



Tomago Estate (MP 07_0086) – Stage 3

Annual Environmental Management Report 2025-26

Prepared For:
Northbank Enterprise Hub Pty Ltd

June 2026

Document Control

Project Name	Tomago Industrial Estate
Title	Annual Environmental Management Report 2025-26
Client	Northbank Enterprise Hub Pty Ltd
Document Status	Final
Date	29 June 2026

Revision History

Version	Purpose	Author	Reviewer
1	Submission to NSW Department of Planning, Housing and Infrastructure	Andrew Wu	SR/RS/SD/DR

Acknowledgements:

MC² Environmental Consulting recognises the assistance provided by Torque Projects in the preparation of this document, particularly Section 8.

Disclaimer:

MC² Environmental Consulting has prepared this document solely for the client identified above. MC² Environmental Consulting accepts no responsibility for any losses or liability resulting from a third party's use of this document.

Table of Contents

1	Title Block.....	1
2	Statement of Compliance	2
3	Introduction.....	3
3.1	Overview of the Development	3
3.2	Regional Context.....	3
3.3	Key Responsibilities	4
3.4	Document Purpose.....	4
4	Approvals.....	8
4.1	Project Approval	8
4.2	Other Approvals.....	8
4.3	Management Plans – Stage 3.....	10
5	Activities During the Reporting Period.....	12
5.1	Administrative Requirements	12
5.2	Construction Activities	12
5.3	Land Management.....	14
6	Actions from the Previous AEMR.....	15
7	Environmental Performance	16
7.1	Traffic and Transport.....	16
7.2	Noise	17
7.3	Air Quality.....	18
7.4	Aboriginal Heritage.....	19
7.5	Visual.....	20
7.6	Ecology	20
8	Water Management.....	24
8.1	Meteorology	24
8.2	Groundwater.....	25
8.3	Surface Water.....	34
9	Community Consultation	37
9.1	Stakeholder Consultation.....	37
9.2	Complaints.....	37

10	Incidents and Non-compliances	38
10.1	Incidents	38
10.2	Non-compliances	38
11	Activities to be Completed in the Next Reporting Period	39
12	References.....	40
13	Abbreviations.....	41

List of Tables

Table 1	The Stages of the Approved Development	3
Table 2	Environmental Management Responsibilities.....	4
Table 3	Annual Reporting Requirements	4
Table 4	Stage 3 Management Plans.....	10
Table 5	Vegetation Community Extents	23
Table 6	Groundwater Quality Parameters.....	29
Table 7	Comparison of Regional Groundwater Level Statistics.....	31
Table 8	Manual Groundwater Level Monitoring Results	32

List of Figures

Figure 1	Regional Locality.....	6
Figure 2	Conceptual Development Layout	7
Figure 3	Works Approved under SWC 230527/01.....	9
Figure 4	Activities During the Reporting Period.....	13
Figure 5	Vegetation Communities within the Conservation Area	22
Figure 6	Monthly Rainfall (Reporting Period vs Average)	24
Figure 7	Cumulative Rainfall (Reporting Period vs Average)	25
Figure 8	Groundwater Monitoring Network.....	28
Figure 9	Recorded Groundwater Levels during the Reporting Period	30
Figure 10	Groundwater Level Monitoring Results.....	33
Figure 11	Complaints.....	37

List of Plates

Plate 1	Disturbance Completed within the Reporting Period	14
Plate 2	Third Parties Disposing of Waste into a Nearby Collector Access Chamber (16 April 2026).....	19
Plate 3	Live Monitoring Equipment installed at SK3520.....	26
Plate 4	Sediment Fences Installed During the Reporting Period	36

Appendices

- Appendix A Cultural Heritage Site Report
- Appendix B Report on Supervision of Vegetation Clearance
- Appendix C Annual Wetland Monitoring Report
- Appendix C Groundwater and Surface Water Monitoring Report

1 Title Block

Name of development	Tomago Industrial Estate
Development Consent (Project Approval)	MP 07_0086
Consent holder	Northbank Enterprise Hub Pty Ltd
Proponents	Northbank Enterprise Hub Pty Ltd (in respect of Lot 210 DP 1174939)
Reporting Period start date	1 May 2025
Reporting Period end date	30 April 2026

Statement on Behalf of Northbank Enterprise Hub Pty Ltd

I, Steve Robson, certify that this audit report is a true and accurate record of the compliance status of MP 07_0086 (for the part of the development on Lot 210 DP 1174939) for the period 01/05/2025 to 30/04/2026 and that I am authorised to make this statement on behalf of Northbank Enterprise Hub Pty Ltd.

Note.

a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the *Environmental Planning and Assessment Act 1979*. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.

b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both)

Name of Authorised Reporting Officer: Steve Robson
Title of Authorised Reporting Officer: Director, Property
Signature of Authorised Reporting Officer:



Date: 30th June 2026

2 Statement of Compliance

The Tomago Estate is a three-stage industrial development authorised by Project Approval MP 07_0086. Northbank Enterprise Hub Pty Ltd (NEH) is the holder of MP 07_0086 and undertakes activities associated with Stage 3 of the development. Westrac Pty Ltd (WesTrac) is responsible for the management of Stages 1 & 2 of the development.

The scope of this Annual Environmental Management Report (AEMR) is limited to NEH's activities associated with Stage 3 of the development. Activities associated with Stages 1 & 2 will be discussed in a separate AEMR prepared on behalf of WesTrac.

NEH's activities during the Reporting Period (1 May 2025 to 30 April 2026) were in accordance with the NSW Project Approval.

3 Introduction

3.1 Overview of the Development

The Tomago Estate is a staged industrial subdivision located in the suburb of Tomago, approximately 12 km north-west of the Newcastle central business district (see **Figure 1**). The approved development consists of three stages, as conceptually shown in **Figure 2**.

Stage 1 of the development is occupied by WesTrac's head office for its NSW & ACT operations. WesTrac is one of the world's largest dealerships of Caterpillar industrial machinery. The WesTrac head office includes facilities for the following activities:

- Manufacturing, servicing and maintenance of earthmoving and mining machinery;
- Warehousing and distribution of machinery and component parts;
- Servicing of on-road trucks;
- Training of personnel (including apprentices); and
- Sales and administration activities.

Stages 2 & 3 of the development are approved for subdivision to facilitate other industrial and commercial enterprises in the future. Condition 1 of Schedule 3 of MP 07_0086 requires the preparation of a revised subdivision plan prior to commencement of Stages 2 and 3. In accordance with this condition, NEH obtained the Planning Secretary's approval of its revised Estate Layout Plan on 16 August 2023. The approved Estate Layout Plan supersedes the plan shown in Appendix 1 of MP 07_0086. The conceptual layout shown in **Figure 2** is consistent with the approved Estate Layout Plan.

NEH commenced construction activities associated with Stage 3 during this Reporting Period. These activities are outlined in **Section 5.2**. Stage 2 of the development has not commenced.

Table 1 identifies the parcels of land included within each development stage and the parties responsible.

Table 1 The Stages of the Approved Development

Stage	Proponent	Applicable Land	Current Status
1	WesTrac	Lot 212 & Part of Lot 211 DP 1174939	Completed
2	WesTrac	Lot 211 DP 1174939	Not Commenced
3	NEH	Lot 210 DP 1174939	Commenced

In addition to the three development stages, the approved development under MP 07_0086 includes a 22 ha conservation area (Lot 22 DP 1150980). This conservation area has been dedicated to the NSW National Parks and Wildlife Service (NPWS) and now forms part of the Hunter Wetlands National Park.

3.2 Regional Context

The suburb of Tomago is predominantly industrial in character and includes several well-established businesses such as Tomago Aluminium Smelter, Williams River Steel and Hunter Galvanising.

The development is located within the Tomago Industrial Site, which is designated as a State Significant Precinct under *State Environmental Planning Policy (Precincts – Regional) 2021*.

The development is located west of the Hunter Wetlands National Park, which is administered by the NPWS. There are also other wetlands located south of the site, but which are not within a protected area.

Tomago Estate is located on the northern arm of the Hunter River. Kooragang Island is located across the Hunter River to the south of the site. The southern portion of Kooragang Island supports significant industrial infrastructure, including Newcastle's port infrastructure.

There is no substantial residential development in the vicinity of Tomago Estate. Newcastle Airport, the major airport for the Hunter region, is located approximately 9 km east of the site.

3.3 Key Responsibilities

The personnel responsible for environmental management on behalf of NEH are listed in **Table 2**.

Table 2 Environmental Management Responsibilities

Representative	Position	Contact Details
Steve Robson	Director, Property	(02) 8229 0312 steve.robson@acequity.com.au
Riley Sampson	Senior Development Manager	(02) 8229 0312 riley.sampson@acequity.com.au

3.4 Document Purpose

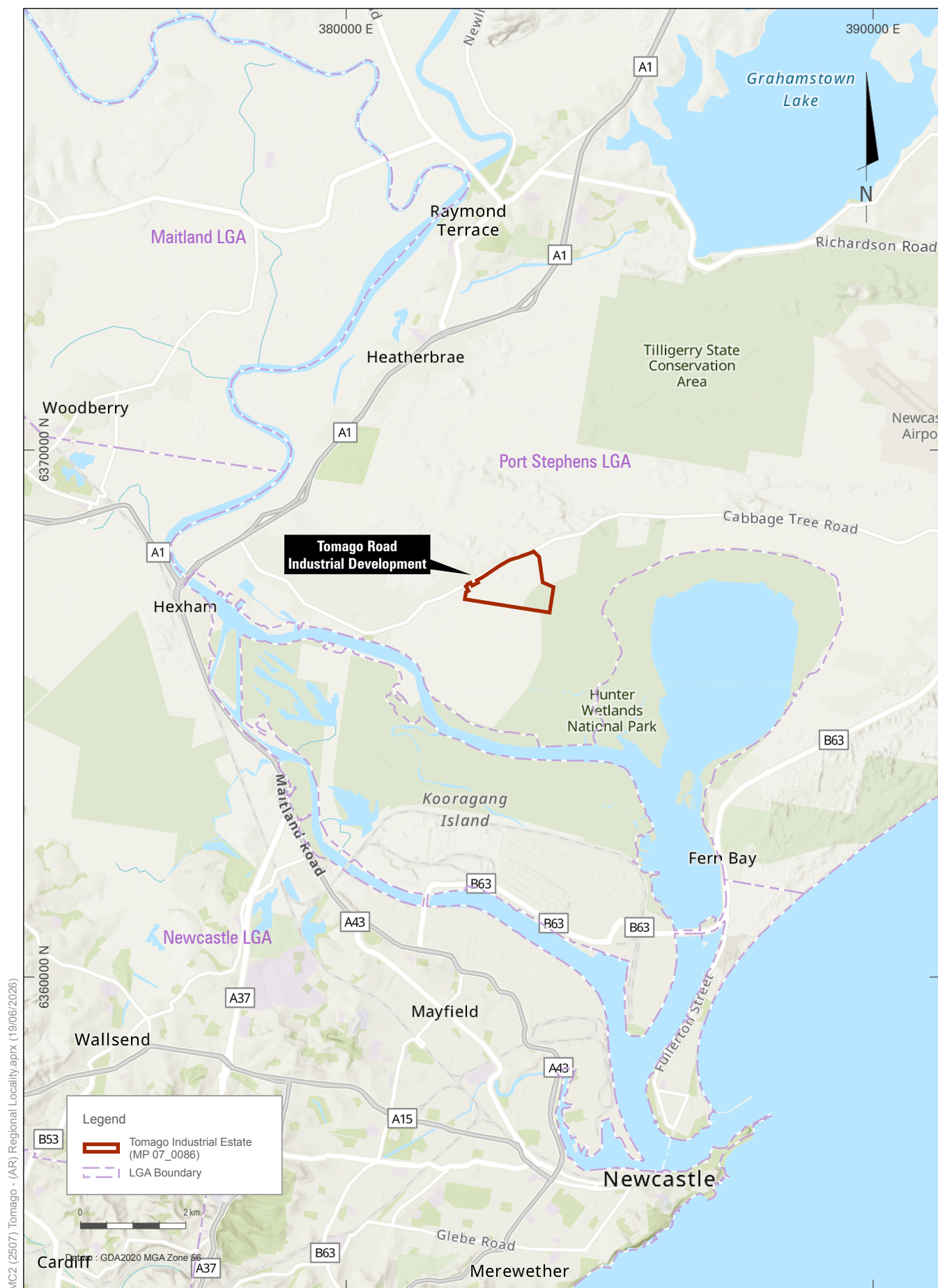
This AEMR has been prepared to satisfy the annual reporting requirements under Schedule 4, Condition 44 of MP 07_0086. **Table 3** reproduces the requirements of this Condition and indicates where the required information is presented in this AEMR.

This AEMR discusses the environmental performance of Stage 3 of the development during the period from 1 May 2025 to 30 April 2026 (the Reporting Period).

Table 3 Annual Reporting Requirements

Condition	Requirement	Relevant Sections
44	Within 12 months of this approval, and annually thereafter, the Applicant must submit an AEMR to the Planning Secretary and relevant agencies. This report must:	Sections 7.1.1, 7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 8.2.1 & 8.3.1
	(a) identify the standards and performance measures that apply to the development	
	(b) describe the works carried out in the last 12 months;	Section 5
	(c) describe the works that will be carried out in the next 12 months;	Section 11
	(d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;	Section 9.1
	(e) include a summary of the monitoring results (including groundwater level data from the Hunter Water Corporation bore SK3520) for the development during	Section 8.2.3

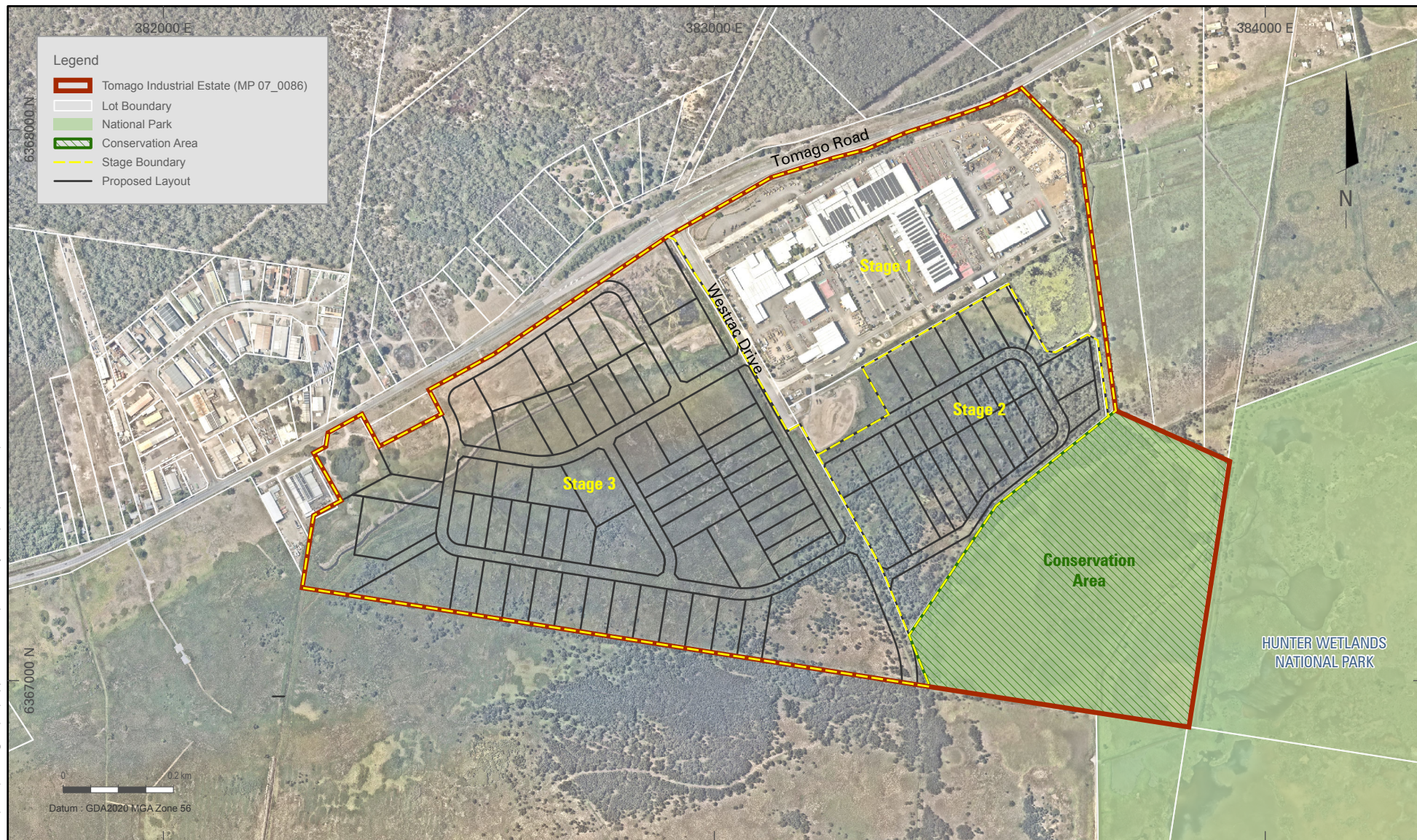
Condition	Requirement	Relevant Sections
	the past year;	
	(f) include an analysis of these monitoring results against the relevant: • impact assessment criteria/limits; • monitoring results from previous years; and • predictions in the EA;	Sections 7.1.2, 7.2.2, 7.3.2, 7.4.2, 7.5.2, 7.6.2, 8.2.3 & 8.3.3
	(g) identify any trends in the monitoring results over the life of the development;	Sections 7.1.2, 7.2.2, 7.3.2, 7.4.2, 7.5.2, 7.6.2, 8.2.3 & 8.3.3
	(h) identify any non-compliance during the previous year; and	Section 10.2
	(i) describe what actions were, or are being, taken to ensure compliance.	Section 7.1.2, 7.2.2, 7.3.2, 7.4.2, 7.5.2, 7.6.2, 8.2.2 & 8.3.2



TOMAGO ESTATE

Regional Locality

FIGURE 1



TOMAGO ESTATE

Approved Development Layout

FIGURE 2

4 Approvals

4.1 Project Approval

4.1.1 Approvals History

Project Approval MP 07_0086 was granted on 7 August 2009 under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Part 3A was the planning approvals regime for 'Major Projects' at the time.

Construction activities associated with Stage 1 of the development commenced in February 2010. Those works represented the 'substantial commencement' of building works, as required by Condition 5 of Schedule 2 of MP 07_0086.

MP 07_0086 has subsequently been modified on three occasions, as follows:

- Modification 1 (MOD1) was granted on 26 November 2015 and facilitated improvements to the drainage management system;
- Modification 2 (MOD2) was granted on 20 June 2017 and made administrative changes to the groundwater monitoring requirements under MP 07_0086; and
- Modification 3 (MOD3) was granted on 18 August 2021 and swapped the location of the machine test and demonstration area with another building (which was approved but not constructed).

4.1.2 Reporting Period

No modifications to MP 07_0086 or new development consents were sought during the Reporting Period.

4.2 Other Approvals

NEH obtained a Subdivision Works Certificate (230527/01) on 14 November 2025 to undertake early works in the northern portion of Stage 3.

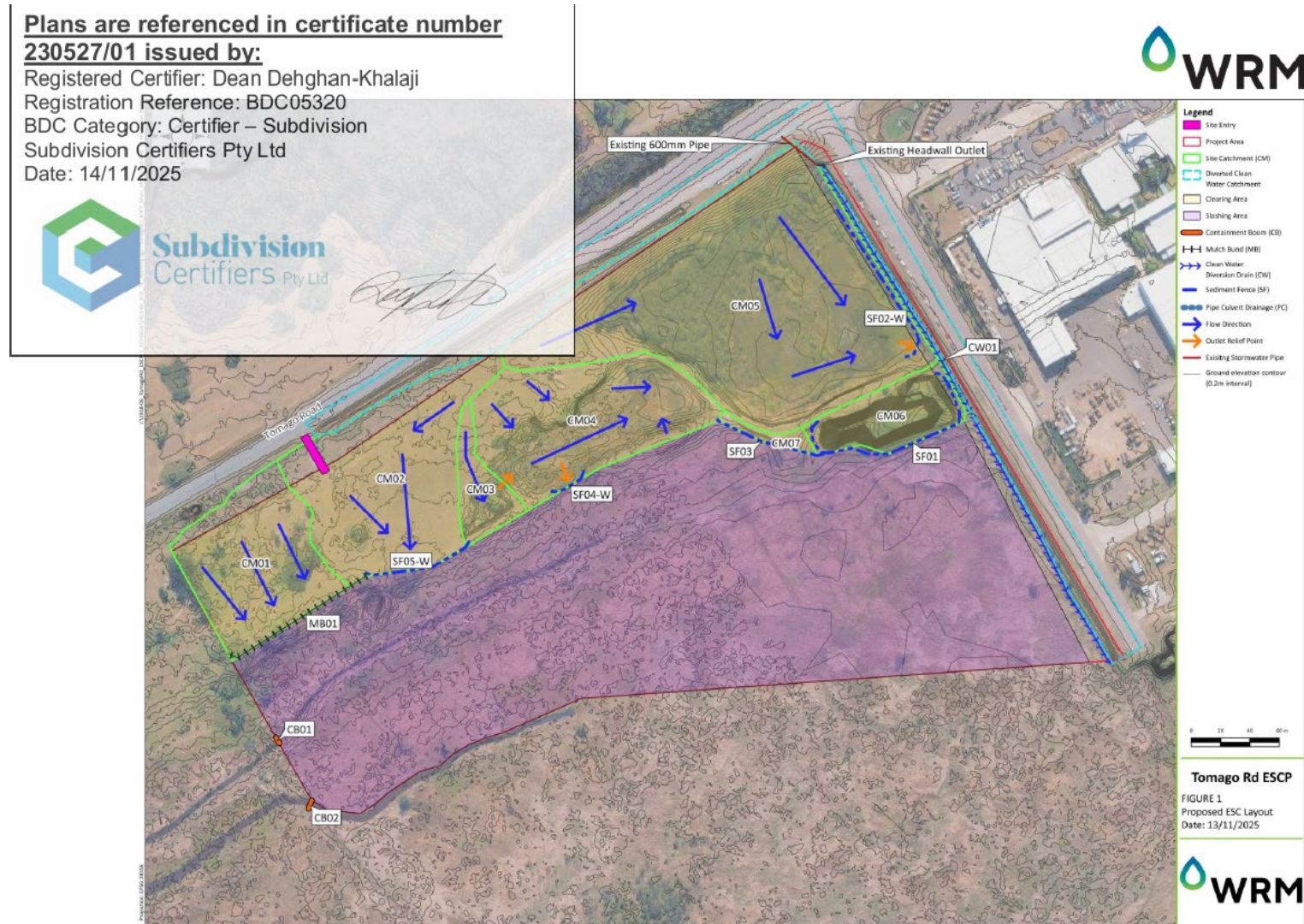
A Subdivision Works Certificate (SWC) is required to undertake physical works related to a development consent for subdivision. An SWC differs from a Subdivision Certificate, which divides land into multiple parts. NEH has not applied for any Subdivision Certificates.

SWC 230527/01 authorises the following activities:

- Establishment of a construction access;
- Clearing of vegetation in the northernmost portion of Lot 210 DP 1174939;
- Slashing of vegetation to the south of the cleared area; and
- Installation of erosion and sediment controls.

These works are shown in **Figure 3**.

Figure 3 Works Approved under SWC 230527/01



Source: Subdivision Certifiers (2025)

4.3 Management Plans - Stage 3

MP 07_0086 requires the preparation or updating of the following management plans in respect of Stage 3:

- Soil and Water Management Plan (pursuant to Condition 8 of Schedule 3) which includes:
 - Site Water Balance;
 - Sediment and Erosion Control Plan;
 - Acid Sulfate Soils Management Plan;
 - Stormwater Management Scheme;
 - Groundwater Monitoring Program for Tomago sand beds; and
 - Wastewater Management Plan;
- Aboriginal Heritage Management Plan (pursuant to Condition 31 of Schedule 3);
- Landscape Management Plan (pursuant to Condition 36 of Schedule 3); and
- Energy Efficiency Plan (pursuant to Condition 40 of Schedule 3).

The management plans applicable to Stage 3 are listed in **Table 4**.

The Stormwater Management Plan serves as multiple components of the Soil and Water Management Plan, namely the site water balance, sediment and erosion control plan and stormwater management scheme. A Wastewater Management Plan was previously developed for Stage 1 but immediately became obsolete as Tomago Estate was connected to the municipal sewerage system prior to Stage 1 occupancy. As such, all relevant components of the Soil and Water Management Plan have been updated for Stage 3.

The Design Guideline includes the content required to satisfy the requirement for a Landscape Management Plan under Condition 36 of Schedule 3 of MP 07_0086.

An Energy Efficiency Plan is required prior to the commencement of operations. This Plan is not required during the construction phase for Stage 3.

Table 4 Stage 3 Management Plans

Plan	Application	Condition of MP 07_0086	Approval Date
Aboriginal Cultural Heritage Management Plan	Stages 1, 2 & 3	Condition 31 of Schedule 3	22 January 2010
Environmental Management Strategy	Stage 3	Condition 42 of Schedule 4	16 June 2025
Groundwater Monitoring Program	Stage 3	Conditions 8 & 13 of Schedule 3	11 June 2025
Acid Sulfate Soils Management Plan	Stage 3	Conditions 8 & 11 of Schedule 3	DPHI acknowledged receipt of the updated plan on 21 March 2025. It advised on April 2025 that further approval is not required for this plan.
Stormwater Management Plan	Stage 3	Conditions 8, 9, 10 & 12 of Schedule 3	14 March 2025

Plan	Application	Condition of MP 07_0086	Approval Date
Design Guidelines	Stage 3	Condition 2 of Schedule 3	14 March 2025
Landscape Plans	Stage 3	Condition 36(b) of Schedule 3	14 March 2025
Traffic Noise Verification Study	Stage 3	Condition 30 of Schedule 3	14 March 2025

MP 07_0086 includes a requirement for a Construction Management Plan (or equivalent) in the Statement of Commitments. To meet this requirement, a Construction Management and Environment Management Plan (CMEMP) was prepared by PrincetonCo (2025) to facilitate best practice management of disturbance impacts. This CMEMP outlines management and mitigation measures for various environmental aspects including:

- Biodiversity;
- Aboriginal cultural heritage;
- Water management;
- Noise;
- Dust;
- Acid sulfate soils; and
- Waste and chemicals.

5 Activities During the Reporting Period

5.1 Administrative Requirements

Condition 2 of Schedule 3 of MP 07_0086 requires the preparation of Design Guidelines prior to the commencement of Stage 3. This requirement was satisfied by the *'Design Guidelines: Northbank Enterprise Hub, Tomago'* (Urbis, 2024), which was approved by the Planning Secretary on 25 September 2025.

On 14 November 2025, NEH notified the following stakeholders of the impending commencement of Stage 3:

- Department of Planning, Housing and Infrastructure (DPHI);
- Port Stephens Council (PSC);
- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Conditions 14 & 16 of Schedule 2 of MP 07_0086 require certain development contributions prior to the issue of a subdivision certificate. The issue of SWC during the Reporting Period does not trigger these requirements, as this SWC does not constitute a 'subdivision certificate'.

5.2 Construction Activities

The construction phase for Stage 3 commenced on 17 November 2025. Construction activities to date have been limited to preliminary clearing and property management.

The following construction activities have been undertaken consistent with SWC 230527/01:

- Establishment of an access for continued construction activities;
- Clearing of vegetation; and
- Slashing of vegetation.

The extent of disturbance undertaken during the Reporting Period is shown in **Figure 4**. The clearing and slashing have occurred within the area authorised by SWC 230527/01 (as shown in **Plate 1**).

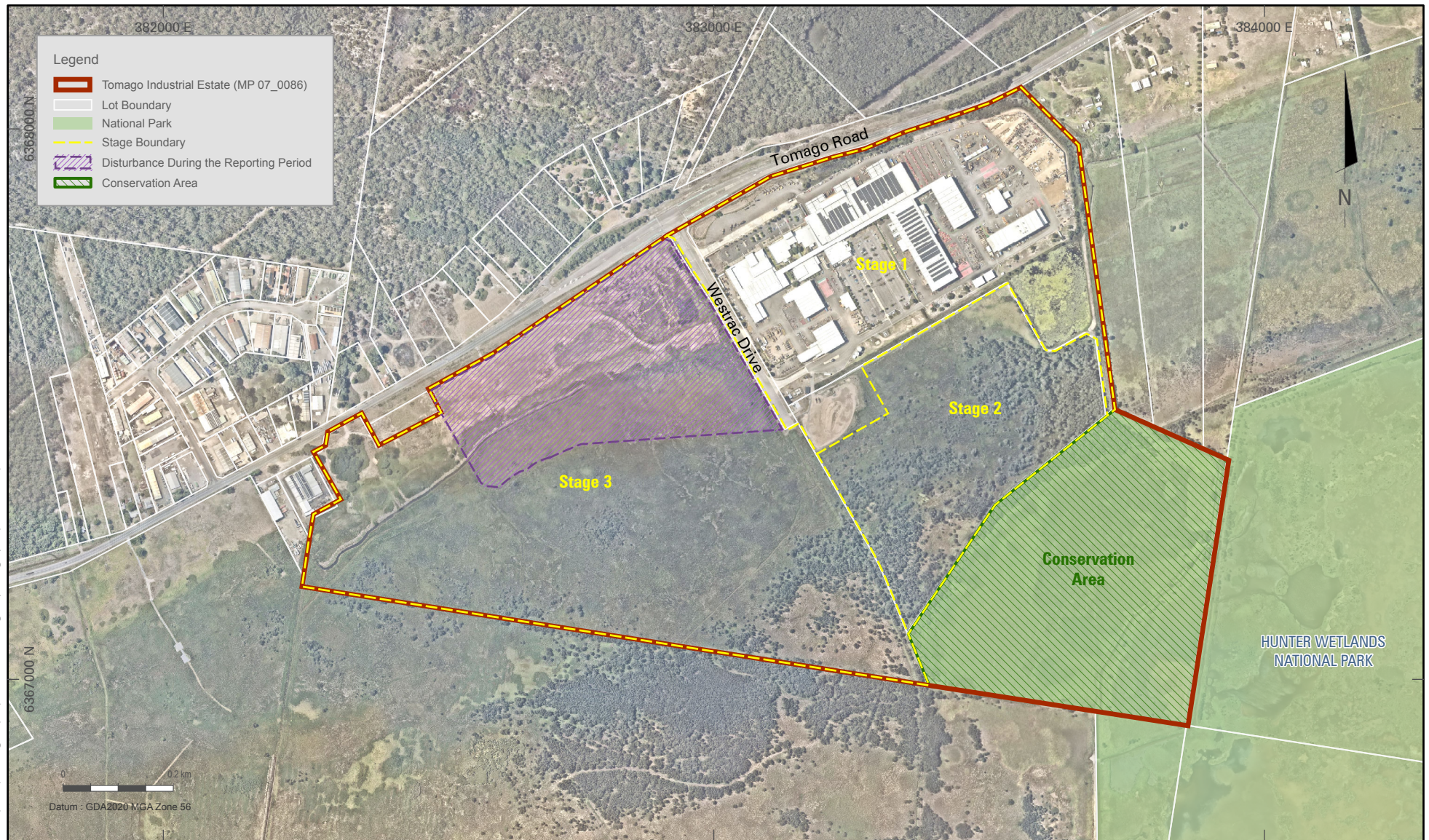
The current construction fleet consists of the following equipment:

- 7 tonne excavator;
- 20 tonne excavator with mulch head;
- Amphibious excavator;
- Truxor (amphibious machine); and
- Tractor with slasher.

There is currently no on-site storage of fuels or other hydrocarbons. Accordingly, the bunding requirement under Condition 7 of Schedule 3 of MP 07_0086 is not applicable. Instead, the construction fleet is refuelled by a fuel truck, which attends the site on demand.

The construction workforce currently consists of 7 full-time equivalent personnel. All of these workers reside locally within the Hunter region. The equipment fleet and workforce size will change in the future proportionate to the scale of construction activities.

Due to the small workforce at present, only minor quantities of general waste are produced. All general waste is removed from the site by a licensed waste contractor. Vegetative matter is mulched and reused on-site to manage erosion and sedimentation.



TOMAGO ESTATE

Activities During the Reporting Period

FIGURE 4

Plate 1 Disturbance Completed within the Reporting Period



5.3 Land Management

In addition to the works undertaken pursuant to SWC 230527/01, NEH has undertaken the following land management activities (which are required regardless of construction):

- Weed and pest management;
- Maintenance of existing drainage channels, including control of vegetation growth to maintain flows; and
- Maintenance of access tracks to monitoring wells.

6 Actions from the Previous AEMR

In its letter dated 3 September 2025, DPHI advised that the previous AEMR generally satisfied the reporting requirement under MP 07_0086 and did not raise any concerns.

7 Environmental Performance

7.1 Traffic and Transport

7.1.1 Performance Measures and Standards

Condition 24 of Schedule 3 of MP 07_0086 requires the preparation of a Traffic Verification Study prior to commencement of Stage 3. The Transport Verification Study is required to:

- a) *be submitted to the Planning Secretary for approval prior to construction of Stage 2 and 3;*
- b) *is undertaken by a suitably qualified traffic engineer;*
- c) *has been prepared in consultation with TfNSW and Council;*
- d) *includes current traffic counts and 10 year traffic growth projections;*
- e) *details traffic generation rates for each stage;*
- f) *demonstrates that the site access would accommodate traffic generated by Stages 2 and 3; and*
- g) *if required, details any upgrades required to Tomago Road and the site access to accommodate Stages 2 and 3.*

7.1.2 Environmental Performance

The 'Tomago Estate Transport Verification Study' was prepared by The Transport Planning Partnership (2023) to consider the traffic implications of Stage 3, as required by Condition 24 of Schedule 3 of MP 07_0086. This Transport Verification Study was approved by the Planning Secretary on 14 March 2025.

The Transport Verification Study utilised traffic count data from May 2023 to model the performance of the Tomago Road / Westrac Drive intersection. The AM peak was determined to be 6:00 to 7:00 am, whereas the PM peak occurs from 3:45 to 4:45 pm.

Although the study was focused on Stage 3, the potential traffic generation due to the approved development of Stage 2 was also considered for cumulative assessment purposes. The total traffic generation associated with Stages 2 & 3 was predicted to be:

- 964 vehicles during the AM peak; and
- 1,074 vehicles during the PM peak.

These values reflect the predicted traffic volumes upon completion of Stages 2 & 3. Given that Stage 3 is currently in the early construction phase, traffic volumes during the Reporting Period were far less than the volumes predicted by the Transport Verification Study. All construction personnel and plant have accessed the site via Tomago Road and Westrac Drive.

The traffic modelling predicted that the Tomago Road / Westrac Drive intersection will perform at an acceptable level of service (LoS C or better). Accordingly, no further upgrades to this intersection are required to accommodate the future development of Stages 2 & 3.

7.1.3 Next Reporting Period

Construction of Stage 3 is expected to continue throughout the next Reporting Period. Traffic volumes associated with construction are expected to remain well within the peak volumes predicted by the Transport Verification Study.

7.2 Noise

7.2.1 Performance Measures and Standards

Condition 25 of Schedule 3 of MP 07_0086 outlines the permissible working hours for the development. Construction activities may be carried out within the following hours:

- 7am and 6pm on weekdays; and
- 8am and 1pm on Saturday.

Condition 26 of Schedule 3 outlines noise limits for the development (as a whole).

Condition 30 of Schedule 3 requires the preparation of a noise verification study prior to the commencement of Stage 3. The purpose of this study is confirm whether road traffic noise associated with development will comply with the criteria recommended by '*Environmental Criteria for Road Traffic Noise*'. (ECRTN). If any residences are predicted to experience exceedances of these criteria, mitigation measures must be implemented to the satisfaction of the Planning Secretary.

7.2.2 Environmental Performance

All construction activities associated with Stage 3 were undertaken within the standard construction hours prescribed by Condition 25 of Schedule 3 of MP 07_0086.

If NEH receives a complaint related to noise, it will commission attended noise monitoring to determine whether its activities are complying with the noise criteria prescribed by MP 07_0086. Given that no noise complaints were received during the Reporting Period, there are no noise monitoring results to report

The '*Tomago Industrial Site – Stage 3: Noise and Vibration Verification*' (EMM, 2024) was prepared in accordance with Condition 30 of Schedule 3 of MP 07_0086. For receptors near the development, the relevant road traffic noise criteria are:

- 60 $L_{Aeq, 15h}$ for the day period; and
- 55 $L_{Aeq, 9h}$ for the night period.

These criteria are already exceeded due to existing traffic along Tomago Road. Where background traffic already results in exceedances, the ECRTN recommends that new developments should not increase the noise level by more than 2 dB. If the incremental increase due to a development is greater than 2 dB, further noise mitigation measures are warranted.

The noise modelling undertaken by EMM (2024) predicted that the additional traffic generated by Stage 3 will not increase traffic noise levels by more than 2 dB. That is, Stage 3 will comply with the ECRTN when considered in isolation. However, when all three stages of the development are considered cumulatively, the increase in road traffic noise would exceed the 2 dB limit prescribed by the ECRTN.

Since Stage 2 has not commenced and Stage 3 is still under construction, road traffic impacts are unlikely to have exceeded the ECRTN limits during the Reporting Period.

NEH has offered to enter into negotiated agreements with the three landowners that are predicted to experience noise exceedances. One of these landowners subsequently entered into the negotiated agreement, whereas the other two landowners have not accepted the offer at this stage.

7.2.3 Next Reporting Period

Construction activities will continue to be limited to the working hours specified in Condition 25 of Schedule 3 of MP07_0086.

As the scale of construction activities increases, consideration will be given to whether additional noise controls are necessary. Such controls may include:

- Utilising lower noise equipment or retrofitting with noise attenuation devices; and
- Reducing or suspending construction works during adverse weather conditions (e.g. strong winds in the direction of private residences).

7.3 Air Quality

7.3.1 Performance Measures and Standards

Condition 32 of Schedule 3 of MP 07_0086 requires that:

"The Applicant must carry out all reasonable and feasible measures to minimise dust generated by the development, ensuring that suitable control measures are implemented to manage dust generated from stockpiles of fill and filling activities".

Condition 33 of Schedule 3 of MP 07_0086 requires the following dust management measures during construction activities:

- (a) all trucks entering or leaving the site with loads have their loads covered;*
- (b) trucks associated with the development do not track dirt onto the public road network;*
and
- (c) public roads used by these trucks are kept clean.*

Condition 34 of Schedule 3 of MP07_0086 states:

"The Applicant must not cause or permit the emission of any offensive odour from the site".

7.3.2 Environmental Performance

The construction of Stage 3 has not progressed to the phase where fill material is being imported to the site. As such, the requirement for truck loads to be covered is not yet applicable.

The construction activities to date have not involved significant earthworks or material handling. As such, dust emissions would be limited to wind-blown dust from cleared areas, which are minor in the context of dust generating activities. As the construction phase progresses, controls will need to be implemented on-site in accordance with MP 07_0086, the associated Statement of Commitments and the CMEMP.

The construction of Stage 3 will not involve any activities that are likely to generate significant odour (such as blasting). NEH did not receive any complaints related to dust or odour during the Reporting Period.

A waste contractor has been observed disposing of sewerage into a collector access chamber at the nearby Hunter Water sewer pump station (see **Plate 2**). This activity results in noticeable odour but is not related to the development. As such, it is not relevant to assessing compliance with Condition 34 of Schedule 3.

Plate 2 Third Parties Disposing of Waste into a Nearby Collector Access Chamber (16 April 2026)



7.3.3 Next Reporting Period

The construction of Stage 3 will continue to progress in the next Reporting Period. It is expected that land raising will commence, which will necessitate the importation of fill material. As required by Condition 33 of Schedule 3 of MP07_0086, all trucks hauling material to the site will have their loads covered. Other existing dust controls will also continue to be implemented throughout the next Reporting Period.

7.4 Aboriginal Heritage

7.4.1 Performance Measures and Standards

Condition 31 of Schedule 3 of MP 07_0086 requires the preparation of an Aboriginal Heritage Management Plan prior to commencement of the development. This requirement has been satisfied by the Aboriginal Cultural Heritage Management Plan (ACHMP) prepared by Indigenous Outcomes (2009), which applies to all three stages of the development.

7.4.2 Environmental Performance

The ACHMP requires that a Sites Officer from the Worimi Local Aboriginal Land Council (WLALC) be present during the initial stages of ground disturbing works. In accordance with this commitment, the Cultural and Heritage Sites Officer from WLALC was present during construction activities from 17 to 20 November 2025. The pre-clearance survey identified artefacts at two locations, comprising a total of 42 stone artefacts and 21 shells. These artefacts were collected and re-buried in a location outside the disturbance footprint.

The WLALC's report on the initial ground disturbing works is provided in **Appendix A**.

7.4.3 Next Reporting Period

It is not anticipated that further surveys by a Sites Officer will be required for the remaining disturbance approved by SWC 230527/01.

If any new disturbance areas are commenced in the next Reporting Period, those works will be undertaken in accordance with the ACHMP (including consultation with the WLALC, as needed).

7.5 Visual

7.5.1 Performance Measures and Standards

Condition 36 of Schedule 3 of MP 07_0086 required an update of the Landscape Management Plan prior to commencement of construction of Stage 3. This update has been completed and was approved by DPHI on 14 March 2025.

Condition 39 of Schedule 3 of MP 07_0086 requires the management of lighting impacts. Lighting is required to meet the relevant Australian Standards and operated in a manner that minimises nuisance to surrounding land uses. This requirement is unlikely to be applicable until the operational phase of Stage 3, as construction activities are generally not conducted at night.

7.5.2 Environmental Performance

NEH obtained the Planning Secretary's approval of its '*Design Guidelines: Northbank Enterprise Hub, Tomago*' (Urbis, 2024) (Design Guidelines) on 25 September 2025. The Design Guidelines include a Stage 3 Landscape Masterplan which meets the requirements of Condition 36(b) of Schedule 3 of MP 07_0086.

The Stage 3 Landscape Masterplan shows the proposed landscaping works within the future subdivision, including locations and species compositions of proposed tree screens. In general, tree plantings will be established along Westrac Drive, the internal access roads and around the stormwater management areas. These plantings will be completed after final ground levels and civil works have been completed. No part of Stage 3 has progressed to the stage where plantings are ready to be implemented.

No construction activities have been undertaken at night. As such, Condition 39 of Schedule 3 of MP 07_0086 has not been applicable.

7.5.3 Next Reporting Period

Construction activities will progress further in the next Reporting Period (see **Section 11**) but are not expected to reach the stage where landscaping can commence.

7.6 Ecology

7.6.1 Performance Measures and Standards

Condition 4B of Schedule 3 of MP07_0086 requires drainage management to avoid adverse impacts to the Conservation Area. This condition relevantly states:

"For the purpose of this condition, adverse impacts are considered to occur when there is a decline in Phragmites Rushland vegetation cover of greater than 20% in extent and Swamp Oak Sedge Forest greater than 10% in extent on the 22 hectare NPWS reserve to the south of the site, when compared against the Kleinfelder April 2010 baseline report".

7.6.2 Environmental Performance

Mitigation

MP 07_0086 does not require the preparation of a Biodiversity Management Plan (or similar). Notwithstanding, the clearing and slashing of vegetation has been undertaken in accordance with the following internal management plans developed for NEH:

- CMEMP (as outlined in Section 4.3); and
- 'Clearing Protocol and Translocation Plan' (AEP, 2025), which was provided to DPHI on 14 November 2025.

The clearing of vegetation in the northernmost portion of Stage 3 was supervised by an ecologist from Anderson Environment & Planning (AEP). The ecologist was present from 17 to 28 November 2025 and observed the removal of all habitat trees (including hollow bearing trees). In addition, the ecologist identified a population of Wallum Froglet (*Crinia tinnula*) in an open grassy area. Sixteen individuals of this species were translocated to alternative habitat outside of the disturbance footprint. A number of snakes were also translocated.

AEP's report on its pre-clearance surveys and supervision of the Stage 3 works is provided in **Appendix B**.

Offsetting

Cool Burn Fire and Ecology (Cool Burn) has conducted annual monitoring of the wetlands within the Conservation Area (Lot 22 DP 1150980) to assess the extent of Phragmites Rushland vegetation and Swamp Oak Sedge Forest (as required by Condition 4B of Schedule 3 of MP 07_0086).

The baseline extent of Phragmites Rushland vegetation and Swamp Oak Sedge Forest were established through surveys conducted in October 2009 and April 2010 by ecobiological (now known as Kleinfelder). This baseline biometric data was discussed in ecobiological (2010).

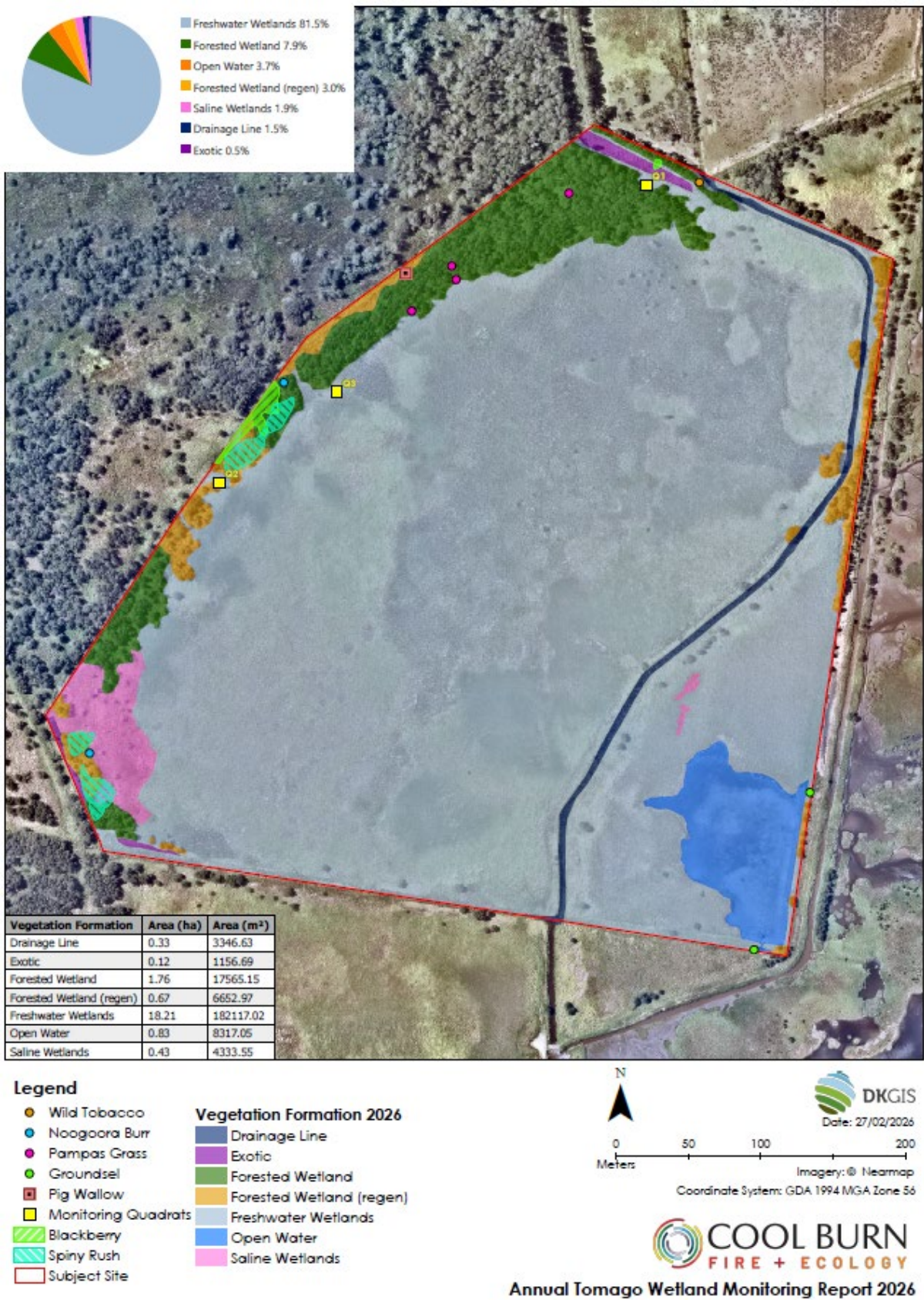
Monitoring of the Conservation Area was undertaken on 13 February 2026 by Cool Burn to establish the current distribution of key vegetation communities. The survey consisted of three plots undertaken in accordance with the Biobanking Assessment Methodology Operation Manual. The February 2025 survey represents the 16th monitoring event since commencement of the development.

The vegetation composition of the Conservation Area (as surveyed in February 2026) is shown in **Figure 5**. The mapped areas of "freshwater wetland" represent Phragmites Rushland, whereas "forested wetland" represents Swamp Oak Sedge Forest.

As shown in **Figure 5**, the areas of Phragmites Rushland and Swamp Oak Sedge Forest present within the Conservation Area were greater during the Reporting Period than the 2009/2010 baseline. As such, no additional drainage management measures are required to address Condition 4B of Schedule 3 of MP07_0086. The results of the 2026 wetland monitoring are reported in full in **Appendix C**.

The 2026 annual monitoring observed an increase in Swamp Oak Sedge Forest in comparison to the February 2025 monitoring and a significant increase (22%) compared to baseline conditions. The extent of freshwater wetland reduced by 0.04ha comparison to 2025 monitoring results but remains 2% greater than the baseline area. Since the extents of these communities have not declined relative to the 2009/10 baseline, the Conservation Area remains compliant with Condition 4B of Schedule 3 of MP 07_0086 in no further action required at present.

Figure 5 Vegetation Communities within the Conservation Area



Source: Cool Burn (2026)

The increase in Swamp Oak Sedge Forest (a saltwater community) is larger than the increase in Phragmites Rushland (a freshwater community). This is consistent with the NPWS' actions which are focused on increasing tidal (saline) flows to the adjacent wetland area.

Table 5 Vegetation Community Extents

Survey Period	Phragmites Rushland	Swamp Oak Sedge Forest
2009/2010	17.86 ha	1.99 ha
2026	18.21 ha	2.43 ha
% change	2% increase	22% increase

7.6.3 Next Reporting Period

The existing drainage management measures will be maintained throughout the next Reporting Period. Annual vegetation monitoring will be undertaken (ideally in February 2027) to confirm that the extent of Swamp Oak Sedge Forest and Phragmites Rushland has not declined compared to the 2009/10 baseline.

8 Water Management

8.1 Meteorology

Climatic conditions (particularly rainfall) provide important context when considering the performance of a development in relation to water management. Long-term rainfall data has been sourced from the Bureau of Meteorology's station at Williamtown RAAF (Station No. 061078), which is located approximately 7km from the development site.

Wet rainfall conditions (9th decile) were experienced during the Reporting Period. The Williamtown RAAF meteorological station recorded 1,365 mm of rainfall during the Reporting Period, which was well above the long-term average of 1135 mm. Particularly wet conditions were experienced in May 2025, with 500 mm of rainfall recorded and August 2025, with 255 mm of rainfall recorded. This rainfall was well above the long-term averages for those months. Rainfall from September 2025 to April 2026 was below long term average monthly rainfall.

Figure 6 and **Figure 7** compares the rainfall recorded during the Reporting Period to long-term averages for the local area.

Figure 6 Monthly Rainfall (Reporting Period vs Average)

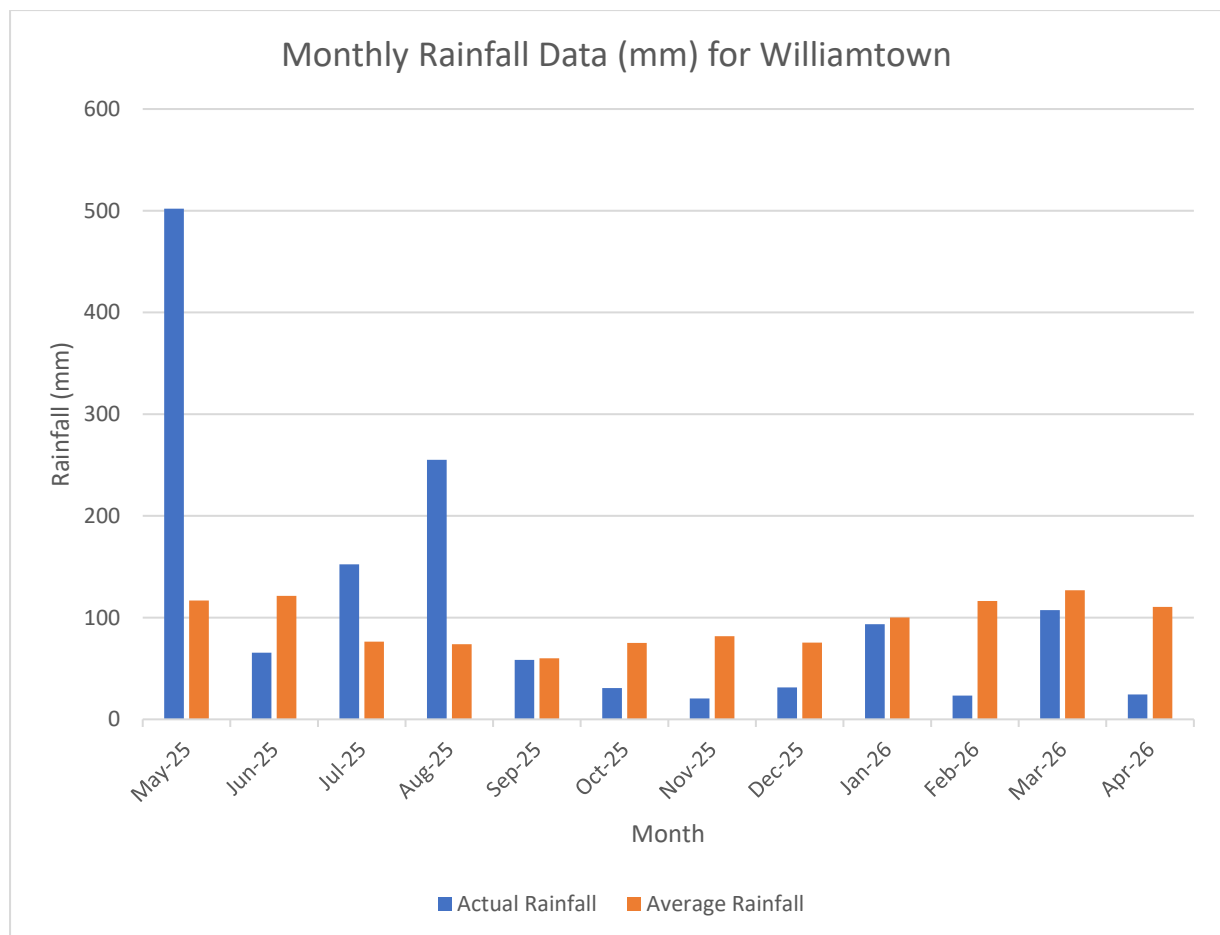
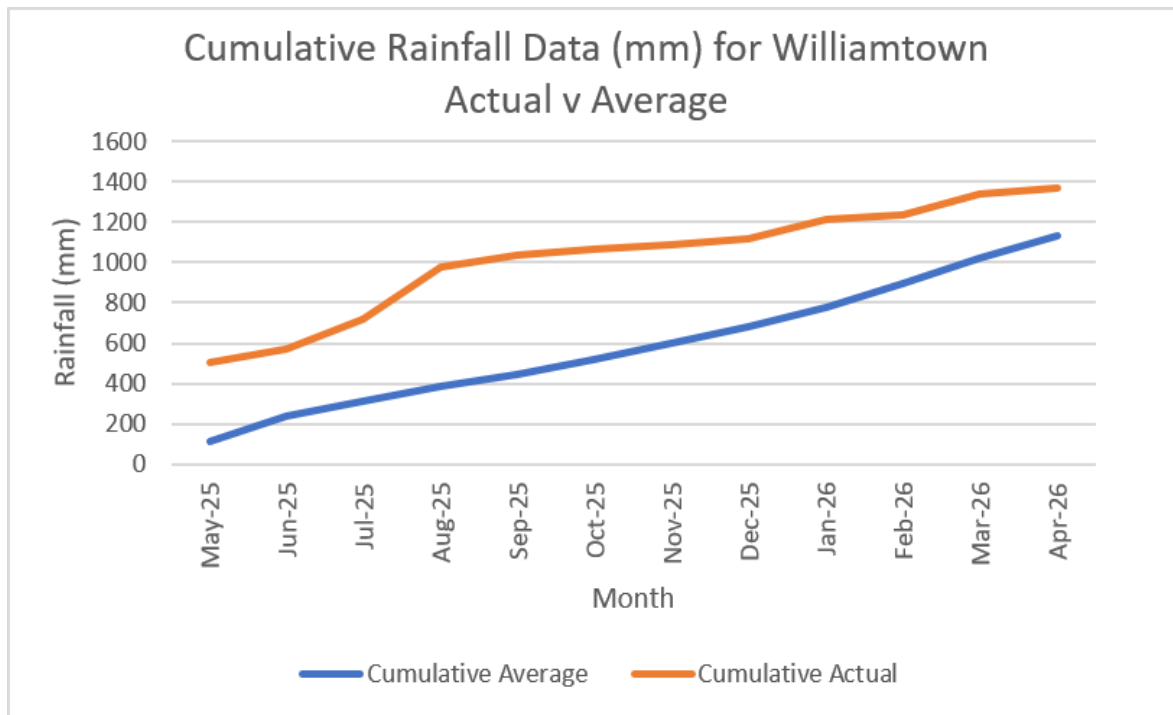


Figure 7 Cumulative Rainfall (Reporting Period vs Average)



8.2 Groundwater

8.2.1 Performance Measures and Standards

Condition 13 of Schedule 3 of MP 07_0086 requires the preparation of a Groundwater Monitoring Program. This requirement is satisfied by the Groundwater Monitoring Program (GMP) prepared by Douglas Partners (2025), which applies specifically to Stage 3.

Condition 44(e) of Schedule 3 of MP07_0086 states that the AEMR must include “a summary of the monitoring results (including groundwater level data from the Hunter Water Corporation bore SK3520) for the development during the past year”.

8.2.2 Management Measures

Regional Groundwater Monitoring

SK3520 is an existing monitoring bore managed by the Hunter Water Corporation. It is located approximately 200 m north-east, upstream and parallel across the groundwater contour from the development.

Hunter Water Corporation has recorded water levels at bore SK3520 on a monthly basis since April 1976. Water levels recorded by SK3520 are indicative of regional groundwater levels in the Tomago Sandbeds.

In February 2026, NEH finalised an agreement with Hunter Water Corporation for the installation of live monitoring equipment within SK3520 (see **Plate 3**). The installation was completed in accordance with NEH’s commitments under its Management Plans for Stage 3. The new monitoring equipment facilitated daily measurements of groundwater levels, as opposed to the previous monthly monitoring frequency. The increased monitoring frequency will enable better correlation of groundwater levels with rainfall.

Plate 3 Live Monitoring Equipment installed at SK3520



Stage 3 Monitoring

The groundwater monitoring network for Stage 3 consists of nine bore locations, which are circled in blue on **Figure 8**. The monitoring network has been designed to include locations upgradient and downgradient of the site to detect potential impacts due to Stage 3 of the development. Monitoring bores have been equipped with dataloggers to enable automated monitoring of water levels.

Groundwater samples are tested for a comprehensive range of water quality parameters, as listed in **Table 6**.

Baseline monitoring has been undertaken at MW04 and MW08 since 2010. MW08 has recently been replaced with MW8A, which is located a short distance to the south-west. Besides MW04, the other bores within the Stage 3 monitoring network were installed in March or April 2023.

In accordance with the approved GMP, the following scope was adopted for the baseline monitoring program in 2023 and 2024:

- Quarterly water quality sampling and analysis for Category 1, 2 & 3 parameters;
- Groundwater level monitoring at hourly intervals using dataloggers (at least 5 bore locations); and
- Manual monitoring of water levels during water quality sampling events.

Baseline monitoring events were undertaken in September 2023, January 2024 and April 2024, with additional events specifically for bore MW107 in May, August and November 2024.

Given that Stage 3 has commenced, the scope of monitoring has been updated to the following (as per the GMP):

- Water quality sampling for Category 1 & 2 parameters on a six monthly basis;
- Water quality sampling for Category 3 parameters on an annual basis; and
- Water level gauging on a quarterly basis (if datalogger monitoring is not undertaken).

There is the potential for monitoring bores to be intercepted as the development of Stage 3 progresses. The GMP requires that bores MW04, MW106, MW8A and MW101 be retained as long as possible.

Figure 8 Groundwater Monitoring Network

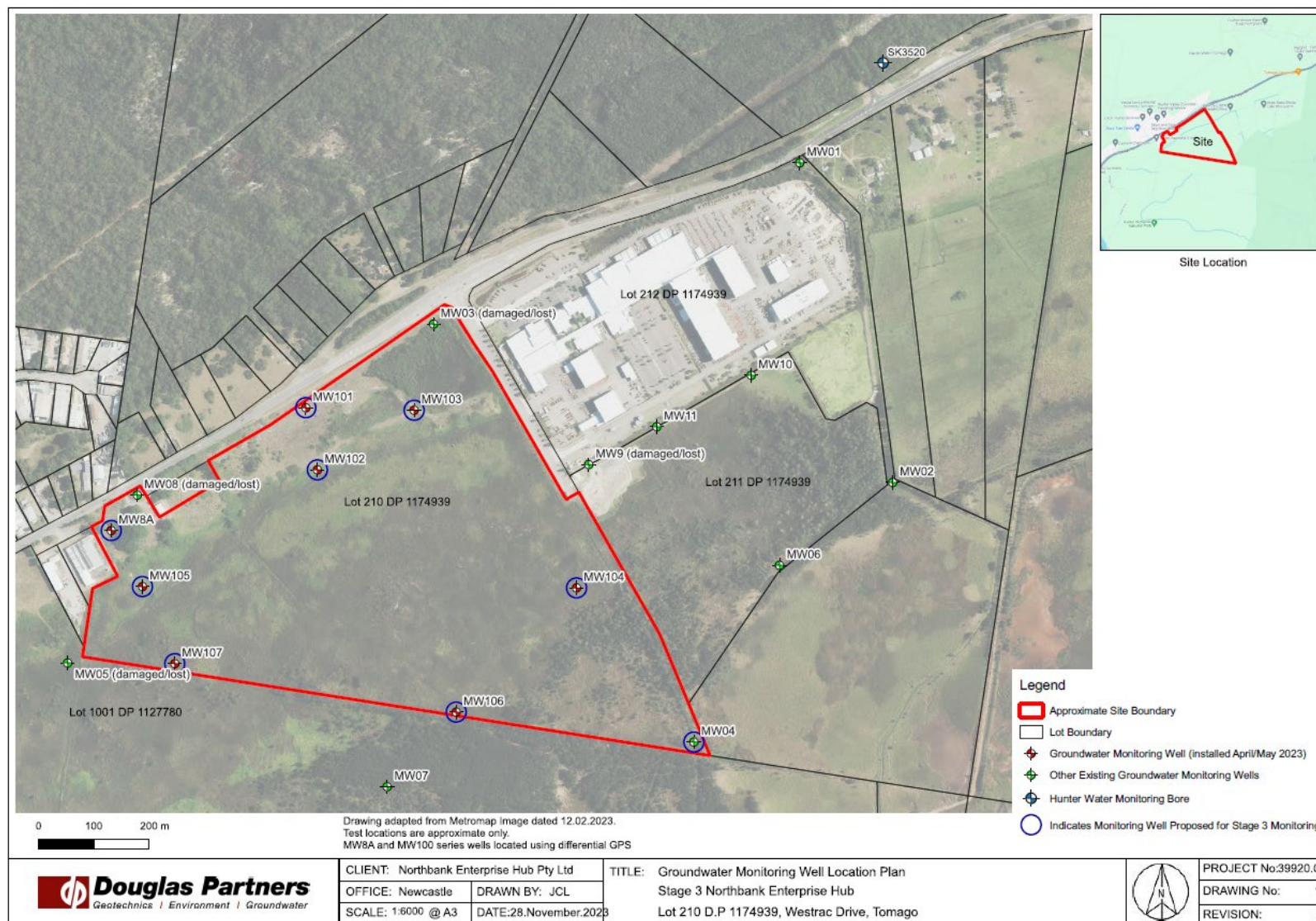


Table 6 Groundwater Quality Parameters

Category 1	Category 2	Category 3
Temperature pH Electrical Conductivity (EC) Dissolved oxygen Oxidation reduction potential Turbidity	Total Suspended Solids (TSS) Cations: - Calcium (Ca) - Iron (Fe) - Potassium (K) - Magnesium (Mg) - Sodium (Na) Anions: - Chloride (Cl) - Sulphate (SO₄) - Ammonia (NH₃) - Bicarbonate (HCO₃) - Carbonate (CO₃) - Nitrite (NO₂) - Nitrate (NO₃) - Total Kjeldahl Nitrogen (TKN) - Total Phosphorus (PO₄) - Fluoride (F) - Total alkalinity Heavy Metals: - Aluminium (Al) - Arsenic (As) - Cadmium (Cd) - Chromium (Cr) - Copper (Cu) - Iron (Fe) - Lead (Pb) - Manganese (Mn) - Mercury (Hg) - Molybdenum (Mo) - Nickel (Ni) - Zinc (Zn)	Total Recoverable Hydrocarbons (TRH) Polycyclic Aromatic Hydrocarbons (PAH) BTEX: - Benzene - Toluene - Ethly benzene - Xylene; Pesticides (OCP/OPP) Polychlorinated Biphenyl (PCB) Phenols Per- and polyfluoroalkyl substances (PFAS)

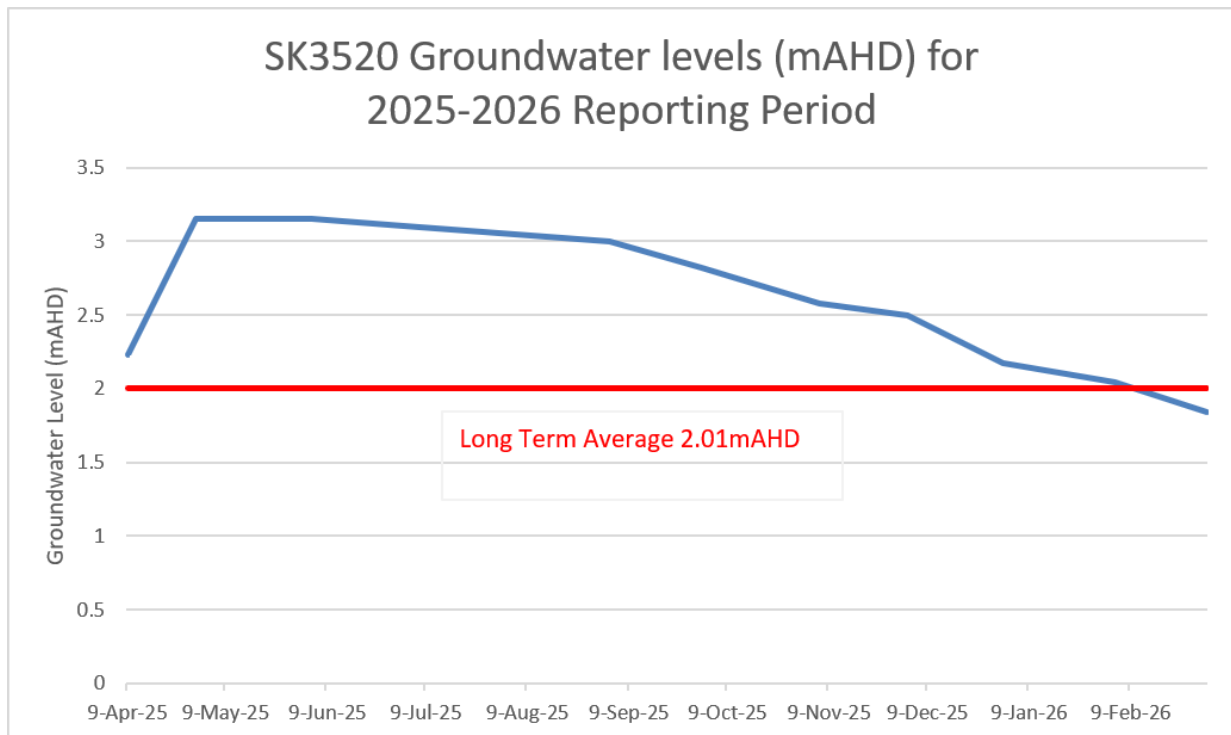
8.2.3 Environmental Performance

Regional Water Levels

Based on 50 years of data collected by bore SK3520, the long-term average water level is 2.01 mAHD. Given that the surface elevation of the downstream end of the development site ranges from 0.1-1.5 mAHD (Asquith and deWitt, 2007), surface expression of groundwater is generally present in parts of the development site.

Figure 9 shows the monthly regional groundwater levels (as recorded at SK3520) during the Reporting Period, including a comparison to the long-term average level.

Figure 9 Recorded Groundwater Levels during the Reporting Period



As evident in **Figure 9**, regional groundwater levels were very high at the commencement of the Reporting Period, peaking at more than 1 m above long term average levels. These high levels were directly due to the 502 mm of rainfall recorded in May 2025.

Groundwater levels at bore SK3520 remained more than 1 m above the long-term average until September 2025.

In contrast to the extended wet period from May to August 2025, rainfall declined to below average levels for the remainder of the Reporting Period (as shown in **Figure 6**). Accordingly, the regional groundwater level at SK3520 steadily declined over this part of the Reporting Period.

Table 7 outlines the updated trends in regional groundwater levels by comparing average, maximum and minimum levels for different time periods within the history of bore SK3520.

The “new” and “previous” water levels in **Table 7** reflect the changes to the long-term average and maximum water levels due to inclusion of data from this Reporting Period. The following observations are made about the consistently high groundwater levels recorded during the Reporting Period:

- The high groundwater levels resulted in water ingress into the Stage 1 stormwater system, and inundation of Tomago Road in May 2025;
- The average level during this Reporting Period was 2.55 mAHD, which is 540 mm above the long-term average.
- The long-term average level increased by 20 mm to 2.01 mAHD;
- The average level since the commencement of the development (i.e. after February 2010) increased by 20 mm to 2.18 mAHD; and

The minimum level of 1.74 mAHD in this Reporting Period was 1.17 m higher than the minimum level recorded in any previous reporting period (0.57 mAHD).

Table 7 Comparison of Regional Groundwater Level Statistics

Metric	Full record of SK3520 levels (1976 - April 2026)	SK3520 levels since Stage 1 of the TEWRP [^] (Oct 2008 – April 2026)	SK3520 levels for this Reporting Period (May 2025-April 2026)
Average Level (mAHD)	New Average 2.01 Previous Average 1.99	2.21	2.55
Minimum Level (mAHD)	0.57	1.10	1.74
Maximum Peak Level (mAHD)	New Maximum >3.5* Previous Maximum >3.5 [#]	New Maximum >3.5* Previous Maximum >3.5 [#]	>3.50

[^] Tomago East Wetland Rehabilitation Project, which is an initiative of the NPWS aimed to increase saline tidal inflow to the wetlands.

[#] Maximum peak level observed adjacent to SK3520 was during the July 2022 storm event which overtopped Tomago Rd, >3.5mAHD for 2 weeks.

* Tomago Rd observed as overtopped 20-28 May 2025. The water level was >3.5mAHD but not able to be measured.

The water levels recorded at SK3520 during the Reporting Period continue to support the rising regional groundwater levels (within the Tomago Sandbeds) that have been reported in previous AEMRs.

Very wet conditions continued from the previous reporting period (2024-25) into the first half of this Reporting Period (see **Section 8.1**). However, the observed increase in water levels may not be attributable fully to climatic factors. Previous monitoring data indicates that the groundwater levels fall between rainfall events. However, the minimum groundwater levels observed during the Reporting Period were significantly higher than the minimum values (i.e. between rainfall events) recorded in previous years.

Stage 3 Water Levels

Groundwater levels were monitored throughout the Reporting Period using dataloggers, which record levels at hourly intervals. NEH has installed telemetry within bores MW04 and MW101 which facilitates real-time monitoring of water levels. NEH's representatives can view real-time water levels from MW101 and MW04 on a desktop interface. The groundwater level data collected by the other bores is periodically downloaded from the dataloggers.

NEH has committed to providing water level data from MW101, MW04 and SK3520 to NPWS every six months. The relevant data was provided on 20 May 2026.

Figure 10 shows the water level trends measured by the Stage 3 monitoring network since the installation of these bores.

Water levels generally correlated with rainfall conditions during the Reporting Period. Noticeable increases in water levels were observed in May and August, consistent with the very high rainfall received in those months. Water levels declined during the relatively dry period from September 2025 until April 2026. Despite a consistent decline during this part of the Reporting Period, water levels were within historical ranges for all bores.

Construction activities within the Reporting Period were limited to clearing and slashing of vegetation. No earthworks have been conducted to date. As such, the observed changes in water level from November 2025 to April 2026 are likely to be attributable to natural processes.

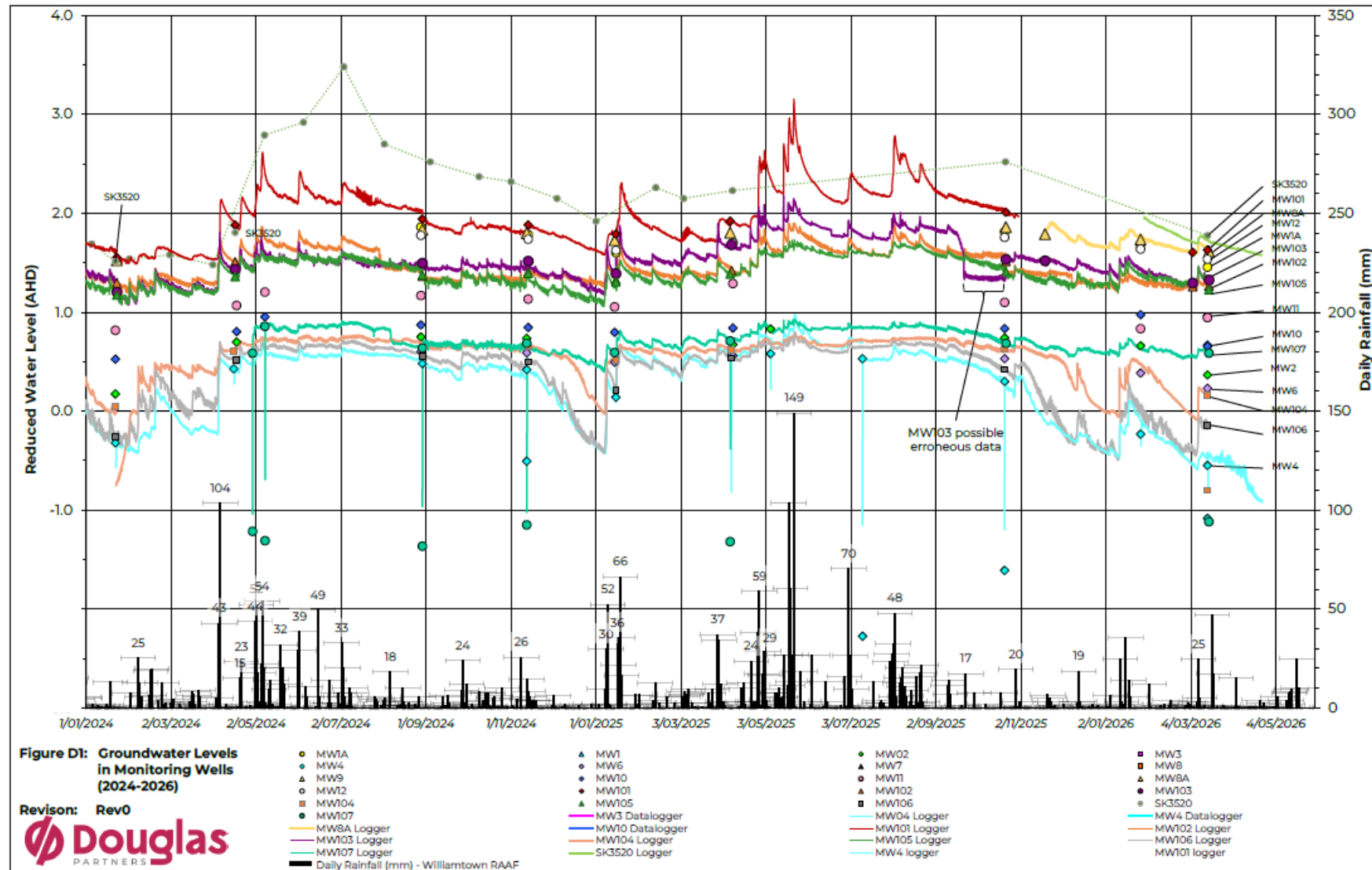
There may have been a technical fault with the logger in bore MW103 that affected results from 17 September to 22 October 2025. This logger was replaced in October 2025.

Manual measurements of groundwater levels were undertaken during the March monitoring round. The results of manual water level monitoring are presented in **Table 8**.

Table 8 Manual Groundwater Level Monitoring Results

Monitoring Bore	Groundwater Level (mAHD)
	March 2026
MW101	1.63
MW102	1.27
MW103	1.33
MW104	0.17
MW105	1.23
MW106	-0.14
MW107	0.59
MW04	-0.56
MW8A	1.62

Figure 10 Groundwater Level Monitoring Results



Stage 3 Water Quality

MP 07_0086 does not prescribe any performance measures or criteria for the quality of groundwater. However, water quality assessment criteria have been derived from site-specific baseline data and presented in Appendix B of the GMP. Exceedance of an assessment criteria does not necessarily constitute an incident or material environmental harm. However, it does trigger the need for further investigation to determine whether the development has resulted in an unacceptable impact (and whether remedial actions are necessary).

Water quality sampling was conducted in March 2026. Given that this monitoring round occurred within six months of the commencement of Stage 3, it satisfies the GMP requirement for biannual monitoring of Category 1 & 2 parameters and annual monitoring of Category 3 parameters.

The water quality results were generally consistent with historical ranges for the Stage 3 monitoring bores. Due to the large number of analytes that are measured (see **Table 6**), it is not unusual for isolated exceedances of trigger values to occur. All exceedances were subsequently investigated by a groundwater specialist. Douglas Partners (2026) concluded that the elevated concentrations of nutrients and metals were outliers, and attributable to natural influences such as redox conditions, pH variability and groundwater level fluctuations.

The water quality of the aquifers within Stage 3 can generally be summarised as follows (Douglas Partners, 2026):

- The Tomago Sandbeds are moderately acidic (pH 4.1 to 5.9);
- The clay aquitard is slightly acidic to neutral (pH 6.6 to 7.4);
- The Tomago Sandbeds exhibit low EC (i.e. 'fresh' water);
- The Tomago Sandbeds exhibit low to moderate turbidity;
- The clay aquitard exhibits very high variability in EC and turbidity, depending on the location.

The water monitoring undertaken during the Reporting Period is reported in full in **Appendix D**.

8.3 Surface Water

8.3.1 Performance Measures and Standards

Conditions 8 to 12 of Schedule 3 of MP 07_0086 require the preparation of a Soil and Water Management Plan (comprised of various sub-plans). As explained in **Section 4.3**, separate versions of these management plans have been prepared for Stage 3 and approved by the Planning Secretary.

Condition 6 of Schedule 3 of MP07_0086 requires the Proponents to comply with section 120 of the *Protection of the Environment Operations Act 1997* (POEO Act). Section 120 of the POEO Act provides a general prohibition against pollution of waters.

8.3.2 Management Measures

Due to its location within the estuarine reaches of the Hunter River, the topography of the site is generally low and flat. There is a low sand dune formation in the northern portion of Stage 3 where elevations range from 3.0 to 4.5 mAHD. Under pre-development conditions, surface runoff generally occurs as sheet flow from the higher sand dune areas towards the flatter lands in the southern portion of Stage 3.

Stage 3 does not interact with the other stages of the development from a hydrological perspective, other than Westrac Drive (which is a public road established by Stage 1). Stage 1 established a network of drains which capture and direct development runoff towards a wetland

within the WesTrac facility. As a result, Stage 1 functions as a separate catchment. Although Stage 2 has not commenced, it is envisaged that runoff from that area will be captured within a stormwater basin and discharged towards the neighbouring Lot 1001 DP 1127780 (also owned by NEH). That is, excess stormwater from Stage 2 (when developed), is likely to be diverted to the south of Stage 3. There is also an existing drain which connects Stage 3 with the Conservation Area (see **Figure 2**). However, there is minimal flow of runoff towards the Conservation Area as the existing culvert along this drain has become blocked (and will be plugged by the Proponent in the future). Therefore, Stage 3 is hydrologically segregated from the other components of the development.

The proposed stormwater management system for Stage 3 is described within the Stormwater Management Plan prepared by WRM (2025). Surface runoff from the developed Stage 3 catchment will be directed towards stormwater basins located in the south-eastern and south-western corners of Stage 3. These basins will ultimately discharge stormwater to the south-west corner of Stage 3 and existing drainage paths to the neighbouring Lot 1001 DP 1127780 (also owned by NEH). Artificial channels will be constructed within and surrounding the approved subdivision of Stage 3 to direct runoff towards these basins. However, this management system is not yet required as Stage 3 is currently in the early construction phase.

8.3.3 Environmental Performance

Stormwater Management

Stormwater management measures for the current phase of construction were approved via SWC 230527/01. These measures are focused on managing runoff from the cleared area. The slashed area (immediately south of the cleared area) continues to function under pre-development drainage patterns. Where possible, runoff from the cleared area is directed towards the existing drain on the western side of Westrac Drive (which was established by Stage 1). Runoff from the western extent of the cleared area (i.e. further from Westrac Drive) is directed towards mulch bunds.

Water Balance

The controls implemented pursuant to SWC 230527/01 have the effect of re-directing water within the same catchment area. Throughout the Reporting Period, runoff would have continued to flow through the Stage 3 catchment, similar to pre-development conditions. Since no stormwater basins have established yet, there was no 'taking' of water or increase in passive losses. Therefore, a water balance is not warranted for this Reporting Period.

Erosion and Sediment Control

The existing drain along Westrac Drive is a clean water diversion. To avoid 'mixing' of clean and sediment laden runoff, sediment fences have been installed along the drain conveying runoff from the Stage 3 catchment (see **Plate 4**).

The mulch bunds established on the downstream extent of the completed disturbance serve to reduce runoff velocities (and therefore potential for erosion).

These controls are consistent with the Stormwater Management Plan for Stage 3 and appropriate for the current progress of construction.

Plate 4 Sediment Fences Installed During the Reporting Period



9 Community Consultation

9.1 Stakeholder Consultation

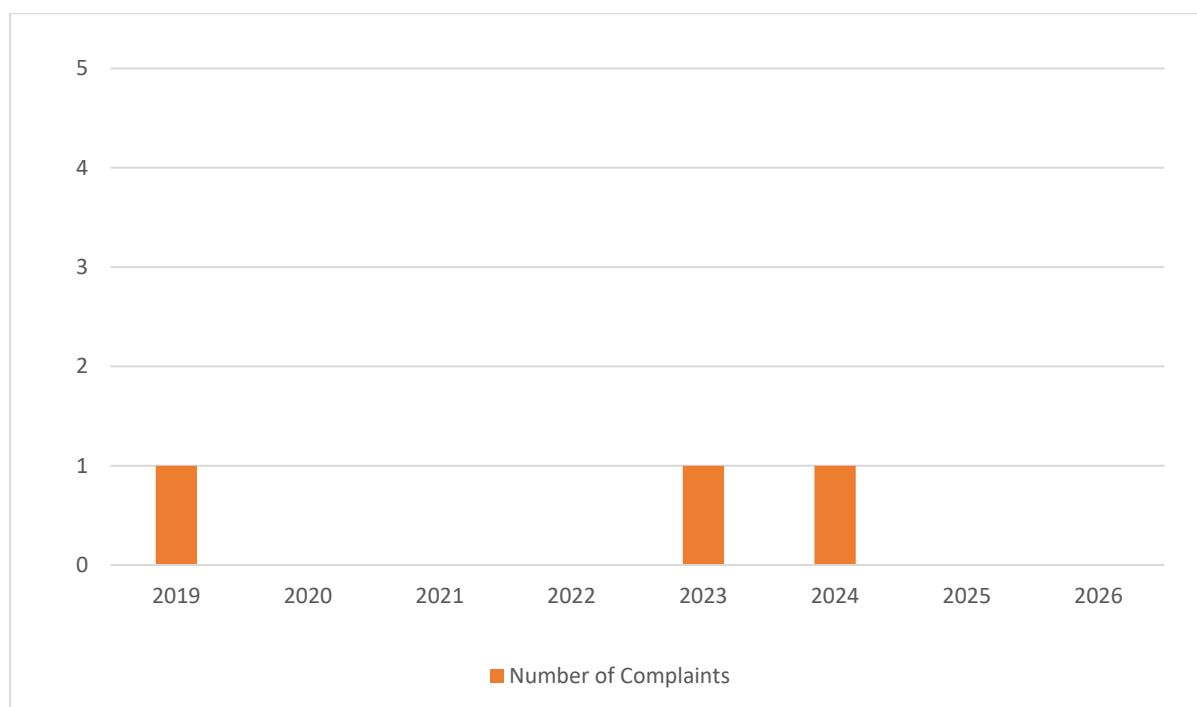
On 11 November 2025, NEH provided written notice to neighbouring landowners and WesTrac that construction of Stage 3 will commence on 17 November 2025. No responses to these letters were received from any landowners or occupiers.

9.2 Complaints

WesTrac has historically been responsible for handling complaints related to Tomago Estate (as a whole). No complaints were received during the Reporting Period, which is indicative of the generally low level of complaints received in recent years. (see **Figure 11**). All complaints received to date were related to Stage 1 of the development.

Since Stage 3 has now commenced, NEH will implement its own complaints handling system beginning in the next Reporting Period. NEH's contact details will be shown on its website (www.northbankenterprisehub.com) and on-site signage

Figure 11 **Complaints**



** Complaints related to Stage 1 of the development*

10 Incidents and Non-compliances

10.1 Incidents

Condition 43 under Schedule 4 of MP 07_0086 states that:

“Within 7 days of detecting an exceedance of the limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Applicant must report the exceedance/incident to the Department, and any other relevant agency. This report must:

- (a) describe the date, time, and nature of the exceedance/incident;*
- (b) identify the cause (or likely cause) of the exceedance/incident;*
- (c) describe what action has been taken to date; and*
- (d) describe the proposed measures to address the exceedance/incident.”*

In addition, the term ‘material harm to the environment’ is defined under MP 07_0086 as:

“Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial.”

There were no incidents during the Reporting Period.

As explained in **Section 8.2.3**, groundwater monitoring for Stage 3 identified exceedances of the assessment criteria prescribed by the GMP. These assessment criteria do not serve as ‘limits’ or ‘performance measures’, but instead act as triggers for further investigation. These exceedances were investigated by a groundwater specialist and were determined to be caused by natural factors and that current conditions remain comparable to baseline (Douglas Partners, 20256). As such, these non-reportable exceedances do not meet the definition of ‘material harm to the environment’ and therefore do not need to be reported as incidents.

10.2 Non-compliances

There were no non-compliances with the conditions of MP 07_0086 during the Reporting Period.

11 Activities to be Completed in the Next Reporting Period

The construction of Stage 3 will continue to progress in the next Reporting Period, including the commencement of earthworks. The following activities are anticipated:

- Further site establishment, including a temporary construction access from Westrac Drive;
- Importing and stockpiling fill material;
- Excavation of soft materials in the north-eastern portion of Stage 3 and filling with sand sourced from within the site or imported;
- Establishment of a temporary sediment basin; and
- Placement of sand onto low-lying areas to establish a platform for further filling with imported material.

12 References

- ADW Johnson (2009). *Environmental Management Plan – Air Quality and Odour*.
- AEP (2025), *Clearing Protocol and Translocation Plan*.
- Asquith and deWitt (2007). *Environmental Assessment Report: Tomago Road, Tomago*.
- Brereton and Taylor-Wood (2010). *Kooragang Character Wetland Ecological Character Description*.
- Cool Burn (2026), *Annual Tomago Wetland Monitoring Report 2026*.
- Douglas Partners (2025), *Groundwater Monitoring Program: Proposed Industrial Subdivision Stage 3, Lot 210 D.P. 1174939, 2 Westrac Drive, Tomago*.
- ecobiological (2010). *Baseline Report for the Wetland Management and Monitoring Plan*.
- EMM (2024), *Tomago Industrial Site – Stage 3: Noise and Vibration Verification*.
- Indigenous Outcomes (2009), *Aboriginal Cultural Heritage Management Plan: Industrial Development Tomago Road, Tomago*.
- NSW Government (2015). *Post-approval Requirements for State significant mining developments: Annual Review Guideline*.
- PrincetonCo (2025), *Construction Management and Environment Management Plan: Lot 210 – Clearing Works*.
- The Transport Planning Partnership (2023), *Tomago Estate Transport Verification Study*.
- Urbis (2024), *Design Guidelines: Northbank Enterprise Hub, Tomago*.
- Urbis (2025), *Environmental Management Strategy: Stage 3 Tomago Industrial Estate*.
- WRM (2025), *Industrial Estate at Lot 210 DP 1174939 (Stage 3), Tomago: Stormwater Management Plan*.

13 Abbreviations

Term	Definition
AEMR	Annual Environmental Management Report
DO	Dissolved Oxygen
DPHI	Department of Planning, Housing and Infrastructure
EC	Electrical Conductivity
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
ML	Megalitres
NEH	Northbank Enterprise Hub Pty Ltd
NPWS	National Parks and Wildlife Service
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
TEWRP	Tomago East Wetland Rehabilitation Project
TKN	Total Kjeldahl Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
WesTrac	WesTrac Pty Ltd

*mc*² Environmental

Appendix A

Cultural Heritage Site Report

Worimi Local Aboriginal Land Council

2163 Nelson Bay Road
Williamtown NSW 2318
PH: 02 4033 8800



CULTURAL HERITAGE SITE
REPORT

PROPOSED SITE	509 Tomago Rd, TOMAGO	CONDUCTED BY	Joel Henderson
PROPONANT	Heritage Now	POSITION	Cultrual Heritage Site Officer

Acknowledgement of Country

**We acknowledge Worimi people, keepers of this country
We pay respect to our Elders past and present
This Worimi country, always was, always will be.**

Proposed Works

The proposed land clearing works was conducted by myself Joel Henderson Worimi LALC Cultrual and Heritage Sites Officer on the 17/11/2025 to the 20/11/2025. The proposed works where vegetation clearing was needed included tree removal at stump level, vegetation clearance around proposed area. Myself Joel Henderson was present during all the above works.

Artefacts Found On Proposed Site

During the vegetation clearing a total of 42 Stone artefacts and 21 Shell were found on the proposed sites whilst the excavations were undertaken. These included Cockell shell, Oyster Shell, White tuft and Nobbys Chert Stone Artefacts.

(Artefacts found will be seen in Figure 1 & Figure 2.)

Location Of Artefacts

Location 1: -32.823115, 151.747371

Location 2: -32.823024, 152.748211

(Approximate location of artefacts found see Figure 3.)

Methodology Proposed Relocation Of Artefacts Found On Site

The methodology of reburial will consist of a hole being dug on site by hand tools to a depth of 1200mm, artefacts will be wrapped in paperbark during the reburial process.

The relocation of Artefacts found during proposed works will be buried and GPS plotted on site. The co-ordinates and photos of artefacts will be uploaded to the AHIMS register.



Figure 1- Stone Artefacts Found.



Figure 2- Stone Artefacts and Shell Found.

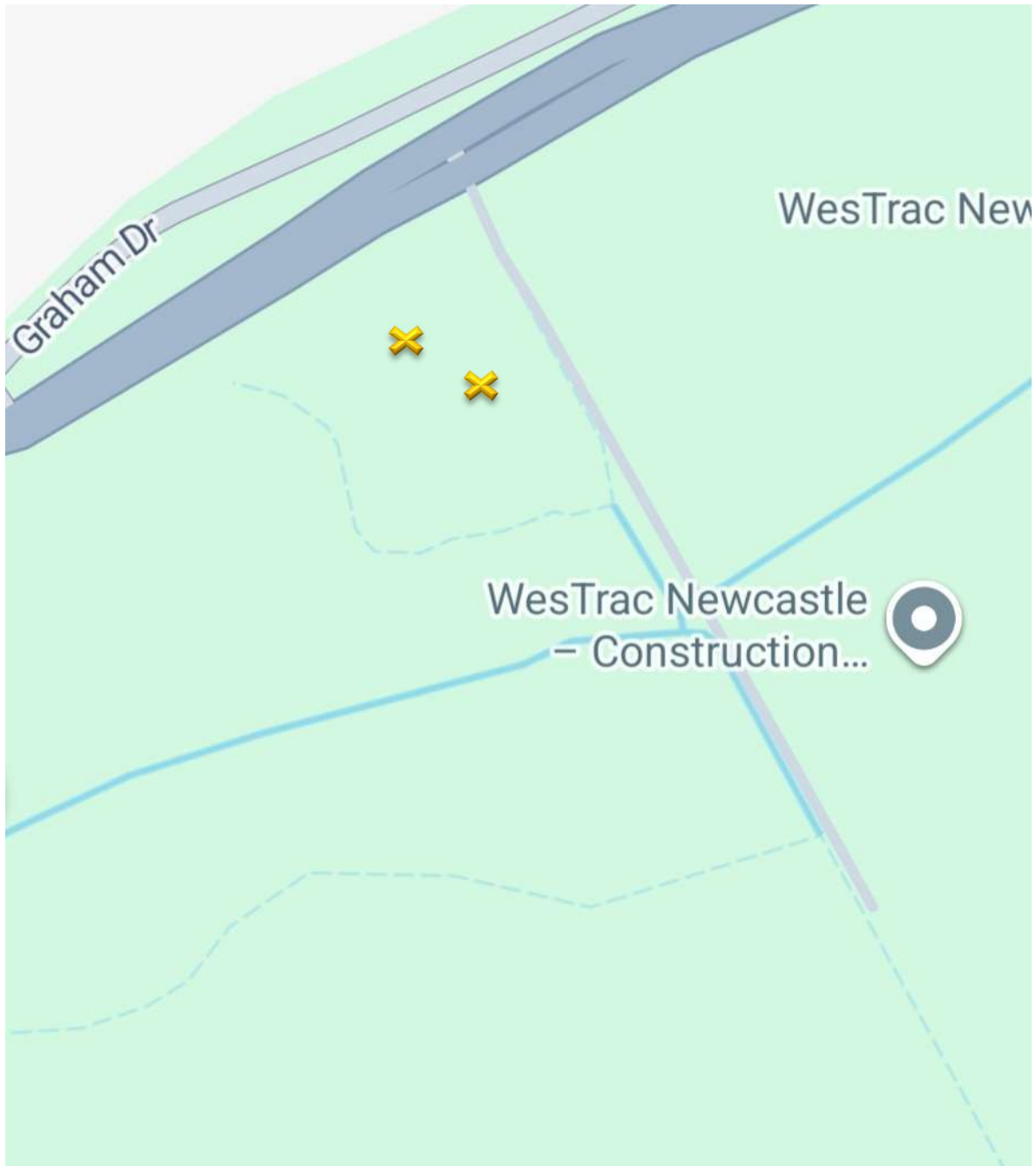


Figure 3- Approximate Location of Artefacts.

*mc*² Environmental

Appendix B

Report on Supervision of Vegetation Clearance

To: Northbank Enterprises Hub Pty Ltd
c/o: Princetonco
Attention: David Rutter
Via Email: david@princetonco.com.au

AEP Ref: 5612

Date: 16 February 2026

Dear David,

Re: Clearance Supervision for Industrial Development Lot 210 DP1174939, 2 Westrac Drive, Tomago, NSW

At the request of Northbank Enterprises Hub Pty Ltd (the Client), Anderson Environment & Planning (AEP) herewith provide a clearance compliance letter to satisfy conditions determined by Section 5.1.2 EcoBiological (2007) *Appendix J - Threatened Species Assessment: Lot 1 DP597372, Lot 1 DP1003492, Lot 161 DP774440 and Lot 513 DP585256, Tomago Road, Tomago* under Section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Conditions of Consent

Section 5.1.2 EcoBiological (2007) *Appendix J - Threatened Species Assessment: Lot 1 DP597372, Lot 1 DP1003492, Lot 161 DP774440 and Lot 513 DP585256, Tomago Road, Tomago* states that:

Pre-clearing surveys

*Approximately 1 week prior to any vegetation clearing a survey of habitat trees should be conducted in the planned clearing area. These trees should be watched at dusk to determine whether any of the hollows are in use by fauna. The actual felling of any habitat trees should be attended by a suitably experienced fauna ecologist in order to ensure the safety of any fauna found to be in the hollows. On all occasions, trees having potential habitat hollows should be 'soft felled' by an experienced machine operator. It is noted that, although not a threatened species, a population of Common Green Tree Frog (*Litoria caerulea*) exists in the two swamp oak stands on the subject site that will be removed by the proposal. This species utilises and relies on trees and their hollows for protection and overwintering and is not usually located in areas without trees and branches. Due to heavy fragmentation of forest in the area the stands of swamp oak on the subject site are isolated. The population of Common Green Tree Frog appears to exist almost entirely in the larger of these two stands and when they are removed it is likely that the population at this locality may be placed at risk of extinction. It is recommended therefore that consideration be given to incorporating an amphibian translocation plan into the management plan governing pre-clearing survey protocols (discussed below) in order to relocate individuals from this population to the nearest suitable remaining forest patch.*

Preclearing and Clearing Methodology

A Clearing Protocol & Translocation Plan (CPTP) has been prepared by AEP (2025) and developed in accordance with the TSA vegetation clearance requirements, specifically TSA section:

5.1.2 Flora and Fauna management and monitoring plans - Pre-clearing surveys

The CPTP includes provisions for pre-clearance surveys, clearance supervision, hygiene protocols and frog translocation. Clearance supervision and handling of fauna was undertaken as per CPTP methodology.

Briefing and Review of Existing information:

- October 2007 EcoBiological *Threatened Species Assessment: Lot 1 DP597372, Lot 1 DP1003492, Lot 161 DP774440 and Lot 513 DP585256, Tomago Road, Tomago* Ref: 156-410
- Department of Planning, Industry and Environment (2020). *Protocols to protect priority biodiversity areas in NSW from Phytophthora cinnamomi, myrtle rust, amphibian chytrid fungus and invasive plants. Saving Our Species Hygiene Guidelines.*
- AEP (2025). *Clearing Protocol & Translocation Plan for Lot 210 DP1174939 at 2 Westrac Drive, Tomago, NSW, 2322.* November 2025.;
- *Development Consent Section 4.38 of the Environmental Planning and Assessment Act 1979 Appendix 3 Statement of Commitments, Section 8.2 Flora and Fauna 7* (NSW Government Department of Planning, Industry and Environment August 2009).
- AEP (2025). *Preclearance compliance letter for Lot 210 DP1174939 at 2 Westrac Drive, Tomago, NSW, 2322.*
- Our detailed knowledge of the required clearance methodology and reporting process; and
- Other documentation and information held by AEP.

Summary of Works

To meet the above requirements, the following works have been undertaken. Results are shown in **Table 1** and site photos are shown in **Attachment A**.

An ecologist attended site to supervise vegetation clearance works from 17/11/2025 to 28/11/2025. This initial first stage of clearing focused on the northern section of the site. As the condition requires, AEP were in attendance for clearing of all habitat trees. In addition, the threatened species Wallum Froglet *Crinia tinnula* was found during clearance in an open grassy area in the north eastern corner. Ecologists were present for the clearance of this habitat as per recommended CPTP methodology. This resulted in one (1) death and nineteen (19) alive Wallum Froglets successfully released into alternative locations offsite.

For the final stage of clearing in the southern section, AEP were not required, however client requested AEP ecologist to return to site to undertake a second preclearance survey for *Crinia tinnula* and other species prior to next stage of clearing commencing. This preclearance survey focused the on eastern boundary.

Table 1: Record of Surveys, Clearance and Fauna Encounters

Scientific Name	Common Name	Date	Count	Fauna Status and Release Type
<i>Pseudechis porphyriacus</i>	Red bellied Black Snake	17/11/25	2	Alive – released into retained lands
		18/11/25	5	Alive – released into retained lands
		24/11/25	1	Alive – released into retained lands
<i>Hemiaspis signata</i>	Marsh Snake	17/11/25	1	Alive – released into retained lands
		18/11/25	1	Alive – released into retained lands
		19/11/2025	2	Alive – self released
		25/11/25	1	Alive – released into retained lands
<i>Crinia tinnula</i>	Wallum Froglet	24/11/25	1	Deceased
		25/11/25	3	Alive – released into retained lands
		26/11/25	16	Alive – released into retained lands
		27/11/25	0	No fauna encountered
		13/1/2026	0	Attended site to undertake preclearance surveys for <i>Crinia tinnula</i> and other species prior to next stage of clearing commencing. Focused efforts on eastern boundary

This letter certifies compliance with all clearance mitigation measures for fauna welfare and DA conditions for vegetation clearing works. The fauna captured in the area to be cleared were safely relocated. An ecologist was present for the removal of any habitat trees ensure to the safety of any fauna found to be in the hollows. Any fauna encountered during clearance works was handled in accordance with *Clearing Protocol and Translocation Plan* (AEP 2025).

We trust this meets your requirements. Should you require further details or clarification, please contact the undersigned on 0418 591 189.



Yours faithfully,

Alissa Rogers

Ecology Project Manager

Anderson Environment & Planning 0418 591 189

Attachment A: Clearance Supervision Site Photos



Attachment A: Clearance supervision photos



Plate 1 – Wallum Froglet found during clearance successfully relocated



Plate 2 – Striped Marsh frog relocated



Plate 3 – Clearance underway in thick tea tree near Wallum froglet habitat



Plate 4 – Marsh Snake relocated

*mc*² Environmental

Appendix C

Annual Wetland Monitoring Report

Annual Tomago Wetland Monitoring Report

2026



Northbank Enterprise Hub Pty Limited

Westrac Drive, Tomago NSW

February 2026



Prepared for:

Northbank Enterprise Hub Pty Limited
1 Westrac Drive
TOMAGO NSW 2322

Prepared by:

Cool Burn Fire & Ecology
Cool Burn Pty Ltd
ABN: 61 645 633 236
Warners Bay NSW 2282

Ref: J430 - Annual Tomago Wetland Monitoring Report 2026

Document Control:

Version	Description	Date	Author	Reviewed
1.0	Draft	27 February 2026	D Milburn	D Pedersen

**Disclaimer**

Cool Burn Pty Ltd has prepared this document based on the information provided by the Client/recipient and has endeavoured to ensure that all information presented in this document is correct and current. Cool Burn advises that there are factors outside Cool Burn current knowledge or control which can affect the Client/recipient's project planning. Cool Burn does not warrant that the document is free from error or omissions arising from these factors and does not accept liability for any such errors or omissions. The scope of services has been defined in consultation with the Client/recipient by time and budgetary constraints imposed by the Client/recipient, and the availability of other data on the project. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. To the fullest extent possible Cool Burn expressly excludes any express or implied warranty as to condition, fitness, merchantability or suitability of this document and limits its liability for direct or consequential loss at Cool Burn's option to re-supplying the document or the cost of correcting the document. In no event shall Cool Burn's responses to questions or any other information in this document be deemed to be incorporated into any legally binding agreement without the express written consent of Cool Burn. The information in this document is proprietary. The Client/recipient, its designated representatives or relevant statutory authorities may use this document for the specific project for which this report was prepared. It should not be otherwise referenced without permission.

Contents

1.	INTRODUCTION	1
1.1	SCOPE	1
1.2	BACKGROUND	1
1.2.1	Edge effects and weed infestation	2
1.2.2	Variation in native vegetation	2
1.3	CURRENT STATUS OF ADJOINING DEVELOPMENT	2
2.	METHODOLOGY	5
2.1	EDGE EFFECTS AND WEED INFESTATIONS	5
2.2	VARIATION IN NATIVE VEGETATION	6
3.	RESULTS	8
3.1	EXTENT OF VEGETATION COMMUNITIES	8
3.2	QUADRAT MONITORING	9
3.2.1	Native species richness	9
3.2.2	Weed assessment	10
4.	DISCUSSION	13
4.1	VEGETATION EXTENT	13
4.2	QUADRAT MONITORING	15
4.3	WEED ASSESSMENT	16
4.4	CONCLUSION	19
5.	REFERENCES	20
ATTACHMENT 1.	QUADRAT DATA	21
ATTACHMENT 2.	BIOMETRIC DATA	24
ATTACHMENT 3.	PHOTO MONITORING	27

Tables and Figures

Table 1: Comparison of areas (ha) of each vegetation community within the CA from 2022 - 2024 (previous) and 2026 (current) to the baseline areas 2009/10. Percentage change is a measure from the baseline areas.	8
Table 2: Comparison, presented as area (ha) and percent change, of the 2009/10 baseline data and the current 2026 monitoring survey for the forested wetland community and freshwater wetland community	14
Table 3: Species data per quadrat	22
Table 4: Biometric data	25

Figure 1: Location	3
Figure 2: Conservation area and works stages	4
Figure 3: Baseline benchmark and quadrat data	7
Figure 4: Area (ha) of each vegetation community and cover of exotic species within the Conservation Area from the 2009/10 Baseline assessment to the current (2024) monitoring round.....	9
Figure 5: Observed native species richness within each monitoring quadrat (0.04 ha) and vegetation community across all years of monitoring. DECCW Benchmark and Regional Baseline data also included.....	10
Figure 6: Percentage cover of exotic species within each vegetation type across all years of monitoring.....	11
Figure 7: Vegetation extent and weed infestations within the Conservation Area - 2024.....	12

1. INTRODUCTION

1.1 SCOPE

Cool Burn Fire & Ecology (Cool Burn) was commissioned by Torque Projects Pty Ltd, on behalf of Northbank Enterprise Hub Pty Ltd (NEH) (formerly WEPL Investments Pty Ltd), to undertake the 2026 Annual Tomago Wetland Monitoring event in Tomago, NSW. This monitoring event was undertaken to assess compliance with Schedule 3, Condition 4B of Project Approval MP07_0086. The monitoring is limited to the Conservation Area (Lot 22 DP 1150980) required under this Approval (Figure 1¹).

1.2 BACKGROUND

The Project Approval (dated 7 August 2009) describes the development as the subdivision of the site for industrial purposes, bulk earthworks across the site and the establishment of Northbank Enterprise Hub Development and associated infrastructure. The approval area includes a 22-hectare (ha) Conservation Area (CA) in the southeast portion of the site (Lot 22 DP 1150980), where any development is excluded (referred to as the 'subject site'). This CA was dedicated by NEH to the NSW National Parks and Wildlife Service (NPWS) to be included in the Hunter Wetlands National Park. The extent of development, the adjoining National Park boundary and the CA are shown in Figure 2. The CA is a freshwater wetland buffer area upstream of Ramsar wetlands.

It should also be noted that the original Project Approval (MP 07_0086) granted on 7 August 2009, was modified on 18 May 2017 (MP 07_0086 MOD 2). In regard to this monitoring project, Condition 4B of MP07_0086 MOD2 makes reference to the vegetation communities monitored annually, whereby the proponent must implement contingency measures to drainage flows, if there is a decline in Phragmites Rushland freshwater wetland vegetation cover of greater than 20% in extent, and Swamp Oak Sedge Forest vegetation greater than 10% in extent, on the NPWS reserve to the south of the site (when compared against the Kleinfelder 2010 baseline report). This is further discussed in Section 4.1.

The Wetland Monitoring and management Plan (Ecobiological 2009) (WMMP) outlines three phases to ensure adequate baseline data collection and monitoring of the CA. These phases are Phase 1 - Existing Vegetation Status, Phase 2 - Establish Baseline Benchmark Data, and Phase 3 - Monitoring. These phases are discussed in further detail in the Section 2. Two key parameters that will be monitored in accordance with the WMMP methods include: (1) Edge Effects and Weed Infestation; and (2) Variation in Native Vegetation. On-site and regional baseline data collected in 2009 and 2010 survey events allow for future comparisons to assess any substantial changes to vegetation communities present within the CA. The two key factors that are monitored are discussed in further detail below.

¹ Figures 1 and 2 source: Kleinfelder Australia, 2023

1.2.1 Edge effects and weed infestation

Weed infestation along the whole development and CA interface is compared to baseline data, and a ranking system is used to trigger whether preparation of a Weed Management Plan (WMP) is required. The provision of exotic plant cover measurements within the survey plots gives a quantitative measurement of weed infestation. Any substantial increase in weed cover within the survey plots highlights the requirement for appropriate actions.

If weed management is required, the weed management actions for control of weed infestations at the development and CA interface will be detailed in a WMP prepared specifically for the subject site.

1.2.2 Variation in native vegetation

Vegetation extent

Vegetation community boundary areas mapped in the baseline monitoring survey (December 2009) are compared against ongoing monitoring surveys. Minor boundary variations are to be expected year-to-year as the vegetation communities are dynamic and respond to environmental pressures. Any substantial boundary change over time will be highlighted through map comparison and the potential causes will be investigated.

Potential causes for variations in vegetation extent and condition include erosion and sedimentation, soil and water chemical changes, nutrient deficiencies and/or excess loading of nutrients (e.g. nitrogen), increased light penetration, changes in the hydrological regime, changes in fire frequency, edge effects from development, changes in land use (e.g. exclusion/introduction of grazing), and natural variation in vegetation community composition through ecological processes such as competition and succession.

Biometric data

If the data collected during the annual monitoring surveys from permanent quadrats is within the established benchmark measurements (determined in April 2010), no action is required. If data for any benchmark attribute is outside benchmark parameters, potential causes will be investigated, and actions to mitigate the potential causes will be recommended. This may require further surveys to determine the cause, and specific action plans prepared to mitigate the issues. Future findings and recommendations will be presented in an annual report to be incorporated into the Annual Environmental Management Reports (AEMR) required for the development.

1.3 CURRENT STATUS OF ADJOINING DEVELOPMENT

Stage 1 of the development (WesTrac) was constructed and fully operational in 2012. Construction of Stages 2 and 3 of the approved development have not yet commenced (Figure 2).



Figure 1 - Locality Map
Legend

- Subject Site
- National Parks
- Major roads



Project Ref:	20234610
Plot Date:	4/4/2023 12:42
Revision:	001 (KWormington)

Map Projection:

GDA 1994 MGA Zone 56

Data Sources:

NSW DFSI - 2019
Nearmap - 2023

Disclaimer: This is not an official or a legal map but is for informational use only. All data was compiled from the best sources available. All boundaries, scale and geographic points are approximate.

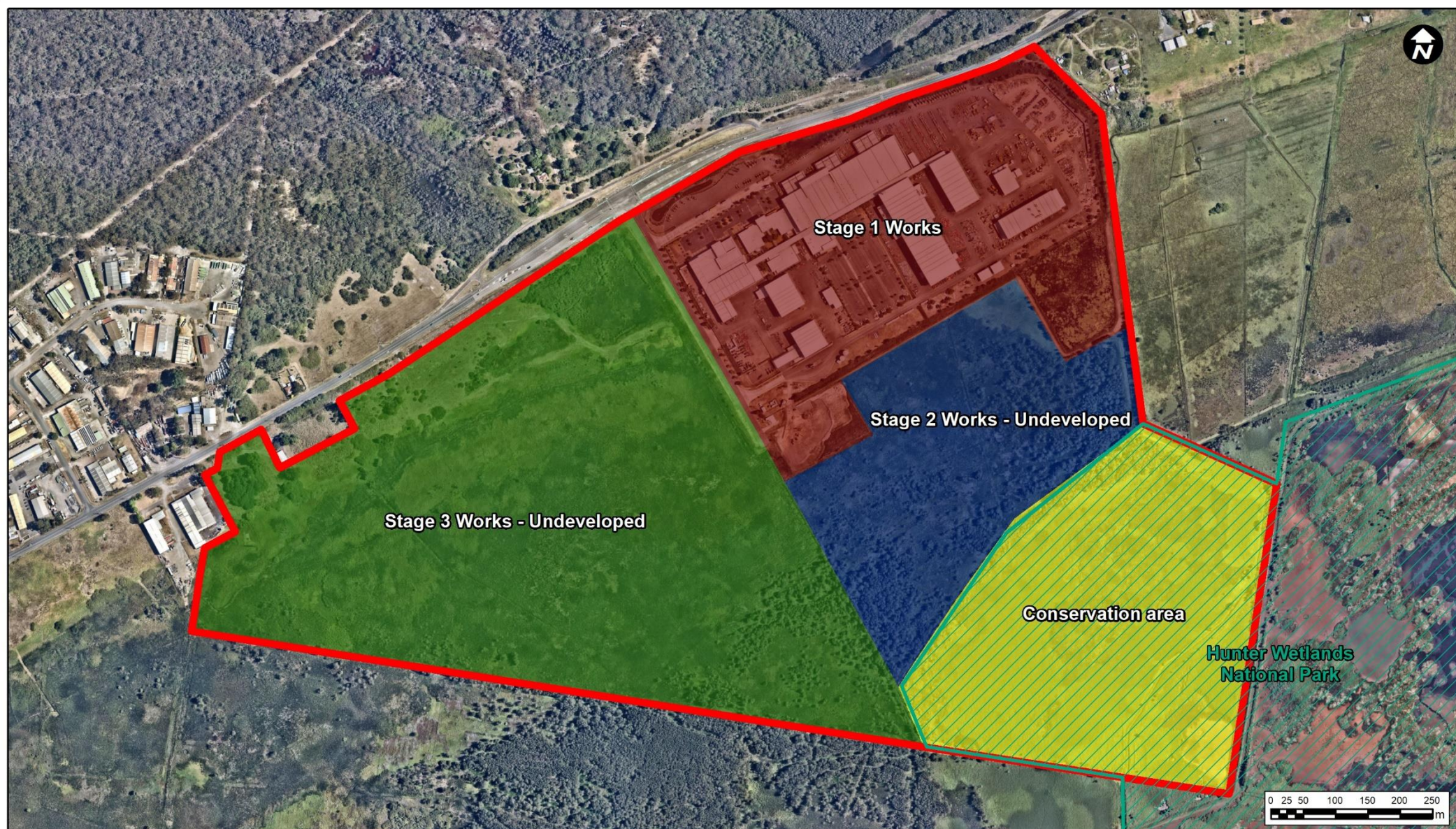


Figure 2 - Conservation Area & Works Stages
Legend

- | | |
|---|---|
|  Subject site |  Conservation area |
|  National Park Boundary |  Stage 1 Works |
| |  Stage 2 Works - Undeveloped |
| |  Stage 3 Works - Undeveloped |



Map Projection:

GDA 1994 MGA Zone 56

Data Sources:

Nearmap - 2023
NSW DFSI - 2019

Project Ref: 20234610

Plot Date: 4/4/2023 12:49

Revision: 001 (KWormington)

Disclaimer: This is not an official or a legal map but is for informational use only. All data was compiled from the best sources available. All boundaries, scale and geographic points are approximate.

2. METHODOLOGY

In October 2009 and April 2010, the CA was surveyed to gather data on existing vegetation condition and extent within the site, and to determine vegetation condition (biometric data). Surveys were conducted at several additional sites in the general locality of the proposed development to collect baseline biometric benchmark data from similar vegetation communities present within the locality. Discussion of differences between the biometric data collected from the CA and the 2010 NSW DECCW biometric benchmarks is provided in the baseline report (Ecobiological 2010).

Data was collected using methods outlined in the WMMP. Phase 1 established the vegetation extent of the wetland area; Phase 2 collated benchmark data for future comparison during monitoring events; and Phase 3 involves ongoing monitoring of the CA through collection of data on vegetation extent and condition, and comparison with data collected during Phases 1 and 2, and previous annual monitoring events. For further details on the methods used during Phases 1 and 2, refer to the WMMP (Ecobiological 2009).

Annual monitoring commenced in 2011, and this report represents the 16th annual monitoring event after the baseline report. The preferred period for annual monitoring is February. This period has been selected to allow annual weed growth and infestation identification and is considered a suitable time to identify the majority of plant species within the 0.04 ha plots.

The methods used to monitor edge effects and weed infestation, and variation in native vegetation extent and condition are outlined below.

2.1 EDGE EFFECTS AND WEED INFESTATIONS

Three permanent survey plots (20 m x 20 m, including a 20 m x 50 m plot for biometric data collection) were established in three vegetation community types (i.e., one in each community) in the CA². Data was collected in accordance with Appendix 2 of the 2009 BioBanking Assessment Methodology Operation Manual (field methodology for measuring condition attributes and site values), a method prepared by the Department of Environment and Climate Change (Seidel & Briggs, 2009).

Data collected from these permanent survey plots during the annual monitoring events are analysed and compared against the established baseline benchmark data and previous annual monitoring events. Impact on the vegetation communities adjacent to the development area will be considered substantial if the measured variance for any benchmark attribute is less than 25% of the lower benchmark or greater than 25% of the upper benchmark. Measurements outside benchmark values would initiate the requirement to investigate and manage any disturbance which may be impacting on the vegetation within the CA.

² The Q2 survey plot is no longer consistent with a saline wetland vegetation community (as mentioned in previous reports). The plot has remained in place to interpret transitional changes over time at that location, however it is still referred to as saline wetland survey plot within this report.

A weed infestation assessment was also undertaken by a qualified botanist walking the interface between the development and CA and marking the location and extent of weed infestation with a hand-held global positioning system (GPS). The location and extent of weed infestations recorded are then compared to previous annual monitoring events to determine if the infestations are increasing, stable or declining.

2.2 VARIATION IN NATIVE VEGETATION

Identification of the extent of the vegetation community types within the CA was undertaken by a qualified and experienced botanist walking the boundary between vegetation communities (ecotone) and marking a series of Rapid Data Points (RDPs). These are then cross referenced by the latest aerial imagery for the site and analysed to identify any changes in the extent of each vegetation community.



Figure 3 - Baseline Benchmark Quadrat Data

Legend

- Subject Site
- ✕ Benchmark Quadrat - Forested Wetlands
- ✕ Benchmark Quadrat - Freshwater Wetlands
- ✕ Benchmark Quadrat - Saline Wetlands



Project Ref:	20234610
Plot Date:	4/4/2023 12:57
Revision:	001 (KWormington)

Map Projection:

GDA 1994 MGA Zone 56

Data Sources:

Nearmap - 2023

Disclaimer This is not an official or a legal map but is for informational use only. All data was compiled from the best sources available. All boundaries, scale and geographic points are approximate.

3. RESULTS

The 16th annual monitoring event for Phase 3 was undertaken on 13 February 2026. Data was collected and compared to the 2009/10 (baseline) data established in Phase 2 and data from previous annual monitoring events.

3.1 EXTENT OF VEGETATION COMMUNITIES

The 2026 monitoring identified incremental changes to vegetation community extents. The forested wetland has increased by 0.09ha, primarily due to increases in regenerating Swamp Oak Sedge Forest. There has been a slight reduction in the freshwater wetland (-0.04ha) and the area of open water (-0.05ha). No change in extent was recorded in the saline wetland or the area of exotic vegetation.

Details of the 2026 assessment on the extent of vegetation communities have been provided in Table 1. A comparison of vegetation extent across all years of monitoring is illustrated in Figure 4. Figure 7 provides spatial mapping of the vegetation extents recorded in 2026.

Table 1: Comparison of areas (ha) of each vegetation community within the CA from 2022 - 2025 (previous) and 2026 (current) to the baseline areas 2009/10. Change in area (ha) is a measure from the baseline areas.

Year	Area of vegetation communities (ha)					Comments
	Percentage change from 2009/10 baseline to previous monitoring periods and the 2026 monitoring period					
	Forested wetland	Freshwater wetland	Saline wetland	Open water	Exotics	
2009/10 (baseline)	1.99	17.86	1.17	0	1.4	Vegetation survey prior to boundaries confirmed by surveyor.
2022	2.07 (+0.08)	18.02 (+0.16)	0.55 (-0.62)	0.80 (+0.80)	0.73 (-0.67)	
2023	2.03 (+0.04)	18.21 (+0.35)	0.51 (-0.66)	0.96 (+0.96)	0.48 (-0.92)	
2024	2.3 (+0.31)	18.11 (+0.25)	0.43 (-0.74)	1.06 (+1.06)	0.12 (-1.28)	
2025	2.34 (+0.35)	18.25 (+0.39)	0.43 (-0.74)	0.88 (+0.88)	0.12 (-1.28)	
2026	2.43 (+0.44)	18.21 (+0.35)	0.43 (-0.74)	0.83 (+0.83)	0.12 (-1.28)	

Note: due to changes to the surveyed boundary of the CA, which occurred after the 2009/10 (baseline) surveys, there is a slight discrepancy in the total areas of approximately 0.1 ha between the baseline and subsequent surveys.

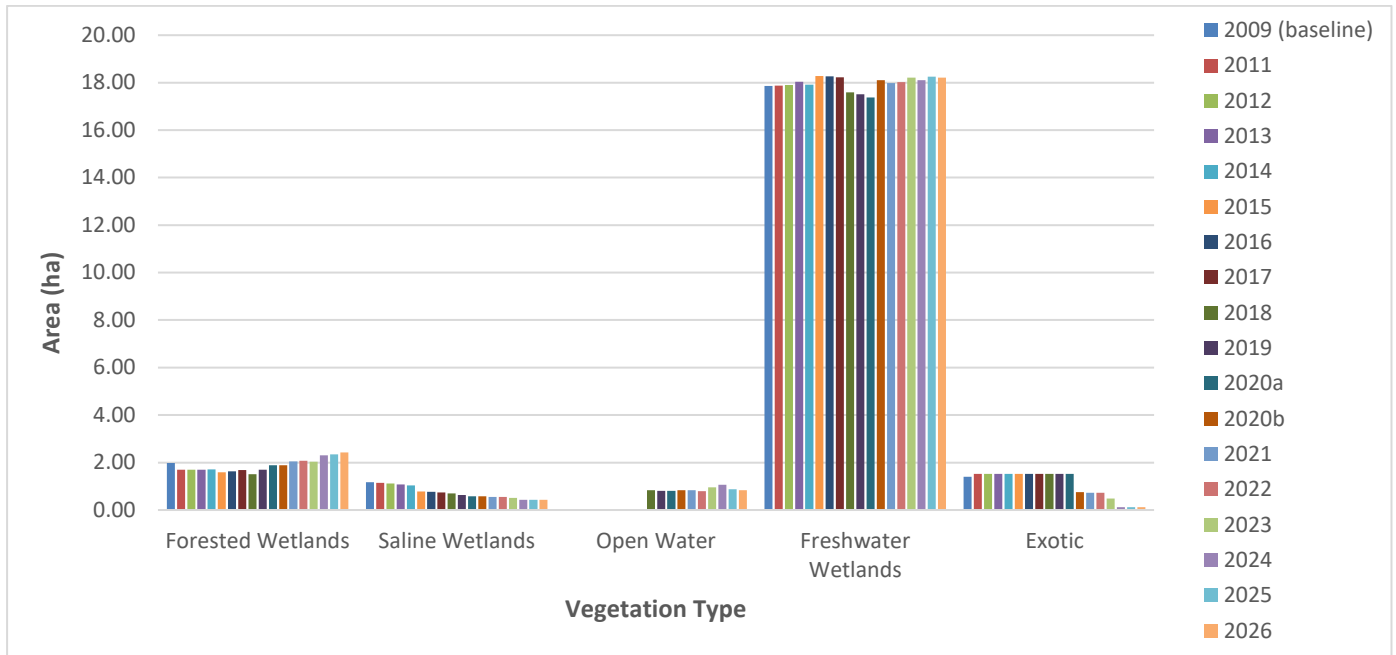


Figure 4: Area (ha) of each vegetation community and cover of exotic species within the Conservation Area from the 2009/10 Baseline assessment to the current (2026) monitoring round.

3.2 QUADRAT MONITORING

3.2.1 Native species richness

Native species richness has increased year on year in all quadrats:

- The forest wetland recorded 11 species (increased by 1) against a regional baseline of 9 species
- The saline wetland recorded 15 species (increased by 3) against a regional baseline of 6 species
- The freshwater wetland recorded 5 species (increased by 1) against a regional baseline of 9 species.

The results of the 2026 native species richness, per vegetation type and in comparison to the results of previous years and benchmark data, is illustrated in Figure 5. Biometric data (a comparison of the structure, composition and species diversity of the three vegetation communities within the CA against the 2009/10 baseline data and DECCW benchmarks is provided in Appendix B.

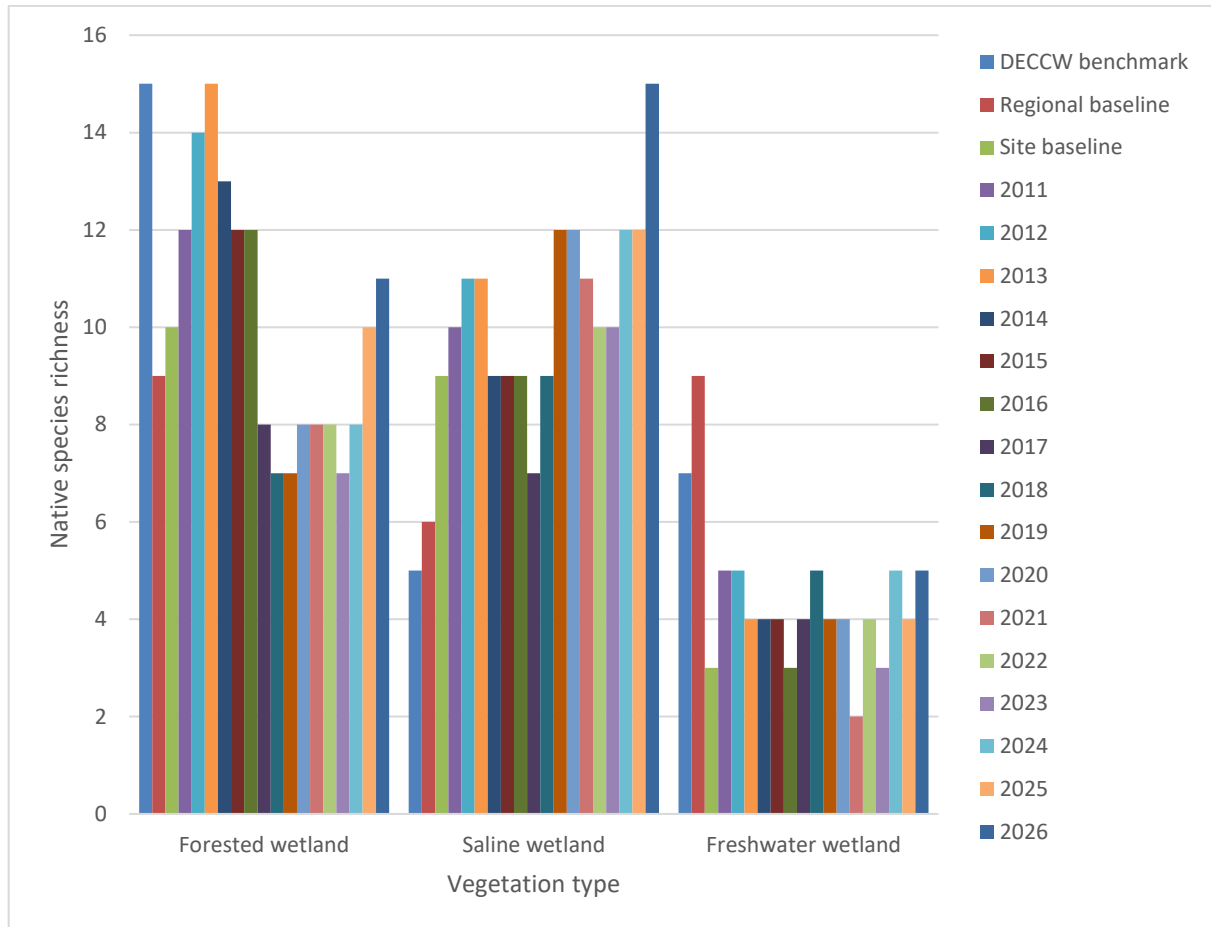


Figure 5: Observed native species richness within each monitoring quadrat (0.04 ha) and vegetation community across all years of monitoring. DECCW Benchmark and Regional Baseline data also included.

3.2.2 Weed assessment

The cover of exotic or weedy plants was very minimal in all quadrats:

- The forest wetland recorded 4% cover (increased by 2%) against a regional baseline of 19%
- The saline wetland recorded 0% cover (consistent with 2025) against a regional baseline of 13%
- The freshwater wetland recorded 0% cover (consistent with 2025) against a regional baseline of 4%.

The weed recorded in the forested wetland was *Hydrocotyle bonariensis* (Pennywort), which has persisted within the quadrat over the last several years but noticeably decreased in cover from 28% recorded in 2024.

The results of the 2026 exotic cover, per vegetation type and in comparison to the results of previous years and benchmark data, is illustrated in Figure 6. Biometric data is provided in Appendix B.

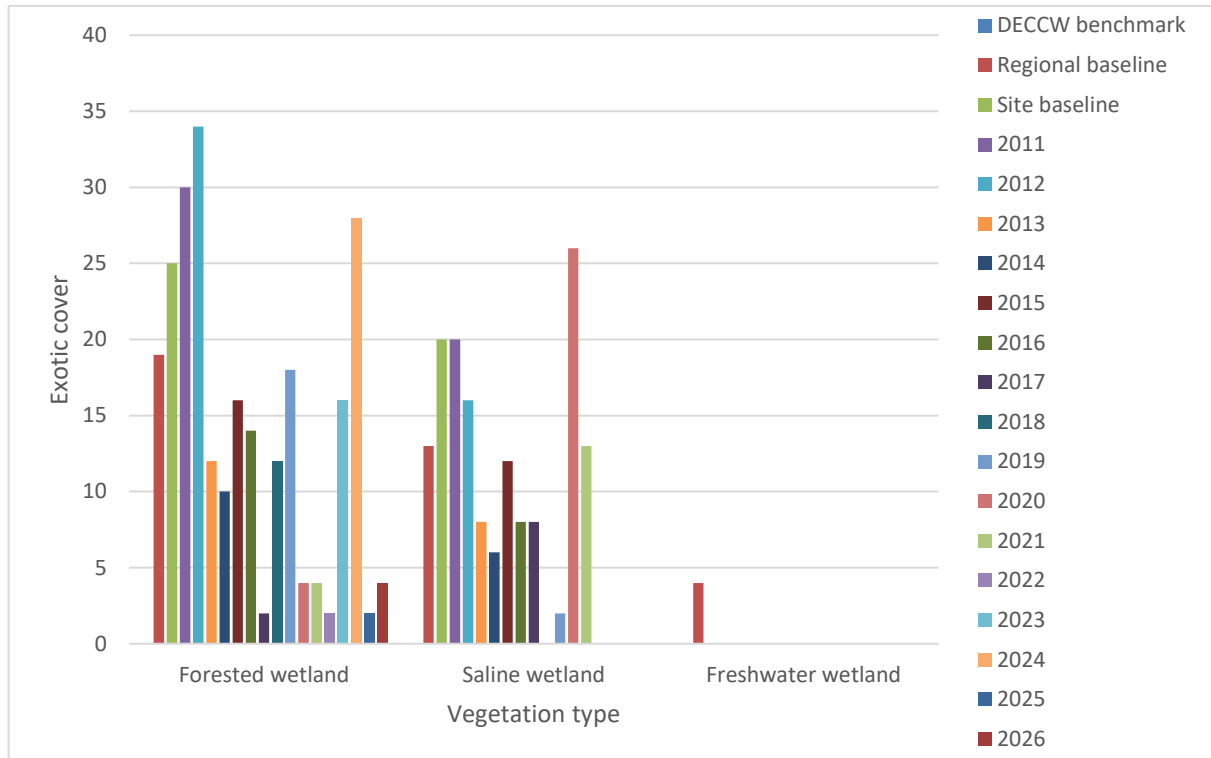


Figure 6: Percentage cover of exotic species within each vegetation type across all years of monitoring.

As part of the general assessment of the entire subject site, four weeds of significance³ were recorded:

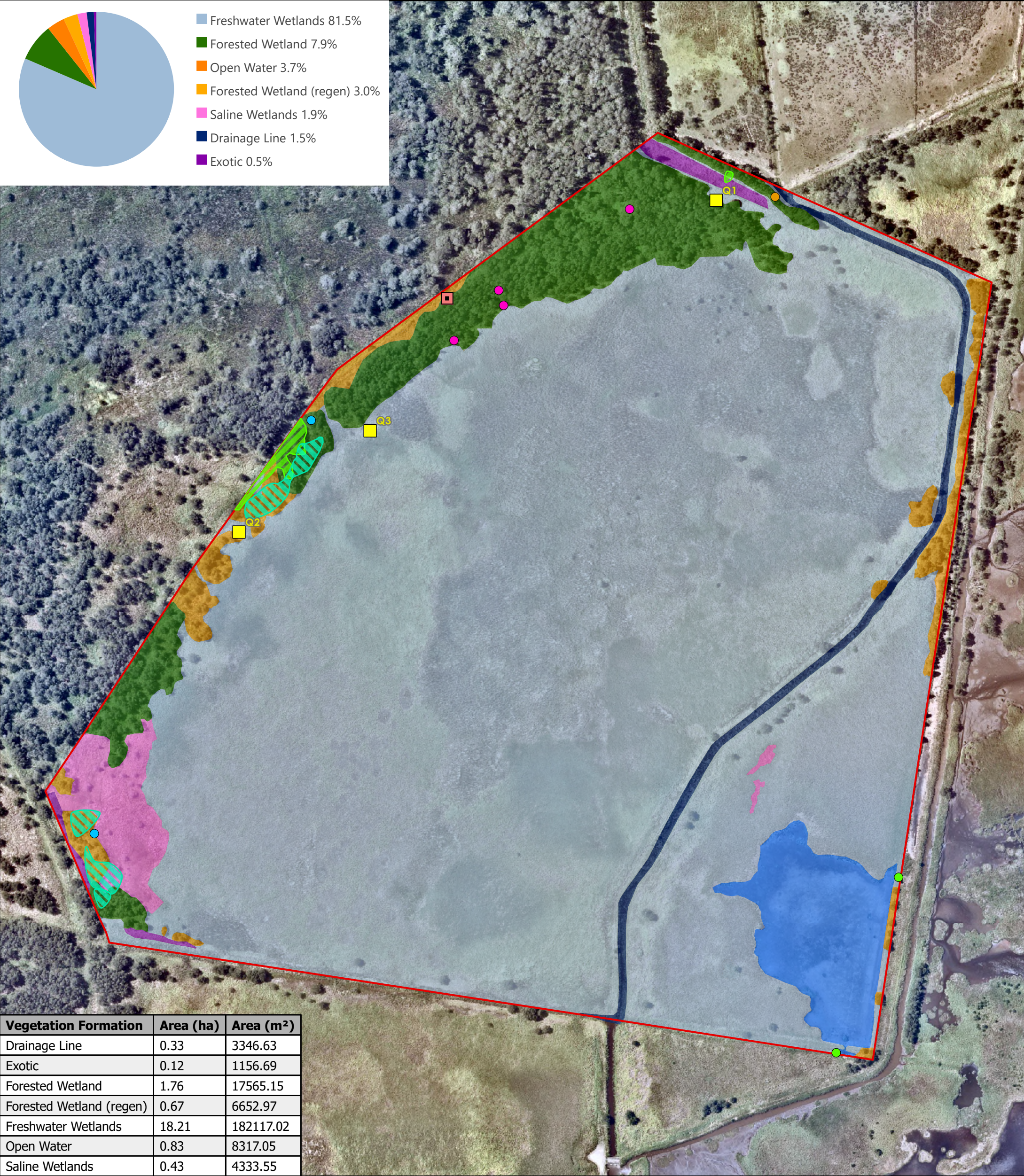
- *Baccharis halimifolia* (Groundsel Bush)
- *Cortaderia selloana* (Pampas Grass)
- *Juncus acutus* (Spiny Rush)
- *Rubus fruticosus* (spp. agg.) (Blackberry).

Pampas Grass, Spiny Rush, and Blackberry have been recorded over previous years and primarily occur along the western fringe of the CA in associated with forested wetland (Figure 7). Groundsel Bush was first recorded in 2025 in the southeast corner of the CA and was recorded again in this area. Noogoora Burr was also recorded in 2025 for the first time with additional plants recorded in 2026. Noogoora Burr is not a weed of significance but a relevant observation for a wetland environment where it can proliferate in suitable conditions.

In addition to the results of the weed assessment, feral animal impacts were also observed within the CA including deer rub, and feral pig rooting and wallows.

The weeds and feral animals are further discussed in Section 4.3. Weed infestations recorded within the CA in 2026 are illustrated in Figure 7.

³ Priority Weeds of the Hunter Region (Department of Primary Industries); Weeds of National Significance

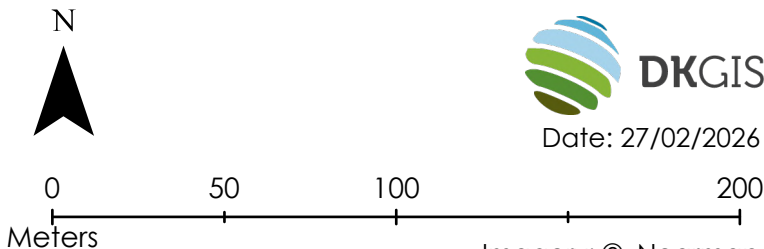


Legend

- Wild Tobacco
- Noogoora Burr
- Pampas Grass
- Groundsel
- Pig Wallow
- Monitoring Quadrats
- Blackberry
- Spiny Rush
- Subject Site

Vegetation Formation 2026

- Drainage Line
- Exotic
- Forested Wetland
- Forested Wetland (regen)
- Freshwater Wetlands
- Open Water
- Saline Wetlands



Date: 27/02/2026

Imagery: © Nearmap
Coordinate System: GDA 1994 MGA Zone 56



4. DISCUSSION

4.1 VEGETATION EXTENT

Vegetation extents across the CA have changed incrementally, and these changes are indicative of an ecosystem response to seasonal patterns and climate variability (seasonal fluctuations over time). The increase in forested wetland is primarily due to regenerating forest along the eastern boundary and maturation of regenerating forest along the western boundary in proximity to Q2. New parcels of forested wetland were mapped around the southeast corner of the CA during this assessment. Forested wetland now accounts for 7.9% of vegetation within the CA, having increased by 0.44ha since baseline surveys in 2010.

The decrease in the freshwater wetland by 0.04ha since the 2025 survey is negligible and reflective of the increase in forested wetland, as well as climate variability with 2025 experiencing above average rainfall in the first half of the year followed by a drier than average spring and summer. This drier period is notable in relation to recent years where La Niña has been a dominant factor in weather patterns for southeastern Australia.

The extent of the saline wetland as it is defined remained unchanged year on year. The area of open water, although dry during the assessment, has decreased slightly with species including *Paspalum vaginatum* (Saltwater Couch) and *Bolboschoenus caldwellii* being present but expanding very slowly, assumedly due to higher salinity levels in the soil substrate at this location. The open water area has reduced by 0.23ha since 2024 and this trend should continue (Plate 1).



Plate 1: The open water area is dynamic and currently slowly regenerating

Compliance

Condition 4B of MP 07_0086 MOD 2 states that the proponent must implement contingency measures to drainage flows, if there is a decline in *Phragmites* Rushland (freshwater wetland) vegetation cover of greater than 20% in extent, and a decline in Swamp Oak Sedge Forest (forested wetland) by greater than 10% in the CA, when compared to the baseline report.

The 2026 annual monitoring observed an increase in Swamp Oak Sedge Forest in comparison to February 2025 and has increased by 22% against baseline data. The freshwater wetland reduced by 0.04ha in comparison to 2025 but remains 2% greater than the baseline area recorded. The CA remains compliant with the management plan and no further action is required.

Table 2: Comparison, presented as area (ha) and percent change, of the 2009/10 baseline data and the current 2026 monitoring survey for the forested wetland community and freshwater wetland community

Survey Period	Forested Wetland	Freshwater Wetland
2009 / 10 baseline	1.99ha	17.86ha
2026	2.43ha	18.21ha
% change	+ 22%	+ 2%

4.2 QUADRAT MONITORING

Below average rainfall for the six months preceding the monitoring has resulted in drier conditions within the CA. At the time of monitoring rainfall was approximately 45% below average year to date (source: Bureau of Meteorology Site 61078 Williamtown RAAF). This drier period of weather, after above average rainfall over the preceding years, has had an influence on the results of the quadrat monitoring for 2026.

Year on year, native species richness increased by one species the forested wetland, three species in the saline wetland, and one species in the freshwater wetland. These figures are slightly more significant when compared to the baseline assessment where species counts were 9, 6, and 9 for the forested, saline, and freshwater wetland respectively. Notably:

- The 11 species recorded at the forested wetland is the highest in ten years
- The 15 species recorded at the saline wetland was the highest to date recorded during annual monitoring
- The five species recorded at the freshwater wetland is the highest equal (with four other years).

The drier conditions have resulted in no inundation for a period of time and have allowed various species to return, including *Lobelia anceps* within the saline wetland which prefers moist but not waterlogged soils (Plate 2). Across all quadrats, species richness is positive and above the acceptable levels of benchmark data.

Canopy cover has remained consistent at 40% for the forested wetland (2023 – 2026) and remains absent at the other two quadrats. Native ground cover for ‘other’ species has increased to 92% in the forested wetland (an increase from 76%) where conditions have been conducive for the native forb *Alternanthera denticulata* (Lesser Joyweed) to thrive in the understorey. Native ground cover for grasses has also increased in the forested wetland and the saline wetland due to a noticeable increase in Saltwater Couch, likely due to drier conditions and less inundation. This grass had also colonised areas of disturbance in the saline wetland that were a result of the previous year’s monitoring (survey tracks through the *Phragmites australis* grassland).

Typha encroachment remains in certain areas of the forested wetland and is likely to hinder recruitment due to its dense growth habit.

Photo monitoring taken at each quadrat is provided in Attachment 3.



Plate 2: *Lobelia anceps* in Q2

4.3 WEED ASSESSMENT

Weed coverage within the quadrats remains very low. Q1 recorded 4% cover of Pennywort, an increase from 2% in 2025 but it remains noticeably below the 28% cover recorded in 2024. No weed species were recorded in Q2 or Q3.

The Pampas Grass plants identified during previous monitoring events are still present, but no new or young plants were recorded in 2026. Blackberry and Spiny Rush infestation are expanding in the Swamp Oak Sedge Forest around Q2 (Plate 3). However, the Spiny Rush infestations of the southwest corner, although mature, remain largely unchanged in extent.

Groundsel Bush was identified in the southeast corner in 2025 on earth mounds created by past drain clearing activities and remains present within this corner. The weed is becoming prominent in the broader area adjacent to the CA. It produces large amounts of wind borne seed, is tolerant of saline conditions and invasive in poorly drained coastal wetlands (Department of Primary Industries 2026). Groundsel Bush is a weed of significance, and it has an allocated *regional recommended measure* for *eradication* in the Hunter region (NSW WeedWise, DPI 2026). The weed is also subject to the Hunter Regional Groundsel Bush Management Strategy 2020 – 2030 and the CA sits within a marginal area with a medium priority for management. The short-term priority action of this Strategy is to eradicate all

marginal infestations within six years (Hunter Regional Weeds 2020). It is recommended that NPWS is notified of the presence of this weed. A strategic approach would be recommended to manage the broader infestation in the area.

Noogoora Burr was recorded within the CA for the first time in 2025 and was recorded at a new location in the southwest corner in 2026. Noogoora Burr can colonise low lying areas that are subject to inundation. The plant can produce dense stands and the seeds are readily spread by wildlife movement due to the hooked burr mechanism of the seed pods. This weed will continue to be monitored and reported on during future monitoring events.

The current area of coverage for significant weeds does not trigger the requirement for a Weed Management Plan (WMMP 2009). The (potential) control and future use of herbicide application should also be considered as larger infestations will require larger volumes of herbicide, which must be carefully applied in wetland environments. Early control of establishing populations is always recommended.



Plate 3: Blackberry infestations are growing along the western boundary of the CA

Feral animal impacts were recorded within the CA. Deer rub on trees (deer remove the velvet from maturing antlers by brushing branches and stems), was noticeable but not observed to be of any significant impact. Feral pig rooting and scat was readily more evident than previous years and one large wallow was recorded along the western boundary of the CA (Plate 4). Involvement in regional pest animal management activities is recommended.



Plate 4: Feral pig wallow within the forested wetland

4.4 CONCLUSION

The 2026 annual Tomago wetland monitoring confirms that the CA remains compliant with Schedule 3, Condition 4B for vegetation extent and no further action is required at this time. The extent of forested wetland has increased slightly due to regenerating patches of Swamp Oak Sedge Forest and Phragmites Rushland remains 2% above the assessed baseline area.

A drier than average preceding six months has resulted in increased diversity across all monitoring quadrats in comparison to 2025.

Exotic cover within the monitoring quadrats was negligible. Four significant weeds occur within the CA. Blackberry and Spiny Rush infestations have increased in the Swamp Oak Sedge Forest around Q2 and they should continue to be monitored. Any weed control activities should focus on these infestations.

Groundsel Bush occurs in the southeast corner. Early control is recommended but should be done strategically due to a broader infestation in the surrounding area. It is recommended that National Parks and Wildlife Service is notified of the presence of this weed in the CA and surrounding area.

Involvement in any local or regional pest animal management activities (managed by NSW Local Land Services) would benefit the CA.

.

5. REFERENCES

The Bureau of Meteorology (2026). Climate data online, retrieved 23 February 2026.

Brown, K., & Bettink, K. (2006). Biology of Sharp Rush,* *Juncus acutus*. In Managing Sharp Rush (* *Juncus acutus*), Proceedings of a workshop held at Wollaston College Conference Centre, Mt Claremont Perth, Western Australia. WA Department of Environment and Conservation.

Department of Primary Industries (2026). Groundsel Bush (*Baccharis halimifolia*), NSW Weedwise [online] available at: <https://weeds.dpi.nsw.gov.au/Weeds/GroundselBush>

ecobiological (2009). Wetland Management and Monitoring Plan for the interface between an industrial subdivision and Hunter Estuary National Park, Tomago, NSW. October 2009.

ecobiological (2010). Baseline Report for the Wetland Management and Monitoring Plan, WesTrac Facility, Tomago, NSW. April 2010.

Hunter Regional Weeds (2020). Hunter Regional Groundsel Bush Strategy 2020-2030. Local Land Services.

Keith, D. (2004). Ocean Shores to Desert Dunes. NSW Department of Environment and Climate Change, Sydney.

Kleinfelder (2022). 2022 Annual Wetland Monitoring Report for Conservation Area, Northbank Enterprise Hub, Tomago, NSW.

Kleinfelder (2023). 2023 Annual Wetland Monitoring Report for Conservation Area, Northbank Enterprise Hub, Tomago, NSW.

NSW National Parks and Wildlife Service (1998). Kooragang Nature Reserve and Hexham Swamp Nature Reserve Plan of Management.

Rayner, D.S. & Glamore, W.C. (2011). Tidal Inundation and Wetland Restoration of Tomago Wetland: Hydrodynamic Modelling. University of NSW Water Research Laboratory Technical Report, Manly Vale.

Saintilan, N. (2009). Australian Saltmarsh Ecology. CSIRO Publishing, Collingwood.

Seidel, J. and Briggs, S. (2009). BioBanking Operational Manual. NSW Department of Environment and Climate Change, Sydney.

ATTACHMENT 1. QUADRAT DATA

Table 3: Species data per quadrat

Family	Scientific Name	Common Name	Q1 Forested Wetland				Q2 Freshwater Wetland (formerly saline)				Q3 Freshwater Wetland			
			2010	2024	2025	2026	2010	2024	2025	2026	2010	2024	2025	2026
Amaranthaceae	<i>Alternanthera denticulata</i>	Lesser joy weed	1	3	3	6		2	3	3				
Apiaceae	<i>*Hydrocotyle bonariensis</i>	Pennywort	2	1	1	1								
Apocynaceae	<i>Parsonsia straminea</i>	Monkey Rope		1		1								
Asteraceae	<i>*Ambrosia tenuifolia</i>	Lacy Ragweed												
Asteraceae	<i>*Aster subulatus</i>	Wild Aster						1						
Asteraceae	<i>*Conyza parva</i>	-												
Asteraceae	<i>*Cotula coronopifolia</i>	Water Buttons	2				3							
Asteraceae	<i>*Crassocephalum crepidioides</i>	Thickhead	1											
Asteraceae	<i>Eclipta platyglossa</i>	-							1	2				
Asteraceae	<i>Enydra fluctuans</i>	-												
Asteraceae	<i>*Senecio madagascariensis</i>	Fireweed	2											
Caryophyllaceae	<i>Spergularia marina</i>	Lesser Sea-spurrey					1							
Casuarinaceae	<i>Casuarina glauca</i>	Swamp Oak	5	4	4	5		2	2	2				
Chenopodiaceae	<i>Einadia trigonos subsp. stellulata</i>	Fishweed	2				2							
Chenopodiaceae	<i>Sarcocornia quinqueflora</i>	Glasswort												
Chenopodiaceae	<i>Atriplex prostrata*</i>	Orache												
Commelinaceae	<i>Commelina cyanea</i>	Native Wandering Jew			1	1								
Cyperaceae	<i>Bolboschoenus caldwellii</i>	-	2	3	2	4	2	3	3	3	4	2	2	2
Euphorbiaceae	<i>*Ricinus communis</i>	Castor Oil Plant	1											
Juncaceae	<i>*Juncus acutus subsp. acutus</i>	Sharp Rush	1				1							
Juncaceae	<i>Juncus kraussii subsp. australiensis</i>	Sea Rush	3	2	1	1	4	2	2	2				
Juncaceae	<i>Juncus usitatus</i>	Common Rush	2											
Juncaginaceae	<i>Triglochin procera</i>	Water Ribbons												
Juncaginaceae	<i>Triglochin striata</i>	Streaked Arrowgrass					3							
Lobeliaceae	<i>Lobelia anceps</i>	-						1		1				

Family	Scientific Name	Common Name	Q1 Forested Wetland				Q2 Freshwater Wetland (formerly saline)				Q3 Freshwater Wetland			
			2010	2024	2025	2026	2010	2024	2025	2026	2010	2024	2025	2026
Poaceae	<i>Cynodon dactylon</i>	Couch								1				
Poaceae	* <i>Echinochloa crus-galli</i>	Barnyard Grass												
Poaceae	* <i>Paspalum dilatatum</i>	Paspalum	2											
Poaceae	* <i>Pennisetum clandestinum</i>	Kikuyu	1											
Poaceae	<i>Isachne globosa</i>	Swamp Millet	3					2	2	2	6			
Poaceae	<i>Lachnagrostis billardierei</i> subsp. <i>billardierei</i>	Coast Blowgrass	2				2							
Poaceae	<i>Paspalum vaginatum</i>	Saltwater Couch		4	5	5		5	4	5		4	3	3
Poaceae	<i>Phragmites australis</i>	Common Reed	2	3	3	2	3	6	6	6	3	6	6	6
Poaceae	<i>Polypogon monspeliensis</i>	Annual Beardgrass					2							
Poaceae	<i>Sporobolus virginicus</i>	Sand Couch		1	1	1	4							
Polygonaceae	<i>Persicaria decipiens</i>	Slender Knotweed						1	3	1				
Polygonaceae	<i>Persicaria strigosa</i>	Spotted Knotweed				1		2	3	2		1		1
Polygonaceae	* <i>Polygonum aviculare</i>	Wireweed	2				2							
Polygonaceae	<i>Rumex brownii</i>	Swamp Dock			1	1				1				
Polygonaceae	* <i>Rumex conglomeratus</i>	Clustered Dock	1					1						
Ranunculaceae	<i>Ranunculus inundatus</i>	Water Buttercup	1		1			1	2	1				
Rosaceae	* <i>Rubus fruticosus</i>	Blackberry	1											
Solanaceae	* <i>Solanum nigrum</i>	Blackberry Nightshade	1	1				1						
Typhaceae	<i>Typha orientalis</i>	Broadleaf Cumbungi						2	3	2		2	3	2
Verbenaceae	* <i>Verbena bonariensis</i>	Purpletop	0											
		Total Native	10	8	10	11	9	12	12	15	3	5	4	5
		Total with Exotic	11	2	1	1	3	3	0	0	0	0	0	0

*Exotic species

ATTACHMENT 2. BIOMETRIC DATA

Table 4: Biometric data

Keith Formation Name	Keith Class (2004)	Quadrat number	Native plant species richness	Native over-storey cover		Native mid-storey cover		Native ground cover (grasses)		Native ground cover (shrubs)		Native ground cover (other)		Number of trees with hollows	Total length of fallen logs	Exotic cover
			Richness in 0.04ha Plot	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper			
Forested Wetlands (DECCW biometric benchmark data 2008)	Coastal Floodplain Wetlands		15	15	65	0	50	0	90	1	15	2	90	0.8	10	0
Forested Wetlands (Average of regional baseline quadrats)			9	25		0		25		0		83		4	6	19
Forested Wetlands		Baseline (Q1)	10	60		0		90		10		50		0	0	25
Forested Wetlands		2024 (Q1)	8	40		0		46		0		98		0	0	28
Forested Wetlands		2025 (Q1)	10	40		0		74		0		76		0	0	2
Forested Wetlands		2026 (Q1)	11	40		0		78		0		92		0	0	4
Saline Wetlands (DECCW biometric benchmark data 2008)	Saltmarshes		5	0	0	0	0	0	10	0	40	30	70	0	0	0
Saline Wetlands (Average of regional baseline quadrats)			6	0		0		81		0		82		0	0	13
Saline Wetlands		Baseline (Q2)	9	0		0		50		0		70		0	0	20
Saline Wetlands		2024 (Q2)	13	0		0		100		0		94		0	0	0

Keith Formation Name	Keith Class (2004)	Quadrat number	Native plant species richness	Native over-storey cover		Native mid-storey cover		Native ground cover (grasses)		Native ground cover (shrubs)		Native ground cover (other)		Number of trees with hollows	Total length of fallen logs	Exotic cover
			Richness in 0.04ha Plot	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper			
Saline Wetlands		2025 (Q2)	12	0		0		94		0		78		0	0	0
Saline Wetlands		2026 (Q2)	15	0		0		100		0		48		0	0	0
Freshwater Wetlands (DECCW biometric benchmark data 2008)	Coastal Freshwater Lagoons		7	3	90	0	5	1	5	0	0	60	95	0	0	0
Freshwater Wetlands (Average of regional baseline quadrats)			9	0		0		42		0		72		0	0	4
Freshwater Wetlands		Baseline (Q3)	3	0		0		90		0		50		0	0	0
Freshwater Wetlands		2024 (Q3)	5	0		0		100		0		38		0	0	0
Freshwater Wetlands		2025 (Q3)	4	0		0		100		0		36		0	0	0
Freshwater Wetlands		2026 (Q3)	5	0		0		100		0		40		0	0	0

ATTACHMENT 3.

PHOTO MONITORING



Q1 2026



Q2 2026



Q3 2026



Q1 2025



Q2 2025



Q3 2025

Appendix D

Groundwater and Surface Water Monitoring Report

**Report on Post Baseline Groundwater and
Surface Water Monitoring – March 2026
(During Construction)**

Stage 3 Northbank Enterprise Hub

**Lot 210 DP 1174939, WesTrac Drive,
Tomago NSW**

**Prepared for Northbank Enterprise Hub
Pty Ltd**

Project 39920.09

2 June 2026

Document History

Details

Project No.	39920.09
Document Title	Report on Post Baseline Groundwater and Surface Water Monitoring – March 2026
Site Address	Lot 210 DP 1174939, WesTrac Drive, Tomago NSW
Report Prepared For	Northbank Enterprise Hub Pty Ltd
Filename	39920.09.R.031.Rev0.2026-03-Stage3

Status and Review

Status	Prepared by	Reviewed by	Date issued
Draft A	Dana Wilson	Will Wright	26 May 2026
Revision 0	Dana Wilson	Will Wright	2 June 2026

Distribution of Copies

Status	Issued to
Draft A	Steve Robson, Northbank Enterprise Hub Pty Ltd Scott Day, Torque Projects Pty Ltd
Revision 0	Steve Robson, Northbank Enterprise Hub Pty Ltd Scott Day, Torque Projects Pty Ltd

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

Signature

Date

Author	<i>Dana Wilson</i>	2 June 2026
Reviewer	<i>P W Wright</i>	2 June 2026

Executive Summary

This report presents the results of groundwater and surface water monitoring undertaken in March 2026 for Stage 3 of the Northbank Enterprise Hub at Lot 210 DP 1174939, WesTrac Drive, Tomago NSW (the site).

Groundwater and surface water monitoring is required under EPBC Approval 2007/3343 and Project Approval MP07_0086. Requirements are set out in the Groundwater Monitoring Plan (GMP) (Douglas, 2025a), Groundwater Management Plan (GWMngtP) (Douglas, 2024), and Stage 3 Soil and Water Management Plan (SMP) (WRM, 2025). These plans require monitoring of groundwater levels, groundwater and surface water quality, and potential development impacts.

The March 2026 event was the first post-baseline monitoring round following commencement of early vegetation clearing and slashing in November 2025. While clearing activities have begun, no major construction activities (e.g. earthworks, fill importation etc) had commenced. Inspections and monitoring of surface waters, separate to the requirements GMP/GWMngtP were also undertaken as reported in Douglas (2026b) and included in Appendix G.

Post-baseline water quality monitoring is required every six months during and after construction, with quarterly water level monitoring via dataloggers. Results are assessed against baseline data from 2023 to 2025 and the historical record.

Monitoring included groundwater level measurement, groundwater and surface water field testing, laboratory analysis of prescribed analytes, QA/QC checks, assessment against relevant criteria, and trend review.

Groundwater levels in March 2026 were lower than in April 2025 but remained within the historical range. Groundwater flow to the south-east was inferred, consistent with previous monitoring.

Monitoring showed no evidence of gross contamination in groundwater or surface water based on field observations and testing of analytes listed in the monitoring plans. Additional TPH speciation testing was also completed in accordance with the GMP/GWMngtP.

Groundwater quality differed between the Tomago Sandbeds and Clay Aquitard aquifers, consistent with historical patterns and the use of separate trigger levels in the GMP/GWMngtP. Some spatial variation was also evident within each aquifer.

Some wells and parameters exceeded assessment criteria; however, overall groundwater and surface water quality remained generally consistent with the historical dataset. Localised nutrient and metal outliers are considered to reflect natural influences such as redox conditions, pH variability, and groundwater level fluctuations. Together with the limited site activities, these results indicate conditions remain comparable to baseline.

Trace hydrocarbons at surface water location SW3a suggest possible influence from road runoff and vehicle activity on Tomago Road. This is considered representative of incoming baseline surface water quality rather than Stage 3 activities.

Future monitoring under the GMP/GWMngtP will support ongoing assessment of groundwater levels and water quality trends during post-baseline stages and help manage potential impacts.

Table of Contents

	Page No
1. Introduction	1
2. Scope of work	2
3. Site identification	3
4. Environmental setting	4
5. Results	6
5.1 Groundwater levels	6
5.2 Groundwater and surface water field parameters	8
5.3 Contaminant observations	10
6. Laboratory testing	10
6.1 Overview	10
6.2 Results	11
6.3 Quality assurance / quality control (QA/QC)	11
7. Assessment criteria	12
8. Discussion	13
8.1 Groundwater levels	13
8.2 Groundwater and surface water quality	14
9. Conclusions	20
10. References	21
11. Limitations	22

Appendix A:	About This Report Drawing 1 – Groundwater Monitoring Well and Surface Water Monitoring Location Plan
Appendix B:	Field Work Methodology
Appendix C:	Sampling Methods Soil Descriptions Symbols and Abbreviations Borehole logs (Bores MW6 to MW11, MW8A, MW101 to MW106) –Douglas Partners Borehole Logs (Bores MW1 to MW5) – Coffey Table A1: Monitoring Well Summary
Appendix D:	Figure D1: Groundwater Levels in Monitoring Wells (2024-2026) Figure D2: Groundwater Levels in Monitoring Wells (2010-2026) Groundwater Quality Monitoring Plots Surface Water Quality Monitoring Plots
Appendix E:	Table 1: Summary of water quality monitoring results – March 2026 Laboratory Report Sheets (404470, 404471, 404571, 404571-A, 404575)
Appendix F:	Quality Assurance / Quality Control Report Chain of Custody Sheets (Field and Despatch) Sample Receipts
Appendix G:	Interim Closure Report on Environmental Inspections and Monitoring (Douglas, 2026b)

Report on Post Baseline Groundwater and Surface Water Monitoring – March 2026 (During Construction)

Stage 3 Northbank Enterprise Hub

Lot 210 DP 1174939, WesTrac Drive, Tomago NSW

1. Introduction

This report, prepared by Douglas Partners Pty Ltd (Douglas), presents the results of groundwater and surface water monitoring undertaken in March 2026 for Stage 3 of the Northbank Enterprise Hub at Lot 210 DP 1174939, WesTrac Drive, Tomago NSW (the site). The investigation was commissioned by Northbank Enterprise Hub Pty Ltd and was undertaken in line with Douglas' proposal 39920.09.P.018B.Rev0 dated 12 March 2026.

Stage 3 of the Northbank Enterprise Hub comprises construction of an industrial subdivision with associated access roads and drainage reserves. The site is an undeveloped vacant lot and will connect to existing roads to the north and west, and adjacent to the Stage 1 WesTrac Caterpillar NSW head office to the east on Lot 211. The site and conceptual plans are shown in Appendix A.

Groundwater and surface water monitoring is required to meet consent conditions for the industrial development. Requirements are set out in the following approved documents:

1. Douglas (2025a) *Groundwater Monitoring Plan* (GMP) which documents a procedure for baseline and post-baseline monitoring (during and after construction) under existing conditional Project Approval MP07_0086;
2. Douglas (2024) *Groundwater Management Plan* (GWMngtP) prepared to meet Environmental Protection and Biodiversity Conservation Act (EPBC) Approval 2007/3343. The GWMngtP has been prepared to minimise potential groundwater impacts and risks arising from the Stage 3 development.
3. WRM (2025) *Stage 3 Soil and Water Management Plan* (SMP) which outlines how stormwater from the proposed development will be managed to meet regulatory requirements and protect receiving bodies.

The GMP and GWMngtP are overlapping plans to meet specific approval requirements, however, both include programs to monitor groundwater levels and quality and to mitigate potential impacts as a result of the Stage 3 development. The SMP outlines requirements for surface water monitoring which broadly follow on from Douglas (2025a; 2024).

The March 2026 monitoring event comprises the first “post-baseline” monitoring event following commencement of early vegetation clearing and slashing works in November 2025. Post-baseline water quality monitoring is required six-monthly (biannually) during and following construction, in addition to three-monthly (quarterly) water level monitoring. Post-baseline monitoring data is to be assessed against baseline monitoring undertaken from 2023 to 2024, as well as additional data collected prior to commencement of initial works in November 2025.

While clearing activities have begun, no major construction activities (e.g. earthworks, fill importation etc) had commenced at the time of monitoring or reporting. Inspections and monitoring of surface waters, separate to the requirements GMP/GWMngtP were also undertaken as reported in Douglas (2026b) and included in Appendix G.

The groundwater monitoring network comprises nine groundwater monitoring wells, some of which are long term locations which continue to be monitored for the Stage 1 development (east). Well locations were selected with consideration of upgradient, mid site and downgradient locations and staging of development works. Surface water monitoring was also undertaken at locations nominated by Douglas in the absence of specific pre-construction locations listed in the SMP. The well and surface water monitoring locations are shown on Drawing 7 in Appendix A.

This report must be read in conjunction with all appendices including the notes provided in Appendix A.

2. Scope of work

The monitoring comprised the following:

- Preparation of field work and safety plans;
- Field investigation on 16 and 17 March 2026 at the locations summarised in Table 2 undertaken by an environmental scientist and environmental field assistant from Douglas. The work was undertaken with reference to the methods and procedures outlined in the GMP and GWMngtP (Douglas, 2025a; 2025b) and comprised:
 - o Measurement of water levels and assessment of possible floating product using an oil/water interface meter;
 - o Groundwater purging and sampling using low flow peristaltic pump. Groundwater samples were collected in laboratory prepared containers for analysis. Samples for dissolved metals analyses were field filtered using a 45 µm disposable in line filter;
 - o Surface water sampling using a long handled swing sampler and placement in laboratory prepared containers for analysis;
 - o Measurement of pH, electrical conductivity (EC), turbidity, dissolved oxygen (DO), oxidation reduction potential (ORP) and temperature during sampling using a calibrated water quality meter ("Category 1 parameters");
 - o Screening for the presence of volatile organic compounds (VOCs) at the top of each well and within groundwater headspace (where sampled) using a calibrated Photoionisation Detector (PID);
 - o Download and re-installation of groundwater pressure transducers (dataloggers) where installed;
 - o Collection of quality assurance and quality control (QA/QC) samples comprising:
 - One groundwater intra-laboratory replicate sample;
 - Two surface water intra-laboratory replicate samples;
 - o Analysis of samples for Category 2 and 3 parameters as per each GMP (refer Section 6) at a National Association of Testing Authorities (NATA) accredited laboratory;
 - o Preparation of this report which includes groundwater levels, water quality, water quality data against site assessment criteria and trends review as required under each plan.

Table 1: Summary of field monitoring tasks and locations

Item	Monitoring locations	Total No.
Groundwater level measurement	Stage 3 specific locations: MW04, MW8A ^{##} , MW101 to MW107, SK3520 Other locations: MW1A, MW06, MW10, MW11, MW12, MW13	17
Groundwater field testing, sampling and laboratory testing	MW4, MW8A ^{##} , MW101 to MW107	9
Surface water field testing, sampling and laboratory testing	SW2 (dry), SW3 (dry), SW3a, SW4 (dry), SW7 (dry), SW8	5 (3 dry)

Notes:

* Wells are also subject to monitoring under separate Stage 1 monitoring requirements

A full review and assessment of the groundwater monitoring well network is provided in the GMP/GWMngtP

Although not a requirement of the GMP/GWMngtP, other nearby monitoring wells were also measured for groundwater level to assist with groundwater level contouring and spatial extent.

The general sampling methods based on the monitoring plans are described in the field work methodology, included in Appendix B. Groundwater monitoring well logs and preceding notes are included in Appendix C.

3. Site identification

The Stage 3 site details are summarised below and on drawings in Appendix A.

Site Address	2 Westrac Drive, Tomago
Legal Description	Lot 210 D.P.1174939
Area	Total lot area 50.13 hectares (red)
Zoning	Zone IN2 General Industrial
Local Council Area	Port Stephens Council
Current Use	Vacant Future industrial subdivision
Approved use	Industrial subdivision

Initial vegetation clearing and slashing works commenced in November 2025 for a 15 hectare area in the northern part of the Stage 3 site. The works included removal of trees/shrubs and grasses in the elevated areas fronting Tomago Road, and slashing and removal of slashed vegetation in the lower-lying areas. Douglas completed inspections and conducted surface water monitoring from November to March 2026 (i.e. prior to, during, and following clearing). Based on the inspections and monitoring, no remedial action or improvements to the clearing works or monitoring program were considered necessary. The interim closure report (Douglas, 2026b) is included in Appendix G.

4. Environmental setting

A detailed description of the environmental and hydrogeological setting is included in the GMP/GWMngtP (Douglas, 2025a; 2025b). Key environmental features are summarised below.

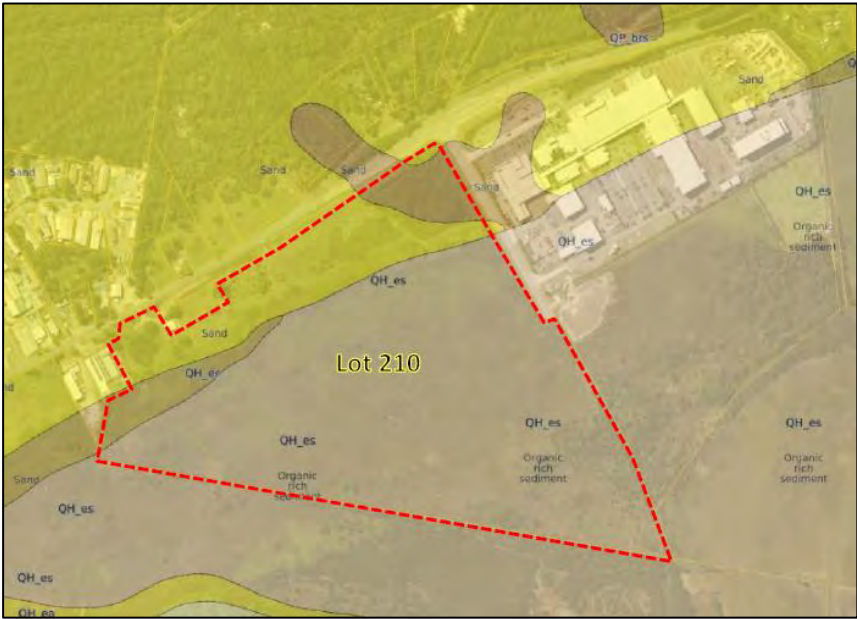
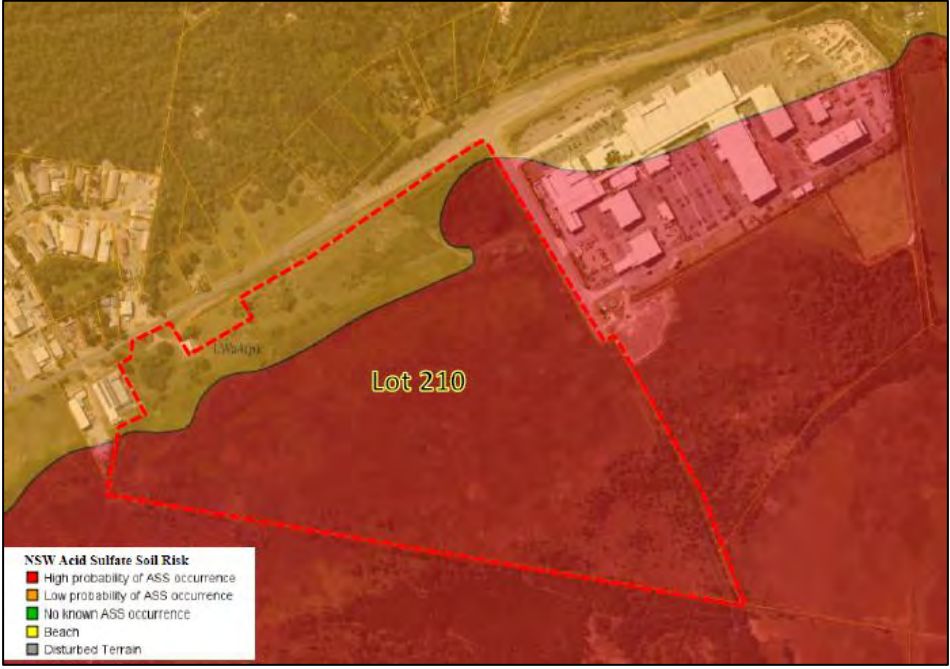
Site Topography	Undeveloped areas comprise generally flat water-logged terrain with typical elevations between RL 0.5 and 2.0 AHD. The northern part of Lot 210 adjacent to Tomago Road is elevated above this level, dominated by low sand dune formation with a maximum elevation of RL 4 AHD.
Site vegetation	Site vegetation in undeveloped areas includes dense reeds / scrubland, with reeds up to 3 m in height, mostly located in areas of water-logged terrain. Some mature trees are also located on the site. Vegetation clearing commenced in November 2025 comprising tree and shrub removal in the northern part of Lot 210. Slashing of reeds commenced for a 15 ha portion.
Geology (Figure 1)	Reference to the NSW Seamless Geology mapping indicates four mapped zones: - QP-bd: Coastal deposits of marine-deposited and aeolian-reworked coastal sand dunes; partially consolidated. - QP_brs: Coastal deposits comprising fine to medium-grained quartz-lithic-carbonate (marine-deposited) sand, organic-rich mud, peat. - QH-es: estuarine swamp comprising organic-rich mud, peat, clay, silt, very fine to fine-grained sand (marine-deposited), fine- to medium-grained sand (fluvially deposited). - QH_er: Estuarine shoreline ridge and dune deposits comprising fine- to medium-grained lithic-quartz sand (fluvially deposited), very fine- to fine-grained lithic-carbonate-quartz sand (marine deposited), polymictic gravel, silt, clay, shell material. 

Figure 1: NSW Seamless Geology Map (Base Image source: MetroMap 2023)

Aquifers	Two groundwater systems are present within the project area: • The aquifer within the Tomago Sandbeds which daylight in the northern elevated parts of the site and include an extensive water-extraction bore field operated by the HWC. The aquifer is unconfined north of Stage 3 and semi-confined where clay soils overly the Tomago Sandbeds. As discussed below, groundwater flows in a south-easterly direction away from the bore field and towards the Stage 3 site. • The aquitard within the Quaternary clay soils overlying the Tomago Sandbeds in most of the project area. The aquitard acts as a semi-confining layer.
Acid Sulfate Soils (ASS)	Most of the site is mapped within an area of high risk of ASS conditions between 1 m to 3 m below the ground surface, corresponding to lower-lying areas. The northern portion of the site on higher ground lies within an area of low probability of ASS conditions, which if present is mostly likely at greater than 3 m below the ground surface, corresponding to the Aeolian sandplain, elevation >4 m).  Figure 2: NSW Seamless Geology Map (Base Image source: MetroMap 2023) Douglas has prepared an acid sulfate soil management plan (Douglas, 2025b) for Stage 3 works based on the previous testing for Stage 1. Additional targeted investigations for ASS in 2026 (Douglas, 2026a) identified the presence of minor ASS conditions for Aeolian sands / silty sands and low level Net Acidity. The presence of ASS will be managed under existing and supplementary ASS procedures.

Surface Water	The low-lying areas on the sites and adjacent sites regularly contain surface water ponded at the surface, derived from groundwater flows from elevated Sandbeds to the north as well as surface water runoff. Surface water flows generally follow the topography, however, are also directed by existing manmade open channels (former farm drains) to convey surface waters further downstream and alleviate surface ponding. Stage 3 surface water flows drain to the west. Ultimately, surface water flows towards the Hunter River (North Arm) which is located to the south-west and south of the site, varying in distance from about 2.7 km to 3.5 km. Groundwater flowing towards the site from the Tomago Sandbeds is low in salinity and is considered to be a fresh water environment. The downgradient receiving environment and groundwater dependent ecosystems are considered to be an estuarine environment, receiving saline/marine tidal surface water flows which inundate the low-lying land areas of the Ramsar wetlands.
---------------	---

5. Results

5.1 Groundwater levels

Groundwater levels in monitoring wells measured during field work are shown in Table 2, reduced to AHD. Continuous groundwater levels (pressure head) were collected via:

- Dataloggers installed in MW8A and MW102 to MW107 (corrected using a barometric pressure logger);
- Vented dataloggers installed in MW101 and HWC well SK3520 which were connected to live monitoring equipment in February 2026 for real-time review of groundwater levels.

Levels from manual measurement and dataloggers are plotted on Figures D1 and D2 in Appendix D against daily rainfall data for the nearby Williamtown Bureau of Meteorology (BOM) weather station.

It should be noted that groundwater levels are affected by factors such as climatic conditions, soil permeability, tidal influences and will therefore vary with time.

Table 2: Results of groundwater level measurement – March 2026

Bore ID	Easting	Northing	Well Details							Groundwater Gauging Event					Comments
			Top of PVC Casing Level (TOC) (AHD)	Ground Level (AHD)	Stick up (m agl)	Well Depth (m bgl)	Screened interval (m bgl)	Screened interval (RL)	Target lithology	Date	Depth to Groundwater (m TOC) ⁽³⁾	Groundwater (AHD) ⁽³⁾	PID Well Headspace (ppm) ⁽¹⁾	Depth of Floating Product (mm) ⁽²⁾	
Nominated monitoring wells															
MW101	382657	6367619	4.09	3.22	0.87	7.0	0.3-7.0	2.9 to -3.8	Sand, fine to med	17/03/2026	2.46	1.63	<1	<1	Brown, slightly turbid, no odour
MW102	382678	6367506	2.52	1.76	0.76	4.0	0.3-4.0	1.5 to -2.2	Sand, fine to med	17/03/2026	1.26	1.27	<1	<1	Pale brown, slightly turbid, no odour
MW103	382853	6367614	3.31	2.34	0.97	7.0	0.3-7.0	2.0 to -4.7	Sand, fine to med	17/03/2026	1.98	1.33	<1	<1	Brown, slightly turbid, no odour
MW104	383148	6367292	1.16	0.68	0.48	1.5	0.5-1.5	0.2 to -0.8	Clay	16/03/2026	1.00	0.17	<1	<1	Pale grey brown, moderately turbid, no odour
MW105	382360	6367294	2.05	1.50	0.55	6.0	0.3-6.0	1.2 to -4.5	Sand, fine to med	17/03/2026	0.82	1.23	<1	<1	Pale grey / brown, moderately turbid, slight sulfur odour
MW106	382929	6367067	1.35	0.70	0.65	2.0	0.5-2.0	0.2 to -1.3	Clay	16/03/2026	1.49	-0.14	<1	<1	Clear, pale brown, no odour
MW107	382381	6367150	1.52	0.70	0.80	2.2	0.5-2.2	0.2 to -1.5	Clay	17/03/2026	0.93	0.59	<1	<1	Pale brown,slightly turbid, no odour
MW04	383360	6367013	1.28	0.52	0.76	3.70	0.7-3.8	-0.2 to -3.3	Clay	16/03/2026	1.84	-0.56	<1	<1	Pale brown, slightly turbid, no odour
MW8A	382304	6367396	3.86	3.10	0.76	7.0	0.5-7.0	2.6 to -3.9	Sand, fine to med	17/03/2026	2.24	1.62	<1	<1	Brown,moderately turbid, no odour
SK3520	383703.28	6368245	3.59	3.28	0.31	10.5	Unknown	Unknown	Assumed sand	16/03/2026	1.81	2.27	<1	<1	Not sampled
Other monitoring wells															
MW1A	383545	6368065	3.31	2.76	0.55	4.0	0.5-4.0	2.26 to -1.24	Sand, fine to med	16/03/2026	1.85	1.46	<1	<1	Pale brown, slightly turbid, slight sulfur odour
MW02	383721	6367483	1.25	~0.87	0.38	3.50	0.5-3.5	0.4 to -2.6	Clay	16/03/2026	0.89	0.37	<1	<1	Brown, slightly turbid, no odour
MW06	383516	6367333	1.26	0.57	0.69	9.0	6.0-9.0	-5.4 to -8.4	Sand, fine to med	16/03/2026	1.03	0.23	<1	<1	Brown, slightly turbid, no odour
MW10	383467	6367675	2.11	0.78	1.33	10.6	4.6-8.3	-3.8 to -7.5	Sand, fine to med	16/03/2026	1.44	0.67	<1	<1	Grey-brown, very turbid, no odour
MW11	383293	6367584	2.42	1.23	1.19	10.6	Unknown	Unknown	Sand, fine to med	16/03/2026	1.47	0.95	<1	<1	Pale brown, slightly turbid, no odour
MW12	383111	6367899	3.57	3.00	0.57	4.0	0.5-4.0	2.5 to -1.0	Sand, fine to med	16/03/2026	2.04	1.54	<1	<1	pale brown, clear, no odour
MW13	383187	6367418	3.63	3.10	0.51	14.5	9.5-12.5	-6.4 to -9.4	Sand, fine to med	16/03/2026	3.14	0.49	<1	<1	Pale brown, slightly turbid, no odour

Notes to Table 2:

AHD - metres Australian Height Datum

m agl = metres above ground level

m bgl = metres below ground level

TOC - top of PVC casing

(1) Minimum detection limit of 1 ppm

(2) Minimum detection limit of 1 mm

(3) - Water level gauged prior to purging and sampling

5.2 Groundwater and surface water field parameters

The field parameters and purging observations during sampling are shown in Table 3 below. The GMP / GWMngtP, these comprise “Category 1” test parameters for in situ assessment of water quality. The results of field testing indicated differing water quality for wells screened in the Tomago Sandbeds to those screened in the clay aquitard which is commensurate with the historical data. Based on the field testing, surface water was most comparable to the quality of groundwater in the Tomago Sandbeds wells.

The results of field testing indicated the following:

- pH:
 - o Surface water: slightly acidic (pH 5.4 and 5.7);
 - o Tomago Sandbeds wells: moderately acidic (pH 4.1 to pH 5.9);
 - o Clay aquitard wells: slightly acidic to neutral (pH 6.6 to 7.4);
- EC:
 - o Surface water: fresh / low in EC ranging from 155 and 171 $\mu\text{S}/\text{cm}$;
 - o Tomago Sandbeds wells: fresh / low in EC ranging from 61 to 301 $\mu\text{S}/\text{cm}$;
 - o Clay aquitard wells: variable, with fresh conditions at MW107, brackish conditions in MW104 and MW106 (3170 and 3340 $\mu\text{S}/\text{cm}$), and saline conditions in MW04 (32,300 $\mu\text{S}/\text{cm}$);
- ORP:
 - o Surface water: reducing for SW3a (-21 mV) representing stagnant surface water and oxidising for SW8 representing free-flowing water;
 - o Tomago Sandbeds wells: reducing conditions (-16 to -38 mV) except MW101 and MW105 which were oxidising (ORP 60-87 mV);
 - o Clay aquitard wells: reducing conditions (-17 to -77 mV) except MW107 which was oxidising (ORP 6 mV);
- DO:
 - o Surface water: Low to high DO concentrations (2.2 to 5.3 mg/L);
 - o Groundwater: Low to moderate DO concentrations (0.6 to 3.4 mg/L);
- Turbidity:
 - o Surface water: low (56-58 NTU) for free-flowing surface water at SW8 and very high turbidity (>1,000 NTU) for stagnant water at SW8;
 - o Tomago Sandbeds wells: low to moderate turbidity (61 to 301 NTU);
 - o Clay Aquitard wells: variable, low to very high turbidity (59 to >1000 NTU).

Table 3: Results of groundwater and surface water field parameters during purging and sampling – March and April 2026

Well ID	Date	Depth to GW (m TOC) ⁽³⁾	Depth to GW (m bgl) ⁽³⁾	Reduced Water Level (AHD) ⁽³⁾	PID Well Headspace (ppm) ⁽¹⁾	PID GW Headspace (ppm) ⁽¹⁾	Depth of Floating Product (mm) ⁽²⁾	pH	EC (µS/cm)	ORP (mV)	Turbidity (NTU)	Temp (°C)	DO (mg/L)	Volume Purged (L)	Comments	Sampling Method
Surface Water																
SW3	16/03/2026	N/A	N/A	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry	N/A
SW3a	17/03/2026	N/A	N/A	N/A	N/A	<1	N/A	5.7	171	-21	>1000	24.7	2.2	N/A	Brown, very turbid, no odour, not flowing	Swing sampler
SW4	17/03/2026	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Dry	N/A
SW7	16/03/2026	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Dry	N/A
SW8	17/03/2026	N/A	N/A	N/A	N/A	<1	N/A	5.4	157	180	56	22.3	5.3	N/A	Pale brown, slightly turbid, no odour, not flowing	Grab sample
Groundwater in Tomago Sandbed Wells																
MW8A	17/03/2026	2.24	1.50	1.62	<1	<1	<1	5.9	266	-16	198	21.5	1.9	12	Brown, moderately turbid, no odour	Peristaltic Pump low flow sampler
MW101	17/03/2026	2.46	1.65	1.63	<1	<1	<1	4.1	93	87	61	24.1	2.8	16	Brown, slightly turbid, no odour	Peristaltic Pump low flow sampler
MW102	17/03/2026	1.26	0.34	1.27	<1	<1	<1	5.8	135	-38	75	22.7	1.9	8	Pale brown, slightly turbid, no odour	Peristaltic Pump low flow sampler
MW103	17/03/2026	1.98	1.04	1.33	<1	<1	<1	5.7	109	-36	78	24.0	3.4	10	Brown, slightly turbid, no odour	Peristaltic Pump low flow sampler
MW105	17/03/2026	0.82	0.14	1.23	<1	<1	<1	4.6	189	60	301	19.4	0.6	12	Pale grey / brown, moderately turbid, slight sulfur odour	Peristaltic Pump low flow sampler
Groundwater in Clay Aquitard Wells																
MW04	16/03/2026	1.84	1.26	-0.56	<1	<1	<1	6.8	32,300	-38	55	18.7	2.1	9	Pale brown, slightly turbid, no odour	Peristaltic Pump low flow sampler
MW104	16/03/2026	1.00	0.51	0.17	<1	<1	<1	7.4	3180	-77	528	19.0	1.7	1	Pale grey brown, moderately turbid, no odour	Peristaltic Pump low flow sampler
MW106	16/03/2026	1.49	0.75	-0.14	<1	<1	<1	6.6	3,340	-17	59	19.9	1.8	8	Clear, pale brown, no odour	Peristaltic Pump low flow sampler
MW107	17/03/2026	0.93	0.12	0.59	<1	<1	<1	6.6	328	6	>1000	19.7	3.0	6	Pale brown, slightly turbid, no odour	Peristaltic Pump low flow sampler

Notes to Table 3:

(1) - minimum limit of detection for PID 1 ppm

(2) - minimum limit of detection for oil-water interface meter 1 mm

(3) - Water level gauged prior to purging and sampling

AHD - Australian Height Datum

EC – Electrical Conductivity

m bgl – metres below ground level

N/A – not applicable

NTU - Nephelometric Turbidity Units

ORP – Oxidation Reduction Potential (mV)

PID – Photoionisation detector

ppm – parts per million

5.3 Contaminant observations

No floating product was detected by the oil/water interface meter during groundwater level measurement of wells as noted in Table 4. It is noted that the interface meter can detect floating product greater than 1 mm thick.

There were no observations of hydrocarbon staining, odours or slicks to the groundwater purged from the wells or at the surface of the surface water bodies at sampling locations. The PID groundwater/surface water headspace was <1 ppm for all surface water and groundwater wells. A slight sulfur odour (i.e. hydrogen sulfide) was noted for MW105. The sulfur odours are typically associated with the presence of ASS and the organic rich and waterlogged clay soils which are present at the site. In addition to aromatic and chlorinated compounds, at times the PID is also capable of detecting some inorganic compounds including hydrogen sulfide and giving PID readings of < 1 ppm.

The field observations indicate the absence of gross contamination for the monitoring wells and surface water sample locations (i.e. absence of staining, hydrocarbon odours, and other observations of gross contamination).

6. Laboratory testing

6.1 Overview

Laboratory testing for the collected groundwater samples was undertaken by Envirolab Services Pty Ltd (Envirolab), a NATA registered laboratory. The analytical methods used are shown on the laboratory sheets in Appendix E.

The laboratory tested the Category 2 and 3 parameters listed in the GMP/GWMngtP as outlined in Table 4 below. Category 1 parameters relate to in situ field parameters presented in Table 3 in Section 5.2.

Table 4: Laboratory Testing Program

Analytes	Stage 3 GMP/GWMngtP (Douglas, 2025a; 2024)	Stage 3 SMP (WRM, 2025)
	Category 2 and 3	Category 2 and 3
Total suspended solids (TSS)	✓	✓
Cations – calcium (Ca), potassium (K), magnesium (Mg), sodium (Na) and iron (Fe).	✓	✓
Anions – chloride (Cl), sulphate (SO ₄), ammonia (NH ₃), bicarbonate (HCO ₃), carbonate (CO ₃), total alkalinity, nitrite (NO ₂), nitrate (NO ₃), total Kjeldahl nitrogen (TKN), total phosphorous (PO ₄) and fluoride (F).	✓	✓
Heavy metals (extended suite) – aluminium, arsenic, cadmium, chromium, copper, iron, lead manganese, mercury, molybdenum, nickel and zinc	✓	✓ (total and filtered)
Total recoverable hydrocarbons (TRH)	✓	✓
Polycyclic and aromatic hydrocarbons (PAH)	✓	✓
Benzene, toluene, ethyl benzene, xylene (BTEX)	✓	✓
Phenols	✓	✓
Organochlorine pesticides (OCP) and organophosphorus pesticides (OPP) – trace level	✓	✓
Polychlorinated biphenyls (PCB) - trace level	✓	✓
Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) – trace level	Not listed	✓
Additional tests – where required to further assess initial test results (e.g. total petroleum hydrocarbon (TPH) for hydrocarbon speciation, or VOCs	Not specified	✓

TPH testing via the silica gel clean up method (SGC) was undertaken for SW3a, replicate DSW2/17.3.26, MW4 and MW104 to further assess trace level TRH.

6.2 Results

The results of analytical testing of groundwater and surface water are included in the laboratory report sheets in Appendix E. The results are summarised in Table 1 and 2 in Appendix E against the relevant criteria for each monitoring plan (refer Section 7).

6.3 Quality assurance / quality control (QA/QC)

Quality assurance and quality control (QA/QC) procedures were adopted throughout the field sampling programme and comprised the following:

- Collection and analysis of one groundwater replicate sample (DGW/16.03.26 from MW12);
- Collection and analysis of one surface water replicate samples (DSW2/17.03.26);
- Following standard operating procedures and procedures in the GMP/GWMngtP;

- Storage of samples under secure, temperature-controlled conditions;
- Use of chain of custody (COC) documentation for the handling, transport and delivery of samples to the selected laboratory.

An overall assessment is included in the QA/QC Report in Appendix F. In summary, the QA/QC testing indicated that the accuracy and precision of the field and laboratory testing procedures is considered to be of sufficient standard to allow the data report to be used to interpret contamination conditions.

7. Assessment criteria

The GMP/GWMngtP (Douglas, 2025a; 2025b) derived site-specific trigger using baseline data. This approach is recommended by the ANZG (2018) guideline particularly where background concentrations naturally exceed default guideline values DGVs. Site-specific trigger levels are *“used to provide a suitable baseline for comparison against values derived from similar aquatic ecosystems”* (ANZG, 2023).

Trigger levels do not guarantee a level of species protection (LOSP), rather, are defined as the concentration recorded by monitoring which would trigger further investigation to assess the potential for adverse impact on groundwater quality from a site.

Statistical analysis of baseline groundwater quality data was outlined in the GMP/GWMngtP (Douglas, 2025a; 2024). Different trigger levels were adopted to reflect differing water quality conditions for wells screened in separate aquifers as well as background concentrations. The two aquifer systems are the Tomago Sandbeds and clay aquitard. For the two aquifers, the following process was adopted:

- Tomago Sandbeds:
 - o The most sensitive beneficial use is adopted of the:
 - The ANZG (2018) fresh water criteria at 95% LOSP DGV; and
 - NHMRC Drinking Water guidelines for human health due to the proximity to drinking water supply bores in the Tomago Sandbeds aquifer (although upgradient);
 - o Unless, the 80th percentile of the baseline data set (2015-2025) is higher, then the 80th percentile value is appropriate for adoption. The 20th percentile is also be considered for pH as the lower bound;
 - o HEPA (2025) *National Environmental Management Plan 3.0* at 95% LOSP was adopted as for PFAS.
- Clay aquitard:
 - o The ANZG (2018) fresh water criteria at 95% LOSP is adopted as the DGV;
 - o Unless, the 80th percentile of the baseline data set (2015-2025) is higher, then the 80th percentile value is appropriate for adoption. The 20th percentile is also be considered for pH as the lower bound;
 - o HEPA (2025) *National Environmental Management Plan 3.0* at 95% LOSP was adopted as for PFAS.

Where no criteria or site based data exists, the trigger level has generally been adopted as the laboratory limit of reporting (LOR) for parameters which are not expected to be naturally occurring in the environment (e.g. hydrocarbons etc).

For some general water quality indicator parameters (e.g. dissolved oxygen, TSS), a trigger value has not been set.

The 95th upper confidence limit (UCL) mean (UCL_{95-mean}) values were also determined based on the statistical analysis of the historical monitoring results (2015-2025) to indicate when values are above the average / mean to allow comment and interpretation of trends.

Site specific trigger levels for surface water have not been determined, therefore the relevant criteria for surface water are the DGVs for marine water quality (ANZG, 2018). A 95% LOSP has been adopted.

Periodic exceedances of the groundwater quality Trigger Levels can be expected to occur, particularly where values are based on the 20th/80th percentile calculations from the baseline data. Exceedances of DGVs for surface water can also be expected periodically as they capture a range of surface water locations and ecosystems risk.

The GMP/GWMngtP (Douglas, 2025a; 2024) list actions that are prompted by the monitoring results where exceedances of the criteria occur. These include assessment of the results against the adopted statistical criteria, documentation of where three consecutive trigger levels are exceeded and assessment of the significance of elevated or atypical results.

The assessment criteria are shown on Table 1 and 2 in Appendix E against the water quality results. UCL_{95-mean} values are also indicated for comparison purposes.

8. Discussion

8.1 Groundwater levels

Groundwater levels (heads) for the March 2026 monitoring event, reduced to AHD, ranged from -0.56 to 2.27 AHD as shown in Table 2 in Section 5.1. The full groundwater level record, including data collected from dataloggers installed in Stage 3 wells and HWC Bore SK3520, is shown plotted on Figures D1 and D2 in Appendix D. The reduced levels infer a groundwater flow direction to the south-east, as per previous monitoring.

Groundwater levels for March 2026, were lower than those measured in the previous annual monitoring event in April 2025, however, were within the historical range gathered to date. Overall, rainfall for the preceding 12 months prior to March 2026 was higher than average but included periods of both very low and very high rainfall as summarised in Table 5.

Table 5: BOM Williamstown rainfall summary

	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Totals
	2025								2026				
Monthly total (mm)	502	65.6	152.4	255.2	58.4	30.8	20.6	31.4	93.6	23.4	107.4	24.2	1441.4
Mean monthly total for Station (mm)	115.8	121.4	76.4	73.8	60.1	75.1	81.8	75.5	100.2	117.6	127.2	111.6	1134.4
% mean rainfall (mm)	434%	54%	199%	346%	97%	41%	25%	42%	93%	20%	84%	22%	127%

Notes:

Green: higher than mean

Orange: lower than mean

It is noted that the historical groundwater levels collected by HWC for Bore SK3520 indicate higher variability, whereas the site based data suggests groundwater levels have remained within a fairly consistent range. This may be a result of the more regular frequency of monitoring (monthly) for SK3520 which can identify seasonal changes which are not reflected in annual monitoring. The datalogger installed in Bore SK3520 from October 2025 will assist with the interpretation of upgradient groundwater level trends and real live review of groundwater levels flowing towards the Stage 3 site.

It should be noted that groundwater levels are affected by factors such as climatic conditions, soil permeability, tidal influences and will therefore vary with time. HWC pumping activities could also influence groundwater level and quality conditions upgradient of the site.

8.2 Groundwater and surface water quality

8.2.1 Overview

All chemical results of testing are summarised in Table 1 and 2 in Appendix E. Groundwater and surface water quality plots are included in Appendix D.

The results of monitoring generally indicated the following:

- The absence of gross contamination in groundwater and surface water at the tested locations based on field observations and testing of contaminants listed in the monitoring plans;
- Differing water quality for wells screened in the Tomago Sandbeds to those screened in clay aquitard, commensurate with rationale for setting different groundwater trigger levels for in the GMP/GWMngtP. Surface water quality was comparable to groundwater in the Tomago Sandbeds.

The results are broadly summarised as follows:

- PAH, BTEX, phenol, OCP, OPP, PCB, and HCN were not detected above the laboratory limit of reporting (LOR);
- Low level PFAS was detected for most locations which is considered representative of background ambient conditions as per previous monitoring to date (i.e. urban conditions which contain PFAS in the environment at trace concentrations);

- TRH was detected above LOR at SW3a (and replicate DSW2/17.3.26), MW4 and MW10. SW3a identified trace Total petroleum hydrocarbons (TPH) above LOR via the silica gel clean up method, however, its replicate sample and MW4 and MW10 were less than LOR. suggesting the absence of petroleum hydrocarbon impacts. TRH has routinely been identified in previous monitoring, whilst TPH has only been identified on occasion. TRH may be attributable to a non-petroleum based source, such as natural organic matter (NOM) which can be detected by the TRH test method;
- Trace TRH, TPH and toluene were detected above LOR at SW3a. This location is in the north-eastern corner of the Stage 3 boundary and receives surface water run-off from the public road (Tomago Road) via the road culvert. Surface water at this location was stagnant and not flowing. The concentrations at SW3a were below the trigger level for toluene, but above the trigger level for TRH/TPH (i.e. LOR). The result is not considered an indication of impacts from Stage 3 activities, rather suggests possible impact from public road runoff which may have trace hydrocarbon residues from road and vehicle activities;
- Total metals (non-filtered) metals in surface water were generally higher than dissolved metals concentrations, attributable to suspended solids in surface water.

Further review of the results relevant to each plan is discussed below.

8.2.2 Comparison to assessment criteria

The results of groundwater and surface water quality testing are shown on Tables 1 and 2 in Appendix E against the relevant default and site-specific assessment criteria. The site-specific criteria is aimed at better reflecting the background range of water quality conditions that regularly fall outside the DGVs and is more specific to local conditions, however, may not always reflect spatial differences between monitoring locations. Table 6 summarises results which were elevated above the criteria for March 2026.

Table 6: Summary of results that were outside the site assessment criteria / trigger levels – March 2026

Analyte	Trigger level for groundwater - GMP/GWMngtP (Douglas, 2025)				Surface water – Default guideline values (DGVs)		Exceedances within historical range for well/surface water location?
	No. and location Tomago Sandbeds Well criteria		No. and location Clay Aquitard Well criteria		No. and location ANZG Fresh water 95% criteria DGVs		
pH	2	MW101, MW105	-	-	2	SW3A, SW8	SW3A – Yes SW8 – No (limited data). No – MW101, MW104 (upgradient monitoring wells)
EC	-	-	1	MW4	-	-	Yes
Alkalinity /bicarbonate	2	MW8A, MW102	1	MW4	-	-	Yes
Chloride, sulphate	-	-	1	MW4	-	-	Yes
Ammonia	1	MW102 (+replicate)	0	-	-	-	Yes
TKN	1	MW102 (+replicate)	-	-	-	-	MW102 – No
Nitrite	-	-	1	MW104	-	-	MW104 – No
Nitrate	1	MW101	-	-	-	-	MW101 – No
Total P	1	MW103	1	MW104	1	SW3A (+replicate)	SW3a – Yes MW103 – Yes (close to LOR) MW104 – No
Sodium	-	-	1	MW104	-	-	Yes
Calcium	1	MW8A	1	MW104	-	-	Yes
Potassium	-	-	1	MW104	-	-	Yes
Dissolved Iron	1	MW103	1	MW4	1	SW3A (+replicate)	SW3a – Yes MW4 -Yes MW103 – No
Dissolved aluminium	5	MW8A, MW101, MW102, MW103, MW105 (all wells)	-	-	2	SW3A (+replicate), SW8 (all locations)	MW103 – No Other wells – Yes All results < March 2026 except for MW103. Criteria pH dependent therefore exceeding for sand beds < pH 6.5
Total aluminium	-	-	-	-	2	SW3A (+replicate), SW8 (all locations)	SW3a – No (limited data) pH dependent criteria
Dissolved Arsenic	1	MW8A	1	MW104	-	-	MW8A – Yes MW104 – No
Total arsenic	-	-	-	-	1	SW3A (+replicate)	Yes
Total cadmium	-	-	-	-	1	SW3A (+replicate)	Yes
Total chromium	-	-	-	-	1	SW3A (+replicate)	Yes
Total copper	-	-	-	-	1	SW3A (+replicate)	Yes
Dissolved manganese	-	-	1	MW104	-	-	MW104 – No
Dissolved nickel			2	MW104, MW106	-	-	Yes
Dissolved zinc	1	MW101	-	-	1	SW8	Yes
Total zinc	-	-	-	-	2	SW3A (+replicate), SW8 (all locations)	Yes
TRH	-	-	2	MW4, MW104, MW106	3	SW3A (+replicate)	Yes
TPH	-	-	-	-	1	SW3A (excl replicate)	SW3A – No
Toluene	-	-	-	-	1	SW3a	Yes

Notes to Table 6: Groundwater was tested for dissolved metals only. Surface water was tested for total (unfiltered) and dissolved metals (field filtered)

Where elevated results were identified above the assessment criteria, these mostly occurred for pH, nutrients and metals.

Total (non-filtered) metals in surface water were higher than dissolved metals attributable to suspended solids in surface water as well as also representing the dissolved phase metals. It is noted that the risk to aquatic ecosystems and DGVs in ANZG are generally based on dissolved metals concentrations which is considered the bioavailable fraction.

Where the trigger level or DGV was exceeded, most contaminant concentrations were found to be within the historical range for the monitoring location. It is noted that an extensive groundwater record has been established, however, baseline surface water data is limited. Surface water is at times dry, as occurred for the current monitoring event with only two of five locations sampled. The comparison of surface water data is therefore constrained.

Notable differences in water quality are discussed as follows:

- The pH at MW105, and in particular MW101, has declined since 2023. These wells represent upgradient wells, both screened in the Sandbeds and indicate changes in pH which may be associated with climatic influences in the broader Tomago Sandbeds aquifer. Most wells screened in the Sandbeds have also shown a general decline in pH. For wells screened in the clay, they have remained steadier, but also show changes between events. pH changes between monitoring events are common.
- Concentrations of nitrogen (ammonia, nitrate, nitrite, TKN) varied between locations and some were outside the background range as noted in Table 6. Nitrogen speciation is strongly controlled by redox conditions, along with oxygen availability, carbon, pH and microbial activity. Higher nitrate is often indicative of higher oxygen conditions (e.g. as groundwater table lowers), and nitrate can indicate denitrification (fluctuating groundwater conditions). Nitrogen species can change rapidly in response to such influences.
- Metals concentrations are also influenced by denitrifying conditions, in particular aluminium, iron, manganese and arsenic and chromium, in addition to being sensitive to pH changes which dissolve, and mobilise metals. Whilst several metals were outlier to the dataset, it is likely they are influenced by redox, pH changes and climatic conditions (e.g. lower groundwater level) given the absence of significant site activities;
- Surface water at SW3a suggests some influence from off-site surface water conditions as noted in Section 8.2.1. The surface water quality leaving the site at SW8 contains lower concentrations of metals and nutrients and was mostly within the DGVs. The influence of surface waters coming on to the site should be considered for possible adverse impacts on the site surface water and downstream receptors.

Overall, the results of monitoring suggest water quality that is comparable to the typical long term data set and within the natural ranges of variability and fluctuation.

8.2.3 Comparison to UCL_{95-mean} values

The GMP and GWMngtP outlined a process to review water quality data against the UCL_{95-mean} values. The purpose is intended for post-baseline monitoring during and following construction to indicate when values are above average background levels, which may prompt review and closer scrutiny if levels are consistently above average/mean. The GMP and GWMngtP outline that monitoring reports should include review of whether the UCL_{95-mean} is exceeded for a parameter on three or more consecutive occasions. This approach is relevant to groundwater only, as statistical review of surface water has not been undertaken. UCL_{95-mean} values do not capture a range for assessment of pH.

The current monitoring event is the first post-baseline monitoring event. Concentrations above the UCL_{95-mean} are shown on Table 1 in Appendix E. Exceedances are summarised in Table 7 below including the results of prior baseline monitoring events for completeness and comparison.

Table 7: Summary of groundwater monitoring wells with concentrations above the UCL95-mean values – 2024, 2025 and 2026

Parameter	GMP/GWMngtP UCL95-mean		Tomago Sandbeds Well criteria			Three consecutive results above the UCL95-mean value?**	GMP/GWMngtP UCL95-mean		Clay aquitard Well criteria			Three consecutive results above the UCL95-mean value**	Comments
			Baseline		Post-baseline				Baseline		Post-baseline		
			April 2024	April / May 2025	March 2026				April 2024	April / May 2025	March 2026		
EC	357	µS/cm	-	-	-	No	17,100	µS/cm	-	MW4 (including re-sample)	MW4	No	
Chloride	47	mg/L	-	-	-	No	6,200	mg/L	MW4	MW4 (including re-sample)	MW4	Yes (MW4)	MW4 has consistently shown higher chloride and sulfate reflecting more saline conditions at this well
Sulphate	15	mg/L	MW8A, MW105	MW8A	MW8A, MW105	Yes (MW8A)	2,540	mg/L	MW4	MW4 (including re-sample)	MW4	Yes (MW4)	
Fluoride	0.1	mg/L	MW103	MW103	MW103	Yes (MW103)	0.6	mg/L	-	MW106	MW104	No	UCL95-mean value in Tomago Sandbeds close to LOR
Ammonia	0.4	mg/L	MW102	MW102	MW102	Yes (MW102)	8.7	mg/L	-	-	-	No	The groundwater quality plot for MW102 shows ammonia and TKN has had historically had higher concentrations than other wells in the Sandbeds.
TKN	0.85	mg/L	MW102	MW8A, MW102	MW102	Yes (MW102)	6.6	mg/L	-	-	-	No	
Nitrate	0.014	mg/L	MW101, MW103	MW101	MW101, MW102, MW103, MW105	Yes (MW101)	0.02	mg/L	MW104, MW107	MW107	MW104, MW107	Yes (MW107)	MW101 and MW107 had an established a trend of higher nitrate during baseline monitoring
Nitrite	0.2	Mg/L	MW103	-	-	No	0.08	mg/L	-	-	MW104	No	
Total P	0.14	mg/L	MW103	-	-	No	1.4	mg/L	-	-	MW4, MW104	No	
Iron	0.6	mg/L	-	MW103	MW103	No	60.8	mg/L	MW4	MW4 (including re-sample)	MW4	Yes (MW4)	MW4 has an established a trend of higher iron during baseline monitoring
Dissolved Arsenic	0.002	mg/L	-	-	MW8A	No	0.017	mg/L	-	-	MW104	No	UCL95-mean value close to LOR
Dissolved Aluminium	0.28	mg/L	MW8A, MW105	MW8A, MW101, MW105	MW101, MW103, MW105	Yes (MW105)	0.015	mg/L		MW104, MW107	MW104	No	MW105 had an established a trend of higher aluminium during baseline monitoring
Dissolved Chromium	0.002	mg/L	MW8A, MW102, MW105	MW8A, MW102, MW105	MW8A, MW102, MW105	Yes (MW8A, MW102, MW105)	0.001	mg/L	-	MW104	MW104	No	MW8A and MW102 generally represent baseline/background conditions receiving groundwater flows from upgradient Sandbeds. The results show an established a trend of higher chromium during baseline monitoring for Sandbeds, however, results and UCL95-mean are both close to LOR.
Dissolved Copper	0.001	mg/L	MW8A, MW101, MW102, MW103, MW105	MW103	-	No	0.007	mg/L	-	-	-	No	UCL95-mean value close to LOR
Dissolved lead	0.001	mg/L	MW8A	MW8A, MW105	-	No	0.002	mg/L	-	-	-	No	
Dissolved Manganese	0.07	mg/L	MW8A, MW102	MW8A, MW102, MW102	MW8A, MW102, MW103	Yes (MW8A, MW102)	7.25	mg/L	MW4	MW4 (including re-sample)	MW4	Yes (MW4)	
Dissolved nickel	0.001	mg/L	MW103	MW8A	-	No	0.021	mg/L	MW4	MW4 (including re-sample)	MW4	Yes (MW4)	UCL95-mean value for Sandbeds close to LOR. MW4 has an established a trend of higher nickel during baseline monitoring
Dissolved molybdenum	0.001	mg/L	-	-	-	No	0.003	mg/L	-	-	-	No	UCL95-mean value close to LOR
Dissolved Zinc	0.008	mg/L	MW101, MW103	MW101	MW101	Yes (MW101)	1.14	mg/L	-		-	No	MW101 has an established a trend of higher nitrate during baseline monitoring. May be associated with lower pHs from 2023 to 2026.

It is noted that the $UCL_{95-Mean}$ value for some parameters is close to the laboratory LOR and in these instances, the value may not be a statistically significant tool in assessing changes in water quality.

Concentrations above the $UCL_{95-mean}$ values occurred for a range of wells across the site for March 2026, as well as prior baseline for some wells indicating that some wells and parameters may be outliers from their grouped aquifer in terms of major ions, some metals and nutrients. The March 2026 results are not dissimilar and therefore not indicative of long-term changes in groundwater quality.

It is noted that anions such as chloride, sulfate, fluoride form part of the group of major ions present in groundwater and are general indicator parameters to indicate water ionic balance, rather than being contaminants of concern from possible site activities.

As noted in Section 8.2.2, the results of monitoring suggest water quality that is comparable to the typical long term data set and within the natural ranges of variability and fluctuation. The concentrations above the $UCL_{95-mean}$ are not considered significant.

Future monitoring will allow identification of results that are persistently higher than the mean.

9. Conclusions

Douglas has completed the first “post-baseline” monitoring groundwater and surface water quality monitoring event with reference the GMP (Douglas, 20252) and GWMngtP (Douglas, 2024), and SWP (WRM, 2025).

Groundwater levels for March 2026, were lower than those measured in the previous annual monitoring event in April 2025, however, were within the historical range gathered to date. The reduced levels infer a groundwater flow direction to the south-east, consistent with previous monitoring.

The monitoring indicated the absence of gross contamination in groundwater and surface water at the monitoring locations based on field observations and testing of contaminants listed in the monitoring plans. Additional speciation testing for TPH was also conducted as per the procedures in the GMP/GWMngtP.

Concentrations above the assessment criteria were identified in some wells and parameters; however, overall groundwater and surface water quality remained generally consistent with the historical dataset. Localised outliers in nutrients and metals are considered to reflect natural influences such as redox conditions, pH variability, and groundwater level fluctuations. These findings, together with the absence of significant site activities, indicate conditions remain comparable to baseline.

Trace hydrocarbon residues at surface water monitoring location SW3a suggest possible impacts from surface water directed towards the site from public road and vehicle activities on Tomago Road. This should be considered baseline surface water quality and representative of surface waters coming on to the site (i.e. not related to Stage 3 activities).

Overall, the results of March 2026 monitoring suggest water quality that is comparable to the typical long term data set and within the natural ranges of variability and fluctuation.

Future monitoring as per the GMP/GWMngtP will support ongoing assessment of groundwater levels and water quality trends during post-baseline stages to mitigate potential impacts.

10. References

ANZECC. (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australia and New Zealand Environment and Conservation Council.

ANZG. (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Canberra, ACT: Australian and New Zealand Governments and Australian state and territory governments.

ANZG. (2023). *Using monitoring data to derive and assess against guideline values*. Retrieved from Australian and New Zealand Guidelines for Fresh & Marine Water Quality: <https://www.waterquality.gov.au/anz-guidelines/monitoring/data-analysis/derivation-assessment>

Department of the Environment. (2014). *Environmental Management Plan Guidelines*. Department of Environment, Commonwealth of Australia.

Douglas. (2024). *Groundwater Management Plan EPBC 2007/3343, Proposed Industrial Subdivision, Stage 3, Lot 210 D.P.1174939, 2 Westrac Drive, Tomago*. Ref 39920.09.R.004.Rev4.GW Mngt Plan: Douglas Partners Pty Ltd.

Douglas. (2025a). *Groundwater Monitoring Plan, Proposed Industrial Subdivision, Stage 3, Lot 210 D.P.1174939, 2 Westrac Drive, Tomago*. Document No. 39920.09.R.001.Rev5.GMP: Douglas Partners Pty Ltd.

Douglas. (2025b). *Acid Sulfate Soil Management Plan, Proposed Industrial Subdivision, Stage 3, Lot 210 D.P.1174939, 2 Westrac Drive, Tomago*. Document No. 39920.09.R.002.Rev2.ASSMP: Douglas Partners Pty Ltd.

Douglas. (2026a). *Report on Preliminary Fill Material Assessment - Northern Dune Sands, Stage 3 Northbank Enterprise Hub, Lot 210 Westrac Drive, Tomago NSW*. Ref: 39920.09.R.028.Rev0: Douglas Partners Pty Ltd.

Douglas. (2026b). *Interim Closure Report on Environmental Inspections and Monitoring, Stage 3 Initial Vegetation Clearing Works (November 2025 to March 2026), Lot 210 DP 1174939, Westrac Drive, Tomago*. Report 39920.18.R.004.Rev0.VegClearingClosure: Douglas Partners Pty Ltd.

HEPA. (2020). *PFAS National Environmental Management Plan (NEMP)*. Version 2.0 : Heads of the EPA Australia and New Zealand.

HEPA. (2025). *PFAS National Environmental Management Plan (NEMP)*. Version 3.0: Heads of EPAs Australia and New Zealand.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.

NHMRC. (2021). *Australian Drinking Water Guidelines 6 2011, Version 3.6*. Canberra: National Health and Medical Research Council, National Resource Management Ministerial Council.

NSW EPA. (2020). *Guidelines for Consultants Reporting on Contaminated Land*. Contaminated Land Guidelines: NSW Environment Protection Authority.

WRM. (2024). *Industrial Estate at Lot 210 DP1174939 (Stage 3), Tomago, Stormwater Management Plan*. Document No 1918-02-B13 (Rev13): WRM Water & Environment Pty Ltd (WRM).

11. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at Lot 210 DP 1174939, WesTrac Drive, Tomago NSW in line with Douglas' proposal 39920.09.P.018B.Rev0 dated 12 March 2026 and acceptance received from Northbank Enterprise Hub Pty Ltd. The work was carried out under agreed terms between Douglas and Northbank Enterprise Hub Pty Ltd (Contract 20230206 ACE-LEG-005A executed 23 February 2023). This report is provided for the exclusive use of Northbank Enterprise Hub Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by Douglas in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the (geotechnical / environmental / groundwater) components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. Douglas cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

Appendix A

About This Report

Drawing 1 – Groundwater Monitoring Well and
Surface Water Monitoring Location Plan

Introduction

These notes have been provided to amplify Douglas' report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Douglas' reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Engagement Terms for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather

changes. They may not be the same at the time of construction as are indicated in the report; and

- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Douglas will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Douglas cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Douglas will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Douglas requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

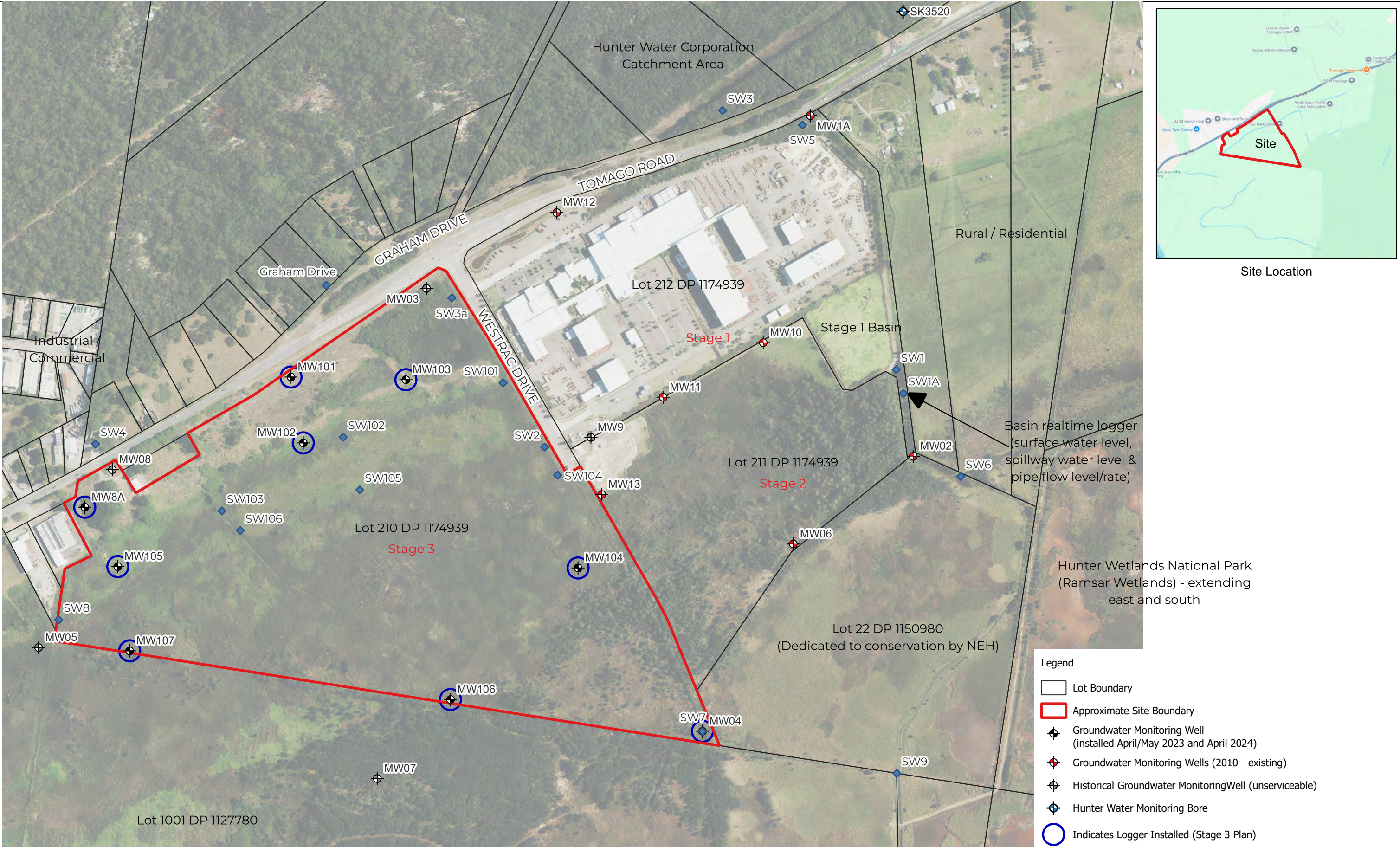
Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. Douglas would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

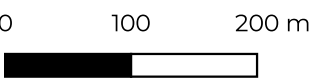
Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

intentionally blank



Site Location



Drawing adapted from Metromap Image dated 12.02.2023.
Test locations are approximate only. MW8A and MW100 series wells located using differential GPS.
MW1A & MW12 - Groundwater monitoring well (installed August 2024).

- Legend
- Lot Boundary
 - Approximate Site Boundary
 - Groundwater Monitoring Well (installed April/May 2023 and April 2024)
 - Groundwater Monitoring Wells (2010 - existing)
 - Historical Groundwater Monitoring Well (unserviceable)
 - Hunter Water Monitoring Bore
 - Indicates Logger Installed (Stage 3 Plan)
 - Surface Water Monitoring Location (Stage 1-2 Plan)



CLIENT: Northbank Enterprise Hub Pty Ltd
OFFICE: Newcastle
SCALE: 1:6000 @ A3

DRAWN BY: PLH
DATE: 27.05.2026

TITLE: Well and Surface Water Monitoring Location Plan
Stage 3, Northbank Enterprise Hub
Westrac Drive, Tomago



PROJECT No:39920.09
DRAWING No: 1
REVISION: 5

Appendix B

Field Work Methodology

1. Guidelines

The following key guidelines were consulted for the field work methodology:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013).
- HEPA *PFAS National Environmental Management Plan (NEMP)* (HEPA, 2025).
- Australian/New Zealand Standard (AS/NZS) 5667.1:1998 Water quality: sampling part 1 – guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples;
- AS/NZS 5667.4 Water quality: sampling guidance on sampling from lakes, natural and manmade;
- AS/NZS 5667.6 Water quality: sampling guidance on sampling of rivers and streams;
- AS/NZS 5667.11 Water quality: sampling guidance on sampling of groundwaters.

2. Groundwater Sampling

Peristaltic Pump

Groundwater sampling is carried out in accordance with Douglas' standard operating procedures. Groundwater samples are collected using a low flow peristaltic pump via the micro-purge (minimal drawdown) method. The sampling method is described as follows:

- Measure the static water level using an electronic interface probe and record the thickness of any LNAPL (if encountered);
- Decontaminate the interface probe and cable between monitoring wells by rinsing in a diluted Liquinox solution and then rinsing in tap water;
- Lower the well-dedicated tubing into the well then clamped at a level estimated to be 1 m below the top of the water column (provided the depth of the pump is within the screened section) or to the approximate mid-point of the well screen;
- Set the pump at the lowest rate possible to minimise drawdown of the water column;
- Measure physical parameters by continuously passing the purged water through a flow cell;
- Following stabilisation of the field parameters, collect samples in laboratory-prepared bottles minimising headspace within the sample bottle and cap immediately.

Sample Handling

The general groundwater sample handling and management procedures comprise:

- Collect 10% replicate samples for QC purposes;
- Label sample containers with individual and unique identification details, including project number and sample location;
- Place the sample jars into a cooled, insulated and sealed container for transport to the laboratory; and
- Use chain of custody documentation.

Reference was made to HEPA (2025) for requirements specific to PFAS.

3. Surface Water Sampling

Surface water sampling is carried out in accordance with Douglas' standard operating procedures. Sample collection is completed using a telescopic pole and decontaminated sample container. A new pair of disposable nitrile gloves are worn at each sample site to minimise potential for cross-contamination. The sampling method is described as follows:

- Where possible, select a sampling point that is a reasonable distance from the edge;
- Immerse the sample container to at least 1 m below the surface, with the opening pointing directly down to maintain a volume of air in the container, thereby avoiding the collection of any surface films;
- Once under the surface of the water, point the mouth of the sample container up stream so that gloved hands, sample container and/or sample collection device are downstream of the sample being collected;
- If the water is still, move the sample container forward away from the sampler and any equipment to collect a continuous uncontaminated sample;
- Use a sample location specific laboratory-prepared glass bottle without preservatives;
- Decant the water sample into laboratory-prepared bottles, minimising headspace within the sample bottle and cap immediately. The sample location specific laboratory-prepared glass bottle can be used as the sample container for the last sample from that location;
- Dispose of any excess water downstream of the sampling point or at a reasonable distance from sample site;
- Label sample containers with individual and unique identification details, including project number and sample location;
- Place the sample jars into a cooled, insulated and sealed container for transport to the laboratory; and
- Use chain of custody documentation.

4. References

HEPA. (2025). *PFAS National Environmental Management Plan (NEMP)*. Version 3.0: Heads of EPAs Australia and New Zealand and Australian Government Department of the Environment.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.

Appendix C

Sampling Methods

Soil Descriptions

Symbols and Abbreviations

Borehole logs (Bores MW6 to MW11, MW8A, MW101 to MW106) –Douglas Partners

Borehole logs (Bores MW1 to MW5) – Coffey

Table A1: Monitoring Well Summary

Introduction to Terminology, Symbols and Abbreviations

Douglas Partners' reports, investigation logs, and other correspondence may use terminology which has quantitative or qualitative connotations. To remove ambiguity or uncertainty surrounding the use of such terms, the following sets of notes pages may be attached Douglas Partners' reports, depending on the work performed and conditions encountered:

- Soil Descriptions;
- Rock Descriptions; and
- Sampling, insitu testing, and drilling methodologies

In addition to these pages, the following notes generally apply to most documents.

Abbreviation Codes

Site conditions may also be presented in a number of different formats, such as investigation logs, field mapping, or as a written summary. In some of these formats textual or symbolic terminology may be presented using textual abbreviation codes or graphic symbols, and, where commonly used, these are listed alongside the terminology definition. For ease of identification in these note pages, textual codes are presented in these notes in the following style **XW**. Code usage conforms with the following guidelines:

- Textual codes are case insensitive, although herein they are generally presented in upper case; and
- Textual codes are contextual (i.e. the same or similar combinations of characters may be used in different contexts with different meanings (for example `PL` is used for plastic limit in the context of soil moisture condition, as well as in `PL(A)` for point load test result in the testing results column)).

Data Integrity Codes

Subsurface investigation data recorded by Douglas Partners is generally managed in a highly structured database environment, where records "span" between a top and bottom depth interval. Depth interval "gaps" between records are considered to introduce ambiguity, and, where appropriate, our practice guidelines may require contiguous data sets. Recording meaningful data is not always appropriate (for example assigning a "strength" to a concrete pavement) and the following codes may be used to maintain contiguity in such circumstances.

Term	Description	Abbreviation Code
Core loss	No core recovery	KL
Unknown	Information was not available to allow classification of the property. For example, when auguring in loose, saturated sand auger cuttings may not be returned.	UK
No data	Information required to allow classification of the property was not available. For example if drilling is commenced from the base of a hole predrilled by others	ND
Not Applicable	Derivation of the properties not appropriate or beyond the scope of the investigation. For example providing a description of the strength of a concrete pavement	NA

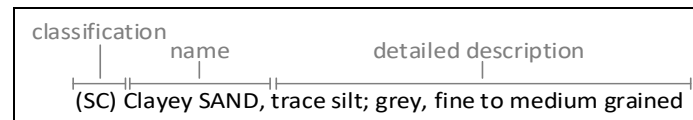
Graphic Symbols

Douglas Partners' logs contain a "graphic" column which provides a pictorial representation of the basic composition of the material. The symbols used are directly representing the material name stated in the adjacent "Description of Strata" column, and as such no specific graphic symbology legend has been provided in these notes.

intentionally blank

Introduction

All materials which are not considered to be “in-situ rock” are described in general accordance with the soil description model of AS 1726-2017 Part 6.1.3, and can be broken down into the following description structure:



The “classification” comprises a two character “group symbol” providing a general summary of dominant soil characteristics. The “name” summarises the particle sizes within the soil which most influence its behaviour. The detailed description presents more information about composition, condition, structure, and origin of the soil.

Classification, naming and description of soils require the relative proportion of particles of different sizes within the whole soil mixture to be considered.

Particle size designation and Behaviour Model

Solid particles within a soil are differentiated on the basis of size.

The engineering behaviour properties of a soil can subsequently be modelled to be either “fine grained” (also known as “cohesive” behaviour) or “coarse grained” (“non cohesive” behaviour), depending on the relative proportion of fine or coarse fractions in the soil mixture.

Particle Size Designation	Particle Size (mm)	Behaviour Model	
		Behaviour	Approximate Dry Mass
Boulder	>200	Excluded from particle behaviour model as “oversize”	
Cobble	63 - 200		
Gravel ¹	2.36 - 63	Coarse	>65%
Sand ¹	0.075 - 2.36		
Silt	0.002 - 0.075	Fine	>35%
Clay	<0.002		

¹ – refer grain size subdivision descriptions below

The behaviour model boundaries defined above are not precise, and the material behaviour should be assumed from the name given to the material (which considers the particle fraction which dominates the behaviour, refer “component proportions” below), rather than strict observance of the proportions of particle sizes. For example, if a material is named a “Sandy CLAY”, this is indicative that the material exhibits fine grained behaviour, even if the dry mass of coarse grained material may exceed 65%.

Component proportions

The relative proportion of the dry mass of each particle size fraction is assessed to be a “primary”, “secondary”, or “minor” component of the soil mixture, depending on its influence over the soil behaviour.

Component Proportion Designation	Definition ¹	Relative Proportion	
		In Fine Grained Soil	In Coarse Grained Soil
Primary	The component (particle size designation, refer above) which dominates the engineering behaviour of the soil	The clay/silt component with the greater proportion	The sand/gravel component with the greater proportion
Secondary	Any component which is not the primary, but is significant to the engineering properties of the soil	Any component with greater than 30% proportion	Any granular component with greater than 30%; or Any fine component with greater than 12%
Minor ²	Present in the soil, but not significant to its engineering properties	All other components	All other components

¹ As defined in AS1726-2017 6.1.4.4

² In the detailed material description, minor components are split into two further sub-categories. Refer “identification of minor components” below.

Composite Materials

In certain situations, a lithology description may describe more than one material, for example, collectively describing a layer of interbedded sand and clay. In such a scenario, the two materials would be described independently, with the names preceded or followed by a statement describing the arrangement by which the materials co-exist. For example, “INTERBEDDED Silty CLAY AND SAND”.

Classification

The soil classification comprises a two character group symbol. The first character identifies the primary component. The second character identifies either the grading or presence of fines in a coarse grained soil, or the plasticity in a fine grained soil. Refer AS1726-2017 6.1.6 for further clarification.

Soil Name

For most soils, the name is derived with the primary component included as the noun (in upper case), preceded by any secondary components stated in an adjective form. In this way, the soil name also describes the general composition and indicates the dominant behaviour of the material.

Component ¹	Prominence in Soil Name
Primary	Noun (eg "CLAY")
Secondary	Adjective modifier (eg "Sandy")
Minor	No influence

¹ – for determination of component proportions, refer component proportions on previous page

For materials which cannot be disaggregated, or which are not comprised of rock or mineral fragments, the names "ORGANIC MATTER" or "ARTIFICIAL MATERIAL" may be used, in accordance with AS1726-2017 Table 14.

Commercial or colloquial names are not used for the soil name where a component derived name is possible (for example "Gravelly SAND" rather than "CRACKER DUST").

Materials of "fill" or "topsoil" origin are generally assigned a name derived from the primary/secondary component (where appropriate). In log descriptions this is preceded by uppercase "FILL" or "TOPSOIL". Origin uncertainty is indicated in the description by the characters (?), with the degree of uncertainty described (using the terms "probably" or "possibly" in the origin column, or at the end of the description).

Identification of minor components

Minor components are identified in the soil description immediately following the soil name. The minor component fraction is usually preceded with a term indicating the relative proportion of the component.

Minor Component Proportion Term	Relative Proportion	
	In Fine Grained Soil	In Coarse Grained Soil
With	All fractions: 15-30%	Clay/silt: 5-12% sand/gravel: 15-30%
Trace	All fractions: 0-15%	Clay/silt: 0-5% sand/gravel: 0-15%

The terms "with" and "trace" generally apply only to gravel or fine particle fractions. Where cobbles/boulders are encountered in minor proportions (generally less than about 12%) the term "occasional" may be used. This term describes the sporadic distribution of the material within the confines of the investigation excavation only, and there may be considerable variation in proportion over a wider area which is difficult to factually characterise due to the relative size of the particles and the investigation methods.

Soil Composition

Plasticity

Descriptive Term	Laboratory liquid limit range	
	Silt	Clay
Non-plastic materials	Not applicable	Not applicable
Low plasticity	≤50	≤35
Medium plasticity	Not applicable	>35 and ≤50
High plasticity	>50	>50

Note, Plasticity descriptions generally describe the plasticity behaviour of the whole of the fine grained soil, not individual fine grained fractions.

Grain Size

Type	Particle size (mm)	
	Coarse	Fine
Gravel	19 - 63	6.7 - 19
	6.7 - 19	2.36 - 6.7
	2.36 - 6.7	0.6 - 2.36
Sand	0.6 - 2.36	0.21 - 0.6
	0.21 - 0.6	0.075 - 0.21
	0.075 - 0.21	

Grading

Grading Term	Particle size (mm)
Well	A good representation of all particle sizes
Poorly	An excess or deficiency of particular sizes within the specified range
Uniformly	Essentially of one size
Gap	A deficiency of a particular size or size range within the total range

Note, AS1726-2017 provides terminology for additional attributes not listed here.

Soil Condition

Moisture

The moisture condition of soils is assessed relative to the plastic limit for fine grained soils, while for coarse grained soils it is assessed based on the appearance and feel of the material. The moisture condition of a material is considered to be independent of stratigraphy (although commonly these are related), and this data is presented in its own column on logs.

Applicability	Term	Tactile Assessment	Abbreviation code
Fine	Dry of plastic limit	Hard and friable or powdery	w<PL
	Near plastic limit	Can be moulded	w=PL
	Wet of plastic limit	Water residue remains on hands when handling	w>PL
	Near liquid limit	"oozes" when agitated	w=LL
	Wet of liquid limit	"oozes"	w>LL
Coarse	Dry	Non-cohesive and free running	D
	Moist	Feels cool, darkened in colour, particles may stick together	M
	Wet	Feels cool, darkened in colour, particles may stick together, free water forms when handling	W

The abbreviation code **NDF**, meaning "not-assessable due to drilling fluid use" may also be used.

Note, observations relating to free ground water or drilling fluids are provided independent of soil moisture condition.

Consistency/Density/Compaction/Cementation/Extremely Weathered Material

These concepts give an indication of how the material may respond to applied forces (when considered in conjunction with other attributes of the soil). This behaviour can vary independent of the composition of the material, and on logs these are described in an independent column and are generally mutually exclusive (i.e it is inappropriate to describe both consistency and compaction at the same time). The method by which the behaviour is described depends on the behaviour model and other characteristics of the soil as follows:

- In fine grained soils, the "consistency" describes the ease with which the soil can be remoulded, and is generally correlated against the materials undrained shear strength;
- In granular materials, the relative density describes how tightly packed the particles are, and is generally correlated against the density index;
- In anthropogenically modified materials, the compaction of the material is described qualitatively;
- In cemented soils (both natural and anthropogenic), the cemented "strength" is described qualitatively, relative to the difficulty with which the material is disaggregated; and
- In soils of extremely weathered material origin, the engineering behaviour may be governed by relic rock features, and expected behaviour needs to be assessed based the overall material description.

Quantitative engineering performance of these materials may be determined by laboratory testing or estimated by correlated field tests (for example penetration or shear vane testing). In some cases, performance may be assessed by tactile or other subjective methods, in which case investigation logs will show the estimated value enclosed in round brackets, for example **(VS)**.

Consistency (fine grained soils)

Consistency Term	Tactile Assessment	Undrained Shear Strength (kPa)	Abbreviation Code
Very soft	Extrudes between fingers when squeezed	<12	VS
Soft	Mouldable with light finger pressure	>12 - ≤25	S
Firm	Mouldable with strong finger pressure	>25 - ≤50	F
Stiff	Cannot be moulded by fingers	>50 - ≤100	St
Very stiff	Indented by thumbnail	>100 - ≤200	VSt
Hard	Indented by thumbnail with difficulty	>200	H
Friable	Easily crumbled or broken into small pieces by hand	-	Fr

Relative Density (coarse grained soils)

Relative Density Term	Density Index	Abbreviation Code
Very loose	<15	VL
Loose	>15 - ≤35	L
Medium dense	>35 - ≤65	MD
Dense	>65 - ≤85	D
Very dense	>85	VD

Note, tactile assessment of relative density is difficult, and generally requires penetration testing, hence a tactile assessment guide is not provided.

Compaction (anthropogenically modified soil)

Compaction Term	Abbreviation Code
Well compacted	WC
Poorly compacted	PC
Moderately compacted	MC
Variably compacted	VC

Cementation (natural and anthropogenic)

Cementation Term	Abbreviation Code
Moderately cemented	MOD
Weakly cemented	WEK

Extremely Weathered Material

AS1726-2017 considers weathered material to be soil if the unconfined compressive strength is less than 0.6 MPa (i.e. less than very low strength rock). These materials may be identified as “extremely weathered material” in reports and by the abbreviation code **XWM** on log sheets. This identification is not correlated to any specific qualitative or quantitative behaviour, and the engineering properties of this material must therefore be assessed according to engineering principles with reference to any relic rock structure, fabric, or texture described in the description.

Soil Origin

Term	Description	Abbreviation Code
Residual	Derived from in-situ weathering of the underlying rock	RS
Extremely weathered material	Formed from in-situ weathering of geological formations. Has strength of less than ‘very low’ as per as1726 but retains the structure or fabric of the parent rock.	XWM
Alluvial	Deposited by streams and rivers	ALV
Fluvial	Deposited by channel fill and overbank (natural levee, crevasse splay or flood basin)	FLV
Estuarine	Deposited in coastal estuaries	EST
Marine	Deposited in a marine environment	MAR
Lacustrine	Deposited in freshwater lakes	LAC
Aeolian	Carried and deposited by wind	AEO
Colluvial	Soil and rock debris transported down slopes by gravity	COL
Slopewash	Thin layers of soil and rock debris gradually and slowly deposited by gravity and possibly water	SW
Topsoil	Mantle of surface soil, often with high levels of organic material	TOP
Fill	Any material which has been moved by man	FILL
Littoral	Deposited on the lake or seashore	LIT
Unidentifiable	Not able to be identified	UID

Cobbles and Boulders

The presence of particles considered to be “oversize” may be described using one of the following strategies:

- Oversize encountered in a minor proportion (when considered relative to the wider area) are noted in the soil description; or
- Where a significant proportion of oversize is encountered, the cobbles/boulders are described independent of the soil description, in a similar manner to composite soils (described above) but qualified with “MIXTURE OF”.

intentionally blank



Sampling and Testing

A record of samples retained, and field testing performed is usually shown on a Douglas Partners' log with samples appearing to the left of a depth scale, and selected field and laboratory testing (including results, where relevant) appearing to the right of the scale, as illustrated below:

SAMPLE			DEPTH (m)	TESTING	
SAMPLE REMARKS	TYPE	INTERVAL		TEST TYPE	RESULTS AND REMARKS
	SPT		1.0 1.45	SPT	4,9,11 N=20

Sampling

The type or intended purpose for which a sample was taken is indicated by the following abbreviation codes.

Sample Type	Code
Auger sample	A
Acid Sulfate sample	ASS
Bulk sample	B
Core sample	C
Disturbed sample	D
Environmental sample	ES
Driven Tube sample	DT
Gas sample	G
Piston sample	P
Sample from SPT test	SPT
Undisturbed tube sample	U ¹
Water sample	W
Material Sample	MT
Core sample for unconfined compressive strength testing	UCS

¹ – numeric suffixes indicate tube diameter/width in mm

The above codes only indicate that a sample was retained, and not that testing was scheduled or performed.

Field and Laboratory Testing

A record that field and laboratory testing was performed is indicated by the following abbreviation codes.

Test Type	Code
Pocket penetrometer (kPa)	PP
Photo ionisation detector (ppm)	PID
Standard Penetration Test x/y = x blows for y mm penetration HB = hammer bouncing HW = fell under weight of hammer	SPT
Shear vane (kPa)	V

Unconfined compressive strength, (MPa)	UCS
--	-----

Field and laboratory testing (continued)

Test Type	Code
Point load test, (MPa), axial (A), diametric (D), irregular (I)	PLT(L)
Dynamic cone penetrometer, followed by blow count penetration increment in mm (cone tip, generally in accordance with AS1289.6.3.2)	DCP9/150
Perth sand penetrometer, followed by blow count penetration increment in mm (flat tip, generally in accordance with AS1289.6.3.3)	PSP/150

Groundwater Observations

▷	seepage/inflow
▽	standing or observed water level
NFGWO	no free groundwater observed
OBS	observations obscured by drilling fluids

Drilling or Excavation Methods/Tools

The drilling/excavation methods used to perform the investigation may be shown either in a dedicated column down the left-hand edge of the log, or stated in the log footer. In some circumstances abbreviation codes may be used.

Method	Abbreviation Code
Direct Push	DP
Solid flight auger. Suffixes: /T = tungsten carbide tip, /V = v-shaped tip	AD ¹
Air Track	AT
Diatube	DT ¹
Hand auger	HA ¹
Hand tools (unspecified)	HAND
Existing exposure	X
Hollow flight auger	HSA ¹
HQ coring	HQ3
HMLC series coring	HMLC
NMLC series coring	NMLC
NQ coring	NQ3
PQ coring	PQ3
Predrilled	PD
Push tube	PT ¹
Ripping tyne/ripper	R
Rock roller	RR ¹
Rock breaker/hydraulic hammer	EH
Sonic drilling	SON ¹
Mud/blade bucket	MB ¹
Toothed bucket	TB ¹
Vibrocore	VC ¹
Vacuum excavation	VE
Wash bore (unspecified bit type)	WB ¹

¹ – numeric suffixes indicate tool diameter/width in mm



Sampling and Testing

A record of samples retained, and field testing performed is usually shown on a Douglas Partners' log with samples appearing to the left of a depth scale, and selected field and laboratory testing (including results, where relevant) appearing to the right of the scale, as illustrated below:

SAMPLE			DEPTH (m)	TESTING	
SAMPLE REMARKS	TYPE	INTERVAL		TEST TYPE	RESULTS AND REMARKS
	SPT		1.0 1.45	SPT	4,9,11 N=20

Sampling

The type or intended purpose for which a sample was taken is indicated by the following abbreviation codes.

Sample Type	Code
Auger sample	A
Acid Sulfate sample	ASS
Bulk sample	B
Core sample	C
Disturbed sample	D
Environmental sample	ES
Driven Tube sample	DT
Gas sample	G
Piston sample	P
Sample from SPT test	SPT
Undisturbed tube sample	U ¹
Water sample	W
Material Sample	MT
Core sample for unconfined compressive strength testing	UCS

¹ – numeric suffixes indicate tube diameter/width in mm

The above codes only indicate that a sample was retained, and not that testing was scheduled or performed.

Field and Laboratory Testing

A record that field and laboratory testing was performed is indicated by the following abbreviation codes.

Test Type	Code
Pocket penetrometer (kPa)	PP
Photo ionisation detector (ppm)	PID
Standard Penetration Test x/y = x blows for y mm penetration HB = hammer bouncing HW = fell under weight of hammer	SPT
Shear vane (kPa)	V

Unconfined compressive strength, (MPa)	UCS
--	-----

Field and laboratory testing (continued)

Test Type	Code
Point load test, (MPa), axial (A), diametric (D), irregular (I)	PLT(L)
Dynamic cone penetrometer, followed by blow count penetration increment in mm (cone tip, generally in accordance with AS1289.6.3.2)	DCP9/150
Perth sand penetrometer, followed by blow count penetration increment in mm (flat tip, generally in accordance with AS1289.6.3.3)	PSP/150

Groundwater Observations

▷	seepage/inflow
▽	standing or observed water level
NFGWO	no free groundwater observed
OBS	observations obscured by drilling fluids

Drilling or Excavation Methods/Tools

The drilling/excavation methods used to perform the investigation may be shown either in a dedicated column down the left-hand edge of the log, or stated in the log footer. In some circumstances abbreviation codes may be used.

Method	Abbreviation Code
Direct Push	DP
Solid flight auger. Suffixes: /T = tungsten carbide tip, /V = v-shaped tip	AD ¹
Air Track	AT
Diatube	DT ¹
Hand auger	HA ¹
Hand tools (unspecified)	HAND
Existing exposure	X
Hollow flight auger	HSA ¹
HQ coring	HQ3
HMLC series coring	HMLC
NMLC series coring	NMLC
NQ coring	NQ3
PQ coring	PQ3
Predrilled	PD
Push tube	PT ¹
Ripping tyne/ripper	R
Rock roller	RR ¹
Rock breaker/hydraulic hammer	EH
Sonic drilling	SON ¹
Mud/blade bucket	MB ¹
Toothed bucket	TB ¹
Vibrocore	VC ¹
Vacuum excavation	VE
Wash bore (unspecified bit type)	WB ¹

¹ – numeric suffixes indicate tool diameter/width in mm

BOREHOLE LOG

CLIENT: WesTrac Pty Ltd
PROJECT: Westrac Industrial Site
LOCATION: 1 Westrac Drive, Tomago, NSW

SURFACE LEVEL: 2.8 AHD
COORDINATE: E:383545.0, N:6368065.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: MW1A
PROJECT No: 39920.14
DATE: 22/08/24
SHEET: 1 of 1

GROUNDWATER		CONDITIONS ENCOUNTERED					SAMPLE			TESTING AND REMARKS				
RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN (#)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE
▼ 22/08/24 Free ground water observed at 1.0m	0.15	FILL / Silty SAND: brown; fine to medium; with organics, rootlets.		FILL	NA	M		D		0.10			 Bentonite ncrete 50mm Class B PVC Casing	
		FILL / SAND, with gravel, trace silt: brown; fine to medium.		possibly FILL	NA	M					PID	<1ppm		
								D		0.50	PID	<1ppm		
	0.70	SAND: grey; fine to medium.		AEO	D	M								
								D		0.90	PID	<1ppm		
	1.00	Silty SAND: brown; fine to medium.		AEO	D					1				
								D		1.50	PID	<1ppm		
	2			AEO	D	W				2				
		3			AEO	D					3			
	4	Borehole discontinued at 4.00m depth. Limit of investigation.												
	2													

NOTES: ⁽¹⁾Soil origin is "probable" unless otherwise stated. ⁽²⁾Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Track Mounted	OPERATION: 100%
METHOD: Hollow Flight Auger	
REMARKS: Top of casing level 3.31 AHD. Replacement for damaged MW1.	

OPERATOR: Tuck Environmental

LOGGED: Krebs
CASING: Uncased

BOREHOLE LOG

CLIENT: WEPL Investments Pty Ltd
PROJECT: Tomago Industrial Estate
LOCATION: Tomago Road, Tomago

SURFACE LEVEL: --
EASTING: 383518
NORTHING: 6367336
DIP/AZIMUTH: 90°/--

BORE No: MW6
PROJECT No: 39920.03
DATE: 7/10/2010
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction	
				Type	Depth	Sample	Results & Comments		Details	
	0.23	SILTY CLAY - Dark grey silty clay, M>Wp							Stickup = 0.7m	
		SILTY CLAY - Grey silty clay, M>>Wp							From 0m to 0.5m, Concrete	
	1								From 0.5m to 2m, Backfill	
	2									
	3								From 2m to 4.5m, Bentonite plug	
	4									
	5								From 4.5m to 6m, 2.5mm washed gravel screen	
	6	SAND - Grey/brown fine to medium grained sand with some silt and clay, trace shell fragments, saturated								
	7								From 6m to 9m, Collapsed strata	
	8								From 6m to 9m, 50mm diameter Class 18 machine slotted PVC screen	
	9	Bore discontinued at 9.0m, limit of investigation							End cap	

RIG: 4WD Truck Mounted Drill Rig

DRILLER:

LOGGED: Prowse

CASING: Nil

TYPE OF BORING: 130mm hollow flight auger

WATER OBSERVATIONS: Free groundwater encountered at 0.3m whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND			
A Auger sample	G Gas sample	PID Photo ionisation detector (ppm)	
B Bulk sample	P Piston sample	PL(A) Point load axial test Is(50) (MPa)	
BLK Block sample	U Tube sample (x mm dia.)	PL(D) Point load diametral test Is(50) (MPa)	
C Core drilling	W Water sample	pp Pocket penetrometer (kPa)	
D Disturbed sample	> Water seep	S Standard penetration test	
E Environmental sample	⊥ Water level	V Shear vane (kPa)	

BOREHOLE LOG

CLIENT: Northbank Enterprise Hub Pty Ltd
PROJECT: Stage 3 Northbank Enterprise Hub
LOCATION: Lot 210 Westrac Drive, Tomago

SURFACE LEVEL: 3.1 AHD
EASTING: 382303.7
NORTHING: 6367395.9
DIP/AZIMUTH: 90°/--

BORE No: MW8A
PROJECT No: 39920.09
DATE: 12/4/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
3	0.25	SILTY SAND - fine to medium grained, dark grey, trace rootlets, moist		D	0.01				Stickup = 0.76 From 0m to 0.1m, concrete	
1		SAND - fine to medium grained, dark grey, trace rootlets, moist at 0.7m - colour change to brown		D	0.5				From 0.1m to 0.3m, bentonite From 0m to 0.5m, 50mm diameter Class 18 PVC Casing	
2	1.2	SAND - fine to medium grained, pale brown, trace sub-angular to sub-rounded gravel, moist		D	1.5					
2		at approximately 1.8m, wet		D	2.5					
3				D	3.5					
4				D	4.5				From 0.3m to 7.0m, 2mm sand From 0.5m to 7.0m, 50mm diameter Class 18 Machine Slotted PVC Screen	
5				D	5.5					
6				D	6.5					
7	7.0	Bore discontinued at 7.0m Limit of investigation							End cap	
8										
9										

RIG: Geoprobe Dual Tube

DRILLER: Tucker

LOGGED: Krebs

CASING: None

TYPE OF BORING: Push tube with disposable liners

WATER OBSERVATIONS: Free groundwater observed at 1.9m during drilling

REMARKS: Top of PVC casing level 3.86 AHD

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: Northbank Enterprise Hub Pty Ltd
PROJECT: Northbank Enterprise Hub
LOCATION: Lot 211 DP 1174939 Westrac Drive, Tomago, NSW

SURFACE LEVEL: 3.1 AHD
COORDINATE: E:383187.9, N:6367418.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: MW13
PROJECT No: 39920.09
DATE: 18/11/24
SHEET: 1 of 2

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS				
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ^(*) DENSITY. ^(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE
Free groundwater observed at 3.4m 18/11/24	3	FILL / Silty CLAY (CI), with gravel: brown; medium plasticity; fine to medium, sub-angular to sub-rounded gravel.		FILL	NA	w<PL		D/ES	0.50	PID	<1ppm		Concrete	50mm Class 18 PVC Casing
	0.70	FILL / Silty CLAY (CI), trace gravel: grey; medium plasticity; fine to medium, sub-angular to sub-rounded gravel.		FILL	NA	w<PL		D/ES	1.00	PID	<1ppm			
	1			FILL	NA	w<PL								
	2			FILL	NA	w<PL								
	2.10	FILL / Silty CLAY (CH): grey; high plasticity.		FILL	NA	w>PL		D/ES	2.50	PID	<1ppm			
	2.90	FILL / Silty SAND (SM): dark brown; fine to medium; possible old topsoil layer, trace organics, rootlets.		FILL	S to F	M		D/ES	3.00	PID	<1ppm			
	3.20	Silty Sandy CLAY (CH): brown; high plasticity; fine to medium sand.												
	4													
	5							D/ES	5.00	PID	<1ppm		Bentonite	
	6			ALV	S to F	w=PL w>PL								
7														
8														
8.60	SAND: grey; fine to medium.			ALV	L	M								
9														

NOTES: ^(*)Soil origin is "probable" unless otherwise stated. ^(*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

NOTES: ^(a)Soil origin is "probable" unless otherwise stated. ^(b)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Geoprobe
METHOD: Hollow Flight Auger
REMARKS: Top of PVC casing level 3.63 AHD. Stickup = 0.53

OPERATOR: Tuck Environmental (Tucker) **LOGGED:** Krebs
CASING: Uncased

Gravel - 2mm grad

BOREHOLE LOG

CLIENT: Northbank Enterprise Hub Pty Ltd
PROJECT: Northbank Enterprise Hub
LOCATION: Lot 211 DP 1174939 Westrac Drive, Tomago, NSW

SURFACE LEVEL: 3.1 AHD
COORDINATE: E:383187.9, N:6367418.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: MW13
PROJECT No: 39920.09
DATE: 18/11/24
SHEET: 2 of 2

CONDITIONS ENCOUNTERED										SAMPLE			TESTING AND REMARKS		
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. (°)	DENSITY. (°)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE
	7	[CONT] SAND: grey; fine to medium.							D/ES		10.00	PID	<1ppm		
	11										11				
	12										12				
	13										13				
	14										14				
	15	Borehole discontinued at 14.50m depth.													
	16														
	17														
	18														
	19														

NOTES: °Soil origin is "probable" unless otherwise stated. °Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

NOTES: (M) Soil origin is "probable" unless otherwise stated. (N) Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Geoprobe
METHOD: Hollow Flight Auger
REMARKS: Top of PVC casing level 3.63 AHD. Stickup = 0.53

OPERATOR: Tuck Environmental (Tucker) **LOGGED:** Krebs
CASING: Uncased

Engineering Log - Piezometer

Client: **ASQUITH & de WITT PTY LTD**

Principal:

Project: **PROPOSED INDUSTRIAL DEVELOPMENT, TOMAGO**

Borehole Location: *REFER TO FIGURE 1*

Borehole No. *MW 1*

Sheet 1 of 1

Project No: **GEOTSGTE20301AA**

Date started: 16.8.2007

Date completed: 16.8.2007

Logged by: CW

Checked by: 

drilling information										material substance					
method	penetration			support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	structure and additional observations
	1	2	3												
HF				C							SM SC	Silty SAND: fine to coarse grained, black Clayey SAND: grey	D M		ALLUVIAL
									0.5						
									1.0				W		
									1.5						
									2.0						
									2.5						
									3.0						
									3.5						
									4.0			Borehole terminated at 3.85m			

method

AS
AD
RR
W
CT
DT
B
V
T
TBX
e.g.

auger screwing*
auger drilling*
roller/cone
washbore
cable tool
diatube
blank bit
V bit
TC bit
Tubex
*bit shown by suffix
e.g. ADT

support

C casing

N nil

penetration

2 3 4

no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

U₅₀
O
N
N*
Nc
P
Bs
R
E
PID
WS
PZ
ALT

undisturbed sample 50mm diameter
disturbed sample
standard penetration test (SPT)
SPT - sample recovered
SPT with solid cone
pressure meter
bulk sample
refusal
environmental sample
PID measurement
water sample
piezometer
air lift test

classification symbols and soil description based on unified classification system

moisture

D dry
M moist
W wet
W_p plastic limit
W_L liquid limit

consistency/density index

VS very soft
S soft
F firm
St stiff
VS_t very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

Date started: 17.8.2007

Date completed: 17.8.2007

Logged by: CW

Checked by:

PIEZOMETER 20301AA LOGS MW1-5.GPJ COFFEY.GDT 17 08

Engineering Log - Piezometer

Client: **ASQUITH & de WITT PTY LTD**

Principal:

Project: **PROPOSED INDUSTRIAL DEVELOPMENT, TOMAGO**

Borehole Location: **REFER TO FIGURE 1**

Borehole No. **MW 3**

Sheet **1 of 1**

Project No: **GEOTSGTE20301AA**

Date started: **17.8.2007**

Date completed: **17.8.2007**

Logged by: **CW**

Checked by: **[Signature]**

drill model & mounting: Truck Mounted				Easting: 382895		slope: -90°		R.L. Surface: 2.91							
hole diameter: 200mm				Northing: 6367789		bearing		datum: AHD							
drilling information				material substance											
method	penetration	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	structure and additional observations		
HF	1 2 3	C							SM	Silty SAND: fine to coarse grained, black mottled white, with rootlets	M		TOPSOIL		
							0.5		SM	Silty SAND: fine to coarse grained, dark grey			AEOLIAN		
							1.0			Becoming dark brown	W				
							1.5								
							2.0			Trace of fine grained rounded gravel.			Alluvial?		
							2.5								
							3.0								
							3.5								
							4.0			Borehole terminated at 3.8m					
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool DT diatube B blank bit V V bit T TC bit TBX Tubex *bit shown by suffix e.g. ADT				support C casing N nil penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow				notes, samples, tests U ₅₀ undisturbed sample 50mm diameter D disturbed sample N standard penetration test (SPT) N' SPT - sample recovered Nc SPT with solid cone P pressure meter Bs bulk sample R refusal E environmental sample PID PID measurement WS water sample PZ piezometer ALT air lift test				classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Piezometer

Borehole No. *MW 4*

Sheet 1 of 1

Project No: **GEOTSGTE20301AA**

Client: **ASQUITH & de WITT PTY LTD**

Date started: 17.8.2007

Principal:

Date completed: **17.8.2007**

Project: **PROPOSED INDUSTRIAL DEVELOPMENT, TOMAGO**

Logged by: CW

Borehole Location: *REFER TO FIGURE 1*

Checked by:

drilling information										material substance			
method	penetration	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
1	2	3											
HF		C							CH	CLAY: high plasticity, grey-brown some orange mottled, with rootlets. Becoming grey.	M>Wp		ALLUVIAL
							0.0						
							0.5						
							1.0						
							1.5						
							2.0						
							2.5						
							3.0						
							3.5						
							4.0			Borehole terminated at 3.9m			

method

AS auger screwing*

AD auger drilling*

RR roller/tricone

W washbore

CT cable tool

DT diatube

B blank bit

V V bit

T TC bit

TBX Tubex

*bit shown by suffix
e.g ADT

support

C casing

N nil

penetration

2 3 4

no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

U₅₀ undisturbed sample 50mm diameter

D disturbed sample

N standard penetration test (SPT)

N* SPT - sample recovered

Nc SPT with solid cone

P pressure meter

Bs bulk sample

R refusal

E environmental sample

PID PID measurement

WS water sample

PZ piezometer

ALT air lift test

classification symbols and soil description based on unified classification system

moisture

D dry

M moist

W wet

Wp plastic limit

W_L liquid limit

consistency/density index

VS very soft

S soft

F firm

St stiff

VSt very stiff

H hard

Fb friable

VL very loose

L loose

MD medium dense

D dense

VD very dense

Table D1: Monitoring Well Summary

Bore ID	Easting	Northing	Elevation Ground Level (AHD)	Elevation top of PVC Casing Level (AHD)	Depth (m bgl)	Screened interval (m bgl)	Screened lithology	Proposed for monitoring in revised GMP for Stage 1-2	Comment
MW1	383552	6368062	2.0	2.84	3.8	0.8-3.8	Sand, clayey	No	Damaged/lost
MW1A	383545	6368065	2.8	3.31	4.0	0.5 - 4.0	Sand, fine to med	Yes	Installed Aug 2024 as replacement for MW1 and upgradient well
MW2	383721	6367483	0.7	1.25	3.5	0.5-3.5	Clay, silty	Yes	Damaged/lost
MW3	382900	6367780	2.9	3.56	3.0	0.5-3.0	Sand, fine to coarse, silt	No	Damaged/lost
MW4	383360	6367013	0.5	1.28	3.7	0.7-3.8	Clay	Yes	High EC readings assumed to be associated with elevated suspended solids (clay particles)
MW5	382225	6367156			3.8	0.8-3.8	Clay and sand	No	Damaged/lost
MW6	383516	6367333	0.6	1.26	9.0	6.0-9.0	Sand, fine to med	Yes	
MW7	382804	6366932	0.4	1.41	2.6	0.6-2.6	Clay, silty	No	Collapsed strata 6-9m - no gravel pack High EC readings assumed to be associated with elevated suspended solids (fine sand due to absence of gravel pack).
MW8	382351	6367460	3.4	4.72	5.5	2.5-5.5	Sand, fine to med	No	Damaged/lost
MW8A	382304	6367396	3.1	3.86	7.0	0.5-7.0	Sand, fine to med	No	Replacement for MW8
MW9	383165	6367492	0.6	1.54	10.6	4.6-8.3	Sand, fine to med	No	Damaged/lost
MW10	383467	6367675	0.8	2.11	10.6	4.6-8.3	Sand, fine to med	Yes	
MW11	383293	6367584	1.2	2.27	10.6		Sand, fine to med	Yes	
MW12	383111	6367900	3.0	3.57	4.0	0.5 - 4.0	Sand, fine to med	Yes	Installed Aug 2024 as new upgradient well
MW13	383188	6367418	3.1	3.63	14.5	9.5 - 12.6	Sand, fine to med	Yes	Installed Nov 2024
MW101	382657	6367619	3.2	4.09	7.0	0.3-7.0	Sand, fine to med	No	Stage 3 monitoring location
MW102	382678	6367506	1.8	2.52	4.0	0.3-4.0	Sand, fine to med	No	Stage 3 monitoring location
MW103	382853	6367614	2.3	3.31	7.0	0.3-7.0	Sand, fine to med	No	Stage 3 monitoring location
MW104	383148	6367292	0.7	1.16	1.5	0.5-1.5	Clay	No	High EC readings assumed to be associated with elevated suspended solids (clay particles). Stage 3 monitoring location
MW105	382360	6367294	1.5	2.05	6.0	0.3-6.0	Sand, fine to med	No	Stage 3 monitoring location
MW106	382929	6367067	0.7	1.35	2.0	0.5-2.0	Clay	No	High EC readings assumed to be associated with elevated suspended solids (clay particles). Stage 3 monitoring location
MW107	382381	6367150	0.72	1.52	2.2	0.5-2.2	Clay	No	Stage 3 monitoring location

Notes:

AHD = metres Australian Height Datum

EC = electrical conductivity

m bgl = metres below ground level

Borehole Location: *REFER TO FIGURE 1*

PIEZOMETER 20301AA LOGS MW1-5 GPJ COFFEY GDT 17 08

BOREHOLE LOG

CLIENT: Northbank Enterprise Hub Pty Ltd
PROJECT: Stage 3 Northbank Enterprise Hub
LOCATION: Lot 210 Westrac Drive, Tomago

SURFACE LEVEL: 3.1 AHD
EASTING: 382303.7
NORTHING: 6367395.9
DIP/AZIMUTH: 90°/--

BORE No: MW8A
PROJECT No: 39920.09
DATE: 12/4/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
3	0.25	SILTY SAND - fine to medium grained, dark grey, trace rootlets, moist		D	0.01				Stickup = 0.76 From 0m to 0.1m, concrete	
1		SAND - fine to medium grained, dark grey, trace rootlets, moist at 0.7m - colour change to brown		D	0.5				From 0.1m to 0.3m, bentonite From 0m to 0.5m, 50mm diameter Class 18 PVC Casing	
2	1.2	SAND - fine to medium grained, pale brown, trace sub-angular to sub-rounded gravel, moist		D	1.5					
2		at approximately 1.8m, wet		D	2.5					
3				D	3.5					
4				D	4.5				From 0.3m to 7.0m, 2mm sand From 0.5m to 7.0m, 50mm diameter Class 18 Machine Slotted PVC Screen	
5				D	5.5					
6				D	6.5					
7	7.0	Bore discontinued at 7.0m Limit of investigation							End cap	
8										
9										

RIG: Geoprobe Dual Tube

DRILLER: Tucker

LOGGED: Krebs

CASING: None

TYPE OF BORING: Push tube with disposable liners

WATER OBSERVATIONS: Free groundwater observed at 1.9m during drilling

REMARKS: Top of PVC casing level 3.86 AHD

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: Northbank Enterprise Hub Pty Ltd
PROJECT: Northbank Enterprise Hub
LOCATION: Lot 211 DP 1174939 Westrac Drive, Tomago, NSW

SURFACE LEVEL: 3.1 AHD
COORDINATE: E:383187.9, N:6367417.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: MW13
PROJECT No: 39920.09
DATE: 18/11/24
SHEET: 1 of 2

CONDITIONS ENCOUNTERED						SAMPLE			TESTING AND REMARKS					
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ^(*) DENSITY. ^(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE
Free groundwater observed at 3.4m 18/11/24	3	FILL / Silty CLAY (CI), with gravel: brown; medium plasticity; fine to medium, sub-angular to sub-rounded gravel.		FILL	NA	w<PL								Concrete - Stickup = 0.5 m <

NOTES: ^(a)Soil origin is "probable" unless otherwise stated. ^(b)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Geoprobe
METHOD: Hollow Flight Auger
REMARKS: Top of PVC casing level 3.63 AHD
 Coordinates and levels by dGPS and are therefore approximate only

OPERATOR: Tuck Environmental (Tucker) **LOGGED:** Krebs
CASING: Uncased

Gravel - 2mm grad
 50mm Class 18 PVC Casing
 Bentonite
 Concrete - Stickup = 0.5 m

BOREHOLE LOG

CLIENT: Northbank Enterprise Hub Pty Ltd
PROJECT: Northbank Enterprise Hub
LOCATION: Lot 211 DP 1174939 Westrac Drive, Tomago, NSW

SURFACE LEVEL: 3.1 AHD
COORDINATE: E:383187.9, N:6367417.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: MW13
PROJECT No: 39920.09
DATE: 18/11/24
SHEET: 2 of 2

CONDITIONS ENCOUNTERED										SAMPLE			TESTING AND REMARKS			
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS. ^(*)	DENSITY. ^(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	BACKFILL	WELL PIPE	
RL (m)																
-7		[CONT] SAND: grey; fine to medium.							D/ES		10.00	PID	<1ppm		50mm Class 18 Machine Slotted PVC Screen	
-8											11					
-9				ALV	L		M				12					
-10											13				Blank Class 18 PVC	
-11											14					
-12		Borehole discontinued at 14.50m depth.														
-13																
-14																
-15																
-16																
-17																
-18																
-19																
-20																
-21																
-22																
-23																
-24																
-25																
-26																
-27																
-28																
-29																
-30																
-31																
-32																
-33																
-34																
-35																
-36																
-37																
-38																
-39																
-40																
-41																
-42																
-43																
-44																
-45																
-46																
-47																
-48																
-49																
-50																
-51																
-52																
-53																
-54																
-55																
-56																
-57																
-58																
-59																
-60																
-61																
-62																
-63																
-64																
-65																
-66																
-67																
-68																
-69																
-70																
-71																
-72																
-73																
-74																
-75																
-76																
-77																
-78																
-79																
-80																
-81																
-82																
-83																
-84																
-85																
-86																
-87																
-88																
-89																
-90																
-91																
-92																
-93																
-94																
-95																
-96																
-97																
-98																
-99																
-100																
-101																
-102																
-103																
-104																
-105																
-106																
-107																
-108																
-109																
-110																
-111																
-112																
-113																
-114																
-115																
-116																
-117																
-118																
-119																
-120																
-121																
-122																
-123																
-124																
-125																
-126																
-127																
-128																
-129																
-130																
-131																
-132																
-133																
-134																
-135																
-136																
-137																
-138																
-139																
-140																
-141																
-142																
-143																
-144																

Engineering Log - Piezometer

Client: **ASQUITH & de WITT PTY LTD**

Principal:

Project: **PROPOSED INDUSTRIAL DEVELOPMENT, TOMAGO**

Borehole Location: *REFER TO FIGURE 1*

Borehole No. *MW 1*

Sheet 1 of 1

Project No: **GEOTSGTE20301AA**

Date started: 16.8.2007

Date completed: 16.8.2007

Logged by: CW

Checked by:

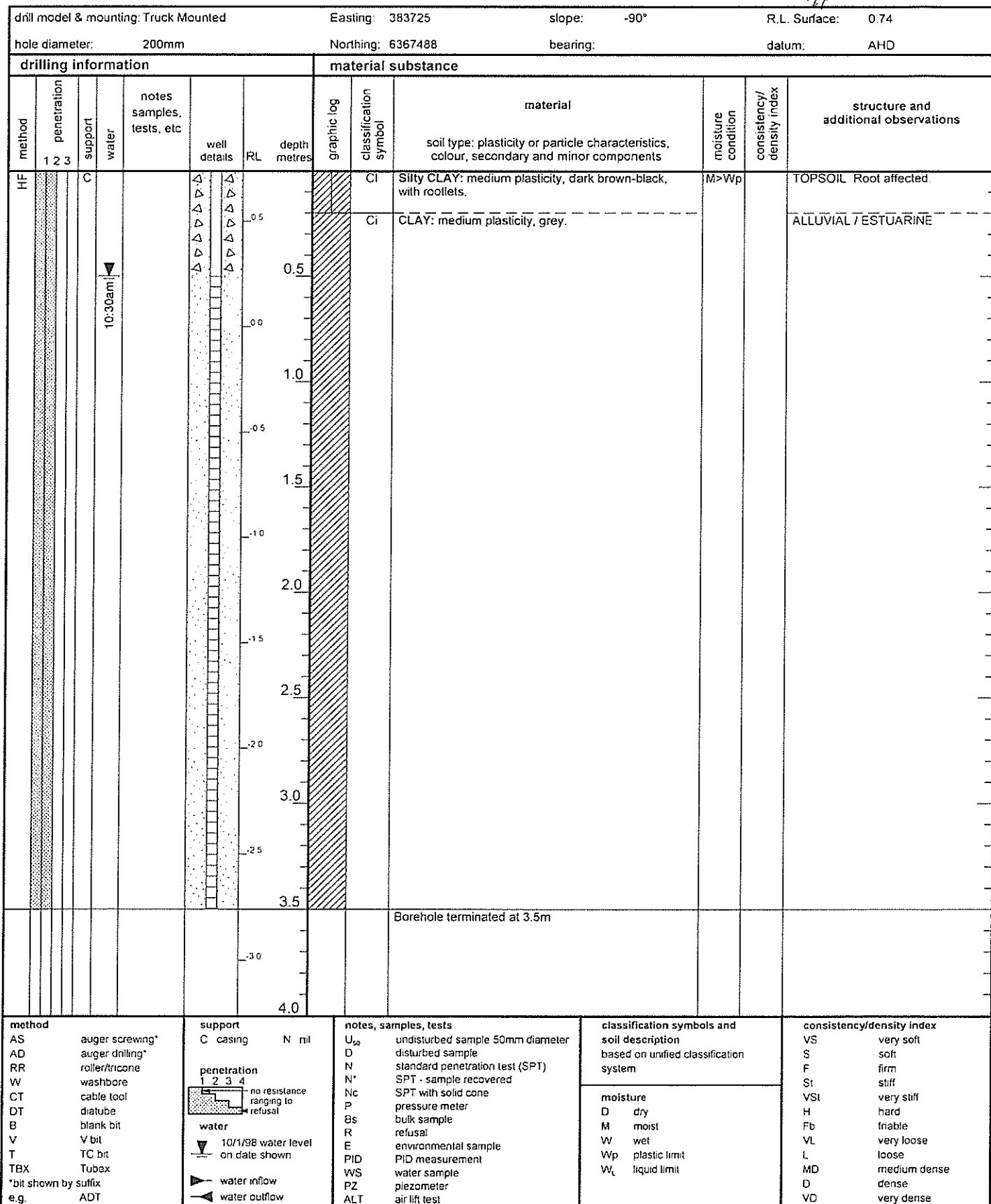
[illegible]

Date started: 17.8.2007

Date completed: 17.8.2007

Logged by: CW

Checked by:



Client: **ASQUITH & de WITT PTY LTD**

Principal:

Project: **PROPOSED INDUSTRIAL DEVELOPMENT, TOMAGO**

Borehole Location: *REFER TO FIGURE 1*

PIEZOMETER 20301AA LOGS MW1-5 GPJ COFFEY GDT 17 08

Engineering Log - Piezometer

Borehole No. *MW 4*

Sheet 1 of 1

Project No: **GEOTSGTE20301AA**

Client: **ASQUITH & de WITT PTY LTD**

Date started: 17.8.2007

Principal:

Date completed: 17.8.2007

Project: **PROPOSED INDUSTRIAL DEVELOPMENT, TOMAGO**

Logged by: CW

Borehole Location: *REFER TO FIGURE 1*

Checked by:

[illegible]

Borehole Location: *REFER TO FIGURE 1*

PIEZOMETER 20301AA LOGS MW1-5 GPJ COFFEY GDT 17 08

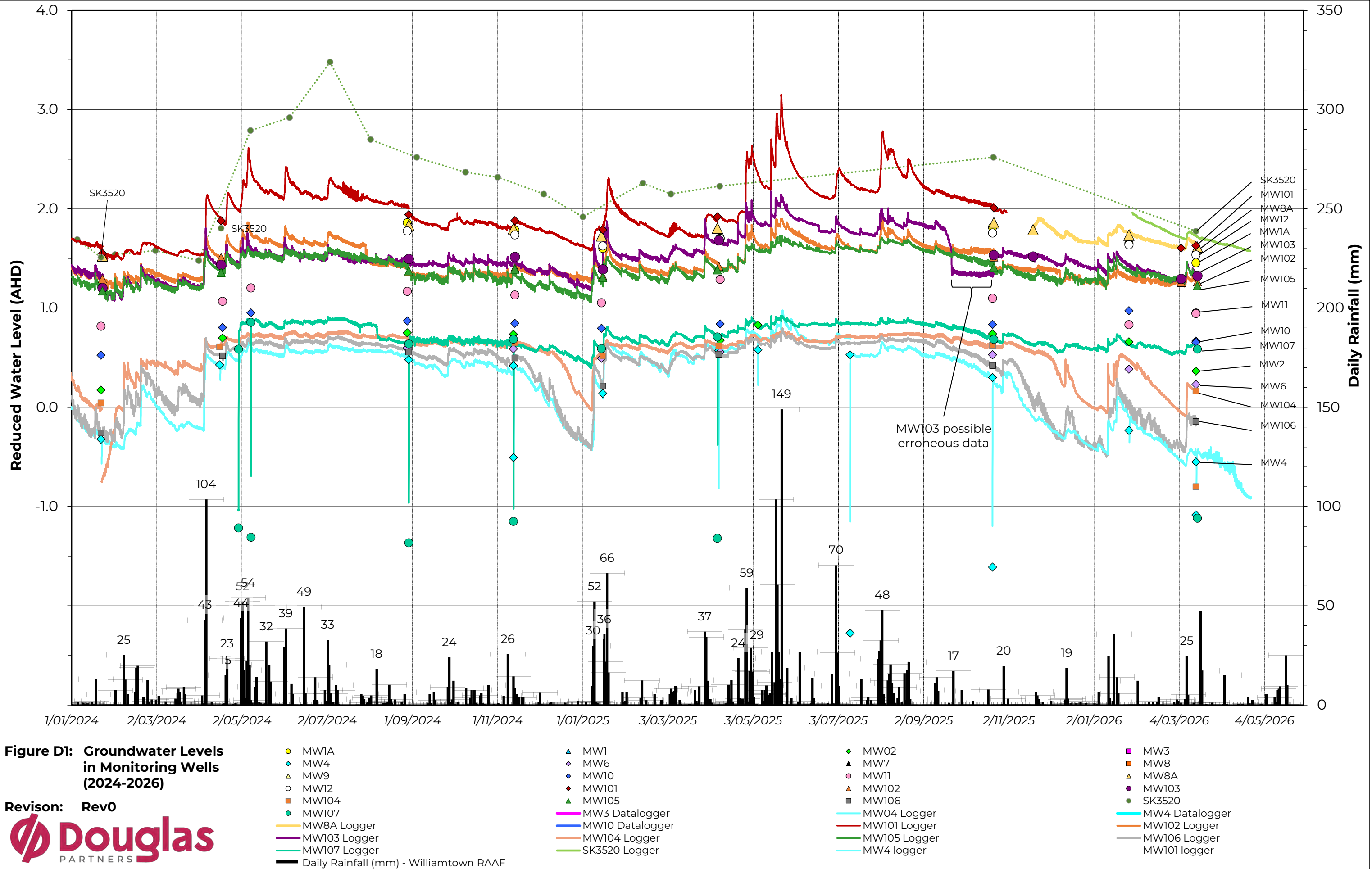
Appendix D

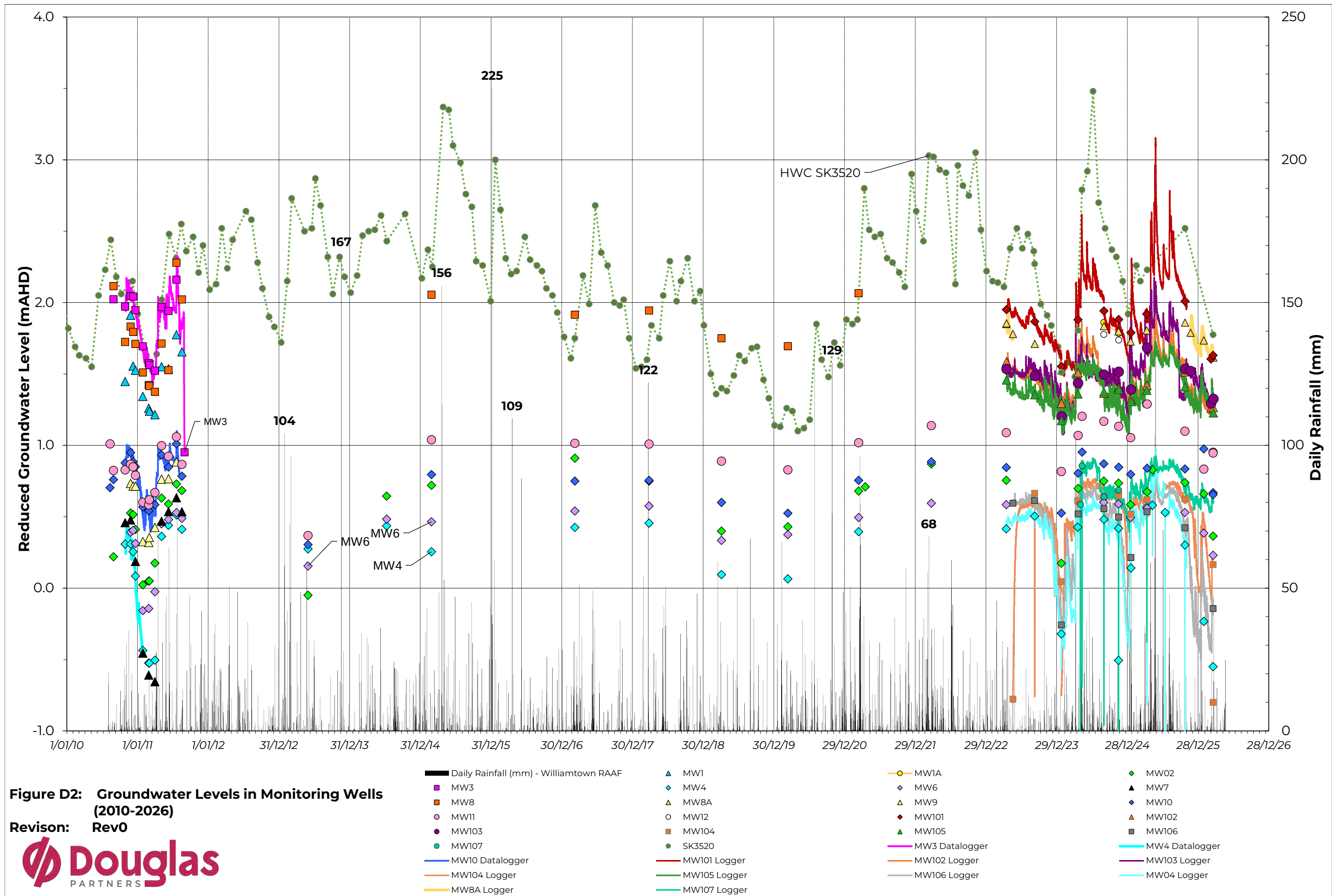
Figure D1: Groundwater Levels in Monitoring Wells
(2024-2026)

Figure D2: Groundwater Levels in Monitoring Wells
(2010-2026)

Groundwater Quality Monitoring Plots

Surface Water Quality Monitoring Plots

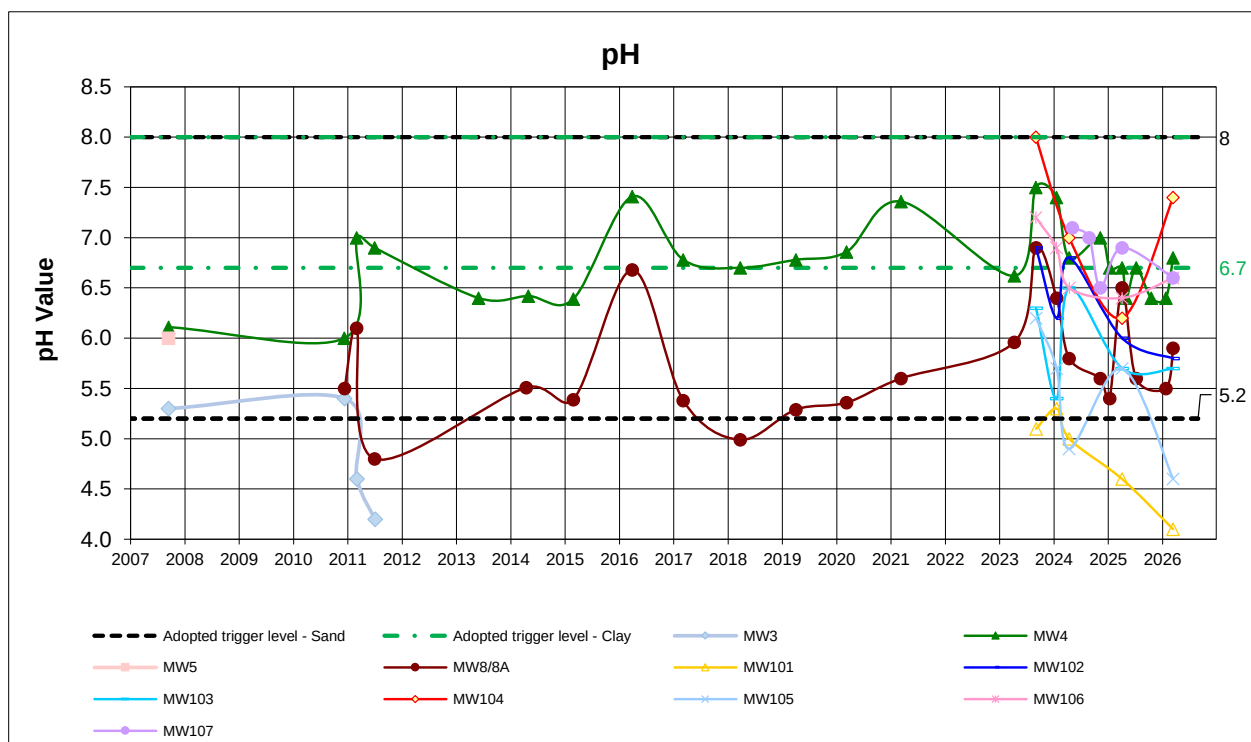
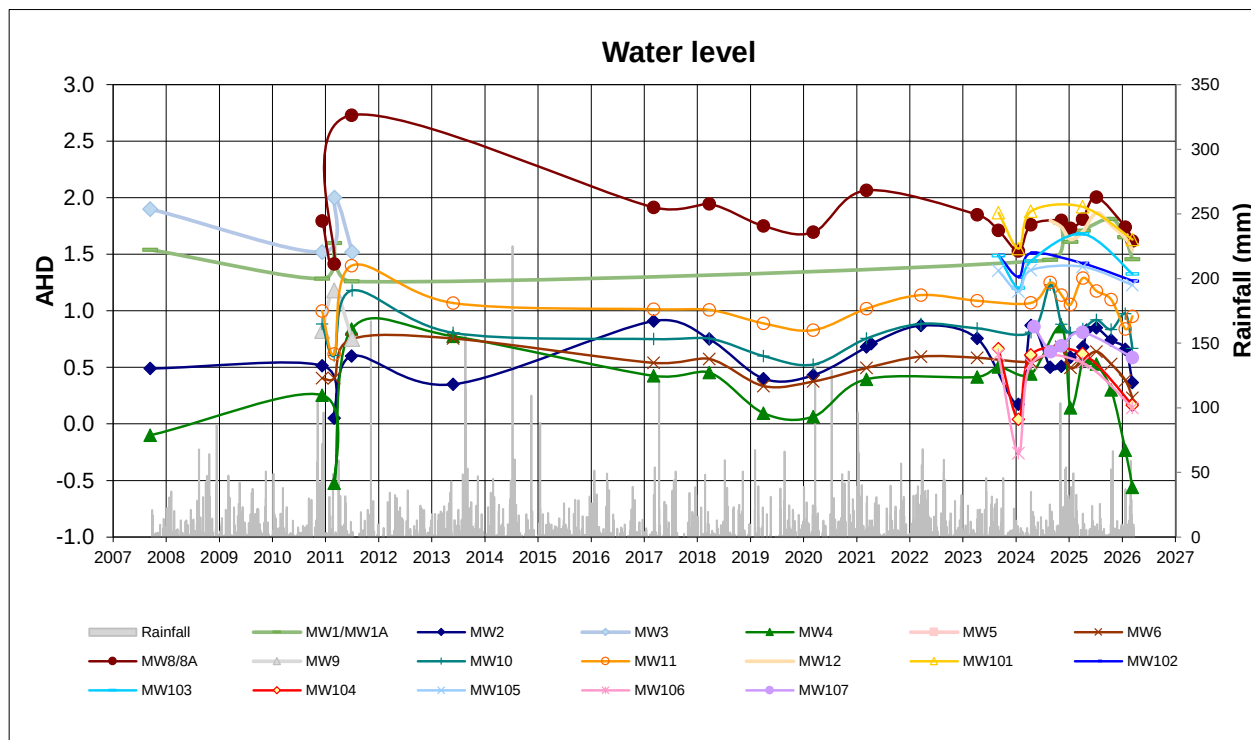




GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

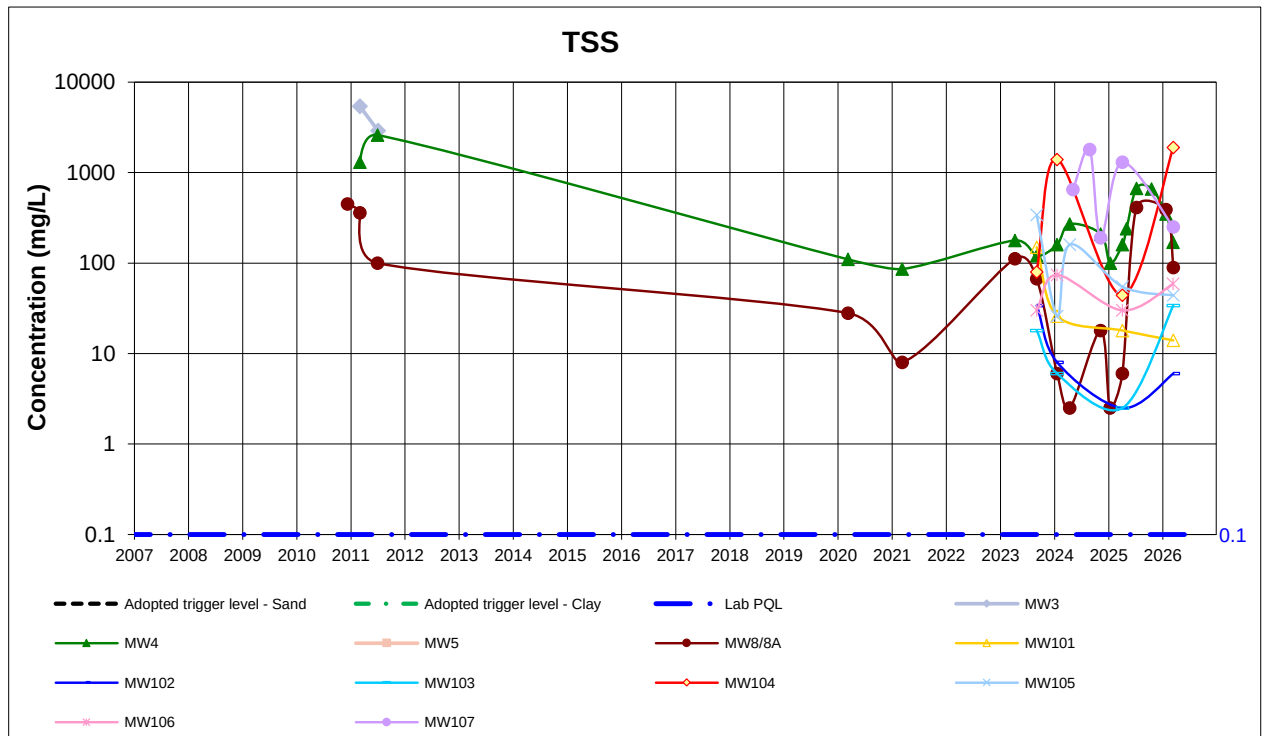
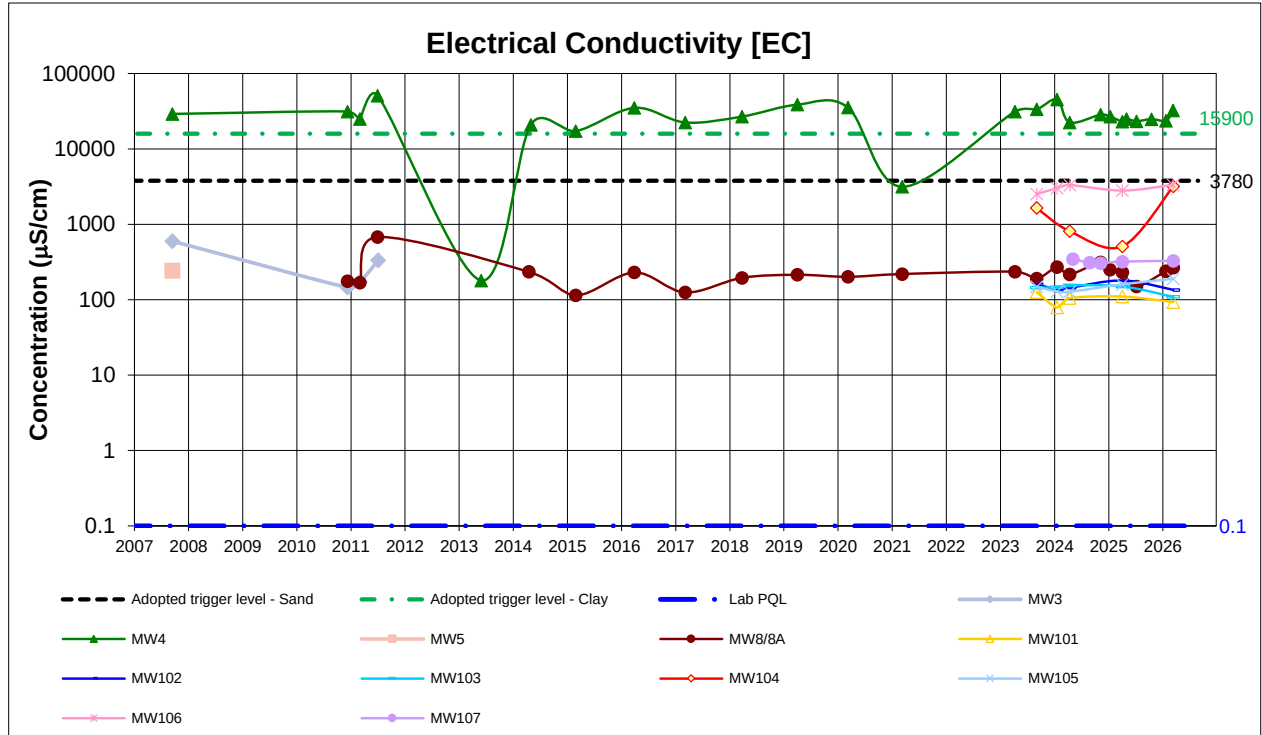


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

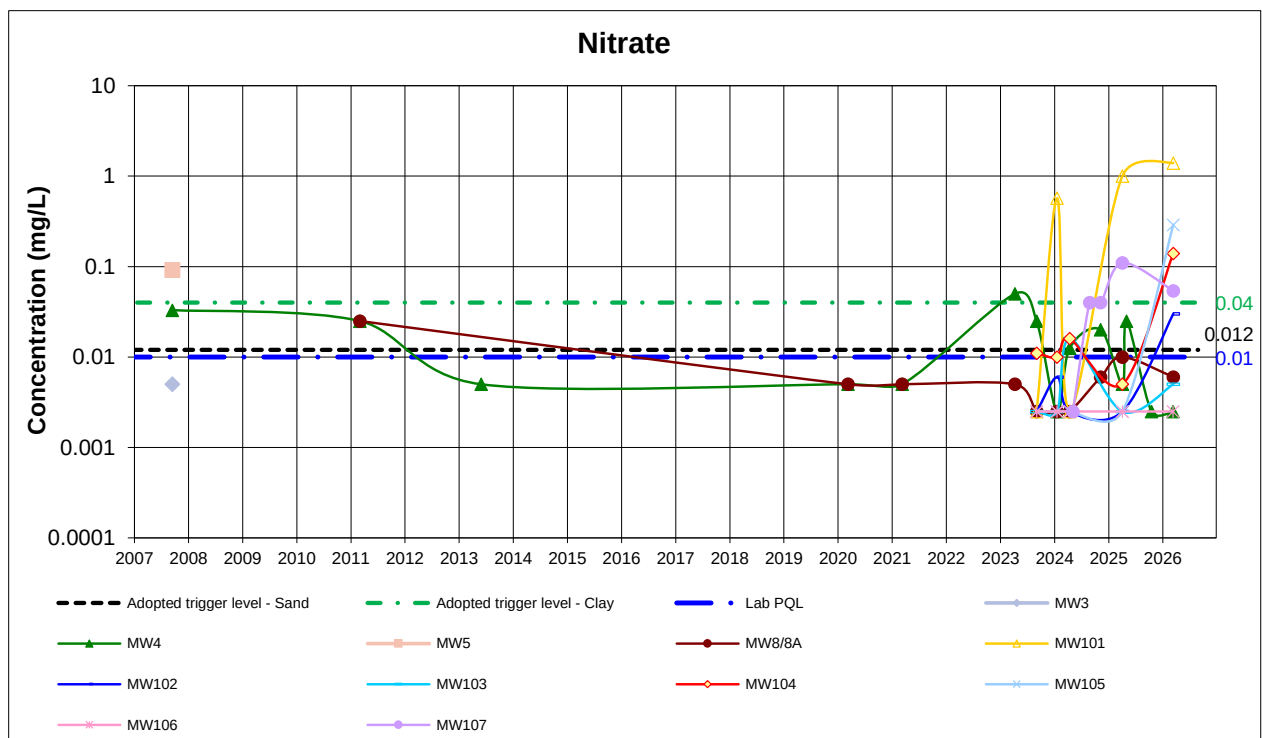
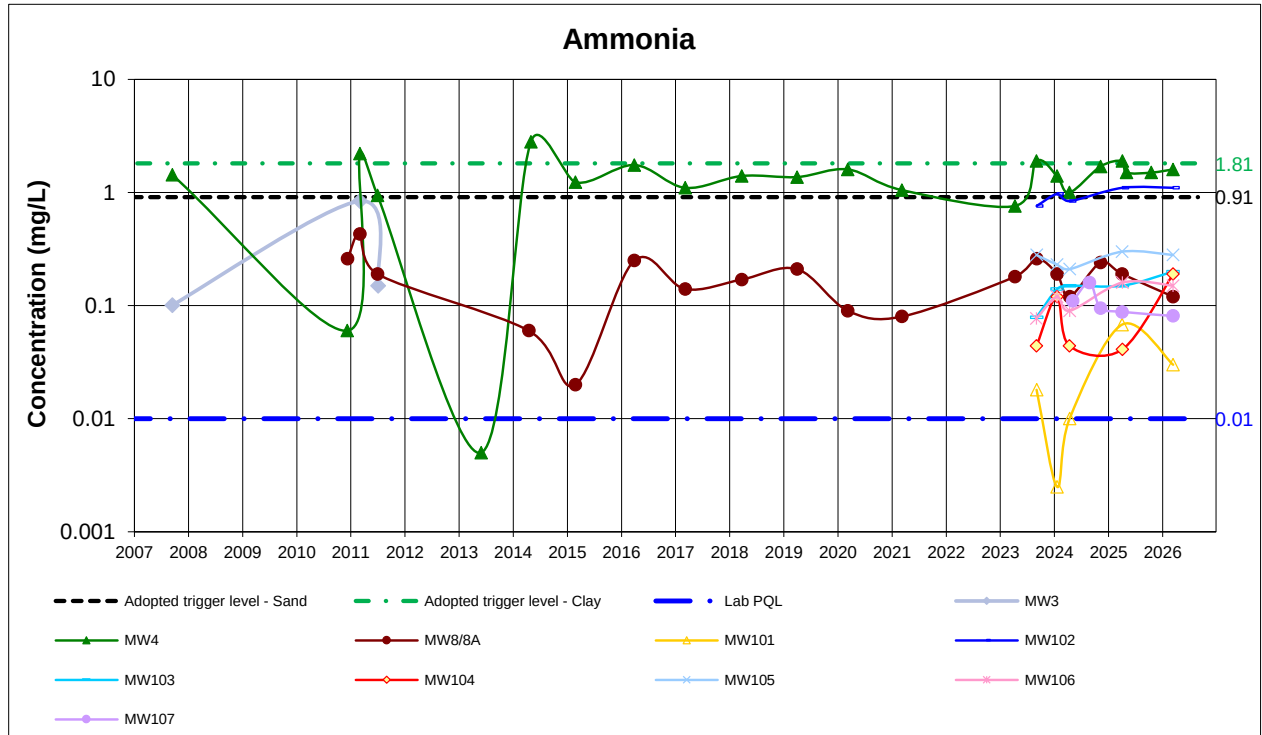


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

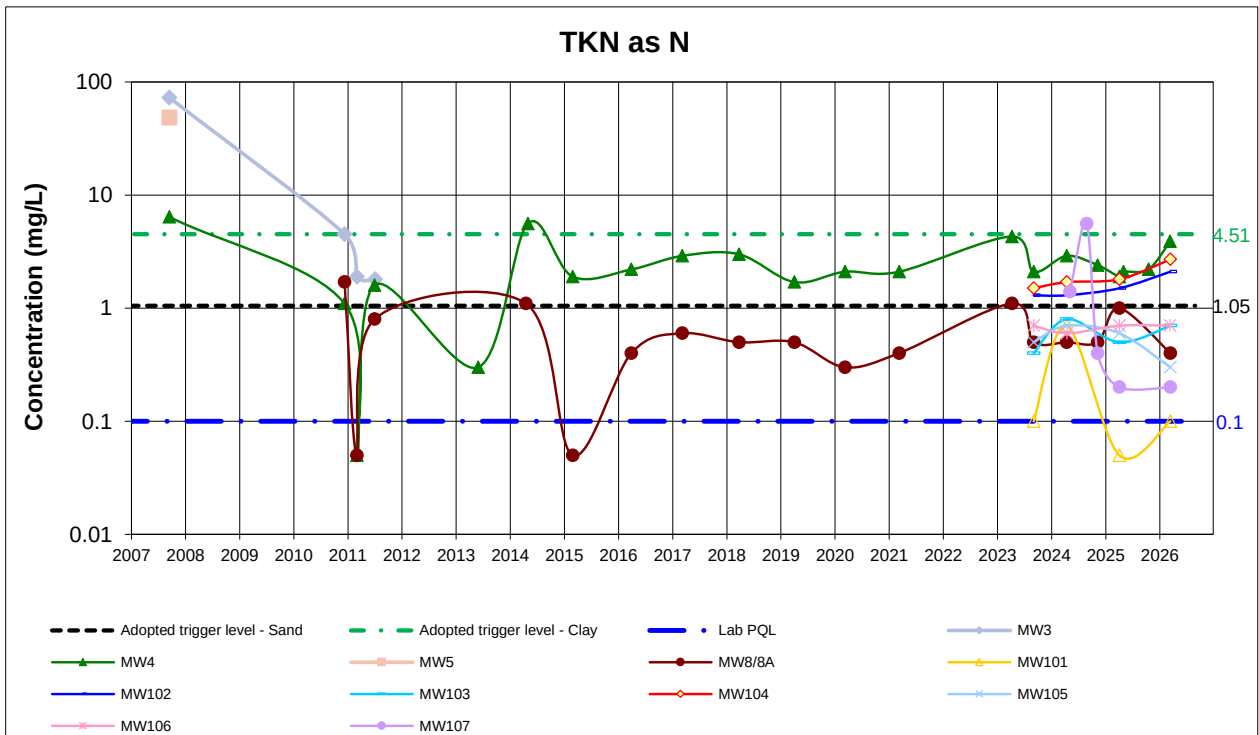
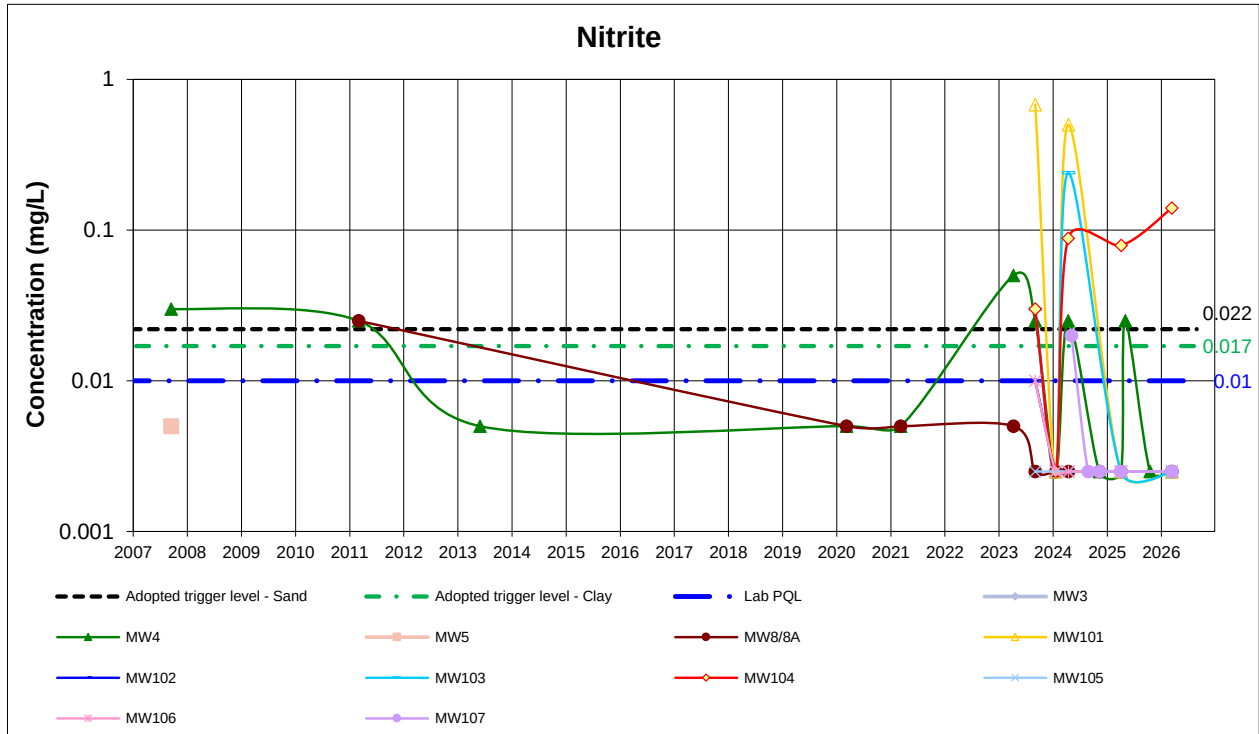


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

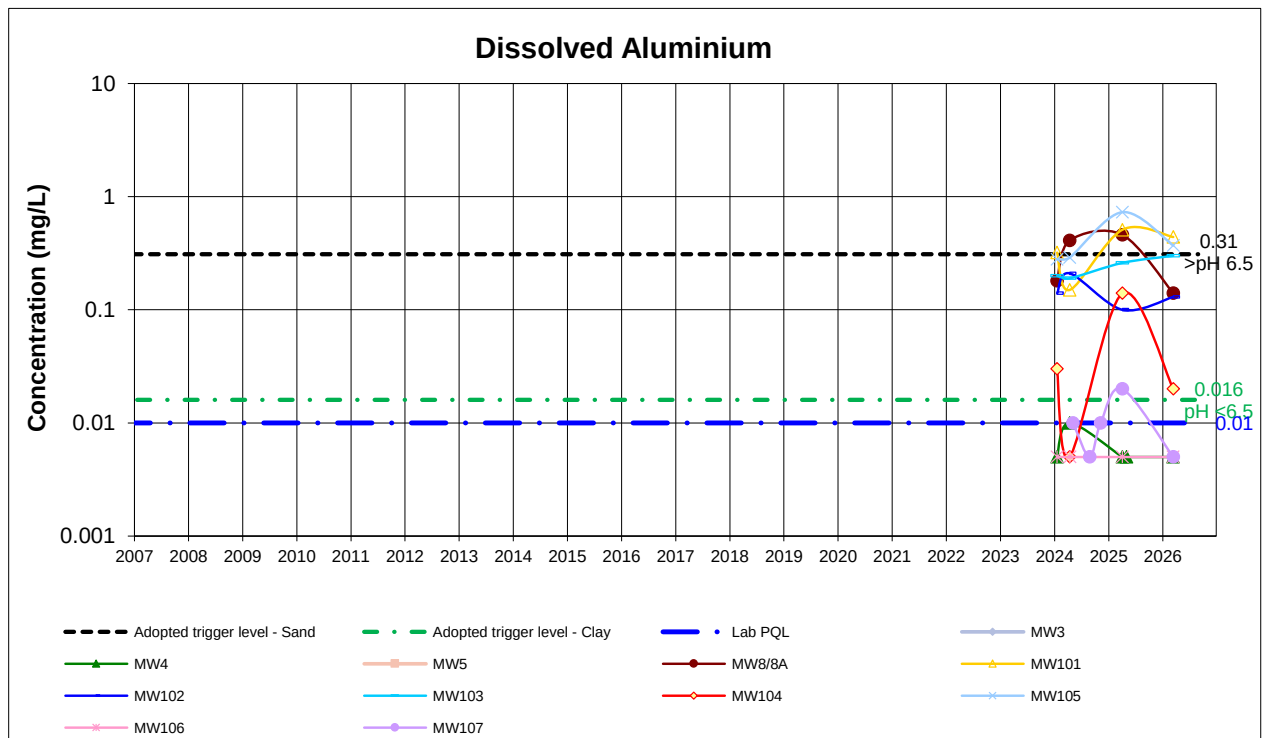
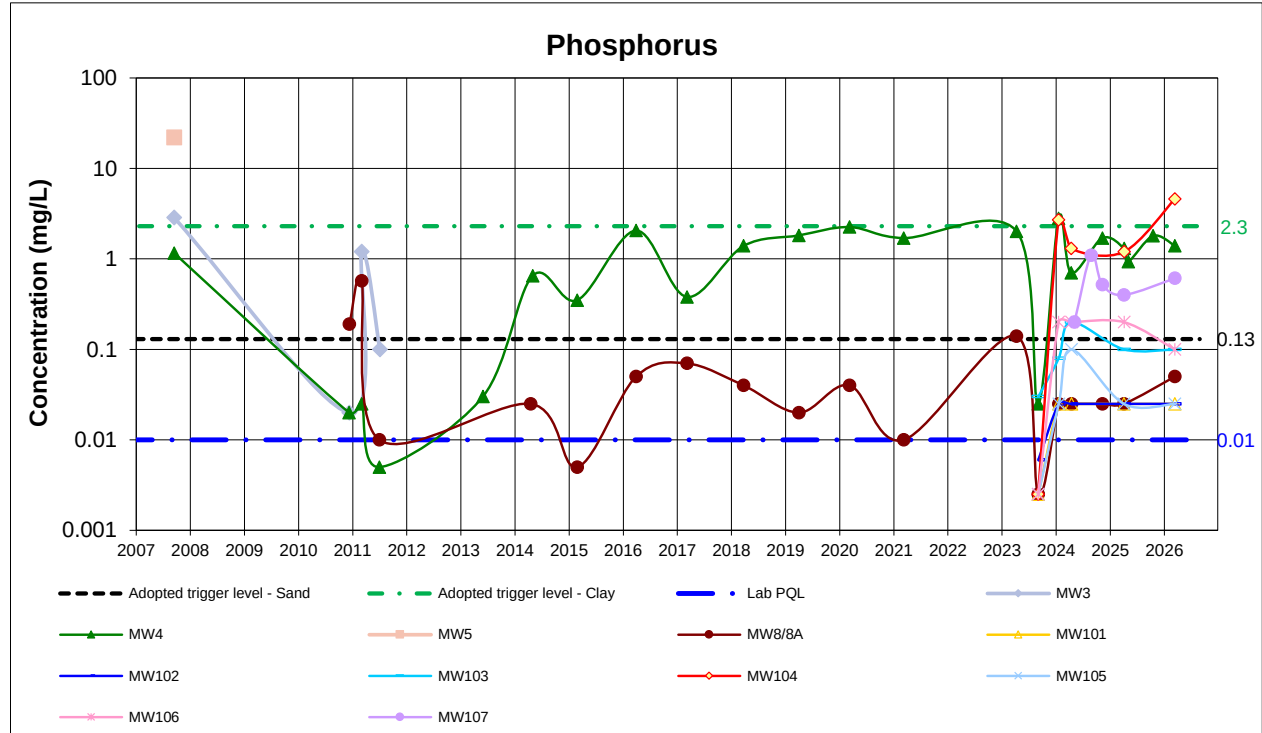


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

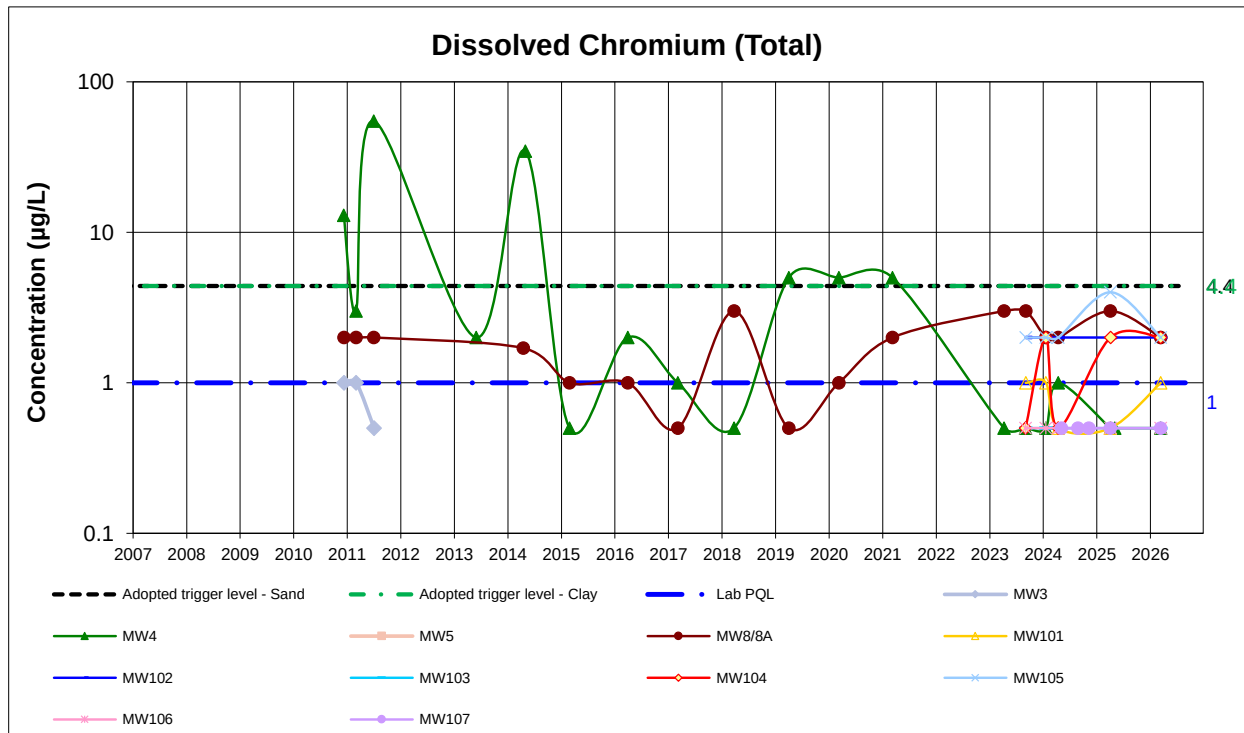
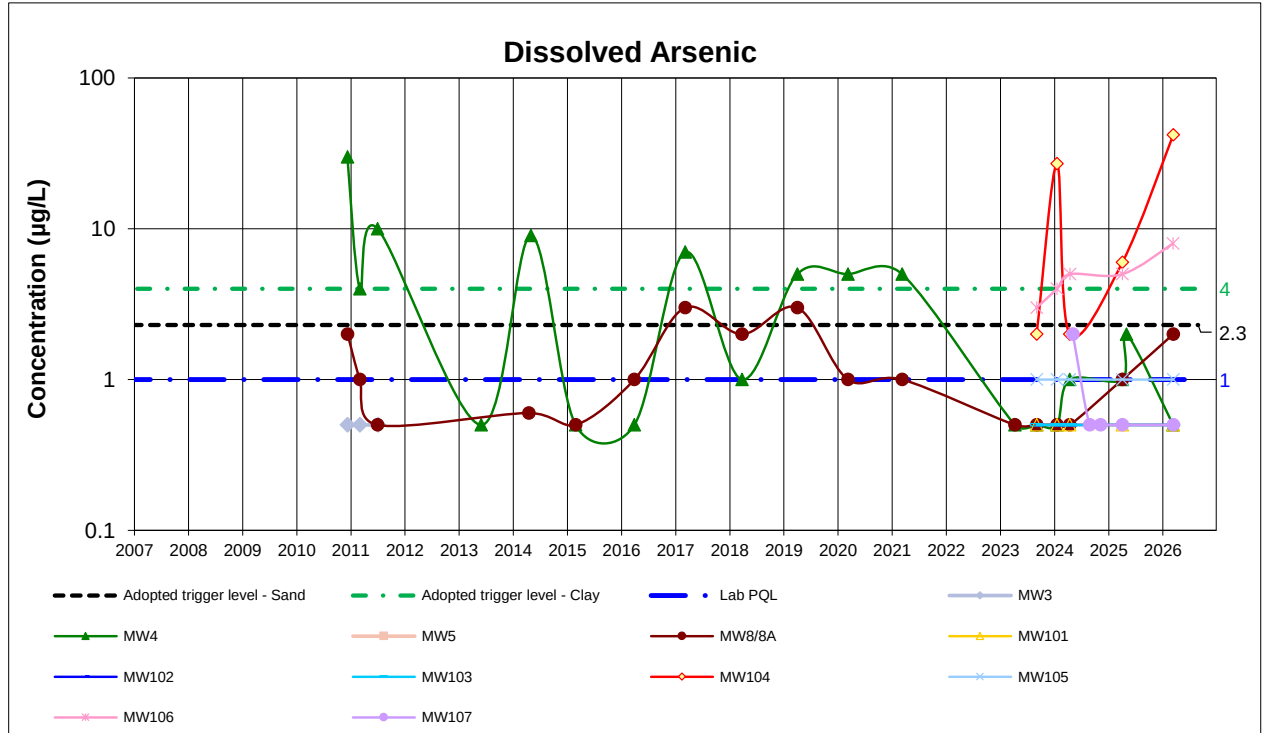


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

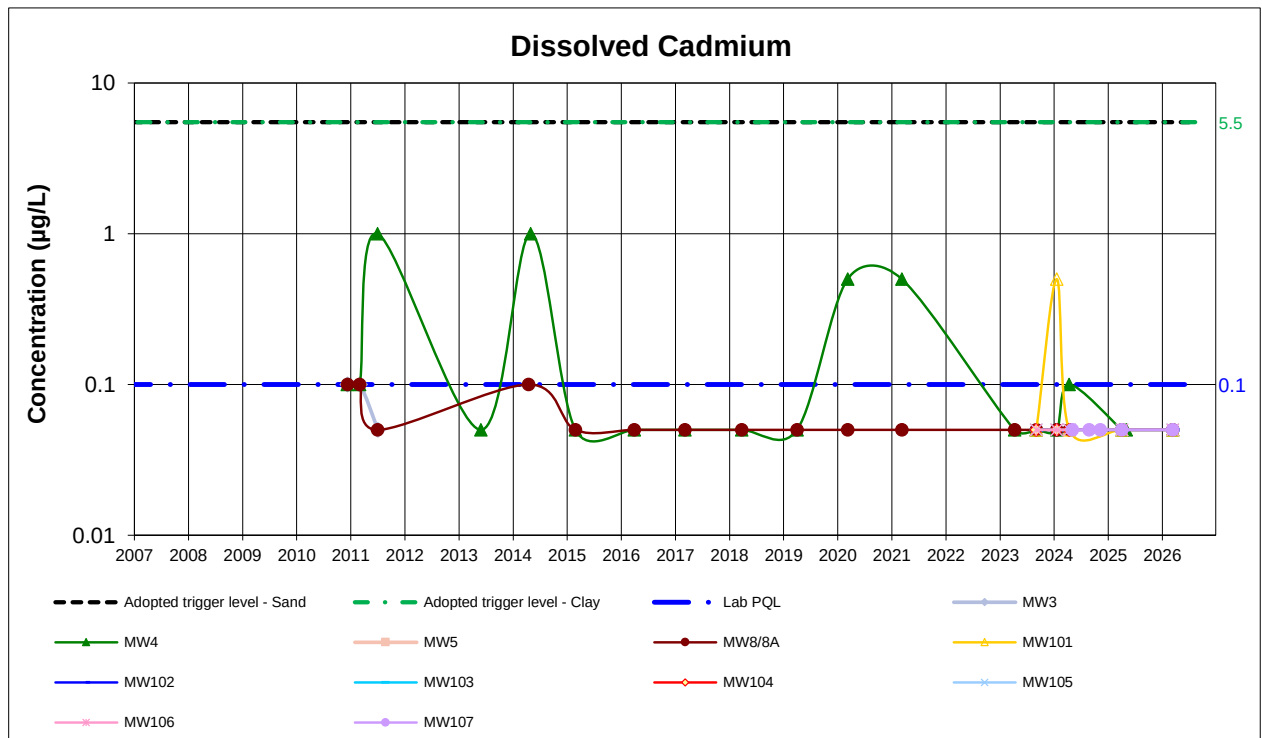
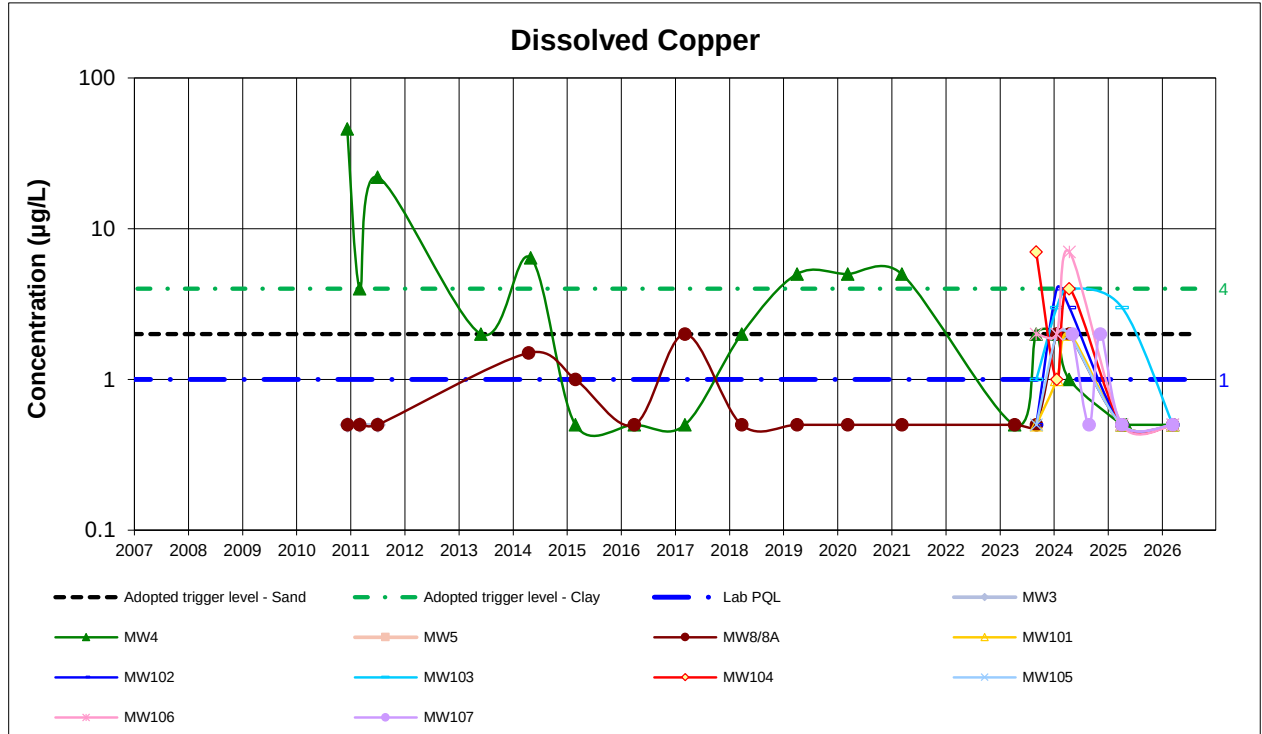


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

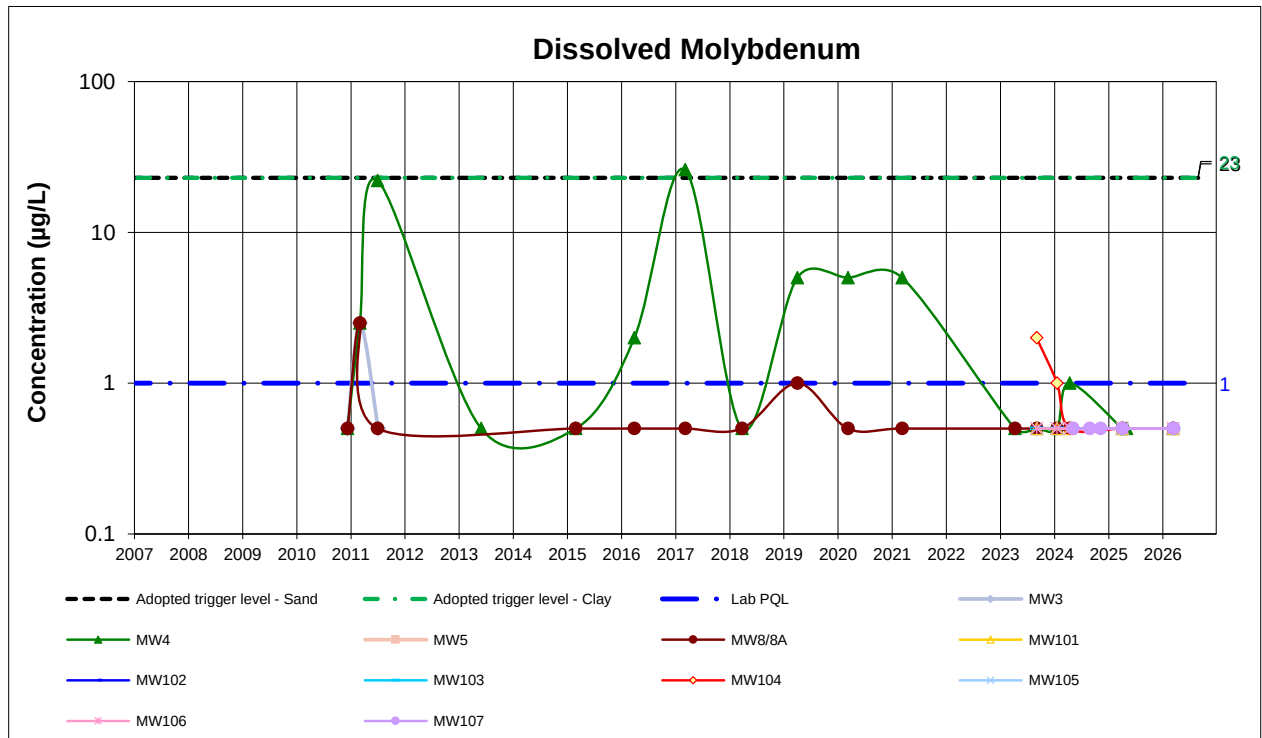
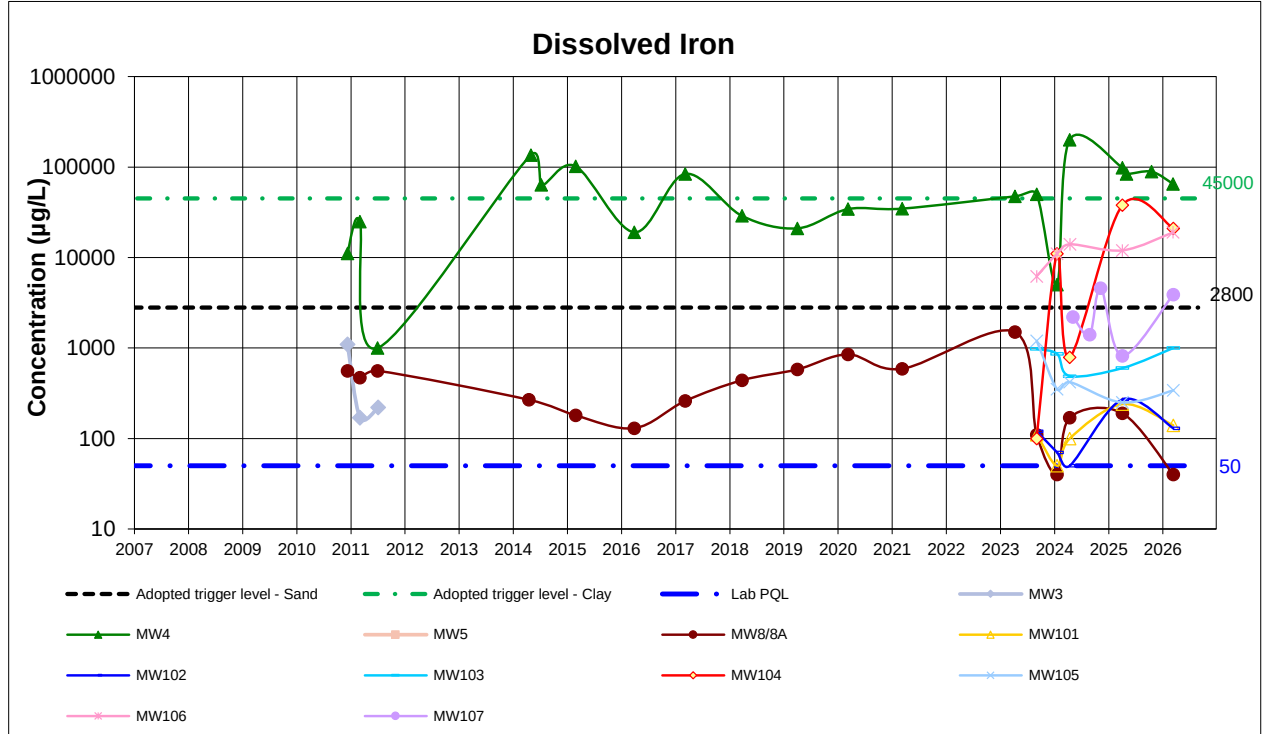


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

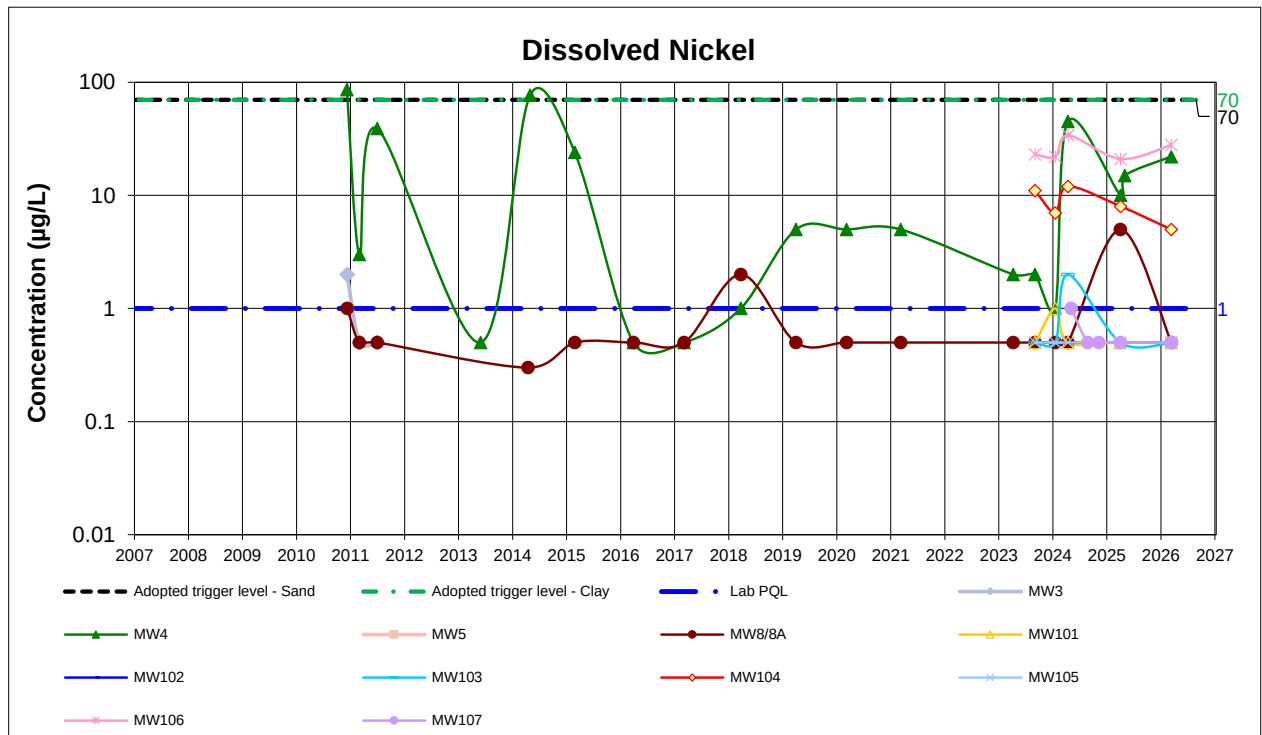
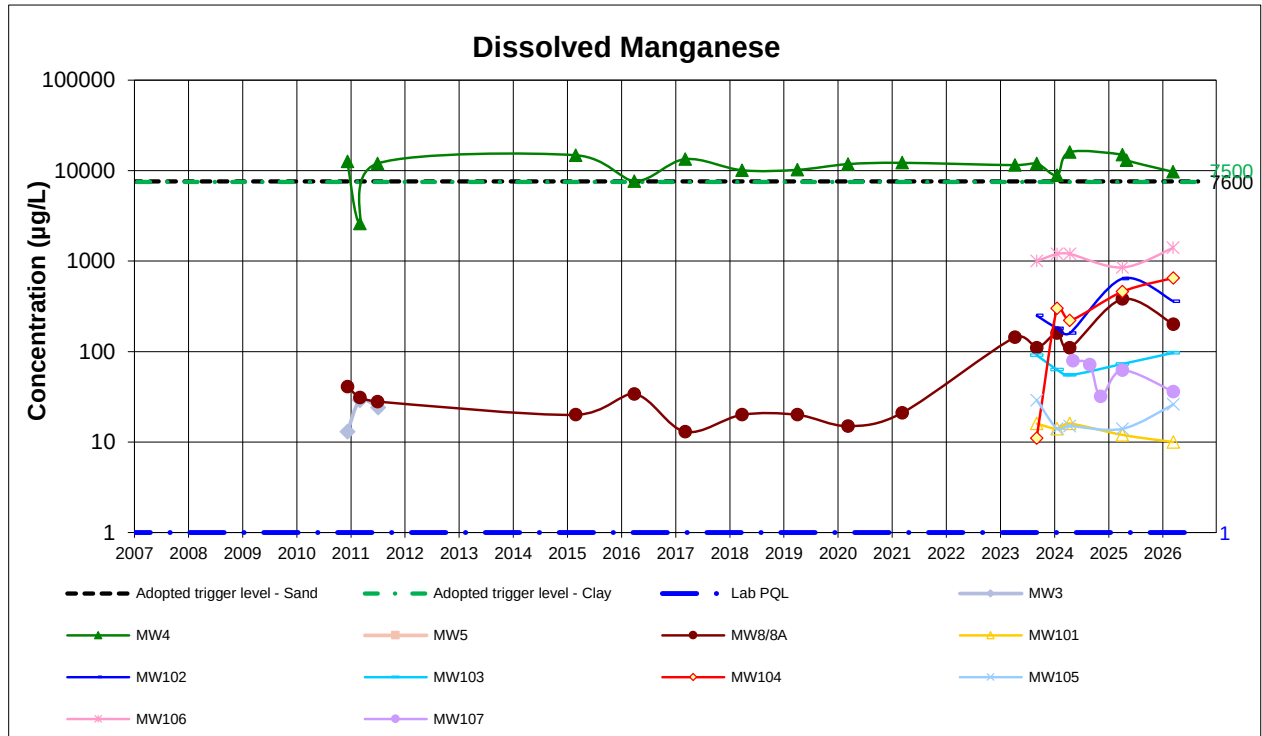


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

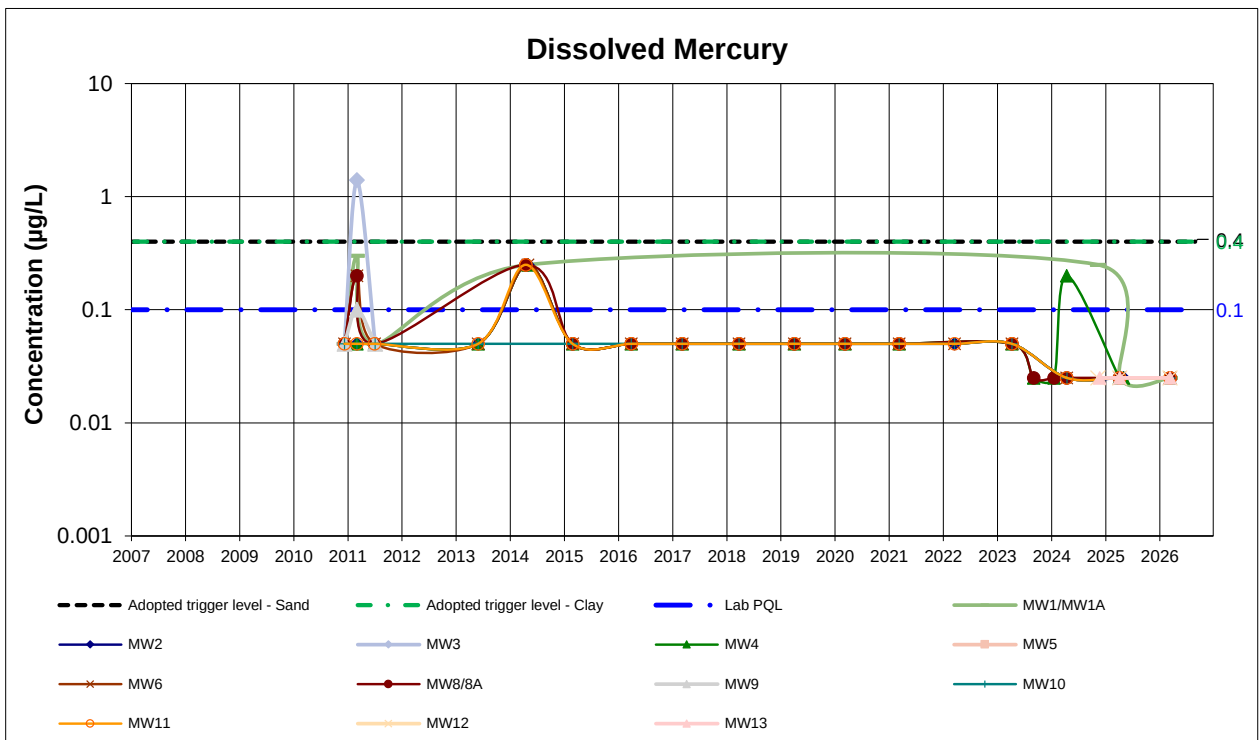
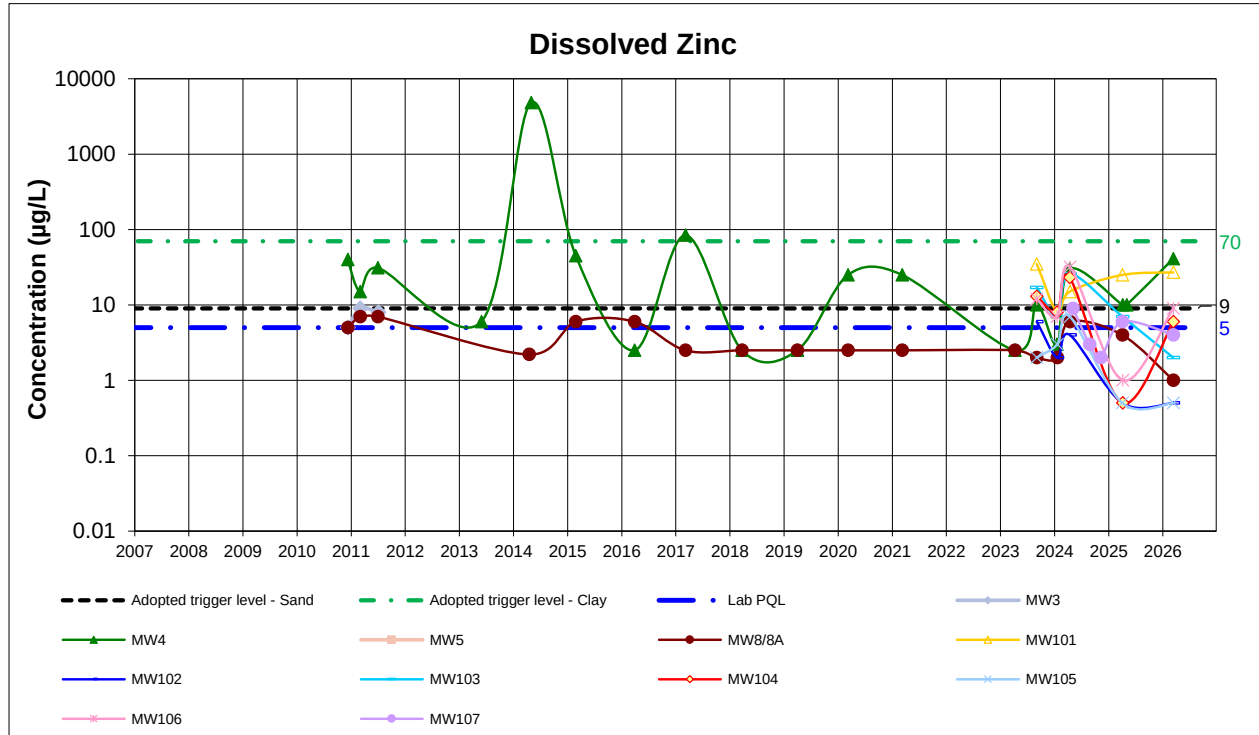


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

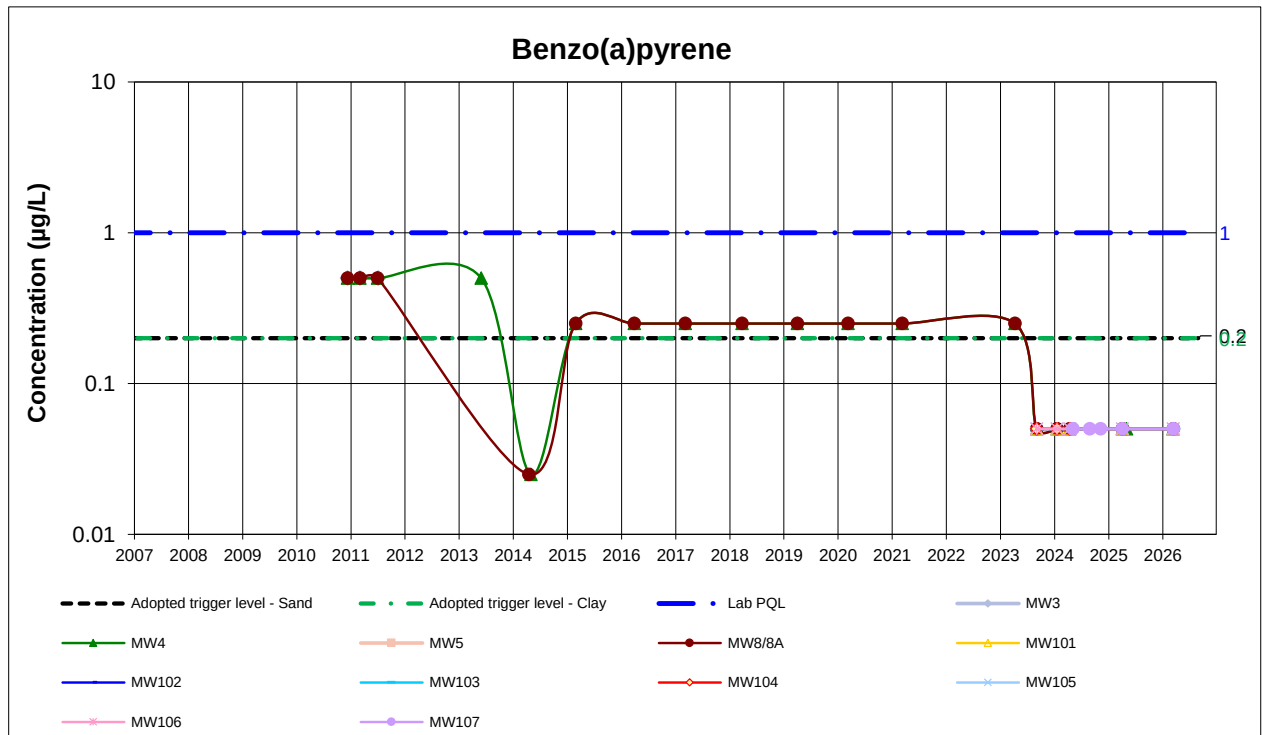
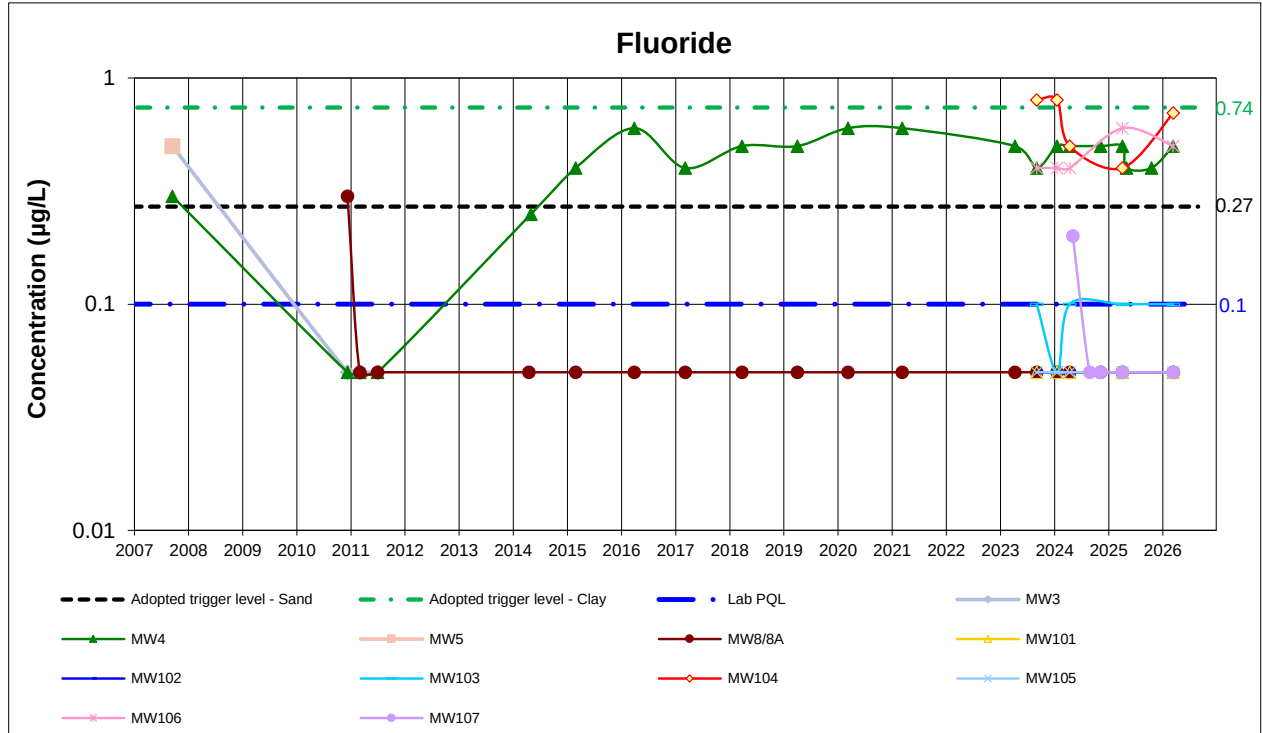


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

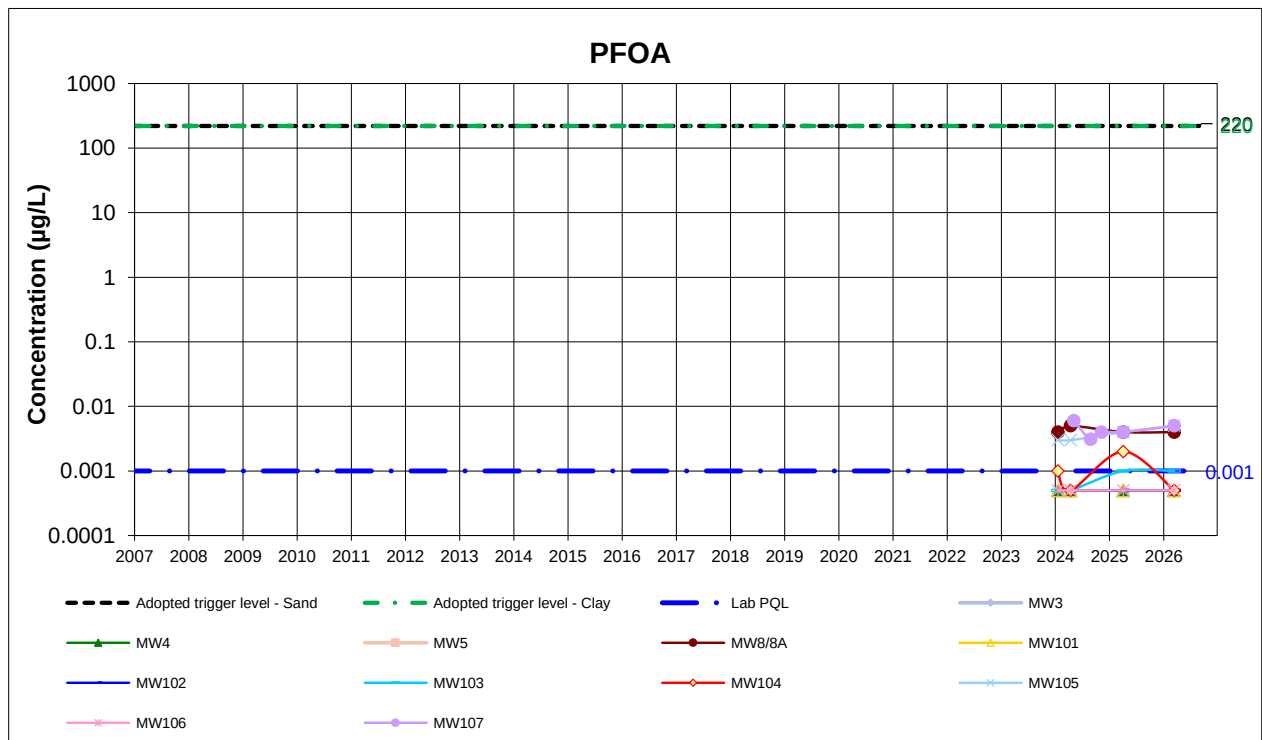
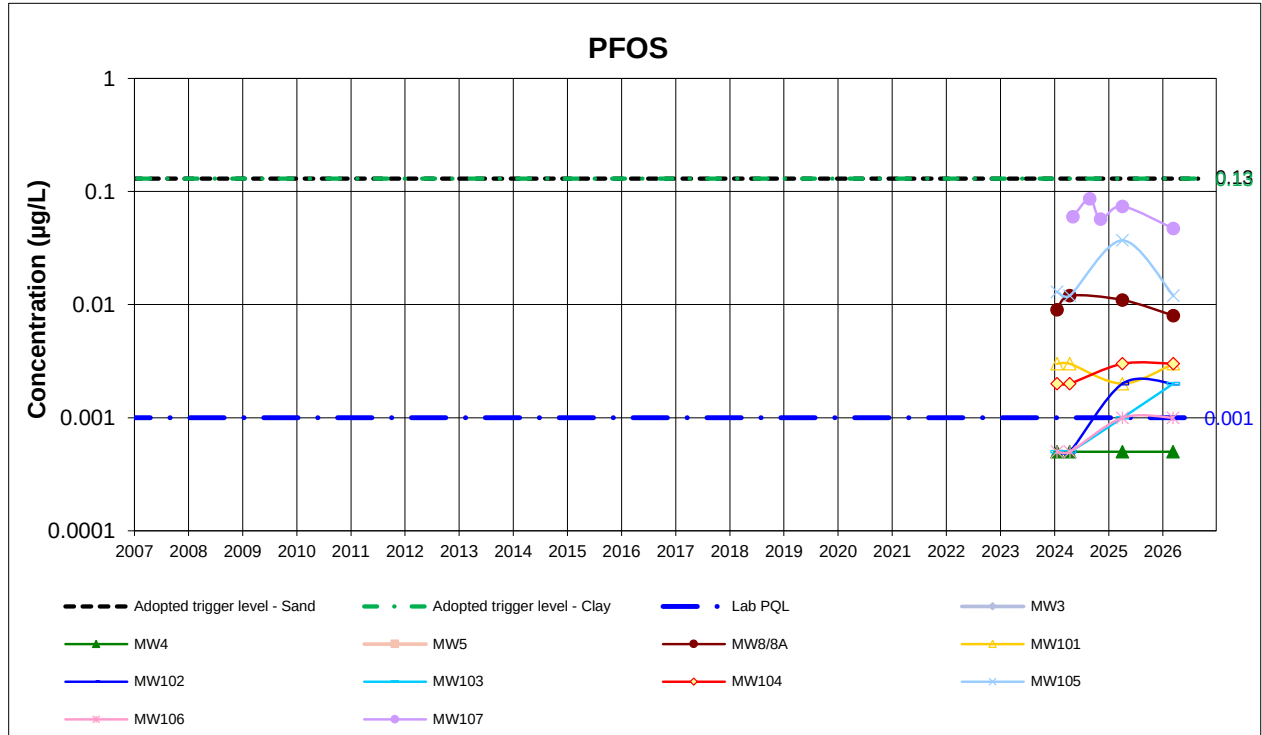


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

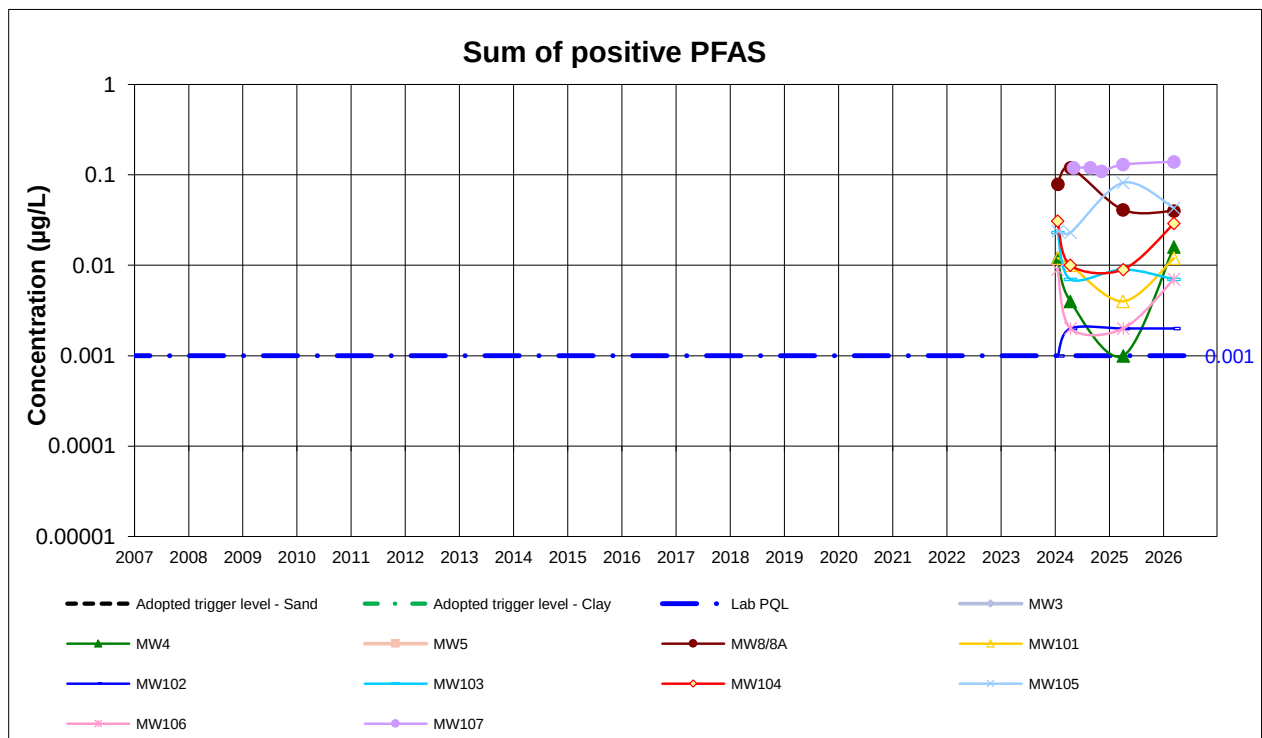
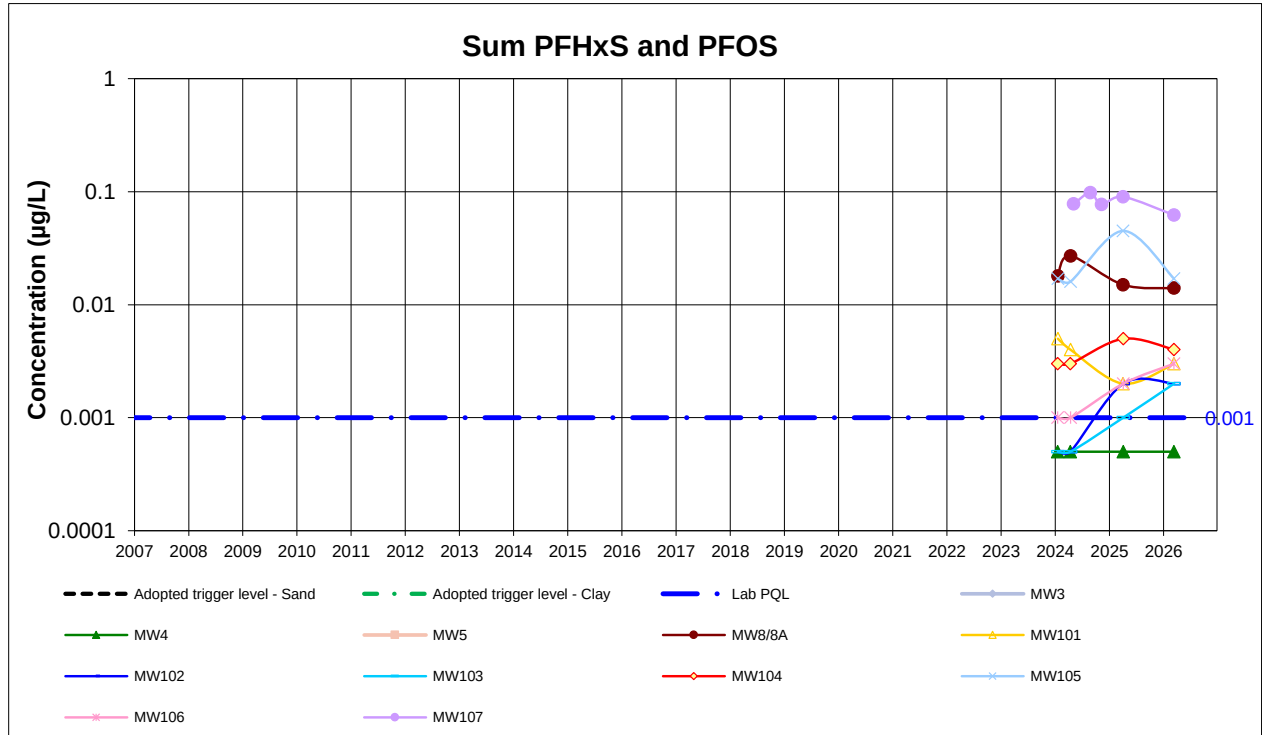


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

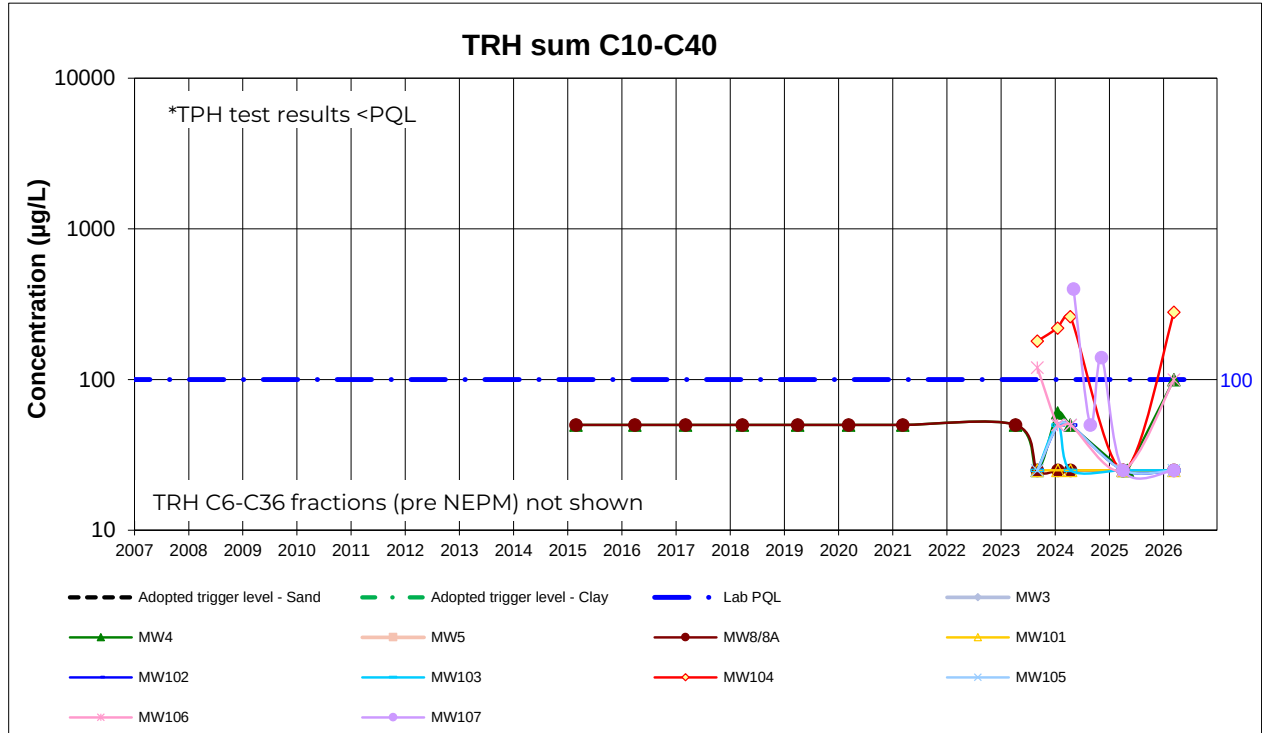


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

GROUNDWATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to May 2026

Data set: All data

Project: 39920.09

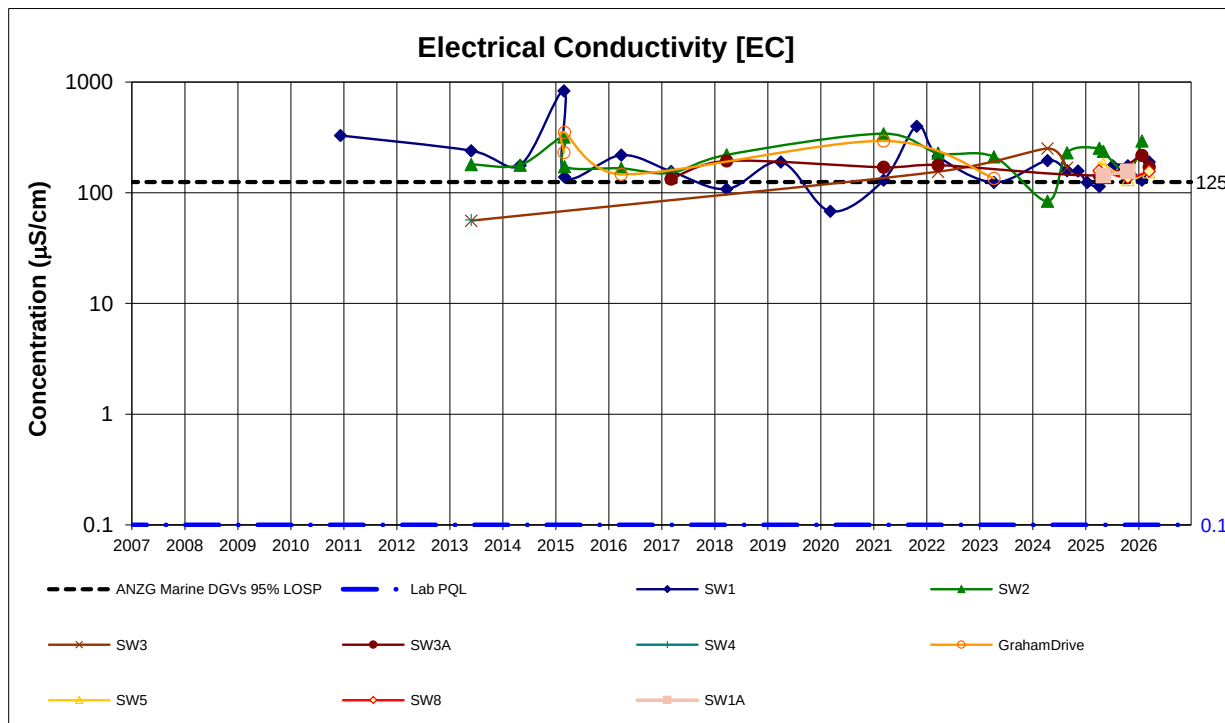
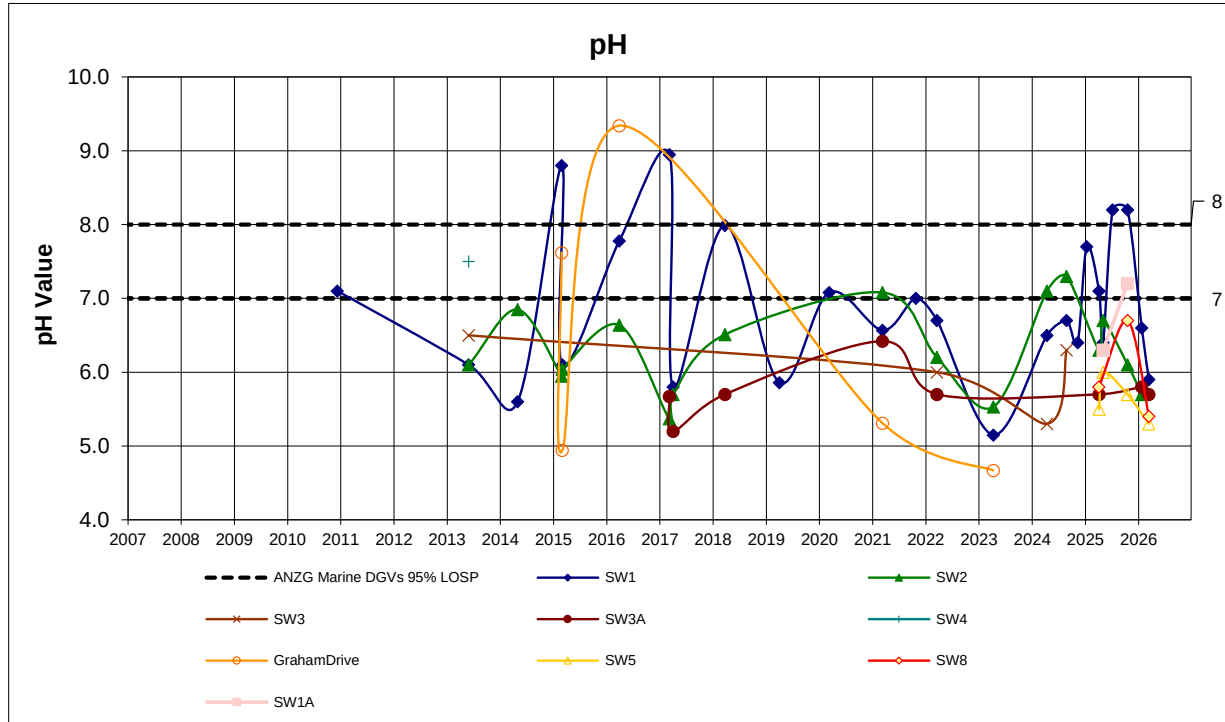


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no criteria

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

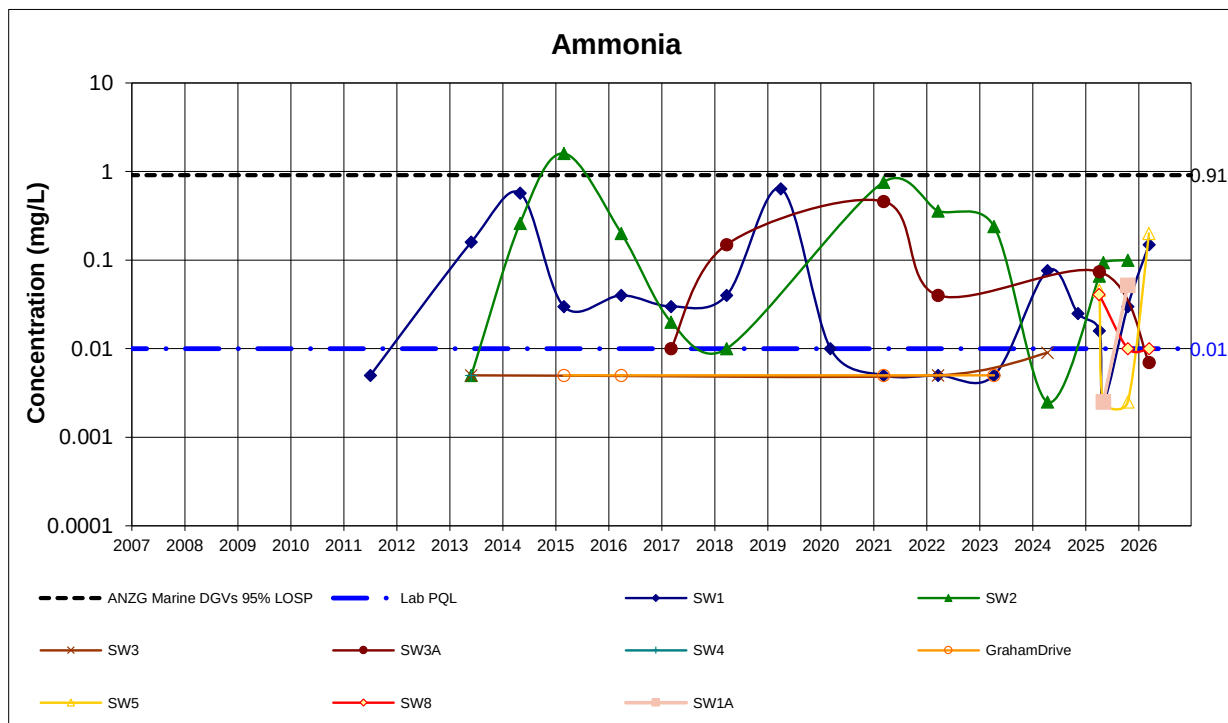
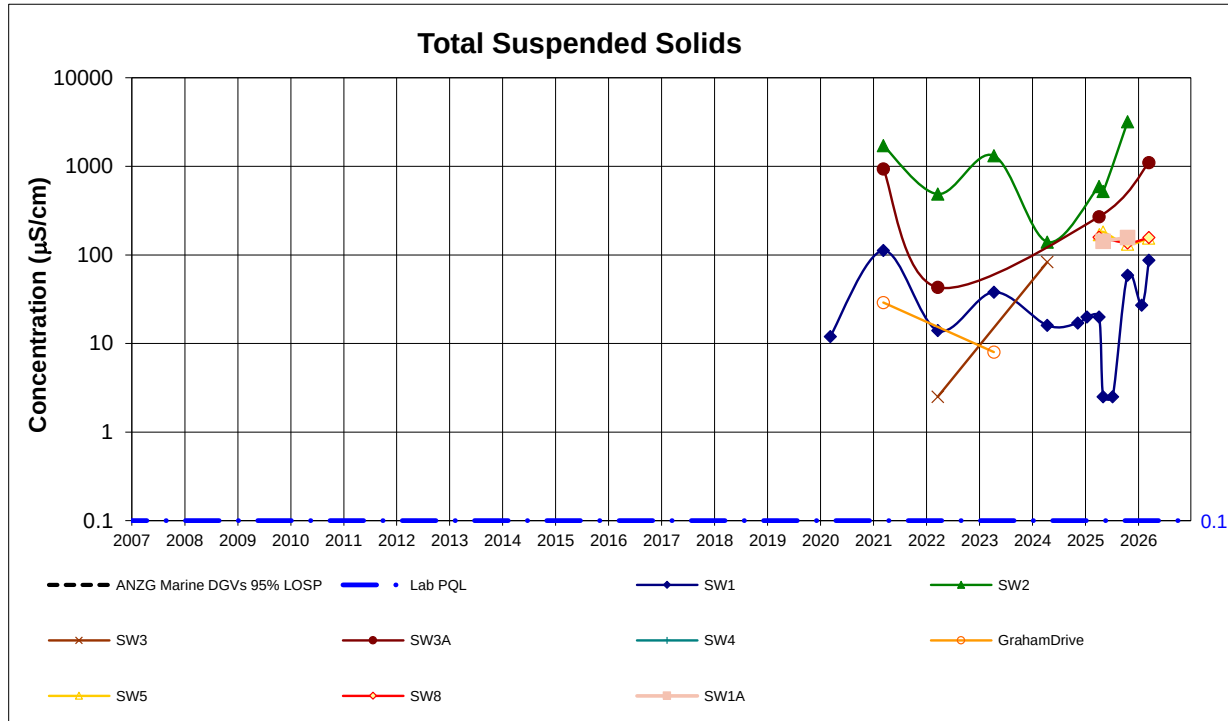


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

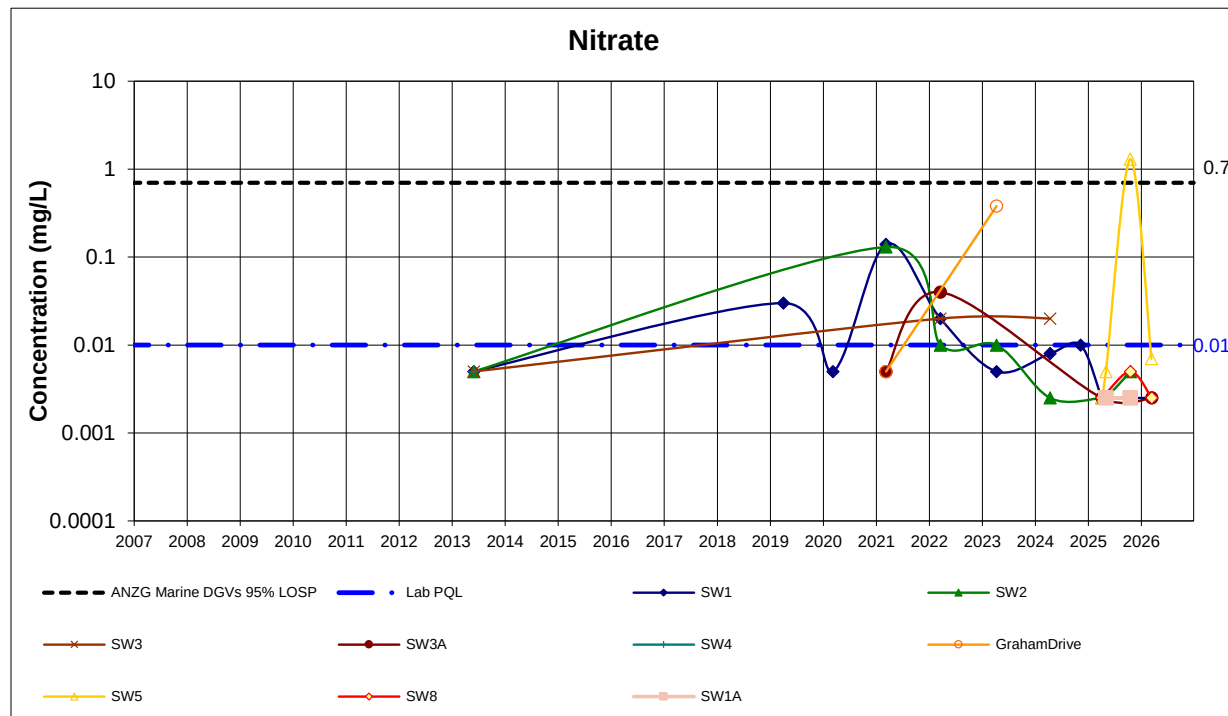
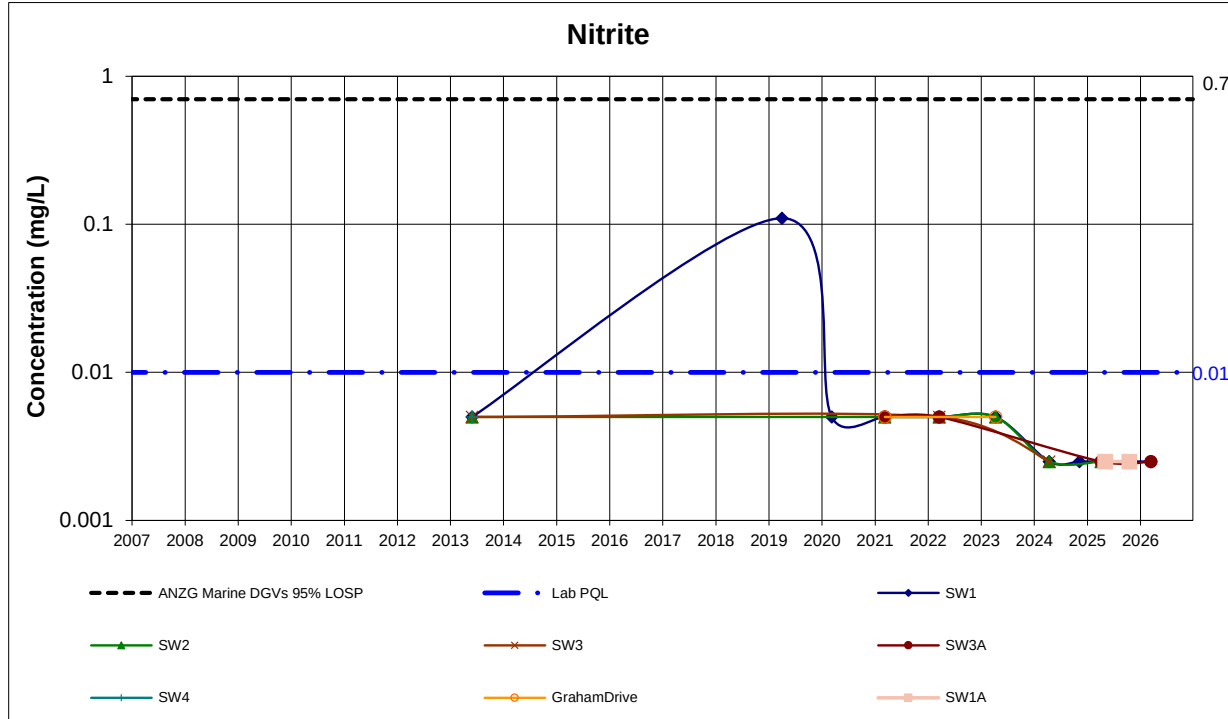


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

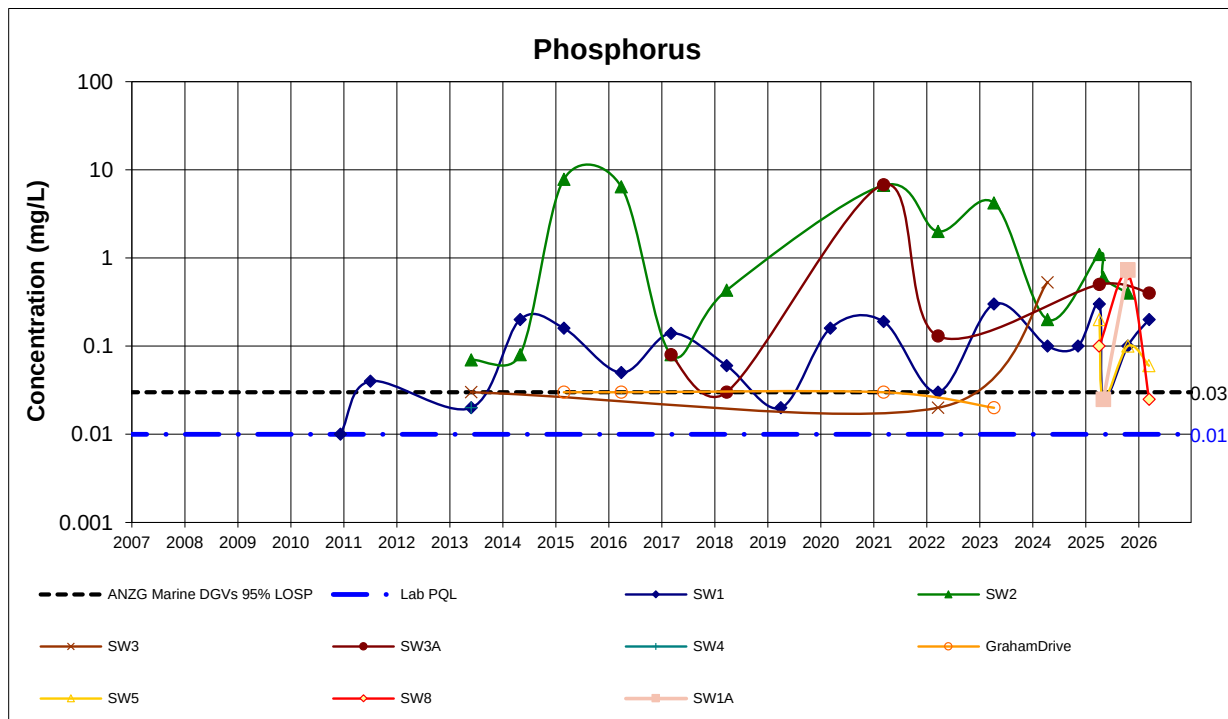
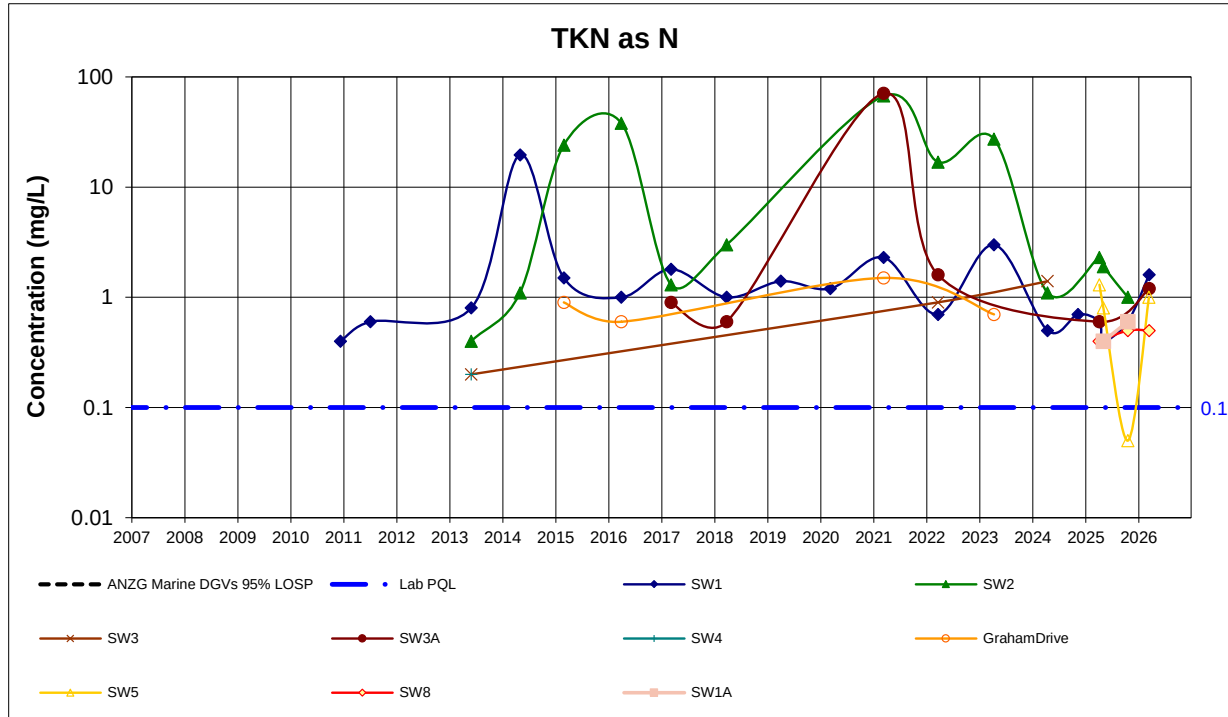


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

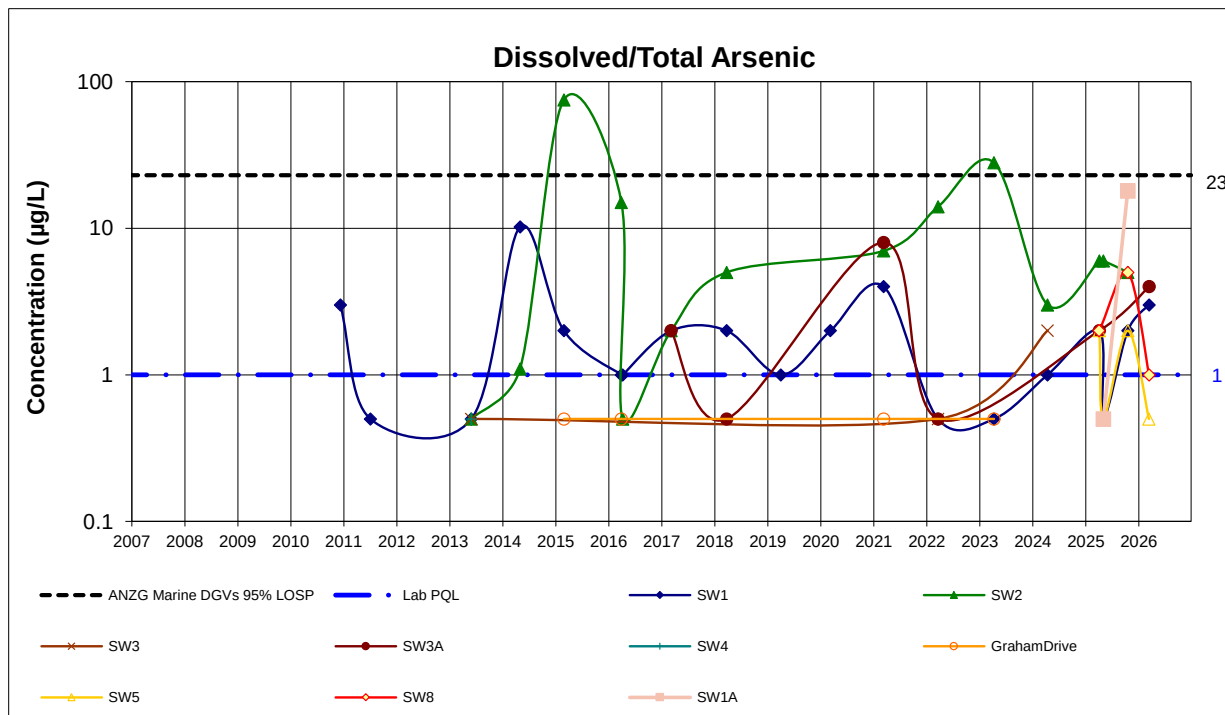
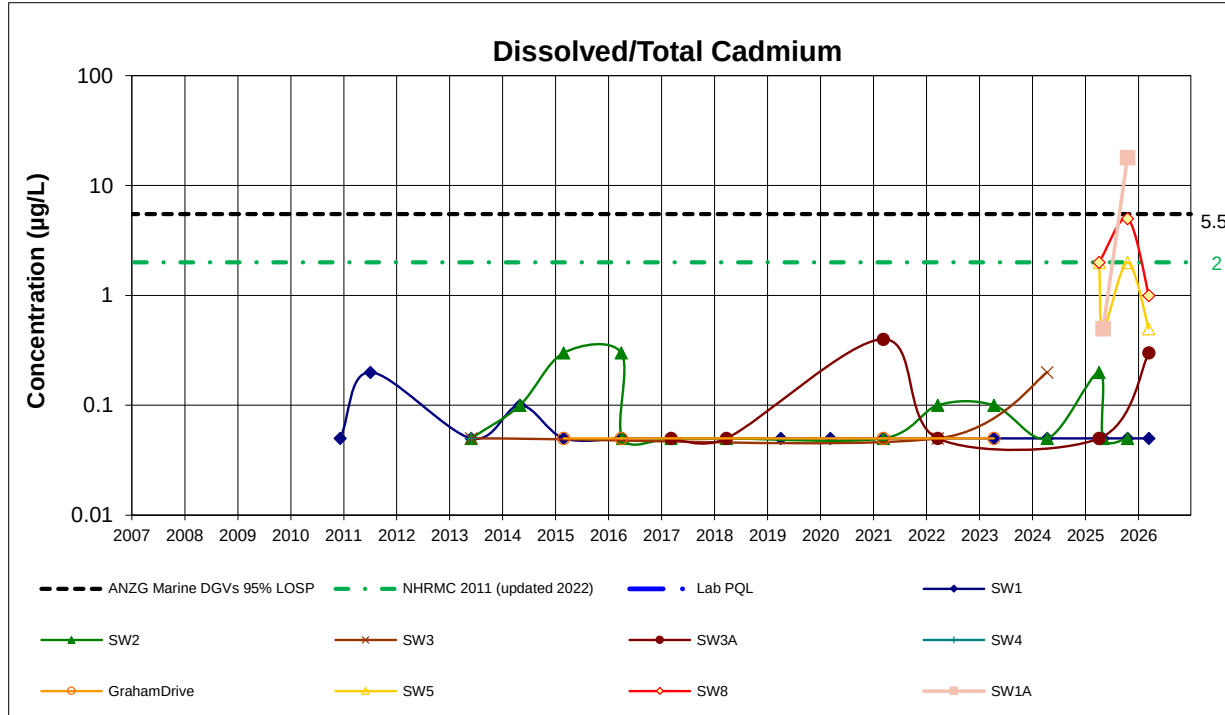


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

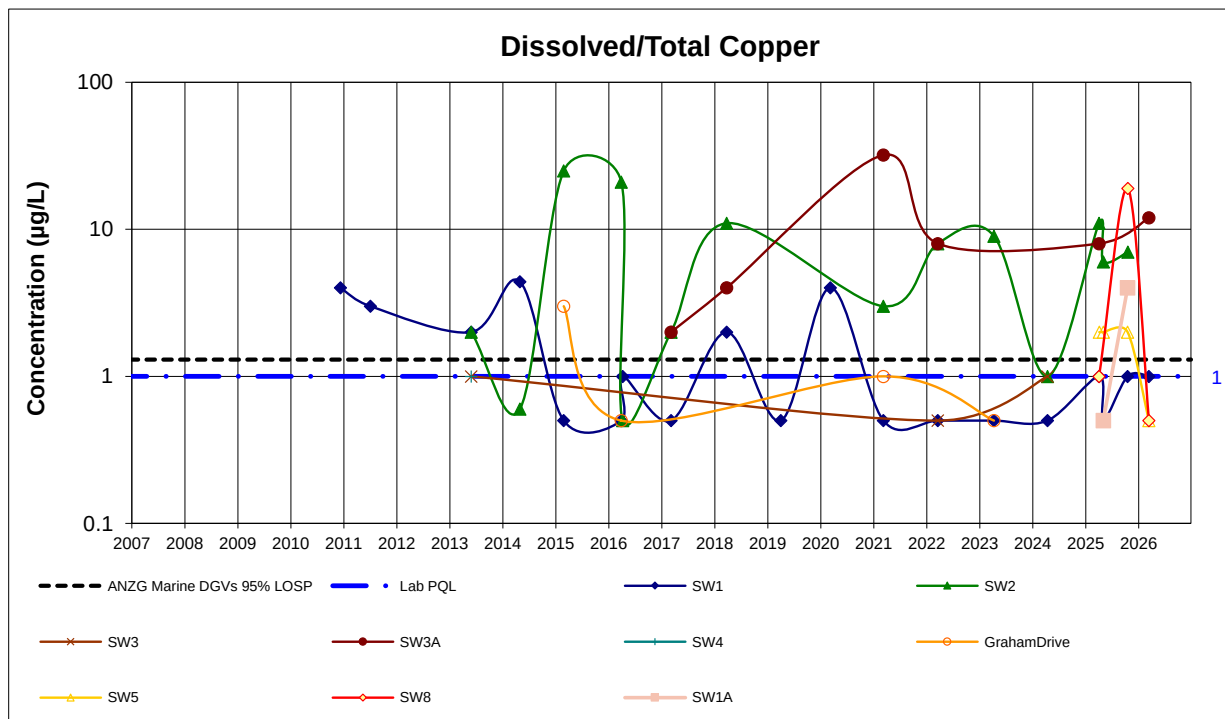
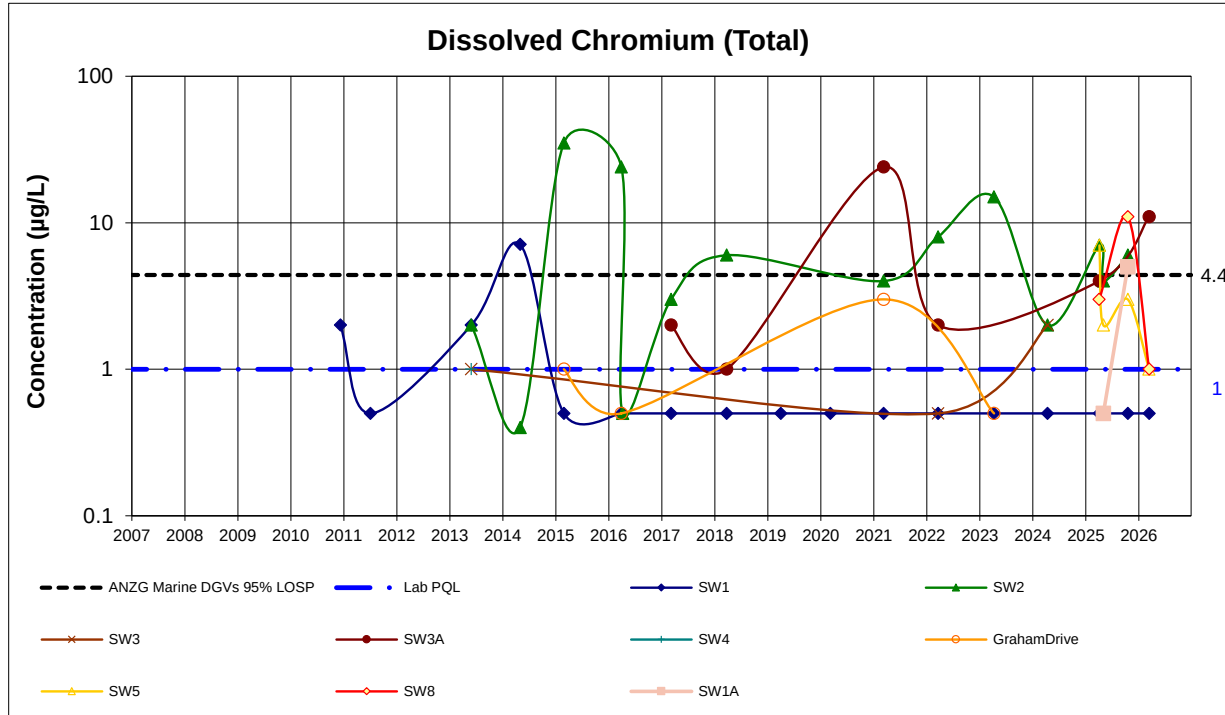


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

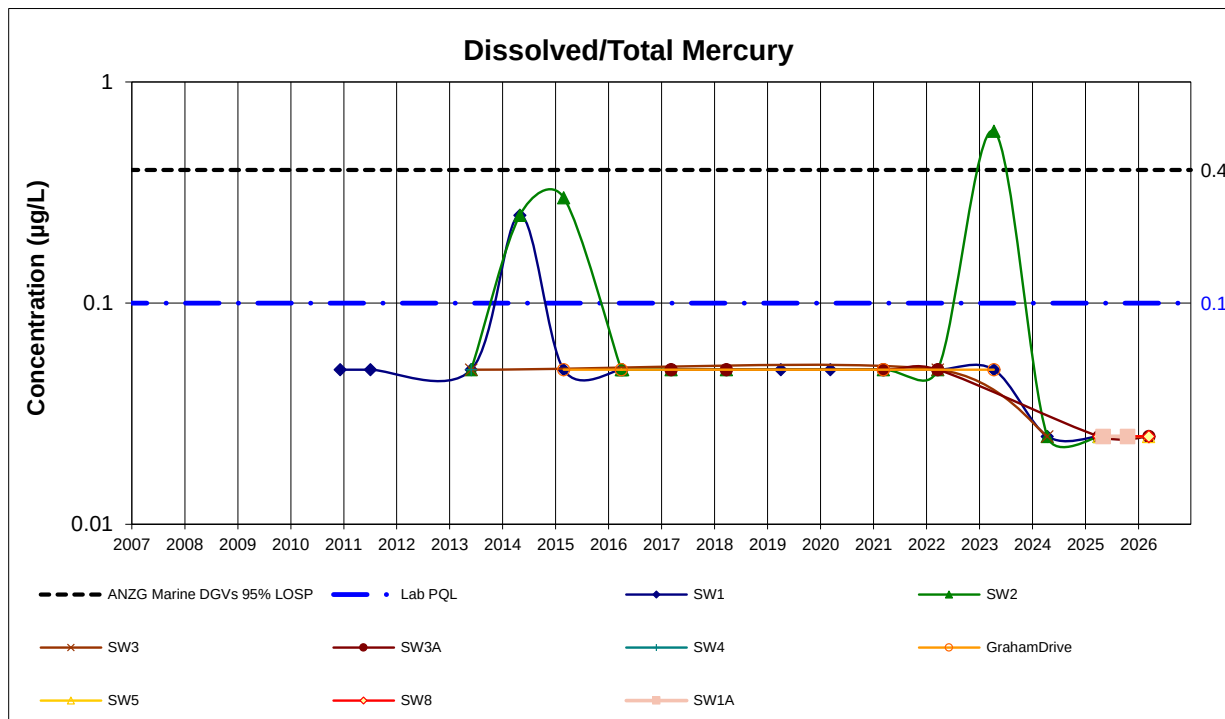
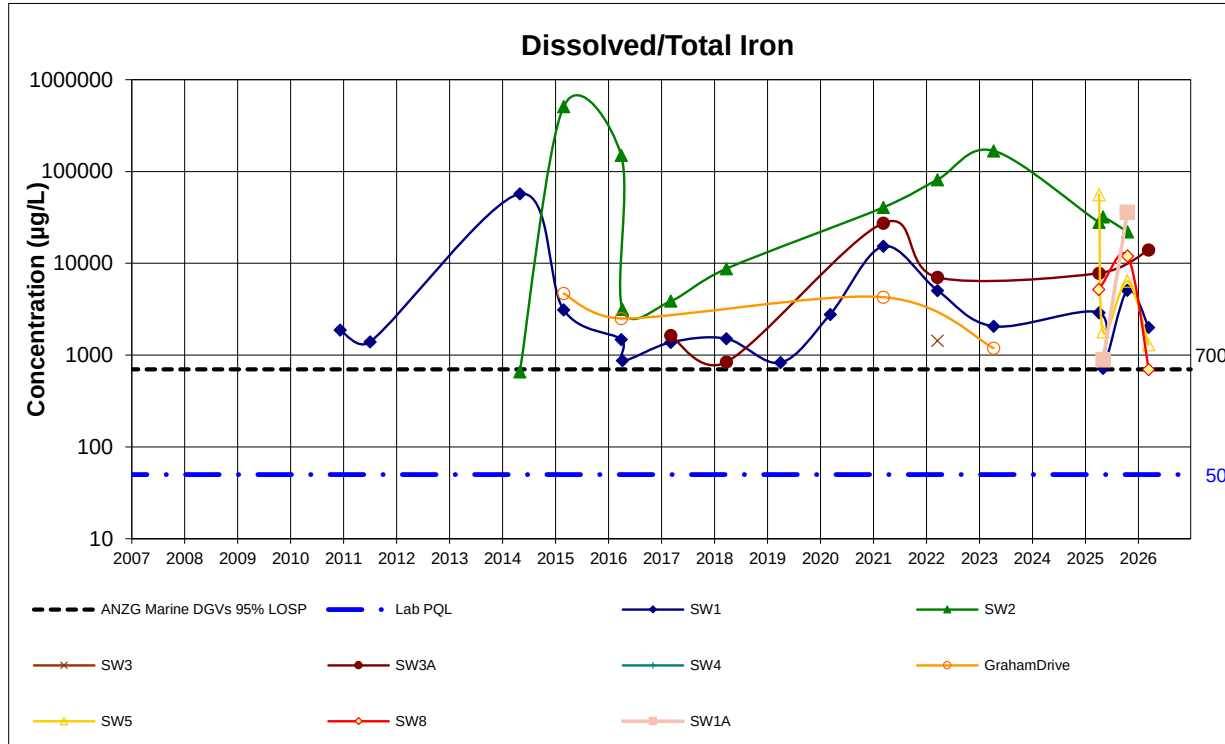


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

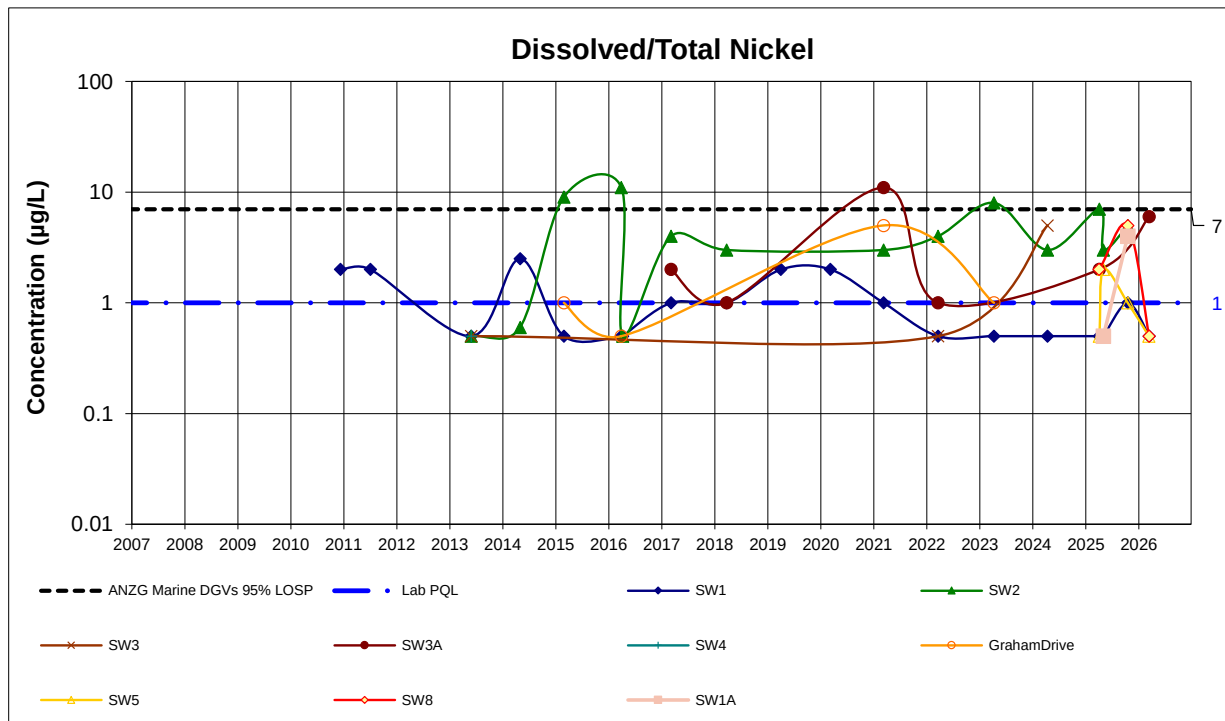
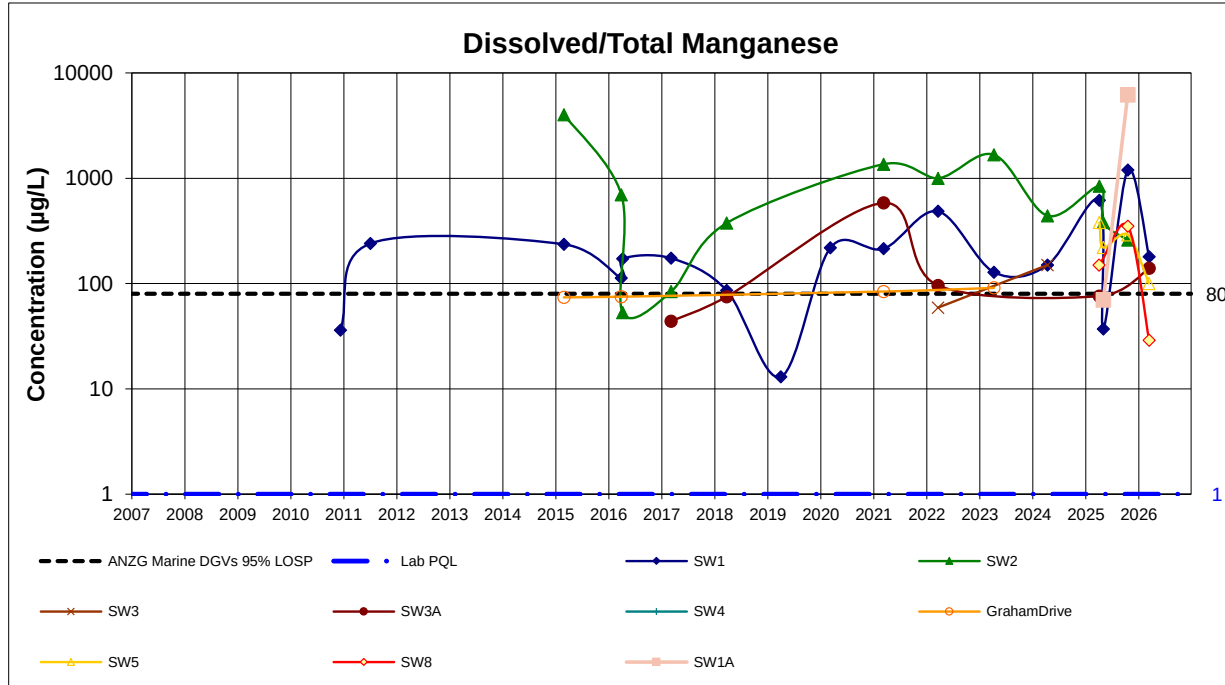


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

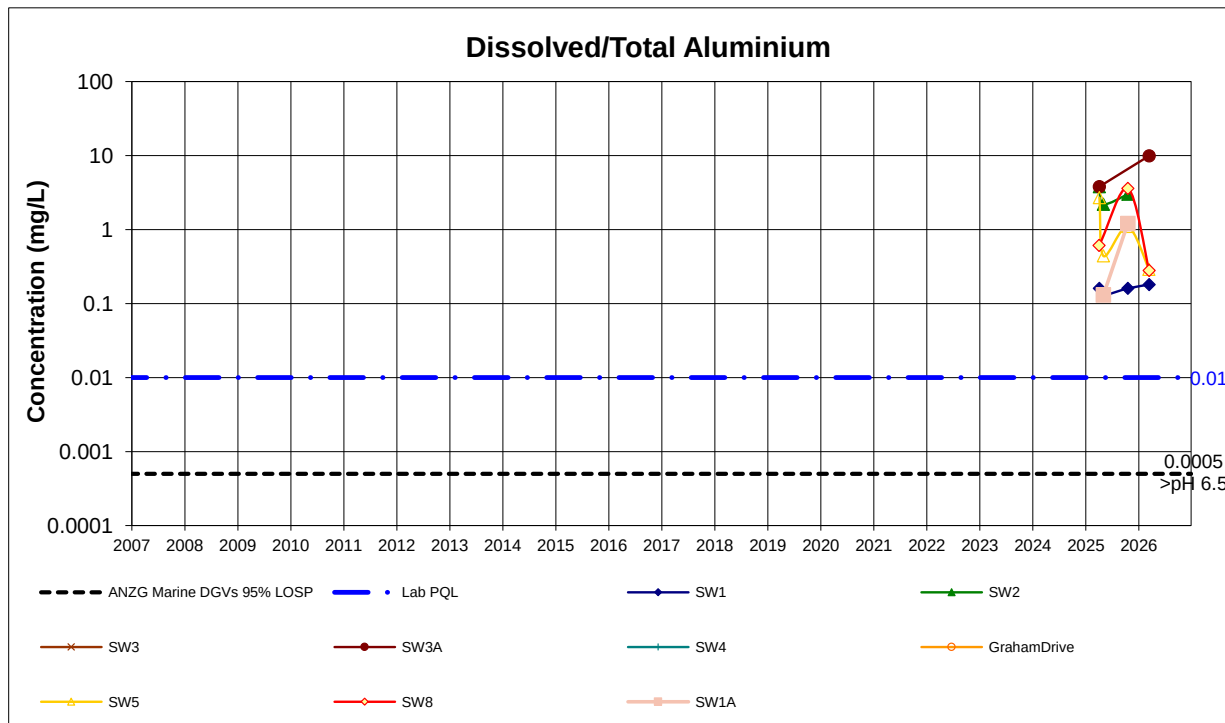
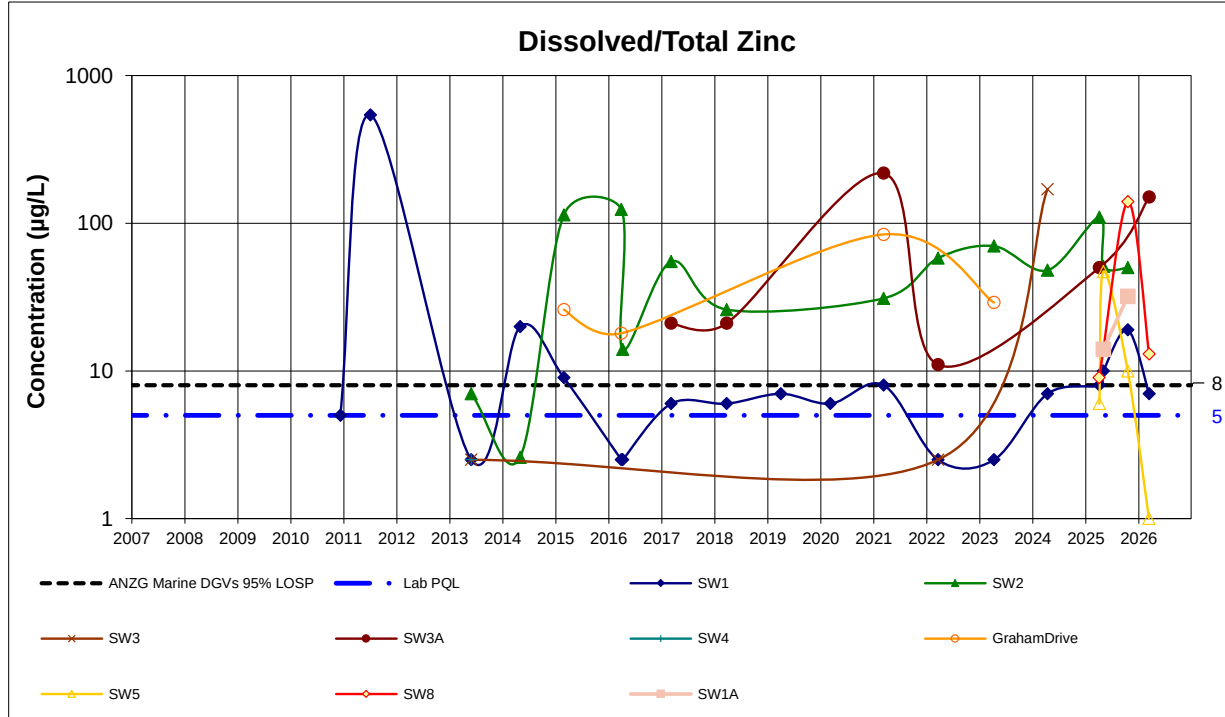


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

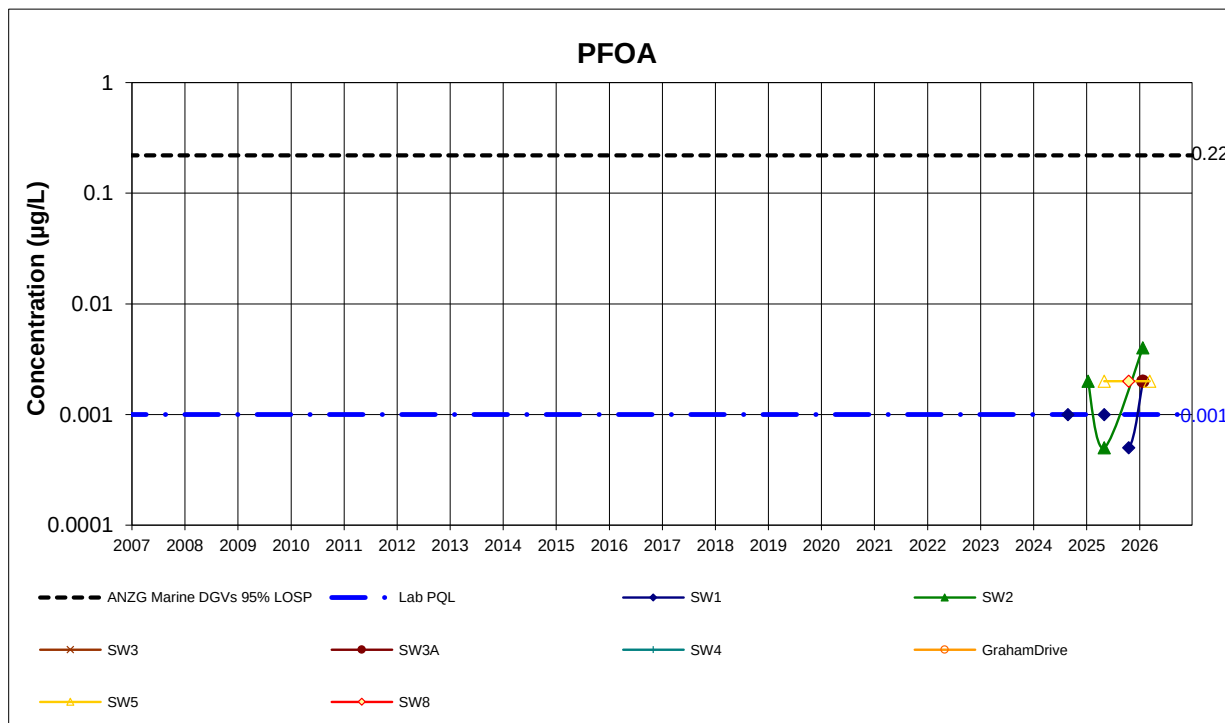
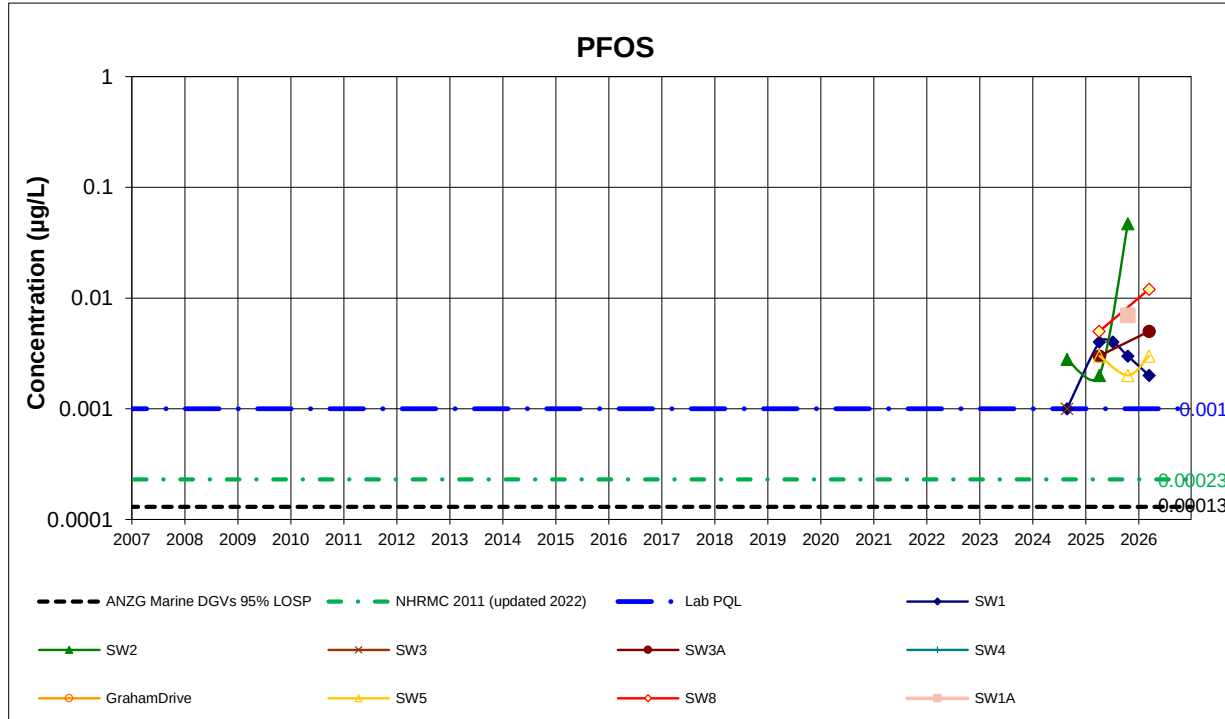


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

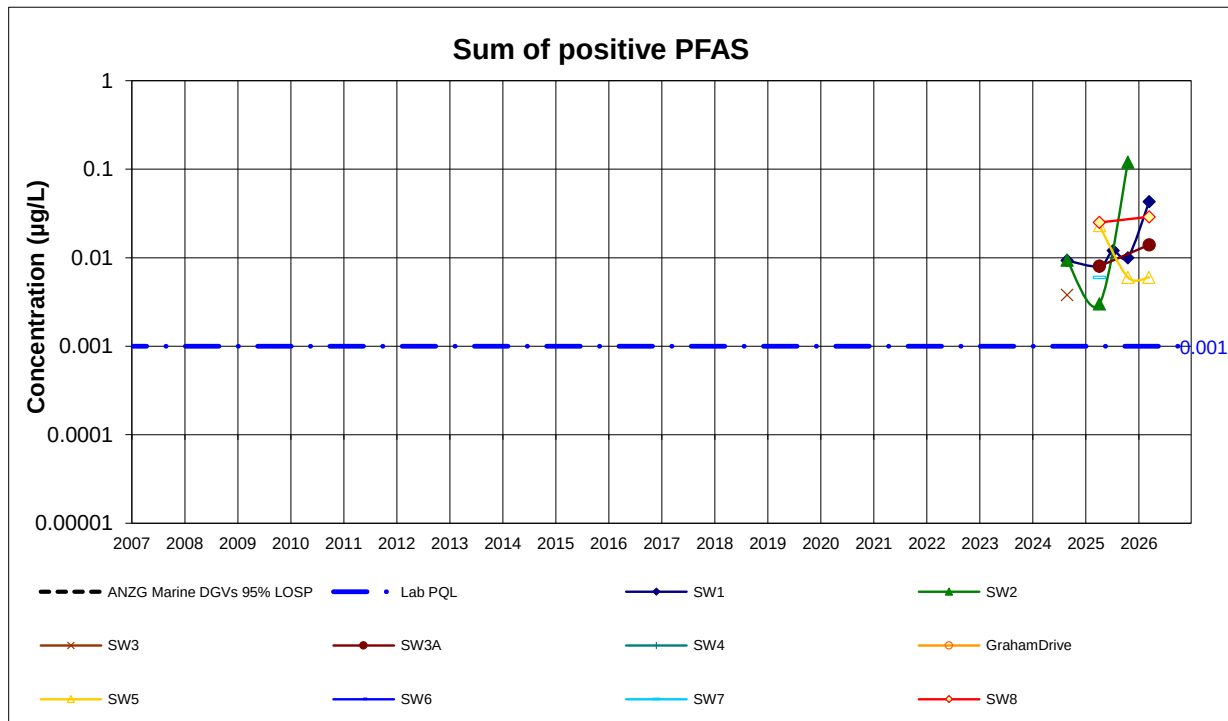
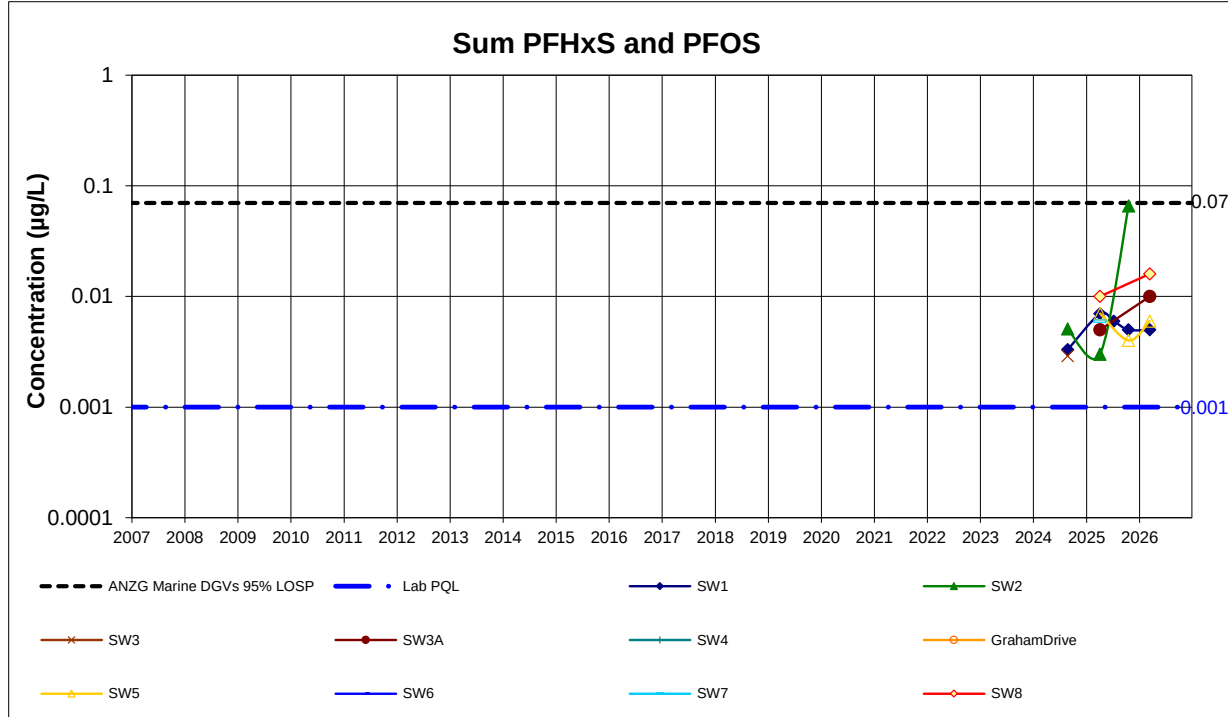


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09

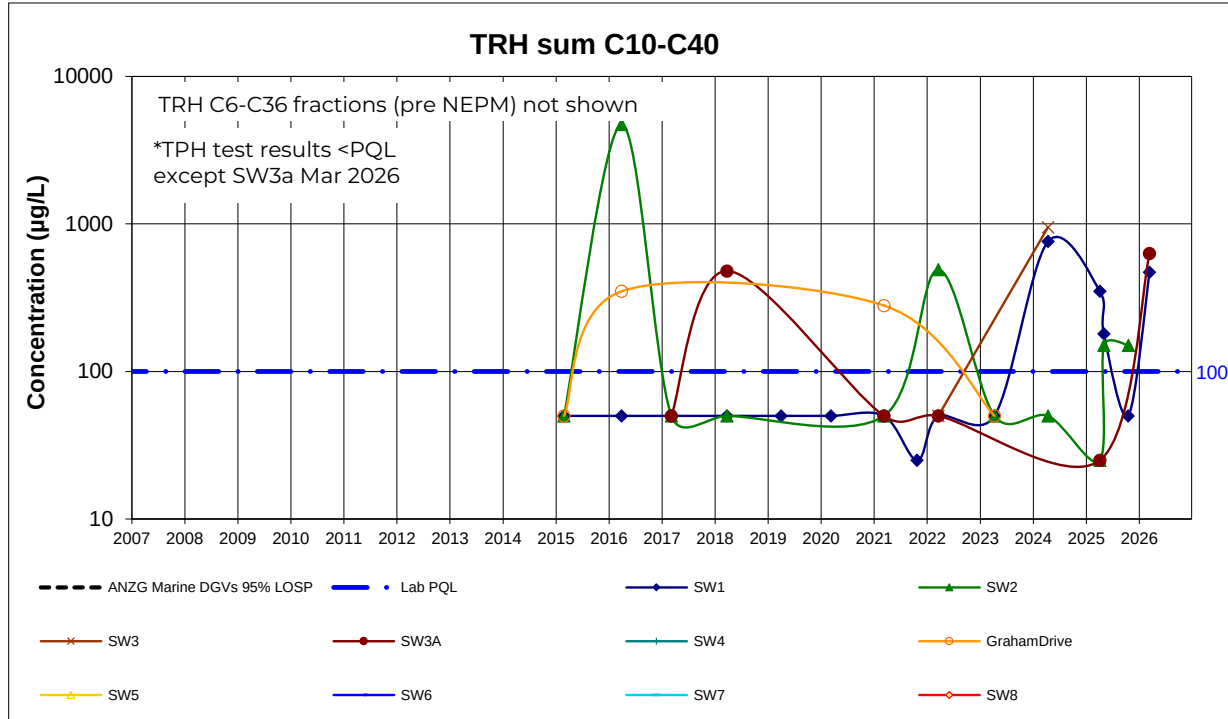


1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

SURFACE WATER QUALITY MONITORING
Tomago Northbank Enterprise Hub
Data Period: 2007 to March 2026

Data set: All data

Project: 39920.09



1. Values reported below PQL are plotted as half PQL
2. If a Criterion line is not plotted, there is no published criteria
3. ANZG - Marine water guideline values

Appendix E

Table 1: Summary of water quality monitoring results – March 2026

Laboratory Report Sheets (404470, 404471, 404571, 404571-A, 404575)

Table 1: Summary of water quality monitoring results - March 2026

			Trigger Levels based on GMP/GWMngP (Douglas, 2025a; 2025b)		Groundwater - Tomago Sandbeds Wells						Trigger Levels based on GMP/GWMngP (Douglas, 2025a; 2025b)		Groundwater - Clay Wells				Groundwater Default Guideline Values GMP/GWMngP (Douglas, 2025a; 2025b)		Surface Water		
			Assessment Criteria for Tomago Sandbeds Wells	UCL95-mean for Tomago Sandbeds Wells	MW8A	MW101	MW102	DGW/17.3.26	MW103	MW105	Assessment Criteria for Clay Aquitard	UCL95-mean for Clay Aquitard	MW4	MW104	MW106	MW107	ANZG (2018) Fresh Water Slightly to Moderately Disturbed Systems DGVs	PFAS NEMP 2025 Fresh 95%	SW3a	DSW2/17.3.26	SW8
					17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026			16 Mar 2026	16 Mar 2026	16 Mar 2026	17 Mar 2026			17 Mar 2026	17 Mar 2026	17 Mar 2026
	Unit	PQL																			
Field																					
pH	-		5.2-8.5		5.9	4.1	5.8	5.8	5.7	4.6	6.5-7.4	7.12	6.8	7.4	6.6	6.6	6.5-8.5		5.7	5.7	5.4
Electrical Conductivity	µS/cm	1	529	357	266	93	135	135	109	189	24500	17100	32300	3180	3340	328	125-2200		171	171	157
Total Suspended Solids (Lab)	mg/L	5			89	14	6	10	34	44			170	1,900	59	250			1,100	800	16
Inorganics																					
Chloride			250	47	21	15	9	9	22	27	8560	6200	9,500	86	850	22			33	31	31
Sulphate	mg/L	1	500	15	58	6	6	7	1	35	3690	2540	5,100	100	160	16			10	9	19
Fluoride	mg/L	1	1.5	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.7	0.6	0.5	0.7	0.5	<0.1			<0.1	<0.1	<0.1
Alkalinity (Hydroxide) as CaCO3	mg/L	0.1	1	1	<5	<5	<5	<5	<5	<5	1	1	<5	<5	<5	<5			<5	<5	<5
Alkalinity (Carbonate as CaCO3)	mg/L	5	5	6	<5	<5	<5	<5	<5	<5	18	290	<5	<5	<5	<5			<5	<5	<5
Alkalinity (Bicarbonate as CaCO3)	mg/L	5	37	56	60	<5	47	46	14	13	808	609	870	650	330	130			11	9	10
Alkalinity (total) as CaCO3	mg/L	1	32	25	60	<5	47	46	14	13	949	798	870	650	330	130			11	9	10
Ammonia as N (filtered)	mg/L	3	0.5	0.4	0.12	0.03	1.1	1.2	0.20	0.28	2	8.7	1.6	0.19	0.15	0.081	0.9		0.007	0.02	0.01
Nitrite (as N) (filtered)	mg/L	0.005	3	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.03	0.02	<0.005	0.14	<0.005	<0.005			<0.005	<0.005	<0.005
Nitrate (as N) (filtered)	mg/L	0.005	0.7	0.014	0.006	1.4	0.03	0.03	0.005	0.29	0.7	0.08	<0.005	0.14	<0.005	0.054			<0.005	<0.005	<0.005
Kjeldahl Nitrogen Total	mg/L	0.005	1.1	0.85	0.4	0.1	2.1	2.1	0.7	0.3	4.6	6.6	3.9	2.7	0.7	0.2			1.2	3.5	0.5
Nitrogen (Total Oxidised)	mg/L	0.1			0.007	1.4	0.03	0.03	0.005	0.29			<0.005	0.28	<0.005	0.056			<0.005	<0.005	<0.005
Total Phosphorus (Organic Phosphate)		0.05	0.086	0.14	0.05	<0.05	<0.05	<0.05	0.1	<0.05	2.1	1.4	1.4	4.6	0.1	0.61	0.025		0.4	0.50	<0.05
Reactive Phosphorus as P (Orthophosphate as P) (filtered)	mg/L	0.005			<0.005	<0.005	0.006	0.005	0.084	0.006			<0.005	0.058	<0.005	<0.005			<0.005	<0.005	<0.005
Sodium (filtered)	mg/L	0.5	180	45	17	8.6	6.4	6.4	11	20	5310	3760	6,500	560	470	17			17	17	16
Calcium (filtered)	mg/L	0.5	13	12	28	3	13	13	3	6.2	478	349	370	49	120	41			5	5	5
Magnesium (filtered)	mg/L	0.5	6	5	4	1	4	4	2	2	977	684	930	51	45	4			1	1	3
Potassium (filtered)	mg/L	0.5	4	3	2	0.8	2	2	2	2	208	147	240	15	10	3			1	1	2
Metals																					
Aluminium (total/non-filtered)	mg/L	0.01	0.055 (pH>6.5) 0.0008 (pH <6.5)								0.055 (pH>6.5) 0.0008 (pH <6.5)						0.055 (pH>6.5) 0.0008 (pH <6.5)		9.9	9.3	0.28
Aluminium (filtered)	mg/L	0.01	0.055 (pH>6.5) 0.0008 (pH <6.5)		0.14	0.44	0.13	0.13	0.3	0.37	0.055 (pH>6.5) 0.0008 (pH <6.5)	0.015	<0.01	0.02	<0.01	<0.01	0.055 (pH>6.5) 0.0008 (pH <6.5)		0.18	0.18	0.04
Arsenic (total/non-filtered)	mg/L	0.001	0.01								0.013		<0.001	0.042	0.008	<0.001	0.0013		0.004	0.004	0.001
Arsenic (filtered)	mg/L	0.001	0.001	0.002	0.002	<0.001	<0.001	<0.001	<0.001	0.001	0.013	0.017	<0.001	0.042	0.008	<0.001	0.0013		<0.001	<0.001	<0.001
Cadmium (total/non-filtered)	mg/L	0.0001	0.0002								0.0002		<0.0001	0.0001	<0.0001	<0.0001	0.0002		0.0003	0.0003	<0.0001
Cadmium (filtered)	mg/L	0.0001	0.0002	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002		<0.0001	<0.0001	<0.0001
Chromium (III+VI) (total/non-filtered)	mg/L	0.001	0.002								0.004		<0.0001	0.0001	<0.0001	<0.0001	0.001		0.011	0.008	0.001
Chromium (III+VI) (filtered)	mg/L	0.001	0.002	0.002	0.002	0.001	0.002	0.002	<0.001	0.002	0.004	0.001	<0.001	0.002	<0.001	<0.001	0.001		0.001	0.001	<0.001
Copper (total/non-filtered)	mg/L	0.001	0.001								0.005		<0.001	0.0001	<0.001	<0.001	0.0014		0.012	0.019	<0.001
Copper (filtered)	mg/L	0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	0.007	<0.001	<0.001	<0.001	<0.001	0.0014		<0.001	<0.001	<0.001
Iron (filtered)	mg/L	0.01	0.8	0.6	0.04	0.14	0.13	0.13	1	0.34	55.2	60.8	65	21	19	3.9	0.7		2.1	1.9	0.09
Lead (total/non-filtered)	mg/L	0.001	0.0034								0.0034		<0.001	<0.001	<0.001	<0.001	0.0034		0.018	0.022	<0.001
Lead (filtered)	mg/L	0.001	0.0034	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0034	0.002	<0.001	<0.001	<0.001	<0.001	0.0034		<0.001	<0.001	<0.001
Manganese (total/non-filtered)	mg/L	0.005	0.5								10.1		<0.0005	0.0005	<0.0005	<0.0005	1.9		0.14	0.13	0.029
Manganese (filtered)	mg/L	0.005	0.5	0.07	0.2	0.01	0.36	0.37	0.097	0.026	10.1	7.25	9.7	0.65	1.4	0.036	1.9		0.049	0.048	0.023
Mercury (total/non-filtered)	mg/L	0.00005	0.0001								0.00006		<0.00005	0.00005	<0.00005	<0.00005	0.00006		<0.00005	<0.00005	<0.00005
Mercury (filtered)	mg/L	0.00005	0.0001	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	<0.0000									

Table 1: Summary of water quality monitoring results - March 2026

			Trigger Levels based on GMP/GWMngP (Douglas, 2025a; 2025b)		Groundwater - Tomago Sandbeds Wells						Trigger Levels based on GMP/GWMngP (Douglas, 2025a; 2025b)		Groundwater - Clay Wells				Groundwater Default Guideline Values (Douglas, 2025a; 2025b)		Surface Water						
			Assessment Criteria for Tomago Sandbeds Wells	UCL95-mean for Tomago Sandbeds Wells	MW8A	MW101	MW102	DGW/17.3.26	MW103	MW105	Assessment Criteria for Clay Aquitard	UCL95-mean for Clay Aquitard	MW4	MW104	MW106	MW107	ANZG (2018) Fresh Water Slightly to Moderately Disturbed Systems DGVs	PFAS NEMP 2025 Fresh 95%	SW3a	DSW2/17.3.26	SW8				
					17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026			16 Mar 2026	16 Mar 2026	16 Mar 2026	17 Mar 2026			17 Mar 2026	17 Mar 2026	17 Mar 2026				
	Unit	PQL																							
BTEX																									
Benzene	mg/L	0.001	0.001	0.0009	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.7		<0.001	<0.001	<0.001	<0.001	0.7		<0.001	<0.001	<0.001				
Toluene	mg/L	0.001	0.18		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.18		<0.001	<0.001	<0.001	<0.001	0.18		0.002	0.003	<0.001			
Ethylbenzene	mg/L	0.001	0.08		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.08		<0.001	<0.001	<0.001	<0.001	0.08		<0.001	<0.001	<0.001			
Xylene (m & p)	mg/L	0.002	0.078		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.078		<0.002	<0.002	<0.002	<0.002	0.075 ⁵²		<0.002	<0.002	<0.002			
Xylene (o)	mg/L	0.001	0.35		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.35		<0.001	<0.001	<0.001	<0.001	0.35		<0.001	<0.001	<0.001			
Naphthalene (VOC)	mg/L	0.001	0.0016		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.07		<0.001	<0.001	<0.001	<0.001	0.07		<0.001	<0.001	<0.001				
Phenols																									
2,4,5-Trichlorophenol	mg/L	0.001	0.000		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2,4,6-Trichlorophenol	mg/L	0.001	0.003		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2,4-Dichlorophenol	mg/L	0.001	0.120		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2,4-Dimethylphenol	mg/L	0.001	0.002		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2,6-Dichlorophenol	mg/L	0.001	0.034		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2-Chlorophenol	mg/L	0.001	0.3		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2-Methylphenol	mg/L	0.001	0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
2-Nitrophenol	mg/L	0.001	0.002		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001			<0.001	<0.001	<0.001				
3&4-Methylphenol (m&p-cresol)	mg/L	0.002	0.001		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			<0.002	<0.002	<0.002	<0.002			<0.002	<0.002	<0.002				
4-chloro-3-methylphenol	mg/L	0.005	0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005			<0.005	<0.005	<0.005				
4-Nitrophenol																									
Pentachlorophenol	mg/L	0.005	0.0036		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.22		<0.005	<0.005	<0.005	<0.005	0.022		<0.005	<0.005	<0.005				
Phenol	mg/L	0.001	0.32		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.4		<0.001	<0.001	<0.001	<0.001	0.4		<0.001	<0.001	<0.001				
Naphthalene (VOC)	mg/L	0.0001	0.0016		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.07		<0.001	<0.001	<0.001	<0.001	0.07		<0.001	<0.001	<0.001				
Phenanthrene	mg/L	0.0001	0.0006		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.002		<0.0001	<0.0001	<0.0001	<0.0001	0.002		<0.0001	<0.0001	<0.0001				
Anthracene	mg/L	0.0001	0.00001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00001		<0.0001	<0.0001	<0.0001	<0.0001	0.00001		<0.0001	<0.0001	<0.0001				
Fluoranthene	mg/L	0.0001	0.001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001		<0.0001	<0.0001	<0.0001	<0.0001	0.001		<0.0001	<0.0001	<0.0001				
Benzo(a) pyrene	mg/L	0.0001	0.00001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00001		<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001				
Acenaphthene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Acenaphthylene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Benzo(a)anthracene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Benzo(a)pyrene TEQ	mg/L	0.0005	0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005		<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005				
Benzo(b+j+k)fluoranthene	mg/L	0.0002	0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002		<0.0002	<0.0002	<0.0002	<0.0002			<0.0002	<0.0002	<0.0002				
Benzo(g,h,i)perylene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Chrysene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Dibenz(a,h)anthracene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Fluorene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Indeno(1,2,3-c,d)pyrene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
Pyrene	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001				
PAHs (Sum of positives)	mg/L	0.0001	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001																

Table 1: Summary of water quality monitoring results - March 2026

			Trigger Levels based on GMP/GWMngP (Douglas, 2025a; 2025b)		Groundwater - Tomago Sandbeds Wells						Trigger Levels based on GMP/GWMngP (Douglas, 2025a; 2025b)		Groundwater - Clay Wells				Groundwater Default Guideline Values GMP/GWMngP (Douglas, 2025a; 2025b)		Surface Water		
			Assessment Criteria for Tomago Sandbeds Wells	UCL95-mean for Tomago Sandbeds Wells	MW8A	MW101	MW102	DGW/17.3.26	MW103	MW105	Assessment Criteria for Clay Aquitard	UCL95-mean for Clay Aquitard	MW4	MW104	MW106	MW107	ANZG (2018) Fresh Water Slightly to Moderately Disturbed Systems DGVs	PFAS NEMP 2025 Fresh 95%	SW3a	DSW2/17.3.26	SW8
					17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026	17 Mar 2026			16 Mar 2026	16 Mar 2026	16 Mar 2026	17 Mar 2026			17 Mar 2026	17 Mar 2026	17 Mar 2026
	Unit	PQL																			
PCBs																					
Arochlor 1016	µg/L	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	<0.01	<0.01			<0.01	-	<0.01
Arochlor 1221	µg/L	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	<0.01	<0.01			<0.01	-	<0.01
Arochlor 1232	µg/L	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	<0.01	<0.01			<0.01	-	<0.01
Arochlor 1242	µg/L	0.01000	0.3		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.3		<0.01	<0.01	<0.01	<0.01	0.3		<0.01	-	<0.01
Arochlor 1248	µg/L	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	<0.01	<0.01			<0.01	-	<0.01
Arochlor 1254	µg/L	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	<0.01	<0.01			<0.01	-	<0.01
Arochlor 1260	µg/L	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	<0.01	<0.01			<0.01	-	<0.01
PFAS																					
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.001	0.13		0.008	0.003	0.002	0.002	0.002	0.012	0.13		<0.001	0.003	0.001	0.047	0.0009	0.13	0.005	0.005	0.012
Perfluorooctanoic acid (PFOA)	µg/L	0.001	220		0.004	<0.001	<0.001	<0.001	0.001	0.005	220		<0.001	<0.001	<0.001	0.005		220	0.003	0.003	0.002
Sum of PFHxS and PFOS	µg/L	0.001			0.014	0.003	0.002	0.002	0.002	0.017			<0.001	0.004	0.003	0.062			0.010	0.0099	0.016

CERTIFICATE OF ANALYSIS 404470

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>39920.09, Tomago</u>
Number of Samples	2 Water
Date samples received	17/03/2026
Date completed instructions received	17/03/2026

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	24/03/2026
Date of Issue	24/03/2026

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Dragana Tomas, Senior Chemist
 Larry Ye, Senior Chemist
 Nancy Zhang, Laboratory Manager, Sydney
 Sean McAlary, Senior Chemist
 Tabitha Roberts, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	20/03/2026	20/03/2026
Date analysed	-	20/03/2026	20/03/2026
TRH C ₆ - C ₉	µg/L	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10
Benzene	µg/L	<1	<1
Toluene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
o-xylene	µg/L	<1	<1
Naphthalene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	108	111
Surrogate Toluene-d8	%	97	99
Surrogate 4-Bromofluorobenzene	%	92	91

svTRH (C10-C40) in Water			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026
TRH C ₁₀ - C ₁₄	µg/L	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	180	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100
Total +ve TRH (C10-C36)	µg/L	180	<50
TRH >C ₁₀ - C ₁₆	µg/L	77	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	77	<50
TRH >C ₁₆ - C ₃₄	µg/L	200	100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100
Total +ve TRH (>C10-C40)	µg/L	280	100
Surrogate o-Terphenyl	%	89	89

PAHs in Water			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026
Naphthalene	µg/L	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	88	91

OCPs in Water - Trace Level			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026
alpha-BHC	µg/L	<0.001	<0.001
HCB	µg/L	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	86	87

OP in water LL ANZECCF/ADWG			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026
Dichlorvos	µg/L	<0.05	<0.05
Mevinphos	µg/L	<0.05	<0.05
Phorate	µg/L	<0.05	<0.05
Dimethoate	µg/L	<0.1	<0.1
Diazinon	µg/L	<0.01	<0.01
Disulfoton	µg/L	<0.05	<0.05
Chlorpyrifos-methyl	µg/L	<0.05	<0.05
Parathion-Methyl	µg/L	<0.05	<0.05
Ronnel	µg/L	<0.05	<0.05
Fenitrothion	µg/L	<0.05	<0.05
Malathion	µg/L	<0.05	<0.05
Chlorpyrifos	µg/L	<0.009	<0.009
Fenthion	µg/L	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004
Bromophos ethyl	µg/L	<0.05	<0.05
Methidathion	µg/L	<0.05	<0.05
Fenamiphos	µg/L	<0.05	<0.05
Ethion	µg/L	<0.05	<0.05
Phosalone	µg/L	<0.05	<0.05
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02
Coumaphos	µg/L	<0.05	<0.05
Surrogate 4-Chloro-3-NBTF	%	86	87

PCBs in Water - Trace Level			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026
Aroclor 1016	µg/L	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01
Surrogate 2-Fluorobiphenyl	%	75	75

Speciated Phenols in water			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026
Phenol	µg/L	<1	<1
2-Chlorophenol	µg/L	<1	<1
4-Chloro-3-Methylphenol	µg/L	<5	<5
2-Methylphenol (O-Cresol)	µg/L	<1	<1
3/4-Methylphenol (m/p-Cresol)	µg/L	<2	<2
2-Nitrophenol	µg/L	<1	<1
2,4-Dimethylphenol	µg/L	<1	<1
2,4-Dichlorophenol	µg/L	<1	<1
2,6-Dichlorophenol	µg/L	<1	<1
2,4,5-Trichlorophenol	µg/L	<1	<1
2,4,6-Trichlorophenol	µg/L	<1	<1
2,4-Dinitrophenol	µg/L	<20	<20
4-Nitrophenol	µg/L	<20	<20
2346-Tetrachlorophenol	µg/L	<1	<1
2-methyl-4,6-Dinitrophenol	µg/L	<10	<10
Pentachlorophenol	µg/L	<5	<5
Surrogate 2-fluorophenol	%	41	44
Surrogate Phenol-d ₆	%	23	25
Surrogate 2,4,6-Tribromophenol	%	96	96
Surrogate p-Terphenyl-d ₁₄	%	88	91

HM in water - dissolved			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date prepared	-	22/03/2026	22/03/2026
Date analysed	-	22/03/2026	22/03/2026
Aluminium-Dissolved	µg/L	20	<10
Arsenic-Dissolved	µg/L	42	8
Cadmium-Dissolved	µg/L	<0.1	<0.1
Chromium-Dissolved	µg/L	2	<1
Copper-Dissolved	µg/L	<1	<1
Iron-Dissolved	µg/L	21,000	19,000
Lead-Dissolved	µg/L	<1	<1
Manganese-Dissolved	µg/L	650	1,400
Mercury-Dissolved	µg/L	<0.05	<0.05
Molybdenum-Dissolved	µg/L	<1	<1
Nickel-Dissolved	µg/L	5	28
Zinc-Dissolved	µg/L	6	9

Metals in Waters - Acid extractable			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date prepared	-	20/03/2026	20/03/2026
Date analysed	-	20/03/2026	20/03/2026
Phosphorus - Total	mg/L	4.6	0.1

Miscellaneous Inorganics			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date prepared	-	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026
Total Suspended Solids	mg/L	1,900	59
Ammonia as N in water	mg/L	0.19	0.15
Nitrite as N in water	mg/L	0.14	<0.005
Nitrate as N in water	mg/L	0.14	<0.005
NOx as N in water	mg/L	0.28	<0.005
TKN in water	mg/L	2.7	0.7
Phosphate as P in water	mg/L	0.058	<0.005
Fluoride, F	mg/L	0.7	0.5

Ion Balance			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date prepared	-	19/03/2026	19/03/2026
Date analysed	-	17/03/2026	17/03/2026
Calcium - Dissolved	mg/L	49	120
Potassium - Dissolved	mg/L	15	10
Sodium - Dissolved	mg/L	560	470
Magnesium - Dissolved	mg/L	51	45
Hardness (calc) equivalent CaCO ₃	mg/L	330	500
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	650	330
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5
Total Alkalinity as CaCO ₃	mg/L	650	330
Sulphate, SO ₄	mg/L	100	160
Chloride, Cl	mg/L	86	850
Ionic Balance	%	28	-5.0

PFAS in Water LOW LEVEL Extend			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date prepared	-	19/03/2026	19/03/2026
Date analysed	-	20/03/2026	20/03/2026
Perfluorobutanesulfonic acid	µg/L	<0.001	<0.001
Perfluoropentanesulfonic acid	µg/L	<0.001	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.002	0.002
Perfluoroheptanesulfonic acid	µg/L	<0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	0.003	0.001
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.02	<0.02
Perfluoropentanoic acid	µg/L	<0.01	<0.01
Perfluorohexanoic acid	µg/L	<0.001	<0.001
Perfluoroheptanoic acid	µg/L	<0.001	<0.001
Perfluorooctanoic acid PFOA	µg/L	<0.001	<0.001
Perfluorononanoic acid	µg/L	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.01	<0.01
Perfluorotetradecanoic acid	µg/L	<0.05	<0.05
4:2 FTS	µg/L	<0.001	<0.001
6:2 FTS	µg/L	0.024	0.004
8:2 FTS	µg/L	<0.002	<0.002
10:2 FTS	µg/L	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5	<0.5
MePerfluorooctanesulf-amid oacetic acid	µg/L	<0.004	<0.002
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	100	97
Surrogate ¹³ C ₂ PFOA	%	103	110
Extracted ISTD ¹³ C ₃ PFBS	%	51	64
Extracted ISTD ¹⁸ O ₂ PFHxS	%	72	82
Extracted ISTD ¹³ C ₄ PFOS	%	90	102
Extracted ISTD ¹³ C ₄ PFBA	%	#	#

PFAS in Water LOW LEVEL Extend			
Our Reference		404470-1	404470-2
Your Reference	UNITS	MW104	MW106
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	20	28
Extracted ISTD ¹³ C ₂ PFHxA	%	49	67
Extracted ISTD ¹³ C ₄ PFHpA	%	65	83
Extracted ISTD ¹³ C ₄ PFOA	%	76	78
Extracted ISTD ¹³ C ₅ PFNA	%	85	93
Extracted ISTD ¹³ C ₂ PFDA	%	92	107
Extracted ISTD ¹³ C ₂ PFUnDA	%	90	100
Extracted ISTD ¹³ C ₂ PFDoDA	%	80	116
Extracted ISTD ¹³ C ₂ PFTeDA	%	72	94
Extracted ISTD ¹³ C ₂ 4:2FTS	%	47	69
Extracted ISTD ¹³ C ₂ 6:2FTS	%	60	76
Extracted ISTD ¹³ C ₂ 8:2FTS	%	93	109
Extracted ISTD ¹³ C ₈ FOSA	%	60	110
Extracted ISTD d ₃ N MeFOSA	%	90	96
Extracted ISTD d ₅ N EtFOSA	%	94	101
Extracted ISTD d ₇ N MeFOSE	%	87	97
Extracted ISTD d ₉ N EtFOSE	%	89	96
Extracted ISTD d ₃ N MeFOSAA	%	38	115
Extracted ISTD d ₅ N EtFOSAA	%	58	101
Total Positive PFHxS & PFOS	µg/L	0.004	0.003
Total Positive PFOA & PFOS	µg/L	0.003	0.001
Total Positive PFAS	µg/L	0.029	0.007

Method ID	Methodology Summary
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-026	Fluoride determined by ion selective electrode (ISE) in accordance with APHA latest edition, 4500-F-C.
Inorg-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 15% ie total anions = total cations +/-15%.
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Metals-020	Determination of various metals/elements by ICP-AES. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Where molecular anion forms are calculated from an element (e.g. SO4 from S or PO4 from P stoichiometrically), the assumption is that the element is only present in that molecular anion form. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Note, the Total +ve PFAS PQL is reflective of the lowest individual PQL and is therefore "Total +ve PFAS" is simply a sum of the positive individual PFASs (or a described sub-set). Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			20/03/2026	1	20/03/2026	23/03/2026		20/03/2026	[NT]
Date analysed	-			20/03/2026	1	20/03/2026	23/03/2026		20/03/2026	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	1	<10	<10	0	94	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	1	<10	<10	0	94	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	96	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	94	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	94	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	92	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	95	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	106	1	108	110	2	106	[NT]
Surrogate Toluene-d8	%		Org-023	99	1	97	99	2	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	94	1	92	95	3	105	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	82	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	126	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	134	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	104	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	115	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	128	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	111	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	115	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	98	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	111	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	90	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: OP in water LL ANZECCF/ADWG					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Dichlorvos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	93	[NT]
Mevinphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Phorate	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.01	Org-022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Disulfoton	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos-methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion-Methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	116	[NT]
Fenitrothion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	125	[NT]
Malathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	129	[NT]
Chlorpyrifos	µg/L	0.009	Org-022/025	<0.009	[NT]	[NT]	[NT]	[NT]	131	[NT]
Fenthion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	µg/L	0.004	Org-022/025	<0.004	[NT]	[NT]	[NT]	[NT]	124	[NT]
Bromophos ethyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methidathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fenamiphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	132	[NT]
Phosalone	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Org-022/025	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Coumaphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: PCBs in Water - Trace Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Aroclor 1016	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Aroclor 1260	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	73	[NT]	[NT]	[NT]	[NT]	70	[NT]

QUALITY CONTROL: Speciated Phenols in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Phenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	33	[NT]
2-Chlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
4-Chloro-3-Methylphenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Methylphenol (O-Cresol)	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	55	[NT]
3/4-Methylphenol (m/p-Cresol)	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Nitrophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dimethylphenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	129	[NT]
2,4,5-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dinitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Nitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	31	[NT]
2346-Tetrachlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-methyl-4,6-Dinitrophenol	µg/L	10	Org-022/025	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Pentachlorophenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	68	[NT]
Surrogate 2-fluorophenol	%		Org-022/025	45	[NT]	[NT]	[NT]	[NT]	42	[NT]
Surrogate Phenol-d ₆	%		Org-022/025	27	[NT]	[NT]	[NT]	[NT]	23	[NT]
Surrogate 2,4,6-Tribromophenol	%		Org-022/025	71	[NT]	[NT]	[NT]	[NT]	73	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			22/03/2026	[NT]	[NT]	[NT]	[NT]	22/03/2026	[NT]
Date analysed	-			22/03/2026	[NT]	[NT]	[NT]	[NT]	22/03/2026	[NT]
Aluminium-Dissolved	µg/L	10	Metals-022	<10	[NT]	[NT]	[NT]	[NT]	101	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Iron-Dissolved	µg/L	10	Metals-022	<10	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Manganese-Dissolved	µg/L	5	Metals-022	<5	[NT]	[NT]	[NT]	[NT]	94	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	116	[NT]
Molybdenum-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]

Client Reference: 39920.09, Tomago

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	[NT]
Date analysed	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	1900	1700	11	108	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.19	[NT]		97	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.14	[NT]		102	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.14	[NT]		96	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.28	[NT]		96	[NT]
TKN in water	mg/L	0.1	Inorg-062	<0.1	1	2.7	[NT]		108	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	0.058	[NT]		112	[NT]
Fluoride, F	mg/L	0.1	Inorg-026	<0.1	1	0.7	[NT]		98	[NT]

QUALITY CONTROL: Ion Balance					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			17/03/2026	[NT]	[NT]	[NT]	[NT]	17/03/2026	[NT]
Date analysed	-			17/03/2026	[NT]	[NT]	[NT]	[NT]	17/03/2026	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	95	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	92	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NT]	[NT]	93	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Perfluorobutanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluoropentanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	97	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	99	[NT]
Perfluoroheptanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	100	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	98	[NT]
Perfluorodecanesulfonic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorobutanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	95	[NT]
Perfluoropentanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	97	[NT]
Perfluorohexanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluoroheptanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorononanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorodecanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	98	[NT]
Perfluoroundecanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	91	[NT]
Perfluorododecanoic acid	µg/L	0.005	Org-029	<0.005	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorotridecanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
Perfluorotetradecanoic acid	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	78	[NT]
4:2 FTS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	103	[NT]
6:2 FTS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	107	[NT]
8:2 FTS	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	97	[NT]
10:2 FTS	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorooctane sulfonamide	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	[NT]
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	96	[NT]
N-Ethyl perfluorooctanesulfon amide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	102	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	95	[NT]
MePerfluorooctanesulf-amid oacetic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	99	[NT]
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	91	[NT]	[NT]	[NT]	[NT]	91	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	88	[NT]	[NT]	[NT]	[NT]	92	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	89	[NT]	[NT]	[NT]	[NT]	92	[NT]
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	91	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	94	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	87	[NT]	[NT]	[NT]	[NT]	90	[NT]
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	88	[NT]	[NT]	[NT]	[NT]	92	[NT]
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	85	[NT]	[NT]	[NT]	[NT]	84	[NT]
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	94	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	85	[NT]	[NT]	[NT]	[NT]	99	[NT]
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	112	[NT]
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	113	[NT]
Extracted ISTD d ₃ N MeFOSA	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD d ₅ N EtFOSA	%		Org-029	94	[NT]	[NT]	[NT]	[NT]	93	[NT]
Extracted ISTD d ₇ N MeFOSE	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	91	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD d ₉ N EtFOSE	%		Org-029	92	[NT]	[NT]	[NT]	[NT]	91	[NT]
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	109	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

PFAS in Water LOW LEVEL Extend - For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

The mass inbalance may be caused by other ions that have not been measured.

CERTIFICATE OF ANALYSIS 404471

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>39920.20, Tomago</u>
Number of Samples	10 Water
Date samples received	17/03/2026
Date completed instructions received	17/03/2026

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	24/03/2026
Date of Issue	24/03/2026

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Dragana Tomas, Senior Chemist
 Larry Ye, Senior Chemist
 Liam Timmins, Organics Supervisor
 Nancy Zhang, Laboratory Manager, Sydney
 Priya Samarawickrama, Senior Chemist
 Sean McAlary, Senior Chemist
 Tabitha Roberts, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water

Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	108	107	109	108	109
Surrogate Toluene-d8	%	99	99	99	100	99
Surrogate 4-Bromofluorobenzene	%	96	95	95	94	93

vTRH(C6-C10)/BTEXN in Water

Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	107	108	109	106	106
Surrogate Toluene-d8	%	99	100	99	98	98
Surrogate 4-Bromofluorobenzene	%	95	94	95	94	94

svTRH (C10-C40) in Water						
Our Reference	UNITS	404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference		MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	140	<100	260	180	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	140	120	<100
Total +ve TRH (C10-C36)	µg/L	140	<50	400	300	<50
TRH >C ₁₀ - C ₁₆	µg/L	100	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	100	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100	<100	360	260	100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	100	<50	360	260	100
Surrogate o-Terphenyl	%	77	72	96	92	89

svTRH (C10-C40) in Water						
Our Reference	UNITS	404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference		MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	140	160	140	<100	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	110	<100	<100
Total +ve TRH (C10-C36)	µg/L	140	160	260	<50	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	200	220	220	<100	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	200	220	220	<50	<50
Surrogate o-Terphenyl	%	78	93	92	86	95

svTRH (C10-C40) in Water NEPM Silica gel

Our Reference		404471-1	404471-3	404471-4	404471-5	404471-6
Your Reference	UNITS	MW4	MW2	MW10	MW13	MW11
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	24/03/2026	24/03/2026	24/03/2026	24/03/2026	24/03/2026
TRH (Silica) C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRH (Silica) C ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100	<100
TRH (Silica) C ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100	<100
TRH (Silica) >C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50	<50
TRH (Silica) >C ₁₆ - C ₃₄	µg/L	<100	<100	<100	<100	<100
TRH (Silica) >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Surrogate 1-Chlorooctadecane	%	93	97	91	89	94

svTRH (C10-C40) in Water NEPM Silica gel

Our Reference		404471-7	404471-8
Your Reference	UNITS	MW1A	SW5
Date Sampled		16/03/2026	16/03/2026
Type of sample		Water	Water
Date extracted	-	18/03/2026	18/03/2026
Date analysed	-	24/03/2026	24/03/2026
TRH (Silica) C ₁₀ - C ₁₄	µg/L	<50	<50
TRH (Silica) C ₁₅ - C ₂₈	µg/L	<100	<100
TRH (Silica) C ₂₉ - C ₃₆	µg/L	<100	<100
TRH (Silica) >C ₁₀ - C ₁₆	µg/L	<50	<50
TRH (Silica) >C ₁₆ - C ₃₄	µg/L	<100	<100
TRH (Silica) >C ₃₄ - C ₄₀	µg/L	<100	<100
Surrogate 1-Chlorooctadecane	%	99	81

PAHs in Water						
Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	81	78	92	86	88

PAHs in Water						
Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	86	88	86	97	87

Speciated Phenols in water						
Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Phenol	µg/L	<1	<1	<1	<1	<1
2-Chlorophenol	µg/L	<1	<1	<1	<1	<1
4-Chloro-3-Methylphenol	µg/L	<5	<5	<5	<5	<5
2-Methylphenol (O-Cresol)	µg/L	<1	<1	<1	<1	<1
3/4-Methylphenol (m/p-Cresol)	µg/L	<2	<2	<2	<2	<2
2-Nitrophenol	µg/L	<1	<1	<1	<1	<1
2,4-Dimethylphenol	µg/L	<1	<1	<1	<1	<1
2,4-Dichlorophenol	µg/L	<1	<1	<1	<1	<1
2,6-Dichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4-Dinitrophenol	µg/L	<20	<20	<20	<20	<20
4-Nitrophenol	µg/L	<20	<20	<20	<20	<20
2346-Tetrachlorophenol	µg/L	<1	<1	<1	<1	<1
2-methyl-4,6-Dinitrophenol	µg/L	<10	<10	<10	<10	<10
Pentachlorophenol	µg/L	<5	<5	<5	<5	<5
Surrogate 2-fluorophenol	%	45	35	44	41	41
Surrogate Phenol-d ₆	%	26	20	25	23	22
Surrogate 2,4,6-Tribromophenol	%	88	83	97	97	96
Surrogate p-Terphenyl-d ₁₄	%	81	78	92	86	88

Speciated Phenols in water

Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Phenol	µg/L	<1	<1	<1	<1	<1
2-Chlorophenol	µg/L	<1	<1	<1	<1	<1
4-Chloro-3-Methylphenol	µg/L	<5	<5	<5	<5	<5
2-Methylphenol (O-Cresol)	µg/L	<1	<1	<1	<1	<1
3/4-Methylphenol (m/p-Cresol)	µg/L	<2	<2	<2	<2	<2
2-Nitrophenol	µg/L	<1	<1	<1	<1	<1
2,4-Dimethylphenol	µg/L	<1	<1	<1	<1	<1
2,4-Dichlorophenol	µg/L	<1	<1	<1	<1	<1
2,6-Dichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4-Dinitrophenol	µg/L	<20	<20	<20	<20	<20
4-Nitrophenol	µg/L	<20	<20	<20	<20	<20
2346-Tetrachlorophenol	µg/L	<1	<1	<1	<1	<1
2-methyl-4,6-Dinitrophenol	µg/L	<10	<10	<10	<10	<10
Pentachlorophenol	µg/L	<5	<5	<5	<5	<5
Surrogate 2-fluorophenol	%	42	42	51	47	55
Surrogate Phenol-d ₆	%	21	23	26	28	33
Surrogate 2,4,6-Tribromophenol	%	94	95	78	101	80
Surrogate p-Terphenyl-d ₁₄	%	86	88	86	97	87

OCPs in Water - Trace Level						
Our Reference	UNITS	404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference		MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
alpha-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	70	67	86	86	86

OCPs in Water - Trace Level				
Our Reference		404471-6	404471-7	404471-9
Your Reference	UNITS	MW11	MW1A	MW12
Date Sampled		16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026
alpha-BHC	µg/L	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	84	81	95

OP in water LL ANZECCF/ADWG						
Our Reference	UNITS	404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference		MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Dichlorvos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Mevinphos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Phorate	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Disulfoton	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-Methyl	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Ronnel	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Fenitrothion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009	<0.009	<0.009
Fenthion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Bromophos ethyl	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Methidathion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Phosalone	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Coumaphos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate 4-Chloro-3-NBTF	%	70	67	86	86	86

OP in water LL ANZECCF/ADWG				
Our Reference		404471-6	404471-7	404471-9
Your Reference	UNITS	MW11	MW1A	MW12
Date Sampled		16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026
Dichlorvos	µg/L	<0.05	<0.05	<0.05
Mevinphos	µg/L	<0.05	<0.05	<0.05
Phorate	µg/L	<0.05	<0.05	<0.05
Dimethoate	µg/L	<0.1	<0.1	<0.1
Diazinon	µg/L	<0.01	<0.01	<0.01
Disulfoton	µg/L	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	µg/L	<0.05	<0.05	<0.05
Parathion-Methyl	µg/L	<0.05	<0.05	<0.05
Ronnel	µg/L	<0.05	<0.05	<0.05
Fenitrothion	µg/L	<0.05	<0.05	<0.05
Malathion	µg/L	<0.05	<0.05	<0.05
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009
Fenthion	µg/L	<0.05	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004	<0.004
Bromophos ethyl	µg/L	<0.05	<0.05	<0.05
Methidathion	µg/L	<0.05	<0.05	<0.05
Fenamiphos	µg/L	<0.05	<0.05	<0.05
Ethion	µg/L	<0.05	<0.05	<0.05
Phosalone	µg/L	<0.05	<0.05	<0.05
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02
Coumaphos	µg/L	<0.05	<0.05	<0.05
Surrogate 4-Chloro-3-NBTF	%	84	81	95

PCBs in Water - Trace Level

Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Aroclor 1016	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate 2-Fluorobiphenyl	%	94	91	77	76	75

PCBs in Water - Trace Level

Our Reference		404471-6	404471-7	404471-9
Your Reference	UNITS	MW11	MW1A	MW12
Date Sampled		16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026
Aroclor 1016	µg/L	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01	<0.01
Surrogate 2-Fluorobiphenyl	%	73	69	85

HM in water - dissolved						
Our Reference	UNITS	404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference		MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/03/2026	22/03/2026	22/03/2026	22/03/2026	22/03/2026
Date analysed	-	22/03/2026	22/03/2026	22/03/2026	22/03/2026	22/03/2026
Aluminium-Dissolved	µg/L	<10	<10	<10	270	2,200
Arsenic-Dissolved	µg/L	<1	<1	4	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	2	3
Copper-Dissolved	µg/L	<1	<1	<1	<1	<1
Iron-Dissolved	µg/L	65,000	360	9,500	630	3,600
Lead-Dissolved	µg/L	<1	<1	<1	1	1
Manganese-Dissolved	µg/L	9,700	740	690	15	330
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum-Dissolved	µg/L	<1	1	2	<1	<1
Nickel-Dissolved	µg/L	22	<1	7	<1	<1
Zinc-Dissolved	µg/L	41	2	280	20	5

HM in water - dissolved						
Our Reference	UNITS	404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference		MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/03/2026	22/03/2026	22/03/2026	22/03/2026	22/03/2026
Date analysed	-	22/03/2026	22/03/2026	22/03/2026	22/03/2026	22/03/2026
Aluminium-Dissolved	µg/L	240	340	200	240	250
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	2	1	1	<1	<1
Copper-Dissolved	µg/L	<1	<1	<1	<1	<1
Iron-Dissolved	µg/L	390	1,700	320	1,500	1,500
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Manganese-Dissolved	µg/L	8	130	110	13	13
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum-Dissolved	µg/L	<1	<1	<1	<1	<1
Nickel-Dissolved	µg/L	<1	<1	<1	<1	<1
Zinc-Dissolved	µg/L	<1	3	1	<1	<1

HM in water - total		
Our Reference		404471-8
Your Reference	UNITS	SW5
Date Sampled		16/03/2026
Type of sample		Water
Date prepared	-	22/03/2026
Date analysed	-	22/03/2026
Aluminium-Total	µg/L	290
Arsenic-Total	µg/L	<1
Cadmium-Total	µg/L	<0.1
Chromium-Total	µg/L	1
Copper-Total	µg/L	<1
Iron-Total	µg/L	1,300
Lead-Total	µg/L	<1
Manganese-Total	µg/L	100
Mercury-Total	µg/L	<0.05
Molybdenum-Total	µg/L	<1
Nickel-Total	µg/L	<1
Zinc-Total	µg/L	1

Ion Balance						
Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Date analysed	-	17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Calcium - Dissolved	mg/L	370	63	54	2	47
Potassium - Dissolved	mg/L	240	40	19	3	3
Sodium - Dissolved	mg/L	6,500	1,100	250	24	14
Magnesium - Dissolved	mg/L	930	110	36	2	16
Hardness (calc) equivalent CaCO ₃	mg/L	4,700	600	280	14	180
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5	<5	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	870	280	680	20	210
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	870	280	680	20	210
Sulphate, SO ₄	mg/L	5,100	250	16	1	5
Chloride, Cl	mg/L	9,500	2,300	37	32	15
Ionic Balance	%	-1.0	-12	6.0	3.0	-3.0

Ion Balance						
Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Date analysed	-	17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Calcium - Dissolved	mg/L	1	5	2	2	2
Potassium - Dissolved	mg/L	2	1	1	0.6	0.6
Sodium - Dissolved	mg/L	34	19	19	19	19
Magnesium - Dissolved	mg/L	3	4	3	2	2
Hardness (calc) equivalent CaCO ₃	mg/L	15	27	17	12	12
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5	<5	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	21	23	12	<5	<5
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	21	23	12	<5	<5
Sulphate, SO ₄	mg/L	2	<1	3	10	11
Chloride, Cl	mg/L	55	36	35	37	38
Ionic Balance	%	-4.0	-3.0	-4.0	-8.0	-8.0

Metals in Waters - Acid extractable

Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Phosphorus - Total	mg/L	1.4	0.08	<0.05	0.79	<0.05

Metals in Waters - Acid extractable

Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Phosphorus - Total	mg/L	<0.05	0.06	0.06	<0.05	<0.05

Miscellaneous Inorganics

Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Ammonia as N in water	mg/L	1.6	0.28	0.32	0.32	1.4
Nitrite as N in water	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate as N in water	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
NOx as N in water	mg/L	<0.005	0.005	<0.005	<0.005	<0.005
TKN in water	mg/L	3.9	0.5	3.7	1	2.2
Phosphate as P in water	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride, F	mg/L	0.5	0.5	0.8	<0.1	0.3
Total Suspended Solids	mg/L	170	40	42	1,700	70

Miscellaneous Inorganics

Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Ammonia as N in water	mg/L	0.49	0.18	0.20	0.098	0.11
Nitrite as N in water	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate as N in water	mg/L	<0.005	<0.005	0.007	<0.005	<0.005
NOx as N in water	mg/L	<0.005	<0.005	0.007	<0.005	<0.005
TKN in water	mg/L	1	0.7	1.0	0.2	0.2
Phosphate as P in water	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride, F	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Total Suspended Solids	mg/L	52	32	<5	<5	<5

PFAS in Water LOW LEVEL Extend

Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Perfluorobutanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.001	<0.001	0.003	0.004	0.002
Perfluoroheptanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	<0.001	<0.001	0.002	0.003	0.002
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.01	<0.01	<0.02	<0.01	<0.01
Perfluoropentanoic acid	µg/L	<0.01	<0.004	<0.02	<0.01	0.02
Perfluorohexanoic acid	µg/L	<0.001	<0.001	0.014	0.002	0.015
Perfluoroheptanoic acid	µg/L	<0.001	<0.001	0.007	0.001	0.004
Perfluorooctanoic acid PFOA	µg/L	<0.001	<0.001	0.002	0.002	0.001
Perfluorononanoic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorotetradecanoic acid	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
6:2 FTS	µg/L	0.016	0.003	0.005	<0.001	0.072
8:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
10:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
MePerfluorooctanesulf-amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	95	100	92	101	99
Surrogate ¹³ C ₂ PFOA	%	100	105	104	109	107
Extracted ISTD ¹³ C ₃ PFBS	%	58	61	52	52	68
Extracted ISTD ¹⁸ O ₂ PFHxS	%	76	76	70	65	83
Extracted ISTD ¹³ C ₄ PFOS	%	94	92	89	77	98
Extracted ISTD ¹³ C ₄ PFBA	%	#	22	#	#	33

PFAS in Water LOW LEVEL Extend						
Our Reference		404471-1	404471-2	404471-3	404471-4	404471-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	31	39	#	24	49
Extracted ISTD ¹³ C ₂ PFHxA	%	63	66	41	49	72
Extracted ISTD ¹³ C ₄ PFHpA	%	81	86	59	65	91
Extracted ISTD ¹³ C ₄ PFOA	%	87	87	58	61	81
Extracted ISTD ¹³ C ₅ PFNA	%	100	99	85	76	103
Extracted ISTD ¹³ C ₂ PFDA	%	98	106	92	90	114
Extracted ISTD ¹³ C ₂ PFUnDA	%	100	101	100	93	102
Extracted ISTD ¹³ C ₂ PFDoDA	%	106	111	97	79	110
Extracted ISTD ¹³ C ₂ PFTeDA	%	80	104	101	90	136
Extracted ISTD ¹³ C ₂ 4:2FTS	%	60	78	49	58	80
Extracted ISTD ¹³ C ₂ 6:2FTS	%	69	79	58	62	84
Extracted ISTD ¹³ C ₂ 8:2FTS	%	92	101	92	88	106
Extracted ISTD ¹³ C ₈ FOSA	%	99	103	99	71	108
Extracted ISTD d ₃ N MeFOSA	%	102	96	96	97	100
Extracted ISTD d ₅ N EtFOSA	%	106	98	102	98	104
Extracted ISTD d ₇ N MeFOSE	%	98	95	94	93	98
Extracted ISTD d ₉ N EtFOSE	%	96	93	93	92	96
Extracted ISTD d ₃ N MeFOSAA	%	87	110	108	80	104
Extracted ISTD d ₅ N EtFOSAA	%	85	98	89	76	108
Total Positive PFHxS & PFOS	µg/L	<0.001	<0.001	0.005	0.007	0.004
Total Positive PFOA & PFOS	µg/L	<0.001	<0.001	0.004	0.005	0.003
Total Positive PFAS	µg/L	0.016	0.003	0.032	0.011	0.11

PFAS in Water LOW LEVEL Extend

Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Perfluorobutanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.002	0.002	0.002	<0.001	<0.001
Perfluoroheptanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	<0.001	0.003	0.003	<0.001	<0.001
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoropentanoic acid	µg/L	<0.004	<0.004	<0.01	<0.004	<0.004
Perfluorohexanoic acid	µg/L	0.002	<0.001	<0.001	<0.001	<0.001
Perfluoroheptanoic acid	µg/L	<0.001	<0.001	0.001	<0.001	<0.001
Perfluorooctanoic acid PFOA	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorononanoic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorotetradecanoic acid	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
6:2 FTS	µg/L	0.004	0.003	<0.001	0.001	0.001
8:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
10:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
MePerfluorooctanesulf-amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	99	91	104	101	100
Surrogate ¹³ C ₂ PFOA	%	114	100	110	107	103
Extracted ISTD ¹³ C ₃ PFBS	%	61	54	60	62	66
Extracted ISTD ¹⁸ O ₂ PFHxS	%	82	78	74	77	77
Extracted ISTD ¹³ C ₄ PFOS	%	95	97	87	90	94
Extracted ISTD ¹³ C ₄ PFBA	%	#	#	#	22	22

PFAS in Water LOW LEVEL Extend						
Our Reference		404471-6	404471-7	404471-8	404471-9	404471-10
Your Reference	UNITS	MW11	MW1A	SW5	MW12	DGW/16.3.26
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	33	31	29	38	36
Extracted ISTD ¹³ C ₂ PFHxA	%	69	62	60	69	70
Extracted ISTD ¹³ C ₄ PFHpA	%	87	74	76	84	87
Extracted ISTD ¹³ C ₄ PFOA	%	81	73	75	81	93
Extracted ISTD ¹³ C ₅ PFNA	%	102	98	90	86	97
Extracted ISTD ¹³ C ₂ PFDA	%	100	92	95	89	101
Extracted ISTD ¹³ C ₂ PFUnDA	%	111	94	108	94	107
Extracted ISTD ¹³ C ₂ PFDoDA	%	106	104	115	111	116
Extracted ISTD ¹³ C ₂ PFTeDA	%	135	131	137	135	137
Extracted ISTD ¹³ C ₂ 4:2FTS	%	77	73	73	71	80
Extracted ISTD ¹³ C ₂ 6:2FTS	%	77	71	77	76	82
Extracted ISTD ¹³ C ₂ 8:2FTS	%	117	102	96	105	108
Extracted ISTD ¹³ C ₈ FOSA	%	114	111	106	106	119
Extracted ISTD d ₃ N MeFOSA	%	99	97	99	98	97
Extracted ISTD d ₅ N EtFOSA	%	101	104	106	100	99
Extracted ISTD d ₇ N MeFOSE	%	94	94	98	98	93
Extracted ISTD d ₉ N EtFOSE	%	90	95	98	91	92
Extracted ISTD d ₃ N MeFOSAA	%	119	119	118	108	124
Extracted ISTD d ₅ N EtFOSAA	%	106	104	102	99	110
Total Positive PFHxS & PFOS	µg/L	0.002	0.006	0.006	<0.001	<0.001
Total Positive PFOA & PFOS	µg/L	<0.001	0.003	0.003	<0.001	<0.001
Total Positive PFAS	µg/L	0.009	0.008	0.006	0.001	0.001

Method ID	Methodology Summary
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-026	Fluoride determined by ion selective electrode (ISE) in accordance with APHA latest edition, 4500-F-C.
Inorg-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 15% ie total anions = total cations +/-15%.
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Metals-020	Determination of various metals/elements by ICP-AES. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Where molecular anion forms are calculated from an element (e.g. SO4 from S or PO4 from P stoichiometrically), the assumption is that the element is only present in that molecular anion form. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Note, the Total +ve PFAS PQL is reflective of the lowest individual PQL and is therefore "Total +ve PFAS" is simply a sum of the positive individual PFASs (or a described sub-set). Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			18/03/2026	1	18/03/2026	19/03/2026		18/03/2026	[NT]
Date analysed	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	1	<10	<10	0	88	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	1	<10	<10	0	88	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	91	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	87	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	85	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	89	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	91	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	104	1	108	110	2	105	[NT]
Surrogate Toluene-d8	%		Org-023	99	1	99	99	0	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	95	1	96	93	3	106	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	82	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water NEPM Silica gel						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			24/03/2026	[NT]	[NT]	[NT]	[NT]	24/03/2026	[NT]
TRH (Silica) C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH (Silica) C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH (Silica) C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH (Silica) >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH (Silica) >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH (Silica) >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate 1-Chlorooctadecane	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Speciated Phenols in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Phenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	33	[NT]
2-Chlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
4-Chloro-3-Methylphenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Methylphenol (O-Cresol)	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	55	[NT]
3/4-Methylphenol (m/p-Cresol)	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Nitrophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dimethylphenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	129	[NT]
2,4,5-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dinitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Nitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	31	[NT]
2346-Tetrachlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-methyl-4,6-Dinitrophenol	µg/L	10	Org-022/025	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Pentachlorophenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	68	[NT]
Surrogate 2-fluorophenol	%		Org-022/025	45	[NT]	[NT]	[NT]	[NT]	42	[NT]
Surrogate Phenol-d ₆	%		Org-022/025	27	[NT]	[NT]	[NT]	[NT]	23	[NT]
Surrogate 2,4,6-Tribromophenol	%		Org-022/025	71	[NT]	[NT]	[NT]	[NT]	73	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	126	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	134	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	104	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	115	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	128	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	111	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	115	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	98	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	111	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	90	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: OP in water LL ANZECCF/ADWG					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Dichlorvos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	93	[NT]
Mevinphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Phorate	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.01	Org-022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Disulfoton	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos-methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion-Methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	116	[NT]
Fenitrothion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	125	[NT]
Malathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	129	[NT]
Chlorpyrifos	µg/L	0.009	Org-022/025	<0.009	[NT]	[NT]	[NT]	[NT]	131	[NT]
Fenthion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	µg/L	0.004	Org-022/025	<0.004	[NT]	[NT]	[NT]	[NT]	124	[NT]
Bromophos ethyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methidathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fenamiphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	132	[NT]
Phosalone	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Org-022/025	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Coumaphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: PCBs in Water - Trace Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/03/2026	[NT]	[NT]	[NT]	[NT]	18/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Aroclor 1016	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Aroclor 1260	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	73	[NT]	[NT]	[NT]	[NT]	70	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	404471-2
Date prepared	-			24/03/2026	1	22/03/2026	22/03/2026		24/03/2026	22/03/2026
Date analysed	-			24/03/2026	1	22/03/2026	22/03/2026		24/03/2026	22/03/2026
Aluminium-Dissolved	µg/L	10	Metals-022	<10	1	<10	<10	0	101	95
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	101	104
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	102	100
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	94	113
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	97	99
Iron-Dissolved	µg/L	10	Metals-022	<10	1	65000	64000	2	105	72
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	101	86
Manganese-Dissolved	µg/L	5	Metals-022	<5	1	9700	9500	2	94	#
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	105	102
Molybdenum-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	91	90
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	22	21	5	95	103
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	41	41	0	96	103

QUALITY CONTROL: HM in water - total					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			22/03/2026	8	22/03/2026	22/03/2026		22/03/2026	[NT]
Date analysed	-			22/03/2026	8	22/03/2026	22/03/2026		22/03/2026	[NT]
Aluminium-Total	µg/L	10	Metals-022	<10	8	290	300	3	106	[NT]
Arsenic-Total	µg/L	1	Metals-022	<1	8	<1	<1	0	106	[NT]
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	8	<0.1	<0.1	0	104	[NT]
Chromium-Total	µg/L	1	Metals-022	<1	8	1	1	0	92	[NT]
Copper-Total	µg/L	1	Metals-022	<1	8	<1	<1	0	96	[NT]
Iron-Total	µg/L	10	Metals-022	<10	8	1300	1200	8	107	[NT]
Lead-Total	µg/L	1	Metals-022	<1	8	<1	<1	0	102	[NT]
Manganese-Total	µg/L	5	Metals-022	<5	8	100	100	0	92	[NT]
Mercury-Total	µg/L	0.05	Metals-021	<0.05	8	<0.05	[NT]		95	[NT]
Molybdenum-Total	µg/L	1	Metals-022	<1	8	<1	<1	0	93	[NT]
Nickel-Total	µg/L	1	Metals-022	<1	8	<1	<1	0	93	[NT]
Zinc-Total	µg/L	1	Metals-022	<1	8	1	2	67	95	[NT]

QUALITY CONTROL: Ion Balance						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404471-3
Date prepared	-			17/03/2026	1	17/03/2026	17/03/2026		17/03/2026	17/03/2026
Date analysed	-			17/03/2026	1	17/03/2026	17/03/2026		17/03/2026	17/03/2026
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	370	370	0	96	#
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	240	240	0	95	85
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	6500	6500	0	92	#
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	930	910	2	96	#
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	[NT]	1	4700	4700	0	[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	<5	0	[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	870	880	1	[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	<5	0	[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	870	880	1	93	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	5100	5700	11	117	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	1	9500	11000	15	107	[NT]
Ionic Balance	%		Inorg-040	[NT]	1	-1.0	-6.0	-143	[NT]	[NT]

Client Reference: 39920.20, Tomago

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/03/2026	8	20/03/2026	20/03/2026		20/03/2026	[NT]
Date analysed	-			22/03/2026	8	23/03/2026	23/03/2026		23/03/2026	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	8	0.06	<0.05	18	102	[NT]

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404471-2
Date prepared	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	18/03/2026
Date analysed	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	18/03/2026
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	1.6	1.6	0	97	100
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	<0.005	0	102	103
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	<0.005	0	96	96
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	<0.005	0	96	96
TKN in water	mg/L	0.1	Inorg-062	<0.1	1	3.9	3.9	0	106	111
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	<0.005	<0.005	0	112	110
Fluoride, F	mg/L	0.1	Inorg-026	<0.1	1	0.5	0.5	0	98	86
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	170	[NT]		108	[NT]

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	4	18/03/2026	18/03/2026		[NT]	[NT]
Date analysed	-			[NT]	4	18/03/2026	18/03/2026		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	4	0.32	[NT]		[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	4	<0.005	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	4	<0.005	[NT]		[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	4	<0.005	[NT]		[NT]	[NT]
TKN in water	mg/L	0.1	Inorg-062	[NT]	4	1	[NT]		[NT]	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	[NT]	4	<0.005	[NT]		[NT]	[NT]
Fluoride, F	mg/L	0.1	Inorg-026	[NT]	4	<0.1	[NT]		[NT]	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	[NT]	4	1700	1700	0	[NT]	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404471-2
Date prepared	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	19/03/2026
Date analysed	-			20/03/2026	1	20/03/2026	20/03/2026		20/03/2026	20/03/2026
Perfluorobutanesulfonic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	101	111
Perfluoropentanesulfonic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	97	113
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	99	117
Perfluoroheptanesulfonic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	100	113
Perfluorooctanesulfonic acid PFOS	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	98	105
Perfluorodecanesulfonic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	96	101
Perfluorobutanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.01	<0.01	0	95	122
Perfluoropentanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.01	<0.01	0	97	109
Perfluorohexanoic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	92	91
Perfluoroheptanoic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	96	106
Perfluorooctanoic acid PFOA	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	101	104
Perfluorononanoic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	96	95
Perfluorodecanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	98	95
Perfluoroundecanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	91	87
Perfluorododecanoic acid	µg/L	0.005	Org-029	<0.005	1	<0.005	<0.005	0	103	99
Perfluorotridecanoic acid	µg/L	0.01	Org-029	<0.01	1	<0.01	<0.01	0	100	91
Perfluorotetradecanoic acid	µg/L	0.05	Org-029	<0.05	1	<0.05	<0.05	0	78	87
4:2 FTS	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	103	105
6:2 FTS	µg/L	0.001	Org-029	<0.001	1	0.016	0.017	6	107	124
8:2 FTS	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	97	117
10:2 FTS	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	101	100
Perfluorooctane sulfonamide	µg/L	0.01	Org-029	<0.01	1	<0.01	<0.01	0	97	109
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	1	<0.05	<0.05	0	96	99
N-Ethyl perfluorooctanesulfonamide	µg/L	0.1	Org-029	<0.1	1	<0.1	<0.1	0	101	94
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-029	<0.05	1	<0.05	<0.05	0	102	98
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-029	<0.5	1	<0.5	<0.5	0	95	117
MePerfluorooctanesulf-amid oacetic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	99	88
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	96	114
Surrogate ¹³ C ₈ PFOS	%		Org-029	96	1	95	99	4	102	98
Surrogate ¹³ C ₂ PFOA	%		Org-029	102	1	100	106	6	103	107

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404471-2
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	91	1	58	58	0	91	62
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	88	1	76	73	4	92	73
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	89	1	94	85	10	92	91
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	98	1	#	#		102	20
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	91	1	31	27	14	97	36
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	83	1	63	59	7	95	71
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	94	1	81	78	4	96	82
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	87	1	87	81	7	90	82
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	88	1	100	88	13	92	101
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	85	1	98	89	10	84	98
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	94	1	100	85	16	102	93
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	85	1	106	89	17	99	110
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	120	1	80	78	3	108	103
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	96	1	60	62	3	101	77
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	95	1	69	69	0	95	78
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	109	1	92	85	8	112	101
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	99	1	99	91	8	113	102
Extracted ISTD d ₃ N MeFOSA	%		Org-029	97	1	102	99	3	95	99
Extracted ISTD d ₅ N EtFOSA	%		Org-029	94	1	106	102	4	93	99
Extracted ISTD d ₇ N MeFOSE	%		Org-029	93	1	98	101	3	91	97

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404471-2
Extracted ISTD d ₉ N EtFOSE	%		Org-029	92	1	96	96	0	91	90
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	97	1	87	81	7	101	108
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	106	1	85	76	11	109	93

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

PFAS in Water LOW LEVEL Extend - For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

8 HM in water - dissolved - # Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Ion Balance - # Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

CERTIFICATE OF ANALYSIS 404471-A

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>39920.20, Tomago</u>
Number of Samples	Additional analysis
Date samples received	17/03/2026
Date completed instructions received	27/03/2026

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	07/04/2026
Date of Issue	31/03/2026

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Nancy Zhang, Laboratory Manager, Sydney

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics

Our Reference		404471-A-1	404471-A-2	404471-A-3	404471-A-4	404471-A-5
Your Reference	UNITS	MW4	MW6	MW2	MW10	MW13
Date Sampled		16/03/2026	16/03/2026	16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	30/03/2026	30/03/2026	30/03/2026	30/03/2026	30/03/2026
Date analysed	-	30/03/2026	30/03/2026	30/03/2026	30/03/2026	30/03/2026
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004

Miscellaneous Inorganics

Our Reference		404471-A-6	404471-A-7	404471-A-9
Your Reference	UNITS	MW11	MW1A	MW12
Date Sampled		16/03/2026	16/03/2026	16/03/2026
Type of sample		Water	Water	Water
Date prepared	-	30/03/2026	30/03/2026	30/03/2026
Date analysed	-	30/03/2026	30/03/2026	30/03/2026
Total Cyanide	mg/L	<0.004	<0.004	<0.004

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hypochlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.

Client Reference: 39920.20, Tomago

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404471-A-2
Date prepared	-			30/03/2026	1	30/03/2026	30/03/2026		30/03/2026	30/03/2026
Date analysed	-			30/03/2026	1	30/03/2026	30/03/2026		30/03/2026	30/03/2026
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	100	73

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

CERTIFICATE OF ANALYSIS 404571

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>39920.20, Tomago</u>
Number of Samples	4 Water
Date samples received	18/03/2026
Date completed instructions received	18/03/2026

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/03/2026
Date of Issue	25/03/2026

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Dragana Tomas, Senior Chemist
 Jenny He, Inorganic Team Leader
 Larry Ye, Senior Chemist
 Nick Sarlamis, Assistant Operation Manager
 Sean McAlary, Senior Chemist
 Tabitha Roberts, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date extracted	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Date analysed	-	21/03/2026	21/03/2026	21/03/2026	21/03/2026
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1
Toluene	µg/L	<1	2	<1	3
Ethylbenzene	µg/L	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	109	111	110	112
Surrogate Toluene-d8	%	99	98	99	99
Surrogate 4-Bromofluorobenzene	%	92	92	91	91

svTRH (C10-C40) in Water					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	<100	340	230	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	190	180	<100
Total +ve TRH (C10-C36)	µg/L	<50	530	410	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50	51	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	51	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100	460	340	110
TRH >C ₃₄ - C ₄₀	µg/L	<100	120	120	<100
Total +ve TRH (>C10-C40)	µg/L	<50	630	470	110
Surrogate o-Terphenyl	%	96	80	93	84

PAHs in Water					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	20/03/2026
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	88	74	102	86

Speciated Phenols in water					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	20/03/2026
Phenol	µg/L	<1	<1	<1	<1
2-Chlorophenol	µg/L	<1	<1	<1	<1
4-Chloro-3-Methylphenol	µg/L	<5	<5	<5	<5
2-Methylphenol (O-Cresol)	µg/L	<1	<1	<1	<1
3/4-Methylphenol (m/p-Cresol)	µg/L	<2	<2	<2	<2
2-Nitrophenol	µg/L	<1	<1	<1	<1
2,4-Dimethylphenol	µg/L	<1	<1	<1	<1
2,4-Dichlorophenol	µg/L	<1	<1	<1	<1
2,6-Dichlorophenol	µg/L	<1	<1	<1	<1
2,4,5-Trichlorophenol	µg/L	<1	<1	<1	<1
2,4,6-Trichlorophenol	µg/L	<1	<1	<1	<1
2,4-Dinitrophenol	µg/L	<20	<20	<20	<20
4-Nitrophenol	µg/L	<20	<20	<20	<20
2346-Tetrachlorophenol	µg/L	<1	<1	<1	<1
2-methyl-4,6-Dinitrophenol	µg/L	<10	<10	<10	<10
Pentachlorophenol	µg/L	<5	<5	<5	<5
Surrogate 2-fluorophenol	%	40	38	41	52
Surrogate Phenol-d ₆	%	22	24	27	33
Surrogate 2,4,6-Tribromophenol	%	97	90	108	76
Surrogate p-Terphenyl-d ₁₄	%	88	74	102	86

OCPs in Water - Trace Level				
Our Reference		404571-1	404571-2	404571-3
Your Reference	UNITS	MW8A	SW3A	SW1
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
alpha-BHC	µg/L	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	90	75	106

OP in water LL ANZECCF/ADWG				
Our Reference		404571-1	404571-2	404571-3
Your Reference	UNITS	MW8A	SW3A	SW1
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Dichlorvos	µg/L	<0.05	<0.05	<0.05
Mevinphos	µg/L	<0.05	<0.05	<0.05
Phorate	µg/L	<0.05	<0.05	<0.05
Dimethoate	µg/L	<0.1	<0.1	<0.1
Diazinon	µg/L	<0.01	<0.01	<0.01
Disulfoton	µg/L	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	µg/L	<0.05	<0.05	<0.05
Parathion-Methyl	µg/L	<0.05	<0.05	<0.05
Ronnel	µg/L	<0.05	<0.05	<0.05
Fenitrothion	µg/L	<0.05	<0.05	<0.05
Malathion	µg/L	<0.05	<0.05	<0.05
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009
Fenthion	µg/L	<0.05	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004	<0.004
Bromophos ethyl	µg/L	<0.05	<0.05	<0.05
Methidathion	µg/L	<0.05	<0.05	<0.05
Fenamiphos	µg/L	<0.05	<0.05	<0.05
Ethion	µg/L	<0.05	<0.05	<0.05
Phosalone	µg/L	<0.05	<0.05	<0.05
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02
Coumaphos	µg/L	<0.05	<0.05	<0.05
Surrogate 4-Chloro-3-NBTF	%	90	75	106

PCBs in Water - Trace Level				
Our Reference		404571-1	404571-2	404571-3
Your Reference	UNITS	MW8A	SW3A	SW1
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Aroclor 1016	µg/L	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01	<0.01
Surrogate 2-Fluorobiphenyl	%	81	68	95

HM in water - dissolved					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date prepared	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Aluminium-Dissolved	µg/L	140	180	20	180
Arsenic-Dissolved	µg/L	2	<1	2	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	2	1	<1	1
Copper-Dissolved	µg/L	<1	<1	<1	<1
Iron-Dissolved	µg/L	40	2,100	190	1,900
Lead-Dissolved	µg/L	<1	<1	<1	<1
Manganese-Dissolved	µg/L	200	49	160	48
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05
Molybdenum-Dissolved	µg/L	<1	<1	<1	<1
Nickel-Dissolved	µg/L	<1	<1	<1	<1
Zinc-Dissolved	µg/L	1	3	1	3

HM in water - total				
Our Reference		404571-2	404571-3	404571-4
Your Reference	UNITS	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date prepared	-	22/03/2026	22/03/2026	22/03/2026
Date analysed	-	22/03/2026	22/03/2026	22/03/2026
Aluminium-Total	µg/L	9,900	180	9,300
Arsenic-Total	µg/L	4	3	4
Cadmium-Total	µg/L	0.3	<0.1	0.3
Chromium-Total	µg/L	11	<1	8
Copper-Total	µg/L	12	1	19
Iron-Total	µg/L	14,000	2,000	12,000
Lead-Total	µg/L	18	<1	22
Manganese-Total	µg/L	140	180	130
Mercury-Total	µg/L	<0.05	<0.05	<0.05
Molybdenum-Total	µg/L	<1	<1	<1
Nickel-Total	µg/L	6	<1	5
Zinc-Total	µg/L	150	7	160

Ion Balance					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date prepared	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Calcium - Dissolved	mg/L	28	5	3	5
Potassium - Dissolved	mg/L	2	1	1	1
Sodium - Dissolved	mg/L	17	17	20	17
Magnesium - Dissolved	mg/L	4	1	2	1
Hardness (calc) equivalent CaCO ₃	mg/L	86	18	14	18
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	60	11	21	9
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	60	11	21	9
Sulphate, SO ₄	mg/L	58	10	<1	9
Chloride, Cl	mg/L	21	33	37	31
Ionic Balance	%	-9.0	-9.0	-10	-5.0

Metals in Waters - Acid extractable					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date prepared	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Phosphorus - Total	mg/L	0.05	0.4	0.2	0.50

Miscellaneous Inorganics					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date prepared	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Ammonia as N in water	mg/L	0.12	0.007	0.15	0.02
Nitrite as N in water	mg/L	<0.005	<0.005	<0.005	<0.005
Nitrate as N in water	mg/L	0.006	<0.005	<0.005	<0.005
NOx as N in water	mg/L	0.007	<0.005	<0.005	<0.005
TKN in water	mg/L	0.4	1.2	1.6	3.5
Phosphate as P in water	mg/L	<0.005	<0.005	0.01	<0.005
Fluoride, F	mg/L	<0.1	<0.1	0.1	<0.1
Total Suspended Solids	mg/L	89	1,100	87	800

PFAS in Water LOW LEVEL Extend

Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Date prepared	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Perfluorobutanesulfonic acid	µg/L	0.001	<0.001	<0.001	<0.001
Perfluoropentanesulfonic acid	µg/L	<0.001	<0.001	0.001	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.006	0.006	0.003	0.005
Perfluoroheptanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	0.008	0.005	0.002	0.005
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluoropentanoic acid	µg/L	0.006	<0.004	0.02	<0.004
Perfluorohexanoic acid	µg/L	0.004	0.001	0.011	0.001
Perfluoroheptanoic acid	µg/L	0.003	<0.001	0.008	<0.001
Perfluorooctanoic acid PFOA	µg/L	0.004	0.003	0.002	0.003
Perfluorononanoic acid	µg/L	0.004	<0.001	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluorotetradecanoic acid	µg/L	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	<0.001	<0.001	<0.001	<0.001
6:2 FTS	µg/L	0.004	<0.001	<0.001	<0.001
8:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002
10:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5	<0.5	<0.5	<0.5
MePerfluorooctanesulf-amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	88	90	94	94
Surrogate ¹³ C ₂ PFOA	%	105	109	109	114
Extracted ISTD ¹³ C ₃ PFBS	%	87	90	86	95
Extracted ISTD ¹⁸ O ₂ PFHxS	%	91	81	89	92
Extracted ISTD ¹³ C ₄ PFOS	%	95	78	85	95
Extracted ISTD ¹³ C ₄ PFBA	%	29	#	#	#

PFAS in Water LOW LEVEL Extend					
Our Reference		404571-1	404571-2	404571-3	404571-4
Your Reference	UNITS	MW8A	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	49	37	27	37
Extracted ISTD ¹³ C ₂ PFHxA	%	71	60	50	65
Extracted ISTD ¹³ C ₄ PFHpA	%	74	64	55	69
Extracted ISTD ¹³ C ₄ PFOA	%	85	72	69	82
Extracted ISTD ¹³ C ₅ PFNA	%	92	76	81	95
Extracted ISTD ¹³ C ₂ PFDA	%	91	74	79	92
Extracted ISTD ¹³ C ₂ PFUnDA	%	89	69	78	83
Extracted ISTD ¹³ C ₂ PFDoDA	%	91	75	77	90
Extracted ISTD ¹³ C ₂ PFTeDA	%	80	74	79	79
Extracted ISTD ¹³ C ₂ 4:2FTS	%	91	75	81	82
Extracted ISTD ¹³ C ₂ 6:2FTS	%	103	94	95	102
Extracted ISTD ¹³ C ₂ 8:2FTS	%	115	95	111	123
Extracted ISTD ¹³ C ₈ FOSA	%	103	82	102	105
Extracted ISTD d ₃ N MeFOSA	%	99	97	98	97
Extracted ISTD d ₅ N EtFOSA	%	99	102	102	101
Extracted ISTD d ₇ N MeFOSE	%	99	97	101	99
Extracted ISTD d ₉ N EtFOSE	%	97	100	100	95
Extracted ISTD d ₃ N MeFOSAA	%	86	89	110	97
Extracted ISTD d ₅ N EtFOSAA	%	110	48	116	97
Total Positive PFHxS & PFOS	µg/L	0.014	0.010	0.005	0.0099
Total Positive PFOA & PFOS	µg/L	0.012	0.007	0.005	0.007
Total Positive PFAS	µg/L	0.040	0.014	0.043	0.014

Method ID	Methodology Summary
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-026	Fluoride determined by ion selective electrode (ISE) in accordance with APHA latest edition, 4500-F-C.
Inorg-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 15% ie total anions = total cations +/-15%.
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Metals-020	Determination of various metals/elements by ICP-AES. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Where molecular anion forms are calculated from an element (e.g. SO4 from S or PO4 from P stoichiometrically), the assumption is that the element is only present in that molecular anion form. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Note, the Total +ve PFAS PQL is reflective of the lowest individual PQL and is therefore "Total +ve PFAS" is simply a sum of the positive individual PFASs (or a described sub-set). Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			20/03/2026	2	20/03/2026	23/03/2026		20/03/2026	[NT]
Date analysed	-			21/03/2026	2	21/03/2026	23/03/2026		21/03/2026	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	2	<10	<10	0	120	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	2	<10	12	18	120	[NT]
Benzene	µg/L	1	Org-023	<1	2	<1	<1	0	119	[NT]
Toluene	µg/L	1	Org-023	<1	2	2	2	0	122	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	2	<1	<1	0	121	[NT]
m+p-xylene	µg/L	2	Org-023	<2	2	<2	<2	0	120	[NT]
o-xylene	µg/L	1	Org-023	<1	2	<1	<1	0	123	[NT]
Naphthalene	µg/L	1	Org-023	<1	2	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	109	2	111	112	1	109	[NT]
Surrogate Toluene-d8	%		Org-023	99	2	98	98	0	102	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	93	2	92	93	1	108	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	98	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	98	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			[NT]	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Naphthalene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	88	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Fluorene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	99	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	107	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	99	[NT]
Pyrene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chrysene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	88	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: Speciated Phenols in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Phenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	31	[NT]
2-Chlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
4-Chloro-3-Methylphenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Methylphenol (O-Cresol)	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	54	[NT]
3/4-Methylphenol (m/p-Cresol)	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Nitrophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dimethylphenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	128	[NT]
2,4,5-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dinitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Nitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	26	[NT]
2346-Tetrachlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-methyl-4,6-Dinitrophenol	µg/L	10	Org-022/025	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Pentachlorophenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	76	[NT]
Surrogate 2-fluorophenol	%		Org-022/025	49	[NT]	[NT]	[NT]	[NT]	41	[NT]
Surrogate Phenol-d ₆	%		Org-022/025	30	[NT]	[NT]	[NT]	[NT]	23	[NT]
Surrogate 2,4,6-Tribromophenol	%		Org-022/025	105	[NT]	[NT]	[NT]	[NT]	73	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022/025	89	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: Speciated Phenols in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			[NT]	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
Phenol	µg/L	1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	30	[NT]
2-Chlorophenol	µg/L	1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	92	[NT]
2-Methylphenol (O-Cresol)	µg/L	1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	68	[NT]
2,6-Dichlorophenol	µg/L	1	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	89	[NT]
4-Nitrophenol	µg/L	20	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	32	[NT]
Pentachlorophenol	µg/L	5	Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	65	[NT]
Surrogate 2-fluorophenol	%		Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	51	[NT]
Surrogate Phenol-d ₆	%		Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	30	[NT]
Surrogate 2,4,6-Tribromophenol	%		Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	85	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022/025	[NT]	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	134	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	117	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	120	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	112	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	116	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	93	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	83	[NT]

QUALITY CONTROL: OP in water LL ANZECCF/ADWG					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Dichlorvos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	68	[NT]
Mevinphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Phorate	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.01	Org-022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Disulfoton	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos-methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion-Methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	122	[NT]
Fenitrothion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	119	[NT]
Malathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	83	[NT]
Chlorpyrifos	µg/L	0.009	Org-022/025	<0.009	[NT]	[NT]	[NT]	[NT]	128	[NT]
Fenthion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	µg/L	0.004	Org-022/025	<0.004	[NT]	[NT]	[NT]	[NT]	98	[NT]
Bromophos ethyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methidathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fenamiphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	108	[NT]
Phosalone	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Org-022/025	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Coumaphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	83	[NT]

QUALITY CONTROL: PCBs in Water - Trace Level					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Aroclor 1016	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	136	[NT]
Aroclor 1260	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	83	[NT]	[NT]	[NT]	[NT]	84	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			23/03/2026	2	23/03/2026	23/03/2026		23/03/2026	[NT]
Date analysed	-			23/03/2026	2	23/03/2026	23/03/2026		23/03/2026	[NT]
Aluminium-Dissolved	µg/L	10	Metals-022	<10	2	180	180	0	102	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	2	<1	<1	0	101	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	2	<0.1	<0.1	0	102	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	2	1	1	0	90	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	2	<1	<1	0	94	[NT]
Iron-Dissolved	µg/L	10	Metals-022	<10	2	2100	2000	5	102	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	2	<1	<1	0	101	[NT]
Manganese-Dissolved	µg/L	5	Metals-022	<5	2	49	49	0	89	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	2	<0.05	[NT]		114	[NT]
Molybdenum-Dissolved	µg/L	1	Metals-022	<1	2	<1	<1	0	92	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	2	<1	<1	0	92	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	2	3	3	0	93	[NT]

QUALITY CONTROL: HM in water - total					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	404571-3
Date prepared	-			22/03/2026	2	22/03/2026	22/03/2026		22/03/2026	22/03/2026
Date analysed	-			22/03/2026	2	22/03/2026	22/03/2026		22/03/2026	22/03/2026
Aluminium-Total	µg/L	10	Metals-022	<10	2	9900	9600	3	102	#
Arsenic-Total	µg/L	1	Metals-022	<1	2	4	4	0	104	105
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	2	0.3	0.3	0	102	106
Chromium-Total	µg/L	1	Metals-022	<1	2	11	11	0	85	95
Copper-Total	µg/L	1	Metals-022	<1	2	12	12	0	88	93
Iron-Total	µg/L	10	Metals-022	<10	2	14000	13000	7	101	#
Lead-Total	µg/L	1	Metals-022	<1	2	18	18	0	101	93
Manganese-Total	µg/L	5	Metals-022	<5	2	140	140	0	83	#
Mercury-Total	µg/L	0.05	Metals-021	<0.05	2	<0.05	[NT]		89	[NT]
Molybdenum-Total	µg/L	1	Metals-022	<1	2	<1	<1	0	92	97
Nickel-Total	µg/L	1	Metals-022	<1	2	6	6	0	87	94
Zinc-Total	µg/L	1	Metals-022	<1	2	150	150	0	89	97

QUALITY CONTROL: HM in water - total					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	4	22/03/2026	22/03/2026		[NT]	[NT]
Date analysed	-			[NT]	4	22/03/2026	22/03/2026		[NT]	[NT]
Aluminium-Total	µg/L	10	Metals-022	[NT]	4	9300	[NT]		[NT]	[NT]
Arsenic-Total	µg/L	1	Metals-022	[NT]	4	4	[NT]		[NT]	[NT]
Cadmium-Total	µg/L	0.1	Metals-022	[NT]	4	0.3	[NT]		[NT]	[NT]
Chromium-Total	µg/L	1	Metals-022	[NT]	4	8	[NT]		[NT]	[NT]
Copper-Total	µg/L	1	Metals-022	[NT]	4	19	[NT]		[NT]	[NT]
Iron-Total	µg/L	10	Metals-022	[NT]	4	12000	[NT]		[NT]	[NT]
Lead-Total	µg/L	1	Metals-022	[NT]	4	22	[NT]		[NT]	[NT]
Manganese-Total	µg/L	5	Metals-022	[NT]	4	130	[NT]		[NT]	[NT]
Mercury-Total	µg/L	0.05	Metals-021	[NT]	4	<0.05	<0.05	0	[NT]	[NT]
Molybdenum-Total	µg/L	1	Metals-022	[NT]	4	<1	[NT]		[NT]	[NT]
Nickel-Total	µg/L	1	Metals-022	[NT]	4	5	[NT]		[NT]	[NT]
Zinc-Total	µg/L	1	Metals-022	[NT]	4	160	[NT]		[NT]	[NT]

QUALITY CONTROL: Ion Balance						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			18/03/2026	1	19/03/2026	19/03/2026		18/03/2026	[NT]
Date analysed	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	28	[NT]		104	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	2	[NT]		93	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	17	[NT]		88	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	4	[NT]		99	[NT]
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	[NT]	1	86	[NT]		[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	<5	0	[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	60	59	2	[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	<5	0	[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	60	59	2	98	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	58	[NT]		99	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	1	21	[NT]		115	[NT]
Ionic Balance	%		Inorg-040	[NT]	1	-9.0	[NT]		[NT]	[NT]

QUALITY CONTROL: Ion Balance						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	2	19/03/2026	19/03/2026		[NT]	[NT]
Date analysed	-			[NT]	2	18/03/2026	18/03/2026		[NT]	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	[NT]	2	5	5	0	[NT]	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	[NT]	2	1	1	0	[NT]	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	[NT]	2	17	16	6	[NT]	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	[NT]	2	1	1	0	[NT]	[NT]
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	[NT]	2	18	18	0	[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	[NT]	2	<5	[NT]		[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	2	11	[NT]		[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	2	<5	[NT]		[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	2	11	[NT]		[NT]	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	2	10	[NT]		[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	2	33	[NT]		[NT]	[NT]
Ionic Balance	%		Inorg-040	[NT]	2	-9.0	[NT]		[NT]	[NT]

Client Reference: 39920.20, Tomago

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			23/03/2026	2	20/03/2026	20/03/2026		23/03/2026	[NT]
Date analysed	-			23/03/2026	2	20/03/2026	20/03/2026		23/03/2026	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	2	0.4	0.4	0	102	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404571-2
Date prepared	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	19/03/2026
Date analysed	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	19/03/2026
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.12	0.11	9	93	95
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	<0.005	0	94	112
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.006	<0.005	18	96	92
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.007	<0.005	33	96	92
TKN in water	mg/L	0.1	Inorg-062	<0.1	1	0.4	[NT]		112	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	<0.005	<0.005	0	85	108
Fluoride, F	mg/L	0.1	Inorg-026	<0.1	1	<0.1	<0.1	0	92	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	89	[NT]		107	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Perfluorobutanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoropentanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	105	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	106	[NT]
Perfluoroheptanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	108	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorodecanesulfonic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	105	[NT]
Perfluorobutanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluoropentanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorohexanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoroheptanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	107	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorononanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	108	[NT]
Perfluorodecanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	99	[NT]
Perfluoroundecanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	110	[NT]
Perfluorododecanoic acid	µg/L	0.005	Org-029	<0.005	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorotridecanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	82	[NT]
Perfluorotetradecanoic acid	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	108	[NT]
4:2 FTS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	109	[NT]
6:2 FTS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	108	[NT]
8:2 FTS	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	103	[NT]
10:2 FTS	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	124	[NT]
Perfluorooctane sulfonamide	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	95	[NT]
N-Ethyl perfluorooctanesulfonamide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	95	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	99	[NT]
MePerfluorooctanesulf-amid oacetic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	103	[NT]
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	91	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	99	[NT]
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	91	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	87	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	86	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	58	[NT]	[NT]	[NT]	[NT]	62	[NT]
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	111	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	119	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	114	[NT]	[NT]	[NT]	[NT]	113	[NT]
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	103	[NT]
Extracted ISTD d ₃ N MeFOSA	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD d ₅ N EtFOSA	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	99	[NT]
Extracted ISTD d ₇ N MeFOSE	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Extracted ISTD d ₉ N EtFOSE	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	87	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	108	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

PFAS in Water LOW LEVEL Extend - For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

8 HM in water - total - # Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

CERTIFICATE OF ANALYSIS 404571-A

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>39920.20, Tomago</u>
Number of Samples	Additional analysis
Date samples received	18/03/2026
Date completed instructions received	27/03/2026

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	07/04/2026
Date of Issue	07/04/2026

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Dragana Tomas, Senior Chemist
 Nancy Zhang, Laboratory Manager, Sydney

Authorised By

Nancy Zhang, Laboratory Manager

svTRH (C10-C40) in Water NEPM Silica gel				
Our Reference		404571-A-2	404571-A-3	404571-A-4
Your Reference	UNITS	SW3A	SW1	DSW2/17.3.26
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	31/03/2026	31/03/2026	31/03/2026
Date analysed	-	01/04/2026	01/04/2026	01/04/2026
TRH (Silica) C ₁₀ - C ₁₄	µg/L	<50	<50	<50
TRH (Silica) C ₁₅ - C ₂₈	µg/L	<100	<100	<100
TRH (Silica) C ₂₉ - C ₃₆	µg/L	270	<100	<100
TRH (Silica) >C ₁₀ - C ₁₆	µg/L	<50	<50	<50
TRH (Silica) >C ₁₆ - C ₃₄	µg/L	260	100	<100
TRH (Silica) >C ₃₄ - C ₄₀	µg/L	<100	<100	<100
Surrogate 1-Chlorooctadecane	%	71	71	71

Miscellaneous Inorganics			
Our Reference		404571-A-1	404571-A-3
Your Reference	UNITS	MW8A	SW1
Date Sampled		17/03/2026	17/03/2026
Type of sample		Water	Water
Date prepared	-	30/03/2026	30/03/2026
Date analysed	-	30/03/2026	30/03/2026
Total Cyanide	mg/L	<0.004	<0.004

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hypochlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

QUALITY CONTROL: svTRH (C10-C40) in Water NEPM Silica gel						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/03/2026	[NT]	[NT]	[NT]	[NT]	31/03/2026	[NT]
Date analysed	-			01/04/2026	[NT]	[NT]	[NT]	[NT]	01/04/2026	[NT]
TRH (Silica) C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH (Silica) C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH (Silica) C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH (Silica) >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH (Silica) >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH (Silica) >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate 1-Chlorooctadecane	%		Org-020	102	[NT]	[NT]	[NT]	[NT]	120	[NT]

Client Reference: 39920.20, Tomago

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			30/03/2026	[NT]	[NT]	[NT]	[NT]	30/03/2026	[NT]
Date analysed	-			30/03/2026	[NT]	[NT]	[NT]	[NT]	30/03/2026	[NT]
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	[NT]	[NT]	[NT]	[NT]	113	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

CERTIFICATE OF ANALYSIS 404575

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>39920.09, Tomago</u>
Number of Samples	8 Water
Date samples received	18/03/2026
Date completed instructions received	18/03/2026

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/03/2026
Date of Issue	25/03/2026

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Dragana Tomas, Senior Chemist
 Jack Wallis, Senior Chemist
 Jenny He, Inorganic Team Leader
 Larry Ye, Senior Chemist
 Liam Timmins, Organics Supervisor
 Nancy Zhang, Laboratory Manager, Sydney
 Sean McAlary, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water

Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	20/03/2026	18/03/2026	19/03/2026
Date analysed	-	19/03/2026	19/03/2026	20/03/2026	19/03/2026	19/03/2026
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	109	108	110	109	109
Surrogate Toluene-d8	%	99	99	100	99	98
Surrogate 4-Bromofluorobenzene	%	94	94	92	94	93

vTRH(C6-C10)/BTEXN in Water

Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	19/03/2026	19/03/2026	19/03/2026
TRH C ₆ - C ₉	µg/L	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10
Benzene	µg/L	<1	<1	<1
Toluene	µg/L	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
o-xylene	µg/L	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	110	108	108
Surrogate Toluene-d8	%	98	98	98
Surrogate 4-Bromofluorobenzene	%	93	92	92

svTRH (C10-C40) in Water						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100	<100	<100	<100	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	91	86	83	91	89

svTRH (C10-C40) in Water				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	<100	<100	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100	<100	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50
Surrogate o-Terphenyl	%	70	87	80

PAHs in Water						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	96	95	88	95	94

PAHs in Water				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Naphthalene	µg/L	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	85	91	94

OCPs in Water - Trace Level						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
alpha-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	91	90	83	92	88

OCPs in Water - Trace Level				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
alpha-BHC	µg/L	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	86	87	90

OP in water LL ANZECCF/ADWG						
Our Reference	UNITS	404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference		DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Dichlorvos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Mevinphos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Phorate	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Disulfoton	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-Methyl	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Ronnel	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Fenitrothion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009	<0.009	<0.009
Fenthion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Bromophos ethyl	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Methidathion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Phosalone	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Coumaphos	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate 4-Chloro-3-NBTF	%	91	90	83	92	88

OP in water LL ANZECCF/ADWG				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Dichlorvos	µg/L	<0.05	<0.05	<0.05
Mevinphos	µg/L	<0.05	<0.05	<0.05
Phorate	µg/L	<0.05	<0.05	<0.05
Dimethoate	µg/L	<0.1	<0.1	<0.1
Diazinon	µg/L	<0.01	<0.01	<0.01
Disulfoton	µg/L	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	µg/L	<0.05	<0.05	<0.05
Parathion-Methyl	µg/L	<0.05	<0.05	<0.05
Ronnel	µg/L	<0.05	<0.05	<0.05
Fenitrothion	µg/L	<0.05	<0.05	<0.05
Malathion	µg/L	<0.05	<0.05	<0.05
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009
Fenthion	µg/L	<0.05	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004	<0.004
Bromophos ethyl	µg/L	<0.05	<0.05	<0.05
Methidathion	µg/L	<0.05	<0.05	<0.05
Fenamiphos	µg/L	<0.05	<0.05	<0.05
Ethion	µg/L	<0.05	<0.05	<0.05
Phosalone	µg/L	<0.05	<0.05	<0.05
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02
Coumaphos	µg/L	<0.05	<0.05	<0.05
Surrogate 4-Chloro-3-NBTF	%	86	87	90

PCBs in Water - Trace Level

Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Aroclor 1016	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate 2-Fluorobiphenyl	%	85	81	77	85	80

PCBs in Water - Trace Level

Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Aroclor 1016	µg/L	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01	<0.01
Surrogate 2-Fluorobiphenyl	%	81	78	81

Speciated Phenols in water						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Phenol	µg/L	<1	<1	<1	<1	<1
2-Chlorophenol	µg/L	<1	<1	<1	<1	<1
4-Chloro-3-Methylphenol	µg/L	<5	<5	<5	<5	<5
2-Methylphenol (O-Cresol)	µg/L	<1	<1	<1	<1	<1
3/4-Methylphenol (m/p-Cresol)	µg/L	<2	<2	<2	<2	<2
2-Nitrophenol	µg/L	<1	<1	<1	<1	<1
2,4-Dimethylphenol	µg/L	<1	<1	<1	<1	<1
2,4-Dichlorophenol	µg/L	<1	<1	<1	<1	<1
2,6-Dichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol	µg/L	<1	<1	<1	<1	<1
2,4-Dinitrophenol	µg/L	<20	<20	<20	<20	<20
4-Nitrophenol	µg/L	<20	<20	<20	<20	<20
2346-Tetrachlorophenol	µg/L	<1	<1	<1	<1	<1
2-methyl-4,6-Dinitrophenol	µg/L	<10	<10	<10	<10	<10
Pentachlorophenol	µg/L	<5	<5	<5	<5	<5
Surrogate 2-fluorophenol	%	39	40	39	37	36
Surrogate Phenol-d ₆	%	21	22	21	21	22
Surrogate 2,4,6-Tribromophenol	%	82	81	75	76	98
Surrogate p-Terphenyl-d ₁₄	%	96	95	88	95	94

Speciated Phenols in water				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date extracted	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Phenol	µg/L	<1	<1	<1
2-Chlorophenol	µg/L	<1	<1	<1
4-Chloro-3-Methylphenol	µg/L	<5	<5	<5
2-Methylphenol (O-Cresol)	µg/L	<1	<1	<1
3/4-Methylphenol (m/p-Cresol)	µg/L	<2	<2	<2
2-Nitrophenol	µg/L	<1	<1	<1
2,4-Dimethylphenol	µg/L	<1	<1	<1
2,4-Dichlorophenol	µg/L	<1	<1	<1
2,6-Dichlorophenol	µg/L	<1	<1	<1
2,4,5-Trichlorophenol	µg/L	<1	<1	<1
2,4,6-Trichlorophenol	µg/L	<1	<1	<1
2,4-Dinitrophenol	µg/L	<20	<20	<20
4-Nitrophenol	µg/L	<20	<20	<20
2346-Tetrachlorophenol	µg/L	<1	<1	<1
2-methyl-4,6-Dinitrophenol	µg/L	<10	<10	<10
Pentachlorophenol	µg/L	<5	<5	<5
Surrogate 2-fluorophenol	%	38	38	39
Surrogate Phenol-d ₆	%	21	21	22
Surrogate 2,4,6-Tribromophenol	%	95	109	89
Surrogate p-Terphenyl-d ₁₄	%	85	91	94

HM in water - dissolved						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/03/2026	22/03/2026	22/03/2026	22/03/2026	22/03/2026
Date analysed	-	22/03/2026	22/03/2026	22/03/2026	22/03/2026	22/03/2026
Aluminium-Dissolved	µg/L	40	130	440	130	300
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	2	1	2	<1
Copper-Dissolved	µg/L	<1	<1	<1	<1	<1
Iron-Dissolved	µg/L	80	130	140	130	1,000
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Manganese-Dissolved	µg/L	23	370	10	360	97
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum-Dissolved	µg/L	<1	<1	<1	<1	<1
Nickel-Dissolved	µg/L	<1	<1	<1	<1	<1
Zinc-Dissolved	µg/L	11	<1	27	<1	2

HM in water - dissolved				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date prepared	-	22/03/2026	22/03/2026	22/03/2026
Date analysed	-	22/03/2026	22/03/2026	22/03/2026
Aluminium-Dissolved	µg/L	370	<10	40
Arsenic-Dissolved	µg/L	1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	2	<1	<1
Copper-Dissolved	µg/L	<1	<1	<1
Iron-Dissolved	µg/L	340	3,900	90
Lead-Dissolved	µg/L	<1	<1	<1
Manganese-Dissolved	µg/L	26	36	23
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05
Molybdenum-Dissolved	µg/L	<1	<1	<1
Nickel-Dissolved	µg/L	<1	<1	<1
Zinc-Dissolved	µg/L	<1	4	11

HM in water - total			
Our Reference		404575-1	404575-8
Your Reference	UNITS	DSW/17.3.26	SW8
Date Sampled		17/03/2026	17/03/2026
Type of sample		Water	Water
Date prepared	-	23/03/2026	23/03/2026
Date analysed	-	23/03/2026	23/03/2026
Aluminium-Total	µg/L	250	280
Arsenic-Total	µg/L	1	1
Cadmium-Total	µg/L	<0.1	<0.1
Chromium-Total	µg/L	1	1
Copper-Total	µg/L	<1	<1
Iron-Total	µg/L	720	700
Lead-Total	µg/L	<1	<1
Manganese-Total	µg/L	30	29
Mercury-Total	µg/L	<0.05	<0.05
Molybdenum-Total	µg/L	<1	<1
Nickel-Total	µg/L	<1	<1
Zinc-Total	µg/L	13	13

Metals in Waters - Acid extractable

Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026	20/03/2026	20/03/2026
Phosphorus - Total	mg/L	<0.05	<0.05	<0.05	<0.05	0.1

Metals in Waters - Acid extractable

Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date prepared	-	20/03/2026	20/03/2026	20/03/2026
Date analysed	-	20/03/2026	20/03/2026	20/03/2026
Phosphorus - Total	mg/L	<0.05	0.61	<0.05

Miscellaneous Inorganics

Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	19/03/2026	19/03/2026	19/03/2026	19/03/2026	19/03/2026
Total Suspended Solids	mg/L	14	10	14	6	34
Ammonia as N in water	mg/L	0.02	1.2	0.03	1.1	0.20
Nitrite as N in water	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate as N in water	mg/L	<0.005	0.03	1.4	0.03	0.005
NOx as N in water	mg/L	<0.005	0.03	1.4	0.03	0.005
TKN in water	mg/L	0.5	2.1	0.1	2.1	0.7
Phosphate as P in water	mg/L	<0.005	0.005	<0.005	0.006	0.084
Fluoride, F	mg/L	<0.1	<0.1	<0.1	<0.1	0.1

Miscellaneous Inorganics

Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date prepared	-	19/03/2026	19/03/2026	19/03/2026
Date analysed	-	19/03/2026	19/03/2026	19/03/2026
Total Suspended Solids	mg/L	44	250	16
Ammonia as N in water	mg/L	0.28	0.081	0.01
Nitrite as N in water	mg/L	<0.005	<0.005	<0.005
Nitrate as N in water	mg/L	0.29	0.054	<0.005
NOx as N in water	mg/L	0.29	0.056	<0.005
TKN in water	mg/L	0.3	0.2	0.5
Phosphate as P in water	mg/L	0.006	<0.005	<0.005
Fluoride, F	mg/L	<0.1	<0.1	<0.1

Ion Balance						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Calcium - Dissolved	mg/L	5	13	3	13	3
Potassium - Dissolved	mg/L	2	2	0.8	2	2
Sodium - Dissolved	mg/L	16	6.4	8.6	6.4	11
Magnesium - Dissolved	mg/L	3	4	1	4	2
Hardness (calc) equivalent CaCO ₃	mg/L	24	46	14	46	14
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5	<5	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	11	46	<5	47	14
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	11	46	<5	47	14
Sulphate, SO ₄	mg/L	18	7	6	6	1
Chloride, Cl	mg/L	29	9	15	9	22
Ionic Balance	%	-7.0	-2.0	9.0	-3.0	-6.0

Ion Balance				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date prepared	-	18/03/2026	18/03/2026	18/03/2026
Date analysed	-	18/03/2026	18/03/2026	18/03/2026
Calcium - Dissolved	mg/L	6.2	41	5
Potassium - Dissolved	mg/L	2	3	2
Sodium - Dissolved	mg/L	20	17	16
Magnesium - Dissolved	mg/L	2	4	3
Hardness (calc) equivalent CaCO ₃	mg/L	26	120	23
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	13	130	10
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	13	130	10
Sulphate, SO ₄	mg/L	35	16	19
Chloride, Cl	mg/L	27	22	31
Ionic Balance	%	-11	-7.0	-9.0

PFAS in Water LOW LEVEL Extend

Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026	23/03/2026	23/03/2026
Perfluorobutanesulfonic acid	µg/L	0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.004	<0.001	<0.001	<0.001	<0.001
Perfluoroheptanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	0.012	0.002	0.003	0.002	0.002
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.01	<0.002	<0.002	<0.002	<0.01
Perfluoropentanoic acid	µg/L	0.006	<0.002	<0.002	<0.002	<0.002
Perfluorohexanoic acid	µg/L	0.003	<0.001	<0.001	<0.001	<0.001
Perfluoroheptanoic acid	µg/L	0.002	<0.001	<0.001	<0.001	<0.001
Perfluorooctanoic acid PFOA	µg/L	0.002	<0.001	<0.001	<0.001	0.001
Perfluorononanoic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorotetradecanoic acid	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
6:2 FTS	µg/L	<0.001	<0.001	0.009	<0.001	0.004
8:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
10:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
MePerfluorooctanesulf-amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	96	95	91	96	100
Surrogate ¹³ C ₂ PFOA	%	107	105	107	105	107
Extracted ISTD ¹³ C ₃ PFBS	%	101	104	94	89	91
Extracted ISTD ¹⁸ O ₂ PFHxS	%	104	96	91	90	92
Extracted ISTD ¹³ C ₄ PFOS	%	101	101	95	89	87
Extracted ISTD ¹³ C ₄ PFBA	%	24	47	40	44	24

PFAS in Water LOW LEVEL Extend						
Our Reference		404575-1	404575-2	404575-3	404575-4	404575-5
Your Reference	UNITS	DSW/17.3.26	DGW/17.3.26	MW101	MW102	MW103
Date Sampled		17/03/2026	17/03/2026	17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water	Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	51	65	57	61	45
Extracted ISTD ¹³ C ₂ PFHxA	%	78	85	77	76	67
Extracted ISTD ¹³ C ₄ PFHpA	%	82	87	82	79	73
Extracted ISTD ¹³ C ₄ PFOA	%	96	97	88	86	84
Extracted ISTD ¹³ C ₅ PFNA	%	109	102	98	90	96
Extracted ISTD ¹³ C ₂ PFDA	%	105	98	93	89	89
Extracted ISTD ¹³ C ₂ PFUnDA	%	90	87	81	81	79
Extracted ISTD ¹³ C ₂ PFDoDA	%	93	92	84	82	82
Extracted ISTD ¹³ C ₂ PFTeDA	%	83	69	77	74	82
Extracted ISTD ¹³ C ₂ 4:2FTS	%	84	89	82	82	72
Extracted ISTD ¹³ C ₂ 6:2FTS	%	98	98	86	87	84
Extracted ISTD ¹³ C ₂ 8:2FTS	%	114	109	96	99	100
Extracted ISTD ¹³ C ₈ FOSA	%	116	108	98	97	99
Extracted ISTD d ₃ N MeFOSA	%	101	101	99	95	103
Extracted ISTD d ₅ N EtFOSA	%	101	99	98	94	100
Extracted ISTD d ₇ N MeFOSE	%	103	97	96	99	101
Extracted ISTD d ₉ N EtFOSE	%	99	98	98	91	98
Extracted ISTD d ₃ N MeFOSAA	%	99	94	81	88	87
Extracted ISTD d ₅ N EtFOSAA	%	121	112	100	103	99
Total Positive PFHxS & PFOS	µg/L	0.015	0.002	0.003	0.002	0.002
Total Positive PFOA & PFOS	µg/L	0.014	0.002	0.003	0.002	0.003
Total Positive PFAS	µg/L	0.029	0.002	0.012	0.002	0.007

PFAS in Water LOW LEVEL Extend

Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Date prepared	-	23/03/2026	23/03/2026	23/03/2026
Date analysed	-	23/03/2026	23/03/2026	23/03/2026
Perfluorobutanesulfonic acid	µg/L	0.002	0.004	<0.001
Perfluoropentanesulfonic acid	µg/L	<0.001	0.004	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.006	0.015	0.004
Perfluoroheptanesulfonic acid	µg/L	<0.001	0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	0.012	0.047	0.012
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.01	0.007	<0.01
Perfluoropentanoic acid	µg/L	0.01	0.01	0.006
Perfluorohexanoic acid	µg/L	0.005	0.011	0.004
Perfluoroheptanoic acid	µg/L	0.003	0.005	0.002
Perfluorooctanoic acid PFOA	µg/L	0.005	0.005	0.002
Perfluorononanoic acid	µg/L	<0.001	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.01	<0.01	<0.01
Perfluorotetradecanoic acid	µg/L	<0.05	<0.05	<0.05
4:2 FTS	µg/L	<0.001	<0.001	<0.001
6:2 FTS	µg/L	<0.001	0.033	<0.001
8:2 FTS	µg/L	<0.002	<0.002	<0.002
10:2 FTS	µg/L	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamidethanol	µg/L	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamidethanol	µg/L	<0.5	<0.5	<0.5
MePerfluorooctanesulfonamidacetic acid	µg/L	<0.01	<0.002	<0.002
EtPerfluorooctanesulfonamidacetic acid	µg/L	<0.002	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	90	98	95
Surrogate ¹³ C ₂ PFOA	%	110	105	104
Extracted ISTD ¹³ C ₃ PFBS	%	90	86	86
Extracted ISTD ¹⁸ O ₂ PFHxS	%	89	88	87
Extracted ISTD ¹³ C ₄ PFOS	%	89	88	85
Extracted ISTD ¹³ C ₄ PFBA	%	#	51	22

PFAS in Water LOW LEVEL Extend				
Our Reference		404575-6	404575-7	404575-8
Your Reference	UNITS	MW105	MW107	SW8
Date Sampled		17/03/2026	17/03/2026	17/03/2026
Type of sample		Water	Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	42	52	44
Extracted ISTD ¹³ C ₂ PFHxA	%	56	72	63
Extracted ISTD ¹³ C ₄ PFHpA	%	66	78	72
Extracted ISTD ¹³ C ₄ PFOA	%	79	86	83
Extracted ISTD ¹³ C ₅ PFNA	%	90	93	91
Extracted ISTD ¹³ C ₂ PFDA	%	86	89	83
Extracted ISTD ¹³ C ₂ PFUnDA	%	70	81	75
Extracted ISTD ¹³ C ₂ PFDoDA	%	80	74	80
Extracted ISTD ¹³ C ₂ PFTeDA	%	73	70	75
Extracted ISTD ¹³ C ₂ 4:2FTS	%	69	78	73
Extracted ISTD ¹³ C ₂ 6:2FTS	%	82	89	80
Extracted ISTD ¹³ C ₂ 8:2FTS	%	95	101	93
Extracted ISTD ¹³ C ₈ FOSA	%	71	91	93
Extracted ISTD d ₃ N MeFOSA	%	100	96	98
Extracted ISTD d ₅ N EtFOSA	%	100	96	100
Extracted ISTD d ₇ N MeFOSE	%	104	98	98
Extracted ISTD d ₉ N EtFOSE	%	99	92	95
Extracted ISTD d ₃ N MeFOSAA	%	21	73	83
Extracted ISTD d ₅ N EtFOSAA	%	45	96	99
Total Positive PFHxS & PFOS	µg/L	0.017	0.062	0.016
Total Positive PFOA & PFOS	µg/L	0.017	0.052	0.014
Total Positive PFAS	µg/L	0.043	0.14	0.029

Method ID	Methodology Summary
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-026	Fluoride determined by ion selective electrode (ISE) in accordance with APHA latest edition, 4500-F-C.
Inorg-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 15% ie total anions = total cations +/-15%.
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Metals-020	Determination of various metals/elements by ICP-AES. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Where molecular anion forms are calculated from an element (e.g. SO4 from S or PO4 from P stoichiometrically), the assumption is that the element is only present in that molecular anion form. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS.
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Note, the Total +ve PFAS PQL is reflective of the lowest individual PQL and is therefore "Total +ve PFAS" is simply a sum of the positive individual PFASs (or a described sub-set). Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			19/03/2026	1	18/03/2026	19/03/2026		18/03/2026	[NT]
Date analysed	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	1	<10	<10	0	86	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	1	<10	<10	0	86	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	88	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	86	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	88	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	85	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	88	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	107	1	109	108	1	106	[NT]
Surrogate Toluene-d8	%		Org-023	99	1	99	99	0	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	94	1	94	93	1	105	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			20/03/2026	[NT]	[NT]	[NT]	[NT]	20/03/2026	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	98	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	98	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	134	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	117	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	120	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	112	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	116	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	93	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	83	[NT]

QUALITY CONTROL: OP in water LL ANZECCF/ADWG					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Dichlorvos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	68	[NT]
Mevinphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Phorate	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.01	Org-022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Disulfoton	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos-methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion-Methyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	122	[NT]
Fenitrothion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	119	[NT]
Malathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	83	[NT]
Chlorpyrifos	µg/L	0.009	Org-022/025	<0.009	[NT]	[NT]	[NT]	[NT]	128	[NT]
Fenthion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	µg/L	0.004	Org-022/025	<0.004	[NT]	[NT]	[NT]	[NT]	98	[NT]
Bromophos ethyl	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methidathion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fenamiphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	98	[NT]
Phosalone	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Org-022/025	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Coumaphos	µg/L	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	83	[NT]

QUALITY CONTROL: PCBs in Water - Trace Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Aroclor 1016	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	136	[NT]
Aroclor 1260	µg/L	0.01	Org-021/022/025	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	83	[NT]	[NT]	[NT]	[NT]	84	[NT]

QUALITY CONTROL: Speciated Phenols in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2026	[NT]	[NT]	[NT]	[NT]	19/03/2026	[NT]
Date analysed	-			23/03/2026	[NT]	[NT]	[NT]	[NT]	23/03/2026	[NT]
Phenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	31	[NT]
2-Chlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
4-Chloro-3-Methylphenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Methylphenol (O-Cresol)	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	54	[NT]
3/4-Methylphenol (m/p-Cresol)	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Nitrophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dimethylphenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-Dichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	128	[NT]
2,4,5-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-Trichlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-Dinitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Nitrophenol	µg/L	20	Org-022/025	<20	[NT]	[NT]	[NT]	[NT]	26	[NT]
2346-Tetrachlorophenol	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-methyl-4,6-Dinitrophenol	µg/L	10	Org-022/025	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Pentachlorophenol	µg/L	5	Org-022/025	<5	[NT]	[NT]	[NT]	[NT]	76	[NT]
Surrogate 2-fluorophenol	%		Org-022/025	44	[NT]	[NT]	[NT]	[NT]	41	[NT]
Surrogate Phenol-d ₆	%		Org-022/025	24	[NT]	[NT]	[NT]	[NT]	23	[NT]
Surrogate 2,4,6-Tribromophenol	%		Org-022/025	105	[NT]	[NT]	[NT]	[NT]	73	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022/025	98	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	404575-2
Date prepared	-			22/03/2026	1	22/03/2026	22/03/2026		23/03/2026	23/03/2026
Date analysed	-			22/03/2026	1	22/03/2026	22/03/2026		23/03/2026	23/03/2026
Aluminium-Dissolved	µg/L	10	Metals-022	<10	1	40	[NT]		102	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		101	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	[NT]		102	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		90	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		94	[NT]
Iron-Dissolved	µg/L	10	Metals-022	<10	1	80	[NT]		102	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		101	[NT]
Manganese-Dissolved	µg/L	5	Metals-022	<5	1	23	[NT]		89	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	81	79
Molybdenum-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		92	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		92	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	11	[NT]		93	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	404575-4
Date prepared	-			[NT]	3	22/03/2026	22/03/2026		[NT]	23/03/2026
Date analysed	-			[NT]	3	22/03/2026	22/03/2026		[NT]	23/03/2026
Aluminium-Dissolved	µg/L	10	Metals-022	[NT]	3	440	430	2	[NT]	89
Arsenic-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	<1	0	[NT]	98
Cadmium-Dissolved	µg/L	0.1	Metals-022	[NT]	3	<0.1	<0.1	0	[NT]	101
Chromium-Dissolved	µg/L	1	Metals-022	[NT]	3	1	1	0	[NT]	90
Copper-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	<1	0	[NT]	79
Iron-Dissolved	µg/L	10	Metals-022	[NT]	3	140	140	0	[NT]	94
Lead-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	<1	0	[NT]	91
Manganese-Dissolved	µg/L	5	Metals-022	[NT]	3	10	10	0	[NT]	#
Mercury-Dissolved	µg/L	0.05	Metals-021	[NT]	3	<0.05	[NT]		[NT]	[NT]
Molybdenum-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	<1	0	[NT]	70
Nickel-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	<1	0	[NT]	91
Zinc-Dissolved	µg/L	1	Metals-022	[NT]	3	27	26	4	[NT]	95

QUALITY CONTROL: HM in water - total					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date prepared	-			23/03/2026	1	23/03/2026	22/03/2026		22/03/2026	[NT]
Date analysed	-			23/03/2026	1	23/03/2026	22/03/2026		22/03/2026	[NT]
Aluminium-Total	µg/L	10	Metals-022	<10	1	250	270	8	102	[NT]
Arsenic-Total	µg/L	1	Metals-022	<1	1	1	1	0	104	[NT]
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	102	[NT]
Chromium-Total	µg/L	1	Metals-022	<1	1	1	1	0	85	[NT]
Copper-Total	µg/L	1	Metals-022	<1	1	<1	<1	0	88	[NT]
Iron-Total	µg/L	10	Metals-022	<10	1	720	720	0	101	[NT]
Lead-Total	µg/L	1	Metals-022	<1	1	<1	<1	0	101	[NT]
Manganese-Total	µg/L	5	Metals-022	<5	1	30	30	0	83	[NT]
Mercury-Total	µg/L	0.05	Metals-021	<0.05	1	<0.05	[NT]		101	[NT]
Molybdenum-Total	µg/L	1	Metals-022	<1	1	<1	<1	0	92	[NT]
Nickel-Total	µg/L	1	Metals-022	<1	1	<1	<1	0	87	[NT]
Zinc-Total	µg/L	1	Metals-022	<1	1	13	13	0	89	[NT]

Client Reference: 39920.09, Tomago

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404575-2
Date prepared	-			20/03/2026	1	20/03/2026	20/03/2026		20/03/2026	20/03/2026
Date analysed	-			20/03/2026	1	20/03/2026	20/03/2026		20/03/2026	20/03/2026
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	1	<0.05	<0.05	0	102	95

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404575-2
Date prepared	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	19/03/2026
Date analysed	-			19/03/2026	1	19/03/2026	19/03/2026		19/03/2026	19/03/2026
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	14	[NT]		107	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.02	0.02	0	93	97
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	<0.005	0	94	106
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	0.008	46	96	92
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	0.008	46	96	92
TKN in water	mg/L	0.1	Inorg-062	<0.1	1	0.5	0.5	0	107	85
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	<0.005	<0.005	0	85	107
Fluoride, F	mg/L	0.1	Inorg-026	<0.1	1	<0.1	<0.1	0	92	97

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	8	19/03/2026	19/03/2026		[NT]	[NT]
Date analysed	-			[NT]	8	19/03/2026	19/03/2026		[NT]	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	[NT]	8	16	14	13	[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	8	0.01	[NT]		[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	8	<0.005	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	8	<0.005	[NT]		[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	8	<0.005	[NT]		[NT]	[NT]
TKN in water	mg/L	0.1	Inorg-062	[NT]	8	0.5	[NT]		[NT]	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	[NT]	8	<0.005	[NT]		[NT]	[NT]
Fluoride, F	mg/L	0.1	Inorg-026	[NT]	8	<0.1	[NT]		[NT]	[NT]

QUALITY CONTROL: Ion Balance						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	404575-2
Date prepared	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	18/03/2026
Date analysed	-			18/03/2026	1	18/03/2026	18/03/2026		18/03/2026	18/03/2026
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	5	[NT]		104	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	2	[NT]		93	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	16	[NT]		88	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	3	[NT]		99	[NT]
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	<3	1	24	[NT]		[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	<5	0	[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	11	10	10	[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	<5	0	[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	11	10	10	98	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	18	19	5	106	102
Chloride, Cl	mg/L	1	Inorg-081	<1	1	29	30	3	103	103
Ionic Balance	%		Inorg-040	[NT]	1	-7.0	[NT]		[NT]	[NT]

QUALITY CONTROL: Ion Balance						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	404575-5
Date prepared	-			[NT]	3	18/03/2026	18/03/2026		[NT]	18/03/2026
Date analysed	-			[NT]	3	18/03/2026	18/03/2026		[NT]	18/03/2026
Calcium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	3	3	0	[NT]	103
Potassium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	0.8	0.8	0	[NT]	91
Sodium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	8.6	8.5	1	[NT]	78
Magnesium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	1	1	0	[NT]	98
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	[NT]	3	14	14	0	[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	<5	[NT]		[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	<5	[NT]		[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	<5	[NT]		[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	<5	[NT]		[NT]	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	3	6	[NT]		[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	3	15	[NT]		[NT]	[NT]
Ionic Balance	%		Inorg-040	[NT]	3	9.0	[NT]		[NT]	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			23/03/2026	1	23/03/2026	23/03/2026		23/03/2026	[NT]
Date analysed	-			23/03/2026	1	23/03/2026	23/03/2026		23/03/2026	[NT]
Perfluorobutanesulfonic acid	µg/L	0.001	Org-029	<0.001	1	0.001	<0.001	0	103	[NT]
Perfluoropentanesulfonic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	98	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.001	Org-029	<0.001	1	0.004	0.004	0	97	[NT]
Perfluoroheptanesulfonic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	98	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.001	Org-029	<0.001	1	0.012	0.011	9	99	[NT]
Perfluorodecanesulfonic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	96	[NT]
Perfluorobutanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.01	<0.01	0	102	[NT]
Perfluoropentanoic acid	µg/L	0.002	Org-029	<0.002	1	0.006	0.006	0	102	[NT]
Perfluorohexanoic acid	µg/L	0.001	Org-029	<0.001	1	0.003	0.003	0	104	[NT]
Perfluoroheptanoic acid	µg/L	0.001	Org-029	<0.001	1	0.002	0.001	67	105	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.001	Org-029	<0.001	1	0.002	0.002	0	103	[NT]
Perfluorononanoic acid	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	99	[NT]
Perfluorodecanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	98	[NT]
Perfluoroundecanoic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	106	[NT]
Perfluorododecanoic acid	µg/L	0.005	Org-029	<0.005	1	<0.005	<0.005	0	114	[NT]
Perfluorotridecanoic acid	µg/L	0.01	Org-029	<0.01	1	<0.01	<0.01	0	96	[NT]
Perfluorotetradecanoic acid	µg/L	0.05	Org-029	<0.05	1	<0.05	<0.05	0	107	[NT]
4:2 FTS	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	104	[NT]
6:2 FTS	µg/L	0.001	Org-029	<0.001	1	<0.001	<0.001	0	107	[NT]
8:2 FTS	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	102	[NT]
10:2 FTS	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	130	[NT]
Perfluorooctane sulfonamide	µg/L	0.01	Org-029	<0.01	1	<0.01	<0.01	0	100	[NT]
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	1	<0.05	<0.05	0	96	[NT]
N-Ethyl perfluorooctanesulfonamide	µg/L	0.1	Org-029	<0.1	1	<0.1	<0.1	0	87	[NT]
N-Me perfluorooctanesulfonamidethanol	µg/L	0.05	Org-029	<0.05	1	<0.05	<0.05	0	100	[NT]
N-Et perfluorooctanesulfonamidethanol	µg/L	0.5	Org-029	<0.5	1	<0.5	<0.5	0	105	[NT]
MePerfluorooctanesulfonamidacetic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	103	[NT]
EtPerfluorooctanesulfonamidacetic acid	µg/L	0.002	Org-029	<0.002	1	<0.002	<0.002	0	94	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	97	1	96	98	2	96	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	96	1	107	109	2	101	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	96	1	101	110	9	95	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	96	1	104	107	3	101	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	92	1	101	105	4	98	[NT]
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	98	1	24	24	0	97	[NT]
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	98	1	51	53	4	96	[NT]
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	92	1	78	80	3	96	[NT]
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	97	1	82	84	2	100	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	100	1	96	99	3	100	[NT]
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	96	1	109	113	4	102	[NT]
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	91	1	105	103	2	98	[NT]
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	86	1	90	89	1	94	[NT]
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	87	1	93	92	1	92	[NT]
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	62	1	83	77	8	64	[NT]
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	96	1	84	85	1	100	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	99	1	98	97	1	102	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	104	1	114	117	3	109	[NT]
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	100	1	116	115	1	99	[NT]
Extracted ISTD d ₃ N MeFOSA	%		Org-029	97	1	101	97	4	101	[NT]
Extracted ISTD d ₅ N EtFOSA	%		Org-029	96	1	101	97	4	99	[NT]
Extracted ISTD d ₇ N MeFOSE	%		Org-029	98	1	103	94	9	102	[NT]

QUALITY CONTROL: PFAS in Water LOW LEVEL Extend					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD d ₉ N EtFOSE	%		Org-029	96	1	99	95	4	98	[NT]
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	87	1	99	98	1	94	[NT]
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	98	1	121	119	2	104	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

8 HM in water - dissolved - # Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

PFAS in Water LOW LEVEL Extend - For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

Appendix F

Quality Assurance / Quality Control Report

Chain of Custody Sheets (Field and Despatch)

Sample Receipts

1. Field and Laboratory Data Quality Assurance and Quality Control

The field and laboratory data quality assurance and quality control (QA/QC) procedures and results are summarised in the following Table 1. Reference should be made to the field work methodology and the laboratory results / certificates of analysis for further details. The relative percentage difference (RPD) results, along with the other field QC samples are included at the end of this appendix.

Table 1: Field and Laboratory Quality Control

Item	Evaluation / acceptance criteria	Compliance
Analytical laboratories used	NATA accreditation	C
Holding times	Various based on type of analysis	C
Intra-laboratory replicates	10% of primary samples; <30% RPD	PC
Laboratory / Reagent Blanks	1 per batch; <PQL	C
Laboratory Duplicate	1 per lab batch; As laboratory certificate	C
Matrix Spikes	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Surrogate Spikes	All organics analysis; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Control Samples	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Standard Operating Procedures (SOP)	Adopting SOP for all aspects of the sampling field work	C

Notes:

C = compliance; PC = partial compliance; NC = non-compliance

1.1 Field Replicates

RPDs for groundwater were low and reflect small differences in concentrations which were close to the PQL.

RPDs surface water were notably higher and up to 166%. The results suggest some heterogeneity between the primary and replicate sample which may be attributable to suspended sediments, limited, organics and stagnant surface water available for sampling at SW3a. Testing of TSS is also indicative of some difference between the samples.

Elevated RPDs are indicated in Table QA1 (results in bold). The exceedances are not, however, considered to be of concern given that:

- The actual differences in the concentrations of the replicate pairs where RPD exceedances occurred were typically low;
- Replicates, rather than homogenised duplicates, were used to minimise risk of volatile loss, hence greater analytical variability between replicate pairs can be expected;
- Most of the recorded concentrations were relatively close to the PQL;
- The majority of RPD results from a replicate pair were within the acceptable limits; and
- All other QA/QC parameters met the data quality indicators.

2. Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQI) as outlined in NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* [NEPM] (NEPC, 2013):

- Completeness: a measure of the amount of usable data from a data collection activity;
- Comparability: the confidence (qualitative) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness: the confidence (qualitative) of data representativeness of media present on-site;
- Precision: a measure of variability or reproducibility of data; and
- Accuracy: a measure of closeness of the data to the 'true' value.

Table 2: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Systematic and selected target locations sampled.
	Preparation of borehole logs, sample location plan and chain of custody records.
	Preparation of field groundwater sampling sheets.
	Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the chain of custody.
	Samples analysed for contaminants of potential concern (COPC) identified in the groundwater monitoring plans (Douglas, 2010; 2023a).
	Completion of chain of custody (COC) documentation.
	NATA accredited laboratory results certificates provided by the laboratory.
	Satisfactory frequency and results for field and laboratory quality control (QC) samples as discussed in Section 1.

Data Quality Indicator	Method(s) of Achievement
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project.
	Experienced samplers used.
	Use of NATA registered laboratories, with test methods the same or similar between laboratories.
	Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled.
	Sample numbers recovered and analysed are considered to be representative of the target media and complying with Data Quality Objectives
	Samples were extracted and analysed within holding times.
	Samples were analysed in accordance with the COC.
Precision	Field staff followed standard operating procedures.
	Acceptable RPD between original samples and replicates.
	Satisfactory results for all other field and laboratory QC samples.
Accuracy	Field staff followed standard operating procedures.
	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQI have been complied with.

3. Conclusion

Based on the results of the field QA and field and laboratory QC, and evaluation against the DQI it is concluded that the field and laboratory test data obtained are generally reliable and useable for this assessment.

4. Reference

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.

			Lab Report Number		RPD	404571		RPD	404575		RPD
			Field ID			SW3A	DSW2/17.3.26		SW8	DSW/17.3.26	
			Date			17 Mar 2026	17 Mar 2026		17 Mar 2026	17 Mar 2026	
			Matrix Type			Water	Water		Water	Water	
			Unit	PQL							
Inorganics											
Hardness (filtered)	mg/L	3	46	46	0	18	18	0	23	24	4
Chloride	mg/L	1	9	9	0	33	31	6	31	29	7
Sulphate	mg/L	1	6	7	15	10	9	11	19	18	5
Fluoride	mg/L	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Alkalinity (Hydroxide) as CaCO3	mg/L	5	<5	<5	0	<5	<5	0	<5	<5	0
Alkalinity (Carbonate as CaCO3)	mg/L	5	<5	<5	0	<5	<5	0	<5	<5	0
Alkalinity (total) as CaCO3	mg/L	5	47	46	2	11	9	20	10	11	10
Ammonia as N (filtered)	mg/L	0.005	1.1	1.2	9	0.007	0.02	96	0.01	0.02	67
Alkalinity (Bicarbonate as CaCO3)	mg/L	5	47	46	2	11	9	20	10	11	10
Ionic Balance	%		-3.0	-2.0	40	-9.0	-5.0	57	-9.0	-7.0	25
Kjeldahl Nitrogen Total	mg/L	0.1	2.1	2.1	0	1.2	3.5	98	0.5	0.5	0
Nitrate (as N) (filtered)	mg/L	0.005	0.03	0.03	0	<0.005	<0.005	0	<0.005	<0.005	0
Nitrite (as N) (filtered)	mg/L	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
Nitrogen (Total Oxidised)	mg/L	0.005	0.03	0.03	0	<0.005	<0.005	0	<0.005	<0.005	0
Total Phosphorus (Organic Phosphate)	mg/L	0.05	<0.05	<0.05	0	0.4	0.50	22	<0.05	<0.05	0
Reactive Phosphorus as P (Orthophosphate as P) (filtered)	mg/L	0.005	0.006	0.005	18	<0.005	<0.005	0	<0.005	<0.005	0
Sodium (filtered)	mg/L	0.5	6.4	6.4	0	17	17	0	16	16	0
Total Suspended Solids (Lab)	mg/L	5	6	10	50	1,100	800	32	16	14	13
Metals											
Aluminium	mg/L	0.01				9.9	9.3	6	0.28	0.25	11
Aluminium (filtered)	mg/L	0.01	0.13	0.13	0	0.18	0.18	0	0.04	0.04	0
Arsenic	mg/L	0.001				0.004	0.004	0	0.001	0.001	0
Arsenic (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Cadmium	mg/L	0.0001				0.0003	0.0003	0	<0.0001	<0.0001	0
Cadmium (filtered)	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium (filtered)	mg/L	0.5	13	13	0	5	5	0	5	5	0
Chromium (III+VI)	mg/L	0.001				0.011	0.008	32	0.001	0.001	0
Chromium (III+VI) (filtered)	mg/L	0.001	0.002	0.002	0	0.001	0.001	0	<0.001	<0.001	0
Copper	mg/L	0.001				0.012	0.019	45	<0.001	<0.001	0
Copper (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Iron	mg/L	0.01				14	12	15	0.7	0.72	3
Iron (filtered)	mg/L	0.01	0.13	0.13	0	2.1	1.9	10	0.09	0.08	12
Lead	mg/L	0.001				0.018	0.022	20	<0.001	<0.001	0
Lead (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Magnesium (filtered)	mg/L	0.5	4	4	0	1	1	0	3	3	0
Manganese	mg/L	0.005				0.14	0.13	7	0.029	0.03	3
Manganese (filtered)	mg/L	0.005	0.36	0.37	3	0.049	0.048	2	0.023	0.023	0
Mercury	mg/L	0.00005				<0.00005	<0.00005	0	<0.00005	<0.00005	0
Mercury (filtered)	mg/L	0.00005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
Molybdenum	mg/L	0.001				<0.001	<0.001	0	<0.001	<0.001	0
Molybdenum (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Nickel	mg/L	0.001				0.006	0.005	18	<0.001	<0.001	0
Nickel (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Potassium (filtered)	mg/L	0.5	2	2	0	1	1	0	2	2	0
Zinc	mg/L	0.001				0.15	0.16	6	0.013	0.013	0
Zinc (filtered)	mg/L	0.001	<0.001	<0.001	0	0.003	0.003	0	0.011	0.011	0
TRH											
C6-C10 Fraction (F1)	mg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
C6-C10 (F1 minus BTEX)	mg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
>C10-C16 Fraction (F2)	mg/L	0.05	<0.05	<0.05	0	0.051	<0.05	2	<0.05	<0.05	0
>C10-C16 Fraction (F2 minus Naphthalene)	mg/L	0.05	<0.05	<0.05	0	0.051	<0.05	2	<0.05	<0.05	0
>C16-C34 Fraction (F3)	mg/L	0.1	<0.1	<0.1	0	0.46	0.11	123	<0.1	<0.1	0
>C34-C40 Fraction (F4)	mg/L	0.1	<0.1	<0.1	0	0.12	<0.1	18	<0.1	<0.1	0
>C10-C40 Fraction (Sum)	mg/L	0.05	<0.05	<0.05	0	0.63	0.11	141	<0.05	<0.05	0
C6-C9 Fraction	mg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
C10-C14 Fraction	mg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
C15-C28 Fraction	mg/L	0.1	<0.1	<0.1	0	0.34	<0.1	109	<0.1	<0.1	0
C29-C36 Fraction	mg/L	0.1	<0.1	<0.1	0	0.19	<0.1	62	<0.1	<0.1	0
C10-C36 Fraction (Sum)	mg/L	0.05	<0.05	<0.05	0	0.53	<0.05	166	<0.05	<0.05	0
BTEX											
Benzene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Toluene	mg/L	0.001	<0.001	<0.001	0	0.002	0.003	40	<0.001	<0.001	0
Ethylbenzene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Xylene (m & p)	mg/L	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
Xylene (o)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Naphthalene (VOC)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Phenols											
3&4-Methylphenol (m&p-cresol)	mg/L	0.002	<0.002	<0.002	0	<0.002	<0.002	0	<0.002	<0.002	0
2,3,4,6-Tetrachlorophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2,4,5-Trichlorophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2,4,6-Trichlorophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2,4-Dichlorophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2,4-Dimethylphenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2,4-Dinitrophenol	mg/L	0.02	<0.02	<0.02	0	<0.02	<0.02	0	<0.02	<0.02	0
2,6-Dichlorophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2-Chlorophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2-Methylphenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
2-Nitrophenol	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
4,6-Dinitro-2-methylphenol	mg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0
4-chloro-3-methylphenol	mg/L	0.005	<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.005	0
4-Nitrophenol	mg/L	0.02	<0.								

Lab Report Number			404575	404575	RPD	404571	404571	RPD	404575	404575	RPD
Field ID			MW102	DGW/17.3.26		SW3A	DSW2/17.3.26		SW8	DSW/17.3.26	
Date			17 Mar 2026	17 Mar 2026		17 Mar 2026	17 Mar 2026		17 Mar 2026	17 Mar 2026	
Matrix Type			Water	Water		Water	Water		Water	Water	
	Unit	PQL									
PFAS											
Perfluorobutane sulfonic acid (PFBS)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	<0.000001	0.000001	0
Perfluoropentane sulfonic acid (PFPeS)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	<0.000001	<0.000001	0
Perfluorohexane sulfonic acid (PFHxS)	mg/L	0.000001	<0.000001	<0.000001	0	0.000006	0.000005	18	0.000004	0.000004	0
Perfluoroheptane sulfonic acid (PFHpS)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	<0.000001	<0.000001	0
Perfluorooctane sulfonic acid (PFOS)	mg/L	0.000001	0.000002	0.000002	0	0.000005	0.000005	0	0.000012	0.000012	0
Perfluorodecane sulfonic acid (PFDS)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
Perfluorobutanoic acid (PFBA)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000001	<0.000001	0	<0.000001	<0.000001	0
Perfluorohexanoic acid (PFHxA)	mg/L	0.000001	<0.000001	<0.000001	0	0.000001	0.000001	0	0.000004	0.000003	29
Perfluoropentanoic acid (PFPeA)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000004	<0.000004	0	0.000006	0.000006	0
Perfluoroheptanoic acid (PFHpA)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	0.000002	0.000002	0
Perfluorooctanoic acid (PFOA)	mg/L	0.000001	<0.000001	<0.000001	0	0.000003	0.000003	0	0.000002	0.000002	0
Perfluorodecanoic acid (PFDA)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
Perfluorododecanoic acid (PFDoDA)	mg/L	0.000005	<0.000005	<0.000005	0	<0.000005	<0.000005	0	<0.000005	<0.000005	0
Perfluorononanoic acid (PFNA)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	<0.000001	<0.000001	0
Perfluorotetradecanoic acid (PFTeDA)	mg/L	0.00005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
Perfluorotridecanoic acid (PFTrDA)	mg/L	0.00001	<0.00001	<0.00001	0	<0.00001	<0.00001	0	<0.00001	<0.00001	0
Perfluoroundecanoic acid (PFUnDA)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	<0.000001	<0.000001	0
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/L	0.000001	<0.000001	<0.000001	0	<0.000001	<0.000001	0	<0.000001	<0.000001	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
Perfluorooctane sulfonamide (FOSA)	mg/L	0.00001	<0.00001	<0.00001	0	<0.00001	<0.00001	0	<0.00001	<0.00001	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/L	0.00005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/L	0.00005	<0.00005	<0.00005	0	<0.00005	<0.00005	0	<0.00005	<0.00005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/L	0.000002	<0.000002	<0.000002	0	<0.000002	<0.000002	0	<0.000002	<0.000002	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/L	0.0005	<0.0005	<0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.0005	0
Sum of PFHxS and PFOS	mg/L	0.000001	0.000002	0.000002	0	0.000010	0.0000099	1	0.000016	0.000015	6
Sum of PFAS	mg/L	0.000001	0.000002	0.000002	0	0.000014	0.000014	0	0.000029	0.000029	0
Sum of PFAS (PFOS + PFOA)	mg/L	0.000001	0.000002	0.000002	0	0.000007	0.000007	0	0.000014	0.000014	0

*RPDs have only been considered where a concentration is greater than 1 times the PQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each PQL multiplier range are: 81 (1 - 10 x PQL); 50 (10 - 30 x PQL); 30 (> 30 x PQL)

[illegible]

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1 Envirolab Services

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 39920.20						Client Project Name: Stage 3 Northbank Enterprise Hub							
Client: Northbank Enterprise Hub Pty Ltd						Location: Lot 210 Westrac Drive, Tomago							
Project Manager: Dana Wilson						DP Lab Received		By:		Date:			
Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)													
Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	Lab 1 ^A	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
MW4			W	G.P		SBK/MSD	16/3/26	07:00	ESky				
MW6													
MW2													
MW10													
MW13													
MW11													
MW1A													
SWS													
MW12		DW/16/3/26	↓	↓		↓	↓	16:00	↓	↓			
MW12A											17/3/26		
MW8A			W	G.P		SBK/MSD	17/3/26	07:00	ESky				
SW3A		DW/17/3/26	↓	↓		↓	↓	↓	↓				
SW1			↓	↓		↓	↓	↓	↓				

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1 Envirolab Services

B Provide name of Lab 2

C Provide name of Lab 3

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson

Sample Login Details

Your reference	39920.09, Tomago
Envirolab Reference	404470
Date Sample Received	17/03/2026
Date Instructions Received	17/03/2026
Date Results Expected to be Reported	24/03/2026

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	OCPs in Water - Trace Level	OP in water LL ANZECCF/ADWG	PCBs in Water - Trace Level	Speciated Phenols in water	HM in water - dissolved	Metals in Waters - Acid extractable	Total Suspended Solids	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	NOx as N in water	TKN in water	Phosphate as P in water	Fluoride, F	Calcium - Dissolved	Potassium - Dissolved	Sodium - Dissolved	Magnesium - Dissolved	Hardness (calc) equivalent CaCO3	Hydroxide Alkalinity (OH-) as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Sulphate, SO4	Chloride, Cl	Ionic Balance	PFAS in Water LOW	
MW104	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW106	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson

Sample Login Details

Your reference	39920.09, Tomago
Envirolab Reference	404470-A
Date Sample Received	17/03/2026
Date Instructions Received	27/03/2026
Date Results Expected to be Reported	07/04/2026

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	Additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:

Sample ID	svTRH (C10-C40) in Water NEPM Silica gel	
	svTRH (C10-C40) in Water Pre	Clean Up
MW104	✓	✓
MW106	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson

Sample Login Details

Your reference	39920.20, Tomago
Envirolab Reference	404471
Date Sample Received	17/03/2026
Date Instructions Received	17/03/2026
Date Results Expected to be Reported	24/03/2026

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	10 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Sample ID	VTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	svTRH (C10-C40) in Water NEPM Silica gel	PAHs in Water	Speciated Phenols in water	OCPs in Water - Trace Level	OP in water LL ANZECCF/ADWG	PCBs in Water - Trace Level	HM in water - dissolved	HM in water - total	Calcium - Dissolved	Potassium - Dissolved	Sodium - Dissolved	Magnesium - Dissolved	Hardness (calc) equivalent CaCO3	Hydroxide Alkalinity (OH-) as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Sulphate, SO4	Chloride, Cl	Ionic Balance	Metals in Waters - Acid extractable	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	TKN in water	Phosphate as P in water	Fluoride, F	Total Suspended Solids	PFAS in Water LOW LEVEL Extend
MW4	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW6	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW2	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW10	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW13	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW11	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW1A	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW5	✓	✓		✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW12	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DGW/16.3.26	✓	✓		✓	✓				✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson

Sample Login Details

Your reference	39920.20, Tomago
Envirolab Reference	404471-A
Date Sample Received	17/03/2026
Date Instructions Received	27/03/2026
Date Results Expected to be Reported	07/04/2026

Sample Condition

Samples received in appropriate condition for analysis	Incorrect Container
No. of Samples Provided	Additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Please contact the laboratory within 24 hours if you wish to cancel the aforementioned testing. Otherwise testing will proceed as per the COC and hence invoiced accordingly.

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:

Sample ID	Total Cyanide	On Hold
MW4	✓	
MW6	✓	
MW2	✓	
MW10	✓	
MW13	✓	
MW11	✓	
MW1A	✓	
SW5		✓
MW12	✓	
DGW/16.3.26		✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson

Sample Login Details

Your reference	39920.20, Tomago
Envirolab Reference	404571
Date Sample Received	18/03/2026
Date Instructions Received	18/03/2026
Date Results Expected to be Reported	25/03/2026

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	4 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	VTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Speciated Phenols in water	OCPs in Water - Trace Level	OP in water LL ANZECCF/ADWG	PCBs in Water - Trace Level	HM in water - dissolved	HM in water - total	Calcium - Dissolved	Potassium - Dissolved	Sodium - Dissolved	Magnesium - Dissolved	Hardness (calc) equivalent CaCO3	Hydroxide Alkalinity (OH-) as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Sulphate, SO4	Chloride, Cl	Ionic Balance	Metals in Waters - Acid extractable	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	NOx as N in water	TKN in water	Phosphate as P in water	Fluoride, F	Total Suspended Solids	PFAS in Water LOW LEVEL Extend
MW8A	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
SW3A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
SW1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
DSW2/17.3.26	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Dana Wilson

Sample Login Details

Your reference	39920.20, Tomago
Envirolab Reference	404571-A
Date Sample Received	18/03/2026
Date Instructions Received	27/03/2026
Date Results Expected to be Reported	07/04/2026

Sample Condition

Samples received in appropriate condition for analysis	Incorrect Container
No. of Samples Provided	Additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Please contact the laboratory within 24 hours if you wish to cancel the aforementioned testing. Otherwise testing will proceed as per the COC and hence invoiced accordingly.

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolab.com.au	Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	svTRH (C10-C40) in Water NEPM Silica gel	svTRH (C10-C40) in Water Pre Clean Up	Total Cyanide
MW8A			✓
SW3A	✓	✓	
SW1	✓	✓	✓
DSW2/17.3.26	✓	✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.

Appendix G

Interim Closure Report on Environmental
Inspections and Monitoring (Douglas, 2026b)

Interim Closure Report on Environmental Inspections and Monitoring

**Stage 3 Initial Vegetation Clearing Works
(November 2025 to March 2026)**

**Lot 210 DP 1174939, Westrac Drive,
Tomago NSW**

**Prepared for Northbank Enterprise Hub
Pty Ltd**

Project 39920.18

28 April 2026

Document History

Details

Project No.	39920.18
Document Title	Interim Closure Report on Environmental Inspections and Monitoring Stage 3 Initial Vegetation Clearing Works (November 2025 to March 2026)
Site Address	Lot 210 DP 1174939, Westrac Drive, Tomago NSW
Report Prepared For	Northbank Enterprise Hub Pty Ltd
Filename	39920.18.R.004.Rev0.VegClearingClosure

Status and Review

Status	Prepared by	Reviewed by	Date issued
Revision 0	Dana Wilson Mitchell Date	Patrick Heads	28 April 2026

Distribution of Copies

Status	Issued to
Revision 0	David Rutter, Princeton Co on behalf of Northbank Enterprise Hub Pty Ltd

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

Signature

Date

Author	<i>Dana Wilson</i> 	28 April 2026
Reviewer	<i>Patrick Heads</i>	28 April 2026

Table of Contents

	Page No
1. Introduction.....	1
2. Scope of work	2
3. Site description and clearing works.....	2
4. Results	3
4.1 Vegetation clearing process.....	3
4.2 Surface water monitoring	4
5. Conclusions.....	5
6. References	6
7. Limitations.....	6

Appendix A: Drawing 1: Groundwater and Surface water monitoring locations

Appendix B: About This Report

Appendix C: Table 1: Results of field monitoring during vegetation clearing

Figure 1: pH in surface water vs time and rainfall

Figure 2: Electrical conductivity in surface water vs time and rainfall

Site photos (Plates 1 to 12)

Report on Environmental Inspections and Monitoring Stage 3 Initial Vegetation Clearing Works (November 2025 to March 2026) Lot 210 DP 1174939, Westrac Drive, Tomago NSW

1. Introduction

This report, prepared by Douglas Partners Pty Ltd (Douglas), presents the results of environmental inspections and monitoring undertaken for Stage 3 vegetation clearing works at Lot 210 DP 1174939, Westrac Drive, Tomago NSW (the site). The investigation was commissioned by Northbank Enterprise Hub Pty Ltd and was undertaken in accordance with Douglas' proposal 39920.18.R.001.Rev0 dated 19 September 2025.

Removal of existing vegetation is required as part of the proposed bulk filling and earthworks program for the approved development. The initial proposed clearing works cover an area of about 15 hectares along the northern part of the Stage 3 site fronting Tomago Road as shown on Drawing in Appendix A.

Based on results of previous subsurface investigations the northern portion of the proposed clearing area contains mostly free-draining sand materials, with the southern part comprising lower-lying water logged and reed vegetation, consistent with the central and southern parts of Stage 3.

A '*Methodology for vegetation clearing for acid sulfate soil management*' was prepared by Douglas (Douglas, 2025a) and included a summary of the proposed vegetation clearing methods with a focus on the potential for disturbance of acid sulfate soils (ASS). The report was prepared as an addendum to the Stage 3 *Acid Sulfate Soil Management Plan (ASSMP)* (Douglas, 2025b).

As the proposed vegetation clearing works were limited to removal of trees and shrubs and slashing of grasses/reeds with minimal disturbance of near surface soils, ASS management measures, such as lime neutralisation, were not considered to be required for the works. In addition to implementation of general soil and surface water management strategies, the clearing methodology recommended periodic environmental inspections and surface water field monitoring to assess surface water pH and other water quality indicators at the surface water locations shown in Drawing 1 in Appendix A.

This interim closure report presents results of environmental inspection and monitoring during and following completion of the clearing works in March 2026.

Five inspections and monitoring events were undertaken as follows:

- Event 1 – 27 November 2025 (prior to clearing works commencing);
- Events 2 to 4 – 3 December 2025, 18 December 2025 and 15 January 2026 (during clearing works);
- Event 5 – 5 March 2026 (following completion of works).

It is noted that additional vegetation clearing and monitoring may also be undertaken as the site development proceeds.

This report must be read in conjunction with all appendices including the notes provided in Appendix B.

2. Scope of work

The following works were undertaken:

- Inspections to observe soil disturbance from clearing and assess whether additional measures were required (e.g. possible lime application to exposed surface soils);
- Noting visual observations of surface water quality;
- Measurement of in-situ parameters in nominated surface water locations using a calibrated meter to review any obvious changes or indicators of adverse impacts to water quality. The extent and number of monitoring locations increased as the clearing works expanded south into the lower-lying areas;
- Review of the water quality data in the context of the field observations and historical water quality data set;
- Preparation of one initial interim memorandum report for initial monitoring events (Douglas, 2025c);
- Preparation of this report.

3. Site description and clearing works

The Stage 3 site details are summarised below and shown on Figure 1.

Site Address	2 Westrac Drive, Tomago
Legal Description	Lot 210 D.P.1174939
Area	Total lot area 50.13 hectares (red) Vegetation clearing area 15 hectares (green shading)
Zoning	Zone IN2 General Industrial
Local Council Area	Port Stephens Council
Current Use	Vacant Future industrial subdivision

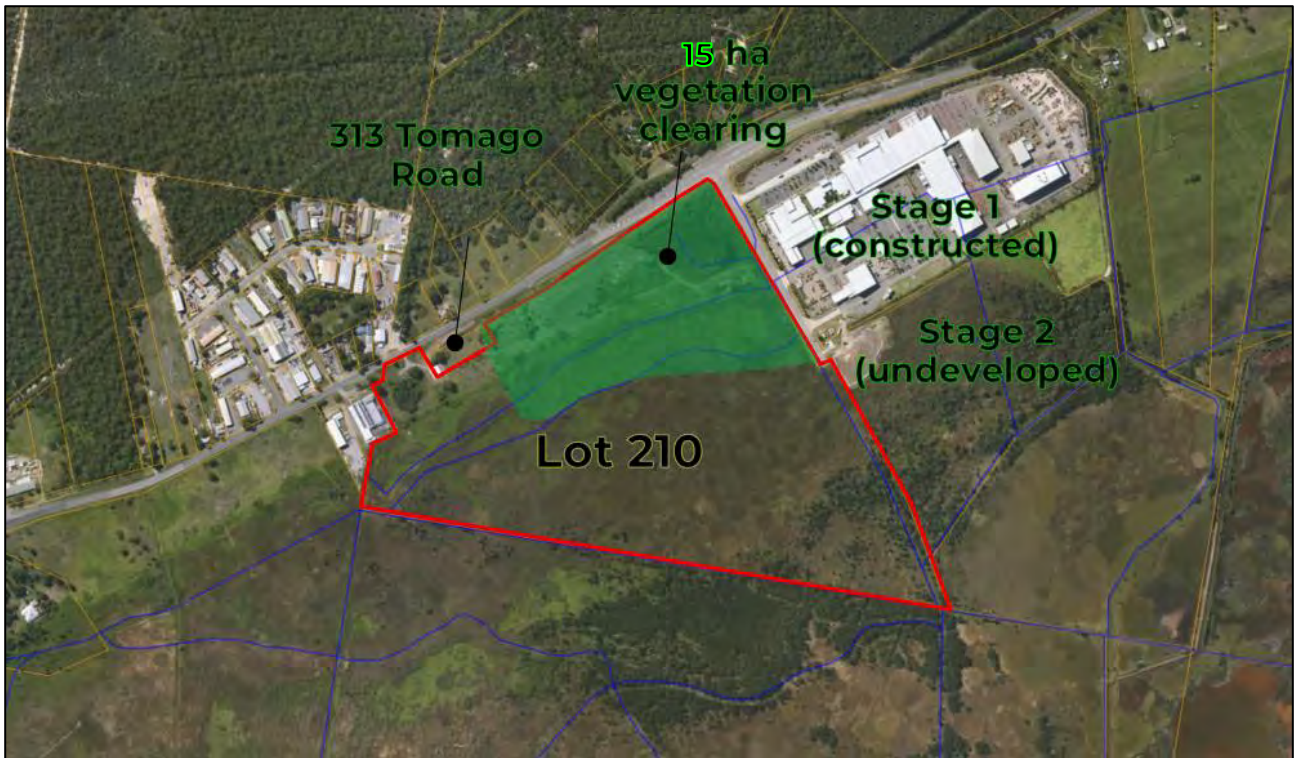


Figure 1: Site and Stage 3 boundary shown in red (Base Image source: MetroMap 2024). Vegetation clearing shaded in green.

The initial proposed vegetation clearing works subject of this report, comprised the following:

- Removal of trees and shrubs. Trees were to be pushed over to expose the root ball, noting that larger trees may have soils attached to the root bulb;
- Slashing of grasses in the northern elevated non-water logged areas of the site;
- Slashing and removal of slashed reed vegetation for the central and southern parts of the site in water-logged soils.

4. Results

4.1 Vegetation clearing process

Based on inspections completed by Douglas, the clearing works appeared to be commensurate with the procedures and potential impacts outlined in *Methodology for vegetation clearing for acid sulfate soil management* (Douglas, 2025a), that is:

- For areas that had been slashed, disturbance of surface soils was minimal (Figures 1 to 5, Figures 20 to 21, Appendix C);
- For trees that had been pushed over, minimal soil was present on the root bulbs;
- The works were being undertaken with regard to general construction environmental management controls including sediment and erosion control. There were no direct discharges of surface water observed by Douglas as a result of the works.

Photo plates for observations during site visits are shown in Appendix C.

4.2 Surface water monitoring

Surface water monitoring was undertaken at locations close to the initial clearing works generally as nominated in the plan (Douglas, 2025a) or as safe access permitted.

The results of surface water monitoring and recorded observations are summarised in Table 1 in Appendix C. The monitoring locations are shown on Drawing 1 in Appendix A.

The results of pH and electrical conductivity (EC) testing over time are plotted on Figures 1 and 2 in Appendix C and also showing recorded daily rainfall.

It is noted that only six (6) of the ten (10) surface water monitoring locations contained water at the final inspection event on 5 March 2026. Below average rainfall occurred over the period of vegetation clearing works. The total recorded rainfall at Williamtown BOM station for November 2025 to March 2026 (inclusive) was 276.4 mm and equivalet to 55% of the mean (501.4 mm) for that period. Surface water at the site is formed by rainfall and runoff, and more significantly, from groundwater that emerges at the toe of the Tomago Sand Bed dunes in the northern part of the site. It is therefore common for surface water at the site to dry out in times of below average rainfall and lower groundwater levels. The vegetation and drain clearing works may also assist to lower surface water levels from within the site and drain stagnant waters, due to the cleared drainage paths as has been observed in previous monitoring for drain clearing.

The inspection and monitoring results are summarised as follows:

- Initial field screening of surface waters on 27 November 2025 indicated slightly acidic conditions with most pHs ranging from 5.2 to 6.1 pH. Location SW2 pH was notably low/acidic with pH of 3.9. The location was characterised by stagnant / ponded water;
- The second monitoring event on 3 December 2025 indicated most surface water readings reduced by about 0.5 pH units, with a range of 5.1 to 5.9 pH. SW2 pH increased to pH 5.4 (i.e. up from 3.9 on 27 November 2025). Interim advice and reporting in Douglas (2025) noted that the pH ranges recorded were generally within the range of the long-term historical data set as well as monitoring of pH undertaken in 2024 for separate drain clearing;
- The third monitoring event on 18 December 2025 indicated most surface water readings were generally similar to the initial field screening, with a range of 5.0 to 6.0 pH. SW3a pH increased to 5.9 (i.e. up from 5.5 on 3 December 2025);
- The fourth monitoring event on 15 January 2026 included additional surface water monitoring locations SW104, SW105 and SW106 as vegetation clearing works extended further south. Field screening of SW104, SW105 and SW106 indicated slightly acidic conditions with pHs ranging from 5.5 to 6.3 pH, commensurate with surface water monitoring locations to the north. Most locations showed pH values similar to the previous monitoring except for SW3a which decreased to pH 4.9 (i.e. down from 5.9 on 18 December 2025). This location receives surface water runoff and flows from the culvert under Tomago Road;

- The fifth and final monitoring event on 5 March 2026 following completion of vegetation works indicated most surface water readings increased by about 0.5 pH, with a range of 5.3 to 6.4 pH. Most pH results were higher or within 0.5 pH units of initial monitoring indicating more neutral surface water conditions suggesting the absence of gross impacts and ASS disturbance;
- EC monitoring indicated surface water remained relatively fresh and low in EC (i.e. <1400 uS/cm).

During the course of works, Douglas compared the monitoring results to surface water monitoring data from 2013 to 2025. The data indicated pH at SW2, SW3/SW3a has typically ranged from pH 5.5 to <7.0 and occasionally up to pH 7.3. Most of the previous monitoring was undertaken in April/May, with limited data undertaken throughout the year to capture seasonal trends and drier conditions. Monitoring during drain clearing in July and August 2024 indicated surface water pH ranged from 5.8 to 6.8 which is similar to the current field testing results.

Overall, the pH fluctuations recorded are considered to be within the general range of the long term historical data set and 2024 drain clearing monitoring. It is noted that most of the monitoring points were located in stagnant ponded surface water and contained significant organics, which may impact field parameters. Field monitoring parameters in ponded stagnant waters may differ to free-flowing surface water locations which have been targeted in previous monitoring.

It should be noted that groundwater levels and the presence of surface water at this site are affected by factors such as climatic conditions, soil permeability, tidal influences and will therefore vary with time.

5. Conclusions

The environmental inspections indicated limited disturbance of soils as a result of tree and shrub removal and general vegetation clearing. The works were undertaken under appropriate construction environmental management controls, including sediment and erosion control measures, with no direct surface water discharge observed as a result of the works.

Surface water field testing pH results generally remained commensurate with the initial screening results undertaken prior to commencement of vegetation clearing. Overall, the surface water results were within the historical range recorded between 2010 to 2025.

Based on the inspections and monitoring, no remedial action or improvements to the clearing works or monitoring program were considered necessary.

Douglas considers that the vegetation clearing works have been completed as per the *Methodology for vegetation clearing for acid sulfate soil management* (Douglas, 2025a), and with no obvious impacts to surface water at the site.

6. References

Douglas. (2025a). *Methodology for vegetation clearing for acid sulfate soil management Stage 3 Northbank Enterprise Hub, Lot 210 DP 1174939 Westrac Drive, Tomago NSW*. Ref: 39920.18.R.001.Rev1: Douglas Partners Pty.

Douglas. (2025b). *Acid Sulfate Soil Management Plan, Proposed Industrial Subdivision, Stage 3, Lot 210 D.P.1174939, 2 Westrac Drive, Tomago*. 39920.09.R.002.Rev2.ASSMP: Douglas Partners Pty Ltd.

Douglas. (2025c). *Memorandum - Results of inspection and monitoring - 27 November and 3 December 2025, Stage 3 vegetation clearing, Lot 210, Tomago Road, Tomago NSW*. Ref: 39920.20.19.R.003.Rev0.InspectionReport: Douglas Partners Pty Ltd.

7. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at Lot 210 DP 1174939 Westrac Drive, Tomago NSW in line with Douglas' proposal dated 25 September 2025 and acceptance received from Northbank Enterprise Hub Pty Ltd dated 1 October 2025. Work was carried out under agreed terms between Douglas Partners Pty Ltd and Northbank Enterprise Hub Pty Ltd (Contract 20230206 ACE-LEG-005A executed 23 February 2023). This report is provided for the exclusive use of Northbank Enterprise Hub Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the surface and surface water conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during this investigation and previous investigations by Douglas and others. The accuracy of the advice provided by Douglas in this report may be affected by undetected variations in ground and surface water conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

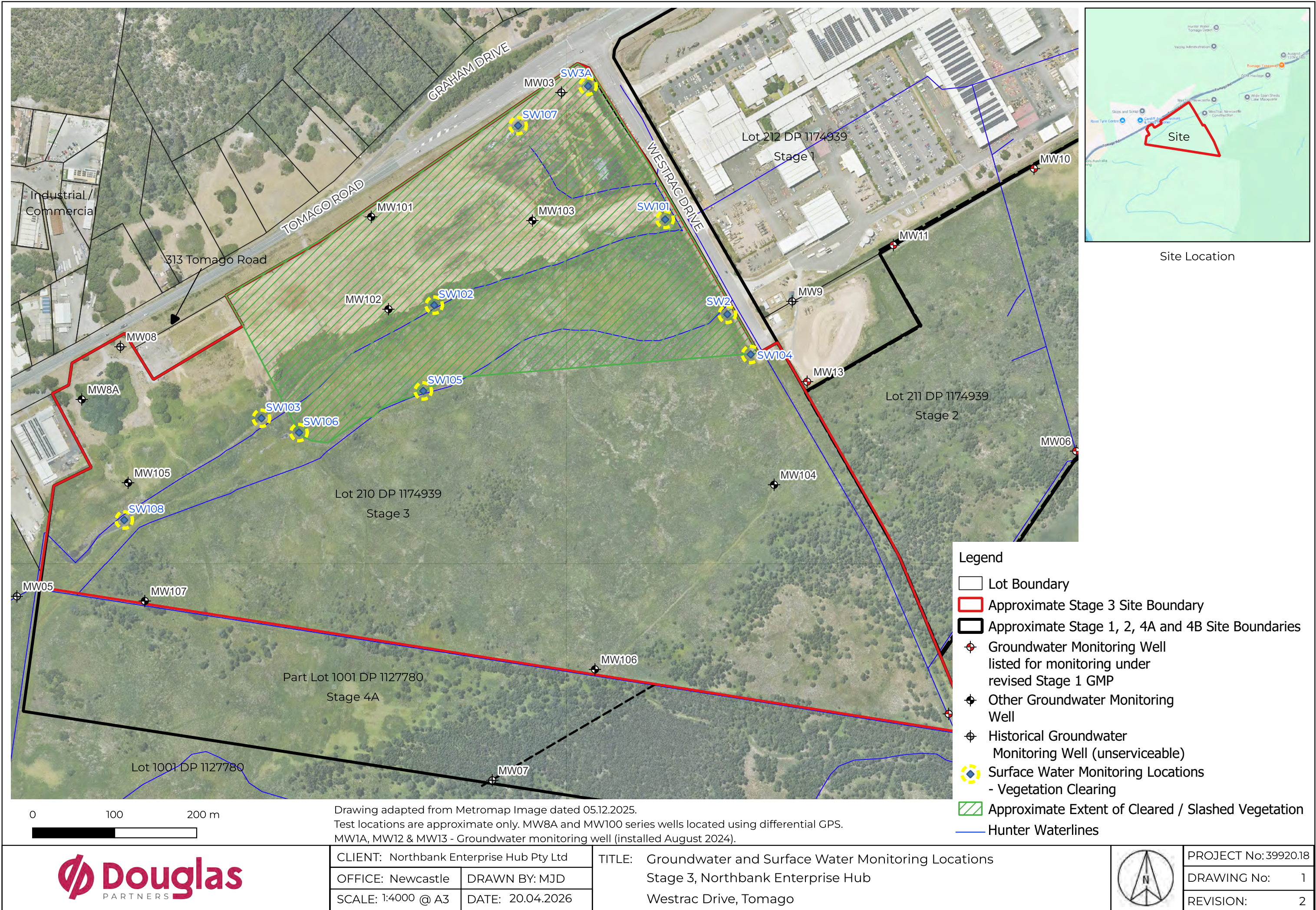
The assessment of atypical safety hazards arising from this advice is restricted to the environmental components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. Douglas cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

Appendix A

Drawing 1: Groundwater and Surface water monitoring locations



Appendix B

About this Report

Introduction

These notes have been provided to amplify Douglas' report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Douglas' reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Engagement Terms for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather

changes. They may not be the same at the time of construction as are indicated in the report; and

- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Douglas will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Douglas cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Douglas will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Douglas requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. Douglas would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

intentionally blank

Appendix C

Table 1: Results of field monitoring during vegetation clearing

Figure 1: pH in surface water vs time and rainfall

Figure 2: Electrical conductivity in surface water vs time and rainfall

Site photos (Plates 1 to 11)

Table 1: Results of field monitoring during vegetation clearing

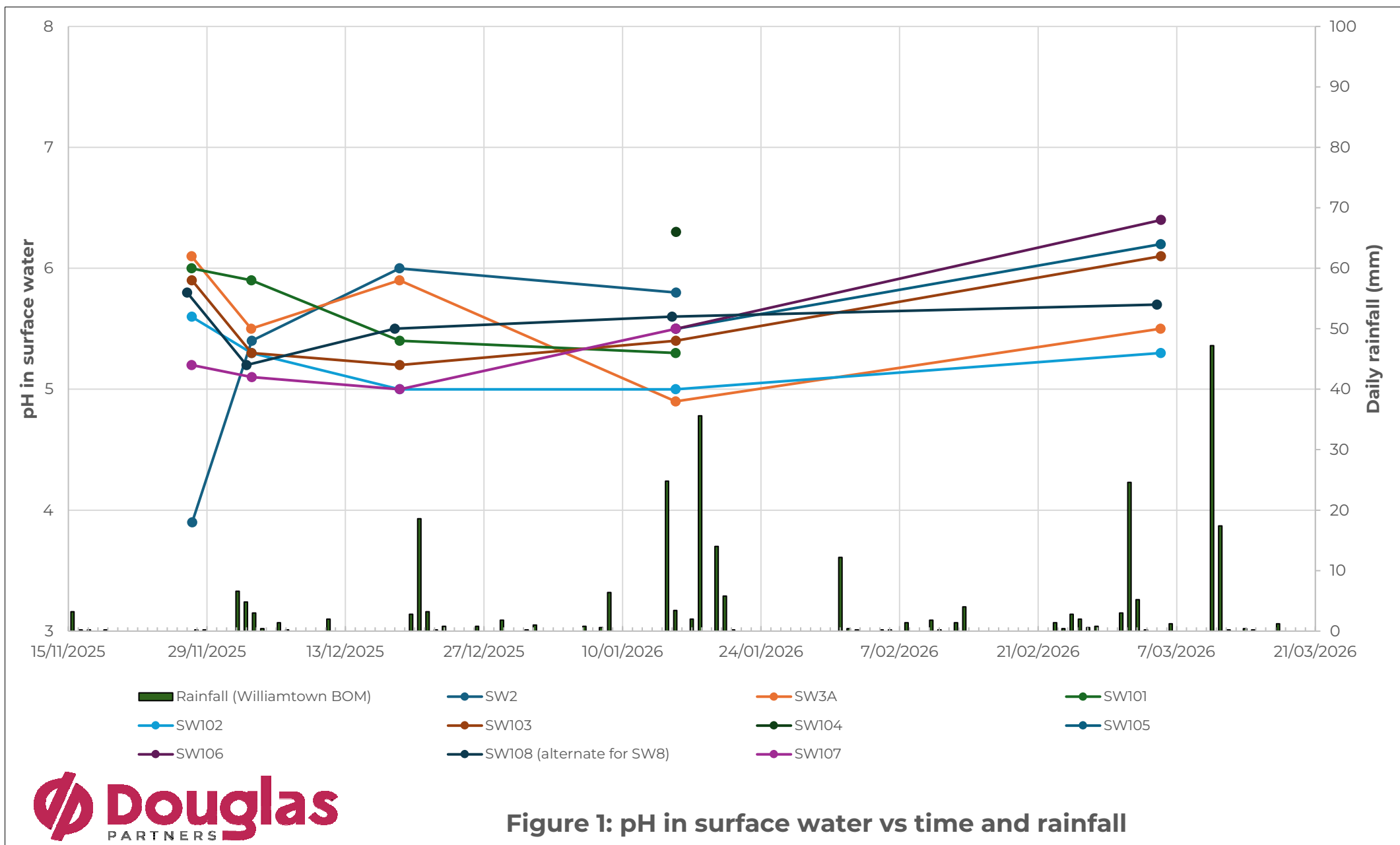
Monitoring location ID	Easting	Northing	Date	Time	pH (pH units)	EC (µS/cm)	DO(mg/L)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Description
SW2	383091	6367499	27/11/2025	12:20	3.9	163	1.5	>1000	22.4	14	Very turbid, brown, not flowing, reeds, slight sulfur odour
			3/12/2025	12:50	5.4	100	1.7	>1000	19.9	83	Very turbid, brown, slight sulfur odour
			18/12/2025	10:55	6.0	144	2.5	>1000	20.8	20	Very turbid, pale brown to brown, slight sulfur odour
			15/01/2026	9:47	5.8	115	1.2	407	21.0	3	Very turbid, brown, reeds
			5/03/2026	9:10	No surface water						Location dry. Has been cleared
SW3A	382921	6367778	27/11/2025	10:40	6.1	157	1.0	>1000	22.0	-41	Very turbid, pale brown, not flowing, reeds
			3/12/2025	11:30	5.5	163	0.9	>1000	20.9	89	Very turbid, pale brown, abundant vegetation
			18/12/2025	11:08	5.9	78	7.7	>1000	23.3	44	Very turbid, pale brown to brown, abundant vegetation
			15/01/2026	8:30	4.9	180	3.3	>1000	22.4	142	Clear, brown, vegetation cleared
			5/03/2026	8:52	5.5	177	2.3	168	22.5	-16	Very turbid, brown, not flowing, vegetation cleared
SW101	383015	6367617	27/11/2025	11:00	6.0	285	3.5	>1000	22.1	19	Very turbid, pale brown, not flowing, reeds
			3/12/2025	11:50	5.9	119	5.5	>1000	19.4	80	Very turbid, brown, not flowing, reeds
			18/12/2025	11:27	5.4	99	6.4	>1000	21.8	72	Very turbid, pale brown to brown, not flowing, reeds
			15/01/2026	8:39	5.3	94	3.3	720	21.7	87	Very turbid, brown, not flowing, reeds
			5/03/2026	9:05	No surface water						Location dry. Has been cleared
SW102	382724	6367511	27/11/2025	11:10	5.6	133	5.4	170	21.7	48	Moderately turbid, brown, not flowing, reeds / aquatic vegetation in drain
			3/12/2025	12:10	5.3	74	3.6	284	20.3	135	Moderately turbid, pale brown, not flowing, reeds / aquatic vegetation in drain
			18/12/2025	11:37	5.0	69	6.5	250	26.3	99	Moderately turbid, pale brown, not flowing, reeds / aquatic vegetation in drain
			15/01/2026	8:47	5.0	95	2.6	128	21.1	118	Moderately turbid, brown, flowing, reeds cleared within drain
			5/03/2026	9:20	5.3	165	4.8	>1000	22.3	61	Very turbid, grey-brown, not flowing, reeds present around banks
SW103	382523	6367373	27/11/2025	11:25	5.9	119	3.0	>1000	24.3	53	Very turbid, brown, not flowing, reeds / aquatic vegetation in drain
			3/12/2025	12:30	5.3	78	6.5	95	20.7	148	Moderately turbid, pale brown, not flowing, reeds / aquatic vegetation in drain, decaying organics
			18/12/2025	11:46	5.2	62	9.1	40	27.7	108	Moderately turbid, pale brown, not flowing, reeds / aquatic vegetation in drain, decaying organics
			15/01/2026	9:16	5.4	86	2.6	44	21.4	77	Clear, brown, flowing, reeds cleared within drain
			5/03/2026	9:33	6.1	139	4.0	516	22.7	-20	Very turbid, grey-brown, slightly flowing east (tidal). Reeds / aquatic vegetation
SW104	383119	6367450	15/01/2026	9:43	6.3	192	4.4	366	21.2	39	Very turbid, brown, not flowing, reeds / aquatic vegetation, minimal water
			5/03/2026	9:12	No surface water						Surface water location was dry. Has been cleared
SW105	382720	6367406	15/01/2026	9:00	5.5	103	3.4	194	22.1	95	Very turbid, brown, not flowing, reeds / aquatic vegetation in drain
			5/03/2026	9:25	6.2	404	1.7	644	22.6	14	Very turbid, grey-brown, not flowing/minimal water present, reeds / aquatic vegetation
SW106	382580	6367354	15/01/2026	9:12	5.5	115	2.4	119	21.7	73	Very turbid, brown, not flowing, reeds / aquatic vegetation in drain
			5/03/2026	9:31	6.4	207	1.4	>1000	22.5	-30	Very turbid, grey-brown, not flowing/minimal water present, reeds / aquatic vegetation
SW107	382836	6367730	27/11/2025	10:55	5.2	355	1.6	>1000	28.5	44	Very turbid, pale brown - grey, ponded surface water, slight decayed organics odour
			3/12/2025	12:40	5.1	177	1.5	>1000	31.4	85	Very turbid, pale brown
			18/12/2025	11:18	5.0	135	2.0	51	25.0	42	Moderately turbid, pale brown to brown, ponded water, slight decayed organics odour
			15/01/2026	8:32	5.5	706	4.0	640	21.9	143	Moderately turbid, brown, ponded water
			5/03/2026	8:57	No surface water						Location dry. Has been cleared
SW108 (alternate for SW8)	382356	6367250	27/11/2025	12:00	5.8	137	5.9	189	23.9	53	SW8 inaccessible, alternate location ~50m east Very turbid, brown, not flowing, reeds / aquatic vegetation in drain
			3/12/2025	1:00	5.2	81	6.6	74	20.1	161	Very turbid, pale brown, not flowing reeds present
			18/12/2025	12:00	5.5	87	10.9	984	25.9	114	Very turbid, pale brown
			15/01/2026	9:30	5.6	106	3.3	98	22.9	94	Slightly turbid, brown, flowing
			5/03/2026	10:00	5.7	138	3.8	123	24.6	57	Slightly turbid, grey-brown, slightly flowing

Notes:

DO - dissolved oxygen
EC - Electrical Conductivity

NT - not tested
NTU - Nephelometric Turbidity Units

ORP - Oxidation Reduction Potential (mV)
PID - Photoionisation detector



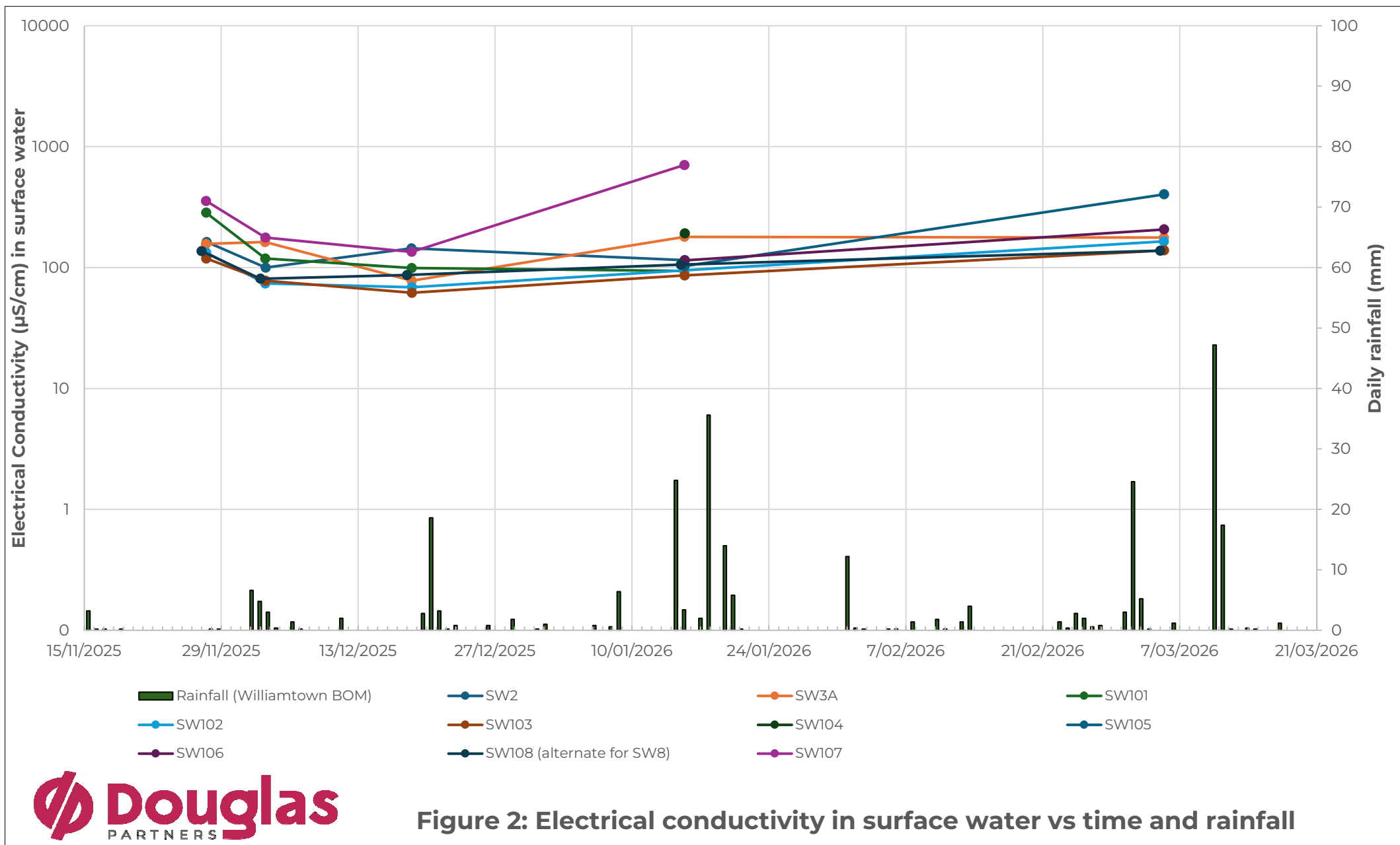




Figure 1: Cleared vegetation looking south-east (27/11/25). WesTrac site and Lot 210 fill stockpile in background



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.09

PLATE No: 1

REV: 0

DATE: 28-Apr-26



Figure 2: Cleared vegetation looking south-west (3/12/25). Low-lying central and southern part of Lot 210 in background



Figure 3: Cleared vegetation looking east (3/12/25). WesTrac site and Lot 210 fill stockpile in background. Low-lying parts of Lot 210 on right



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.09

PLATE No: 2

REV: 0

DATE: 28-Apr-26



Figure 4: Cleared vegetation looking west from location SW3A (3/12/25). Tomago Road on right



Figure 5: Cleared vegetation looking the north-eastern part of site from location SW101. WesTrac Drive on right



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.09

PLATE No: 3

REV: 0

DATE: 28-Apr-26



Figure 6: Surface water monitoring location SW2 (27/11/25)



Figure 7: Surface water monitoring location SW2 (3/12/25)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty
Ltd

PROJECT: 39920.09

PLATE No: 4

REV: 0

DATE: 28-Apr-26



Figure 8: Surface water monitoring location SW101 (27/11/25)



Figure 9: Surface water monitoring location SW101 (3/12/25)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 5

REV: 0

DATE: 28-Apr-26



Figure 10: Surface water monitoring location SW102 (27/11/25)



Figure 11: Surface water monitoring location SW102 (3/12/25)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 6

REV: 0

DATE: 28-Apr-26



Figure 12: Surface water monitoring location SW103 (27/11/25)



Figure 13: Surface water monitoring location SW103 (3/12/25)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 7

REV: 0

DATE: 28-Apr-26



Figure 14: Surface water monitoring location SW107 (27/11/25)



Figure 15: Surface water monitoring location SW107, looking west (3/12/25)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 8

REV: 0

DATE: 28-Apr-26



Figure 16: Surface water monitoring location SW108 (27/11/25)

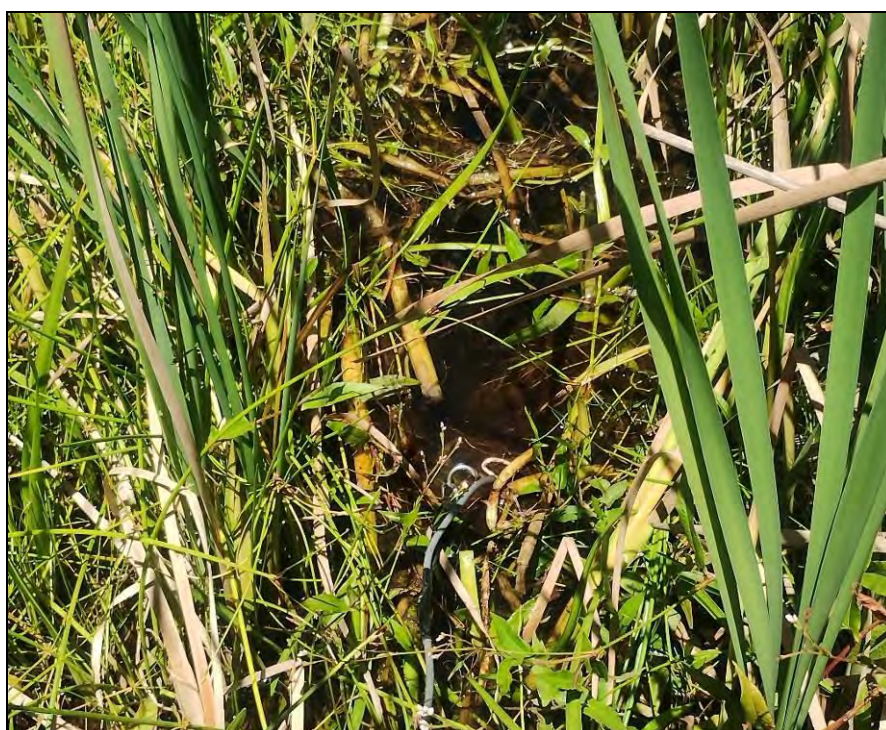


Figure17: Surface water monitoring location SW108 (3/12/25)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 9

REV: 0

DATE: 28-Apr-26

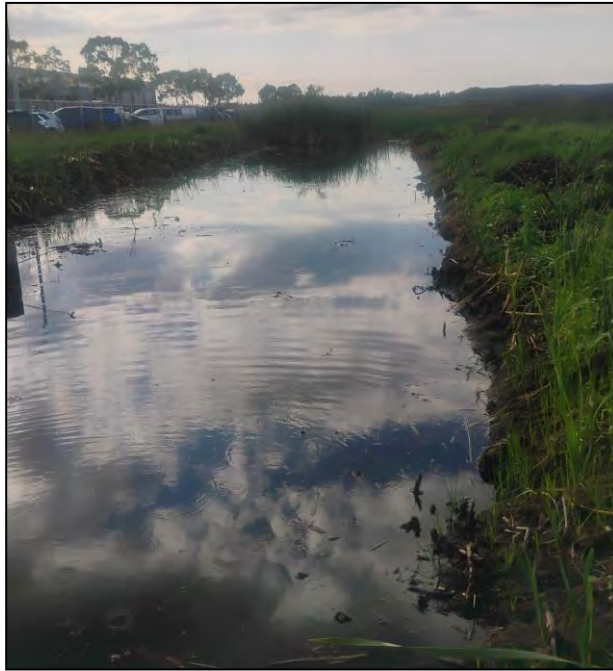


Figure 18: Surface water monitoring location SW3a (15/01/2026)

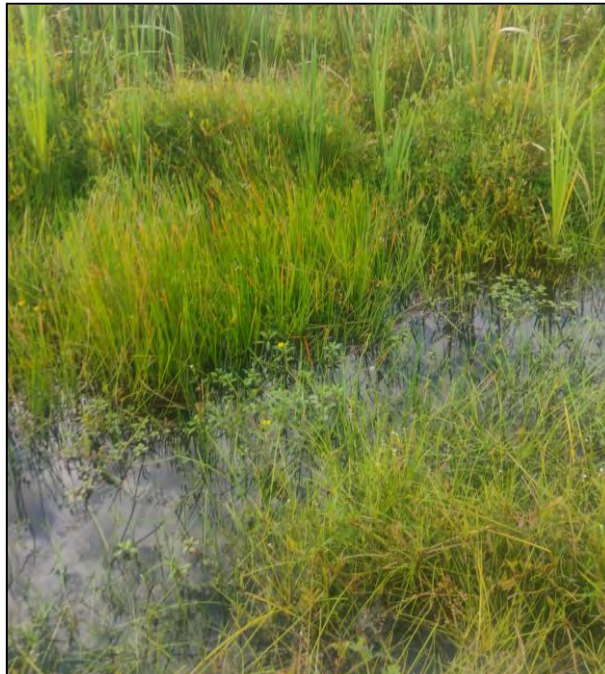


Figure 19: Surface water monitoring location SW105 (15/01/26)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 10

REV: 0

DATE: 28-Apr-26



Figure 20: Cleared Vegetation looking south near MW103 (05/03/2026)



Figure 21: Cleared vegetation looking west near SW101 (05/03/26)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 11

REV: 0

DATE: 28-Apr-26



Figure 22: Surface water monitoring location SW3a (05/03/2026)



**Site Photographs
Stage 3 Vegetation Clearing
Lot 210 Westrac Drive, Tomago**

CLIENT: Northbank Enterprise Hub Pty Ltd

PROJECT: 39920.18

PLATE No: 12

REV: 0

DATE: 28-Apr-26