Letter

Environmental Protection Act 1994

Finalisation of an Environmental Protection Order

Pursuant to section 810; and section 358 (unamended)

Robert Hayward

Chief Executive Officer

Maranoa Regional Council

Cnr Bungil and Quintin Streets

ROMA QLD 4455

Your reference: EPPR00407513

Our reference: C-CPLPO-100293771, STATE-E-100481987

Dear Mr Hayward,

TAKE NOTICE: that on Thursday, 25 January 2024 (and as amended on 18 November 2024) under the *Environmental Protection Act 1994* (the Act) the administering authority issued an environmental protection order (EPO) to Maranoa Regional Council. The administering authority is the Chief Executive of the Department of the Environment, Tourism, Science and Innovation (the department).

The EPO was issued in respect to the activities of Maranoa Regional Council at:

Location Name	Environmentally relevant activities (ERAs)	Location
Roma Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (d) more than 10,000t but not more than 20,000t ERA 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (a) less than 50,000t ERA 62 - Resource recovery and transfer facility operation - 1(b) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing general waste ERA 62 - Resource recovery and transfer facility operation - 1(c) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 2 regulated waste	Short St Roma (Lot 241 WAL53170 and Lot 242 WV1872)
Mitchell Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (b) 2,000t to 5,000t	St George Road, Mitchell (Lot 71 SP284884)
Injune Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (a) less than 2000t	Womblebank Gap Road, Injune (Lot 150 WT317)
Surat Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (a) less than 2000t	Silver Springs Road, Surat (Lot 124 EG247)

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Yuleba Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (a) less than 2000t	Perry St, Yuleba (Lot 302 WV558 and Lot 82 WV1897)
Wallumbilla Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (a) less than 2000t	Un-named road Wallumbilla (Lot Part of 220 Plan WV1085)
Jackson Waste Facility	ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (a) less than 2000t	Un-named Road, Jackson (Lot 55 BWR291)

A. Requirements

The requirements of this EPO were:

1. By **5:00 pm on 9 February 2024** you must engage an appropriately qualified person (AQP) to carry out the requirements of the notice and confirm the engagement in writing to southwest.es@des.qld.gov.au or by post to PO Box 731, Toowoomba QLD 4350. The written confirmation of the engagement must include each persons' qualifications and suitable experience relevant to the scope of work each AQP will undertake.

2. You must require the AQP, in collaboration with Maranoa Regional Council staff involved with the operation of the waste facilities, to develop interim written procedures which meet the requirements of condition P1-G1 of the Environmental Authority (EA) with regard to the prevention and management of fire at all waste facilities.

3. By **30 April 2024** you must submit the interim written procedure(s) required by Requirement 2 to the department by email to southwest.es@des.qld.gov.au or by post to PO Box 731, Toowoomba QLD 4350

4. The interim written procedure(s) required by Requirement 2 must be implemented from the date they are submitted under Requirement 3.

5. You must require the AQP, in collaboration with Maranoa Regional Council staff involved with the operation of the waste facilities, to develop written procedures which meet the requirements of condition P1-G1 of the EA for the current and ongoing operations.

6. The written procedures required by Requirement 5 must include the following:

(a) Site design, including waste storage areas, waste disposal cell (current and proposed) design, construction and filling at the premises (except where no further waste disposal is planned); and

(b) A risk assessment to identify risks to all environmental values from the activities undertaken at all waste facilities. This must include considerations for routine operations, other operations onsite (e.g. waste stored for tyre recyclers or lands depot at Roma; sawdust from the sawmill stored at Mitchell), and emergencies; and

(c) Procedures and control measures to mitigate and manage the environmental risks identified in Requirement 6(b) and other common issues associated with waste facilities, including (but not limited to) waste cell design, leachate management, stormwater management, landfill gas management, waste acceptance, waste placement, compaction and coverage, waste stockpile segregation and size, site access and security, customer education and communication, and incident and emergency response; and

(d) A groundwater monitoring system to measure the impacts to groundwater from the activities at the Roma and Mitchell Waste Facilities, and any other waste facilities where it is deemed necessary from the risk assessment in Requirement 6(b); and

(e) A monitoring plan which specifies parameters to be monitored, monitoring locations, procedures and frequency, and analysis and interpretation of results for any monitoring identified as necessary under the risk assessment carried out under Requirement 6(b), and any monitoring identified as necessary for management of waste facilities under Requirement 6(c) and (d);

(f) Details of how plant, equipment and control measures included under the written procedures must be maintained and operated.; and

(g) Notification requirements under the EA and *Environmental Protection Act 1994*.

7. The written procedures required by Requirement 2 and 5 and in accordance with Requirement 6 must:

(a) Specify the person responsible for each action or requirement; and

(b) Specify how the actions or requirements are to be achieved; and

(c) Account for changes in staffing; and

(d) Include requirements for developing and delivering staff training (including refresher and new staff training), assessing staff competency and keeping records to demonstrate this; and

(e) Include a schedule and triggers for periodically reviewing and updating information, procedures and staff training; and

(f) Specify timeframes for implementation where any actions or requirements do not commence immediately.

8. The written procedures required by Requirement 2 and 5 and in accordance with Requirements 6 and 7 must consider the department's *Landfill siting, design, operation and rehabilitation Guideline, 2021.*

9. The written procedures required by Requirement 2 and 5 and in accordance with Requirements 6 to 8 must not contradict requirements under the EA (EPPR00407513) or the Act.

10. By **30 June 2024** you must submit a report demonstrating progress to date in addressing Requirements 5 to 8 to the department by email to southwest.es@des.qld.gov.au or by post to PO Box 731, Toowoomba QLD 4350.

11. From **21 November 2024** until you comply with Requirement 13, you must provide written progress updates and advice about any factors impacting compliance with the requirements of this notice to the department by the end of each month (except for the month of December).

12. By **30 March 2025** you must submit a draft copy of the written procedures required by Requirement 5, and which are in accordance with Requirements 6 to 9, to the department for review and comment by email to southwest.es@des.qld.gov.au or by pose to PO Box 731, Toowoomba QLD 4350.

13. Within **2 months** of receiving comments from the department on the draft written procedures submitted under Requirement 12, you must submit a final version of the written procedures to the department, by email to southwest.es@des.qld.gov.au or by post to PO Box 731, Toowoomba QLD 4350 which:

(a) comply with Requirements 5 to 9; and

(b) incorporate any comments and recommendations made in writing by the department.

14. The written procedure(s) developed under Requirements 5 to 9 must be implemented from the date they are submitted under Requirement 13.

B. Compliance with the requirements

In determining compliance with these requirements of the EPO, the department has considered:

- The response provided on 2 February 2024 in relation to Requirement 1 of the EPO;
- Documents provided on 30 April 2024 in relation to Requirement 3;
- The interim draft written procedures provided on 1 July 2024;
- The draft written procedures provided on 31 March 2025 and 28 November 2025;
- The final written procedures developed and submitted to the department on 13 April 2026:
- Monthly updates provided to the department.
- Discussions with you throughout the course of the EPO, including those on the 14 November 2025, 30 January 2026 and 12 May 2026.
- Site inspections conducted on 21-22 April 2026 at the Roma landfill and the Yuleba and Jackson transfer facilities.

There are two requirements from the EPO which the department views as being deficient in rigour, and are alleged non-compliances with sections 361 the Act (refer to Table 1). These matters also relate to contraventions of section 430 of the Act and Condition P1-G2 of EPPR00407513 (refer to Table 1) which continue beyond cessation of this EPO. However, in considering the circumstances around these matters, the department is not taking enforcement action against these matters at this time. If the department finds that these matters are ongoing, further action may be taken in the future to ensure you meet compliance with the EA and the Act in accordance with the departments Enforcement Guidelines. The department acknowledges that there have been significant changes and improvements to your operations since the commencement of the EPO, and other further improvements to be implemented such as those relating to leachate and stormwater management are planned.

C. Obligations

The department has determined that Maranoa Regional Council has submitted documents in relation to the requirements of the EPO. Accordingly, this letter serves as a notice that this EPO is finalised and is no longer in effect.

Maranoa Regional Council is reminded of their responsibility to comply with conditions contained in Environmental Authority EPPR00407513, duties under the Act, and any existing development approval. The department will follow up in the future with a site visit to your facilities to view the efficacy of the written procedures and looks forward to reviewing your revised Receiving Environmental Monitoring Programs.

D. Issued by



Lisa Fritz
Principal Environmental Officer`
Delegate of the Administering Authority
Dept of the Environment, Tourism, Science and Innovation
10 June 2026

Enquiries:
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Table 1. Alleged non-compliance with the *Environmental Protection Act 1994* (the Act)	
Legislative requirement	**Details**
s810 of the Act - Unamended Act continues to apply in relation to particular instruments (1) The unamended Act continues to apply in relation to any of the following (each a relevant instrument) issued under the unamended Act before the commencement, as if the amending Act had not been enacted - (a) an environmental protection order; **S361 of the Act** Offence not to comply with order (2) The recipient must not contravene an environmental protection order.	Maranoa Regional Council (MRC) were issued EPO STAT-E-100481987. Requirement 14 of the EPO states that the written procedure(s) developed under Requirements 5 to 9 of the order, must be implemented from the date they are submitted under requirement 13. In accordance with Requirement 13, on 13 April 2026 final written procedures were submitted to the department which incorporated/addressed the comments we provided on 13 February 2026. A review of these final documents has found them to generally meet requirements 5 to 9 of the EPO. On 21 April 2026 departmental officers observed MRC staff and contractors at the Roma Waste facility at Short Street Roma, unaware of details on recent updates to written procedures. They also could not locate written procedures onsite during this inspection. On 12 May 2026 during a meeting with MRC, the appropriately qualified person (AQP) and departmental officers, the Manager - Waste & Environmental Health Services Waste & Environmental Health Services admitted that they had not passed on updated written procedures and the details to the weighbridge staff as they were contractors. They stated that staff had been informed of changes, however contractors were not included in the update. People working and managing the waste facility on a day to day basis cannot implement the written procedures if they are not aware of them. Therefore, it is alleged that MRC have not implemented the written procedures at the Roma Waste facility from the day they were submitted to the department as required by Requirement 14 of the EPO. It is alleged that MRC did not comply with the order (EPO) due to the written procedures not being implemented as required by Requirement 14 which is an alleged offence with s361 of the unamended Act.
s430 of the Act - Contravention of condition of environmental authority (1) This section applies to a person who is the holder of, or is acting under, an environmental authority. (3) The person must not contravene a condition of the authority. **Condition P1-G1 of EPPR00407513 states that the activity must be undertaken in accordance with written procedures that:**	In addition to the alleged contravention above, the same circumstances are applied to the following section of the Act and condition P1-G1 of the EA (EPPR00407513). MRC are the holder of the EA, and the written procedures provided on 13 April 2026 have been developed to also comply with requirements under condition P1-G1. Following a review of the Receiving Environment Monitoring Programs (REMPs), monitoring reports and data, it was found that the Yuleba REMP supports the collection of surface water samples for analysis of flow and water quality parameters. Review of both the laboratory data and the supplied monitoring report imply that no surface water samples have been collected. The Injune REMP indicates that MW003 is located hydraulically up gradient of the landfill mass. This water quality data represents background groundwater quality, hence is important that these samples are collected and analysed. The REMP supports that a minimum data set of 8 samples

1. identify potential risks to the environment from the activity during routine operations and emergencies; and 2. establish and maintain control measures that minimise the potential for environmental harm; and 3. ensure plant, equipment and measures are maintained in a proper and effective condition; and 4. ensure plant, equipment and measures are operated in a proper and effective manner; and 5. ensure that staff are trained and aware of their obligations under the Environmental Protection Act 1994; and 6. ensure that reviews of environmental performance are undertaken at least annually.	over a 12 month period is required. Results provided in the excel spreadsheet only show that one sample has been collected from this location with no commentary provided on the missing data. Only one sample from the background groundwater source does not adequately support whether there have been impacts from the activity. While this has occurred prior to the finalisation of procedures, it indicates inconsistencies between what the written procedures require and what has been implemented. In failing to implement the procedures as outlined above, it is alleged that P1-G1 of EPPR00407513 and s430(3) of the Act have not been complied with. It is recommended that staff awareness training is undertaken annually for written procedures (incorporating updates), environmental authority conditions and general environmental duty. It is recommended that this training is documented and follow up consultation by the way of auditing is undertaken by MRC management staff to ensure the activities are undertaken in accordance with written procedures, including the standard operating procedures (SOPs) for the sites.
s810 of the Act - Unamended Act continues to apply in relation to particular instruments (1) The unamended Act continues to apply in relation to any of the following (each a relevant instrument) issued under the unamended Act before the commencement, as if the amending Act had not been enacted - (a) an environmental protection order; **S361 of the Act** Offence not to comply with order (2) The recipient must not contravene an environmental protection order.	MRC were issued EPO STAT-E-100481987. Requirement 6(d) and (e) states that the written procedures required by Requirement 5 must include the following: (d) A groundwater monitoring system to measure the impacts to groundwater from the activities at the Roma and Mitchell Waste Facilities, and any other waste facilities where it is deemed necessary from the risk assessment in Requirement 6 (b). (e) A monitoring plan which specifies parameters to be monitored, monitoring locations, procedures and frequency, and analysis and interpretation of results for any monitoring identified as necessary under the risk assessment carried out under Requirement 6(b) and any monitoring identified as necessary for management of waste facilities under Requirement 6(c) and (d). The REMPs for Roma, Mitchell, Injune, Jackson, Surat, Wallumbilla and Yuleba were provided to the department in relation to Requirement 6(d) and (e). They were found to comply in part with Requirement 6 (d) and (e), however, a comprehensive review by the department found deficiencies in the documentation as detailed below in 'Table 2. REMPs feedback'. It is alleged that the: - groundwater monitoring programs developed to measure the impacts of the landfilling activities have not adequately addressed the risks to groundwater - The monitoring plan has not adequately specified parameters, locations, procedures and frequency of monitoring for some sites.

	Therefore the department considers MRC has not fulfilled Requirement 6(d) and (e) and therefore are non compliant with s361 of the unamended Act.
s430 of the Act - Contravention of condition of environmental authority (1) This section applies to a person who is the holder of, or is acting under, an environmental authority. (3)The person must not contravene a condition of the authority . **Condition P1-G1 of EPPR00407513 states that the activity must be undertaken in accordance with written procedures that:** 1. identify potential risks to the environment from the activity during routine operations and emergencies; and 2. establish and maintain control measures that minimise the potential for environmental harm; and 3. ensure plant, equipment and measures are maintained in a proper and effective condition; and 4. ensure plant, equipment and measures are operated in a proper and effective manner; and 5. ensure that staff are trained and aware of their obligations under the Environmental Protection Act 1994; and	In addition to the alleged contravention above, the same circumstances are applied to the following section of the Act and condition P1-G1 of the EA (EPPR00407513). MRC are the holder of the EA. The REMPs provided have been developed to also comply with requirements under condition P1-G1. A comprehensive review by the department found deficiencies in the documentation as detailed in Table 2. REMPs feedback. In failing to adequately identify potential risks to the environment from the activity and establish appropriate control measures to minimise potential for environmental harm, it is alleged that P1-G1 of EPPR00407513 and s430(3) of the Act has not been complied with. Other feedback has also been provided for consideration in relation to the REMPs (refer to Table 3). It is recommended MRC and the AQP review the comments and feedback above and make necessary amendments to the relevant documents to ensure potential risks to the environment from the activity have been identified and control measures are established to minimise the potential for environmental harm.

6. ensure that reviews of environmental performance are undertaken at least annually.	

Table 2. REMPs feedback.

General comments regarding all sites.

- The REMPs do not provide sufficient information detailing current and historical landfill activities, including: the location of all landfill cells, the anticipated depth of the landfill cells, the location of any supporting infrastructure (i.e. stormwater dams, temporary waste storage), the type of waste disposed at the facility (presumed municipal waste) etc. This information is critical when designing the groundwater monitoring network and is used to justify both the location and targeted depth of the monitoring bores. In the absence of this information, it is difficult to accurately assess the groundwater bore networks efficacy.
- The REMPs commonly do not provide justification for the chosen location of the bores (with consideration to the current and historical landfilling activities) nor to support the targeted depth of the groundwater bores. It is often unclear which groundwater bore is considered to represent background water quality that is unaffected by landfilling activities. The identification of background groundwater quality is critical in determining potential harm to the environment and is required to calculate site specific trigger values.
- There is inconsistency in the surface water sampling requirements included in several of the REMPs. Eg Injune REMP - Section 5.1.1 states that no surface water monitoring points are proposed. This is inconsistent with Section 6.1 that states that flow will be recorded at each of the surface water locations and Table 7 that outlines surface water quality monitoring parameters.
- The REMPs (usually section 6.3) state that groundwater sampling will be undertaken in accordance with Australian Standard AS5667 Water Quality Sampling, and in accordance with the Monitoring and Sampling Guidelines 2009 Version 2 2013 (DESI 2018). These guidelines outline a number of sampling methodologies and not all of those sampling methods may be appropriate for the site. Both the National Environment Protection Measure for Assessment of Site Contamination (**ASC** *NEPM)* and *DETSI Monitoring and Sampling Manual* preference low flow sampling methods for accurate groundwater sampling. The REMPs should include a Standard Operating Procedure describing the groundwater sampling methodology used, to ensure consistency in the data collected. There is currently uncertainty as to what sampling methods are being used to collect the sample and if they are consistent across sample locations and sites themselves.
- Per- and polyfluoroalkyl substances **(PFAS)** concentrations have been compared to Ecological Freshwater 95% species protection criteria based on the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (EPP**)** protection level. While this is appropriate for toxicity assessments, the value does not adequately assess risks associated with the bioaccumulation or biomagnification properties of PFAS. The National Environmental Management Plan (NEMP) states that for bioaccumulative contaminants the 99% species protection default guideline value (DGV) should be used when assessing bioaccumulation in slight to moderately disturbed ecosystems. Likewise the value does not assess risk of biomagnification.
- The consultant has used standard laboratory detection limits for PFAS that are higher than the concentrations needed to assess potential risk of bioaccumulation and biomagnification. It is recommended that future sampling use analytical methods capable of lower detection limits / trace analysis to enable assessment for bioaccumulation and biomagnification.

- The technical memorandums are generally factual and provide limited interpretation or assessment of potential environmental risk to environmental values. Laboratory results have only been assessed against adopted guidelines. There is no assessment as to whether the landfill has caused impacts to the groundwater, potential impacts to environmental receptors, groundwater trends, the extent (if known) of the contaminant plume, the suitability of the groundwater bore network etc.
- Depth to water measurements are missing from the documentation, and as such the accuracy of the groundwater flow data cannot be determined.
- The REMPs and sampling results for each site have been reviewed and are summarised in the sections below. As outlined above, the technical memorandum reports provided to date are factual and are restricted to comparison of data against guideline values. It is recommended that these assessments are expanded to consider trends, comment on groundwater contamination / potential contaminant plumes, distinguish between natural contaminant concentrations and leachate impacts etc.
- The REMPs (usually section 7.2) states that data from the monitoring locations will be assessed to derive local water quality objectivise over the period of the REMP. Groundwater trigger values should only be derived in accordance with the departmental guideline: DES (2021). Using monitoring data to assess groundwater quality and potential environmental impacts. Version 2. Department of Environment and Science (DES), Queensland Government, Brisbane. This guideline outlines key information such as; minimal sampling points, approved statistical methods, accounting for statistical outliers etc.

  Before calculating groundwater trigger values, the consultant needs to assess whether groundwater has been impacted by the landfill activities. This will involve comparison of water quality to background or hydraulically upgradient bores and assessment against water quality objectives.

Roma

- The REMP states that there is an unregistered groundwater bore that is used for water supply at the landfill site. It is unclear where this bore is located, what depth this bore has been installed to, which aquifer this bore targets and what the water is used for at the site (i.e drinking/ irrigation etc). Further information should be provided to inform the REMP.
- The REMP identified 9 groundwater wells (MW01 – MW09). Additional groundwater wells (MW10 - MW11) are noted on figure “Existing Site Plan”. The REMP should be updated to include the additional groundwater bores.
- Further information is required to justify the groundwater bore network installed. Such justification should include: the location and depth of landfills cells (both current and historical), which groundwater bores target which aquifer and whether they represent confined or unconfined aquifers. For example, it is noted that MW007 and MW09 are located adjacent to each other. It is presumed that these wells target different aquifers at the site. However groundwater heights recorded on bore logs for MW07 and MW09 are similar in both wells suggesting the presence of only one aquifer.
- The reports provided do not included key information including depth to water. In the absence of such information it is not possible to validate the groundwater flow direction reported by the consultant nor determine possible interactions with the landfill cells. There is also uncertainty as to how nested wells or wells targeting other aquifers have been considered when calculating the groundwater flow direction.
- The REMP states that it is expected that groundwater levels are below the base of the waste. Further information is required to justify this conclusion. Historical sampling undertaken in the immediate area supports groundwater levels at approximately 7.5mbgs. This information is important to the conceptual site model (CSM), as groundwater that is in direct contact with waste will lead to increased levels of groundwater contamination.

- It is important to understand whether landfilling activities have ever been undertaken on Lot 244 WAL53170 and Lot 240 WAL53170. This is important in establishing the suitability of the surface water sampling locations.

Surface Water Sample Locations at Roma Waste Facility

- The upstream surface water sampling location is located approximately 300m upstream of the known landfill mass. There is uncertainty as to whether water from this location could have been impacted from the landfill activity. To eliminate any potential for the upstream sampling location to be affected by the landfill, it would be ideal if the sample was collected from a location further upstream.
- Given the size and volume of the landfill, the type of waste received, its proximity to a permanent water body and the township, it would also be desirable to include a surface water sample location directly adjacent to the landfill (adjacent to MW011) to identify the direct nature of any leachate impacts. This is considered warranted as analytical results from groundwater bore MW011 suggest the possible presence of landfill leachate evidenced by elevated concentrations key parameters including: PFAS, ammonia, Biochemical Oxygen Demand **(BOD)**, chloride.

Mitchell

- The REMP states that groundwater flow direction is generally south to north. This is inconsistent with the figures that show groundwater flow towards the northwest. In the absence of field groundwater elevation data the accuracy of the supplied groundwater contours cannot be determined. Given that no sampling has been undertaken at MW02 and MW01 it is unclear how the groundwater flow direction has been calculated.
- The REMP states that it is expected that groundwater levels are below the base of the waste mass. This may be incorrect. Review of historical aerial imagery on google maps shows the waste is in contact with water in numerous photos. No details outlining the construction of the waste cells have been provided and as such it cannot be verified whether the water is representative of surface water or groundwater.
- Groundwater sampling appears to be restricted to only two wells (MW3 and MW4). No explanation is provided as to why MW01 and MW02 have not been sampled. Both of the sampled wells appear to be hydraulically upgradient or cross gradient of the waste cells and as such there does not appear to be any assessment of down gradient groundwater. This is critical as MW2 is located directly down gradient of the landfill, with water identified in the cell, and is located in a sand geology that will exhibit a high hydraulic conductivity.
- Further information is required to identify where the landfill cells are located at the site.
- No information has been provided that states which way the surface water body flows. It is assumed that the water flows west to east, suggesting that SW01 is the upgradient location. The suitability of this test location as an upgradient location needs to be assessed in accordance with establishment of the groundwater flow direction.
- It is recommended that continued groundwater sampling using the full groundwater bore network be undertaken to accurately determine the groundwater flow direction and attempt to define the nature and extent of groundwater impacts. This should coincide with surface and groundwater sampling using trace level PFAS analysis to enable assessments of potential bioaccumulation and biomagnification risks. This information should be used to refine the CSM developed. Depending on the results of this assessment, further assessment may be needed to assess impacts and risks to human health and the environment.

Yuleba

- The REMP states that the groundwater flow direction is generally west to east. Assuming the groundwater contours are in metres above Australian Height Datum (mAHD) (as indicated in the bore logs), both figures show groundwater flow would be east to west. Further information is required to determine the accuracy of the groundwater flow. This information is critical in interpreting laboratory data.

- Groundwater flow direction should be further interrogated. Groundwater appears to be flowing both away from the watercourse and topographically upgradient. This is unusual. It is also noted that the screened interval in MW01 is significantly different (32-44mbgs) compared to MW02 (11-17mbgs) and MW03 (11-17mbgs).
- MW01 is hydraulically down gradient, however appears to have only been sampled on one occasion. Further justification is required.
- It is recommended that the consultant continue to sample, asses the results with consideration to upgradient water quality and derive WQO to allow a detailed assessment of the site.

Wallumbilla

- The REMP should be updated to include reference to MW04 that has been installed following finalisation of the REMP.
- The REMP states that groundwater flow direction is generally west to east. This is inconsistent with the figure in the REMP and the updated groundwater contour figure that shows groundwater flows towards the southwest away from the watercourse. Groundwater levels have not been provided and as such there is no way to confirm the accuracy of the data. Accurate groundwater flow is critical due to the landfills proximity to middle creek, shallow groundwater levels and sections of sand geology.
- Assuming groundwater flow is towards the southwest, MW001 is likely to be hydraulically upgradient of the landfill. Review of google earth aerial imagery however shows land disturbances (circa 2006) in the northeast portion of the site that could influence groundwater quality at MW01.
- The upstream surface water test location is appropriately distanced from the landfill to determine upgradient water quality. However, the down-stream surface water sampling point is located approximately 1.3km from the landfill and is unlikely to provide an indication of possible landfill impacts to the receiving water body. The location may have been chosen based on access. Acknowledging this, an additional surface water location adjacent to the landfill would be beneficial in determining possible impacts.

Surat

- Justification for the location of the groundwater wells are required. There is limited assessment of groundwater quality hydraulically down gradient of the landfill cells (viewed on google earth). Although MW01 is hydraulically down gradient of the landfill, it is located north of the predicted landfill mass shown on google earth's historical imagery and may not fully represent groundwater quality down gradient.
- The REMP should be updated to include MW04 (acknowledging that this bore was installed approximately 1 year after the finalisation of the REMP).
- It is recommended that the consultant continue to sample, asses the results and derive WQO to allow a detailed assessment of the site.

Jackson

- The groundwater wells have been installed at distances of 90m and 130m from the assumed landfill mass. Groundwater bores installed closer to the waste would have been more capable of detecting localised impacts, however the bores can still be used to assess the possible presence of widespread impacts.
- Only two groundwater bores have been installed. As such it is not possible to calculate the groundwater flow direction and confirm the suitability of the location of the groundwater bores.
- The 2025 Technical Memorandum states "No further sampling beyond July 2024 – wells display very poor hydrogeological characteristics". No further information has been provided to explain what is meant by poor hydrogeological "characteristics". The bore logs reported a groundwater head of 20m and 30m in bores MW01 and MW02 at the time of installation which would suggest that there is sufficient groundwater present for the purposes of collecting a sample. It is recommended that further information provided to explain and evidence the finding of "poor hydraulic conductivity" and the REMP updated to account for this.

Injune

- Groundwater flow direction has changed since the finalisation of the REMP. October 2025 shows groundwater flowing in a north north-western direction which is different than the previous east to west direction reported in the REMP. Further sampling events should scrutinise reported groundwater flow direction to determine long term trends and thus potential impacts the environment. The determination of groundwater flow direction is critical in ensuring the groundwater bore network is adequately located hydraulically down gradient of the waste mass (i.e. there are currently no groundwater bores along the western boundary of the allotment).
- There is insufficient information regarding the location and depth of the waste and supporting facilities. There is uncertainty as to whether waste has ever been placed on the southern portion of the site. Additionally historical photographs on google earth show evidence of water bodies.
- The Technical Memorandum (2025) indicates that two surface water samples have historically been collected (July 2024 and September 2024). No further information regarding the location of the sampling point or the results of the sampling has been provided. The REMP states that no surface water points are proposed for the WMF. It is unclear whether surface water values require further consideration under the REMP .
- It is recommended that the consultant continue to sample, asses the results and derive WQO to allow a detailed assessment of the site.

Table 3. Additional comments on REMPS for consideration

- Table 7 of the REMPs details the Water Quality Monitoring Parameters proposed for the groundwater and surface water sampling program. The testing regime is significant and could possibly be reduced following a review of the sampling data and with consideration to landfill guidance material available through various environmental protection agencies (e.g. NSW, VIC, SA).
- The REMPs (usually section 7.2) states that data from the monitoring locations will be assessed to derive local water quality objectives over the period of the REMP. Groundwater trigger values should only be derived in accordance with the departmental guideline: *DES (2021). Using monitoring data to assess groundwater quality and potential environmental impacts. Version 2. Department of Environment and Science (DES), Queensland Government, Brisbane*. This guideline outlines key information such as; minimal sampling points, approved statistical methods, accounting for statistical outliers etc.

  Before calculating groundwater trigger values, there needs to be an assessment as to whether groundwater has been impacted by the landfill activities. This will involve comparison of water quality to background or hydraulically upgradient bores and assessment against WQOs.
- PFAS concentrations have been compared against the NEMP version 3.0 guidelines and the Australian Drinking Water Guidelines (ADWG) 2025. Future assessments must also reference the updated Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) toxicant default guideline values perfluorooctanesulfonic acid (PFOS) in freshwater.

Roma

- The most recent laboratory spreadsheet identifies a tab titled ROMA PB that is accompanied by a sample named: *GW Drinking Water 1*. The labelling suggest that this location may represent a production bore that is used for drinking water purposes. Further information is required to determine the location, use and construction details of this bore.

  The analytical results revealed concentrations of selected contaminates were below the drinking water guidelines. The results however did identify elevated concentrations (5 CFU/100ml) of thermotolerant faecal coliforms. If this bore is used for drinking water further investigation is required to determine if there these concentrations are representative of Escherichia coli.

The ADWG states that *"Escherichia coli should not be detected in any 100 mL sample of drinking water. If detected in drinking water, immediate action should be taken including investigation of potential sources of faecal contamination."*