Appendix G

Water Quality Management Plan

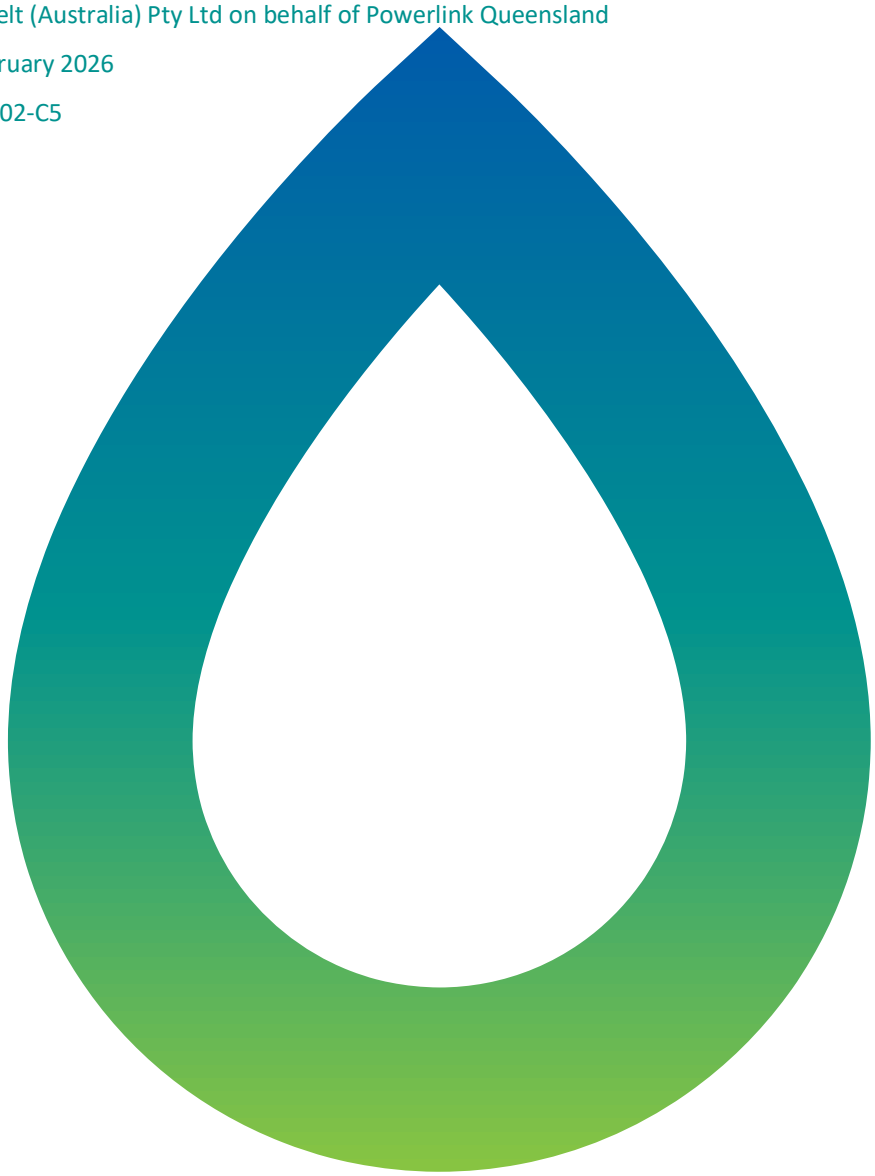
CALVALE TO CALLIOPE RIVER TRANSMISSION LINE REINFORCEMENT PROJECT

Water Quality Management Plan

Umwelt (Australia) Pty Ltd on behalf of Powerlink Queensland

3 February 2026

2254-02-C5



DETAILS

Report Title	Calvale To Calliope River Transmission Line Reinforcement Project, Water Quality Management Plan
Client	Umwelt (Australia) Pty Ltd on behalf of Powerlink Queensland

THIS REVISION

Report Number	2254-02-C5
Date	3 February 2026
Author	Tarkan Pasin
Reviewer	Lindsay Millard

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed _____

Position title (please print) _____

Full name (please print) _____

Organisation (please print) _____

Date _____/_____/_____

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1 INTRODUCTION

1.1 PURPOSE

This Water Quality Management Plan (WQMP) provides a framework for managing water quality during construction and decommissioning until disturbed construction surfaces are appropriately stabilised. The Surface Water Assessment (WRM, 2025) confirmed that the Project will not have a significant impact on the World Heritage Area (WHA), National Heritage List (NHL), or the Great Barrier Reef Marine Park (GBRMP) through changes in hydrology or water quality. Furthermore, the Project will not contribute to cumulative impacts within the catchment.

To maintain this outcome, this WQMP establishes monitoring, management and reporting protocols to protect receiving water quality and comply with regulatory requirements.

The operation of overhead transmission lines has minimal environmental impact, as it mainly consists of routine inspections and other low-impact activities. Powerlink's standard environmental policies and procedures cover these activities, and the risks to water quality are considered low.

1.2 SCOPE

This WQMP applies to all construction activities that have the potential to impact water quality, including:

- Site establishment and clearing;
- Earthworks and excavation;
- Concrete batching and placement;
- Chemical and fuel usage and storage;
- Waste management; and
- Stormwater discharge.

1.3 RELATED DOCUMENTS

The WQMP is subordinate to the detail contained within:

- Powerlink's Environmental Management Plan (EMP) (Doc ID A5644552, 5 September 2025)

The EMP is the overarching environmental management framework. Other relevant documents that are in development but will inform this WQMP are the details that are included within:

- Construction Erosion and Sediment Control Plan (ESCP) - Principal Contractor's detailed erosion and sediment controls.
- Construction Environmental Management Plan (CEMP) - Principal Contractor's construction method statements and procedures.

The WQMP works together with, and is informed by:

- Vision Environment's Calvale to Calliope River Transmission Line Reinforcement Project: Baseline Water Quality Monitoring Program report (Final 23 October 2025).

2 OBJECTIVE AND PERFORMANCE MEASURES

2.1 WATER QUALITY OBJECTIVES

The Project extends 87 kilometres east of Biloela, from the Calvale Substation to the Calliope River Substation at Gladstone. While it is divided into five sections, baseline water quality monitoring is occurring within the estuary near Section E. Section E encompasses the Calliope River lower estuary, which serves as the receiving environment for potential downstream effects of the Project. The lower estuary is the most relevant location for detecting and assessing changes in water quality that could influence the Great Barrier Reef (GBR) World Heritage Area (WHA) and the GBR Marine Park (GBRMP).

In contrast, surface water features within the upstream Project Area are primarily ephemeral and only convey flow following rainfall events. The few perennial reaches farther inland are challenging to access for regular monitoring and have limited hydrological connectivity to the estuary. Any localised impacts in these upper catchment areas would undergo significant dilution and attenuation before reaching the Calliope River estuary and are therefore unlikely to affect the GBRWHA and GBRMP measurably.

Powerlink's EMP sets the overarching objective of achieving no adverse impacts on water bodies from soil-disturbing activities, supported by detailed requirements.

The overarching objective is to maintain the receiving water quality in accordance with environmental values.

- Prevent discharge of contaminated water to watercourses;
- Minimise sediment mobilisation and turbidity impacts;
- Comply with regulatory discharge criteria (where applicable); and
- Protect downstream Great Barrier Reef values.

2.2 WATER QUALITY INDICATORS

To meet regulatory requirements and monitoring objectives, the WQMP will focus on ensuring compliance with the water quality objectives listed in Table 1 of the baseline water quality monitoring program (Vision Environment, 2025), listed below.

Table 2.1 Calliope River lower estuary water quality objectives (Vision Environment, 2025)

Parameter	WQO	Description
pH	7.4 – 8.3	20th - 80th percentile (DEHP, 2014)
TSS (mg/L)	20	QWQG (DERM 2009)
Turbidity Wet Season (NTU)	6 - 11 - 24	20^{th} - 50^{th} - 80^{th} percentile (DEHP, 2014)
Turbidity Dry Season (NTU)	5 - 11 - 21	
Dissolved Oxygen (% saturation)	91 - 95 - 100	
Total Nitrogen (µg/L)	140 - 175 - 210	
Ammonia (µg/L)	3 - 6 - 10	
Nitrogen Oxides (µg/L)	3 - 3 - 10	

Parameter	WQO	Description
Total Phosphorus (µg/L)	17 - 22 - 25	
Filterable Reactive Phosphorus (µg/L)	2 - 4 - 6	
Chlorophyll-a (µg/L)	1.0 - 1.7 - 2.7	
Dissolved Aluminium (µg/L)	37	95% species protection AWQG (ANZG 2018, 2021, 2025c)
Dissolved Cadmium (µg/L)	5.5	
Dissolved Chromium (µg/L)	27 (CrIII), 4.4 (CrVI)	
Dissolved Cobalt (µg/L)	1	
Dissolved Lead (µg/L)	4.4	
Dissolved Mercury (µg/L)	0.4	
Dissolved Silver (µg/L)	1.4	
Dissolved Vanadium (µg/L)	100	
Dissolved Zinc (µg/L)	8.0	
Dissolved Copper (µg/L)	0.6 (when DOC ≤ 0.5 mg/L)	95% species protection AWQG Dependent on DOC concentrations (ANZG 2025d). WQO = 1.24* (DOC - 0.5) + 0.55
Weak-acid Extractable Iron (µg/L)	540	95% species protection AWQG (ANZG 2025e)
Dissolved Manganese (µg/L)	300	Draft 95% species protection AWQG (ANZG 2025a)
Dissolved Nickel (µg/L)	5.8	Draft 95% species protection AWQG (ANZG 2025b)
Endosulfan (µg/L)	0.01	95% species protection AWQG (ANZG 2018)
Endrin (µg/L)	0.008	
Aldrin (µg/L)	0.003	Unknown level of species protection (ANZG 2018)
Chlordane (µg/L)	0.001	
DDT (µg/L)	0.0004	
Heptachlor (µg/L)	0.0004	
Methoxychlor (µg/L)	0.004	
Chlorpyrifos (µg/L)	0.009	95% species protection AWQG (GBRMPA 2010, ANZG 2018)
Diazinon (µg/L)	0.01	

In summary, these are:

- Turbidity and total suspended solids (TSS) to assess sediment runoff into the waterway.
- Nutrients, with emphasis on nitrogen, phosphorus and carbon in both particulate and dissolved inorganic forms.
- Potential contaminants, including metal(loid)s and organic compounds (e.g. herbicides and pesticides).

The baseline water quality monitoring program focuses on the following physical and chemical indicators:

- Total Suspended Solids (TSS) and Turbidity: TSS represents suspended organic and inorganic particles, and turbidity measures the scattering of light caused by these particles. Soil disturbance during construction may increase sediment runoff, leading to higher TSS and turbidity and, consequently, reduced dissolved oxygen production.
- pH: Indicates the acidity or alkalinity of the water and influences toxicity in aquatic organisms. In estuarine areas, disturbance of acid sulphate soils during construction poses a risk, as acidic runoff may affect nearby waterways.
- Dissolved Oxygen: Measured in mg/L or % saturation, it is essential for aquatic life. Sediment runoff may also introduce organic material, increasing biological oxygen demand and further reducing oxygen levels.
- Metal(loids): While some metal(loids) are essential micronutrients, elevated concentrations can be toxic. Soil disturbance and runoff are expected to increase total metal loads in waterways. Additionally, disturbance of acid sulphate soils can lower pH and increase the dissolved (bioavailable) fraction, heightening ecological risk to aquatic organisms.
- Herbicides: Used in agriculture, these synthetic chemicals can harm non-target aquatic plants, reduce primary productivity and alter ecosystem balance even at low concentrations (ANZG, 2018). Monitoring is vital in catchments draining to sensitive environments such as the GBR WHA (GBRMPA, 2010).
- Pesticides/Herbicides: A broad-spectrum suite of herbicides and pesticides available through the analytical laboratory has been selected to provide comprehensive baseline coverage. Several of the selected analytes have applicable Australian Water Quality Guideline (AWQG) values, while others do not. Their inclusion supports a precautionary and transparent baseline assessment. Pesticides and herbicides are included in the event-based monitoring suite given their potential use during vegetation clearing activities.

2.3 REEF 2050 WATER QUALITY IMPROVEMENT PLAN 2017-2022 FOR CALLIOPE RIVER CATCHMENT (FITZROY REGION)

Table 2.2 shows the end-of-catchment reduction targets listed in the Reef 2050 Water Quality Improvement Plan 2017-2022 (DETSI, 2018). The reduction targets for the Calliope River, in which the project is located, are specifically highlighted. The 2025 end-of-catchment water quality targets are expressed as percentage reductions in anthropogenic loads for the entire catchment. The percentage reductions are not appropriate to be applied to the Project as they represent such a small part of the much larger total catchment area.

The targets are calculated from the 2013 anthropogenic baseline to reflect previously reported water quality pollutants from 2009 to 2013. Reporting percentages enables annual reductions to be tracked over time, even as baselines are updated as knowledge improves. Catchments with an MCL (Maintain Current Load) target have minimal anthropogenic pollutant loads. The aim for this category of catchments is to maintain current water quality and prevent increases in pollutant loads.

The Reef 2050 Water Quality Improvement Plan specifies a limited number of water quality targets (WQT), namely dissolved inorganic nitrogen (DIN), fine sediment, particulate phosphorus (PP) and particulate nitrogen (PN).

In contrast, the WQMP includes a broader suite of parameters, as outlined in Table 2.1, which lists only those parameters with established water quality objectives (WQOs) under the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* (EPP). These parameters reflect the specific analytes measured by the laboratory, which generally align with Reef 2050 terminology.

Where Reef 2050 parameters are not measured directly, they will be derived using established and accepted methods, as follows:

- DIN will be represented by ammonia + nitrogen oxides;
- Particulate P will be represented by Total P and dissolved P; and
- Particulate N will be represented by total N and dissolved N.

Total suspended sediments (TSS) are proposed in place of fine sediment as a conservative indicator of suspended sediment conditions in this estuarine system, capturing both fine and aggregated particles under dynamic mixing regimes where fine sediment fractions cannot be consistently resolved.

Table 2.2 End-of-catchment anthropogenic water quality targets for the Reef catchments by 2025 and relative priorities for water quality improvement (DETSI, 2018)

Region	Catchment/ Basin	Area (ha)	Targets								Pesticide target to protect min 99% of aquatic species at end-of-catchment
			Dissolved inorganic nitrogen		Fine sediment		Particulate phosphorus		Particulate nitrogen		
			tonnes	% reduction	kilo-tonnes	% reduction	tonnes	% reduction	tonnes	% reduction	
Fitzroy	Styx River	301,340	**MCL**	MCL	**MCL**	MCL	**MCL**	MCL	**MCL**	MCL	
	Shoalwater Creek	360,180	**MCL**	MCL	**MCL**	MCL	**MCL**	MCL	**MCL**	MCL	
	Waterpark Creek	183,650	**MCL**	MCL	**MCL**	MCL	**MCL**	MCL	**MCL**	MCL	
	Fitzroy River	14,254,470	**MCL**	MCL	**390**	30	**380**	30	**640**	30	
	Calliope River	224,060	**MCL**	MCL	**15**	30	**54**	30	**107**	30	
	Boyne River	249,630	**MCL**	MCL	**6**	40	**5**	40	**9**	40	
Burnett Mary	Baffle Creek	408,470	**16**	50	**11**	20	**15**	20	**33**	20	
	Kolan River	290,450	**34**	50	**6**	20	**5**	20	**14**	20	
	Burnett River	3,319,540	**150**	70	**85**	20	**29**	20	**68**	20	
	Burrum River	337,170	**93**	50	**3**	20	**3**	20	**8**	20	
	Mary River	946,580	**180**	50	**130**	20	**160**	20	**470**	20	

3 BASELINE WATER QUALITY CONDITIONS

3.1 BASELINE MONITORING SUMMARY

The water quality monitoring is to be conducted in accordance with the procedures outlined in the Baseline Water Quality Monitoring Report (Vision Environment, 2025) at the designated locations. Water quality monitoring will ensure that the characteristics listed in Section 2 are monitored.

Monitoring is intended to capture seasonal variability for November to April and May to October periods. Exceedances beyond the water quality characteristics listed in the WQO are noted as existing water quality issues. Details on baseline data are provided in the Baseline Water Quality Monitoring Report (Vision Environment, 2025). In summary, they are:

- Baseline period commences in October 2025 until the commencement of construction; and
- Sample location methodology as outlined in the baseline water quality monitoring program, gives due consideration for safety, access and avoiding stagnant water.

3.2 RECEIVING ENVIRONMENT CHARACTERISTICS

The primary focus for water quality monitoring is Section E (Calliope River Lower Estuary). This section serves as the receiving environment for potential downstream impacts. Figure 3.1 illustrates the Calliope River mouth as a tidally influenced estuary system feeding into Gladstone Harbour. The Great Barrier Reef Marine Park (GBRMP) boundary borders Gladstone Harbour and 'The Narrows' to the north.

3.2.1 Upstream Hydrology

In contrast, surface water features within the upstream Project Area (Sections A to D) are primarily ephemeral. Detailed surface water assessments (see Surface Water Assessment, Section 4.3) confirm that crossings such as Larcom Creek (Section C) are classified as drainage features or ephemeral streams at the crossing location under the *Water Act 2000*, rather than permanent watercourses. These reaches typically convey flow only following significant rainfall events and have limited hydrological connectivity to the estuary. Consequently, any localised impacts in these upper catchment areas would undergo significant dilution and attenuation before reaching the Calliope River estuary.

Upstream flow regimes of the Calliope River are freshwater until the Bruce Highway, where a weir is located, and then transition to a tidally influenced estuary. Terrestrial ephemeral streams are situated around the Project; they drain into the Calliope River (a perennial major watercourse).

3.2.2 Reef 2050 Objectives and Goals

The Reef 2050 Objectives and Goals 2021-2025 list the following habitats and populations to be managed as an objective:

- Coral reef habitat;
- Seagrass meadows;
- Seabirds and shorebirds;
- Populations of protected species; and
- Fish and invertebrate species (in line with recreational, commercial and culturally based fisheries objectives).

The Plan also lists the following management goals:

- Species and habitats are supported to adapt to a changing climate; and

- Key habitats are being actively rehabilitated or restored.

3.2.3 Water Quality Targets

The Project achieves water quality targets by adhering to the Reef Water Quality Improvement Plan (2017-2022) directives (see Section 2.3). Environmental Values and Water Quality Objectives for the Curtis Island, Calliope River, and Boyne River Basins were established to protect Tidal and Freshwater aquatic ecosystems.

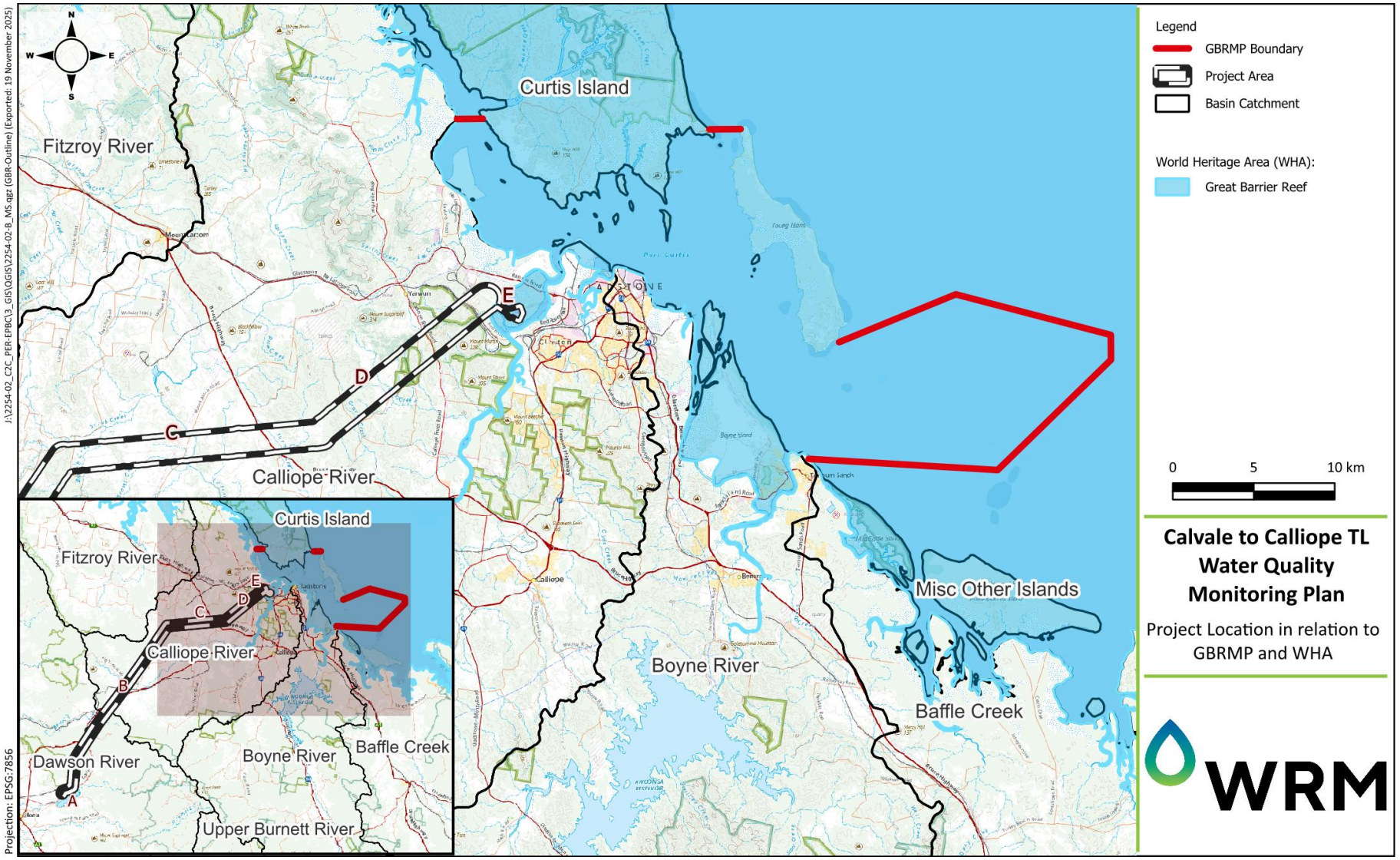

Figure 3.1 Project Area in relation to GBRMP

4 WATER QUALITY MANAGEMENT MEASURES

4.1 MANAGEMENT HIERARCHY

This WQMP follows the hierarchy for measures:

1. Avoid - site selection, design, timing;
2. Minimise - reduce footprint, staged clearing, controlled drainage;
3. Mitigate - erosion and sediment controls, treatment, containment; and
4. Rehabilitate - progressive rehabilitation, revegetation.

The WQMP is supported and works in concert with the following construction management plans produced by the Principal Contractor. The WQMP will be updated and harmonised with the details once the Principal Contractor is engaged and its plans become available. Key aspects of those plans are summarised below.

4.2 CONSTRUCTION EROSION AND SEDIMENT CONTROL PLAN

Refer to the Construction ESCP for detailed controls, including:

- Sediment basins and traps;
- Silt fences and sediment barriers;
- Diversion banks and drains; and
- Stabilisation measures.

4.3 POWERLINK'S ENVIRONMENTAL MANAGEMENT PLAN

Powerlink's EMP contains details and procedures that also address water quality management. Examples of such water quality management aspects, include:

- All chemicals and fuels stored and handled in bunded areas (110% capacity);
- Storage areas located a minimum of 50m from watercourses;
- Spill kits available at all storage locations;
- Designated concrete washout areas, bunded and lined;
- No discharge of concrete washwater to the environment;
- pH testing of washwater before disposal;
- Hardened concrete is disposed of at a licensed facility;
- Sewage managed via sealed tanks, removed by licensed contractor;
- No discharge of wastewater to receiving waters;
- Vehicle washdown in designated areas only;
- Clean and dirty water separation; and
- Treatment of dirty water before discharge (if applicable).

5 MONITORING AND INSPECTION PROGRAM

5.1 WATER QUALITY MONITORING

Water quality monitoring shall be undertaken in accordance with this WQMP.

5.1.1 Event-Based Monitoring

Rain event-based monitoring will be undertaken by a suitably qualified person throughout construction works within Section E, at the locations and frequency detailed in Table 5.2 and shown on Figure 5.1[1]. Until the rehabilitation criteria are met, monitoring will be undertaken, where safe to do so, to capture potential episodic pulses of sediment and nutrient loads. This monitoring will be triggered by rainfall events meeting the criteria defined in the Baseline Water Quality Monitoring Program (Vision Environment, 2025):

- Monitoring triggered by rainfall events exceeding the nominated runoff causing threshold, nominally a storm event producing greater than 25 mm in 24 hours OR greater than 50 mm over three days (Vision Environment, 2025);
- Sample collection within 24 hours of discharge event; and
- Parameters listed in Table 5.1. Additional parameters may require testing in the instance of an exceedance or incident.

Table 5.1 Laboratory testing and reporting

Parameter	Laboratory Limit of Reporting (LOR)
Total suspended solids (TSS)	5 mg/L
Total organic carbon (TOC)	0.5 mg/L
Dissolved organic carbon (DOC)	0.5 mg/L
Total nitrogen	50 µg/L
Total Kjeldahl nitrogen (TKN)	50 µg/L
Ammonia	5 µg/L
Nitrogen oxides (NOx)	2 µg/L
Total phosphorus	5 µg/L
Filterable reactive phosphorus (FRP)	1 µg/L
Organochlorine Pesticide suite	0.5 – 2 µg/L
Organophosphorus Pesticide suite	0.5 – 2 µg/L
Phenoxyacetic Acid Herbicide suite	10 µg/L

Event-based monitoring will include parameters to assess the four Reef 2050 Water Quality Target indicators: DIN, fine sediment, particulate phosphorus, and particulate nitrogen. These indicators will be derived from the measured laboratory analytes as described in Section 2.3.

[1] Note: excludes baseline sampling locations DPI-1 and DPI-2.

5.1.2 In-Situ Monitoring Parameters

Water quality monitoring will involve in situ measurements of electrical conductivity, pH, turbidity, and dissolved oxygen. Measurements will be taken using a calibrated multiparameter water-quality meter. Readings will be taken at approximately 0.5 to 1.0 m depth intervals at each site and logged at each depth through to the benthos.

5.1.3 Chemical Parameter Testing

All non-physiochemical parameters (chemical parameters) monitored are required to be tested via laboratory analysis, see Table 5.2.

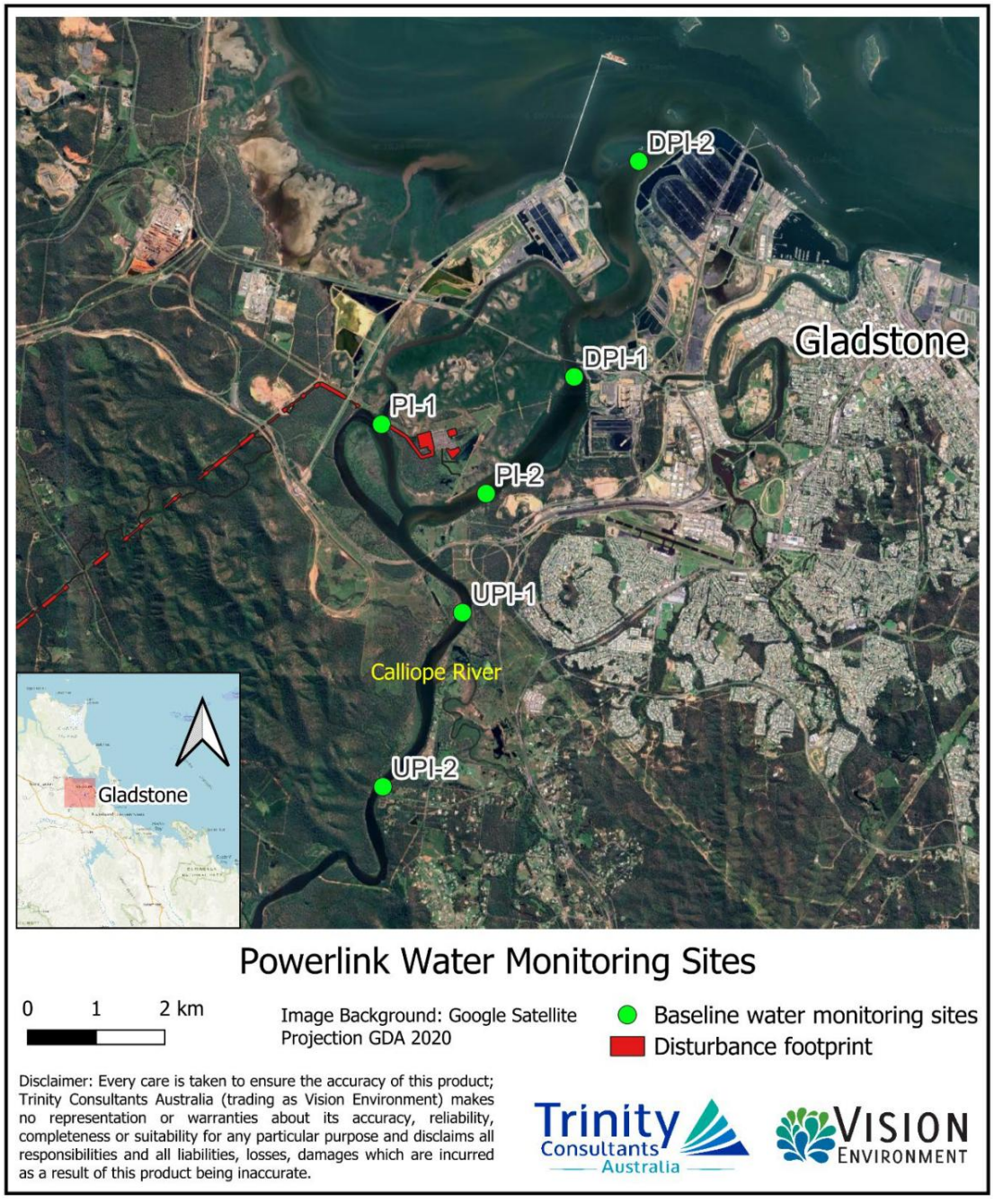

Figure 5.1 Construction water monitoring site locations (derived from Vision Environment (2025) Baseline Water Quality Monitoring Program)[2]

[2] Note: excludes baseline sampling locations DPI-1 and DPI-2.

Table 5.2 Construction water quality monitoring

Site Name	Description	Location	Parameters	Frequency	Method
PI-1	Potential impact site, river crossing	23°51.2345'S 151°11.0443'E	Provided in Table 5.1	Event-based following significant rainfall events (≥25 mm in 24 hours or ≥50 mm over three days).	Laboratory analysis / In situ monitoring
PI-2	Potential impact site, Substation land clearing	23°51.7920'S 151°11.9340'E		Event-based following significant rainfall events (≥25 mm in 24 hours or ≥50 mm over three days).	Laboratory analysis / In situ monitoring
UPI-1	Upstream inputs	23°52.7298'S 151°11.7168'E		Event-based following significant rainfall events (≥25 mm in 24 hours or ≥50 mm over three days).	Laboratory analysis / In situ monitoring
UPI-2	Upstream inputs	23°54.0972'S 151°11.0148'E		Event-based following significant rainfall events (≥25 mm in 24 hours or ≥50 mm over three days).	Laboratory analysis / In situ monitoring

5.2 VISUAL INSPECTIONS

Qualitative water quality assessments will be conducted throughout the Project Area to ensure site activities do not cause environmental harm or environmental nuisance to waterways within, or adjacent to, the Project. Visual monitoring will be undertaken at representative locations within the Project Area and adjacent waterways downstream into which the Project discharges. These will involve the following tasks:

- Weekly visual inspection of controls;
- Weekly inspection of chemical storage areas;
- Post-rainfall inspection of all water quality controls; and
- Inspection of receiving waters for turbidity plumes, discolouration, sheens.

5.3 TRIGGER VALUES AND RESPONSE

Quantitative trigger levels for water quality parameters will be derived after completion of the baseline monitoring period, using the percentile-based approach recommended by the ANZG (2018) guidelines.

Limit Triggers will be developed using a combination of existing WQOs and site-specific baseline monitoring results. Where established WQOs are available for a parameter, these will serve as the primary basis for defining Limit Triggers. For parameters for which no applicable WQOs are available, or for which guideline values are not directly applicable to estuarine conditions, baseline monitoring data will be used to characterise background water quality. In these cases, percentile-based statistics (including the 80th percentile of baseline data, consistent with ANZG (2018) guidance) will inform trigger values.

The final Limit Triggers will be established by considering both guideline-based thresholds and baseline-derived conditions in combination, to ensure triggers are protective of environmental values while accounting for natural variability within the receiving environment.

'Environmental harm' will be defined as water quality conditions that exceed the Limit Triggers and have the potential to adversely affect the identified environmental values of the receiving waters.

Trigger values will be derived after completion of the baseline monitoring period using a site-specific, percentile-based approach consistent with ANZG guidance (2018) and the Before–After–Control–Impact (BACI) monitoring design adopted for this project. Trigger values will be established for each monitored parameter (and where relevant, for wet and dry seasons), and will be used to:

- provide early warning of potential departures from background conditions (Alert Trigger);
- identify departures that are unlikely to be attributable to natural variability and therefore require investigation (Action Trigger); and
- define conditions that indicate potential environmental harm, requiring management attention (Limit Trigger).

5.3.1 Dataset used for trigger derivation

Baseline data will be drawn from the monthly surveys collected at the six monitoring sites.

Prior to statistical analysis, data will be screened using the QA/QC framework described in the baseline program. This includes field duplicates, trip blanks, field blanks, and laboratory QA/QC. Any results flagged as invalid/contaminated will be excluded from the trigger calculations.

To ensure triggers reflect natural drivers (tidal influence, rainfall, seasonal patterns), baseline data will be separated into seasons: Wet Season (November to April) and Dry Season (May to October) for

parameters known to vary seasonally (e.g., turbidity). Where sufficient data exists, separate triggers will be derived by season.

Baseline water quality results may also be reviewed in the context of prevailing environmental conditions at the time of sampling, such as recent rainfall and tidal conditions, to confirm that derived trigger values are representative of typical background variability and not largely influenced by isolated events.

The following rules will be applied to the data:

- Results < Laboratory Limits of Reporting (LOR). These results will be retained using a consistent censored data approach (substitution with ½ LOR during statistical analyses).
- Outliers will not be removed simply because they are high. Values will only be excluded where a clear non-environmental cause is demonstrated (e.g., sample contamination confirmed by blanks, instrument malfunction).
- Transformations: For strongly skewed parameters (common for turbidity, nutrients and TSS), log-transformation may be used for statistical testing, but percentile-based trigger values will be reported in original units.

5.3.2 Trigger derivation approach

5.3.2.1 Alert Trigger

The purpose of this trigger is to identify a potential deviation from baseline conditions.

For parameters where 'higher is worse' (e.g. turbidity), the Alert Trigger will be calculated as the 80th percentile of the baseline dataset.

For parameters with a range of acceptable values (e.g., pH and dissolved oxygen), Alert Triggers will be calculated as the 20th and 80th percentiles of the baseline dataset (similar to local Water Quality Objectives/WQO).

Data from all six baseline monitoring sites may be pooled to calculate percentile values, where appropriate.

5.3.2.2 Action Trigger

The purpose of this trigger is to identify a potential deviation at Potential Impact sites from baseline and concurrently measured reference conditions.

The Action Trigger is reached when only Potential Impact sites breach the Alert Trigger. No breaches are recorded at the upstream and downstream reference sites during the same monitoring event. This indicates a departure from baseline/reference conditions that is unlikely to be natural variability alone and therefore requires investigation.

5.3.2.3 Limit Trigger

This trigger indicates potential environmental harm, requiring immediate action.

- If a parameter has a defined WQO/AWQG value applicable to the Calliope River lower estuary, that value will be the Limit Trigger; and,
- Where no WQO exists for a parameter, the Limit Trigger will be derived from the 99th percentile of baseline data.

5.3.3 Adopted trigger values

Final trigger values will be documented following completion of baseline monitoring.

5.4 WEATHER MONITORING

Records will be kept and maintained of the following activities:

- Weather forecasts, pre-rainfall inspections, and thresholds;
- Weekly weather forecast monitoring as standard;
- Daily monitoring when adverse weather is predicted;
- Pre-rainfall inspections triggered at a specific threshold (nominally more than 25 mm predicted);
- Pre-rainfall checklist to assess site preparedness; and
- Post-rainfall implied through weekly inspections.

5.5 INCIDENT RESPONSE AND CORRECTIVE ACTIONS

5.5.1 Response to Exceedances

A summary of the responses once a trigger value is reached is listed in Table 5.3.

Table 5.3 Triggers and responses

Trigger Level	Response Action	Responsibility	Timeframe
Alert	Increase monitoring frequency, inspect controls (e.g. potential erosion and sediment control failures)	Environmental Officer	24 hours of becoming aware
Action	Investigate the cause, implement corrective actions (e.g. Check and rectify existing sediment and erosion controls, where necessary implement additional sediment and erosion controls in affected areas as per the ESCP)	Site Manager	48 hours of becoming aware
Limit	Stop relevant activities, notify the regulator, and implement corrective actions	Project Manager	Immediate

Note: Monitoring during construction is likely to experience a lag period between the trigger level exceedance and knowledge of the exceedance due to the laboratory analysis time. The relevant manager responsible for the trigger must act accordingly upon recognition of exceedance.

5.5.2 Spill Response

In the event of a chemical or fuel spill:

- Ensure personnel safety;
- Contain spill using spill kit materials;

- Prevent entry to stormwater or watercourses;
- Notify Site Manager and Environmental Officer immediately;
- Clean up using appropriate methods;
- Dispose of contaminated materials at a licensed facility;
- Complete incident report and investigation; and
- Refer to the CEMP for detail relating to management of spills for response protocols.

5.5.3 Incident Reporting

In the event of an environmental incident:

- All environmental incidents recorded in the site register;
- Notifiable incidents reported to the regulator within the required timeframes; and
- Incident investigation to identify root cause and preventative actions.

6 REPORTING AND REVIEW

6.1.1 Pollution Incident Response Procedures

- Report as per Incident Reporting (Section 5.5.3). Contain pollutants immediately if possible.

6.1.2 Community Complaints

- Community complaints management includes receipt of complaints, investigation, implementation of appropriate remedial action, and feedback to the complainant, as well as communication to site management or personnel, and notification to external bodies, such as regulatory authorities, where necessary.

6.1.3 Extreme Weather Event Management

- Ensure containment of possible contaminants as well as the safety of personnel and equipment.
- If contaminants access a waterway or watercourse, contain immediately and report as per Incident Reporting (Section 5.5.3).
- Perform monitoring, if extreme weather has caused increases beyond WQO for water quality characteristics, report as per Incident Reporting.
- Investigate and perform further preventative actions to avoidable repeated exceedances, noting that extreme weather events may, by nature, increase naturally occurring exceedances in catchments.
- The Project site shall be appropriately prepared for both likely and unlikely wet weather conditions.
- The Contractor's ESCP will include detailed on the wet weather preparedness plan to establish appropriate erosion and sediment control measures and actions that may be implemented prior to a predicted wet weather event shall be prepared by the Principal Contractor.

6.2 INTERNAL REPORTING

- Weekly environmental inspection reports;
- Monthly water quality monitoring summary;
- Quarterly trend analysis against baseline data; and
- Incident reports as required.

6.3 ADAPTIVE MANAGEMENT

This WQMP will be reviewed and updated:

- Following any significant water quality exceedance;
- At completion of major construction lots or phases; and
- Where required.

Changes to management measures implemented through the WQMP revision and communicated to all personnel.

7 ROLES AND RESPONSIBILITIES

7.1 OVERVIEW

The effectiveness of the WQMP relies on appropriate delegation and a thorough understanding of responsibilities.

Table 7.1 Roles and Responsibilities for WQMP

Role	Responsibilities
Project Manager	Overall accountability for environmental performance, approve WQMP, and ensure resources are available.
Site Manager	Day-to-day implementation, ensure contractor compliance, and incident response.
Environmental Officer	Monitor compliance, conduct inspections, maintain monitoring program, liaise with regulators, and report trends.
Site Supervisor	Implement controls, supervise contractors, conduct daily inspections, and report issues.
All Personnel	Comply with WQMP requirements, report incidents and risks.
Contractors	Implement controls within their scope and comply with procedures.

7.2 TRAINING AND AWARENESS

The effectiveness of the WQMP relies on appropriate training and awareness of water quality aspects.

7.2.1 Training Requirements

Table 7.2 proposes the training and awareness requirements for the WQMP.

Table 7.2 Training and awareness

Training Topic:	Audience	Frequency
WQMP overview and requirements	All site personnel	Site induction
Water quality monitoring procedures	Environmental Officer	Prior to role commencement
Erosion and sediment control	Earthworks personnel	Prior to works + refresher
Spill response	All personnel	Site induction + annual
Chemical handling	Relevant personnel	Prior to handling and on an annual basis

7.2.2 Toolbox Talks

Training and awareness will be supported by regular toolbox talks that cover:

- Water quality risks and controls;
- Seasonal considerations (wet season preparedness);
- Monitoring results and trends; and
- Lessons learned from incidents.

Powerlink and the Principal Contractor maintain training attendance records.

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