/20 | 22/04/20 | 06/11/20 | 31/05/20 |
| CRRDA-003-TSD-002 | 27/03/20 | ESC | Boggo Rd | 4, 15, 18 | 30/03/20 | 31/03/20 | 22/04/20 | 06/11/20 | 31/05/20 |
| CRRDA-005-TSD-004 | 27/03/20 | Reporting | Albert St, Boggo Rd, Roma St, Woolloongabba | 4, 6, 11, 13 | 30/03/20 | 31/03/20 | 22/04/20 | 06/11/20 | 31/05/20 |
| CRRDA-006-TSD-005 | 27/03/20 | Air Quality | Albert St, Boggo Rd, Roma St, Woolloongabba | 13 | 30/03/20 | 31/03/20 | 22/04/20 | 06/11/20 | 31/05/20 |
| CRRDA-004-TSD-003 | 28/03/20 | Traffic | Boggo Rd | 4, 10, 14 | 30/03/20 | 31/03/20 | 22/04/20 | 06/11/20 | 31/05/20 |
| Withdrawn | | | | | | | | | |
| CRRDA-007-RIS-002 | 04/01/20 | Air Quality | Mayne Yard, Victoria Park, Yeronga, Fairfield | 13 | 28/04/20 | 30/04/20 | Withdrawn | | |
| CRRDA-008-TSD-006 | 04/08/20 | Working Hours | Roma Street | 4, 10 | 28/04/20 | 30/04/20 | Withdrawn | | |
| Gate 1 - EM notification to contractor. NCE confirmed Gate 2 - 48 hour NCE notification submitted to CG Gate 3 - 14 day report submitted Gate 4 - 14 day report uploaded to CRR website Gate 5 - Records of mitigation / preventative measures submitted to the CG | | | | | Complete | | | | |

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

Appendix A RIS Monthly Report

Monthly CGCR Report September 2022

Cross River Rail – Rail, Integration and Systems Alliance

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1 Progress Summary - Relevant Project Works

The following Project Works were undertaken during the reporting period:

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

| Area | Project Works |
|---------------|--|
| Mayne Area | Mayne Yard North <ul style="list-style-type: none"> Mayne Yard North and associated facilities have been completed by SCAS RIS #44, at the end of July, and is ready for QR acceptance Tripod Bridge (BR11/13) incl RSS walls completed, deck units landed and barriers under construction Breakfast Ck Bridge (BR08) – RW150 completed and temp works for Super-T installation commenced Mayne Yard East / West <ul style="list-style-type: none"> RW130 – Retaining wall on Eastern side under ICB overpass nearing completion Demolition of Diesel Locomotive Provisioning area commenced. |
| Northern Area | RNA / Northern Corridor <ul style="list-style-type: none"> CSR scope GST and on Bridge structure BR43 nearing completion Demolition of RNA facilities and QR facilities commenced (Eastern side of Ekka Station) CSR scope ongoing throughout corridor Victoria Park Feeder Station civil scope nearing completion Watermain Underbore at Bowen bridge Road completed. |
| Southern Area | Southern Portal / Dutton Park <ul style="list-style-type: none"> Park Road Track Sectioning Cabinet (TSC) Building Foundations completed SCAS preparation & general site access ongoing in readiness for October 1 – 10 SCAS. |
| Southern Area | Fairfield Station <ul style="list-style-type: none"> Platform slabs progressing on PL1 & PL2 throughout the month Finalisation of PL 2/3 canopy structural steel Blockwork to PL2/3 buildings completed, blockwork retaining walls progressing to PL1 Offsite fit-out & completion of overpass module screens, painting and flooring Crane pad preparation for overpass module lifts planned during SCAS 1 – 10 October. |
| Southern Area | Yeronga Station <ul style="list-style-type: none"> New pedestrian overpass opened to public on 30 September Commencement of works on Lift 01, 02 commenced during September Station entrance canopies & slabs progressing General station building fit-out completion scope progressing. |

| Area | Project Works |
|---------------|--|
| Southern Area | Clapham Yard <ul style="list-style-type: none"> • RSS wall construction of BR94 (Chale street Road over Rail Bridge) commenced • Drainage outlet at Rocky Water Hole completed • SEQ Watermain protection completed • CSR works ongoing • Retaining Wall RW650 (in front of Aurizon facility) completed • Capping along Dual Gauge alignment commenced. |
| Southern Area | Rocklea Station <ul style="list-style-type: none"> • Station closure occurred as planned on the morning of 12 September • Following the closure, services disconnections, asbestos removal, site setup & stockpiling occurred in readiness for major works during the October – 10 SCAS. |

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 | Mayne Yard North <ul style="list-style-type: none"> • Drainage and pavements of Access Road • Surcharge Load release and commence cross drainage repairs of pre-load introduction post drainage install • Commence soil nailed wall RW115 • BR08 (Breakfast Creek Bridge) landing Span 3 (centre Super-T). |
| Northern Area | RNA / Northern Corridor <ul style="list-style-type: none"> • Completion of demolition • Rock excavation south-eastern area of Ekka Station (not impacted by EXH Stage 2 switch) • Service relocations East (between Bowen Bridge Road and Ekka Station) • Victoria Park Feeder Station handover to HV team by the civil team • Commence OHLE foundations through the corridor. |
| Southern Area | Southern Portal / Dutton Park <ul style="list-style-type: none"> • Planned works in October 1 – 10 SCAS (RIS_TSD_34A) <ul style="list-style-type: none"> - CSR Scope including UTX's - Noise barrier removal - Fenton St RMAR works - Ensign Ave batter excavation for RW455 • Ongoing completion of Park Rd TSC foundation & civil works. |
| Southern Area | Fairfield Station <ul style="list-style-type: none"> • Planned works in October 1 – 10 SCAS (RIS_TSD_34A) <ul style="list-style-type: none"> - Installation of new overpass modules 01, 02 & 03 - Installation of Stair 2 structural steel - Installation of Lift 2 structural steel - Finalise PL1 canopy structural steel - Commence PL 2/3 roofing - Demolition of existing overpass bridge - FRP various platform slabs • Various trades and activities both on and off platform leading toward partial re-opening |

| Area | Project Works |
|---------------|---|
| Southern Area | Yeronga Station <ul style="list-style-type: none"> Planned works in October 1 – 10 SCAS (RIS_TSD_34A) <ul style="list-style-type: none"> Open new pedestrian overpass Remove existing pedestrian overpass Demolition of existing temporary platform slabs FRP of infill permanent platform slabs incl coping & tactiles Finalise Stair 2 finishing works Relocation of ticketing equipment & SACID's. Various trades and activities both on and off platform leading toward reopening |
| Southern Area | Clapham Yard <ul style="list-style-type: none"> Commence creek works for drainage outlet in Moolabin Creek Continue CSR scope and commence pavements. |
| Southern Area | Rocklea Station <ul style="list-style-type: none"> Planned works in October 1 – 10 SCAS (RIS_TSD_34A) <ul style="list-style-type: none"> Relocation of waiting shelter structure Demolition of remaining platform building Demolition of platform 1 & 2 Dual gauge lowering scope Install platform 03 precast units Install PL1, 2 & 3 temporary hoarding fence Demolition of overpass stairs and replacement with scaffold stairs Site office mobilisation <p>Commence lower level services on PL1.</p> |

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 |
|--------------------|----------|--------------------|--|------------------|---|---|--------|
| Friday 9 September | RNA | Construction noise | Rock breaking | September 2022 | Stakeholder complaint regarding rock breaking activities occurring in the rain – why start works and wake everyone up when you would have known that you would have to pack up shortly after due to the wet weather. Stakeholder was not aware that rock breaking could occur in the wet. | Team advised that the activity was not weather dependant as the operator was sitting in the cabin of the excavator. | Closed |

| Date Received | Location | Issue | Project Works / Activity source of the concern | Reporting Period | Complaint Detail | Unity Response | Status |
|------------------------|-------------------|--------------------|---|------------------|--|---|--------|
| Thursday 15 September | Fairfield | Construction Noise | Worker's behaviour, out of hours works, workforce parking | September 2022 | Stakeholder complaint regarding night works and associated noise emissions, workforce parking on local street and worker's methods of communication during out of hours works. | <p>The team contacted the stakeholder who confirmed they were receiving the letter drop box notification but had not signed up to the email updates.</p> <p>The stakeholder was added to the email updates distribution list and was provided comprehensive feedback on works carried out to date and upcoming Project Works.</p> <p>The team also provided details on the drivers behind certain out of hours works (e.g. rail or road possessions).</p> <p>Finally, the team reviewed noise monitoring carried out to date and confirmed that validation noise monitoring had been carried out at the façade of the resident's apartment complex during high intensity works (e.g. extended possession at Christmas).</p> <p>Monitoring had confirmed that due to the proximity of the apartment complex to the Project Works, stakeholders living in the complex would experience noise levels close to or above the noise goals + 20dBA.</p> <p>Since the apartment complex is a multi-story building, UNITY has limited options with regards to providing effective attenuation at source or at receiver (e.g., temporary noise blankets).</p> <p>However, due to the nature of the build (recent construction with double glazing) it is expected that higher façade attenuation can be achieved indoors.</p> | Closed |
| Monday 19 September | Yeronga Station | Construction noise | Out of hours works | September 2022 | Stakeholder complaint regarding noise coming from the Yeronga Station laydown area located near Ovendeau Street. | Team advised that the Yeronga team will work to minimise accessing the laydown area during night shift through planning material movements for day shift. | Closed |
| Wednesday 28 September | Fairfield Station | Construction noise | Out of hours works | September 2022 | Stakeholder complained about construction noise coming from the Fairfield Station upgrade. Night works were disrupting their sleep and they were concerned about the planned activities during the October 1-10 extended SCAS. | Team spoke with stakeholder about the planned works in October. Consultation was undertaken with the Environment Team and a decision was made to proactively relocate the stakeholder into alternative accommodation. | Closed |

3 Environmental Monitoring Results

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

3.1 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 not 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 not 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 Error! Reference source not found. |
|----------|--|--------------------|------------|--------------------------|------------|-----------------------|------------------------|--|--|---------------------------------|---------------------------------|-------------------------------|-------------------------------|--|
| | N/A – not triggered during monitoring period | | | | | | | | | | | | | |

- 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.

3.1.3 Vibration Monitoring

Vibration monitoring to validate the predictive model was triggered for:

- The use of a 430kg hammer at the RNA Showgrounds in proximity to the State heritage listed 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 |
|----------------------|-------------------------|-------------|-------------------------------|---|---------------------------------------|--|--|--|---|------------------------------------|--------------------------------|--|
| John MacDonald Stand | 03/09/2022 – 30/09/2022 | Continuous | John MacDonald Stand | Heritage – DIN4150 Group 3 | Model verification at sensitive place | 14t excavator with 430kg hammer (only if rock encountered) | 1.1 mm/s | 63m | 0.43 mm/s | 3 mm/s | No | Works monitored include: <ul style="list-style-type: none">• Demolition of adjoining toilet block (pulveriser attachment and hand tools only, no vibration intensive equipment); and• Demolition of platform (approximately 63m away) using 430kg hammer where rock was encountered |

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 Vibration Monitoring

3.1.6.1 Model Verification

3.1.6.1.1 John MacDonald Stand Results

Vibration monitoring during rock breaking works at the RNA Showgrounds was undertaken at the foundation of the State Heritage listed John MacDonald Stand within the Bar Room. This location was selected based on the outcomes of predictive assessments.

Review of the measurement data confirmed there were no exceedances of the Project's vibration goals.

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

3.2 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) | AQ-04 | 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. |
| TSP / PM ₁₀ Monitor | Mayne Yard East (Eastern Air Shed) | Mayne Yard East | 26 August 2022 | Active |

| Monitoring Device Installed by UNITY | Area | Name | Date Installed | Status for 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 |

3.2.1 Dust results

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

- RNA and Clapham Yard:
 - 9 August 2022 to 9 September 2022
- Mayne Yard
 - 9 August 2022 to 15 September 2022
- Dutton Park
 - 8 August 2022 to 9 September 2022

The Mayne Yard DDG is located within the active rail corridor and requires a Protection Officer for collection and replacement.

Due to a staffing issue with Protection Officers the gauge was inaccessible until 15 September 2022. The DDG was therefore left for an extended period of 37 days. As per AS/NZS 3580.10.1, section 7.3, for routine monitoring programs, the period of exposure is 30±2 days. Although the Mayne Yard results are not considered a representative sample according to the Australian Standard, per the advice of the Project Certified Air Quality Professional (CAQP), the sample can still be recorded as indicative.

This is possible due to the gauge being active for a longer period than 30±2 days. As the gauge was in place for an additional seven (7) days and still did not record an exceedance, it is highly unlikely that an exceedance would have occurred over a 30-day period.

The results are detailed below and complied with 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 Abbotsford Rd (E Mayne) (mg/m ² /day) | AQ-06– Clapham Yard (mg/m ² /day) | AQ-08 – Dutton Park (mg/m ² /day) |
|------------------------------------|--|--|--|--|
| 120 | 33 | 20 * | 33 | 110 |
| Total Rainfall during Period (mm) | 35.0 | 26.8 | 47.8 | 14.2 |

** Results are indicative only*

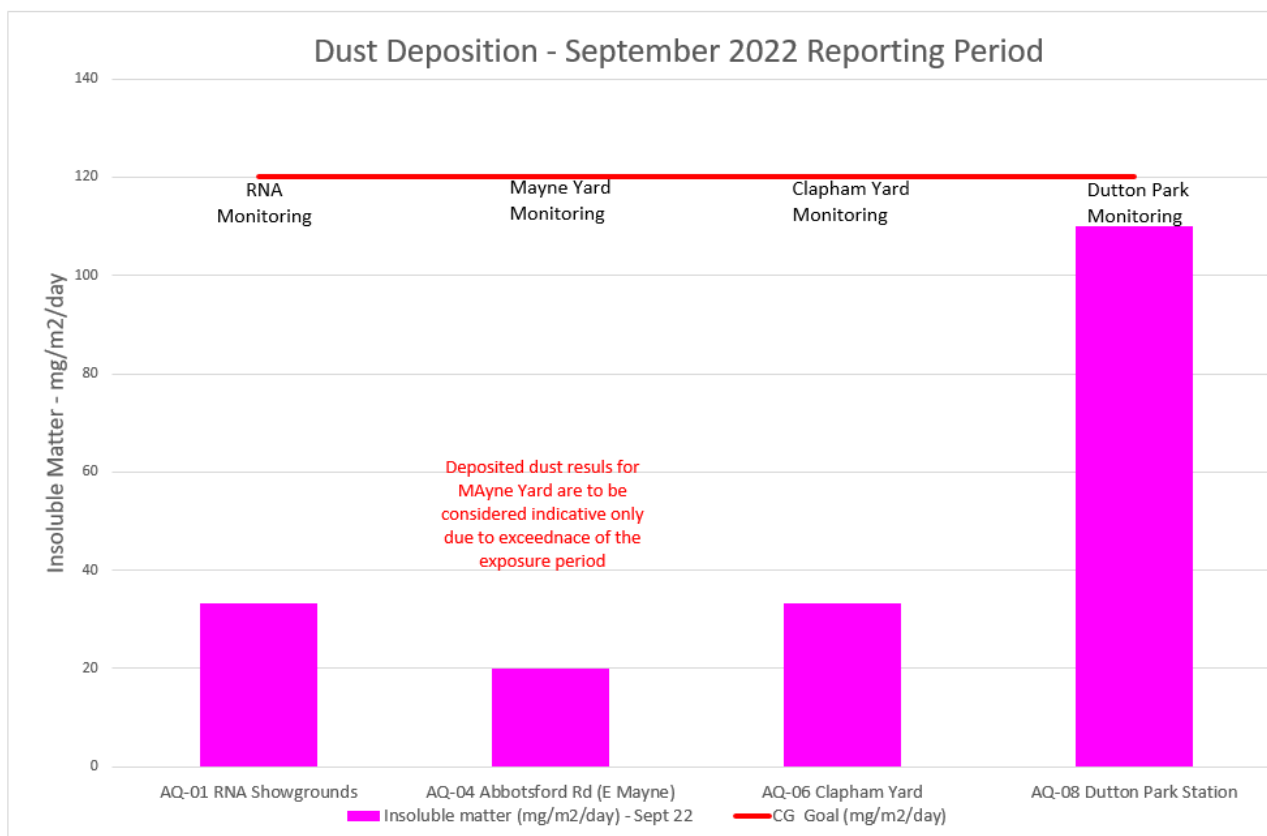


Figure 1 Air Quality Monitoring (Deposited Dust) Results

3.2.2 Particulates results

3.2.2.1 Air Quality Monitoring Stations

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

3.2.2.2 Monitoring results – Reporting Period

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

TSP is one of the indicators for which the Coordinator-General has imposed a goal of 80 µg/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 50 µg/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 air quality professionals. The results are represented in the below figures.

It is noted that the Clapham Yard Results for TSP and PM10 are indicative only for the following periods:

- 01 to 04 September 2022
- 06 to 10 September 2022, and
- 17, 22 and 23 September 2022.

The DMP experienced power failure which coincided with days of lower sun exposures and therefore less than 75% of data were collected over a 24-hour period during these days. Unity has contacted the equipment supplier who advised that larger solar panels cannot be fitted to the DMP.

Unity therefore consulted with their CAQP to identify whether relocation of the DMP, based on upcoming Project Works would be acceptable.

The CAQP provided initial feedback on the potential locations available to Unity. One location was deemed acceptable, and whilst this location will be closer to emissions sources and so could be expected to measure higher than at receptors, it is deemed to have the potential to receive more sun exposure and will be more readily accessible for trouble-shooting efforts in the event ongoing data loss is identified.

The DMP will be relocated in November 2022 as a Protection officer has been secured to demobilise the DMP from its current location.

It is noted that during the reporting period there were no complaints pertaining to Air quality from the Clapham Yar Airshed Area, the deposited dust results met the Air Quality Goals, and significant erosion control (soil binder) and active dust suppression (water carts) were implemented at Clapham Yard.

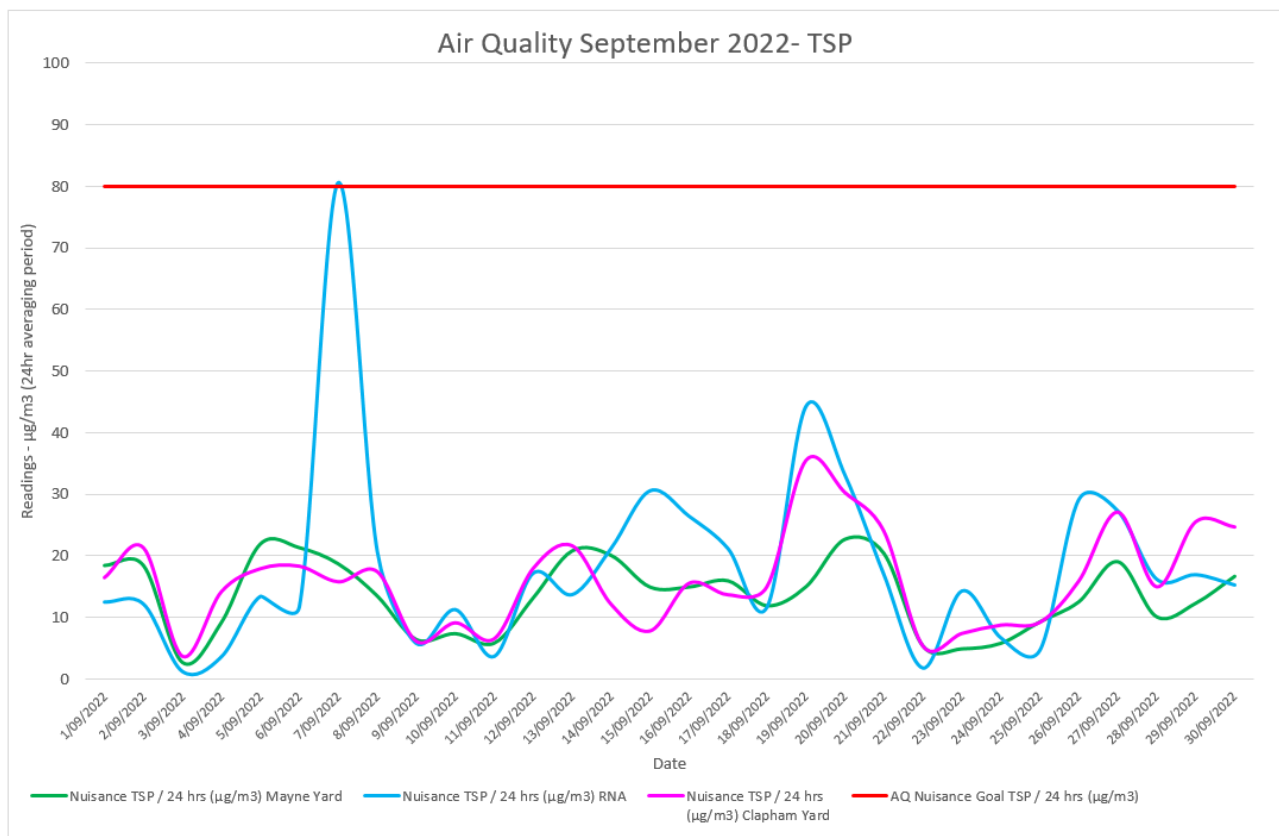


Figure 2 Air Quality Monitoring (TSP) Results

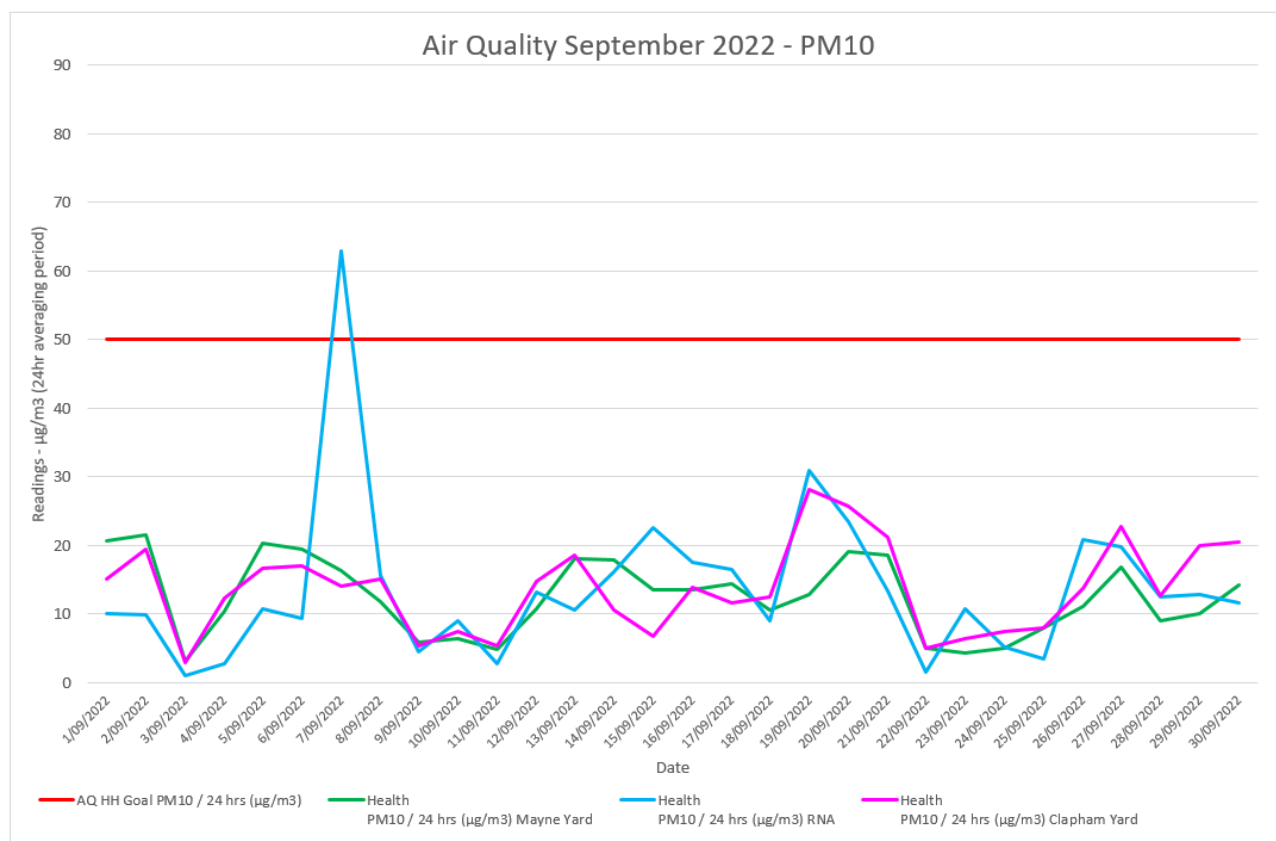


Figure 3 Air Quality Monitoring (PM10) Results

3.2.3 Monitoring Results – Annual Averaging

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

The below table summarises where TSP and PM₁₀ monitoring 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 16 days | Period 1 98% over 365 days Period 2 99% Over 365 days Period 3 17% Over 17 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) 36 over 36 days | Period 1 100% Over 36 days | 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) 62 over 109 days | Period 1 86% over 365 days Period 2 79% Over 365 days Period 3 57% Over 109 days | Applicable for Period 1 Data capture met minimum data capture requirements Applicable for Period 2 Data capture met minimum data capture requirements 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) 157 over 242 days | Period 1 90% over 364 days Period 2 65% Over 230 days | Applicable for Period 1 Data capture met minimum data capture requirements Not Applicable for Period 2 Data capture has not yet met the minimum data capture requirements |

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 | Not yet applicable |
| | | Period 3 | - | Not 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 | Not yet applicable |
| | | Period 3 | - | Not yet applicable | - | Not yet applicable | - |

3.2.4 Interpretation

3.2.4.1 RNA DMP Exceedances

During the reporting period there was an exceedance on 07 September 2022 of the TSP and PM₁₀ Air 24-hr Air Quality Goals at the RNA site, namely

- TSP result of 81 µg/m³ (Goal is 80 µg/m³)
- PM₁₀ result of 63 µg/m³ (Goal is 50 µg/m³)

To ascertain whether these exceedances were likely attributable to the Project Works Unity carried out a review of the

- The DMP operational parameters
- DMP detailed data capture
- DES records for potential regional air quality event
- Works
- Weather conditions
- Community feedback

The review identified that the DMP did not malfunction with 100% data capture over the 24 hours and all other operational parameters (such as flow rates) within normal operating range.

There had been limited rainfall leading to and on the day of the exceedances which may have affected results due to humidity build up. The DMP had also recently been factory calibrated at the manufacturer's facilities.

No maintenance activities or routine calibration activities had been carried out on the day.

Equipment failure or error can therefore be ruled out.

The detailed capture identified that high particulate results were recorded from 11:00 am to 16:30, and it was confirmed that project works were occurring in the areas as part of an extended Rail possession within the corridor (EXT-014).

There was no regional air quality event reported by the DES on 07 September 2022.

Wind conditions on 07 September 2022 are presented in the below wind rose.

Wind Rose - 07 September 2022 - 24 hours

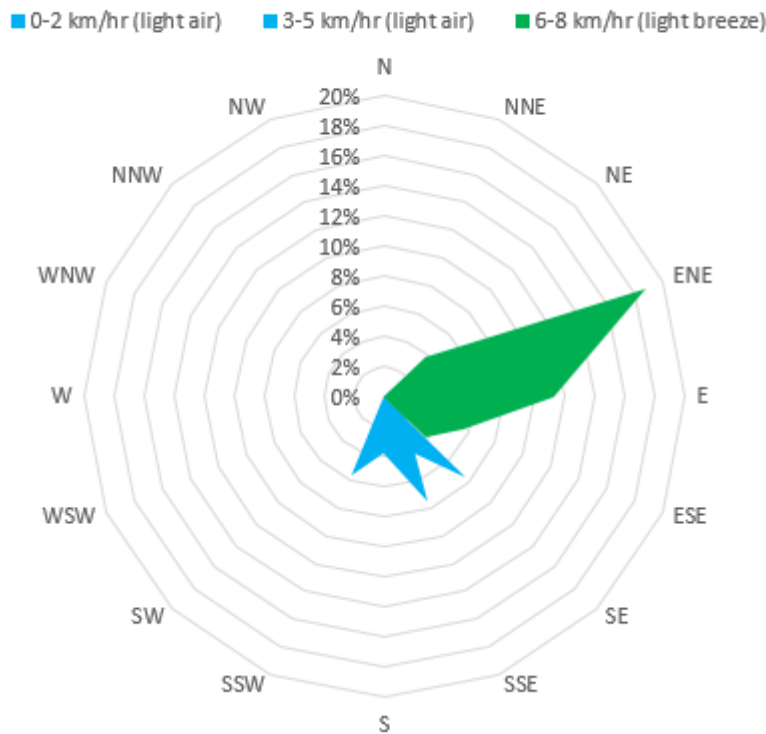


Figure 4 Wind Rose - 07 September 2022

As shown on the wind rose, the wind conditions were mild. Predominant winds were easterly winds, meaning that the DMP was downwind of the Project Works.

On the afternoon of 07 September 2022 when the highest readings were recorded and therefore contributed to the 24-hr goals exceedances, wind conditions show that high wind speeds reached up to 18 km/hr, which can be classified as a gentle breeze under the Beaufort Scale.

The afternoon winds also were easterly winds.

As such the DMP was located down-wind of the Project Works and the exceedances are likely related to the Project works on the day. Indeed, the DMP is located along Lanham Street. This area was used as a laydown and primary access point for plant and equipment required as part of the rail possession. Therefore, there was an increase of the Project Works intensity in the immediate vicinity of the DMP.

It is however noted that:

- EXT-014 SCAS covered a 10-day period from 01 to 10 September 2022.
- Exceedance of the Air Quality Goals only occurred on one (1) day during the possessions despite the increase in Project Works intensity
- On the day of the exceedances, the sensitive receivers, which comprise of residential Receivers and one commercial receiver on Tufton Street, were upwind of the Project Works.
- There are no sensitive receivers downwind of the works as the site is located adjacent the Clem Northern Portal Structure
- There were no complaints pertaining to air quality matters on the day of the exceedances and during the duration of the extended SCAS.
- For the remainder of the reporting period there were no exceedances of the Air Quality Goals.
- Water Carts were available during the possession to carry out dust suppression activities.

Therefore, the RIS scope of works has met the project outcomes set out by the Imposed Conditions and OEMP.

3.2.4.2 Dutton Park DDG elevated results

The siting of the Dutton Park DDG is limited by constrained site boundaries.

The Dutton Park DDG was placed on the construction area boundary between 15 Cope Street (project works) and 211 Annerley Road (residential receiver) to monitor dust generation from construction activities.

During the monitoring period (8 August 2022 to 9 September 2022), construction works at Dutton Park consisted of building demolitions and cut and fill earthworks, with many works occurring immediately adjacent the DDG.

The measured dust deposition level of 110 mg/m²/day is 92% of the air quality goal of 120 mg/m²/day. Due to the nature of the Project Works undertaken and the proximity to the DDG, the measured dust deposition level for Dutton Park is understandable.

Indeed, with the DDG located within the construction area boundary, it is therefore closer to dust emission sources than the nearest receptor, acknowledging that the separation distance between the gauge and the nearest receptor is only approximately 5m.

No exceedances of dust deposition levels have been recorded for the current reporting period and no dust complaints have been received."

3.3 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 and dewatering monitoring were undertaken.

3.3.1 Rainfall Records

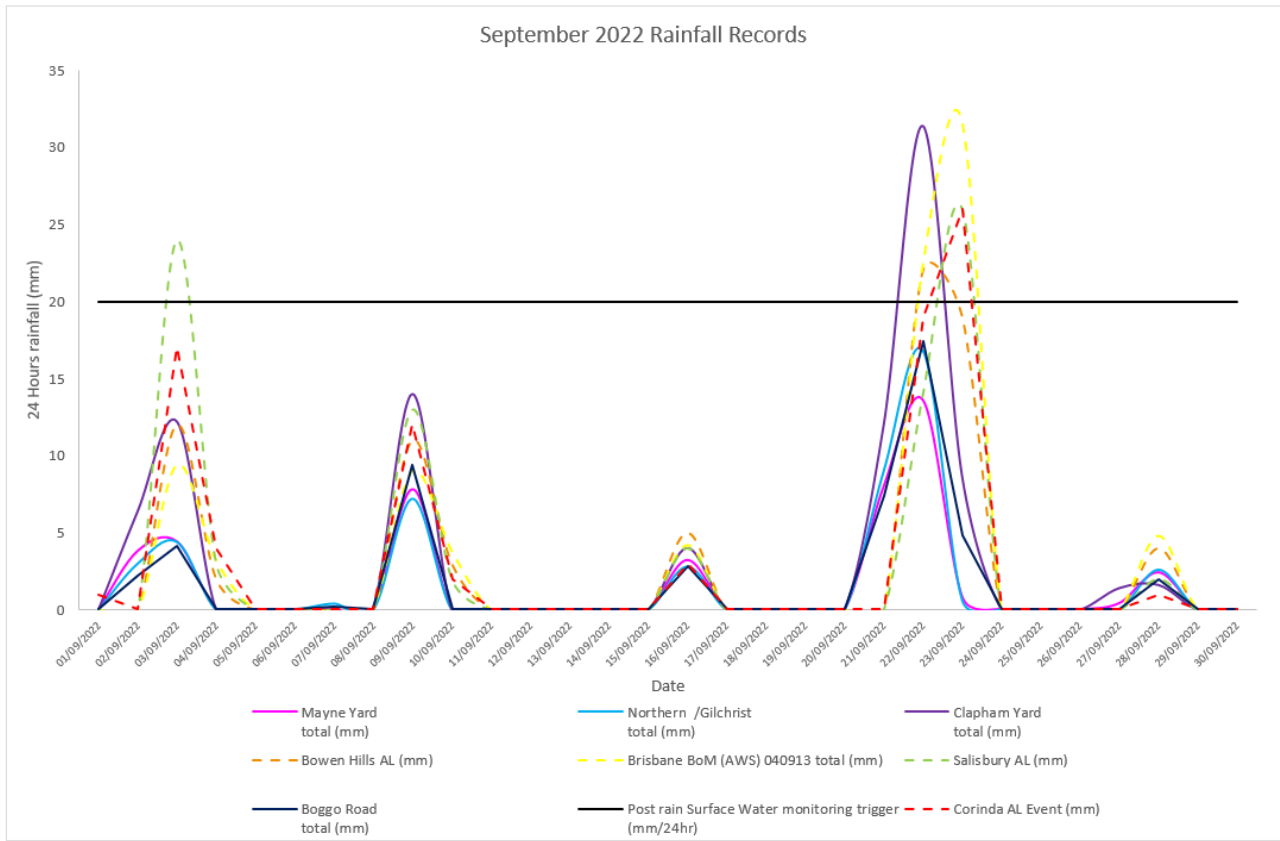


Figure 5: September 2022 Rainfall Records

3.3.2 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 Surface Water 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) |
| 23 September 2022 | Breakfast Creek | SW-1 | Fast flow | Field: 17.76 Lab: 21.3 | 16 | 87 | 8.1 | N/A |
| 23 September 2022 | Breakfast Creek | SW-2 | Fast flow | Field: 15.61 Lab: 17.7 | 20 | 80 | 7.2 | |
| 23 September 2022 | Breakfast Creek | SW-3 | Fast flow | Field: 12.84 Lab: 16.3 | 17 | 76 | 7.3 | |
| 23 September 2022 | Moolabin Creek | SW-5 | N/A | Field: 25.71 Lab: 27.6 | 13 | 88 | 7.8 | 44% or 18mg/L increase |
| 23 September 2022 | Moolabin Creek | SW-6 | N/A | Field: 36.97 Lab: 36.2 | 31 | 89 | 7.4 | |
| 23 September 2022 | Rocky Water Holes | SW-7 | N/A | Field: 35.59 Lab: 36.9 | 38 | 88 | 8.4 | N/A |
| 23 September 2022 | Rocky Water Holes | SW-8 | N/A | Field: 33.07 Lab: 37.2 | 24 | 87 | 7.23 | |
| 23 September 2022 | Rocky Water Holes | SW-8a | N/A | Field: 39.33 Lab: 36.2 | 28 | 86 | 7.5 | |

3.3.2.1 Post Rainfall Monitoring Results Interpretation

The post rainfall monitoring event identified that water quality was visually more turbid throughout the systems at all monitoring locations.

Where in situ monitoring was carried out, in one instance, downstream water quality data exhibited changes of >5mg/L or 10% increase for TSS or 10% for turbidity.

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

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 included the review of the following factors:

- Rainfall size (below or above the design criteria for the erosion and sediment control measures)




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.

- Existence of an ESC-P designed by suitably qualified person consistent with the Guidelines for Best Practice Erosion and Sediment Control (IECA 2008) as per Imposed Condition 18.
- Status of the erosion and sediment control measures that is:
 - ESC measures were installed and maintained as per the ESC-P or the relevant action plan from routine surveillance; and
 - If the rain event was below the design criteria, the ESC measures had not been damaged by the rain event.
- Presence of external sources of sedimentation in the immediate vicinity of the Project Works, and
- Evidence that, where site run-off had been generated by the rainfall, site run-off had entered surface water bodies without going through an ESC measure, and
- Previous rainfall resulting in increased run-off potential, and
- Flow conditions of the creek (e.g. were flood warning issued).

The below table details the assessment for the monitoring event that identified or presumed impacts to water quality.

Table 11 Post rainfall monitoring event exceedance review

| Date | Location | Event size | Event above Design Criteria | ESC-P designed and regularly maintained by Suitably Qualified Person | ESC measures were installed and maintained to the appropriate standard | ESC measures damaged by the rain event | Evidence of site run off had entered the surface water bodies | Site run off had entered the surface water bodies without going through ESC measures | Presence of external sources of sedimentation | Previous rainfall resulting in increased run-off potential | Flood alert issued | Discernible downstream impact solely attributable to Project Works releases |
|--|-----------------------------|--|--|--|---|--|---|--|---|--|--------------------|---|
| 23 September 2022 | Clapham Yard Moolabin Creek | Between a 12EY ⁴ and 6EY Micro-bursts of between 4EY and 3EY recorded | Microbursts exceeded the Design Criteria | Yes | Yes | No | No | No | Yes – unknown black plume from midstream outlet | No | No | No – evidence midstream outlet may have impacted water quality downstream |
| SW- 5 – Upstream | | | | | Midstream | | | SW-6 – Downstream | | | | |
|  | | | | |  | | |  | | | | |

⁴ Exceedances per year (EY): the number of times an event is likely to occur or be exceeded within any given year.

3.3.3 Routine Surface Water Monitoring Results

During the reporting period, UNITY did not undertake routine surface water quality monitoring.

A review of the data sample has identified that over 12 months of continuous data collection has occurred with over 20 monitoring events. The frequency of background monitoring has therefore been reduced to bi-annually, with the dry season monitoring completed in June 2022.

Wet season (September to March) monitoring will be required to occur prior to March 2023.

This reduction of monitoring frequency is acceptable to continue informing the Dis-1 Credit for the ISCA 'Excellent Rating' the Project is pursuing.

3.3.4 Groundwater Discharge Monitoring Results

Groundwater discharge monitoring was not triggered during the reporting period.

3.3.5 Surface Water Discharge Monitoring

Surface water discharge monitoring was triggered during the reporting period.

| Date | Location | Waterway | Discharge Criteria ⁵ | | | |
|-------------------|-----------|--|--|----------------------|---------------------|---|
| | | | Turbidity (NTU) Nil until Turbidity / TSS correlation achieved ⁶ | 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 |
| 8 September 2022 | Clapham | Bypass pumping at Moolabin Creek | 6.01 NTU | N/A | 74.3 pre discharge | 7.2 |
| 12 September 2022 | Fairfield | Discharging to stormwater drain ultimately discharging to Brisbane River | 45.66 NTU | N/A | 105.7 pre discharge | 8.1 |
| 12 September 2022 | Clapham | Bypass pumping at Moolabin Creek | 9.19 NTU | N/A | 56.9 pre discharge | 7.2 |
| 20 September 2022 | Clapham | Bypass pumping at Moolabin Creek | 5.34 NTU | N/A | 37.2 pre discharge | 7.0 |
| 23 September 2022 | Fairfield | Discharging to stormwater drain ultimately discharging to Brisbane River | 46.05 NTU | N/A | 86.9 pre discharge | 8.0 |

⁵ Refer to the waterways and water quality management plan, a C-EMP sub-plan for details of derivation of the discharge criteria

⁶ 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

4.1 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 12 Summary of Non-Compliance Events

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

4.2 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 13 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 three active Worksites | Compliant | Not Applicable |
| Air Quality | Complaint's response | Moderate to High | Not triggered No complaints | Compliant | Not Applicable |
| Noise | Buffer distance tests based on the outcomes of the predictive assessment based / risk profile of activities | Moderate to High | Not triggered | Compliant | Not Applicable |
| Noise | Plant noise audits for noisy plant to validate models input as required | Moderate to High | No | N/A | Not Applicable |
| Noise | Complaint's response | Moderate to High | Not triggered No complaints | Compliant | Not Applicable |
| Vibration | Construction Monitoring at Sensitive Places / DAPs - Model verification based on the outcomes of the predictive assessment based / risk profile of activities | Moderate to High | Yes – continuous monitoring undertaken for specific works (RNA stage 2 demolition) | Compliant | Not Applicable |
| Vibration | Complaint's response | Moderate to High | Not triggered No complaints | Compliant | 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 in January 2022 Dry Season monitoring completed in June 2022 | Compliant | Not Applicable |
| Water Quality | Post Rainfall | Moderate to High | Yes – one monitoring event (8 locations) undertaken 23 September 2022 | Compliant | Not Applicable |
| Water Quality | Dewatering | Moderate to High | Yes – five discharge events during reporting period | Compliant | Not Applicable |

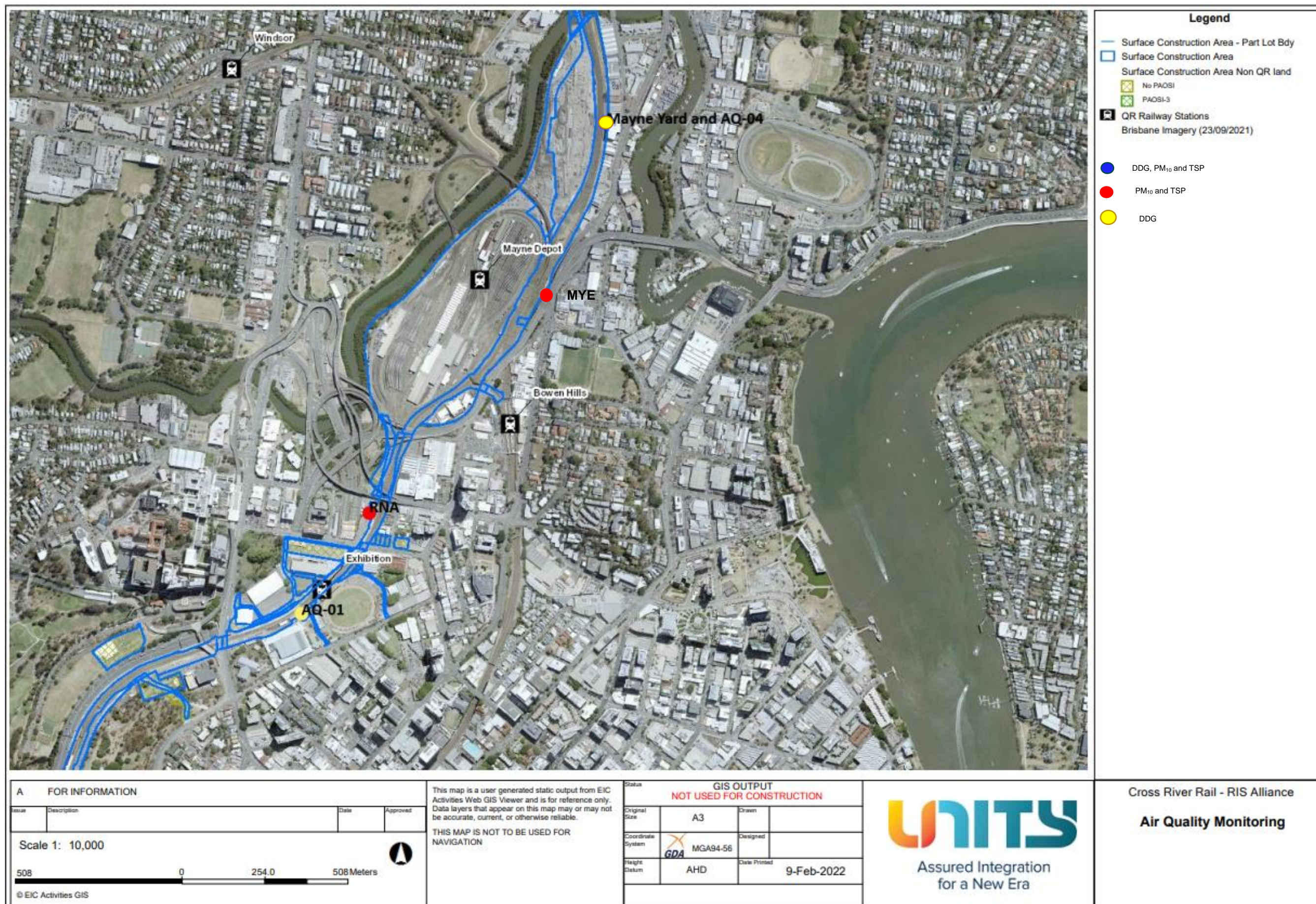
Attachment 1 Imposed Conditions Non-Compliance Event Report (if required)

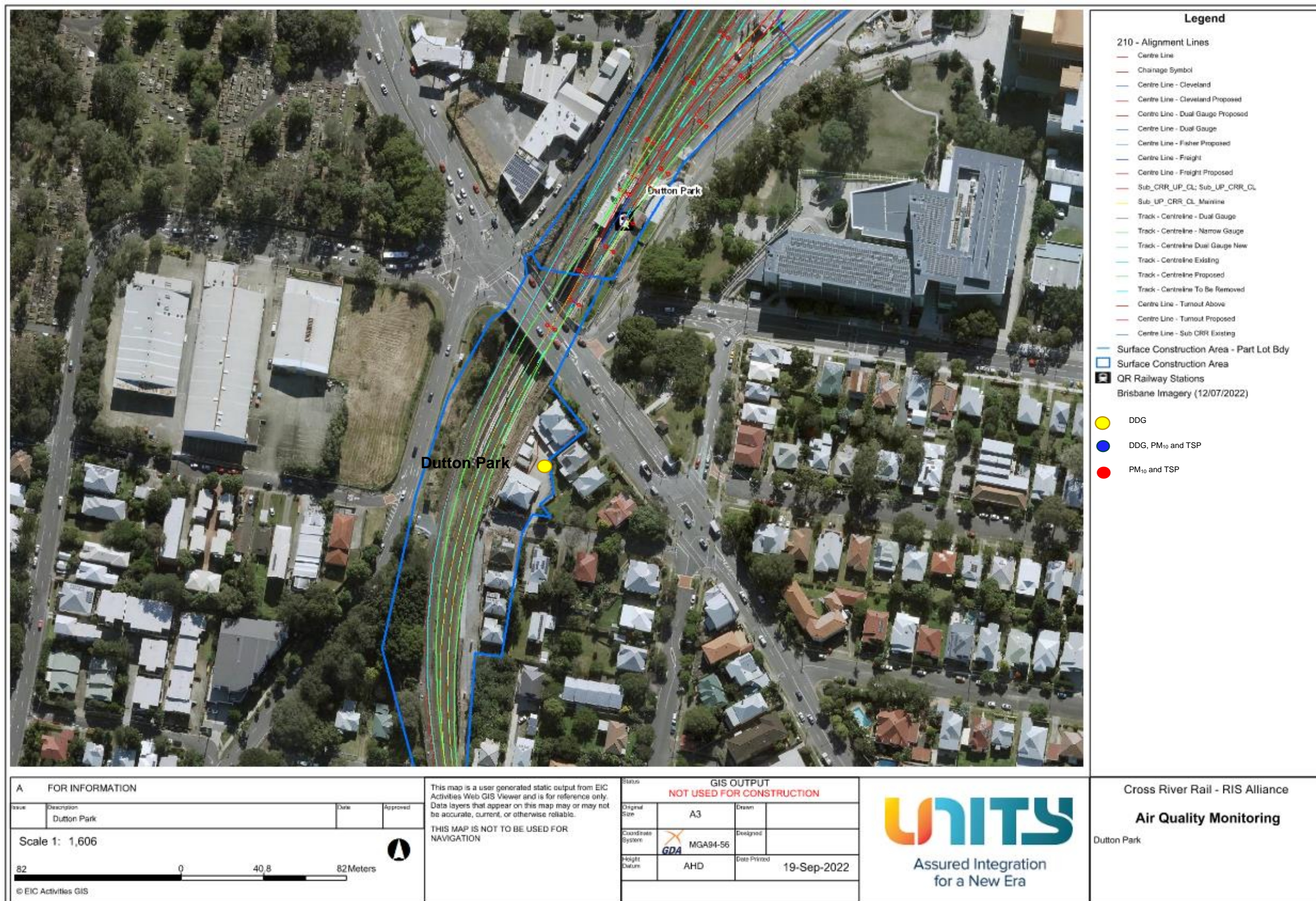
None for this reporting period.

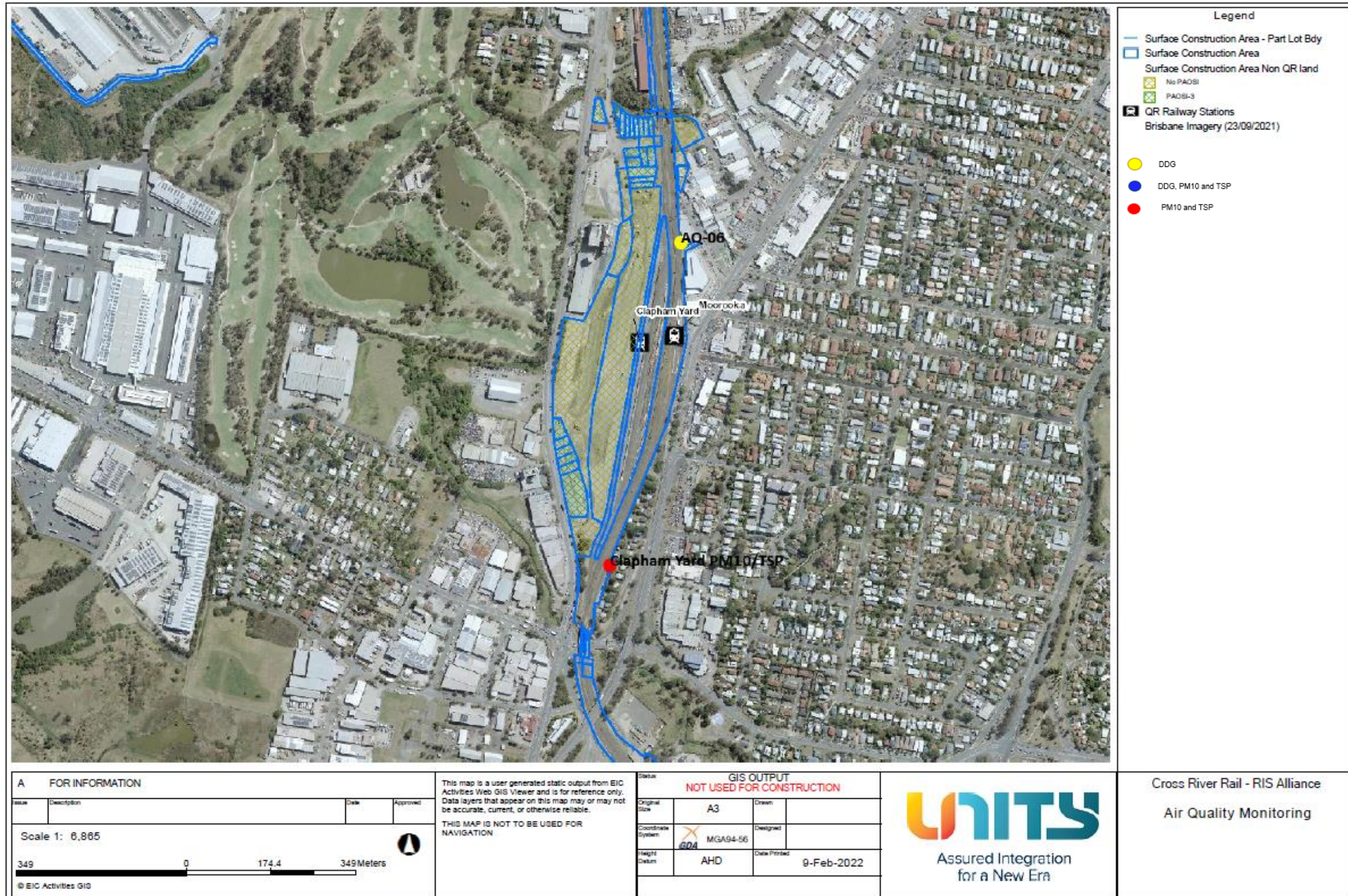
Attachment 2 Monitoring Locations – Noise and Vibration

None for this reporting period.

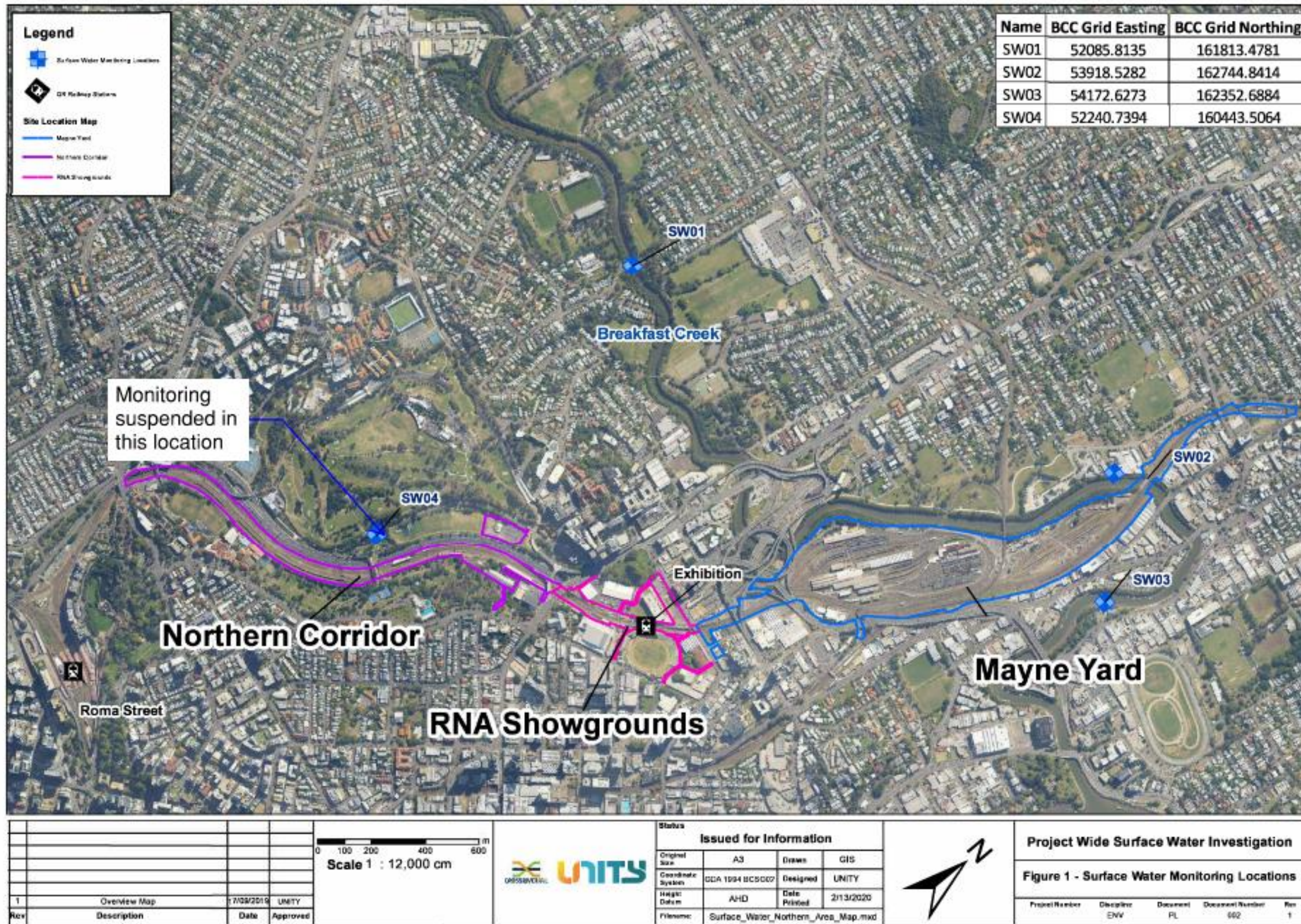
Attachment 3 Monitoring Locations – Air Quality

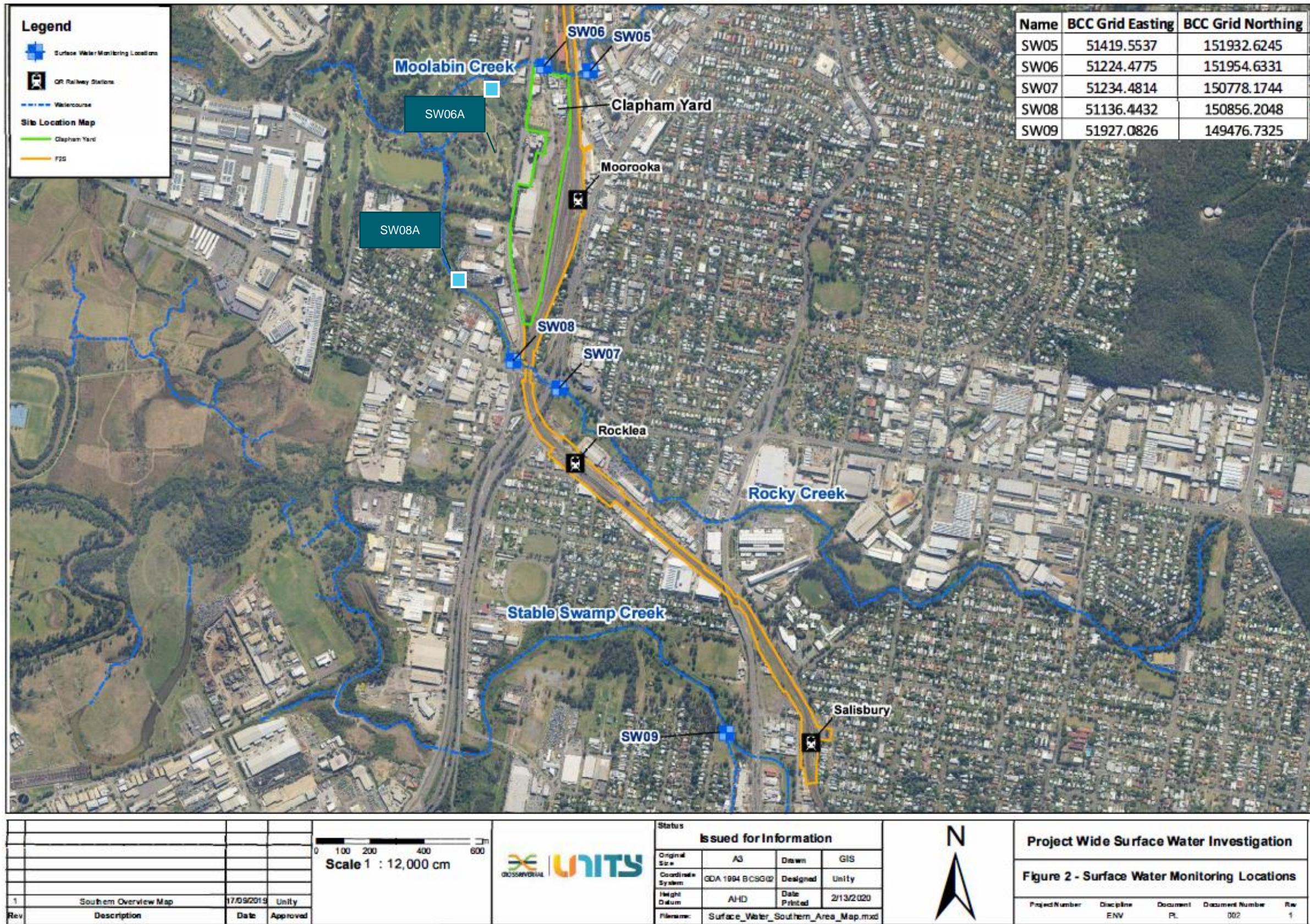






Attachment 4 Monitoring Locations – Surface Water





Appendix B TSD Monthly Report

COORDINATOR-GENERAL'S MONTHLY REPORT: September 2022

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.

Noise monitoring was conducted on eight (8) occasions during September 2022. Nil vibration monitoring was required during the month of September 2022. Each noise and vibration 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 September 2022. Air quality monitoring confirmed works adhered to project requirements.

Water quality monitoring was conducted before the release of water from the site on twenty-one (21) occasions. Each monitoring event confirmed project requirements were adhered to. Two (2) 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 10). |
| 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 Report acknowledges instances that exist that these goals may not be achieved.

During September there were no new (vibration generating) construction activities or changes in construction methodologies. As such, no vibration monitoring was performed.

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 exist that these goals may not be achieved.

Noise monitoring was conducted on eight (8) occasions during September 2022. All noise monitoring data adhered to project requirements and is provided in the table below.

Table 3: Noise Monitoring Data

| No. | Date | Time (AM / PM) | Location (Street Name) (Construction Precinct) | Purpose of Monitoring | Internal or External ^[3] Monitoring | Activity | Dominant Noise Source | Noise Goal LA10 ^[1] | Noise level LA10 | Noise Goal LAeq ^[2] | Noise level LAeq | Adhered to Project Requirements (Yes / No) |
|-----|------------|-------------------|--|---|--|--------------------------------|--------------------------|--------------------------------------|------------------------|--------------------------------------|------------------------|---|
| 1. | 1/09/2022 | 12:26:00 PM | Gregory Terrace (Northern Portal) | Model Verification | External | Concrete works | Construction | 62 | 65.7 | 52 | 64.6 | Yes |
| 2. | 05/09/2022 | 11:46:00 AM | Railway Terrace (Southern Portal) | Construction Monitoring at Sensitive Places | External | Concrete works (demolition) | Construction | 57 | 83.6 ^[3] | 47 | 79.9 | Yes |
| 3. | 6/09/2022 | 12:01:00 PM | Albert Street (Albert Street Precinct) | Model Verification | External | Concrete works (demolition) | Construction | 72 | 71.6 | 62 | 70 | Yes |
| 4. | 12/09/2022 | 1:27:00 PM | Albert Street (Albert Street Precinct) | Construction Monitoring at Sensitive Places | External | Concrete works (demolition) | Construction | 72 | 70.8 | 62 | 68.6 | Yes |
| 5. | 14/09/2022 | 2:55:00 PM | Kent Street (Southern Portal) | Model Verification | External | Concrete works (demolition) | Construction | 67 | 73.6 | 57 | 69.5 | 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. | 14/09/2022 | 5:25:00 AM | Albert Street (Albert Street Precinct) | Model Verification | External | Concrete works | Construction and road traffic | 59 | 69.3 | 52 | 67.1 | Yes |
| 7. | 14/09/2022 | 6:50:00 AM | Albert Street (Albert Street Precinct) | Construction Monitoring at Sensitive Places | External | Concrete works | Construction | 72 | 76.1 | 62 | 74.8 | Yes |
| 8. | 29/09/2022 | 11:43:00 AM | Albert Street (Albert Street Precinct) | Model Verification | External | Concrete works and equipment deliveries | Construction | 72 | 65.1 | 62 | 63.3 | Yes |

- [1] Intermittent noise goal (LA10)

- [2] Continuous noise goal (LAeq)

- 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] Imposed Condition 11(c) implemented

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 September 2022. The dust deposition gauges result 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 | 25.00 | Air quality monitoring was performed during the reporting period. All results adhered to project requirements. |
| Roma Street Precinct | | | | 16.13 | |
| Albert Street Precinct (North) | | | | 38.71 | |
| Albert Street Precinct (South) | | | | 29.03 | |
| Woolloongabba Precinct (North) | | | | 46.88 | |
| Woolloongabba Precinct (South) | | | | 46.88 | |
| Boggo Road Precinct (North) | | | | 26.67 | |
| Boggo Road Precinct (South) | | | | 63.33 | |
| Southern Portal (South) | | | | 20.00 | |
| Southern Portal (East) | | | | 20.00 | |

3.3.2 Particulates and Ambient Air Quality Results

Total Suspended Particles (TSP) and particulate matter less than 10µm (PM10) monitoring were conducted during September 2022.

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 September 2022. Three (3) Government air quality stations near the Construction Precincts are also utilised.

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

| Date | TSP Project Goal ^[1] | PM10 Project Goal | Woolloongabba | | Albert | | Boggo Road | | Northern Portal | |
|-----------|---------------------------------|-------------------|----------------------------|-------|--------|-------|------------|-------|-----------------|-------|
| | | | TSP | PM 10 | TSP | PM 10 | TSP | PM 10 | TSP | PM 10 |
| | | | (µg/m ³ /24 hr) | | | | | | | |
| 01-Sep-22 | 80 | 50 | - [2] | - [2] | 17.11 | 16.74 | 9.21 | 9.21 | 12.90 | 12.84 |
| 02-Sep-22 | 80 | 50 | - [2] | - [2] | 22.83 | 22.65 | 13.66 | 13.66 | 18.92 | 18.86 |
| 03-Sep-22 | 80 | 50 | - [2] | - [2] | 14.25 | 14.16 | - [3] | - [3] | 4.49 | 4.47 |
| 04-Sep-22 | 80 | 50 | - [2] | - [2] | 3.75 | 3.64 | - [3] | - [3] | 5.01 | 4.92 |
| 05-Sep-22 | 80 | 50 | 9.78 | 9.34 | 11.19 | 11.07 | 4.10 | 4.10 | 7.73 | 7.67 |
| 06-Sep-22 | 80 | 50 | 8.92 | 8.83 | 14.57 | 14.33 | 4.64 | 4.63 | 9.38 | 9.34 |
| 07-Sep-22 | 80 | 50 | 10.16 | 10.13 | 14.05 | 13.87 | 8.13 | 8.12 | 9.48 | 9.44 |
| 08-Sep-22 | 80 | 50 | 10.98 | 10.92 | 14.48 | 14.30 | 5.85 | 5.85 | 10.18 | 10.14 |
| 09-Sep-22 | 80 | 50 | 8.39 | 8.34 | 12.51 | 12.45 | 6.84 | 6.84 | 6.64 | 6.61 |
| 10-Sep-22 | 80 | 50 | 7.19 | 7.05 | 9.90 | 9.80 | 4.53 | 4.50 | 3.45 | 3.37 |
| 11-Sep-22 | 80 | 50 | 3.60 | 3.55 | 5.32 | 5.24 | 2.34 | 2.32 | 3.24 | 3.19 |
| 12-Sep-22 | 80 | 50 | 5.57 | 5.48 | 11.92 | 11.74 | 3.00 | 2.97 | 4.26 | 4.12 |
| 13-Sep-22 | 80 | 50 | 7.77 | 7.65 | 13.10 | 12.90 | 4.65 | 4.62 | 7.03 | 6.91 |
| 14-Sep-22 | 80 | 50 | 10.92 | 10.81 | 15.47 | 15.35 | 6.92 | 6.91 | 10.89 | 10.82 |
| 15-Sep-22 | 80 | 50 | 10.61 | 10.52 | 13.15 | 13.08 | 7.46 | 7.44 | 9.08 | 9.04 |
| 16-Sep-22 | 80 | 50 | 15.94 | 15.88 | 18.21 | 18.12 | 11.78 | 11.76 | 14.03 | 13.94 |
| 17-Sep-22 | 80 | 50 | 21.12 | 21.06 | 22.59 | 22.45 | 16.09 | 16.06 | 18.69 | 18.59 |
| 18-Sep-22 | 80 | 50 | 7.16 | 7.03 | 7.95 | 7.83 | 4.42 | 4.39 | 5.22 | 5.07 |

| Date | TSP Project Goal ^[1] | PM10 Project Goal | Woolloongabba | | Albert | | Boggo Road | | Northern Portal | |
|-----------|---------------------------------------|----------------------|---------------|-------|--------|-------|------------|-------|-----------------|-------|
| | | | TSP | PM 10 | TSP | PM 10 | TSP | PM 10 | TSP | PM 10 |
| | | | (µg/m3/24 hr) | | | | | | | |
| 19-Sep-22 | 80 | 50 | 13.48 | 13.33 | 16.16 | 15.96 | 10.31 | 10.29 | 11.79 | 11.64 |
| 20-Sep-22 | 80 | 50 | 16.31 | 16.12 | 19.94 | 19.76 | 12.08 | 12.06 | 16.30 | 16.18 |
| 21-Sep-22 | 80 | 50 | 15.68 | 15.61 | 18.22 | 18.11 | 10.22 | 10.21 | 13.60 | 13.55 |
| 22-Sep-22 | 80 | 50 | 14.79 | 14.77 | 15.49 | 15.47 | 10.68 | 10.67 | 12.36 | 12.35 |
| 23-Sep-22 | 80 | 50 | 4.92 | 4.87 | 9.76 | 9.66 | 2.81 | 2.81 | 4.40 | 4.36 |
| 24-Sep-22 | 80 | 50 | 5.92 | 5.82 | 8.23 | 7.98 | 3.47 | 3.44 | 3.94 | 3.86 |
| 25-Sep-22 | 80 | 50 | 8.99 | 8.90 | 8.87 | 8.75 | 6.40 | 6.35 | 7.24 | 7.15 |
| 26-Sep-22 | 80 | 50 | 11.78 | 11.73 | 14.35 | 14.11 | 8.56 | 8.52 | 12.42 | 12.35 |
| 27-Sep-22 | 80 | 50 | 10.52 | 10.43 | 13.08 | 12.74 | 7.60 | 7.43 | 10.91 | 10.84 |
| 28-Sep-22 | 80 | 50 | 13.67 | 13.61 | 15.83 | 15.73 | 10.27 | 10.27 | 11.44 | 11.36 |
| 29-Sep-22 | 80 | 50 | 5.82 | 5.72 | 9.57 | 9.40 | 3.09 | 3.06 | 3.80 | 3.71 |
| 30-Sep-22 | 80 | 50 | 9.33 | 9.28 | 13.49 | 13.30 | 6.44 | 6.43 | 11.08 | 10.97 |

- [1] Project works must aim to achieve construction air quality goals. The Coordinator-General Change Report – Whole of Project Refinements 2019 acknowledges instances exist that these goals may not be achieved.
- [2] The Woolloongabba air quality unit experienced technical difficulties from 1 to 4 September 2022. 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. The monitoring unit has been sent away for repairs and a hire unit was in place from 5 September 2022.
- [3] The Boggo Road air quality unit experienced technical difficulties on the 3 & 4 September 2022. As soon as practicable the unit was inspected, 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.

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 µg/m3/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=cbd¶meter=18&date=1/09/2022&timeframe=month>)
- South Brisbane: PM10 daily Maximum average: **23.3 µg/m3/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=sbr¶meter=18&date=1/09/2022&timeframe=month>)
- Woolloongabba: PM10 daily Maximum average: **42.6 µg/m3/24 hr** (<https://apps.des.qld.gov.au/air-quality/chart/?station=woo¶meter=18&date=1/09/2022&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, 1–30 September 2022 [about Particle PM₁₀](#)

[Brisbane CBD station overview](#)

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

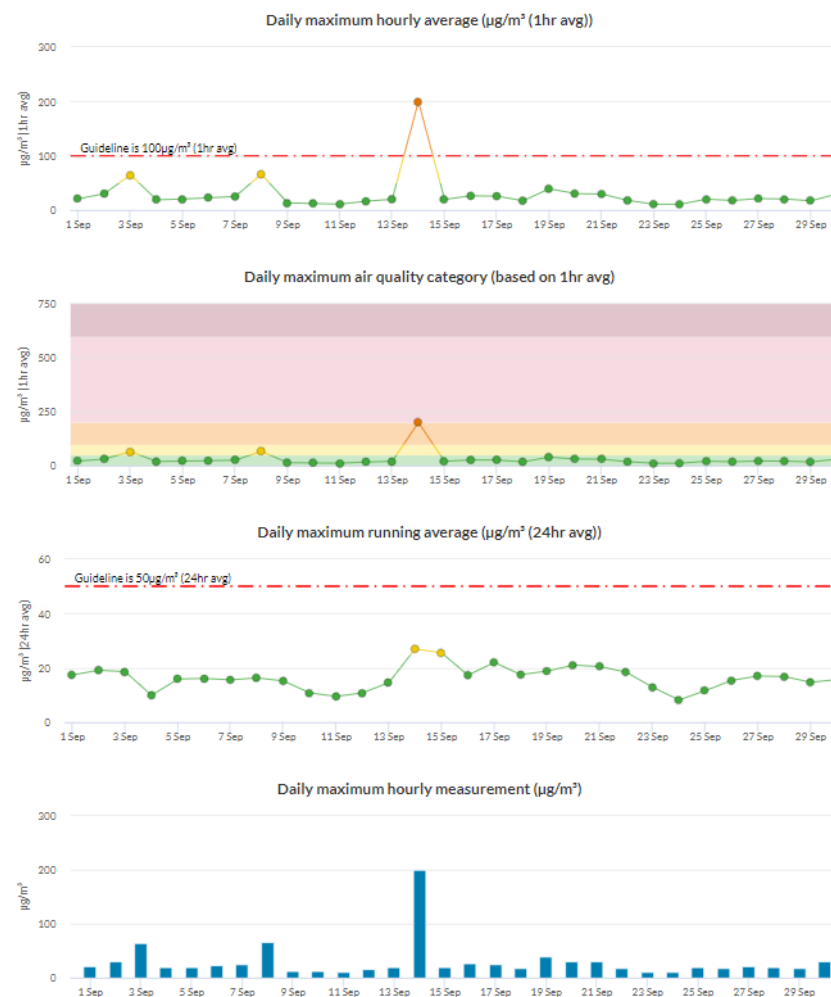


Figure 1: Brisbane CBD – DES Station - PM10 graph for September 2022 (reproduction from the DES website).

Particle PM₁₀ at South Brisbane, 1–30 September 2022 [about Particle PM₁₀](#)

[South Brisbane station overview](#)

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

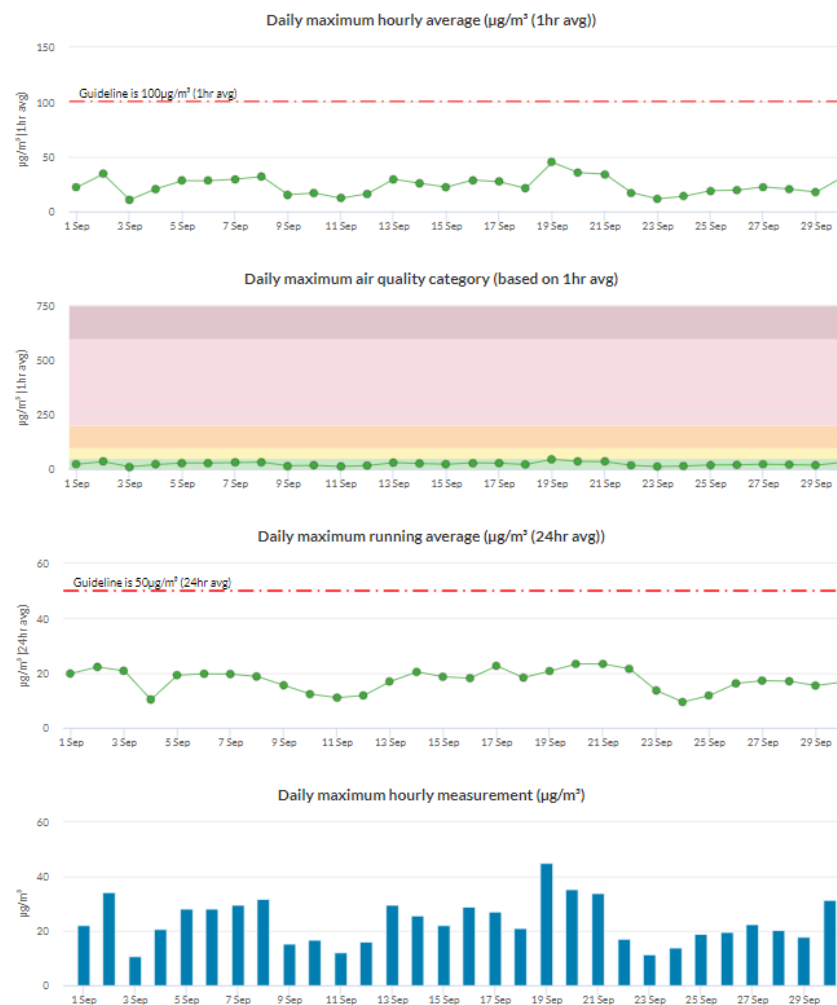


Figure 2: South Brisbane – DES Station - PM10 graph for September 2022 (reproduction from the DES website).

Particle PM₁₀ at Woolloongabba, 1–30 September 2022 [about Particle PM₁₀](#)

[Woolloongabba station overview](#)

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

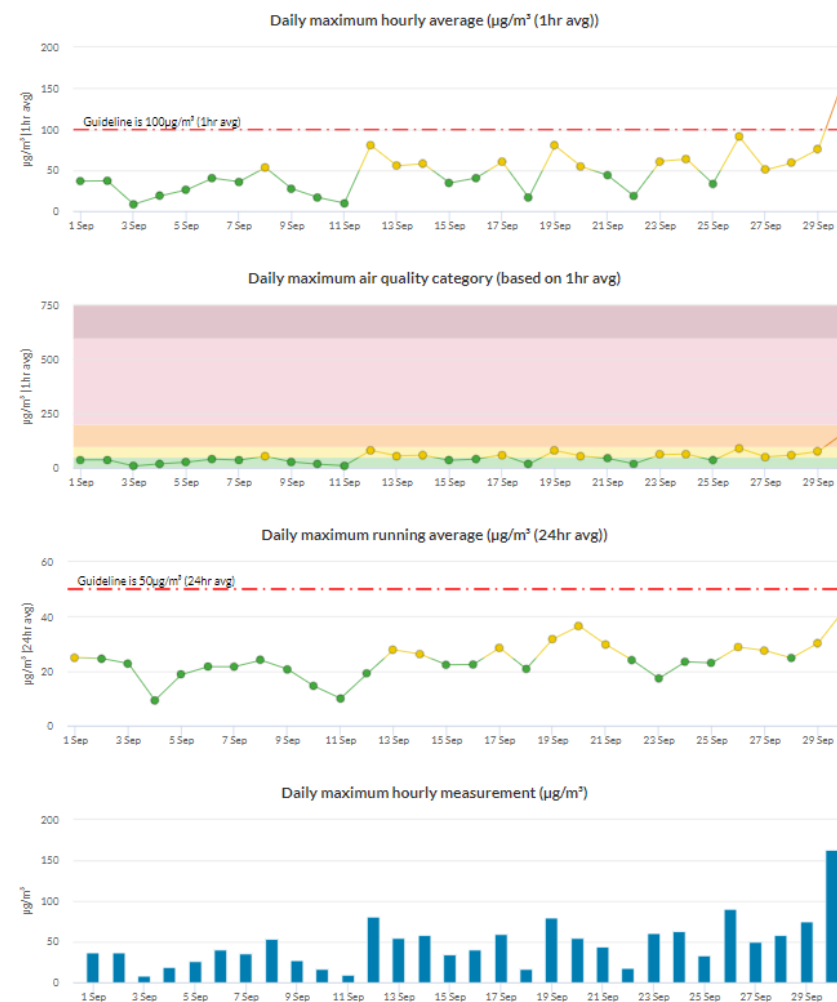


Figure 3: Woolloongabba – DES Station - PM10 graph for September 2022 (reproduction from the DES website).

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 (FRP) (µg/L) | Chlorophyll a (µg/L) | Dissolved oxygen (%) ^[2] | |
| Roma Street | 12/09/2022 | 8.39 | <5 | 0.95 | 230.00 | 610.00 | 500.00 | 1300.00 | 10.00 | <10 | <1 | 87.30 | Yes |
| Albert Street | 15/09/2022 | 7.20 | 16.00 | 0.41 | 1350.00 | 1400.00 | 1400.00 | 4100.00 | 20.00 | <10 | <1 | 73.83 | Yes |
| Boggo Road | 16/08/2022 | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | - ^[5] | N/A |
| Woolloongabba | 19/09/2022 | 7.57 | <5 | 0.73 | 70.00 | 630.00 | 400.00 | 1100.00 | 10.00 | <10 | <1 | 80.26 | 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.
- [5] The Boggo Road sample was acquired, however misplaced by a third-party during transit to be analysed. The results were expected to be consistent with previous months and testing will proceed next month.
- 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 | 1/09/2022 | 7.94 | 1.98 | Yes |
| 2. | Northern Portal | 2/09/2022 | 8.08 | 1.57 | Yes |
| 3. | Northern Portal | 3/09/2022 | 8.10 | 2.03 | Yes |
| 4. | Northern Portal | 5/09/2022 | 8.09 | 3.02 | Yes |
| 5. | Northern Portal | 6/09/2022 | 8.28 | 2.13 | Yes |
| 6. | Northern Portal | 7/09/2022 | 8.33 | 5.60 | Yes |
| 7. | Northern Portal | 8/09/2022 | 8.38 | 22.10 | Yes |
| 8. | Northern Portal | 9/09/2022 | 8.31 | 2.68 | Yes |
| 9. | Northern Portal | 10/09/2022 | 8.41 | 2.78 | Yes |
| 10. | Northern Portal | 12/09/2022 | 8.41 | 1.01 | Yes |
| 11. | Northern Portal | 13/09/2022 | 8.20 | 10.22 | Yes |
| 12. | Northern Portal | 14/09/2022 | 8.41 | 3.57 | Yes |
| 13. | Northern Portal | 15/09/2022 | 8.33 | 3.81 | Yes |
| 14. | Northern Portal | 16/09/2022 | 8.40 | 15.88 | Yes |
| 15. | Northern Portal | 17/09/2022 | 8.28 | 2.06 | Yes |

| | | | | | |
|-----|-----------------|------------|------|-------|-----|
| 16. | Northern Portal | 19/09/2022 | 8.29 | 1.03 | Yes |
| 17. | Northern Portal | 20/09/2022 | 8.42 | 1.77 | Yes |
| 18. | Northern Portal | 21/09/2022 | 8.36 | 12.83 | Yes |
| 19. | Northern Portal | 23/09/2022 | 8.23 | 10.27 | Yes |
| 20. | Northern Portal | 24/09/2022 | 7.72 | 18.70 | Yes |
| 21. | Northern Portal | 26/09/2022 | 8.26 | 4.28 | 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 September 2022, CBGU JV undertook two (2) rounds of surface water sampling at five (5) site locations (upstream and downstream). A localised rain event that occurred on 22nd September 2022 triggered post-rainfall sampling at Albert Street and Woolloongabba precincts. Rainfall recorded at Roma Street and Boggo Road precincts via the on-site weather stations did not trigger post-rainfall sampling at these sites.

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

Table 8: Offsite Upstream & Downstream Water Quality Data

| Location | Upstream / Downstream | Date | Purpose of Monitoring | Turbidity (NTU) | EC (µS/cm) | Dissolved oxygen (%) | pH |
|---------------------------|-----------------------|------------|-----------------------|-----------------|------------|----------------------|------|
| Roma Street | Upstream | 12/09/2022 | Monthly | 10.69 | 30,600 | 83.23 | 7.72 |
| Roma Street | Downstream | 12/09/2022 | Monthly | 9.65 | 29,700 | 83.73 | 7.76 |
| Albert Street | Upstream | 15/09/2022 | Monthly | 4.51 | 27,500 | 94.4 | 7.87 |
| Albert Street | Downstream | 15/09/2022 | Monthly | 5.83 | 27,000 | 93.19 | 7.89 |
| Northern Portal | Upstream | 16/09/2022 | Monthly | 22.5 | 292 | 73.72 | 7.71 |
| Northern Portal | Downstream | 16/09/2022 | Monthly | 14.3 | 378 | 55.52 | 7.51 |
| Woolloongabba | Upstream | 19/09/2022 | Monthly | 4.37 | 12,600 | 74.76 | 7.38 |
| Woolloongabba | Downstream | 19/09/2022 | Monthly | 4.54 | 12,700 | 80.26 | 7.48 |
| Boggo Road ^[1] | Downstream | 19/09/2022 | Monthly | 4.71 | 7,860 | 45.32 | 7.00 |
| Albert Street | Upstream | 23/09/2022 | Post Rainfall | 8.28 | 28,600 | 85.93 | 7.86 |
| Albert Street | Downstream | 23/09/2022 | Post Rainfall | 5.9 | 28,600 | 89.56 | 7.88 |

| Location | Upstream / Downstream | Date | Purpose of Monitoring | Turbidity (NTU) | EC (μS/cm) | Dissolved oxygen (%) | pH |
|---------------|-----------------------|------------|-----------------------|-----------------|------------|----------------------|------|
| Woolloongabba | Upstream | 23/09/2022 | Post Rainfall | 6.71 | 23,500 | 91.98 | 7.63 |
| Woolloongabba | Downstream | 23/09/2022 | Post Rainfall | 24.2 | 4,210 | 102.88 | 7.92 |

- [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 September 2022, seven (7) 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. | 5 Sep 22 | Kent Street (Southern Area Works) | Shared User Path Controls | A stakeholder contacted the Project regarding traffic management controls on the shared user path. CBGU attempted to contact the stakeholder several times to discuss the issue. No response has been received. | Closed |
| 2. | 6 Sep 22 | Hubert Street (Woolloongabba Precinct) | Worker Behaviour | A stakeholder contacted the Project regarding worker behaviour. CBGU investigated the event and reminded the workforce of employee expectations. | Closed |
| 3. | 11 Sep 22 | Albert Street (Albert Street Precinct) | Noise | A stakeholder contacted the Project regarding noise generated from the Albert Street Worksite. 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 |
| 4. | 11 Sep 22 | Unknown (Albert Street Precinct) | Noise | A stakeholder contacted the Project regarding noise generated from the Albert Street Worksite. 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 |
| 5. | 11 Sep 22 | Unknown (Albert Street Precinct) | Noise | A stakeholder contacted the Project regarding noise generated from the Albert Street Worksite. 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 |

| No. | Date | Location | Description of Issue | Responses | Status of Event |
|-----|-----------|---|----------------------|--|-----------------|
| 6. | 19 Sep 22 | Mary Street (Albert Street Precinct) | Noise | <p>A stakeholder contacted the Project regarding noise generated from the Albert Street Worksite. 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.</p> <p>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.</p> | Closed |
| 7. | 20 Sep 22 | Mary Street (Albert Street Precinct) | Noise | <p>A stakeholder contacted the Project regarding noise generated from the Albert Street Worksite. 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.</p> <p>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.</p> | Closed |