

Annual Compliance Report, 2024-2025

Orange Waste Project

Orange City Council

208212_AR_010B

Rev: B

30 September 2025






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ABBREVIATIONS

Abbreviation	Abbreviated term
AEMR	ANNUAL ENVIRONMENTAL MONITORING REPORT
AHD	AUSTRALIAN HEIGHT DATUM
ARMP	APICULTURE RISK MANAGEMENT PLAN
DPE	NSW DEPARTMENT OF PLANNING AND ENVIRONMENT
EC	ELECTRICAL CONDUCTIVITY
EPA	NSW ENVIRONMENT PROTECTION AUTHORITY
EPL	ENVIRONMENT PROTECTION LICENCE
ERRRC	EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
IEA	INDEPENDENT ENVIRONMENTAL AUDIT
LEMP	LANDFILL ENVIRONMENTAL MANAGEMENT PLAN
OCC	ORANGE CITY COUNCIL
OEMP	OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN
ORRRC	OPHIR ROAD RESOURCE RECOVERY CENTRE
OWP	ORANGE WASTE PROJECT
SOP	STANDARD OPERATING PROCEDURE
SWMP	SOIL AND WATER MANAGEMENT PLAN
TSS	TOTAL SUSPENDED SOLIDS
VEM	VIRGIN EXCAVATED MATERIAL
WAP	WORK ACTIVITY PROCEDURE
WRRMP	WASTE AND RESOURCE RECOVERY MONITORING PROGRAM

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Table 1 – Annual Review


Name of Operation	Orange Waste Project
Name of Operator	Orange City Council
Development consent / project approval #	PA 09_0025 https://pp.planningportal.nsw.gov.au/major-projects/projects/orange-waste-facility
Operation start date	5 August 2013
Operation end date	Current
Annual Review start date	1 July 2024
Annual Review end date	30 June 2025
<p>I, Wayne Davis, Manager Waste Services & Technical Support, certify that this audit report is a true and accurate record of the compliance status of Orange Waste project for the period 1 July 2024 to 30 June 2025, and that I am authorised to make this statement on behalf of Orange City Council.</p> <p><i>Note.</i></p> <p>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.</p> <p>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).</p>	
Name of authorised reporting officer	Wayne Davis
Title of authorised reporting officer	Manager Waste Services & Technical Support
Date	30 / 09 / 2025
Signature of authorised reporting officer	

Table 2 – Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
All Conditions	Yes / No



1. INTRODUCTION

1.1 Overview of Project

The Orange Waste Project (OWP) is an integrated plan for improved resource recovery and residual waste management for the Orange LGA, and to address the current situation where the landfill space at the ORRRC has reached its capacity. The operations at the ERRRC and ORRRC sites together create an integrated resource recovery and waste management strategy, which will improve the diversion from landfill from 18%-20% to the target of approximately 58%.

1.1.1 FACILITIES

The two facilities included in the OWP are the Ophir Road Resource Recovery Centre (ORRRC) and the Euchareena Road Resource Recovery Centre (ERRRC) (refer **Figure 1**). The Orange Waste Project (OWP) focuses on the transportation of waste products between the two facilities for disposal and/or recovery.

1.1.2 OPERATIONS

Ophir Road Resource Recovery Centre (ORRRC)

The operation of the ORRRC facility is undertaken in accordance with all requirements of the PA and all conditions specified by the Environment Protection Authority (EPA) in Environment Protection Licence (EPL) No. 5956. The licence requires that the total quantity of waste disposed at the premises must not exceed 65,000 tonnes per annum, including no more than 10 tonnes per annum of clinical waste. The licence also requires that no more than 50 tonnes of waste tyres are stored at the premises at any one time.

The ORRRC facility is primarily used as a waste transfer station. The sorted, compacted, and baled waste destined for landfill is taken to the ERRRC. The asbestos and dead animal waste disposal cells remain active at ORRRC.

Euchareena Road Resource Recovery Centre (ERRRC)

The operation of the ERRRC landfill is undertaken in accordance with all requirements of the PA and all conditions specified by the EPA in EPL No. 20104.

The ERRRC facility is used for processing of food/garden organics, receipt of waste baled at ORRRC, and the disposal of mixed residual waste.

External contractor JR Richards and Sons (JRR) is contracted for collection, sorting, and composting under EPL No. 20140. The composting operations are continuing to be managed by JR Richards and Sons at the ERRRC. The composting facility is producing Australian Standard (AS4454) compliant compost product. This product is available for purchase by the general public at the ORRRC.

1.1.3 MANAGEMENT OF OPERATION

Name: Wayne Davis

Position: Manager Waste Services and Technical Support

Phone: 02 6393 8113

Email: wdavis@orange.nsw.gov.au

1.2 Purpose of Report

This Annual Review has been prepared to address the requirements of Schedule 7 Condition 6 of the Project Approval 09_0025 (Project Approval) for the Orange Waste Project (OWP).

Annual Review

6. One year after the commencement of operations, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General.

This review must:

- a. describe the operations that were carried out in the past year;*
- b. analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the*
 - relevant statutory requirements, limits or performance measures/criteria;*
 - monitoring results of previous years; and*
 - relevant predictions in the EA;*
- c. identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;*
- d. identify any trends in the monitoring data over the life of the Project; and*
- e. describe what measure will be implemented over the next year to improve the environmental performance of the Project.*

1.3 Structure of Report

The Annual Review contains 12 sections as described below in **Table 3**.

Table 3 – Annual Review Structure

Section	Purpose
Section 1 – Introduction	Identifies the introduction of project and purpose of the Annual Review and structure.
Section 2 – Location	Identifies the local and regional setting of each facility.
Section 3 – Approvals and Licences	Details of approvals, licences and agreements for the OWP.
Section 4 – Environmental Monitoring	Summary of relevant data from the ORRRC and ERRRC Annual Environmental Monitoring Reports, and comment on relevant standards.
Section 5 – Environmental Assessment Predictions	Provides a comparison of monitoring results against relevant predictions made in the Environmental Assessment for OWP.



Section	Purpose
Section 6 – Operational Activities	Descriptions of operational activities during the reporting period and proposed operational activities in the next reporting period.
Section 7 – Vehicle Movements to ERRRC	Details of vehicle movements to ERRRC.
Section 8 – Management Plan Implementation	Details of implementation of management plans during the reporting period.
Section 9 – Monitoring Programs	Summary of monitoring and results from the Waste and Resource Recovery Monitoring Program and ERRRC Flora and Aboriginal Heritage Monitoring Program.
Section 10 – Rehabilitation	Description of rehabilitation undertaken during the reporting period.
Section 11 – Compliance and Incidents	Summary of incidents and the status of compliance with relevant monitoring programs, management plans and the project approval.
Section 12 – Independent Environmental Audit	If an Independent Environmental Audit is undertaken during the reporting period, a summary of non-compliances and corrective actions will be provided in this section.

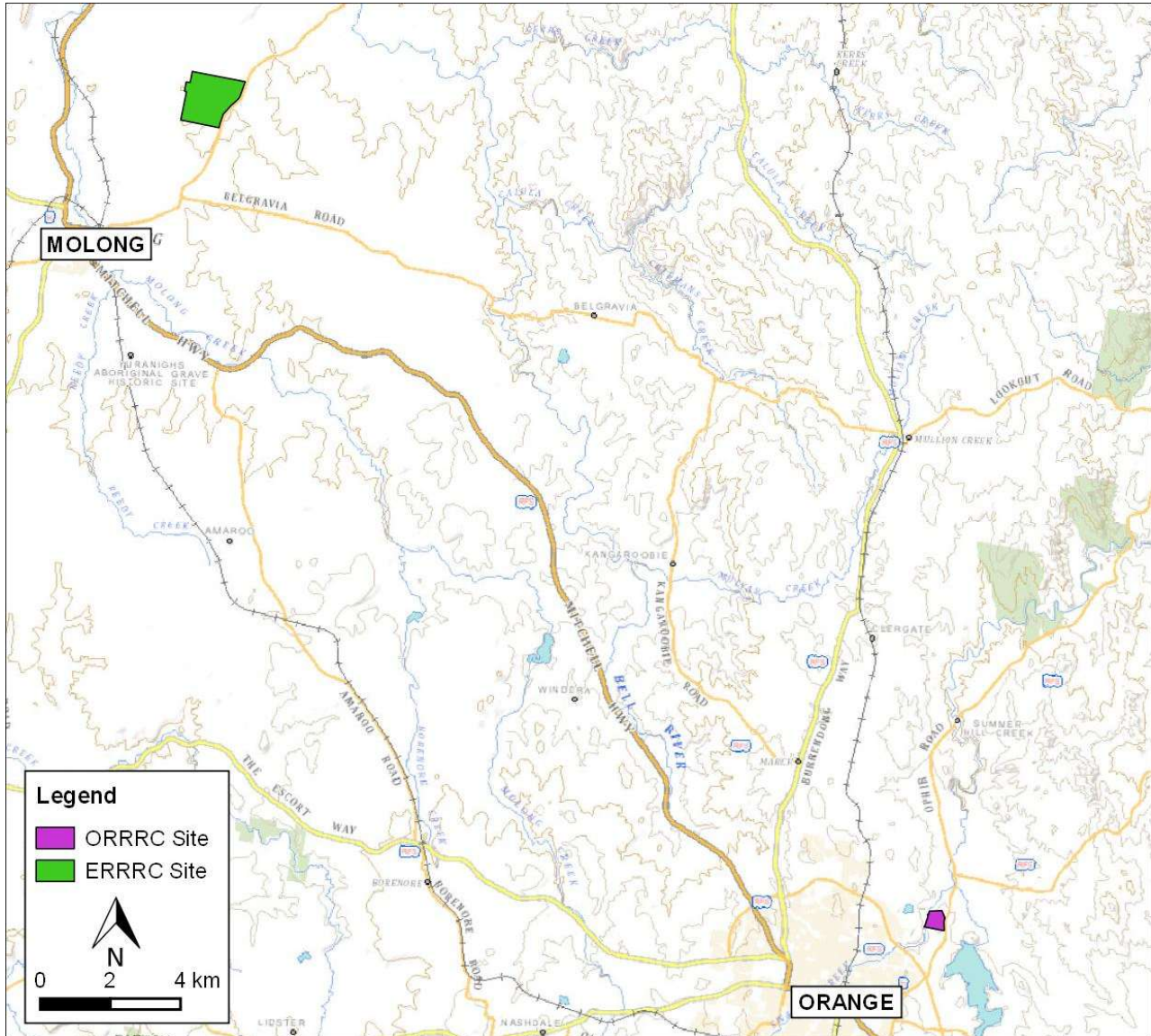


2. LOCATION

2.1 Regional Location

The locations of ORRRC and ERRRC in a regional context are provided in **Figure 1**.

Figure 1 – Regional locations of ORRRC and ERRRC



(Source: NSW LPI)

2.2 ORRRC

The layout of the ORRRC site is provided in **Figure 2** and monitoring points are provided in **Figure 3**.

Figure 2 – ORRRC Site Layout

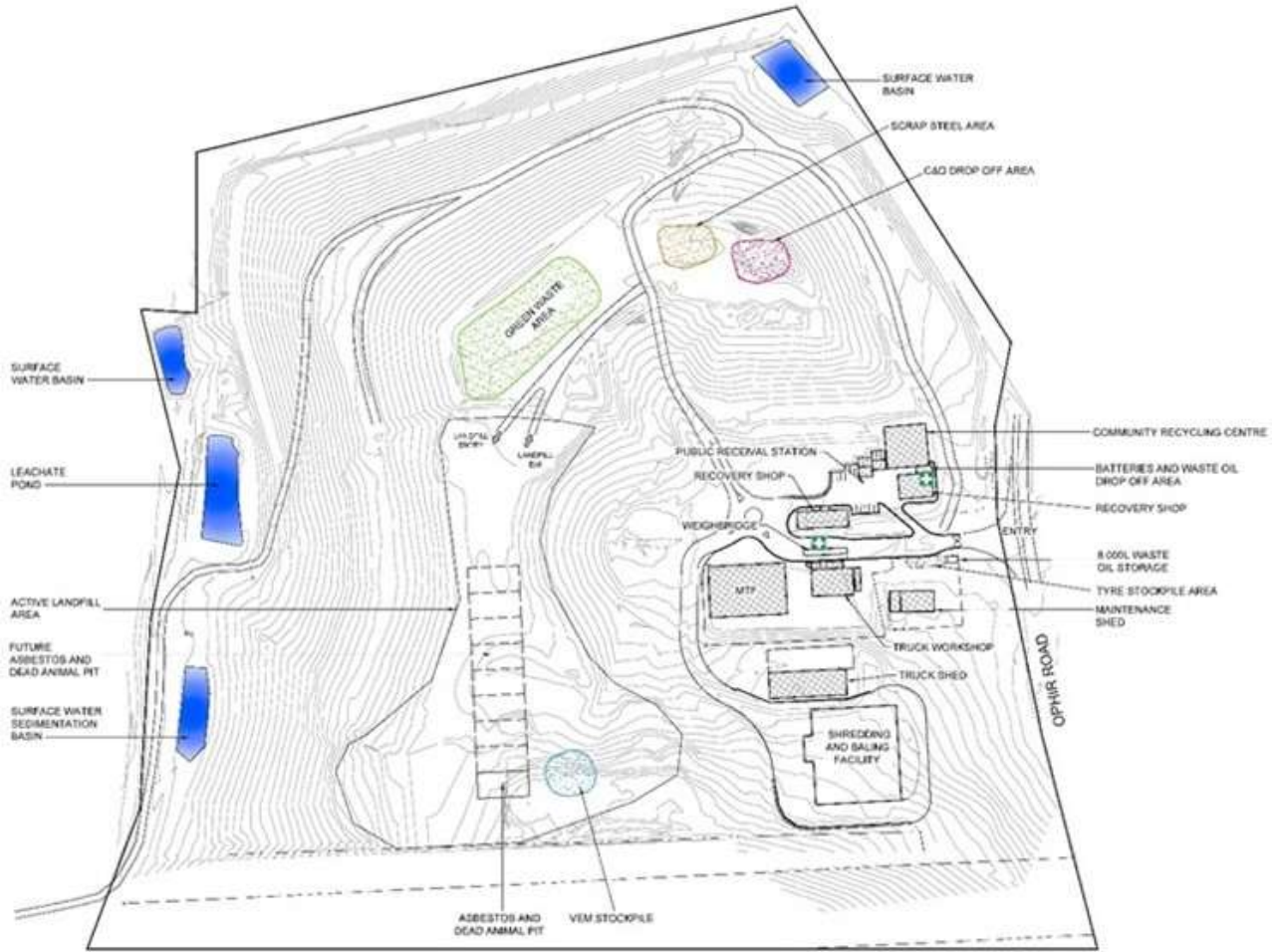
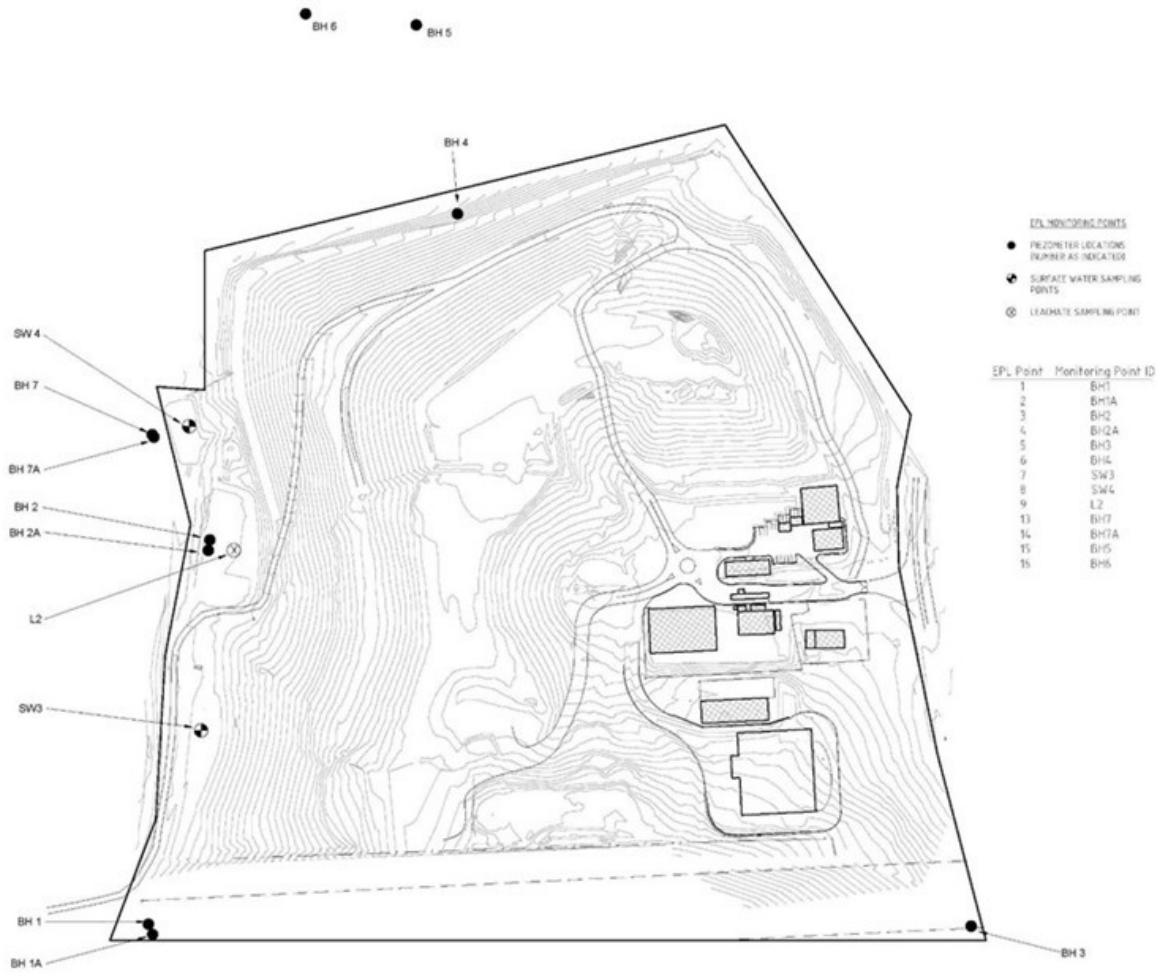


Figure 3 – ORRRC Monitoring Points



2.3 ERRRC

The layout of the ERRRC site and location of monitoring points is provided in **Figure 4**.

Figure 4 – ERRRC Site Layout with Monitoring Points



3. APPROVALS AND LICENSES

3.1 Approvals

A list of relevant approvals for ORRRC and ERRRC are provided in **Table 4**.

Table 4 – Approvals

Approval	Approval Authority	Approval Date
Orange Waste Project Project Approval (MP 09_0025)	Minister for Planning and Infrastructure	14 September 2011
Orange Waste Project Project Approval Modification (MP 09_0025 MOD 1)	Minister for Planning and Infrastructure	28 April 2010
ORRRC Liquid Trade Waste Approval to Discharge to Councils Sewer	Orange City Council	12 July 2012
ORRRC Liquid Trade Waste Revised Approval	Orange City Council	16 January 2019
ERRRC Liquid Trade Waste Approval	Orange City Council	16 January 2019
Waste Disposal Facility (community recycling centre) – DA 129/2016(1)	Orange City Council	5 July 2016
Part 3A Project Approval Modification Application	Department of Planning and Environment (now DPIE)	28 February 2018

3.2 Licences

A list of relevant licences for ORRRC and ERRRC are provided in **Table 5**.

Table 5 – Licences

Licence	Regulatory Authority	Licence Version Date
ORRRC Environment Protection Licence No. 5956	Environment Protection Authority	30 May 2019
ERRRC Environment Protection Licence No. 20104	Environment Protection Authority	19 March 2025

3.3 Conservation Agreement

A Conservation Agreement was registered for part of the ERRRC by the NSW Office of Environment and Heritage (NSW OEH), and came into effect on 10 September 2013 in accordance with the provisions of the *National Parks and Wildlife Act 1974*.

The Conservation Agreement covers 100.3 hectares and relates to part of the land described as Lot 102 DP 1183238.

A 5-year works plan was prepared for the ERRRC in June-July 2021 to facilitate rehabilitation of the conservation area by specifying approaches for management of the following items of concern through to the 2026 monitoring period:

- > Stock Exclusion and Fencing
- > Weed Control
- > Feral Animal Control
- > Erosion Control
- > Firewood Harvesting
- > Fallen Timber Removal
- > Regenerating Fencing Remnants
- > Installation of On-site Markers
- > Clearing and Disturbance
- > Remnant Connectivity
- > Mapping Remnants
- > Groundcover Management

A revegetation plan for the ERRRC was also prepared in June-July 2021 to document the approach for recovery of the conservation area in accordance with the agreement. The revegetation plan defined the objectives for revegetation and outlined the requirements to be considered for supply of seed and plant stock. A plan for ongoing monitoring and management of revegetated areas is also included, specifying the timeframes (in seasonal increments) and milestones over a 5-year period.

The 5-year works plan and the revegetation plan have been reviewed and accepted by the NSW Biodiversity Conservation Trust (Central West and Western Region) in July 2021.

Site inspections took place in March to May 2025, and a progress report on the status of the 5-year works plan was provided to the NSW Biodiversity Conservation Trust in August 2025, which included a summary of activities relating to weed control, pest control, fire management, restoration, seed collection, thinning of indigenous vegetation, cultural heritage, visitation and research, developments and monitoring. This update is provided in **Appendix F**.



4. ENVIRONMENTAL MONITORING

4.1 Introduction

An Annual Environmental Monitoring Report (AEMR) has been prepared and submitted to the NSW Environment Protection Authority (EPA) for both ORRRC and ERRRC for the reporting period 1 July 2024 – 30 June 2025 in accordance with each facility's Environment Protection Licence (EPL).

A summary of monitoring results from each facility's AEMR is provided in the following sections.

4.2 ORRRC AEMR Summary

4.2.1 ENVIRONMENTAL MONITORING

Groundwater

Groundwater monitoring was conducted at ten (10) piezometer monitoring stations in September 2024 and March 2025.

Groundwater levels were relatively static in the reporting period. Groundwater is generally noted to flow from the south-east to the north-west.

Groundwater samples were obtained from monitoring stations and were analysed for the biannual suite of parameters. Monitoring station BH2A could not be sampled in March 2025 as insufficient recharge following purging was encountered.

The following parameters exceeded the LEMP provisional groundwater limits within the reporting period:

- > Copper in BH1A (September 2024)
- > Copper in BH5 (September 2024 and March 2025)
- > Ammonia in BH2 (September 2024 and March 2025)
- > Total Petroleum Hydrocarbons in BH2 (September 2024 and March 2025)
- > Total Petroleum Hydrocarbons in BH4 (September 2024 and March 2025)

Concentrations of analytes were generally consistent with historical results, and were not considered excessively high or low, being comparable with previous monitoring periods.

Potential increasing trends may be inferred for:

- > Conductivity at BH5, BH6 and BH7
- > Total dissolved solids (TDS) at BH1, BH5, BH6 and BH7
- > Calcium at BH5 and BH7
- > Magnesium at BH5 and BH7
- > Manganese at BH1A and BH7A
- > Ammonia at BH1A
- > Nitrate at BH7

Results of further monitoring will establish whether these are indicative of significantly increasing trends.

Concentrations of analytes of environmental concern in groundwater at the ORRRC facility have been charted for the monitoring period and attached to this review as **Appendix E, Charts E2 to E10**.

Surface Water

Surface water discharge samples were collected from SW3 (July 2024, October 2024, November 2024, December 2024, January 2025 and February 2025) during the reporting period. Non-discharge sampling was also conducted at SW3 (September 2024) and SW4 (September 2024 and March 2025) when water was present during the biannual monitoring events.

Concentrations of monitored analytes in surface water were below LEMP provisional limits, with the following exceptions:

- > SW3, Ammonia (December 2024)
- > SW3, TPH C₁₅-C₂₈ and C₂₉-C₃₆ fractions (September, October and December 2024)

Concentrations of analytes of environmental concern in surface water at the ORRRC facility have been charted for the monitoring period and attached to this review as **Appendix E, Charts E11 to E18**.

Leachate

Leachate monitoring point L2 was recorded to be dry during both biannual monitoring rounds in September 2024 and March 2025.

Landfill Gas

Landfill gas readings accumulated within buildings located within 250 metres of deposited waste were consistently below the threshold concentration during the reporting period.

Relevance of Standards

Where exceedances of drinking, stock watering or irrigation criteria have been identified, these have generally been recorded for reference purposes in the AEMR. No receptors have been identified that utilise groundwater or leachate within the immediate area of the site, whilst surface water discharges are not considered to have significantly impacted downgradient surface water receptors.

4.2.2 COMPLAINTS

There were no complaints reported to Orange City Council regarding the operation of the landfill during the annual reporting period. No investigations or reporting to the EPA was required.

Complaint history for ORRRC is provided in **Table 6**.

Table 6 – ORRRC Complaint History

AEMR	Complaints
2024-2025	No complaints.
2023-2024	No complaints.
2022-2023	No complaints.
2021-2022	No complaints.
2020-2021	No complaints.
2019-2020	No complaints.
2018-2019	No complaints.



AEMR	Complaints
2017-2018	No complaints.
2016-2017	Four odour complaints.
2015-2016	Two odour complaints.
2014-2015	Seven odour complaints made to the EPA between September 2014 and March 2015.
2013-2014	Five odour complaints received between 20 March and 10 April 2014.
2012-2013	One odour complaint made to the EPA on 5 November 2012.
2011-2012	One complaint received on 16 September 2011 relating to the presence of plastic bags on a neighbouring property during windy conditions.
2010-2011	One complaint received in relation to odour.
2009-2010	No complaints
2008-2009	No complaints
2007-2008	No complaints
2006-2007	No complaints
2005-2006	No complaints
2004-2005	No complaints
2003-2004	No complaints
2002-2003	No complaints
2001-2002	No complaints
2000-2001	No complaints

4.3 ERRRC AEMR Summary

4.3.1 ENVIRONMENTAL MONITORING

A summary of environmental monitoring results from ERRRC is provided below. Detailed monitoring results are provided in the ERRRC AEMR and summarised in **Appendix D**.

Groundwater

Groundwater monitoring was conducted at six piezometer monitoring stations in August 2024 and February 2025.

Groundwater levels were relatively static in the reporting period. Groundwater elevations remain elevated above the historic range.

HP4 is indicated as the most up-gradient monitoring point in the reporting period, and HP3 is the most downgradient point.



Groundwater samples were collected from monitoring stations HP1, HP2, HP3, HP4, HP5 and HP6, and results were compared to available guidelines. Elevated concentrations of the following monitoring parameters were recorded in groundwater:

- > Alkalinity (all monitoring points)
- > Chloride (HP1)
- > Total Nitrogen (HP1, HP2 and HP5)
- > Iron (HP3 and HP6)
- > Manganese (HP3 and HP6)

Concentrations of analytes were generally consistent with historical results, and were not considered excessively high or low, being comparable with previous monitoring periods.

Potential increasing trends of groundwater analytes may be inferred for:

- > Chloride at HP1
- > Potassium at HP4
- > Iron at HP3
- > Ammonia at HP5
- > Nitrate at HP1 and HP3
- > Total Nitrogen at HP1 and HP3

Results of further monitoring will establish whether these are indicative of significantly increasing trends.

Concentrations of analytes of environmental concern in groundwater at the ERRRC facility have been charted for the monitoring period and attached to this review as **Appendix E, Charts E19 to E27**.

Surface Water

Surface water samples for the required range of parameters were opportunistically collected from locations SW1 and SW2 in August 2024 and February 2025 during the biannual monitoring rounds (these locations were not discharging at the time of sampling). Location SWB was recorded to discharge in December 2024 and a sample was subsequently collected. Sampling and analysis undertaken was undertaken in accordance with the requirements of EPL 20104.

Some exceedances of discharge criteria nominated in the SWMP were identified, including turbidity and TSS. Concentrations of other monitored analytes in surface water were below the SWMP criteria, where present, and/or within historical ranges.

Potential increasing trends for concentrations of parameters recorded at location SW1 may be inferred for:

- > Electrical Conductivity
- > Suspended solids
- > Chloride
- > Potassium

Results of further monitoring will establish whether these are indicative of significantly increasing trends.

It is noted that the discharge from SW1 was not recorded as discharging in the 2024-2025 reporting period.

Concentrations of analytes of environmental concern in surface water at the ERRRC facility have been charted for the monitoring period and attached to this review as **Appendix E, Charts E28 to E36**.



Leachate

The leachate monitoring point is scheduled to be monitored on a 6-monthly basis, and sampling was conducted in August 2024 and February 2025. Concentrations of monitored analytes in leachate were generally within historical ranges.

Concentrations of analytes were generally consistent with historical results, and were not considered excessively high or low, being comparable with previous monitoring periods. Analytical data for leachate monitored at the ERRRC facility is attached to this review as **Appendix D, Table D7**.

Concentrations of analytes of environmental concern in leachate at the ERRRC facility have been charted for the monitoring period and attached to this review as **Appendix E, Charts E37 to E45**.

Deposited Dust

The highest result recorded during the reporting period was 4.4 g/m²/month at the eastern gauge (EPL 2) in the 4 November 2024 to 6 December 2024 period. An exceedance of the project criterion in the 2024-2025 reporting period was recorded at the northern gauge (EPL 1) in the 6 January 2025 to 6 February 2025 period (4.1 g/m²/month).

Exceedances of the project criterion in November 2024 to February 2025 period may be attributable to landfill operations, or from adjacent agricultural/farming activities. Follow-up analysis in later periods confirmed a return to deposited dust within the project criterion.

The project criterion is not identified as a limit condition of EPL 20104.

Relevance of Standards

Where exceedances of drinking, stock watering or irrigation criteria have been identified, these have generally been recorded for reference purposes in the AEMR. No receptors have been identified that utilise groundwater or leachate within the immediate area of the site, whilst surface water discharges are not considered to have significantly impacted downgradient surface water receptors.

4.3.2 COMPLAINTS

There were no complaints reported to Orange City Council regarding the operation of the landfill during the annual reporting period. No investigations or reporting to the EPA was required.

Complaint history for ERRRC is provided in Table 7.

Table 7 – ERRRC Complaint History

AEMR	Complaints
2024-2025	No complaints
2023-2024	No complaints
2022-2023	No complaints
2021-2022	No complaints
2020-2021	No complaints
2019-2020	No complaints
2018-2019	No complaints



AEMR	Complaints
2017-2018	One complaint received on 10 January 2018 related to a burning odour from a fire at the ERRRC facility.
2016-2017	No complaints
2015-2016	No complaints
2014-2015	No complaints
2013-2014	One complaint received on 6 March 2014 related to surface water runoff onto the adjoining landowner's property.
2012-2013	No complaints



5. ENVIRONMENTAL ASSESSMENT PREDICTIONS

5.1 Introduction

This section provides a comparison of monitoring results against relevant predictions made in the Environmental Assessment (EA) for the OWP, prepared by GHD in September 2009.

Predictions made with regards to waste quantities received and diverted are addressed in **Section 9.2**.

5.2 ORRRC

The EA does not provide any predictions relevant to monitoring at ORRRC for groundwater, surface water, leachate, or landfill gas.

5.2.1 AIR QUALITY

The EA provides some quantitative goals and predictions for dust and odour under *Section B.5.6 (Air Quality)* however, there is no requirement for quantitative dust or odour monitoring at ORRRC. Therefore, no comparison can be made with the EA goals or predictions.

5.2.2 NOISE

The EA provides predictions for noise levels under *Section B.5.8 (Noise)*. In accordance with the OEMP, noise monitoring is undertaken by recording of complaints received. In the event that a noise complaint is received more than once, field monitoring is undertaken to quantify off-site impacts. No noise complaints were received during the reporting period and therefore no noise monitoring was undertaken, and comparison cannot be made with the EA predictions.

5.3 ERRRC

The EA does not provide any predictions relevant to monitoring at ERRRC for groundwater, surface water, or leachate.

5.3.1 AIR QUALITY

Odour

The EA provides some odour performance criteria for odour under Section C.4.10 (Air Quality) however, there is no requirement for quantitative odour monitoring at ERRRC. Therefore, no comparison can be made with the EA goals or predictions.

Deposited Dust

The EA provides predictions for deposited dust, which provide the following conclusions.

The predicted mean monthly deposited dust rates presented in Table C.4-14 of the EA are well below the project goal of 3.8 g/m²/month for all modelled scenarios.

Table C.4-15 of the EA indicates that the predicted PM₁₀ levels at all surrounding residences would include six exceedances above the project goal of 50 µm/m³ (24-hour average) for all modelling scenarios, albeit the exceedance would have been caused by the abnormally high background levels attributable to other sources.

The predicted levels (Annual Average PM₁₀ concentrations at the assessment locations) are significantly lower than the project goal of 30 µm/m³ for all modelling scenarios.

It is predicted that both the 24-hour average PM_{2.5} goal of 25 µm/m³ and the annual average goal of 8 µm/m³ PM_{2.5} would be achieved during all stages of construction and operation.

The highest result recorded during the reporting period was 4.4 g/m²/month at the eastern gauge (EPL 2) in the 4 November 2024 to 6 December 2024 period. The project criterion of 4 g/m²/month defined in Condition 24 of the Project Approval and in the *Air Quality Monitoring Program* (Orange City Council, 2012) was exceeded twice in the 2024-2025 reporting period:

- > 4 November 2024 to 6 December 2024, Eastern Gauge: 4.4 g/m²/month
- > 6 January 2025 to 6 February 2025, Eastern Gauge: 4.1 g/m²/month

The predicted mean monthly deposited dust rate project goal of 3.8 g/m²/month is defined in *Table C.4-14* of the EA.

Monthly dust monitoring results are attached to this Annual Review as **Table D8** and **Chart E46**. It is noted that these monitoring results are recorded at locations at the perimeter of the ERRRC facility, rather than the receptor impacts predicted in the EA.

The annualised averages for dust deposition gauge results are reported in **Table 8**.

Table 8 – Annualised Averages for Dust Deposition (g/m²/year)

Year	North (DG1)	East (DG2)	South (DG3)	West (DG4)
2012 - 2013	0.9	0.7	1.7	0.7
2013 - 2014	1.4	0.9	0.9	0.8
2014 - 2015	1.0	0.9	0.9	0.7
2015 - 2016	1.1	0.7	1.1	1.6
2016 - 2017	1.6	0.9	1.2	1.5
2017 - 2018	1.0	0.8	5.6	1.1
2018 - 2019	2.3	3.2	2.3	5.4
2019 - 2020	3.8	3.5	3.3	5.1
2020 - 2021	1.2	0.9	1.2	0.8
2021 - 2022	1.0	1.4	0.7	0.5
2022 - 2023	1.4	2.4	0.5	0.7
2023 - 2024	1.0	0.6	0.5	0.8
2024 - 2025	2.1	1.3	0.6	0.7

Note: Results as Insoluble Solids in g/m²/month

5.3.2 NOISE

The EA provides predictions for noise levels under *Section C.4.12 (Noise)*. In accordance with the OEMP, noise monitoring is undertaken by recording of complaints received. In the event that a noise complaint is received



more than once, field monitoring is undertaken to quantify off-site impacts. This is undertaken in accordance with the ERRRC Noise Monitoring Program under *Section 7.5* of the OEMP.

No noise complaints were received during the reporting period and therefore no noise monitoring was undertaken, and comparison cannot be made with the EA predictions.

6. OPERATIONAL ACTIVITIES

6.1 ORRRC Operational Activities

6.1.1 DURING THE REPORTING PERIOD

Landfilling operations at ORRRC have continued with the receipt of asbestos and dead animal waste streams. Final capping is progressively occurring at the eastern and western faces as capping material is brought to the site. Completed cells used for asbestos waste disposal in the south-west of the site have had compost material applied to promote soil health and reduce erosion risk. The last waste material filled at the eastern face was in late-2019.

6.1.2 PROPOSED FOR 2025/26 REPORTING PERIOD

No changes to operational activities are proposed during the 2025-26 period.

6.2 ERRRC Operating Hours

Orange City Council has confirmed that the ERRRC has complied with the operating hours in Condition 27 of Schedule 5.

6.3 ERRRC Operational Activities

6.3.1 DURING THE REPORTING PERIOD

Baled waste continues to be placed within Stage 3 and Stage 4 as well as the void between Stage 2 and Stage 3. Inert (unbaled) waste has been placed in Stage 3.

Sealing layers have been added to Stage 1 and 2 in readiness for final capping. Gas management infrastructure is currently being installed in Stage 1 and is discussed further in **Section 8.3**.

No other changes to operational activities occurred during the reporting period.

6.3.2 PROPOSED FOR 2025/26 REPORTING PERIOD

No changes to operational activities are proposed during the 2025-26 reporting period.

7. VEHICLE MOVEMENTS TO ERRRC

7.1 Introduction

Vehicle movements to ERRRC are required to demonstrate compliance with Schedule 5 Condition 34 of the Project Approval, reproduced below:

34. Unless the Director-General agrees otherwise, the Proponent shall ensure that the operations on site do not generate more than 40 heavy vehicle movements in any one day, and not more than 30 heavy vehicle movements a day when averaged over a 7-day period

Compliance with the requirements of Project Approval 'Schedule 6 – Transport' is also mandated.

7.2 Vehicle Records

Vehicle records for the reporting period were provided by JR Richards and include records of daily heavy vehicle movements to and from ERRRC. The data has been compiled to assess compliance with *Condition 34* of the Project Approval.

Vehicle records were compiled as described below:

- > Total movements per day.
- > Total movements per week divided by seven (7) to obtain the average movements per day over a 7-day period.

Compiled records are provided as **Appendix A**. Raw data is available upon request.

Review of the vehicle movement data identified the following:

- > Operations did not generate more than 40 heavy vehicle movements in a single day during the reporting period.
- > Eleven (11) dates in the reporting period recorded more than 30 movements.
- > Operations did not generate more than 30 heavy vehicle movements a day when averaged over a 7-day period. The total number of daily heavy vehicle movements across the reporting period averaged 19.7 movements per day. The maximum number of daily heavy vehicle movements averaged during a 7-day period was 29.2 movements per day (9/11/2024 – 15/11/2024).
- > Additional vehicle movements occurred relating to subcontractors involved in ongoing engineering management of landfill Stages 1 to 4. No waste transfer was associated with these vehicle movements, and accordingly these have been excluded from this review.

7.3 School Bus Operations

Condition 10(b) of the Project Approval (Schedule 6) requires that OCC shall ensure that no heavy vehicles associated with the project use Euchareena Road during the regular school bus operations on that road. This includes not being within the Euchareena Road exclusion zone at the following times:

- > 7.00 am – 7.15 am Mon-Fri (School days)
- > 8.28 am – 8.37 am Mon-Fri (School days)
- > 3.28 pm – 3.40 pm Mon-Fri (School days)
- > 4.40 pm – 5.00 pm Mon-Fri (School days)

JR Richards continues to maintain records to ensure heavy vehicles do not violate the school bus operation times. Original data is available in Excel format upon request.

For the 2024/25 reporting period, no violations were recorded with regard to heavy vehicle movements within the Euchareena Road exclusion zone.

JR Richards monitor records and implement the following actions to ensure ongoing compliance into the future:

- > Management ensures the Euchareena procedure is run through with any new driver and refreshed every six months, whilst the vehicle will be inspected weekly to ensure integrity of warning stickers
- > New warning stickers and buzzer warning system are placed in each vehicle that accesses Euchareena Rd. Driver training mitigates risk of breaches of the Transport Code of Conduct
- > Emails received from EROAD have an alarm notification to ensure urgency is relayed.
- > Development of a 'roster of responsibility' to monitor the EROAD system during out-of-office periods.



8. MANAGEMENT PLAN IMPLEMENTATION

8.1 Introduction

The following sections provide details on the implementation of management plans during the reporting period, including:

- > ORRRC Landfill Environmental Management Plan
- > ERRRC Landfill Environmental Management Plan
- > ERRRC Landfill Gas Management Plan
- > Conservation Management Plan
- > Apiculture Risk Management Plan
- > Community Education Program

8.2 Landfill Environmental Management Plans

The ORRRC and ERRRC Landfill Environmental Management Plans (LEMPs) are provided in the Orange Waste Project Operational Environmental Management Plan (OEMP).

8.2.1 REVIEW

The OEMP is reviewed annually and updated as required to address minor operational changes, update contact details in relevant sections, and update selected SOPs and WAPs.

The OEMP, when updated, is submitted to the Department of Planning and Environment (DPE) with a covering letter outlining the updates.

8.2.2 IMPLEMENTATION

Training and Inductions

The LEMPs continue to be implemented at each facility by ensuring all staff, regular contractors and visitors complete the relevant inductions in accordance with *Section 5.1 – Staff Training and Standard Operating Procedure (SOP) 02 – Site Inductions, provided in the OEMP.*

Daily Checklists

Each LEMP requires completion of a Daily Checklist.

Daily Checklists ensure that operational staff and contractors are correctly undertaking daily tasks, resulting in correct and efficient operations at each facility. In addition to recording daily operational procedures, the checklist also records references to incidents, complaints, or any other unusual activities or occurrences.

Daily checklists are available to the Manager Waste Services and Technical Support to determine compliance with procedures and identify the need for any action to be taken.

No non-compliances or major actions resulted from daily checklists at ORRRC and ERRRC during the reporting period.

Actions Required

No issues with LEMP implementation have been identified during the reporting period at ERRRC or ORRRC, and therefore no actions are required.

8.3 ERRRC Landfill Gas Management Plan

Management actions are identified in *Section 4 (Biofilter System Design)* and *Section 5 (System Performance and Review)* of the *ERRRC Landfill Gas Management Plan* (LGMP – Geolyse, 2019). The status of implementation of each management action is provided in **Table 9**.

Table 9 – ERRRC Landfill Gas Management Plan Actions

Management Action	Status
Final Capping	<p>Stage 1 and Stage 2 final capping commenced in 2024-25 atop already applied intermediate cover. A 300 mm seal bearing layer has also been established, and additional capping layers are proposed to include:</p> <ul style="list-style-type: none"> > 150 mm topsoil; > 850 mm revegetation layer; > Protection geotextile; > Linear low-density polyethylene (LLDPE) geomembrane; > Protection geotextile (if required).
System Installation	<p>For each landfill stage, a total biofiltration area of 16 m² per cell is proposed, consisting of a network consisting of four (4) biofilters, each with an area of 4 m² (2 m x 2 m) and 1 m of organic media. Each biofilter would capture landfill gas from a quarter of the stage (approximately). Biofilters are also proposed to be modular to allow for installation of additional adjacent units if the rate of methane oxidation is required to be increased.</p>
Drainage Infrastructure	<p>The gas drainage system should consist of pipework placed in an aggregate filled trench, underlying the seal bearing layer. Characteristics of the proposed drainage media are:</p> <ul style="list-style-type: none"> > Large grain size and high porosity; > Less than 5% fines; > High permeability / gas conductivity; > Physical stability and durability; > Recycled (crushed) concrete and brick and tile are suitable. <p>The gas drainage pipework should be a suitable class of polyethylene pipe or pipe made from other materials appropriate for the intended use.</p> <p>A standardised pipework sizing of 150 mm diameter within a trench of 0.5 m width and 0.5 m depth is proposed.</p>



Management Action	Status
<p>Biofilter Media</p>	<p>The biofilter media is proposed to possess the following characteristics:</p> <ul style="list-style-type: none"> > High porosity to allow movement of gases and water, but with sufficient organic fines to hold moisture; > Moderate gas permeability, (less than that of the gas drainage aggregate); > Biologically stability; > A carbon : nitrogen ratio of approximately 15 : 1; > Water holding capacity ranging from 35 to 45% vol/vol; > Gas movement through the biofilter should continue even when the biofilter is at water holding capacity; > Good drainage and/or hydraulic conductivity; > Structural stability; > Homogeneity; > Low concentrations of substances that may inhibit methanotrophic methane oxidation. <p>The biofilter media is proposed to be derived from composted garden organics available from the JR Richards composting facility at the site, and consist of a combination of composted garden organics and shredded wood. Preliminary testing has confirmed composted 'Tunnel' material as being largely suitable as biofilter media, however its oxygen consumption rate was recorded to be elevated. Incorporating shredded wood was recommended to help stabilise oxygen demand while maintaining appropriate air permeability.</p>
<p>Monitoring</p>	<p>Rainfall events of 20 mm or greater (in 24 hours) would trigger monitoring. Monitoring would also be conducted in periods of low rainfall (less than 5 mm rainfall total across a two-week period), to check the moisture levels of the biofilter media.</p> <p>Inspection and quantitative monitoring would be conducted weekly in the initial four (4) weeks of commissioning, then shifting to monthly.</p>
<p>Oxidation Targets</p>	<p>The oxidation target of the proposed biofiltration system is a minimum rate of 80% of pre-filter methane emissions (vol/vol).</p> <p>Further investigation and corrective action are recommended where methane emissions are recorded at concentrations greater than 0.05% (vol/vol) at any point on the landfill surface, including proximal to the biofiltration system.</p>

8.4 Conservation Agreement Area

The ERRRC Conservation Agreement Area includes the location of remnant woodlands, conservation area, rehabilitation corridors (refer **Figure 5**).



8.5 Conservation Management Plan

The ERRRC Conservation Management Plan (CMP) provides management measures to be undertaken. The status of implementation of each operational management measure is provided in **Table 10**.



Figure 5 – ERRRC Conservation Agreement Area

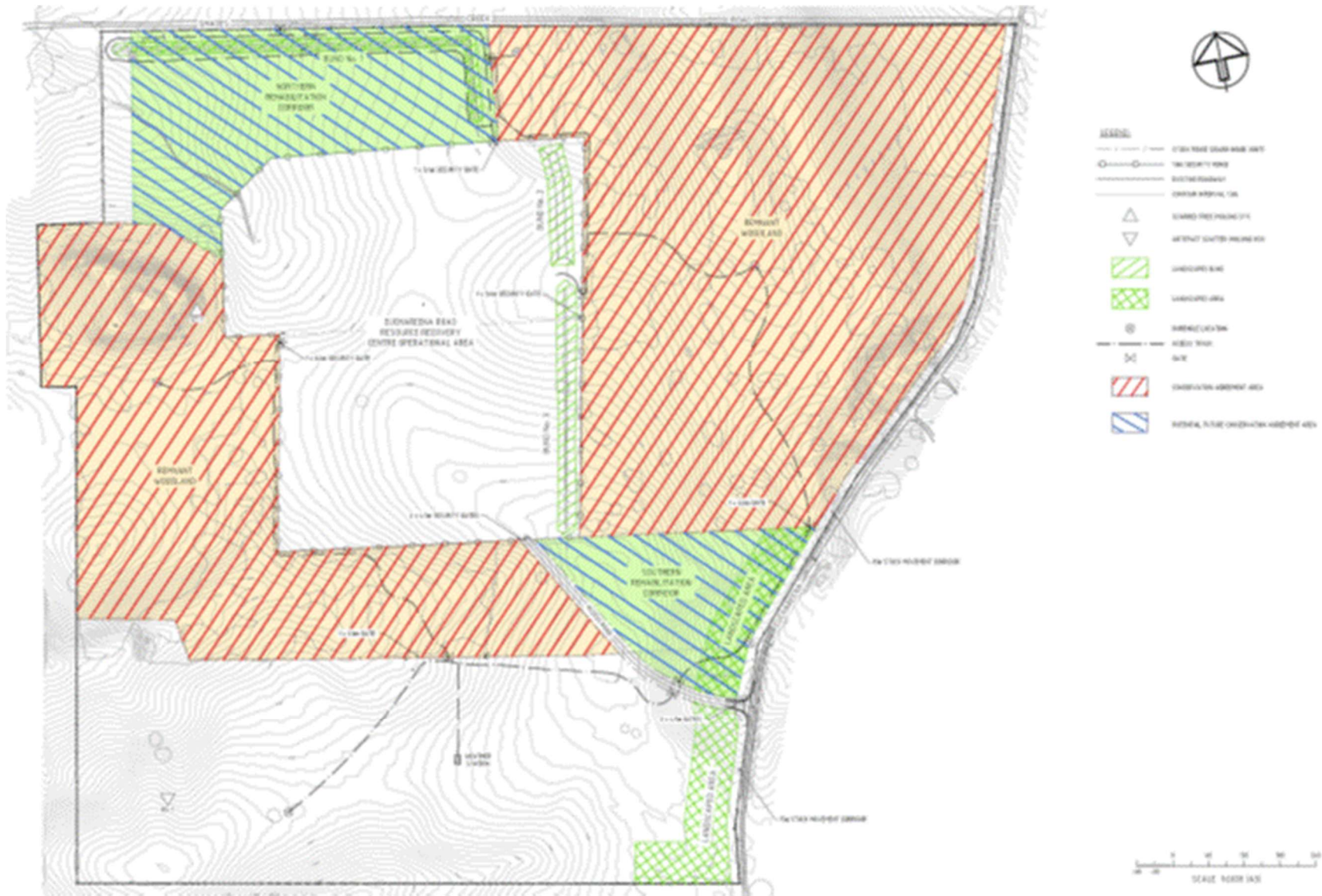


Table 10 – Rehabilitation and Management Measures

Category	Task	Status	Action Required	
ABORIGINAL				
2	DURING OPERATION OF RRC			
a	Staff Inductions	i All staff and contractors are to undertake an induction that includes a cultural heritage awareness component, consistent with Sections 6.1.1 and 6.2.1 of the Aboriginal Heritage Management Plan.	All staff and contractors undergo a detailed induction prior to commencing any work or activities on the site. Section 5.1 (Training) of the OEMP and SOP 02 – Site Inductions includes a section on Aboriginal Heritage Management consistent with the requirements of Sections 6.1.1 and 6.2.1 of the Aboriginal Heritage Management Plan.	No action required
b	Heritage & Biodiversity Awareness	i A suitably sized copy of Drawing 18B_EV01 shall be displayed in the Site Office, where the Site Manager has visual access to it.	Drawing 18B_EV01 is displayed in the ERRRC Site Office	No action required
		ii A person shall be appointed by Orange City Council to take responsibility for the continued protection of the identified heritage items, ensuring they are protected from future impacts.	The Manager of Waste Services & Technical Support is responsible for the continued protection of the identified heritage items.	No action required
		iii The items are to be monitored regularly. In particular, monitoring shall consider: The impacts of any grazing animals. If it looks like stock are rubbing	Scarred tree ST1 is monitored annually as part of the ERRRC Flora and Aboriginal Heritage Monitoring Program. Monitoring was undertaken	All gates were secured to prevent animal ingress in June 2021, and inspections in the 2024/25 period confirmed functionality. The fabric protective screen of scarred tree ST1 was identified in March 2024 to be



Category		Task	Status	Action Required	
		<p>against the items, they should be fenced off to avoid such impacts.</p> <p>Whether or not the scarred tree (ST1) is closing over. If such occurs consultation with OEH and the LALC shall be undertaken to determine what measures/if any shall be undertaken to rectify the situation.</p> <p>Photo monitoring site to be monitored annually, with outcomes recorded in an Aboriginal Heritage Monitoring report.</p>	<p>during the reporting period in March 2025.</p> <p>A fabric protective screen has been affixed to a screening fence to deter digging animals. From the March 2025 inspection, the scarred tree showed little change in trunk damage from initial survey photographs.</p>	<p>deteriorating and in need of replacement, and had not been replaced as of March 2025.</p>	
REMNANT WOODLAND					
3	DURING OPERATION OF RRC				
a	Staff Inductions	i	All staff and contractors are to undertake an induction that includes a cultural heritage awareness component, consistent with Sections 6.1.1 and 6.2.1 of the Aboriginal Heritage Management Plan.	All staff and contractors undergo a detailed induction prior to commencing any work or activities on the site. SOP 02 – Site Inductions includes a section on Aboriginal Heritage Management.	No action required
b	Heritage & Biodiversity Awareness	i	A suitably sized copy of Drawing 19B_EV02 shall be displayed in the Site Office, where the Site Manager has visual access to it.	Drawing 19B_EV01 is displayed in the ERRRC Site Office	No action required
	Woodland Monitoring	i	Implementation of the woodland monitoring program.	Two permanent monitoring sites throughout the remnant Box-gum woodland EEC have been established, including two quadrants (C1 and C2) and one transect (F1). Flora in remnant	As specified in 5-year works action plan (refer to Appendix H)



Category		Task		Status	Action Required
				woodland is monitored annually as part of the ERRRC Flora and Aboriginal Heritage Monitoring Program. Monitoring was undertaken during the reporting period on 6, 11 and 13 March 2025.	
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs may be undertaken in accordance with advice from a suitably qualified person.	Supplementary plantings to improve condition and improve connectivity within remnants using cuttings or seeds from on-site species where possible	As specified in 5-year works action plan (refer to Appendix H)
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guards.	As above	As specified in 5-year works action plan (refer to Appendix H)
c	Weed & Pest Management	i	Implementation of the Weed Management Program.	<p>The ERRRC Weed Management Plan is provided as Section 7.2 of the Orange Waste Project (OWP) Operational Environmental Management Plan (OEMP).</p> <p>One weed inspection occurred at ERRRC during the reporting period, in July 2024 (refer – Appendix C). The following actions have been undertaken in response to the weed inspection:</p> <ul style="list-style-type: none"> > Several Serrated Tussock removed during inspection. > Ongoing monitoring of site by Weed Inspection Officers. 	Targeted weed control to reduce cover of weed species, as specified in 5-year works action plan (refer to Appendix H)



Category		Task	Status	Action Required
		ii	<p>Implementation of the Pest Control Plan.</p> <p>The ERRRC Pest Management Plan is provided as Section 7.3 of the OWP OEMP.</p> <p>RRC staff maintained fencing around the perimeter of the landfill operations to maintain security and mitigate intrusion from feral animals such as European foxes.</p>	No action required
d	Groundcover Management	i	<p>Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.</p>	<p>Stock excluded from Conservation Area</p> <p>As specified in 5-year works action plan (refer to Appendix H)</p>
		ii	<p>Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that a diverse ground layer of native species is encouraged.</p> <p>Grazing regimes will be guided by:</p> <ul style="list-style-type: none"> Appropriate location of grazing Triggers to change grazing regime e.g. changes to abundance of selected key species. 	<p>Stock excluded from Conservation Area</p> <p>As specified in 5-year works action plan (refer to Appendix H)</p>



Category	Task	Status	Action Required
	<p>Triggers for grazing to be excluded e.g. during flowering and seeding of particular species.</p> <p>Seasons where grazing may be desirable e.g. reduction in seeding of particular weed species.</p> <p>Exclusion of grazing for a required number of years or until certain outcomes have been achieved.</p> <p>Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows:</p> <p>Ensure stock camps are not established.</p> <p>Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area.</p> <p>Mustering of livestock with the use of working dogs and horses is permitted.</p> <p>Fodder or any stock feed may not be brought into the remnant woodland areas.</p> <p>Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area</p>		



Category	Task	Status	Action Required
	<p>for at least a week immediately prior to their introduction.</p> <p>Pasture improvement or fertilisation is not permitted.</p> <p>Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences.</p>		
	<p>iii Any grazing and implementation of grazing regime requires prior written agreement from OEH, subject to monitoring reports.</p>	<p>Stock excluded from Conservation Area</p>	<p>As specified in 5-year works action plan (refer to Appendix H)</p>
	<p>iv Reducing the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation and inhibiting natural regeneration and the owner is granted a licence to cull under Section 121 of the NPW Act 1974.</p>	<p>OCC was granted permission to undertake a conservation cull of up to 125 kangaroos in late 2024.</p> <p>The 2024-25 ERRRC Flora and Aboriginal Heritage Monitoring Program identified the local kangaroo population remains high with several hundred remaining on the site. A drone survey was recommended for Spring 2025 to assess current kangaroo numbers and determine if further culling will be required.</p>	<p>No action required</p>



Category	Task	Status	Action Required	
REHABILITATION CORRIDORS				
4 DURING OPERATION OF RRC				
b	Woodland Monitoring	i Implementation of the rehabilitation corridor monitoring program.	Two permanent monitoring sites within the rehabilitation corridor have been established, including two quadrants (R1 and R2) and two transects (F1 and F2). Flora in rehabilitation corridors is monitored annually as part of the ERRRC Flora and Aboriginal Heritage Monitoring Program. Monitoring was undertaken during the reporting period in March 2025.	No action required
		ii Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	Supplementary plantings to improve condition and improve connectivity within remnants using cuttings or seeds from on-site species where possible. In September 2024, replacement plantings were undertaken in the southern rehabilitation corridor.	Supplementary plantings are expected to occur in the southern rehabilitation corridor in late 2025
		iii Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	As above	As specified in 5-year works action plan (refer to Appendix H)
c	Weed & Pest Management	i Implementation of the Weed Management Program.	The ERRRC Weed Management Plan is provided as Section 7.2 of the OWP OEMP. One weed inspection occurred at ERRRC during the reporting period (refer – Appendix C). No specific recommendations or actions have been	Targeted weed control to reduce cover of weed species, as specified in 5-year works action plan (refer to Appendix H)



Category		Task		Status	Action Required
				undertaken within the rehabilitation corridors in response to the weed inspection. Ongoing monitoring of the site by Weed Inspection Officers is to continue.	
		ii	Implementation of the Pest Control Plan.	The ERRRC Pest Management Plan is provided as Section 7.3 of the OWP OEMP. RRC staff maintained fencing around the perimeter of the landfill operations to maintain security and mitigate intrusion from feral animals such as European foxes.	No action required
d	Groundcover Management	i	Groundcover management within the rehabilitation areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times. Trees and shrubs are to be protected from cattle.	Stock excluded from Conservation Area	As specified in 5-year works action plan (refer to Appendix H)
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas.	Stock excluded from Conservation Area	As specified in 5-year works action plan (refer to Appendix H)



Category	Task	Status	Action Required	
LANDSCAPED BUNDS				
4	DURING OPERATION OF RRC			
a	Landscaped Bunds	i The landscaped bunds shall be constructed and landscaped in accordance with the CMP.	The Landscape Bunds were constructed and seeded prior to operations on August 2013. Some tree loss was experienced on these bunds due to extreme weather conditions. No plantings were undertaken due to drought conditions. There will be a reviewing of future planting regime subject to adequate rainfall.	No action required
b	Heritage & Biodiversity Awareness	i A suitably sized copy of Drawing 16B_EV02 shall be displayed in the Site Office, where the Site Manager has visual access to it.	Drawing 16B_EV02 is displayed in the ERRRC Site Office.	No action required
c	Monitoring	i Implementation of the Landscaped Bund/Strip monitoring program.	A permanent monitoring site within Landscape Bund 1 (B1) has been established as part of the ERRRC Flora and Aboriginal Heritage Monitoring Program.	Tree guard removal is required for plantings >1 m in Bund 1
		ii Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	No supplementary planting programs recommended by the ERRRC Flora and Aboriginal Heritage Monitoring Program for the reporting period.	No action required



Category		Task		Status	Action Required
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	As above	No action required
d	Weed & Pest Management	i	Implementation of the Weed Management Program.	<p>The area north of Bund 1 was slashed in late 2024 and mid-2025 and has been dominated by the natives Red Grass and Slender Rat’s Tail Grass.</p> <p>The ERRRC Weed Management Plan is provided as Section 7.2 of the OWP OEMP.</p> <p>One weed inspection occurred at ERRRC during the reporting period (refer – Appendix C). No specific recommendations or actions have been undertaken at the landscaped bunds in response to the weed inspection. Ongoing monitoring of the site by Weed Inspection Officers is to continue.</p>	Targeted weed control to reduce cover of weed species, as specified in 5-year works action plan (refer to Appendix H)
		ii	Implementation of the Pest Control Plan.	<p>The ERRRC Pest Management Plan is provided as Section 7.3 of the OWP OEMP.</p> <p>RRC staff maintained fencing around the perimeter of the landfill operations to maintain security and mitigate intrusion from feral animals such as European foxes.</p>	No action required



Category	Task	Status	Action Required
LANDSCAPED AREA			
3	DURING OPERATION OF RRC		
a	Heritage & Biodiversity Awareness	i A suitably sized copy of Drawing 17C_EV02 shall be displayed in the Site Office, where the Site Manager has visual access to it.	Drawing 17C_EV02 is displayed in the ERRRC Site Office. No action required
b	Monitoring	i Implementation of the landscaped area monitoring program.	A permanent monitoring site within the Landscaped Area has been established which includes one transect (L1). Flora in the landscaped area is monitored annually as part of the ERRRC Flora and Aboriginal Heritage Monitoring Program. Monitoring was undertaken during the reporting period in March 2025. No action required
		ii Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	Supplementary plantings to improve condition and improve connectivity within remnants using cuttings or seeds from on-site species where possible As specified in 5-year works action plan (refer to Appendix H)
		iii Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	As above As specified in 5-year works action plan (refer to Appendix H)
c	Weed & Pest Management	i Implementation of the Weed Management Program.	The ERRRC Weed Management Plan is provided as Section 7.2 of the OWP OEMP. Targeted weed control to reduce cover of weed species, as specified in 5-year works action plan (refer to Appendix H)



Category		Task		Status	Action Required
				One weed inspection occurred at ERRRC during the reporting period (refer – Appendix C). No specific recommendations or actions have been undertaken at the landscaped area in response to the weed inspection. Ongoing monitoring of the site by Weed Inspection Officers is to continue.	
		ii	Implementation of the Pest Control Plan.	The ERRRC Pest Management Plan is provided as Section 7.3 of the OWP OEMP. RRC staff maintained fencing around the perimeter of the landfill operations to maintain security and mitigate intrusion from feral animals such as European foxes.	No action required
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	Stock excluded from Conservation Area	As specified in 5-year works action plan (refer to Appendix H)
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas.	Stock excluded from Conservation Area	As specified in 5-year works action plan (refer to Appendix H)



8.6 Apiculture Risk Management Plan

The Apiculture Risk Management Plan (AMP) identifies monitoring and recording requirements to minimise apiculture risks. The status of implementation of the ARMP monitoring and recording requirements is provided in **Table 11**.

Table 11 – Implementation of ARMP

Requirement	Status	Action Required																										
Preliminary Provisions																												
1.2 Records and Monitoring Where not otherwise stated, a record of any non-conformance detected and the subsequent corrective actions must be kept.	There have been no non-conformances recorded in the reporting period.	No action required																										
A register of bee sightings at the ERRRC must be kept	<p>In accordance with the Apiculture Risk Management Plan, Council and its Contractor JR Richards and Sons, monitor the Euchareena Road Resource Recovery Centre for bees. Bees were sited throughout the 2024-2025 period. Details of these sightings are as follows:</p> <table border="1"> <thead> <tr> <th>Date</th> <th># Bees</th> <th># Occurrences</th> <th>Location of Bees</th> </tr> </thead> <tbody> <tr> <td rowspan="2">July 2024</td> <td>Single</td> <td>1</td> <td rowspan="2">Euchareena Road Resource Recovery Centre composting office area</td> </tr> <tr> <td>2 - 50</td> <td>7</td> </tr> <tr> <td rowspan="2">August 2024</td> <td>Single</td> <td>3</td> <td rowspan="2">Euchareena Road Resource Recovery Centre composting office area</td> </tr> <tr> <td>2 - 50</td> <td>5</td> </tr> <tr> <td rowspan="2">September 2024</td> <td>2 - 50</td> <td>5</td> <td rowspan="2">Euchareena Road Resource Recovery Centre composting office area</td> </tr> <tr> <td>50 - 100</td> <td>3</td> </tr> <tr> <td>October 2024</td> <td>Single</td> <td>2</td> <td>Euchareena Road Resource Recovery Centre composting office area</td> </tr> </tbody> </table>	Date	# Bees	# Occurrences	Location of Bees	July 2024	Single	1	Euchareena Road Resource Recovery Centre composting office area	2 - 50	7	August 2024	Single	3	Euchareena Road Resource Recovery Centre composting office area	2 - 50	5	September 2024	2 - 50	5	Euchareena Road Resource Recovery Centre composting office area	50 - 100	3	October 2024	Single	2	Euchareena Road Resource Recovery Centre composting office area	No action required
Date	# Bees	# Occurrences	Location of Bees																									
July 2024	Single	1	Euchareena Road Resource Recovery Centre composting office area																									
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September 2024	2 - 50	5	Euchareena Road Resource Recovery Centre composting office area																									
	50 - 100	3																										
October 2024	Single	2	Euchareena Road Resource Recovery Centre composting office area																									

Requirement	Status				Action Required
		2 - 50	6		
	November 2024	2 - 50	6	Euchareena Road Resource Recovery Centre composting office area	
		50 - 100	2		
	December 2024	2 - 50	6	Euchareena Road Resource Recovery Centre composting office area	
		50 - 100	2		
	January 2025	2 - 50	3	Euchareena Road Resource Recovery Centre composting office area	
		50 - 100	6		
	February 2025	Single	1	Euchareena Road Resource Recovery Centre composting office area	
		2 - 50	6		
		50 - 100	1		
	March 2025	2 - 50	4	Euchareena Road Resource Recovery Centre composting office area	
		50 - 100	4		
	April 2025	Single	1	Euchareena Road Resource Recovery Centre composting office area	
		2 - 50	7		
	May 2025	Single	1	Euchareena Road Resource Recovery Centre composting office area	
		2 - 50	7		
	June 2025	Single	4	Euchareena Road Resource Recovery Centre composting office area	
		2 - 50	4		



Requirement	Status	Action Required
Customer complaints must be recorded on the customer complaints register and updated on the Orange City Council website monthly. All supporting documentation relating to the complaint must also be retained on file.	A <i>Complaints Register (Form 14.01)</i> and <i>Complaints Report Form (Form 14.02)</i> is provided under SOP 14 – Complaints Handling of the OWP OEMP. Records of complaints are kept for at least four years in accordance with EPA requirements. A complaints registry is maintained on Council’s website Refer to: http://www.orange.nsw.gov.au/	No action required
A report on issues relating to this RMP must be provided to the Review Committee either by exception or at no less than 6-monthly intervals.	The Apiculture Committee which consists of local apiarists, the President of the Central Tablelands Apiary Association and Department of Primary Industries resolved to meet annually. A report is provided to this Committee at the annual meeting. Any beekeeping equipment sightings at the facilities are reported to this committee immediately. No incidents relating to sighting of apiary materials were recorded in the 2024-2025 reporting period.	No action required
Used Bee Keeping Equipment		
2.4.1 Records Records will be kept of all instances where loads containing used beekeeping equipment have been rejected. This should contain, date stopped, nature of goods, driver details and date reported to site supervisor	<i>Form 6.01 – Rejected Apiculture Product Register</i> is provided under <i>SOP 06 – Bee Keeping Equipment and Honey Containers</i> of the OWP OEMP. There were no incidents of bee keeping equipment being identified at the ORRRC facility in the 2024-2025 reporting period.	No action required
Records will be kept by waste stream of the discovery and subsequent burial of any item of beekeeping equipment that inadvertently enters the ORRRC. This should also contain, date found, nature of goods and date reported to site supervisor.	<i>Form 6.03 – Found Apiculture Product Register</i> is provided under <i>SOP 06 – Bee Keeping Equipment and Honey Containers</i> of the OWP OEMP. There were no incidents of bee keeping equipment being identified at the ORRRC facility in the 2024-2025 reporting period.	No action required



Requirement	Status	Action Required
2.4.2 Monitoring Site supervisor to check processes and records quarterly	The Site Supervisor has checked and processed records in accordance with the ARMP. No incidents relating to sighting of apiary materials were recorded in the 2024-2025 reporting period.	No action required
Site supervisor to report incidents to the NSW Department of Primary Industries (DPI) as appropriate	This is a requirement of <i>SOP 06 – Bee Keeping Equipment and Honey Containers</i> of the OWP OEMP. If there is an incident this is immediately reported to DPI and to the Apiculture Committee No incidents relating to sighting of apiary materials were recorded in the 2024-2025 reporting period.	No action required
Used Honey Containers		
3.4.1 Records A record of any bale rejection is to be kept and is to include date, degree of failure plus any indication of cause, and date reported to management.	<i>Form 09 – Compromised Bales Returned to ORRRC</i> is provided under <i>SOP 09 – Rejected Bales</i> from <i>ERRRC</i> of the OWP OEMP. There have been no compromised or rejected bales in the reporting period.	No action required
A record of any wrapping tear or failure is to be kept and is to include incident date, corrective action, and date reported to management.	As above.	No action required
3.4.2 Monitoring Site supervisor to check processes and records quarterly	The Site Supervisor has processed and checked records in accordance with the OEMP.	No action required
Timber or Tree Logs		
4.4.1 Records A record of feral colonies (alive or dead) found in tree logs must be kept	Records of feral colonies (alive or dead) found in tree logs are recorded as rejected or found waste on <i>Form 06.01 - Rejected Apiculture Product Register</i> or <i>Form 6.03 – Found Apiculture Product Register</i> (respectively) under <i>SOP 06 – Bee Keeping Equipment and Honey Containers</i> under the OWP OEMP. There have been no feral bee colonies detected in any tree logs during the reporting period.	No action required



Requirement	Status	Action Required
Processing, storage and disposal records for risk material must be kept.	There have been no feral bee colonies detected in any tree logs during the reporting period.	No action required
4.4.2 Monitoring Site supervisor to report instances of feral colonies in tree logs to DPI as appropriate.	This is a requirement of <i>SOP 06 – Bee Keeping Equipment and Honey Containers</i> of the OWP OEMP. There have been no feral bee colonies detected in any tree logs during the reporting period.	No action required
Site supervisor to check processes and records quarterly	There have been no feral bee colonies detected in any tree logs during the reporting period.	No action required
Education / Personnel Competency		
9.3.1 Records Induction and training records for all staff performing key tasks relating to the ARMP must be kept on file. Staff must sign these records confirming that training has been received.	A Staff Training Register is provided under <i>SOP 02 – Site Inductions</i> under the OWP OEMP.	No action required
9.3.2 Monitoring Monitoring of staff performance must be carried out by the responsible person at regular intervals.	The Site Supervisor and Manager Waste Services & Technical Support monitor staff performance.	No action required

8.7 Community Education and Communications Strategy

8.7.1 IMPLEMENTATION

The Community Education and Communications Strategy (CECS) is a three-phase strategy.

Phase 1 and 2 applied to the pre-operation period and are no longer applicable.

Phase 3 also applied to the pre-operation period but also includes operational actions to overcome implementation problems.



The status of implementation of relevant operational communication tools identified in the CECS during the reporting period is provided in **Table 12**.

Table 12 – Communication Tool Implementation Status

Tool	Function	Audience	Implementation Status
'X' (formerly Twitter) / Facebook	Use 'X' in months following launch to show statistics on how much waste has been diverted from landfill and subsequently how much greenhouse gasses have been reduced. Reinforce what is required of residents e.g. 'Remember to use your new bin for organics from this week onward.	All stakeholders. Residents	Orange City Council utilises its social media accounts to continually promote Council's activities including waste management activities. In particular, Council's FOGO Service was promoted using: <ul style="list-style-type: none"> > 1x Media release > 1x Podcast segment > 4x Social media posts and blurbs > 1x Pop-up waste education video
Open days and guided educational tour of new facilities.	Special school tours should be organised on weekdays.	All stakeholders	Throughout the reporting period, Council hosted eleven (11) school tours and four (4) community tours to the Waste Facilities.
Direct response to community questions	Where possible requests and questions will be responded to through one of the established communication elements e.g. website, information booth. In some cases, if a particular group of people e.g. Senior Citizens Association) need more information special presentations or distribution of targeted information will be arranged.	Specific community groups	Orange City Council has hosted numerous public place displays to promote Council's waste management services and facilities. These public place displays provide opportunities for the community to speak one-on-one with the representative hosting the display. During the reporting period, four (4) 'pop-up displays' (PUDs) delivered in the Orange LGA at the Farmers' Markets and the 2024 Sustainable Living Expo. 'Take-home' surveys were provided at the Pop-up displays and during the community tours in the Orange LGA. The PUDs throughout the 2024-25 contract year educated respondents by focusing on correct usage of the FOGO and recycling bin services in Orange and highlighting the results from the recent bin inspections.



Tool	Function	Audience	Implementation Status
Customer Service Centre	The centre should be well prepared with answers to expected questions and should direct customers to the website, newsletter and information booth.	Residents and businesses	Orange City Council maintain a phone line for enquiries and complaints about the OWP (1300 650 511). Customers can be directed to the website for specific information on the OWP at: www.orange.nsw.gov.au
Poster display	The posters will also address implementation issues and educate people on elements of the new system that they may not be following correctly e.g. in the case of widespread use of plastic bags in new organics bin.	All stakeholders	The OCC Sustainability Team worked with EnviroCom staff in October 2024 to compile several posters and signage for the new 3x bin system.



8.7.2 ENVIROCOM ANNUAL REPORTS

Orange City Council's waste collection contractor, J.R. Richards & Sons, has engaged EnviroCom Australia to deliver the educational elements of the OWP.

EnviroCom has provided two (2) annual reports on waste education activities, identifying the following initiatives carried out during the reporting period:

Food and Garden Organics Waste Education Plan 2024-25– Annual Report (July 2025)

- > Community workshops, delivering instruction on how to make, use and maintain beeswax wraps were held (2 sessions).
- > FOGO and Recycling Media Campaign.
- > Community Waste Facility Tours
 - School Group ORRRC and/or ERRRC Tours – 9 tours
 - ORRRC and/or ERRRC Community Tours – 4 tours
- > Pop-up Displays promoting the range of waste services available in Orange City Council, and providing residents with the opportunity to interact with informed education personnel (4 events)
- > Sustainable Living Expo.

NetWaste Joint Recycling Contract, Waste Diversion Education Strategy Implementation Plan – 2024/25 (June 2024)

- > Community initiatives including
 - Cinema Advertising: To broaden the reach of waste education, animated videos will be shown at the local Odeon 5 cinema. This targets demographics, such as 18-35 year olds, who may not engage with the council's social media or website.
 - Composting & Worm Farming Workshop: A 1.5-hour community workshop will be held on a weekend to teach residents about composting and worm farming. The workshop will be promoted through the council's Facebook page, website, and local special interest groups.
- > Schools & Early Learning Centre initiatives including:
 - Schools Waste Education & Engagement Program (SWEEP): This program is aimed at primary schools in Orange to help them reduce waste and improve resource recovery. One school will be selected to participate, with others placed on a waitlist. The program includes conducting waste audits, providing internal bins and signage, and establishing an "eco team" of students.
- > Cross Community Collaboration initiatives including
 - Internal Waste Assessment - Staff Consultation and Education: This initiative focuses on educating and engaging Orange City Council staff to promote positive behaviour change regarding waste diversion and resource recovery within council operations. This includes staff training, information sessions, and providing resources like posters and signage.
 - Liaison with External Companies: The plan involves collaboration with several external organizations to deliver the initiatives. This includes working with Simply Cups for a coffee cup collection bin, Star Media Advertising for cinema promotions, and JR Richards & Sons for school recycling and FOGO services.

The EnviroCom reports are provided in **Appendix B**.



9. MONITORING PROGRAMS

9.1 Introduction

A summary of monitoring and results during the reporting period for the following monitoring programs is provided in the following sections:

- > Waste and Resource Recovery Monitoring Program (WRRMP).
- > ERRRC Flora and Aboriginal Heritage Monitoring Program.

9.2 Waste and Resource Recovery Monitoring Program

9.2.1 MANAGEMENT STRATEGY

The key resource recovery outcome of the WRRMP strategy is to achieve an overall 58% diversion of waste from landfill, broken down as:

- > 63% of municipal waste generated.
- > 53% of Commercial and Industrial (C&I) waste generated.
- > 53% of Building and Demolition (B&D) waste generated.

9.2.2 WASTE DIVERSION

Percentage waste diversion since 2012/13 is provided in **Table 13** and plotted from **Figure 6** to **Figure 9**.

Table 13 – Percentage Waste Diversion

Reporting Period	Municipal	C&I	B&D
2012/13	37.2%	17.1%	64.7%
2013/14	50.4%	27.3%	60.0%
2014/15	51.0%	31.7%	81.1%
2015/16	55.5%	32.3%	92.3%
2016/17	47.5%	17.8%	76.1%
2017/18	60%	22%	34%
2018/19	44%	19%	91%
2019/20	50%	24%	36%
2020/21	45%	26%	56%
2021/22	61%	26%	34%
2022/23	56%	16%	44%
2023/24	50%	27%	68%
2024/25	44%	24%	58%

The overall waste diversion decreased since last year, from 44.8% in 2023-24 to 40.8% in 2024-25. This result is less than the overall diversion target (58%).

Figure 6 – Overall Waste Diversion

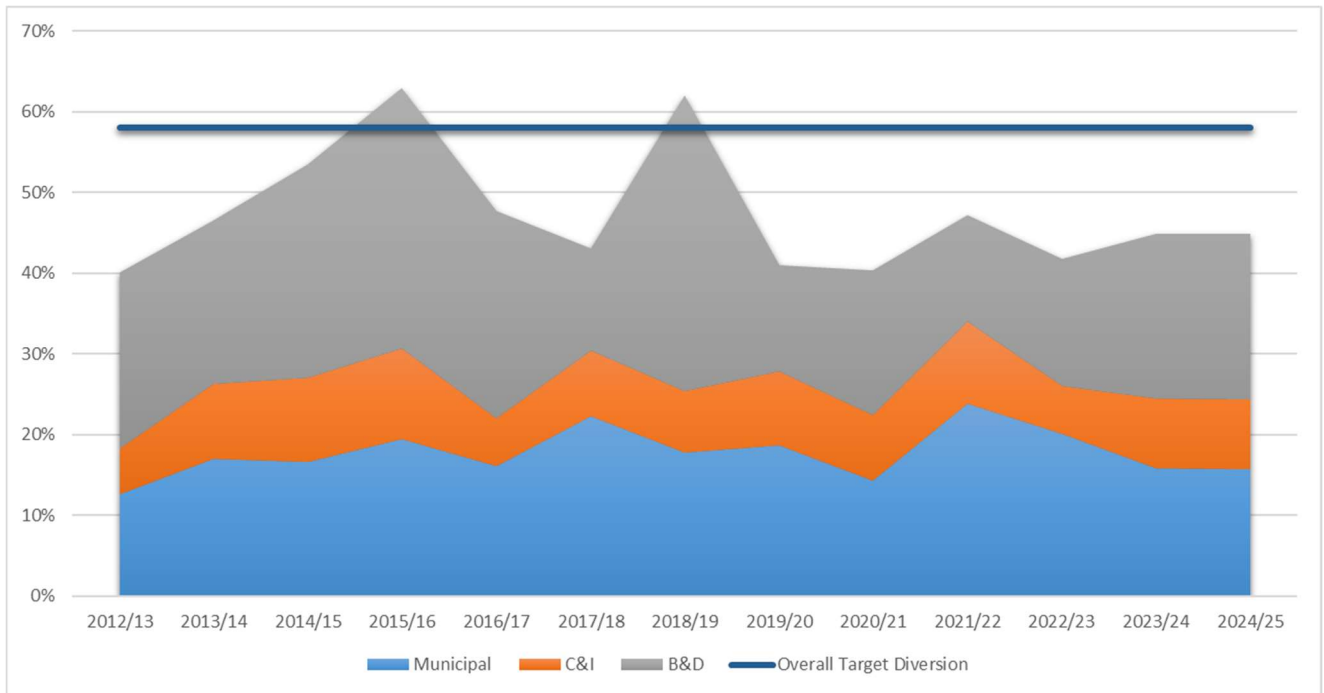


Figure 7 – Municipal Sector Waste Diversion

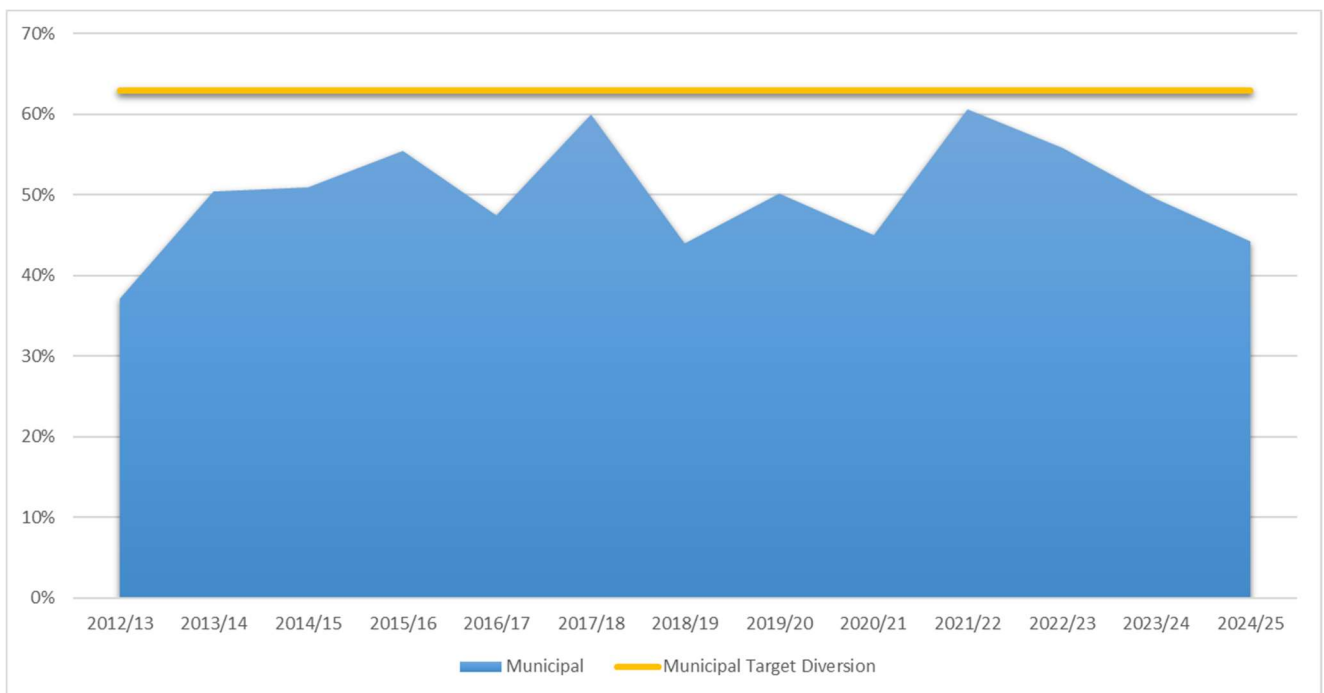


Figure 8 – C&I Sector Waste Diversion

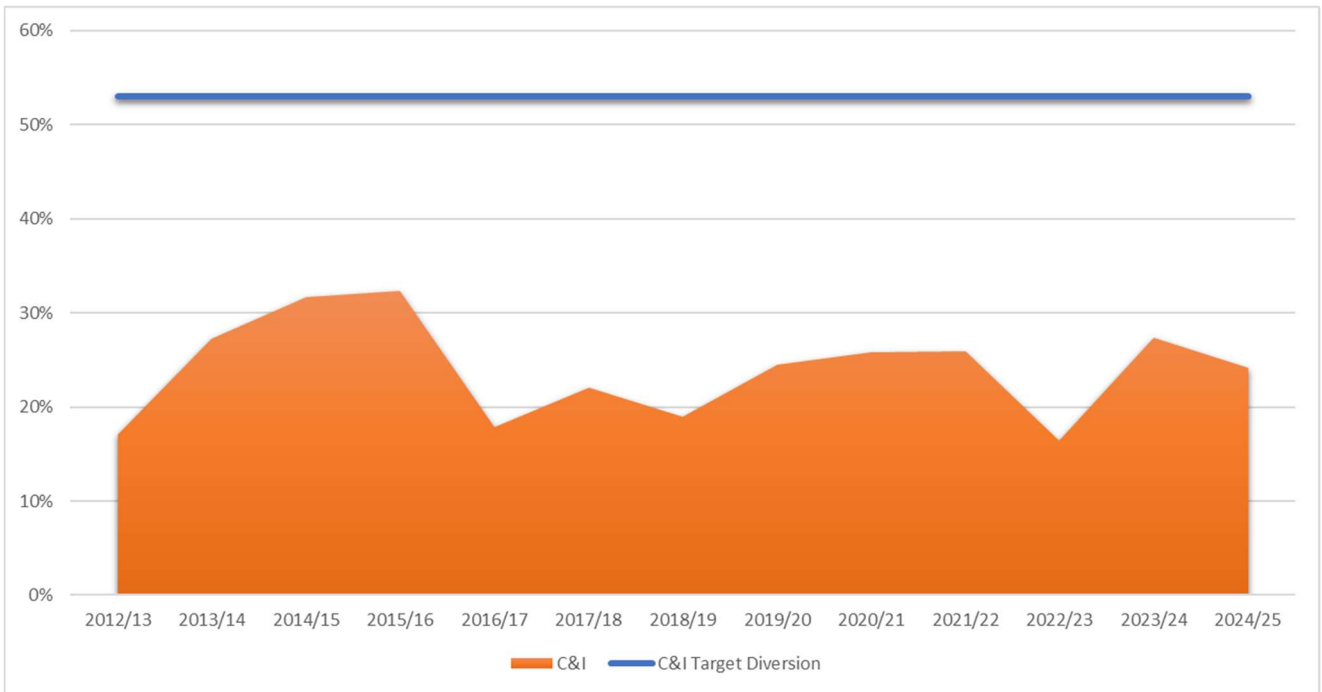
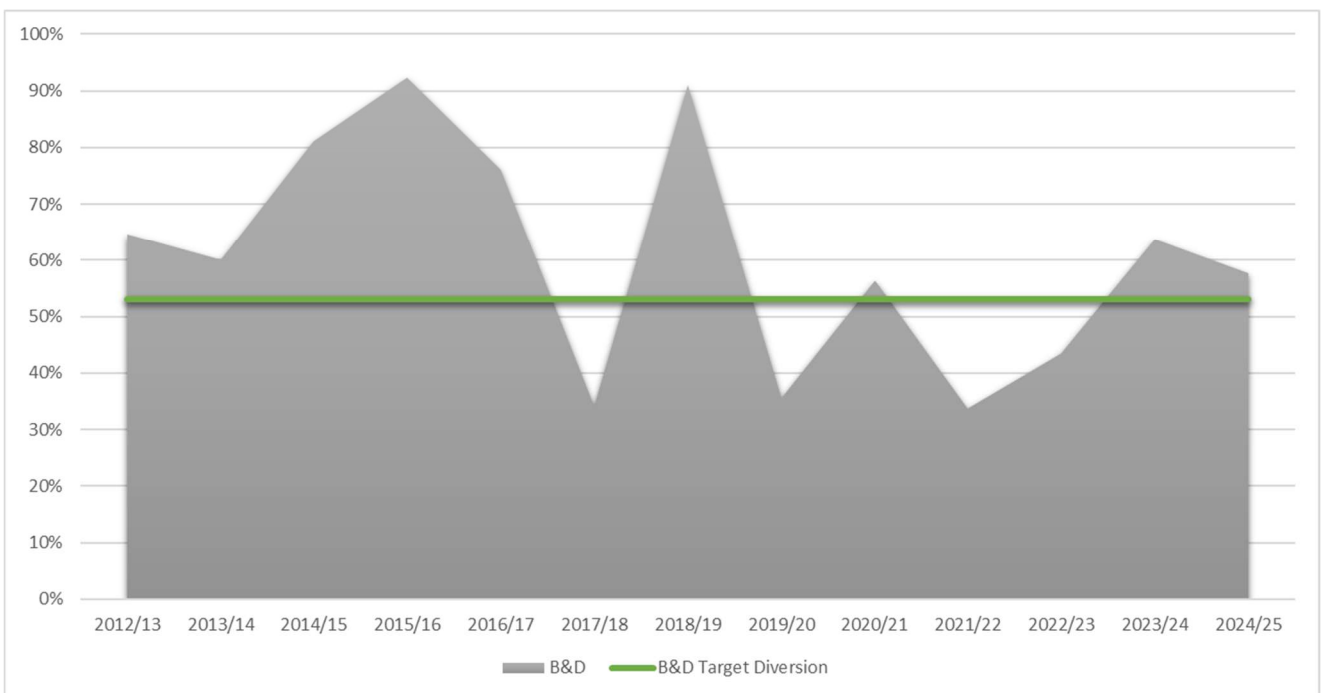


Figure 9 – B&D Sector Waste Diversion



9.2.3 COMPOST VOLUMES

In the 2024-2025 period, 746.9 tonnes of compost were transferred from ERRRC to ORRRC. A larger volume is understood to have been transferred directly to other Council projects.



9.3 ERRRC Flora and Aboriginal Heritage Monitoring Program

9.3.1 INTRODUCTION

Monitoring was completed in March 2025 as part of the approved Conservation Management Plan for ERRRC. A summary of monitoring results is provided in the following sections.

9.3.2 FLORA MONITORING

Flora monitoring sites assessed during the survey included:

- > Two plots as control sites in remnant woodland areas (C1 and C2).
- > Two plots within the rehabilitation corridor; one in the southern rehabilitation corridor and another in the northern rehabilitation corridor (R1, R2).
- > Transect within the landscaped area on the south western boundary (L1).
- > Transect within the newly planted landscape bund on the northern boundary (B1).
- > One transect west of the access road in remnant woodland also acting as a control site (F1, C1).
- > One transect east of the access road in the southern rehabilitation corridor also acting as a plot site (F2, R2).
- > One transect (L2) established in the 2016 survey period that incorporates the planted rehabilitation area immediately north of the facility's perimeter fence line.

Flora monitoring identified the following:

Annual flora monitoring was conducted on 11th March 2025. This survey period followed four months of generally average rainfall: November 2024 92.0 mm (long-term average 60.6 mm), December 2024 79.0 mm (long-term average 64.1 mm), January 2025 49.0 mm (long-term average 69.8 mm) and February 2025 71.0 mm (long-term average 57.0 mm) (BOM, 2025). These conditions meant flowering parts of plants were evident and native grasses and forbs were increasing in cover compared to recent drought years. Vegetation cover within plots was between 75-95%, while litter ranged from 4-15%. Higher vegetation covers were associated with lower litter loads and the recovery of groundcover species following slashing. Populations of native perennials have recovered after the drought as well as exotic annuals and some perennials.

*During 2018 and early 2019, stock had access to all areas of the Conservation Area which significantly reduced groundcover, resulting in a bare understorey. Stock have been excluded from the Conservation Area since June/July 2019, allowing the groundcover vegetation to recover after overgrazing and drought. The regeneration of native grasses and forbs has been aided by slashing (occurred between winter 2021 and Winter 2025). Conversely, the cover and abundance of exotic species is generally reducing. However, exotic species (*Phalaris aquatica* [*Phalaris*]) and High Threat Weeds (HTW) (*Centaurea solstitialis* [*St Barnaby's Thistle*], *Marrubium vulgare* [*White Horehound*], *Carthamus lanatus* [*Saffron Thistle*] and *Xanthium spinosum* [*Bathurst Burr*]) are still prevalent throughout the site. Open areas on the site were slashed throughout 2025, reducing the dominance of *Phalaris*. However, exotic grass tussocks and mats of stems continue to hinder the regeneration of native grasses and forbs in some areas, favouring the presence of exotic forbs. Past disturbance and selective grazing by livestock have promoted thistle and White Horehound infestations.*

Kangaroo populations utilising the Conservation Area remain consistently high. This is likely due to recent rainfall which has promoted grass growth in the region. Although the local macropod population utilises



the Conservation Area as part of a wider foraging range, large mobs still occur within remnant woodland areas on the site (particularly the NRC, and eastern and western remnant woodland) as indicated by numerous scats and camps (patches of flattened grass). During vegetation surveys in March 2025, approximately 300 kangaroos were observed in the eastern remnant woodland, while 50 were observed in the western remnant woodland. These individuals are likely to impact the structure and composition of woodland and grassland within the Conservation Area. The population size, and associated grazing pressure, continues to increase. In some woodland areas, macropod camps hinder the recovery of native groundcover species. In 2024, ERRRC neighbours and the Mayor of Cabonne raised their concerns regarding the overabundance of kangaroo on the site. In November 2024, OCC were approved to complete a conservation cull of up to 125 kangaroos in consultation with National Parks and Wildlife Services (NPWS). In Spring 2025, a drone survey will be undertaken to assess current kangaroo numbers and determine if further culling will be required.

Damage to young trees during 2019 and early 2020 from grazing livestock was extensive. Stock had grazed upon foliage, broken stems and branches and collapsed tree guards. Since stock exclusion, these plantings continue to produce new growth and regeneration can be found in plot L1 and L2.

Low numbers of Acacias that were directly seeded in 2010 across the Southern Boundary of the Northern Rehabilitation Corridor (SB-NRC) (near L2) are now established shrubs despite being heavily grazed during 2019 and early 2020.

In 2022 extensive plantings were undertaken in the following areas as per the Revegetation Plan Works Schedule:

- Year 1 - January 2022 plantings: 70 trees/shrubs in Landscape Area 1 (LA1) and 280 trees/shrubs in Bund 1.*
- Year 2 - July 2022 plantings: 32 trees and 32 shrubs per vegetation island in both the NRC and SRC, 22 trees and 20 shrubs in the SB-NRC, and 10 trees/shrubs in Landscape Area 2 (LA2).*
- Year 2 – September 2022: 500 trees and shrubs in vegetation islands in both the NRC and SRC.*

During vegetation surveys in February and March 2022, extensive kangaroo damage to the January 2022 plantings was observed as these areas appear to be thoroughfares for kangaroo dispersal. Evidence of kangaroo damage includes the displacement of tree guards, stakes and jute matting, leaving young saplings unprotected, often resulting in lower success rate. Ongoing kangaroo damage to plantings was also identified between 2023 and 2025. Vegetation islands across the eastern extent of the NRC and LA1 were particularly affected.

The 2024 BCT annual review recommended ongoing monitoring for active erosion and the establishment of a photo monitoring point to determine erosion stabilisation.

9.3.3 CORRECTIVE ACTIONS

Appendix D of the *Annual Flora and Aboriginal Heritage Monitoring Report* (attached as **Appendix G**) includes 'Management Issues' and describes control measures to be implemented and timeframes for completion.

9.3.4 ABORIGINAL HERITAGE MONITORING

Aboriginal Heritage monitoring during the survey included monitoring of a scarred tree (Molong ST1, Side ID 44-1-0080) to determine the impacts of grazing animals and whether the scarred tree is closing over.



Monitoring identified the following:

The 2025 site conditions have remained consistent as previous years. The locality and surrounding context of the site has not changed and the tree remains within the conservation area.

The scarred tree AHIMS Site ID #44-1-0080 is located on the eastern side of a moderate slope, positioned amongst an open woodland community, with several similarly sized trees located within a 50 -100 metre radius.

The tree remains in moderate health, however, does have crown damage which is now seven years old. On observation the loss of a large limb on the south-eastern facing side of the tree is likely to occur during a large weather event. Ground logs and fallen limbs are also present to the immediate north and west of the tree, with limb fall observed from the surrounding trees. Consistent with the 2024 monitoring report, regeneration of new foliage has occurred at the base of the tree.

The scarred tree is protected through implementation of a temporary screening fence, consisting of four 1200 x 3400 mm metal gates that have been chained together and fastened to star pickets to form a barrier. The fence is located at an approximate distance of 1500 mm from the tree. A fabric protective screen erected between June 2022 and February 2023 has since deteriorated. It is noted that this screening requires replacement to deter digging animals. It is recommended that the temporary fence barrier remain in place to act as an adequate buffer and minimise impacts to the tree.

The tree shows little change in trunk damage from initial survey photographs. The internal cavity has not significantly increased in size and does not show evidence of termite damage. Evidence of a small amount of rot to the dead heartwood of the scar continues to occur and spider infestation was present.

The tree is not subject to stock or macropod interference due to the exclusion of stock grazing in this area. Vegetation immediately surrounding the area did not show high levels of macropod movement and ground visibility was extremely low due to dense ground coverage. A high density of rock outcrop surrounds the site. Areas of vegetation regrowth were more prominent at the base of the western side of the tree; however vegetation regrowth is occurring around all sides of the trunk.

Scar measurements taken during the 2025 survey period are as follows and are compared to the original 2004 site recording.

Table: Scar Measurements

Recording year	Length of scar (cm)	Width of scar (cm)	Girth mid scar (cm)	Depth of bark (cm)	Height (cm)
2003	147	16	247	15	90
2025	145	15.5	247	15	90

In summary, the cultural scar measures approximately 90 cm above ground surface. The blaze is approximately 145 cm long and 15.5 cm at its widest part. The exposed heart-wood averages 15 cm deep from the outer bark surface. There have been no changes since the 2024 survey for this scar.

No significant change to the culturally modified scar has occurred since the 2024 monitoring period.



AHIMS #44-1-0081 is recorded as an isolated find (grindstone or muller) and is located in the south-western portion of Lot 102, DP1183238. This site was not inspected, however previous recommendations for inspecting this site are still encouraged.



10. REHABILITATION

10.1 ORRRC

The western face of the ORRRC landfill was predominantly capped in 2017. The face was revegetated through seeding mix application (white clover and rye with a cover crop of oats) and direct planting of tube-stock shrubs and larger trees, in accordance with the ORRRC Landfill Environmental Management Plan.

Over 60% of the eastern face of the ORRRC landfill received 1 to 2 metres of soil for phytocapping (average thickness 1.28 m) in 2018. Progressive capping using log-chip continued in 2021 and 2022 following easing of prevailing drought conditions. A seed mix consisting of white clover and rye with a cover crop of oats is being applied with fertiliser across the finalised capped area as it extends. Capping is progressive on the eastern and western faces as suitable materials arrive on site.

When final heights are reached, the vegetation process will continue in accordance with the Landfill Environmental Management Plan.

Persistent planting of shrubs and grasses as the phytocap extends over the site will promote evapotranspiration and reduce the risks of soil erosion and potential compromise of the capping structure.

Water balance modelling has indicated that an average phytocap thickness of 1.32 m at the western face and 1.28 m at the eastern face would be sufficient to achieve the required outcome of reducing rainwater infiltration from the base of the final cap to approximately 5% of the annual rainfall. Some areas of the eastern face may require additional capping (up to 100 mm) to reduce rainfall infiltration.

10.2 ERRRC

Rehabilitation at ERRRC continued with ongoing spraying of weeds, watering and maintenance of planted trees.

Specific rehabilitation activities undertaken at the ERRRC during the reporting period are detailed in **Table 14**.

Table 14 – ERRRC Rehabilitation Activities

Month / Year	Rehabilitation Activity
July-2024	Further feral animal monitoring was conducted as a continuation of the program established in March. This ongoing work is required to assess the kangaroo population and determine if control measures, such as culling, are needed.
September-2024	New plantings were installed to replace vegetation that had been damaged or destroyed by herbivory from local wildlife. This action included the installation of tree guards, stakes, water crystals, and fertiliser to support the new saplings.
	Regular monitoring of plantings in the Southern Rehabilitation Corridor (SRC) was carried out to assess damage from wildlife and other factors. This ongoing assessment helps inform maintenance activities, such as replacing dead plantings and repairing tree guards.
October-2024	Watering of the plantings within the northern and southern rehabilitation islands (NRI and SRI) was undertaken. This was essential to support the survival and establishment of the young vegetation, especially following delayed planting schedules.

Month / Year	Rehabilitation Activity
	Monitoring of plantings continued in the SRC to track their condition and survival rates. This regular check-up is crucial for adapting management strategies and ensuring the success of the revegetation project.
November-2024	Slashing and mowing activities were conducted across various areas, including access tracks and remnant woodlands, as a primary method of weed control. This action aimed to reduce the cover of exotic grasses like Phalaris and manage dominant weeds.
December-2024	<p>Approval was granted for a conservation cull of up to 125 kangaroos to manage the high local population. This pest control measure was deemed necessary due to significant kangaroo damage to plantings and the overall conservation area.</p> <p>Further slashing and mowing were carried out as part of the ongoing weed control program. These efforts were intended to reduce the dominance of exotic grasses and other weed species throughout the conservation area.</p>
February-2025	<p>The program of slashing and mowing for weed control continued across the site's access tracks, open areas, and remnant woodlands. This mechanical control method helps reduce the cover of exotic grasses and contributes to an increase in native grass cover.</p> <p>Plantings in the northern and southern rehabilitation islands received watering throughout the month. This action was crucial for the survival of the vegetation, which appeared to be in good condition during subsequent surveys.</p>
March-2025	<p>A vegetation survey was conducted to assess the condition of the conservation area, including the effectiveness of weed control and the health of plantings. The survey noted that while slashing had reduced exotic grasses, St Barnaby's Thistle still dominated much of the site.</p> <p>Weed control efforts continued with more slashing and mowing undertaken during the month. This was part of the scheduled maintenance to manage exotic species and promote the growth of native grasses.</p>
May-2025	<p>Targeted spot spraying of weeds was carried out in the Southern Rehabilitation Corridor (SRC). This chemical control method was used to prepare areas for upcoming plantings scheduled for late August and early September.</p> <p>As part of the ongoing erosion monitoring program, additional photographs were taken to document the condition of drainage lines. This helps track changes in erosion, which was primarily observed in the eastern remnant woodland and the Northern Rehabilitation Corridor (NRC).</p>
June-2025	<p>The regular slashing and mowing program for weed management continued into June. This activity is a key part of the strategy to reduce bushfire risk and the overdominance of exotic plant species.</p> <p>The site's ongoing erosion monitoring continued with more photographic evidence collected. This visual record is used to assess any further erosion and determine if intervention is needed.</p> <p>Extensive monitoring of plantings was conducted to assess damage, particularly from kangaroos. This work helps to identify areas needing supplementary planting and maintenance.</p>



Month / Year	Rehabilitation Activity
	Planting maintenance was carried out in the Southern Rehabilitation Corridor (SRC) by a contractor. This work is critical for the long-term success of the revegetation efforts in this area.



11. COMPLIANCE AND INCIDENTS

11.1 Summary

A summary of incidents and the status of compliance with relevant monitoring programs, management plans and the project approval are summarised in **Table 15**.

Table 15 – Compliance and Incident Summary

	Details	Action
Environmental Monitoring Programs		
ORRRC Environmental Monitoring	Exceedances of provisional LEMP limits were recorded for groundwater and surface water monitoring during the reporting period – refer Section 4.2 .	Continued monitoring
	An incident categorised as a fire occurred at the ORRRC Facility on 26 April 2025. The fire was located in the organic mulch stockpile and was extinguished.	Site PIRMP was enacted. Fire Brigade was contacted. No amendments to PIRMP were considered necessary.
	An incident categorised as ‘asbestos waste identification’ occurred at the ORRRC Facility on 16 September 2024. The material was wet down and transferred to an asbestos cell for burial.	Site PIRMP was enacted. No amendments to PIRMP were considered necessary.
ERRRC Environmental Monitoring	Exceedances of provisional LEMP limits were recorded for surface water and deposited dust – refer Section 4.3 .	Continued monitoring
	Two (2) incidents categorised as fires occurred at the ERRRC Facility on 19 August 2024 and 30 June 2025. The fires were contained with the affected material being spread, wet down and compacted.	Site PIRMP was enacted. Fire Brigade was contacted. No amendments to PIRMP were considered necessary.
Management Plans		
ORRRC and ERRRC Landfill Environmental Management Plans (LEMP) – Daily Checklist	No non-compliances or major actions resulted from daily checklists at ORRRC and ERRRC during the reporting period.	No action required
Apiculture Risk Management Plan (ARMP)	The Site Supervisor has checked and processed records in accordance with the ARMP. There have been no incidents during the reporting period.	No action required

	Details	Action
Approval		
Schedule 6 Condition 10(b) / Schedule 5 Condition 34	No vehicle movements non-compliances were recorded in the reporting period.	No action required
Complaints		
ORRRC	No complaints were received by Orange City Council regarding the operation of ORRRC during the annual reporting period.	No action required
ERRRC	No complaints were received by Orange City Council regarding the operation of ERRRC during the annual reporting period.	No action required

Table 16 – Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
Project Approval	Yes
Correspondence from Secretary, NSW Department of Planning and Environment, December 2017	Yes

Table 17 – Non-Compliances

Relevant Approval	Condition #	Condition description (summary)	Compliance Status	Comment	Where addressed in Annual Review
N/A	-	-	-	-	-



12. INDEPENDENT ENVIRONMENTAL AUDIT

An Independent Environmental Audit (IEA) was commenced in June 2024 and provided to Orange City Council (OCC) on 24 July 2024. OCC provided a response to the IEA (including an audit action plan) to the NSW Department of Planning and Environment (DPE) on 1 August 2024.

Non-conformances and opportunities for improvement identified in the 2024 IEA have been addressed by Council, as summarised in the 'Response action plan' provided in **Appendix I**.

Supporting evidence referenced in the audit action plan is available upon request.





APPENDIX A

JR RICHARDS COMPILED VEHICLE RECORDS



Date	Total Daily Movements
01/07/2024	22
02/07/2024	18
03/07/2024	18
04/07/2024	18
05/07/2024	20
08/07/2024	17
09/07/2024	24
10/07/2024	24
11/07/2024	14
12/07/2024	12
15/07/2024	22
16/07/2024	23
17/07/2024	30
18/07/2024	18
19/07/2024	15
22/07/2024	20
23/07/2024	22
24/07/2024	12
25/07/2024	22
26/07/2024	20
29/07/2024	14
30/07/2024	18
31/07/2024	16
01/07/2024	28
02/07/2024	28
05/07/2024	18
06/08/2024	16
07/08/2024	14
08/08/2024	15
09/08/2024	10
12/08/2024	28

Date	Total Daily Movements
13/08/2024	22
14/08/2024	16
15/08/2024	14
16/08/2024	16
19/08/2024	26
20/08/2024	10
21/08/2024	8
22/08/2024	18
23/08/2024	16
26/08/2024	18
27/08/2024	12
28/08/2024	14
29/08/2024	14
30/08/2024	10
02/09/2024	20
03/09/2024	14
04/09/2024	16
05/09/2024	12
06/09/2024	14
09/09/2024	22
10/09/2024	16
11/09/2024	20
12/09/2024	30
13/09/2024	12
16/09/2024	26
17/09/2024	20
18/09/2024	18
19/09/2024	22
20/09/2024	16
23/09/2024	16
24/09/2024	16



Date	Total Daily Movements
25/09/2024	17
26/09/2024	16
27/09/2024	21
30/09/2024	20
01/10/2024	20
02/10/2024	12
03/10/2024	10
04/10/2024	20
08/10/2024	16
09/10/2024	18
10/10/2024	22
11/10/2024	20
14/10/2024	20
15/10/2024	20
16/10/2024	22
17/10/2024	14
18/10/2024	14
21/10/2024	18
22/10/2024	20
23/10/2024	18
24/10/2024	18
25/10/2024	16
28/10/2024	14
29/10/2024	14
30/10/2024	19
31/10/2024	16
01/11/2024	16
04/11/2024	20
05/11/2024	30
06/11/2024	24
07/11/2024	12

Date	Total Daily Movements
08/11/2024	16
11/11/2024	28
12/11/2024	22
13/11/2024	24
14/11/2024	36
15/11/2024	36
16/11/2024	10
18/11/2024	26
19/11/2024	20
20/11/2024	12
21/11/2024	18
22/11/2024	20
25/11/2024	18
26/11/2024	6
27/11/2024	28
28/11/2024	24
29/11/2024	22
02/12/2024	14
03/12/2024	20
04/12/2024	24
05/12/2024	17
06/12/2024	16
09/12/2024	24
10/12/2024	20
11/12/2024	24
12/12/2024	12
13/12/2024	18
16/12/2024	20
17/12/2024	28
18/12/2024	24
19/12/2024	33



Date	Total Daily Movements
20/12/2024	22
23/12/2024	24
24/12/2024	17
27/12/2024	16
30/12/2024	14
31/12/2024	16
02/01/2025	14
03/01/2025	16
06/01/2025	17
07/01/2025	12
08/01/2025	30
09/01/2025	32
10/01/2025	24
13/01/2025	18
14/01/2025	22
15/01/2025	28
16/01/2025	16
17/01/2025	32
20/01/2025	22
21/01/2025	24
22/01/2025	22
23/01/2025	16
24/01/2025	20
28/01/2025	21
29/01/2025	23
30/01/2025	18
31/01/2025	16
03/02/2025	18
04/02/2025	24
05/02/2025	24
06/02/2025	34

Date	Total Daily Movements
07/02/2025	28
10/02/2025	18
11/02/2025	20
12/02/2025	16
13/02/2025	20
14/02/2025	16
17/02/2025	16
18/02/2025	18
19/02/2025	24
20/02/2025	24
21/02/2025	24
24/02/2025	22
25/02/2025	24
26/02/2025	28
27/02/2025	16
28/02/2025	20
01/03/2025	12
03/03/2025	22
04/03/2025	20
05/03/2025	30
06/03/2025	24
07/03/2025	23
10/03/2025	28
11/03/2025	20
12/03/2025	18
13/03/2025	10
14/03/2025	8
17/03/2025	20
18/03/2025	22
19/03/2025	19
20/03/2025	16



Date	Total Daily Movements
21/03/2025	14
24/03/2025	22
25/03/2025	21
26/03/2025	16
27/03/2025	18
28/03/2025	13
31/03/2025	14
01/04/2025	20
02/04/2025	18
03/04/2025	20
04/04/2025	13
07/04/2025	28
08/04/2025	21
09/04/2025	26
10/04/2025	18
11/04/2025	12
14/04/2025	16
15/04/2025	16
16/04/2025	20
17/04/2025	15
22/04/2025	26
23/04/2025	28
24/04/2025	24
28/04/2025	28
29/04/2025	30
30/04/2025	24
01/05/2025	20
02/05/2025	26
03/05/2025	13
05/05/2025	30
06/05/2025	24

Date	Total Daily Movements
07/05/2025	19
08/05/2025	16
09/05/2025	19
12/05/2025	20
13/05/2025	10
14/05/2025	29
15/05/2025	18
16/05/2025	15
19/05/2025	22
20/05/2025	28
21/05/2025	20
22/05/2025	22
23/05/2025	20
26/05/2025	32
27/05/2025	40
28/05/2025	18
29/05/2025	28
30/05/2025	22
02/06/2025	28
03/06/2025	26
04/06/2025	24
05/06/2025	20
06/06/2025	16
10/06/2025	32
11/06/2025	36
12/06/2025	20
13/06/2025	6
16/06/2025	28
17/06/2025	24
18/06/2025	20
19/06/2025	22



Date	Total Daily Movements
20/06/2025	18
23/06/2025	11
24/06/2025	14
25/06/2025	14
26/06/2025	10
27/06/2025	16
30/06/2025	8
01/07/2025	10
02/07/2025	10
03/07/2025	20
04/07/2025	20
07/07/2025	18
08/07/2025	30
09/07/2025	22
10/07/2025	12

Date	Total Daily Movements
11/07/2025	12
14/07/2025	14
15/07/2025	20
16/07/2025	20
17/07/2025	22
18/07/2025	16
21/07/2025	20
22/07/2025	16
23/07/2025	24
24/07/2025	30
25/07/2025	16
28/07/2025	31
29/07/2025	24
30/07/2025	18
31/07/2025	18





APPENDIX B

ENVIROCOM REPORTS





Orange City Council

FOGO Waste Education Plan 2024-2025: Annual Report

Final version

July 2025

Project Undertaken by



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In Cooperation with

Orange City Council

JR Richards & Sons

Disclaimer

The collection of information presented in this report was undertaken to the best level possible within the agreed timeframe and should not be solely relied upon for commercial purposes. The opinions, representations, statements or advice, expressed or implied in this report are provided in good faith.

Information, statements and recommendations implied or stated in this report are limited to the nature and scope of the project and do not constitute legal advice.

Project Team

Revision	Author	Reviewer	Approved	Date
Draft	Kayla Clanchy	Kathryn Sullivan	Kathryn Sullivan	July 2025
Final	Kayla Clanchy	Kathryn Sullivan	Wayne Davis (OCC)	July 2025

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1. Introduction

The 2024-2025 period was the 11th year of the Orange City Council Food Organics Garden Organics ('FOGO') Collection Contract with JR Richards & Sons. This Contract includes the weekly collection of green-lidded household FOGO bins (240L mobile garbage bins) from most residential households in the LGA. As part of the Collection Contract, a waste education component is funded to improve food waste diversion and sustainable waste outcomes for the Orange area.

A number of education initiatives were funded under the Waste Education Plan 2024-2025:

- Bin Inspection Program ('BIP') (Recycling, FOGO, General Waste streams)
 - BIP collateral feedback
- Beeswax wrap community workshops
- Community and School waste facility tours
- Pop-up Displays
 - Sustainable Living Expo 2024
- Media campaign
- Pub trivia round.

Not all education initiatives were delivered in the 2024-2025 financial year and there is the possibility of rolling this funding over to the next WEP 2025-2026.

The 2024-25 WEP budget and expenditures are summarised in Table 1. A full breakdown of budget expenditure is available in Appendix 4.

Table 1. Budget summary

WEP Year	Budget (exc. GST)
Carryover (over/underspend from previous year)	-\$2,350.89
2024/25 Budget Allocation	\$68,898.00
Available Budget 2024/25	\$66,547.11
2024/25 Budget Expenditure	\$66,936.61
2024/25 Budget rollover to 2025/26	-\$389.50

1.1. Key Focuses of the WEP 24/25

The WEP 24/25 was created to align with the goals and strategies of Orange City Council and NSW waste targets. Key strategic documents:

- *Orange Community Strategic Plan 2018-2028* and associated *Delivery/Operational Plans*
 - It is noted that the current Community Strategic Plan is set to the timeframe of 2022-2032
- *NSW Waste and Sustainable Materials Strategy 2041*.

These strategic documents will again be consulted when planning for the next WEP 25-26.

2. WEP 24/25 Initiatives

Under the WEP 24/25, EnviroCom delivered initiatives ranging from data collection to in-person education delivery, and subsequent coordination to achieve its outcomes as part of the OCC FOGO contract. Table 2 illustrates initiatives delivered in the WEP year to June 2025:

Table 2. WEP deliverables to June 2025.

Initiatives	Delivery status
Program Management, WEP Development, Budget & Reporting	✓
Bin Inspection Program – 1x domestic kerbside recycling, 2x FOGO, 1x GW	✓ (additional GW data collected alongside FOGO)
BIP collateral feedback	✓
Beeswax wrap community workshops (2x)	✓
Waste facility tours - Community (2x weekday, 2x weekend)	✓
Waste facility tours - School (4x bus not supplied by Envirocom, 7x bus supplied by Envirocom)	✓ (9 out of 11 allocations delivered)
Pop-up Displays (1x weekday, 3x weekend)	✓
Sustainable Living Expo 2024 PUD	✓
Media campaign	- (linked to OCC WDES contract for Simply Cups)
Pub trivia round	- (lack of quiz master interest)

2.1. Program Management, WEP Development, Budget & Reporting

The 2024/25 WEP was coordinated and delivered by Waste Educators and Environmental Consultants from EnviroCom's Orange as well as other EnviroCom personnel across Australia.

Monthly status reports, where relevant, were provided to the Manager of Waste Services and Technical Support at Orange City Council.

Reporting, budgeting, and the development of initiatives for the following WEP 25-26 were also conducted as part of this initiative.

2.2. Bin Inspection Program ('BIP')

This was the second consecutive year of the EnviroCom multi stream kerbside Bin Inspection Program (BIP) for Orange City Council. The focus of the program is to provide feedback to residents on their resource recovery practices for each of the three bin services in the LGA. The program also serves to demonstrate Council's continued focus on the correct and increased usage of kerbside recycling and FOGO services as well as reducing contamination.

A visual inspection of recycling, FOGO, and general waste bins from single-unit dwellings (SUDs) was conducted over five inspection weeks between September 2024 and April 2025. In addition to this, education resources in the form of tags and stickers were distributed, which provided constructive feedback to residents based on observed behaviours at the point of disposal.

Key findings:

Recycling bin inspections

Over the two inspection weeks (10 days – 1 week funded by the NetWaste JRC and 1 week funded by OCC), 1653 properties were inspected, with 1249 observed to have presented a recycling bin. This indicates an average recycling bin presentation rate of 76% for all recorded households.

Of all recycling bins inspected, 84% were assessed as having Nil or Low levels of observed contamination. Conversely, 5% of bins were considered to have High or Gross levels of observed contamination. The primary contaminant observed was soft plastics and it was identified in 23% of all bins inspected. The second most frequently observed contaminant was tissues/paper towel, constituting 8% of all bins inspected.

More than half (58%) of all presented bins were recorded with a volume between 80%-100% full. This indicates that more than half of Orange households may be limited by kerbside bin capacity if residents were to significantly expand the volume of material diverted through the recycling waste stream.

FOGO bin inspections

Over the two inspection weeks (10 days), 1497 properties were inspected, with 850 observed to have presented a FOGO bin. This indicates an average FOGO bin presentation rate of 57% for all recorded households.

Of all FOGO bins inspected, 89% were assessed as having Nil or Low levels of observed contamination. Conversely, 6% of bins were considered to have High or Gross levels of observed contamination. The primary contaminant observed was recyclables (excluding newspaper) and it was identified in 5.5% of all bins inspected. The second most frequently observed contaminant was soft plastics, constituting 4.5% of all bins inspected.

Under half (42%) of all presented bins were recorded with a volume between 80%-100% full. The average proportion of FOGO bins containing visible food waste was 28%, slightly lower than the 2023-24 bin inspection program finding of 32 percent.

General waste bin inspections

Over three inspection weeks (15 days), 2995 properties were inspected, with 2368 observed to have presented a general waste bin. This indicates an average GW bin presentation rate of 79% for all recorded households. Under half (43%) of all presented bins were recorded with a volume between 80%-100% full.

Across all areas, 18% of inspected general waste bins were observed to contain FOGO materials, and 49% of inspected bins were observed to contain recyclable items. In many cases, the

contents of general waste bins were unobservable due to opaque plastic bags and it is therefore likely that the actual percentage of recoverable material is much higher.

Key recommendations:

Recommendation 1

Shifting the focus of the Program from 'inspection' to 'engagement' will introduce more opportunities for kerbside conversations and qualitative data collection. Quantitative data should still be collected, but as a complement to more sociable program hours spent face-to-face with residents (i.e. later mornings).

Recommendation 2

Mixed packaging labels and generalised social media messages surrounding the acceptability of materials such as soft plastics and bagged material can be confusing in many households. It is recommended that bin inspections are continued to be used as an education tool.

Recommendation 3

The inspections have highlighted the most common contamination types. This information should be used to inform education efforts, including school outreach and community presentations and interactions. Based on the observations, the key recycling 'villains' continue to be soft plastics, followed by bagged material, tissues/paper towel, and non-recyclable plastics. Reducing volumes of cardboard in FOGO is a potentially new area of focus.

Recommendation 4

Continuing to include the distribution of key behavioural prompts such as 'No soft plastics or bagged materials [in recycling]' and 'no compostable bags [in FOGO]' stickers should be considered. Restarting the stickering program for 'Food goes in the green bin' during GW inspections is also recommended.

Recommendation 5

Increasing household uptake of FOGO and recycling (including non-kerbside recycling initiatives) through education delivered alongside potential changes to bin servicing frequency for general waste bins.

Refer to Final Bin Inspection Report (May 2025) for full results and discussion.

The above recommendations will be consulted in preparation for the next WEP 2025-26.

2.2.1. BIP collateral feedback

Over the years of conducting bin inspections in Orange, mixed feedback has been put forward by residents with regards to the tags/stickers employed under the program. Some residents are content with the information on the tags, and others find the stickers or tags to be confusing. In order to choose the best design for the BIP collateral which is the most effective way of promoting accurate waste education without resulting in hostile responses from residents, community feedback garnered during specialised pop-up displays. These specialised PUDs were delivered in August 2024 across 2 days, with surveys collected and results reported back to Council for consideration.

Core recommendations from this exercise were:

1. **Utilise a single tag design for each waste stream** to prevent households feeling singled out by “contamination” or “no contamination” graded tags. Move to universal 5-star rating tag system instead.
2. **‘No soft plastics’ bin sticker to be applied selectively** to those households only that have been observed actually putting soft plastic in recycling bins through the bin inspection program.
3. **Update commonly observed contaminants on big tags (icons)** to keep tags current with observed trends. Less reliance on Inspector filling in the ‘other’ free text section of tags.

All recommendations were actioned for subsequent bin inspections, from December 2024 onwards. See Appendix 1 of this Report for updated Bin Inspection collateral.

Refer to Final BIP Collateral Feedback Summary Report (October 2024) for full results and discussion.

2.3. Beeswax wraps community workshops

Direct community engagement through delivery of workshops is effective at influencing waste-related behaviours with the potential for key messaging to extend to the broader community (word of mouth and social diffusion). Community engagement in this format consisted of two beeswax wraps delivered back-to-back on a weekday during the Summer School holidays.

Each session ran for 1.5hrs on Tuesday 7 January at the ELF, with a morning session and an afternoon session. An introductory presentation ran for about 20 minutes at the start of each presentation, dubbed ‘The State of Waste’ and setting context for why beeswax wraps were an important alternative to plastic production and consumption. The audience was very engaged during the introduction and common questions about kerbside FOGO and recycling options were fielded by EnviroCom.

There was significant interest in the events through Eventbrite registrations. Approximately 10 people joined the morning session and 8 people joined the afternoon session, indicating a ‘drop off’ rate of about 70% (compared to the number of registrations).

The demographic mix of attendees was broad, with school children attending with parents and some elderly participants attending with home care workers. Everyone had the opportunity to make at least one beeswax wrap, and some made more than one as there were spare squares of fabric due to not all registrations turning up on the day.

Feedback given to EnviroCom and Orange Eco on the day was very positive:

“A fun, crafty kind of activity for the school holidays”

“I have always been curious about how beeswax wraps are made, this has been great”

“I turned up to make a wrap but I didn’t expect to be able to also get my recycling questions answered too!”

2.4. Waste Facility Tours

Waste facility tours of the Ophir Road and Euchareena Road Resource Recovery Centres were conducted throughout the contract year for the community and by-demand for local Schools.

Two weekend and two weekday community tours were conducted on the following dates:

- Tuesday 19 November 2024
- Saturday 11 January 2025
- Thursday 17 April 2025
- Saturday 14 June 2025

The weekday tours were organised with special interest community groups and the weekend tours were promoted by Council's Comms team through Orange City Council social media channels as well as the Orange City Life newspaper.

Written feedback from the community of these tours was overwhelmingly positive:

- *"The pacing, topics and amount of information and the sitting-walking ratio was just right! The tours are a very worthwhile initiative and hopefully you can entice more members of the community."*
- *"Very knowledgeable engaging explanations. Really enjoyed the visit to Molong facility as well as Orange."*
- *"The tour of the resource recovery centre and the FOGO efforts to reduce waste were both very informative. The tour to Molong was eye opener, scary and worrying to see so much waste but also grateful for council efforts to reduce and process waste."*
- *"An excellent & thoroughly enjoyable informative tour."*

At the start of each School term, a promotional flyer (Appendix 3) was sent to Schools in the LGA about Waste Facility Tour options. Bookings were invited alongside a request (if necessary) for EnviroCom to arrange for bus transfers.

There have been numerous School tours conducted in the contract year:

- 1x St Marys Catholic Primary School
- 4x James Sheahan Catholic High School
- 1x Orange High School
- 1x Kinross Wolaroi School
- 1x Orange East Public School
- 1x Anson St School

Feedback from Schools has been mostly positive as well, however, there have been some safety concerns raised. These safety concerns are echoed by EnviroCom staff, and it is proposed to rework the nature and scope of Waste Facility Tours moving forward for Schools and Community groups to ensure these tours remain feasible to deliver. Predominantly, it is proposed that large buses (e.g. 57-seater coach) and large groups (e.g. >25 participants) are no longer catered to. Further discussions on this topic with Council will inform next WEP deliverables.

2.5. Pop-up Displays ('PUDs')

Pop-up displays (PUDs) serve multiple purposes: they promote the range of waste services available in Orange, provide a social setting for interactions with residents on common and topical waste questions, visually signal that Orange City Council is serious about waste minimisation and diversion practices, and reinforce positive behaviours with the aid of props, factsheets, and giveaways.

The focus for PUDs in the 2024/25 contract period was waste and recycling with a focus on soft plastics. Toward the latter part of the contract year, focus was also given to safe battery disposal. Photos from various PUD set-ups are included in Appendix 2.

Four weekend PUDs and one weekday PUD was delivered in the contract year. This includes the Sustainable Living Expo PUD, which was a longer PUD delivered as part of Orange's Sustainable Living Expo in September. Table 3 summarises these PUDs and number of engagements:

Table 3. PUDs delivered

Date	Location	Comments	Approx. Engagements
Sun 22 September 2024	Sustainable Living Expo (Showgrounds)	6hr delivery. Included PowerPoint presentation	100
Sat 9 November 2024	Orange Farmers Market	4hr delivery	60
Tue 15 April 2025	North Orange Bunnings	4hr delivery with FRNSW in co-attendance	50
Sun 4 May 2025	Experience Orange (Botanic Gardens)	4hr delivery	70
Sat 10 May 2025	Orange Farmers Market	4hr delivery	80

Throughout the contract year, casual observations were made on PUD discussion topics and interactions. The most dominant conversation topics at PUDs related to questions about when soft plastics recycling would be 'coming back', what should be done with pizza boxes (recycling preferred over FOGO), and jar lids/other lids on or off on recyclables. It is noted that the type of people who approach PUDs are generally already quite engaged citizens when it comes to waste diversion efforts, so these 'common' questions may not be indicative of the general population's likely 'common' questions and educational needs when it comes to waste minimisation and diversion practices.

As PUDs and community engagement activities are also delivered under the NetWaste contract for Orange, re-prints for factsheets and other collateral are necessary. This has been mostly allocated funding under the new NetWaste WEP, however, additional printing costs may need to be budgeted for under the next OCC FOGO contract. Kitchen caddies (and associated stickers) and bin bombs as giveaways have been exceptionally popular and it is likely these items will need to be replenished as part of the next WEP year for the OCC FOGO contract.

2.6. Media campaign

The media campaign was not delivered in the 24-25 contract year. Funds will rollover to 25-26 WEP year.

Discussions in 2024 between EnviroCom and Council led to the outcome that the media campaign timing for the 24-25 contract year would be tied to the OCC WDES contract for Council's procurement of Simply Cup bins for its civic buildings (and potentially a BRAD Banish Bin, organised by OCC Sustainability Team). The purpose of this cross-contract coordination was for media campaign funding under the OCC FOGO contract to go towards publicity and promotion of the Simply Cup bins as funded under the Internal Waste Assessment of the OCC WDES contract.

There were significant manufacturer delays in the delivery of the Simply Cups bins to Council, and these bins were only received by Council in May 2025 (as opposed to an initial timeline of January 2025).

At a meeting with Council representatives on Tuesday 3 June 2025, it was agreed to delay publicity of the Simply Cups bins through a media campaign until such time that the Simply Cups bins could be successfully embedded in Council operations and use by Council staff in the main Council building.

2.7. Pub trivia round

Pub trivia can be a hugely popular social pastime in Orange. Introducing waste-related trivia to these events was thought to be potentially fertile ground to engage with younger adults on waste education (particularly during Plastic Free July).

On two separate occasions, engagement with the main quiz master for trivia events at several pubs in Orange was initiated. The first engagement in June/July 2024 was rebuffed by the quiz master. The second engagement initiated in April 2025 – offering a reduced amount of 'trivia interference' – was further rebuffed.

Quiz masters are anecdotally very protective of their formats and methods. With few quiz masters in the LGA, this avenue may not be suitable for future WEPs.

Consideration will be given to other social avenues for engaging with young adults in the LGA on waste education, as part of WEP planning for 2025-26.

3. FOGO WEP 2024-25 Budget Summary

Program Initiatives	Allocated budget	Spent to-date	Remaining
Project Coordination	\$5,497.54	\$5,497.54	\$0.00
Project coordination	\$4,133.73	\$4,133.73	\$0.00
Monthly emails	\$1,363.81	\$1,363.81	\$0.00
BIPs	\$16,697.12	\$16,697.12	\$0.00
Coordination	\$4,020.29	\$4,020.29	\$0.00
Delivery	\$9,840.14	\$9,840.14	\$0.00
Reporting	\$2,836.68	\$2,836.68	\$0.00
PUDs	\$5,974.87	\$5,974.87	\$0.00
Weekday	\$1,442.28	\$1,442.28	\$0.00
Weekend	\$4,532.59	\$4,532.59	\$0.00
Waste Facility Tour	\$25,349.44	\$19,096.23	\$6,253.20
Promo	\$367.66	\$275.74	\$91.91
Community - weekday	\$3,373.48	\$3,373.48	\$0.00
Community - weekend	\$4,041.10	\$4,041.10	\$0.00
School - bus supplied by EnviroCom	\$14,376.34	\$8,215.05	\$6,161.29
School - bus not supplied by EnviroCom	\$3,190.86	\$3,190.86	\$0.00
Media Campaign	\$3,419.44	\$0.00	\$3,419.44
Media Campaign	\$3,419.44	\$0.00	\$3,419.44
Sustainable Living Expo 2024	\$2,628.17	\$2,628.17	\$0.00
Sustainable Living Expo 2024	\$2,628.17	\$2,628.17	\$0.00
Beeswax Wrap Workshops	\$2,068.86	\$2,068.86	\$0.00
Beeswax Wrap Workshops	\$2,068.86	\$2,068.86	\$0.00
Pub Trivia Round	\$975.83	\$0.00	\$975.83
Pub Trivia Round	\$975.83	\$0.00	\$975.83
BIP Collateral Feedback	\$5,877.45	\$5,877.45	\$0.00
BIP Collateral Feedback	\$5,877.45	\$5,877.45	\$0.00
Additional items	\$0.00	\$9,096.36	-\$9,096.36
PS Program - Calare school delivery	\$0.00	\$9,096.36	-\$9,096.36
Total costed initiatives	\$68,488.72	\$66,936.61	\$1,552.11

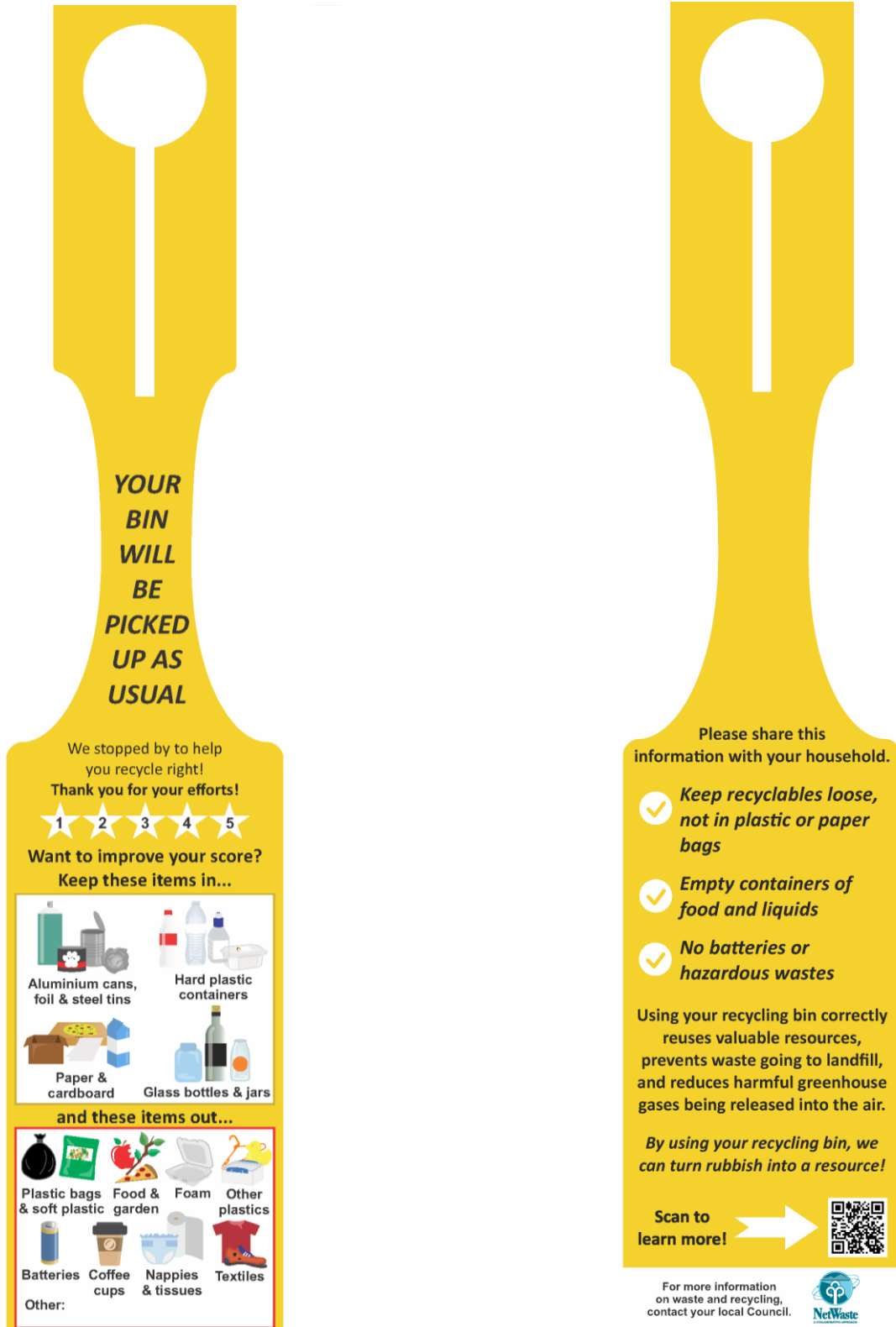
OCC FOGO BUDGET SUMMARY

July 2024 - June 2025

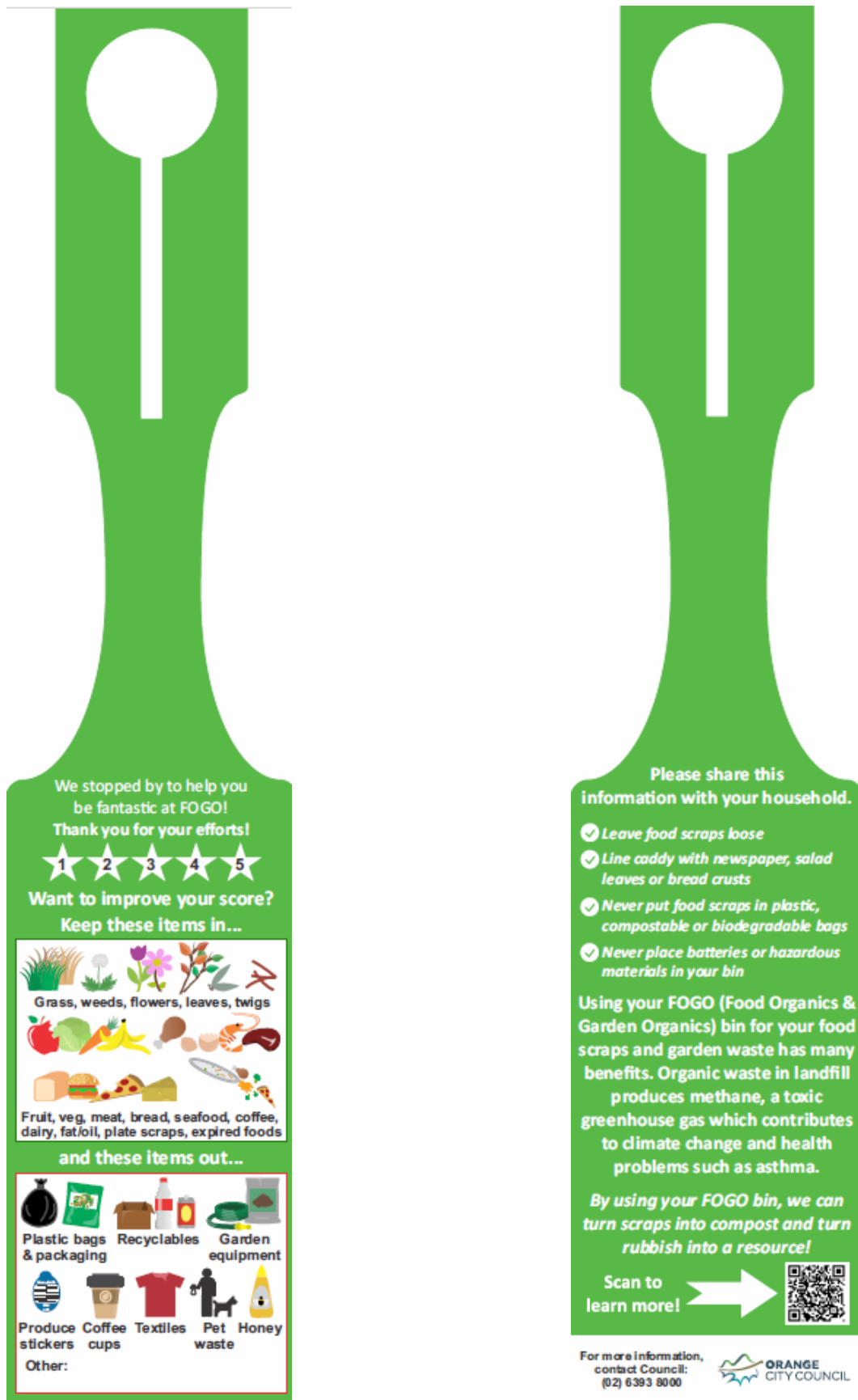
2024/25 Budget	\$68,898.00
Carryover (over/underspend from previous year)	-\$2,350.89
Available budget 2024/25	\$66,547.11
Spent to-date 2024/25	\$66,936.61
Total remaining	-\$389.50

Appendix 1: Bin Inspection Collateral

Bin Inspection Tag (front & back) – recycling



Bin Inspection Tag (front & back) – FOGO



Bin Inspection Soft Plastics sticker – recycling



Bin Inspection No Bags sticker – FOGO



Bin Inspection Food Goes in the Green Bin sticker – GW



Appendix 2: PUD events and engagements

PUD photos

North Orange Bunnings with FRNSW (weekday)



Orange City Centre shopping centre (weekday)



Experience Orange event (weekend)



Orange Farmers Market (weekend)



Appendix 3: Waste Facility Tour promotional flyer (schools)

Resource Recovery Centre Educational Tours



Orange City Council is pleased to offer **FREE Resource Recovery Centre Tours to local schools.**

Tour groups will visit the Ophir Road Resource Recovery Centre (ORRRC) in Orange and the Euchareena Road Resource Recovery Centre (ERRRC) in Molong. Students will have the opportunity to see and learn about the following:

- Where garbage, recycling and food and garden organics goes and how it is processed
- The Waste Baling Facility, Recycling Transfer Building, Recovery Shops and Community Recycling Centre at the ORRRC
- The landfill and organics composting facility at the ERRRC
- What other waste types can be dropped off at the ORRRC and how these materials are handled
- The economical and environmental importance of diverting waste from landfill

Tours run for approximately three (3) hours and are delivered by Orange City Council's environmental education consultants, EnviroCom Australia. Shorter tours can be arranged on request.

Tour groups are required to organise a bus to transport students to and from the RRCs and to move through the sites. Support is available to schools who do not have a private school bus. **Only one bus load can tour the site at a time.**

If you are interested in organising a tour, please return the completed Expression of Interest form to EnviroCom using the contact details below.



EXPRESSION OF INTEREST

School name:

Contact name:

Phone number:

Email:

Year group:

Total number of students:

Preferred date:

Please fill out form electronically,
save and return via email to
occwasteed@envirocom.com.au

EnviroCom Orange
Ph: 0400 407 685 or 0447 944 738
Email: occwasteed@envirocom.com.au





Orange City Council

*Waste Diversion Education Strategy: Annual Implementation
Plan 2024-2025*

Annual Report

Final version

July 2025

Project Undertaken by



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In Cooperation with

Orange City Council

Disclaimer

The collection of information presented in this report was undertaken to the best level possible within the agreed timeframe and should not be solely relied upon for commercial purposes. The opinions, representations, statements or advice, expressed or implied in this report are provided in good faith.

Information, statements and recommendations implied or stated in this report are limited to the nature and scope of the project and do not constitute legal advice.

Project Team

Revision	Author	Reviewer	Approved	Date
Draft	Kayla Clanchy	Kathryn Sullivan	Kathryn Sullivan	July 2025
Final	Kayla Clanchy	Kathryn Sullivan	Wayne Davis (OCC)	July 2025

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1. Introduction

The 2024-2025 Annual Implementation Plan was the 8th year of the *Orange City Council Waste Diversion Education Strategy* ('OCC WDES'). The Strategy was first developed for a 2016-2021 timeframe, with the key focus of the Strategy on waste diversion from landfill in the LGA.

Each Implementation Plan since the WDES inception has delivered several on-the-ground waste education initiatives. The education initiatives funded under the Implementation Plan 2024-2025 were:

- Internal Waste Assessment – Phase 3
- Cinema Advertising
- Schools Waste Education & Engagement Program ('SWEEP')
- Composting & Worm Farming community workshop.

Some components of the SWEEP Program and Internal Waste Assessment follow-up will be delivered in the next contract year.

The 2024-25 WEP budget and expenditures are summarised in Table 1. A full breakdown of budget expenditure is available in Appendix 1.

Table 1. Budget summary

WEP Year	Budget (exc. GST)
2024/25 Budget Allocation	\$30,000.00
2024/25 Budget Expenditure	\$25,893.64

1.1. Key Focuses of the Implementation Plan 24/25

The two key focuses of the WDES have traditionally been:

1. Increase and improve presentation of appropriate materials to diversion services
2. A sustained reduction in the total amount of waste generated.

These broad objectives are aligned with targets in the *NSW Waste and Sustainable Materials Strategy 2041* and the *Orange City Council Community Strategic Plan 2022-2032*.

The targeted improvement in materials diversion is being undertaken in a dynamic community environment that is subject to a number of waste education and behaviour change activities. These include programs and initiatives that are being undertaken concurrently via the Orange FOGO contract and the NetWaste Joint Recycling Contract.

2. Implementation Plan 24/25 deliverables

Under the Implementation Plan 24/25, EnviroCom delivered initiatives aimed at supplementing other education initiatives in the region. For instance, the School Waste Education and Engagement Program (SWEEP) supports and extends on other School education initiatives under the NetWaste JRC. Table 2 summarises initiatives delivered in the implementation year to June 2025:

Table 2. WEP deliverables to June 2025.

Initiatives	Delivery status
Program Management, Development, Budget & Reporting	✓
Internal Waste Assessment – Phase 3 (Simply Cups)	partial
Cinema advertising	✓
School Waste Education & Engagement Program	partial
Composting and worm farm community workshop	✓

2.1. Program Management, Development, Budget & Reporting

The 2024/25 WEP was coordinated and delivered by Waste Educators and Environmental Consultants from EnviroCom's Orange office as well as other EnviroCom personnel across Australia. Monthly status reports, where relevant, were provided to the Manager of Waste Services and Technical Support at Orange City Council.

Reporting, budgeting, and the development of initiatives for the following Implementation Plan 25-26 were also conducted as part of this initiative.

2.2. Internal Waste Assessment – Phase 3 (Simply Cups)

Under FOGO WEP 2020-21, EnviroCom undertook an internal waste assessment of 10 Council-owned venues. As a follow up to the Internal Waste Assessment, EnviroCom developed a Phase 2 recommendations and opportunities report under FOGO WEP 2021-22 for Council. These recommendations outlined a strategic approach to consulting, educating and engaging Council staff to promote positive behaviour change and improve opportunities for waste diversion and resource recovery. The final phase (Phase 3) of the Internal Waste Assessment is to undertake education and training once Council has implemented the recommended changes outlined in the report.

The full scope of deliverables under Phase 3 of the Internal Waste Assessment was not delivered in the contract year due to delays in the Simply Cups order. Phase 3 under the Implementation Plan for 2024-2025 outlined the following deliverables:

- Purchase of coffee cup collection bin and liaison with Simply Cups
- Liaison and consultation with Council's Sustainability Team and cleaning staff

- Development and delivery of staff training sessions (2x face-to-face sessions allocated in budget)
- Design and development of supporting collateral e.g. posters, signage.

Purchase of coffee cup collection bins

There were significant manufacturer delays in the delivery of the Simply Cups bins to Council, and these bins were only received by Council in May 2025 (as opposed to an initial timeline of January 2025).

Liaison and consultation with OCC Sustainability Team

Discussions in 2024 between EnviroCom and Council led to the outcome that the media campaign timing for the OCC FOGO 24-25 contract year would be tied to the OCC WDES contract for Council's procurement of Simply Cup bins for its civic buildings (and potentially a BRAD Banish Bin, organised by OCC Sustainability Team). The purpose of this cross-contract coordination was for media campaign funding under the OCC FOGO contract to go towards publicity and promotion of the Simply Cup bins as funded under the Internal Waste Assessment of this Implementation Plan 2024-2025.

At a meeting with Council representatives on Tuesday 3 June 2025, it was agreed to delay publicity of the Simply Cups bins through a media campaign until such time that the Simply Cups bins could be successfully embedded in Council operations and use by Council staff in the main Council building. At this meeting, it was also proposed to delay internal training of cleaning staff and Council staff until July 2025, to better align with OCC Sustainability Team's workflow.

Development and delivery of cleaner and staff training sessions

Presentation slides for cleaners have been developed for the above requirements in July 2025. Council has opted for video training packages (instead of face-to-face training) for use of the Simply Cups bins for Council office staff. Coordination of this process is ongoing with Council's Sustainability Team and Comms Team.

Design and development of posters and signage

It is understood that OCC Sustainability Team worked with EnviroCom staff in October 2024 to compile several posters and signage for the new 3x bin system. Simply Cups posters and signage has also been supplied by Simply Cups and customised by the Sustainability Team.

2.3. Cinema Advertising

To further expand the reach of waste education resources, particularly to demographics which may not follow Council's social media pages, cinema advertising was proposed to be utilised at the local Odeon 5 cinema in Orange.

One 15 second animated video has been developed and delivered to Star Media Advertising and played throughout the year at the Odeon 5 cinema in Orange. This video has been focussed on FOGO services.

A second animated video has not been developed and delivered under this Implementation Plan.

2.4. School Waste Education & Engagement Program ('SWEEP')

The pilot SWEEP program began with participation from Orange East Public School. The Coordination and development of resource templates includes promotional materials, registration forms, templates for audit data analysis, waste management plans, and completion certificates. These templates can then be applied to any future participants in the program.

A school waste audit was conducted by an EnviroCom educator with students and staff. The data from this report supported the creation of a waste management plan. This plan included baseline audit data, school waste goals, and the recommended path to achieve them. Associated supporting collateral, resources, and infrastructure are based off the school waste management plan.

After a chance to implement their waste initiatives, EnviroCom will return to conduct a follow-up waste audit. The school will be recognised for their waste efforts and a case study will be created for consideration of the future of the SWEEP program.

Components delivered:

- Development of resource templates
- Delivery of 1x audits and incursion

Due to extended leave of the contact teacher, EnviroCom was unable to complete the follow-up assessments in June. Resources for a worm farm refresh were purchased from the allocated budget for implementation during the follow-up visit to the school.

It is recommended that the SWEEP is funded in future Implementation Plans for more schools, to complement other education activities such as NetWaste Primary School Incursions and Resource Recovery Centre School Tours.

2.5. Composting and worm farm community workshop

Direct community engagement through delivery of workshops is effective at influencing waste-related behaviours with the potential for key messaging to extend to the broader community (word of mouth and social diffusion). Community engagement in this format consisted of one 1.5hr free weekend workshop.

This workshop was held on Saturday 21 June at the ELF. An Eventbrite page was created and shared with Council, including the Comms team, who promoted the event through various channels.

The workshop event page was also shared with some local community groups to distribute to their members and networks, such as the Rotary Club, ECCO, CWA, and the Youth Hub.

A compost bin, worm farm, and worms were given away as lucky door prizes at the workshop.

A total of 19 people attended the workshop out of 25 registrations. This is an exceptional conversion rate of registrations to attendance. This was most likely due to the promotion of free giveaways as part of the workshop.

The cohort in attendance was a mix of ages, from toddlers through to elderly residents. Verbal and written feedback from participants was very positive:

“The workshop was very clear and easy to follow. I left feeling inspired to start a compost bin!”

“Fabulous presenter, very knowledgeable, great content with lots of inspiring and practical advice for our household.”

Overall, this was a highly engaged group of residents who felt confident in asking a wide variety of waste-related questions. At the end of the workshop, some participants also enquired about when the next series of workshops would be available and wanting more details about Resource Recovery Centre tours.

3. Budget Summary

Program Initiatives	Allocated budget	Spent to-date	Remaining
IWA Phase 3	\$2,882.44	\$720.61	\$2,161.83
IWA Phase 3	\$2,882.44	\$720.61	\$2,161.83
Cinema Advertising	\$12,270.35	\$12,270.35	\$0.00
Cinema Advertising	\$12,270.35	\$12,270.35	\$0.00
SWEEP	\$11,535.72	\$6,219.84	\$5,315.88
Coordination	\$3,785.82	\$3,785.82	\$0.00
Collateral	\$2,942.44	\$232.62	\$2,709.82
Audit 1	\$2,201.40	\$2,201.40	\$0.00
Audit 2	\$1,756.59	\$0.00	\$1,756.59
Reporting	\$849.48	\$0.00	\$849.48
Composting & Worm Farming Workshop	\$1,432.10	\$1,432.10	\$0.00
Composting & Worm Farming Workshop	\$1,432.10	\$1,432.10	\$0.00
Project Coordination	\$2,629.26	\$2,629.26	\$0.00
Project Coordination	\$2,629.26	\$2,629.26	\$0.00
Additional items	\$2,621.49	\$2,621.49	\$0.00
Community workshop	\$896.49	\$896.49	\$0.00
Simply Cups Tube	\$1,725.00	\$1,725.00	\$0.00
	\$0.00	\$0.00	\$0.00
Total costed initiatives	\$33,371.36	\$25,893.64	\$7,477.71

Available budget 2024/25	\$30,000.00
Spent to-date 2024/25	\$25,893.64
Total remaining	\$4,106.36



FOGO Waste Education Plan 2024-25

Final version

June 2024



Education, Training, Research

Project Undertaken by



Education, Training, Research

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Acknowledgments

EnviroCom would like to thank the staff at Orange City Council and JR Richards & Sons for their valuable assistance and cooperation during the planning and delivery of projects under Waste Education Plan 2024-25.

Project Team

Project Coordinator: Jo Smith (Area Lead, NSW)

Project Team: Jo Smith (Area Lead, NSW)
Eliza Hurst (Environmental Consultant)
Laura Geurtsen (Environmental Consultant)

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1.0 Introduction

Orange City Council (Council) has commenced the eleventh year of the Food Organics and Garden Organics (FOGO) Collection Contract, managed through JR Richards & Sons (JRR). The contract includes the weekly collection of the 240-litre green lid household FOGO bin and is available to most residents within the Local Government Area (LGA). Council is part of the wider NetWaste group, which is working towards a regional approach with regard to waste minimisation and management throughout all member council areas.

The contract includes an educational component, which is developed and delivered by EnviroCom, following consultation with Council. The 2024-25 FOGO Waste Education Plan (FOGO WEP 2024-25) has been developed based on the following budget allocation:

Year	Budget (Exc. GST)
2023-24 overspend	\$59.50
2024-25 allocation	\$68,898.00
Total 2024-25 budget	\$68,838.50

Throughout the 2023-24 contract year, EnviroCom provided Council with updates and suggestions for future contract initiatives, and this combined with the understanding that several strong initiatives are to remain in the FOGO contract each year, culminated in the development of this WEP, to be delivered across the contract period (1st July 2024 – 30th June 2025) and are detailed further on the following pages.

- WEP 2024-25 project management and coordination
- Bin Inspection Program (three streams)
- Community and school waste facility tours
- Pop-up displays
- Media campaign
- Beeswax wrap workshops
- Sustainable Living Expo
- BIP collateral feedback
- Pub trivia round

All EnviroCom staff have undertaken the Australian Government's **COVID-19 Infection Control Training** eLearning course. As a team, EnviroCom employees continue to comply with all instructions given by Federal and State Government departments.

The 2024-25 WEP will be delivered by experienced environmental consultants from EnviroCom's Orange office.

1.1. Strategic links and key considerations

A number of key documents have informed the development of the 2024-25 Waste Education Plan for Council.

1.1.1. Orange Community Strategic Plan 2018 – 2028

The Community Strategic Plan 2018 - 2028 is Council's main planning document. It aims to outline the aspirations and needs of the Orange community together with expected levels of service, financial modelling, asset management and projected resources. The Community Strategic Plan is a 10-year plan to guide Council and community activity.

The Community Strategic Plan provides four key themes to guide the growth and development of the City: Live, Preserve, Prosper and Collaborate. Theme 2, Preserve, focuses on balancing the natural and built environment. The community wished to be more sustainable by promoting renewable energy, reducing waste and protecting natural resources.

- Objective 8: Managing our resources wisely
 - 8.1 Identify and deliver essential water, waste and sewer infrastructure to service the community into the future
 - 8.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community
 - 8.3 Promote the range of recycling services

1.1.2. Orange Delivery/Operational Plan 2019 – 2023

The four-year Delivery/Operational Plan details how the strategies outlined in the 10-year Orange Community Strategic Plan will be implemented over the next four years. For each strategic direction, the document sets out the objectives, strategies and tasks to be achieved over the term of the Plan.

Objective 8 of the Delivery/Operational Plan is managing our resources wisely.

- Strategy 8.3 promote the range of recycling services
 - 8.3.1 Deliver waste and recycling services:
 - Promote and offer a free annual household hazardous waste service at the ORRRC
 - Deliver education materials or services to Orange residents relating to the waste, recycling and organics contract provisions

1.1.3. NSW Waste and Sustainable Materials Strategy 2041

In June 2021, the NSW Department of Planning, Industry and Environment (DPIE) released the [NSW Waste and Sustainable Materials Strategy \(Stage 1 2021 - 2027\)](#) that updates the previous *Waste Avoidance and Resource Recovery Strategy 2014-2021*.

The Strategy supports NSW transition to a circular economy over the next 20 years with key reforms including the phasing out of problematic single-use plastic items, financial incentives for manufacturers and producers to design out problematic plastics, having government agencies prefer recycled content, mandating the separation of food and garden organics for households and selected businesses, and incentivising biogas generation from waste materials.

Strategy targets are to:

- reduce total waste generated by 10% per person by 2030

- have an 80% average recovery rate from all waste streams by 2030
- significantly increase the use of recycled content by governments and industry
- phase out problematic and unnecessary plastics by 2025
- halve the amount of organic waste sent to landfill by 2030
- reduce litter by 60% by 2030 and plastics litter by 30% by 2025
- triple the plastics recycling rate by 2030

The Strategy sets out three focus areas:

1. Meeting future infrastructure and service needs
2. Reducing carbon emissions through better waste and materials management
3. Building on our work to protect the environment and human health from waste pollution

To complement this strategy, the DPIE have also released two additional documents. The [NSW Plastics Action Plan](#) sets out how problematic plastics will be phased out, tackle litter from plastic items like cigarette butts, and support innovation and research. The [NSW Waste and Sustainable Materials Strategy: A guide to future infrastructure needs](#) sets out the investment pathway required for NSW to meet future demand for residual waste management and recycling.

2.0 WEP 2024-25 waste education initiatives

This section provides a detailed description of each of the waste education initiatives costed for delivery under FOGO WEP 2024-25, including: program overview; methodology; deliverables; requirements from Council; intended program outcomes; anticipated timeframes for delivery; and pricing.

A full budget summary is provided in section 3.0.

2.1. Program Management, WEP Development & Reporting

The 2024-25 WEP will be coordinated and delivered by experienced Environmental Consultants from EnviroCom's Orange office. Regular contact between EnviroCom and Council, via phone and email, will be maintained to allow for frequent correspondence regarding the Waste Education Program and for updates on progress in the development and delivery of each of the proposed initiatives

EnviroCom will ensure the timely delivery of all initiatives to a high standard throughout the 2024-25 contract year.

2.1.1. Methodology

Development and planning

FOGO WEP 2024-25 will be developed by EnviroCom, in consultation with Council, with initiatives delivered by the Project Coordinator and EnviroCom team.

Delivery

The Project Coordinator will plan, prepare and deliver monthly reports between July 2024 and May 2025 outlining initiative progress and budget updates, provided in email format. JRR will also be included in all updates and correspondence. EnviroCom's Orange-based staff will be available to liaise with Council on projects as required and will request approval from Council on all project initiatives.

Allowance has been made for a mid-year progress update meeting and a WEP 2025-26 contract rollover planning meeting with Council (mid-May 2025). It will be EnviroCom's intention to submit the draft 2025-26 WEP for Council approval prior to 1st July 2025. This will ensure that the 2025-26 initiatives can be planned and implemented from the start of the new contract period, and that all programs can be delivered in a timely manner across 12 months (July 2025 – June 2026).

Reporting

In addition to the monthly reports, a WEP 2024-25 Annual Report will be developed and provided to Council at the end of the contract period (late June 2025).

2.1.2. Deliverables

- Monthly reporting – ongoing as from July 2024
- Mid-year progress update meeting
- 2025-26 WEP planning meeting attendance – ~May 2025
- 2025-26 WEP planning and budget development (draft for Council approval) – June 2025
- 2024-25 WEP annual report – June 2025

2.1.3. Requirements from Council

- Approval (or comment and then final approval) of WEP 2024-25
- Ongoing liaison, feedback and approvals for initiative delivery elements
- Discussion and comment on draft WEP 2025-26

2.1.4. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Program development, WEP development & reporting	Monthly reporting – ongoing as from July 24 Mid-year progress update meeting 2025-26 WEP planning meeting attendance – May 25 2025-26 WEP planning and budget development (draft for Council approval) – June 25 2024-25 WEP annual report – June 25	\$5,497.54
Total		\$5,497.54

2.2. Bin Inspection Program: Recycling, FOGO & General Waste Streams

Results from the 2021 kerbside waste segregation audit indicated that resource loss – recyclable and organic materials presented to the general waste stream in Orange – was 57%. The largest contributor to this stream was food waste, representing 17% of all resource loss. Based on the 2022 kerbside audits, the contamination rate for the FOGO stream was very low, at 1.47%. The most common contaminant present in the stream was bagged/encased food.

The most recent Bin Inspection Program (BIP) in Orange showed that the majority (78%) of inspected recycling bins contained three or fewer contaminants, and 93% of inspected FOGO bins contained three or fewer contaminants. In the recycling stream, the most common contaminants were soft plastics (30%) and non-recyclable plastic (10%). In the FOGO stream, contaminants mainly took the form of soft plastics (31%) and bagged organic materials (22%).

Based on the success of BIPs in Orange in previous years, another two rounds of BIPs targeting the kerbside recycling, two rounds of FOGO and general waste BIPs (inspected concurrently) and one round of general waste inspections will be undertaken during the 2024-25 contract period. The BIPs aim to identify user waste generation and disposal behaviours and encourage the correct use of recycling, FOGO and general waste bins through the provision of direct feedback to residents via educational collateral. Qualitative data collected on waste disposal behaviours during these inspections will enable Orange City Council to identify the contaminants most commonly and consistently being presented in recycling and FOGO bins, and fullness of general waste bins. This data can be used to inform the future development of targeted community education and education campaigns and the potential for changing to a fortnightly general waste collection.

2.2.1. Methodology

Development and planning

EnviroCom will liaise with the Contractor (JRR) and Council to identify target areas for the visual observation of approximately 100-120 recycling, 100-120 FOGO and 150-170 general waste bins per inspection day. For the recycling and FOGO streams, bin volumes and contamination incidences will be recorded. Due to the bagged nature of most waste in the general waste stream, only presentation rates

and bin volumes will be recorded, although any obvious evidence of resource loss will also be noted.

The recycling stream followed by the FOGO and general waste streams (inspected concurrently) will be inspected twice in different areas across five consecutive days, followed by a singular round of general waste inspections (five delivery weeks in total). These will be conducted in approximately October 2024 and February 2025. As bin inspections will be carried out under the NetWaste WEP 2024-25, one round of recycling inspections will come from the NetWaste budget, with the remaining four rounds covered under the OCC FOGO WEP 2024-25.

Once suitable areas/streets are confirmed with the contractor, a bin inspection schedule will be drafted and provided to Council and the contractor for approval. Streets will be selected based on whether they have been visited previously, in order to expand the reach of the program, assisting in building a profile of individual household's waste generation and disposal behaviour across all three waste streams.

Educational bin tags have been used previously to promote desired behaviours: a 'Well done' bin tag (for no/negligible visible contamination) and an 'Oops! There's something in here that doesn't belong!' bin tag. The reverse of the tags will allow individual households to be notified about corrective behaviours i.e. highlighting observed contaminants and reiterating unacceptable materials or thanked when observed to be recycling correctly.

In addition to the performance feedback bin tags, EnviroCom will continue to employ the use of a 'no soft plastics' and 'no compostable or plastic bags' A6-sized sticker that is placed on all inspected recycling and FOGO bins respectively, to act as an ongoing point-of-source prompt to reduce the presentation of bagged recyclables and organics. A sticker for the general waste stream will also be employed, to promote the disposal of food waste in the green lid bin rather than the red lid bin. These stickers aim to encourage and sustain correct disposal behaviours.

Based on feedback received during the BIP Collateral Feedback project (section 2.8), the current design of the tags and stickers may be updated to ensure maximum cooperation from the community.

The tags and stickers will be printed by an external printing company. Budget has been allocated to cover the printing costs.

A Frequently Asked Questions (FAQs) document will be revised and provided to Council and JRR to assist with any customer service enquiries during the inspection periods.

Delivery

EnviroCom will send reminder emails, the week before delivery, to the JRR Contract Manager, as well as each day prior to inspections (this aims to ensure that bins in the inspection areas are not serviced until after the inspection has taken place). A reminder will also be sent to Council regarding the briefing of the customer service team.

The bin inspections will take place between approximately 6:00am and 8:00am over five consecutive days (unless advised otherwise by Council). Data will be recorded at each bin on a specifically designed mobile phone application. Information collected will include:

- Street and house number
- Longitude/latitude
- Bin fullness
- Contamination rating (recycling and FOGO)
- Contaminants observed (recycling and FOGO)
- Resource loss (general waste)
- Image (if required)
- Comments (if required)

Reporting

This real-time data will be uploaded to a web-based database that is then exported in Excel format post-inspection. A full report will be developed and provided to Council within ten business days of BIP completion. The information gathered in the inspections will contribute to the current BIP dataset for Council, and also be used to inform Council's capacity to transition to a fortnightly general waste collection. This snapshot assessment and the data collected for each waste stream in selected households will help to build a picture of the household's waste generation and disposal behaviours.

2.2.2. Deliverables

- Bin tag printing (for FOGO and recycling streams)
- Recycling bin sticker printing
- FOGO bin sticker printing
- Development of BIP schedules
- Visual observation of approximately 100-120 recycling bins, 100-120 FOGO and 150-170 general waste bins per inspection day by an experienced inspector (4 delivery weeks allocated in total)
- Final report at the conclusion of all BIPs and summary included in annual report

2.2.3. Requirements from Council/JRR

- Identification of target areas and streets
- Approval of BIP schedules
- Notification to any relevant Council members and customer service staff
- Notification of JRR customer service staff
- Distribution of the FAQs document to customer service staff

2.2.4. Intended program outcomes

Kerbside BIPs aim to identify user behaviours and encourage the correct use of kerbside bins through the provision of direct feedback to residents on their disposal behaviours at a household level. The provision of bin stickers and tags act as a 'point of source' prompt, serving as an ongoing reminder to residents to review and modify their waste disposal behaviours if needed. The presence of bin stickers and tags can also act as a discussion point between neighbours (known as social diffusion), effectively acting as a motivator for behaviour change so that, over time, modified and improved resource recovery behaviours become the social norm.

2.2.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Bin Inspection Program – coordination, scheduling and collateral development/printing (bin tags and stickers)	Aug 2024	\$4,020.29
Bin Inspection Program – delivery	Ongoing, beginning Sep 2024	\$9,840.14
Bin Inspection Program – reporting	May 2025	\$2,836.68
Total		\$16,697.12

2.3. Beeswax wrap workshops

Community workshops, in various forms, have been a staple of the FOGO WEP since 2016. Due to high uptake from the community in previous workshops, it is proposed that EnviroCom continues to deliver beeswax wrap making workshops across the course of the contract year.

2.3.1. Methodology

Promotion & Development

EnviroCom will deliver hands-on workshops to the community, providing participants with an opportunity to get creative and make their own beeswax wraps, while also asking questions and sharing suggestions and ideas throughout the presentation.

The workshops will be promoted via Council's channels, and the event organised by EnviroCom using Eventbrite.

Delivery

EnviroCom will manage workshop bookings and enquiries and send a reminder email within a week of workshop delivery. Workshops will be approximately one and a half hours in duration, inclusive of a brief waste and recycling presentation section at the beginning of the presentation. To maximise efficiency and to provide value for Council, a morning and afternoon workshop will be delivered on the same day.

Workshop Evaluation & Reporting

Attendees will be encouraged to fill out a short evaluation survey at the end of the session for feedback and evaluation purposes. The workshop evaluation data will be analysed and provided in the WEP 2024-25 final report.

2.3.2. Deliverables

- Liaison with beeswax wrap makers, Orange Eco
- Liaison with Council staff to book ELF
- Management of workshop attendees via Eventbrite
- Update workshop PowerPoint content and evaluation form
- Delivery of 1x day consisting of a morning and afternoon face-to-face workshop, during school holidays
- Workshop summary provided in final report

2.3.3. Requirements from Council

- Approval of all content associated with delivery/materials (as required)

2.3.4. Intended program outcomes

Community workshop attendees are provided with the knowledge and inspiration to consider practical ways to avoid and reduce waste generation, particularly through the use of beeswax wraps, with the potential for key messaging to extend to the broader community (word of mouth and social diffusion). Evaluation forms provide a form of monitoring and assessment with feedback being used to shape future programs.

2.3.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Beeswax wrap workshop delivery (x2 sessions in one day)	Summer school holidays	\$2,068.86
Total		\$2,068.86

2.4. Community and school waste facility tours

Four community waste facility tours (two weekday and two weekend) will be included under this year’s WEP budget. Due to the demand for tours from local schools, allocation will continue to be provided for primary and high school tours.

2.4.1. Methodology

Development and planning

EnviroCom will liaise with Council to confirm the community tour delivery dates. An Eventbrite page will be developed for each tour to facilitate online bookings and this page will be promoted via Council’s Facebook page. The tours will be promoted using the same content as in previous years (date changes only).

Delivery

A reminder email will be sent to all registered attendees within the same week of the delivery date to support maximum attendance, as well as a confirmation text message 48 hours prior to the tour date.

Each tour will run for approximately three hours, providing an overview of the operations and management of both sites, with attendees given a chance to see the following:

- The garbage baler, FOGO shredder and kerbside recycling transfer building at the ORRRC
- The self-haul drop-off point at the ORRRC
- The composting facility and landfill at the ERRRC
- The environmental management strategies at both sites

The allocated budget includes the delivery of two weekday tours to the ORRRC and ERRRC facilities (anticipated to align with the school holidays), and two weekend tours. Additional facility tours will be available to school groups, with the provision of a bus aimed at encouraging attendance by schools that might otherwise not have had the opportunity. An allocation for bus hire for both school and community tours has been included in the costings. The waste facility tours will be promoted to primary and high schools via an EoI form that will be emailed to schools and contact teachers at the start of Term 3 2024 and Term 1 2025.

Community tour attendees will be provided with a range of educational materials to take home, including the ORRRC map flyer; waste-themed fridge magnet (developed

under WEP 2018-19); and OCC A-Z waste guide flyer. The school group contact person will also be sent the primary school or high school (as appropriate) tour worksheet and answer sheet, developed under FOGO WEP 2023-24, for distribution to the class after the tour.

Reporting

Following each tour, community tour attendees and teachers will be sent a link to complete a feedback survey via SurveyMonkey.

The number of attendees, final delivery details, evaluation results and notable comments will be included in the corresponding monthly report, as well as provided in the FOGO WEP 2024-25 final report.

2.4.2. Deliverables

- Eventbrite promotion/bookings page development
- Review/amend and distribute Eol form to schools
- Four community waste facility tours delivered throughout contract year (two weekday, two weekend)
- School waste facility tours delivered upon request

2.4.3. Requirements from Council

- Liaison between EnviroCom and Council regarding delivery dates
- Approval of promotional materials
- Council Comms team to advertise tours on social media and website (promotional material provided by EnviroCom via email)

2.4.4. Intended program outcomes

Waste facility tours are both educational and effective at influencing positive waste-related behaviours in the community. They also create an opportunity for new community members to join the pledge network. Evaluation forms provide a form of monitoring and assessment with feedback being used to shape future programs.

2.4.5. Timing and pricing

Element	Timeframe	Cost Per Unit	Units budgeted	Allocated Budget (exc. GST)
Community weekday tour	School holidays 2024-25	\$1,686.74	2	\$3,373.48
Community weekend tour	Ongoing	\$2,020.55	2	\$4,041.10
School tour promo	Term 3 2024 and Term 1 2025	\$367.66	1	\$367.66
School tour – own bus	Ongoing, as per bookings	\$797.72	4	\$3,190.86
School tour – bus provided		\$2,053.76	7	\$14,376.34
Total				\$25,349.44

2.5. Pop-up Displays

Pop-up Displays (PUDs) provide an opportunity for residents to interact with informed education personnel and display information to clarify issues and have positive behaviours reinforced.

It is suggested that four PUDs are delivered during the 2024-25 contract period (one weekday and three weekends), focusing on correct usage of the FOGO and recycling bin services in Orange and highlighting the results from the recent bin inspections.

Note: The current pricing for PUDs does not include any allocation for the development or printing of new resources.

2.5.1. Methodology

Development and planning

EnviroCom, in consultation with Council, will coordinate the delivery of PUDs in the Orange LGA during the 2024-25 contract year. Pricing currently allows for the attendance of one EnviroCom consultant across a four-hour face-to-face period for each event; however, this can be tailored to meet the needs of specific events and pricing adjusted accordingly.

EnviroCom will aim to schedule the weekday PUD during school holiday periods where possible, to increase the likelihood of engaging resident audiences similar to weekends and provide the best value for money for Council. The PUDs will be held at popular venues in the Orange LGA. Weekday PUDs have traditionally been delivered at local shopping centres, while weekend PUDs are more commonly delivered at Farmers Markets and local fairs.

Delivery

The displays will include key OCC collateral and resources such as the A-Z waste guide, factsheets, ORRRC flyer, CRC postcard, FOGO flyer, soft plastics flyer, recycling flyer, bin magnet, caddies, Bin Bombs, and battery boxes, among any other Orange-specific collateral. Extra PUDs in the Orange LGA are also planned for delivery under NetWaste WEP 2024-25.

Reporting

EnviroCom will aim to record stall visitation through the use of a people counter, and the number of stall visitors engaged, along with any notable comments, will be included in the corresponding monthly report, as well as provided in the 2024-25 annual report.

2.5.2. Deliverables

- Delivery of four PUDs to increase resident knowledge and understanding of Council's kerbside service and facilities and the importance of correct source separation and waste disposal

2.5.3. Requirements from Council

- Approval of PUD locations and schedule

2.5.4. Intended project outcomes

Residents are supported to improve household waste management and their waste generation and disposal behaviours by interacting with experienced consultants to clarify waste-related enquiries and obtain new information.

2.5.5. Timing and pricing

Element	Timeframe	Cost per unit	Units budgeted	Allocated Budget (exc. GST)
Weekday PUD	Ongoing throughout year	\$1,442.28	1	\$1,442.28
Weekend PUD – Orange Farmers Market		\$1,510.86	3	\$4,532.59
			Total	\$5,974.87

2.6. Media campaign

2.6.1. Methodology

Development and planning

EnviroCom will design and undertake a targeted community education and engagement media campaign, with the topic to be decided in conjunction with Council. It is EnviroCom's intention to share information with the Orange community to raise awareness and understanding of key waste topics, as reiterating desired waste generation and disposal behaviours through a range of media avenues is an effective approach.

Delivery

In order to appeal to a broad community demographic, a range of mediums and media approaches are proposed. The allocated budget includes the development of a Communication (Comms) Plan with consideration given to the utilisation of the following media elements:

- Media release
- Social media posts
- Council podcast
- Pop-up waste education videos

EnviroCom will liaise with Council's Waste and Communications departments regarding the format, scheduling and release/publication of media-based elements which will be included in the Comms Plan. All content will be provided to Council for approval with final versions provided in print-ready PDF, JPEG or MP4 format.

Reporting

The official release dates of various campaign elements will be included in the corresponding monthly report, as well as provided in a summary table in the FOGO WEP 2024-25 final report.

2.6.2. Deliverables

- Development of a Comms Plan outlining topics and key content for each media strand
- Media release development (x1)
- Social media posts and blurbs (x4)
- Council podcast (x1)
- Pop-up waste education videos (x1)

2.6.3. Requirements from Council

- Approval/comment on Comms Plan
- Approval of all artwork and content
- Release and distribution of materials according to Comms Plan schedule

2.6.4. Intended project outcomes

Targeted and relevant educational messages addressing a specific issue or topic of interest supports improved user behaviours. Reiterated messages regarding the correct use of kerbside bins and Council waste facilities will encourage preferred waste generation and disposal behaviours to become the social norm, helping to reduce contamination, enhance resource recovery and divert waste from landfill.

2.6.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Develop Comms plan and associated media elements	November 2024	\$3,419.44
Total		\$3,419.44

2.7. Sustainable Living Expo 2024

Following the success of the Sustainable Living Expo 2022 and 2023, and requests for future involvement, provision has been made within this year's WEP for participation in the Expo for 2024.

2.7.1. Methodology

Development and planning

EnviroCom will liaise with the event organisers (Rotary Club of Orange) of the Sustainable Living Expo 2024 in the lead-up to the event, and will deliver a PUD and presentation at the Expo. Allowance has been made for an EnviroCom consultant to attend for the event's duration from 8am – 3pm.

Delivery

At the Sustainable Living Expo in 2023, EnviroCom held a stall (similar to a regular PUD) during the event and facilitated a waste sorting game/competition. If event organisers are happy to do the same, this can be repeated in 2024, or a similar workshop developed. EnviroCom will bring all stall equipment and props in preparation for delivery.

Reporting

Details of event support provided by EnviroCom will be included in the corresponding monthly report, as well as provided in the WDES WEP 2024-25 final report.

2.7.2. Deliverables

- Liaison with event organisers
- Delivery of PUD and presentation by EnviroCom, providing event attendees with an opportunity to obtain information on correct waste disposal
- Provision of summary report to Council

2.7.3. Requirements from Council

- Approval of event support/participation details

2.7.4. Intended project outcomes

The continual provision of high-quality waste education to the community, further highlighted by the waste sorting game, will assist in reducing recycling and FOGO stream contamination throughout the event, and by taking home this knowledge, residents will also be encouraged to reduce contamination in their kerbside bins.

2.7.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Delivery of PUD and presentation at Sustainable Living Expo 2024	Sunday 22 nd September 2024	\$2,628.17
Total		\$2,628.17

2.8. BIP collateral feedback

Over the years of conducting bin inspections in Orange, mixed feedback has been put forward by residents with regards to the tags/stickers employed under the program. Some residents are content with the information on the tags, and other find the stickers to be confusing. In order to choose the best design for the BIP collateral which is the most effective way of promoting accurate waste education without resulting in hostile responses from residents, it is suggested that feedback in the form of specialised pop-up displays and surveys is requested of the community.

2.8.1. Methodology

Development and planning

In conjunction with Council, EnviroCom will develop survey questions and focus questions which ask respondents to rate and comment on the tags and stickers currently used for bin inspections (all three streams). The feedback will aim to find out useful information such as the positive/negative connotations provided by the tag, and the clarity of the information on the tag and sticker.

A flyer containing information about the feedback desired by residents, inclusive of a QR code linking to the survey questions, will be designed by EnviroCom and approved by Council. This will be handed out at pop-up displays, which will be run consecutively on a Friday and Saturday at one of Orange's main shopping centres.

Delivery

The pop-up displays will be booked by EnviroCom and ideally held at Orange City Centre or similar large shopping centre in Orange. Each display will be staffed from 10am-2pm (peak traffic period) across a two-day period on a Friday and Saturday. This will allow for a wide variety of the community, who may or may not have had their bins inspected before, to take the survey and to have their feedback.

Each PUD would be staffed by two EnviroCom consultants, in order to maximise the reach of the display and increase the number of residents taking the survey during the four-hour interval when the displays will be staffed. Feedback and survey results gathered from each resident will be collated into a document which will guide the redesign of the current tags and stickers employed across the Orange LGA.

Reporting

EnviroCom would report back to Council with survey questions, the final document of community feedback and the resulting new tag/sticker designs. The new tag and sticker design could also be tailored for NetWaste, should there be budget available to incorporate the changes.

2.8.2. Deliverables

- Coordination of pop-up displays and venue hire
- Delivery of pop-up displays in Orange

- Redesign of current BIP stickers and tags (all streams)

2.8.3. Requirements from Council

- Approval of survey questions and pop-up display locations
- Approval of new BIP collateral designs

2.8.4. Intended project outcomes

Updating regularly-used BIP collateral to promote effective understanding of waste disposal will add value to the current and long-running BIP program in Orange. Hearing residents voice their opinions on the collateral and taking on board feedback will ensure that the collateral is fit-for-purpose and will receive positive feedback from residents when affixed to inspected bin lids. Such collateral is also less likely to make residents presenting contaminated bins feel singled out, and instead, will help them to feel empowered to make changes to their disposal habits.

2.8.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
<ul style="list-style-type: none"> • Coordination and delivery of pop-up displays • Redesign of BIP collateral 	August 2024	\$5,877.45
Total		\$5,877.45

2.9. Pub trivia round

To highlight the importance of correct waste disposal, and to celebrate annual events such as Plastic Free July and National Recycling Week, it is proposed that EnviroCom facilitates a round of waste-related trivia questions to be delivered during July (Plastic Free July) and November (National Recycling Week) at local pub trivia nights. Two rounds could be run during July, and one round during November.

2.9.1. Methodology

EnviroCom will develop 13 questions (one round plus one bonus question) per trivia night with a waste theme, which will be read as part of the weekly pub trivia night run by quizmaster Neil Gill (Wednesdays at the Canobolas Hotel, Thursdays at Waratahs Orange). The questions will be approved by Council and sent to Neil a week in advance of the first trivia night. If required, an EnviroCom staff member could do a brief talk about the relevant waste event prior to the commencement of the round on the night.

Following the end of the round, answers will be provided to trivia attendees as per usual, but EnviroCom will also note the percentage of teams which correctly answered each waste-related question, to understand any gaps in waste education which may need to be addressed.

2.9.2. Deliverables

- Development of trivia questions
- Liaison with quizmaster Neil Gill
- Development of summary report including question success rate

2.9.3. Requirements from Council

- Approval of trivia questions

2.9.4. Intended project outcomes

A target audience often overlooked and difficult to reach with regards to waste education is the 18-40 age bracket. As school and early learning centre waste incursions reach the younger demographic, and those over 50 are more commonly found to be following Council social media/websites to source accurate waste information, there is a large proportion of the community who do not receive this information. Instead, this demographic can be targeted through trivia nights to learn more about important waste events and disposal methods, and directed to Council's website or social media for continued waste education.

2.9.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
<ul style="list-style-type: none">• Development of trivia questions (3x rounds)• Liaison with quizmaster for facilitating questions	July 2024 and November 2024	\$975.83
Total		\$975.83

3.0 WEP 2024-25 budget summary

Budget expenditure by initiative as described in WEP 2024-25

Initiative	Details	Cost (ex. GST)
Project Coordination		
WEP management, coordination, Council liaison and reporting (monthly and annual)	<ul style="list-style-type: none"> Monthly reporting – ongoing as from July 2024 Mid-year progress update meeting 2025-26 WEP planning meeting attendance – May 2025 2025-26 WEP planning and budget development – June 2025 2024-25 WEP annual report – June 2025 	\$5,497.54
Bin Inspection Program		
Coordination & collateral	<ul style="list-style-type: none"> Ordering of BIP collateral Mapping inspection areas Scheduling inspections Liaison with JRR and Council 	\$4,020.29
Delivery	<ul style="list-style-type: none"> Delivery of 1x recycling, 2x FOGO & general waste, and 1x general waste inspection weeks (5 days each) 	\$9,840.14
Reporting	<ul style="list-style-type: none"> Collation of all BIP data Analysis of data and provision of report to Council 	\$2,836.68
Beeswax Wrap Workshops		
Beeswax wrap workshops	<ul style="list-style-type: none"> Liaison with Orange Eco Update of PowerPoint presentation Delivery of workshops during work hours 	\$2,068.86
Waste Facility Tours		
Tour promo	<ul style="list-style-type: none"> Development of promotion email, sent to Orange primary schools in Term 3 and Term 1 	367.66
Community tour – weekday x2	<ul style="list-style-type: none"> Promotion of tour via Council's social media Coordination of booking requests via Eventbrite Delivery of tour during work hours on a weekday Receiving evaluation feedback 	\$3,373.48
Community tour – weekend x2	<ul style="list-style-type: none"> Promotion of tour via Council's social media Coordination of booking requests via Eventbrite Delivery of tour on a weekend Receiving evaluation feedback 	\$4,041.10
School tour – own bus x4	<ul style="list-style-type: none"> Liaison with school Delivery of tour during school hours on a weekday Receiving evaluation feedback 	\$3,190.86
School tour – bus provided x7	<ul style="list-style-type: none"> Liaison with school and bus company Delivery of tour during school hours on 	\$14,376.34

	a weekday • Receiving evaluation feedback	
Pop-up Displays		
PUD – weekday x1	<ul style="list-style-type: none"> • Development of promo tile for social media • Liaison with shopping centre/ event organisers for booking • Delivery of 4-hour PUD during work hours 	\$1,442.28
PUD – weekend x3	<ul style="list-style-type: none"> • Development of promo tile for social media • Liaison with shopping centre/ event organisers for booking • Delivery of 4-hour PUD outside of work hours 	\$4,532.59
Media Campaign		
Media Campaign	<ul style="list-style-type: none"> • Development of Comms Plan • Development of content and provision to Council for distribution 	\$3,419.44
Sustainable Living Expo		
Sustainable Living Expo – PUD and demonstration	<ul style="list-style-type: none"> • Liaison with event organisers and Council • Delivery of 6-hour PUD outside of work hours • Delivery of a practical demonstration to audience (e.g. mini audit of event bins) • Provision of summary report to Council 	\$2,628.17
BIP collateral feedback		
BIP collateral feedback	<ul style="list-style-type: none"> • Development of focus group and survey questions • Facilitation of focus groups • Collation of feedback into document • Development of new collateral designs 	\$5,877.45
Pub trivia round		
Pub trivia round	<ul style="list-style-type: none"> • Development of 3x rounds of trivia questions • Liaison with quizmaster to facilitate trivia questions 	\$975.83
TOTAL		\$68,488.72

Budget summary of WEP 2024-25

2024-25 budget	\$68,898.00
Carryover (unspent from 2023-24)	-\$59.50
Available budget 2024-25	\$68,838.50
Allocated budget	\$68,488.72
Underspend	\$349.78



Orange City Council

FOGO Waste Education Plan 2024-2025: Annual Report

Final version

July 2025

Project Undertaken by



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In Cooperation with

Orange City Council

JR Richards & Sons

Disclaimer

The collection of information presented in this report was undertaken to the best level possible within the agreed timeframe and should not be solely relied upon for commercial purposes. The opinions, representations, statements or advice, expressed or implied in this report are provided in good faith.

Information, statements and recommendations implied or stated in this report are limited to the nature and scope of the project and do not constitute legal advice.

Project Team

Revision	Author	Reviewer	Approved	Date
Draft	Kayla Clanchy	Kathryn Sullivan	Kathryn Sullivan	July 2025
Final	Kayla Clanchy	Kathryn Sullivan	Wayne Davis (OCC)	July 2025

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1. Introduction

The 2024-2025 period was the 11th year of the Orange City Council Food Organics Garden Organics ('FOGO') Collection Contract with JR Richards & Sons. This Contract includes the weekly collection of green-lidded household FOGO bins (240L mobile garbage bins) from most residential households in the LGA. As part of the Collection Contract, a waste education component is funded to improve food waste diversion and sustainable waste outcomes for the Orange area.

A number of education initiatives were funded under the Waste Education Plan 2024-2025:

- Bin Inspection Program ('BIP') (Recycling, FOGO, General Waste streams)
 - BIP collateral feedback
- Beeswax wrap community workshops
- Community and School waste facility tours
- Pop-up Displays
 - Sustainable Living Expo 2024
- Media campaign
- Pub trivia round.

Not all education initiatives were delivered in the 2024-2025 financial year and there is the possibility of rolling this funding over to the next WEP 2025-2026.

The 2024-25 WEP budget and expenditures are summarised in Table 1. A full breakdown of budget expenditure is available in Appendix 4.

Table 1. Budget summary

WEP Year	Budget (exc. GST)
Carryover (over/underspend from previous year)	-\$2,350.89
2024/25 Budget Allocation	\$68,898.00
Available Budget 2024/25	\$66,547.11
2024/25 Budget Expenditure	\$66,936.61
2024/25 Budget rollover to 2025/26	-\$389.50

1.1. Key Focuses of the WEP 24/25

The WEP 24/25 was created to align with the goals and strategies of Orange City Council and NSW waste targets. Key strategic documents:

- *Orange Community Strategic Plan 2018-2028* and associated *Delivery/Operational Plans*
 - It is noted that the current Community Strategic Plan is set to the timeframe of 2022-2032
- *NSW Waste and Sustainable Materials Strategy 2041*.

These strategic documents will again be consulted when planning for the next WEP 25-26.

2. WEP 24/25 Initiatives

Under the WEP 24/25, EnviroCom delivered initiatives ranging from data collection to in-person education delivery, and subsequent coordination to achieve its outcomes as part of the OCC FOGO contract. Table 2 illustrates initiatives delivered in the WEP year to June 2025:

Table 2. WEP deliverables to June 2025.

Initiatives	Delivery status
Program Management, WEP Development, Budget & Reporting	✓
Bin Inspection Program – 1x domestic kerbside recycling, 2x FOGO, 1x GW	✓ (additional GW data collected alongside FOGO)
BIP collateral feedback	✓
Beeswax wrap community workshops (2x)	✓
Waste facility tours - Community (2x weekday, 2x weekend)	✓
Waste facility tours - School (4x bus not supplied by Envirocom, 7x bus supplied by Envirocom)	✓ (9 out of 11 allocations delivered)
Pop-up Displays (1x weekday, 3x weekend)	✓
Sustainable Living Expo 2024 PUD	✓
Media campaign	- (linked to OCC WDES contract for Simply Cups)
Pub trivia round	- (lack of quiz master interest)

2.1. Program Management, WEP Development, Budget & Reporting

The 2024/25 WEP was coordinated and delivered by Waste Educators and Environmental Consultants from EnviroCom's Orange as well as other EnviroCom personnel across Australia.

Monthly status reports, where relevant, were provided to the Manager of Waste Services and Technical Support at Orange City Council.

Reporting, budgeting, and the development of initiatives for the following WEP 25-26 were also conducted as part of this initiative.

2.2. Bin Inspection Program ('BIP')

This was the second consecutive year of the EnviroCom multi stream kerbside Bin Inspection Program (BIP) for Orange City Council. The focus of the program is to provide feedback to residents on their resource recovery practices for each of the three bin services in the LGA. The program also serves to demonstrate Council's continued focus on the correct and increased usage of kerbside recycling and FOGO services as well as reducing contamination.

A visual inspection of recycling, FOGO, and general waste bins from single-unit dwellings (SUDs) was conducted over five inspection weeks between September 2024 and April 2025. In addition to this, education resources in the form of tags and stickers were distributed, which provided constructive feedback to residents based on observed behaviours at the point of disposal.

Key findings:

Recycling bin inspections

Over the two inspection weeks (10 days – 1 week funded by the NetWaste JRC and 1 week funded by OCC), 1653 properties were inspected, with 1249 observed to have presented a recycling bin. This indicates an average recycling bin presentation rate of 76% for all recorded households.

Of all recycling bins inspected, 84% were assessed as having Nil or Low levels of observed contamination. Conversely, 5% of bins were considered to have High or Gross levels of observed contamination. The primary contaminant observed was soft plastics and it was identified in 23% of all bins inspected. The second most frequently observed contaminant was tissues/paper towel, constituting 8% of all bins inspected.

More than half (58%) of all presented bins were recorded with a volume between 80%-100% full. This indicates that more than half of Orange households may be limited by kerbside bin capacity if residents were to significantly expand the volume of material diverted through the recycling waste stream.

FOGO bin inspections

Over the two inspection weeks (10 days), 1497 properties were inspected, with 850 observed to have presented a FOGO bin. This indicates an average FOGO bin presentation rate of 57% for all recorded households.

Of all FOGO bins inspected, 89% were assessed as having Nil or Low levels of observed contamination. Conversely, 6% of bins were considered to have High or Gross levels of observed contamination. The primary contaminant observed was recyclables (excluding newspaper) and it was identified in 5.5% of all bins inspected. The second most frequently observed contaminant was soft plastics, constituting 4.5% of all bins inspected.

Under half (42%) of all presented bins were recorded with a volume between 80%-100% full. The average proportion of FOGO bins containing visible food waste was 28%, slightly lower than the 2023-24 bin inspection program finding of 32 percent.

General waste bin inspections

Over three inspection weeks (15 days), 2995 properties were inspected, with 2368 observed to have presented a general waste bin. This indicates an average GW bin presentation rate of 79% for all recorded households. Under half (43%) of all presented bins were recorded with a volume between 80%-100% full.

Across all areas, 18% of inspected general waste bins were observed to contain FOGO materials, and 49% of inspected bins were observed to contain recyclable items. In many cases, the

contents of general waste bins were unobservable due to opaque plastic bags and it is therefore likely that the actual percentage of recoverable material is much higher.

Key recommendations:

Recommendation 1

Shifting the focus of the Program from 'inspection' to 'engagement' will introduce more opportunities for kerbside conversations and qualitative data collection. Quantitative data should still be collected, but as a complement to more sociable program hours spent face-to-face with residents (i.e. later mornings).

Recommendation 2

Mixed packaging labels and generalised social media messages surrounding the acceptability of materials such as soft plastics and bagged material can be confusing in many households. It is recommended that bin inspections are continued to be used as an education tool.

Recommendation 3

The inspections have highlighted the most common contamination types. This information should be used to inform education efforts, including school outreach and community presentations and interactions. Based on the observations, the key recycling 'villains' continue to be soft plastics, followed by bagged material, tissues/paper towel, and non-recyclable plastics. Reducing volumes of cardboard in FOGO is a potentially new area of focus.

Recommendation 4

Continuing to include the distribution of key behavioural prompts such as 'No soft plastics or bagged materials [in recycling]' and 'no compostable bags [in FOGO]' stickers should be considered. Restarting the stickering program for 'Food goes in the green bin' during GW inspections is also recommended.

Recommendation 5

Increasing household uptake of FOGO and recycling (including non-kerbside recycling initiatives) through education delivered alongside potential changes to bin servicing frequency for general waste bins.

Refer to Final Bin Inspection Report (May 2025) for full results and discussion.

The above recommendations will be consulted in preparation for the next WEP 2025-26.

2.2.1. BIP collateral feedback

Over the years of conducting bin inspections in Orange, mixed feedback has been put forward by residents with regards to the tags/stickers employed under the program. Some residents are content with the information on the tags, and others find the stickers or tags to be confusing. In order to choose the best design for the BIP collateral which is the most effective way of promoting accurate waste education without resulting in hostile responses from residents, community feedback garnered during specialised pop-up displays. These specialised PUDs were delivered in August 2024 across 2 days, with surveys collected and results reported back to Council for consideration.

Core recommendations from this exercise were:

1. **Utilise a single tag design for each waste stream** to prevent households feeling singled out by “contamination” or “no contamination” graded tags. Move to universal 5-star rating tag system instead.
2. **‘No soft plastics’ bin sticker to be applied selectively** to those households only that have been observed actually putting soft plastic in recycling bins through the bin inspection program.
3. **Update commonly observed contaminants on big tags (icons)** to keep tags current with observed trends. Less reliance on Inspector filling in the ‘other’ free text section of tags.

All recommendations were actioned for subsequent bin inspections, from December 2024 onwards. See Appendix 1 of this Report for updated Bin Inspection collateral.

Refer to Final BIP Collateral Feedback Summary Report (October 2024) for full results and discussion.

2.3. Beeswax wraps community workshops

Direct community engagement through delivery of workshops is effective at influencing waste-related behaviours with the potential for key messaging to extend to the broader community (word of mouth and social diffusion). Community engagement in this format consisted of two beeswax wraps delivered back-to-back on a weekday during the Summer School holidays.

Each session ran for 1.5hrs on Tuesday 7 January at the ELF, with a morning session and an afternoon session. An introductory presentation ran for about 20 minutes at the start of each presentation, dubbed ‘The State of Waste’ and setting context for why beeswax wraps were an important alternative to plastic production and consumption. The audience was very engaged during the introduction and common questions about kerbside FOGO and recycling options were fielded by EnviroCom.

There was significant interest in the events through Eventbrite registrations. Approximately 10 people joined the morning session and 8 people joined the afternoon session, indicating a ‘drop off’ rate of about 70% (compared to the number of registrations).

The demographic mix of attendees was broad, with school children attending with parents and some elderly participants attending with home care workers. Everyone had the opportunity to make at least one beeswax wrap, and some made more than one as there were spare squares of fabric due to not all registrations turning up on the day.

Feedback given to EnviroCom and Orange Eco on the day was very positive:

“A fun, crafty kind of activity for the school holidays”

“I have always been curious about how beeswax wraps are made, this has been great”

“I turned up to make a wrap but I didn’t expect to be able to also get my recycling questions answered too!”

2.4. Waste Facility Tours

Waste facility tours of the Ophir Road and Euchareena Road Resource Recovery Centres were conducted throughout the contract year for the community and by-demand for local Schools.

Two weekend and two weekday community tours were conducted on the following dates:

- Tuesday 19 November 2024
- Saturday 11 January 2025
- Thursday 17 April 2025
- Saturday 14 June 2025

The weekday tours were organised with special interest community groups and the weekend tours were promoted by Council's Comms team through Orange City Council social media channels as well as the Orange City Life newspaper.

Written feedback from the community of these tours was overwhelmingly positive:

- *"The pacing, topics and amount of information and the sitting-walking ratio was just right! The tours are a very worthwhile initiative and hopefully you can entice more members of the community."*
- *"Very knowledgeable engaging explanations. Really enjoyed the visit to Molong facility as well as Orange."*
- *"The tour of the resource recovery centre and the FOGO efforts to reduce waste were both very informative. The tour to Molong was eye opener, scary and worrying to see so much waste but also grateful for council efforts to reduce and process waste."*
- *"An excellent & thoroughly enjoyable informative tour."*

At the start of each School term, a promotional flyer (Appendix 3) was sent to Schools in the LGA about Waste Facility Tour options. Bookings were invited alongside a request (if necessary) for EnviroCom to arrange for bus transfers.

There have been numerous School tours conducted in the contract year:

- 1x St Marys Catholic Primary School
- 4x James Sheahan Catholic High School
- 1x Orange High School
- 1x Kinross Wolaroi School
- 1x Orange East Public School
- 1x Anson St School

Feedback from Schools has been mostly positive as well, however, there have been some safety concerns raised. These safety concerns are echoed by EnviroCom staff, and it is proposed to rework the nature and scope of Waste Facility Tours moving forward for Schools and Community groups to ensure these tours remain feasible to deliver. Predominantly, it is proposed that large buses (e.g. 57-seater coach) and large groups (e.g. >25 participants) are no longer catered to. Further discussions on this topic with Council will inform next WEP deliverables.

2.5. Pop-up Displays ('PUDs')

Pop-up displays (PUDs) serve multiple purposes: they promote the range of waste services available in Orange, provide a social setting for interactions with residents on common and topical waste questions, visually signal that Orange City Council is serious about waste minimisation and diversion practices, and reinforce positive behaviours with the aid of props, factsheets, and giveaways.

The focus for PUDs in the 2024/25 contract period was waste and recycling with a focus on soft plastics. Toward the latter part of the contract year, focus was also given to safe battery disposal. Photos from various PUD set-ups are included in Appendix 2.

Four weekend PUDs and one weekday PUD was delivered in the contract year. This includes the Sustainable Living Expo PUD, which was a longer PUD delivered as part of Orange's Sustainable Living Expo in September. Table 1 Table 3 summarises these PUDs and number of engagements:

Table 3. PUDs delivered

Date	Location	Comments	Approx. Engagements
Sun 22 September 2024	Sustainable Living Expo (Showgrounds)	6hr delivery. Included PowerPoint presentation	100
Sat 9 November 2024	Orange Farmers Market	4hr delivery	60
Tue 15 April 2025	North Orange Bunnings	4hr delivery with FRNSW in co-attendance	50
Sun 4 May 2025	Experience Orange (Botanic Gardens)	4hr delivery	70
Sat 10 May 2025	Orange Farmers Market	4hr delivery	80

Throughout the contract year, casual observations were made on PUD discussion topics and interactions. The most dominant conversation topics at PUDs related to questions about when soft plastics recycling would be 'coming back', what should be done with pizza boxes (recycling preferred over FOGO), and jar lids/other lids on or off on recyclables. It is noted that the type of people who approach PUDs are generally already quite engaged citizens when it comes to waste diversion efforts, so these 'common' questions may not be indicative of the general population's likely 'common' questions and educational needs when it comes to waste minimisation and diversion practices.

As PUDs and community engagement activities are also delivered under the NetWaste contract for Orange, re-prints for factsheets and other collateral are necessary. This has been mostly allocated funding under the new NetWaste WEP, however, additional printing costs may need to be budgeted for under the next OCC FOGO contract. Kitchen caddies (and associated stickers) and bin bombs as giveaways have been exceptionally popular and it is likely these items will need to be replenished as part of the next WEP year for the OCC FOGO contract.

2.6. Media campaign

The media campaign was not delivered in the 24-25 contract year. Funds will rollover to 25-26 WEP year.

Discussions in 2024 between EnviroCom and Council led to the outcome that the media campaign timing for the 24-25 contract year would be tied to the OCC WDES contract for Council's procurement of Simply Cup bins for its civic buildings (and potentially a BRAD Banish Bin, organised by OCC Sustainability Team). The purpose of this cross-contract coordination was for media campaign funding under the OCC FOGO contract to go towards publicity and promotion of the Simply Cup bins as funded under the Internal Waste Assessment of the OCC WDES contract.

There were significant manufacturer delays in the delivery of the Simply Cups bins to Council, and these bins were only received by Council in May 2025 (as opposed to an initial timeline of January 2025).

At a meeting with Council representatives on Tuesday 3 June 2025, it was agreed to delay publicity of the Simply Cups bins through a media campaign until such time that the Simply Cups bins could be successfully embedded in Council operations and use by Council staff in the main Council building.

2.7. Pub trivia round

Pub trivia can be a hugely popular social pastime in Orange. Introducing waste-related trivia to these events was thought to be potentially fertile ground to engage with younger adults on waste education (particularly during Plastic Free July).

On two separate occasions, engagement with the main quiz master for trivia events at several pubs in Orange was initiated. The first engagement in June/July 2024 was rebuffed by the quiz master. The second engagement initiated in April 2025 – offering a reduced amount of 'trivia interference' – was further rebuffed.

Quiz masters are anecdotally very protective of their formats and methods. With few quiz masters in the LGA, this avenue may not be suitable for future WEPs.

Consideration will be given to other social avenues for engaging with young adults in the LGA on waste education, as part of WEP planning for 2025-26.

3. FOGO WEP 2024-25 Budget Summary

Program Initiatives	Allocated budget	Spent to-date	Remaining
Project Coordination	\$5,497.54	\$5,497.54	\$0.00
Project coordination	\$4,133.73	\$4,133.73	\$0.00
Monthly emails	\$1,363.81	\$1,363.81	\$0.00
BIPs	\$16,697.12	\$16,697.12	\$0.00
Coordination	\$4,020.29	\$4,020.29	\$0.00
Delivery	\$9,840.14	\$9,840.14	\$0.00
Reporting	\$2,836.68	\$2,836.68	\$0.00
PUDs	\$5,974.87	\$5,974.87	\$0.00
Weekday	\$1,442.28	\$1,442.28	\$0.00
Weekend	\$4,532.59	\$4,532.59	\$0.00
Waste Facility Tour	\$25,349.44	\$19,096.23	\$6,253.20
Promo	\$367.66	\$275.74	\$91.91
Community - weekday	\$3,373.48	\$3,373.48	\$0.00
Community - weekend	\$4,041.10	\$4,041.10	\$0.00
School - bus supplied by EnviroCom	\$14,376.34	\$8,215.05	\$6,161.29
School - bus not supplied by EnviroCom	\$3,190.86	\$3,190.86	\$0.00
Media Campaign	\$3,419.44	\$0.00	\$3,419.44
Media Campaign	\$3,419.44	\$0.00	\$3,419.44
Sustainable Living Expo 2024	\$2,628.17	\$2,628.17	\$0.00
Sustainable Living Expo 2024	\$2,628.17	\$2,628.17	\$0.00
Beeswax Wrap Workshops	\$2,068.86	\$2,068.86	\$0.00
Beeswax Wrap Workshops	\$2,068.86	\$2,068.86	\$0.00
Pub Trivia Round	\$975.83	\$0.00	\$975.83
Pub Trivia Round	\$975.83	\$0.00	\$975.83
BIP Collateral Feedback	\$5,877.45	\$5,877.45	\$0.00
BIP Collateral Feedback	\$5,877.45	\$5,877.45	\$0.00
Additional items	\$0.00	\$9,096.36	-\$9,096.36
PS Program - Calare school delivery	\$0.00	\$9,096.36	-\$9,096.36
Total costed initiatives	\$68,488.72	\$66,936.61	\$1,552.11

OCC FOGO BUDGET SUMMARY

July 2024 - June 2025

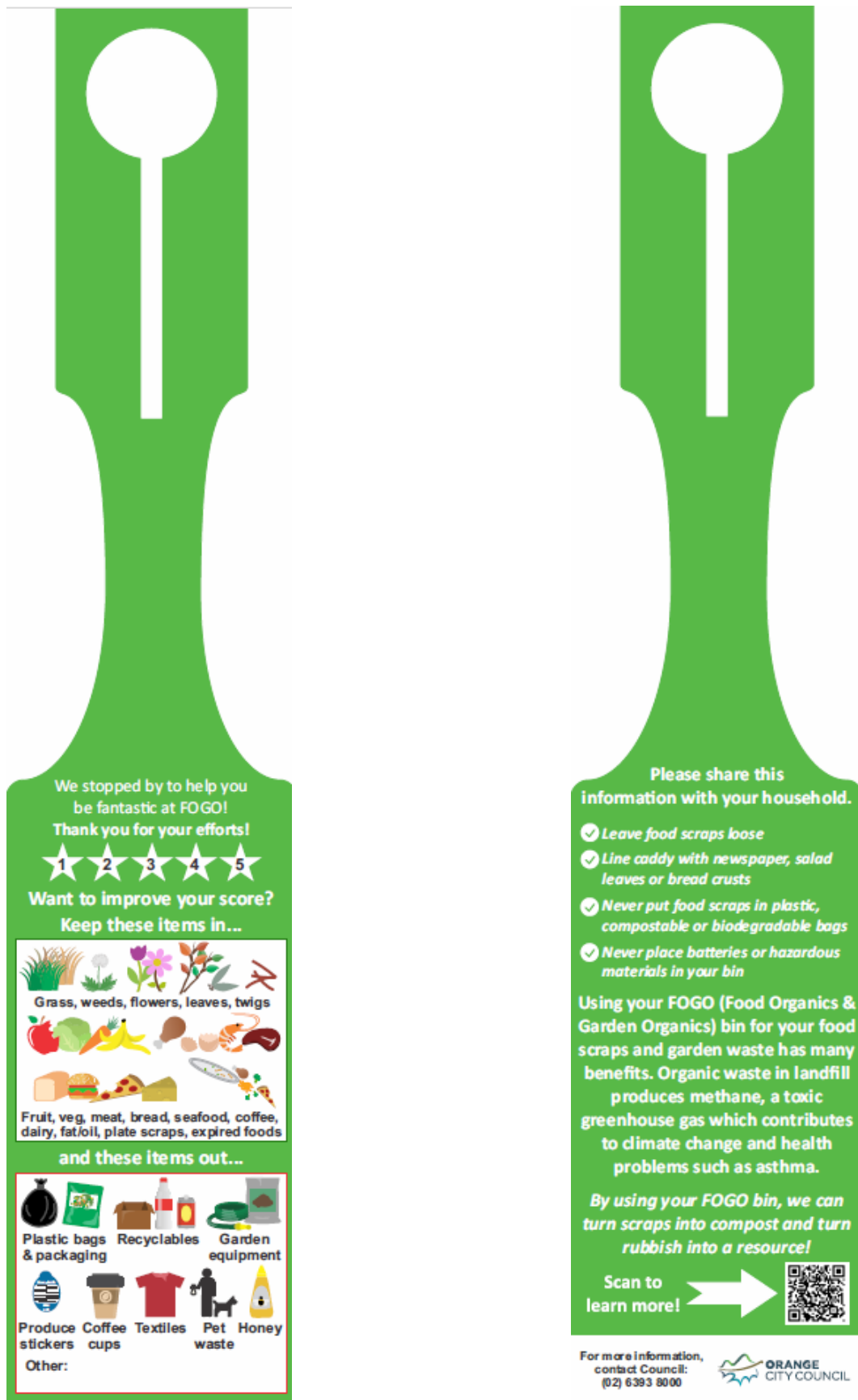
2024/25 Budget	\$68,898.00
Carryover (over/underspend from previous year)	-\$2,350.89
Available budget 2024/25	\$66,547.11
Spent to-date 2024/25	\$66,936.61
Total remaining	-\$389.50

Appendix 1: Bin Inspection Collateral

Bin Inspection Tag (front & back) – recycling



Bin Inspection Tag (front & back) – FOGO



Bin Inspection Soft Plastics sticker – recycling



Bin Inspection No Bags sticker – FOGO



Bin Inspection Food Goes in the Green Bin sticker – GW



Appendix 2: PUD events and engagements

PUD photos

North Orange Bunnings with FRNSW (weekday)



Orange City Centre shopping centre (weekday)



Experience Orange event (weekend)



Orange Farmers Market (weekend)



Appendix 3: Waste Facility Tour promotional flyer (schools)

Resource Recovery Centre Educational Tours



Orange City Council is pleased to offer **FREE Resource Recovery Centre Tours to local schools.**

Tour groups will visit the Ophir Road Resource Recovery Centre (ORRRC) in Orange and the Euchareena Road Resource Recovery Centre (ERRRC) in Molong. Students will have the opportunity to see and learn about the following:

- Where garbage, recycling and food and garden organics goes and how it is processed
- The Waste Baling Facility, Recycling Transfer Building, Recovery Shops and Community Recycling Centre at the ORRRC
- The landfill and organics composting facility at the ERRRC
- What other waste types can be dropped off at the ORRRC and how these materials are handled
- The economical and environmental importance of diverting waste from landfill

Tours run for approximately three (3) hours and are delivered by Orange City Council's environmental education consultants, EnviroCom Australia. Shorter tours can be arranged on request.

Tour groups are required to organise a bus to transport students to and from the RRCs and to move through the sites. Support is available to schools who do not have a private school bus. **Only one bus load can tour the site at a time.**

If you are interested in organising a tour, please return the completed Expression of Interest form to EnviroCom using the contact details below.



EXPRESSION OF INTEREST

School name:

Contact name:

Phone number:

Email:

Year group:

Total number of students:

Preferred date:

Please fill out form electronically,
save and return via email to
occwasteed@envirocom.com.au

EnviroCom Orange
Ph: 0400 407 685 or 0447 944 738
Email: occwasteed@envirocom.com.au





Orange City Council

*Waste Diversion Education Strategy: Annual Implementation
Plan 2024-2025*

Annual Report

Final version

July 2025

Project Undertaken by



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Project Team

Revision	Author	Reviewer	Approved	Date
Draft	Kayla Clanchy	Kathryn Sullivan	Kathryn Sullivan	July 2025
Final	Kayla Clanchy	Kathryn Sullivan	Wayne Davis (OCC)	July 2025

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1. Introduction

The 2024-2025 Annual Implementation Plan was the 8th year of the *Orange City Council Waste Diversion Education Strategy* ('OCC WDES'). The Strategy was first developed for a 2016-2021 timeframe, with the key focus of the Strategy on waste diversion from landfill in the LGA.

Each Implementation Plan since the WDES inception has delivered several on-the-ground waste education initiatives. The education initiatives funded under the Implementation Plan 2024-2025 were:

- Internal Waste Assessment – Phase 3
- Cinema Advertising
- Schools Waste Education & Engagement Program ('SWEEP')
- Composting & Worm Farming community workshop.

Some components of the SWEEP Program and Internal Waste Assessment follow-up will be delivered in the next contract year.

The 2024-25 WEP budget and expenditures are summarised in Table 1. A full breakdown of budget expenditure is available in Appendix 1.

Table 1. Budget summary

WEP Year	Budget (exc. GST)
2024/25 Budget Allocation	\$30,000.00
2024/25 Budget Expenditure	\$25,893.64

1.1. Key Focuses of the Implementation Plan 24/25

The two key focuses of the WDES have traditionally been:

1. Increase and improve presentation of appropriate materials to diversion services
2. A sustained reduction in the total amount of waste generated.

These broad objectives are aligned with targets in the *NSW Waste and Sustainable Materials Strategy 2041* and the *Orange City Council Community Strategic Plan 2022-2032*.

The targeted improvement in materials diversion is being undertaken in a dynamic community environment that is subject to a number of waste education and behaviour change activities. These include programs and initiatives that are being undertaken concurrently via the Orange FOGO contract and the NetWaste Joint Recycling Contract.

2. Implementation Plan 24/25 deliverables

Under the Implementation Plan 24/25, EnviroCom delivered initiatives aimed at supplementing other education initiatives in the region. For instance, the School Waste Education and Engagement Program (SWEEP) supports and extends on other School education initiatives under the NetWaste JRC. Table 2 summarises initiatives delivered in the implementation year to June 2025:

Table 2. WEP deliverables to June 2025.

Initiatives	Delivery status
Program Management, Development, Budget & Reporting	✓
Internal Waste Assessment – Phase 3 (Simply Cups)	partial
Cinema advertising	✓
School Waste Education & Engagement Program	partial
Composting and worm farm community workshop	✓

2.1. Program Management, Development, Budget & Reporting

The 2024/25 WEP was coordinated and delivered by Waste Educators and Environmental Consultants from EnviroCom's Orange office as well as other EnviroCom personnel across Australia. Monthly status reports, where relevant, were provided to the Manager of Waste Services and Technical Support at Orange City Council.

Reporting, budgeting, and the development of initiatives for the following Implementation Plan 25-26 were also conducted as part of this initiative.

2.2. Internal Waste Assessment – Phase 3 (Simply Cups)

Under FOGO WEP 2020-21, EnviroCom undertook an internal waste assessment of 10 Council-owned venues. As a follow up to the Internal Waste Assessment, EnviroCom developed a Phase 2 recommendations and opportunities report under FOGO WEP 2021-22 for Council. These recommendations outlined a strategic approach to consulting, educating and engaging Council staff to promote positive behaviour change and improve opportunities for waste diversion and resource recovery. The final phase (Phase 3) of the Internal Waste Assessment is to undertake education and training once Council has implemented the recommended changes outlined in the report.

The full scope of deliverables under Phase 3 of the Internal Waste Assessment was not delivered in the contract year due to delays in the Simply Cups order. Phase 3 under the Implementation Plan for 2024-2025 outlined the following deliverables:

- Purchase of coffee cup collection bin and liaison with Simply Cups
- Liaison and consultation with Council's Sustainability Team and cleaning staff

- Development and delivery of staff training sessions (2x face-to-face sessions allocated in budget)
- Design and development of supporting collateral e.g. posters, signage.

Purchase of coffee cup collection bins

There were significant manufacturer delays in the delivery of the Simply Cups bins to Council, and these bins were only received by Council in May 2025 (as opposed to an initial timeline of January 2025).

Liaison and consultation with OCC Sustainability Team

Discussions in 2024 between EnviroCom and Council led to the outcome that the media campaign timing for the OCC FOGO 24-25 contract year would be tied to the OCC WDES contract for Council's procurement of Simply Cup bins for its civic buildings (and potentially a BRAD Banish Bin, organised by OCC Sustainability Team). The purpose of this cross-contract coordination was for media campaign funding under the OCC FOGO contract to go towards publicity and promotion of the Simply Cup bins as funded under the Internal Waste Assessment of this Implementation Plan 2024-2025.

At a meeting with Council representatives on Tuesday 3 June 2025, it was agreed to delay publicity of the Simply Cups bins through a media campaign until such time that the Simply Cups bins could be successfully embedded in Council operations and use by Council staff in the main Council building. At this meeting, it was also proposed to delay internal training of cleaning staff and Council staff until July 2025, to better align with OCC Sustainability Team's workflow.

Development and delivery of cleaner and staff training sessions

Presentation slides for cleaners have been developed for the above requirements in July 2025. Council has opted for video training packages (instead of face-to-face training) for use of the Simply Cups bins for Council office staff. Coordination of this process is ongoing with Council's Sustainability Team and Comms Team.

Design and development of posters and signage

It is understood that OCC Sustainability Team worked with EnviroCom staff in October 2024 to compile several posters and signage for the new 3x bin system. Simply Cups posters and signage has also been supplied by Simply Cups and customised by the Sustainability Team.

2.3. Cinema Advertising

To further expand the reach of waste education resources, particularly to demographics which may not follow Council's social media pages, cinema advertising was proposed to be utilised at the local Odeon 5 cinema in Orange.

One 15 second animated video has been developed and delivered to Star Media Advertising and played throughout the year at the Odeon 5 cinema in Orange. This video has been focussed on FOGO services.

A second animated video has not been developed and delivered under this Implementation Plan.

2.4. School Waste Education & Engagement Program ('SWEEP')

The pilot SWEEP program began with participation from Orange East Public School. The Coordination and development of resource templates includes promotional materials, registration forms, templates for audit data analysis, waste management plans, and completion certificates. These templates can then be applied to any future participants in the program.

A school waste audit was conducted by an EnviroCom educator with students and staff. The data from this report supported the creation of a waste management plan. This plan included baseline audit data, school waste goals, and the recommended path to achieve them. Associated supporting collateral, resources, and infrastructure are based off the school waste management plan.

After a chance to implement their waste initiatives, EnviroCom will return to conduct a follow-up waste audit. The school will be recognised for their waste efforts and a case study will be created for consideration of the future of the SWEEP program.

Components delivered:

- Development of resource templates
- Delivery of 1x audits and incursion

Due to extended leave of the contact teacher, EnviroCom was unable to complete the follow-up assessments in June. Resources for a worm farm refresh were purchased from the allocated budget for implementation during the follow-up visit to the school.

It is recommended that the SWEEP is funded in future Implementation Plans for more schools, to complement other education activities such as NetWaste Primary School Incursions and Resource Recovery Centre School Tours.

2.5. Composting and worm farm community workshop

Direct community engagement through delivery of workshops is effective at influencing waste-related behaviours with the potential for key messaging to extend to the broader community (word of mouth and social diffusion). Community engagement in this format consisted of one 1.5hr free weekend workshop.

This workshop was held on Saturday 21 June at the ELF. An Eventbrite page was created and shared with Council, including the Comms team, who promoted the event through various channels.

The workshop event page was also shared with some local community groups to distribute to their members and networks, such as the Rotary Club, ECCO, CWA, and the Youth Hub.

A compost bin, worm farm, and worms were given away as lucky door prizes at the workshop.

A total of 19 people attended the workshop out of 25 registrations. This is an exceptional conversion rate of registrations to attendance. This was most likely due to the promotion of free giveaways as part of the workshop.

The cohort in attendance was a mix of ages, from toddlers through to elderly residents. Verbal and written feedback from participants was very positive:

“The workshop was very clear and easy to follow. I left feeling inspired to start a compost bin!”

“Fabulous presenter, very knowledgeable, great content with lots of inspiring and practical advice for our household.”

Overall, this was a highly engaged group of residents who felt confident in asking a wide variety of waste-related questions. At the end of the workshop, some participants also enquired about when the next series of workshops would be available and wanting more details about Resource Recovery Centre tours.

3. Budget Summary

Program Initiatives	Allocated budget	Spent to-date	Remaining
IWA Phase 3	\$2,882.44	\$720.61	\$2,161.83
IWA Phase 3	\$2,882.44	\$720.61	\$2,161.83
Cinema Advertising	\$12,270.35	\$12,270.35	\$0.00
Cinema Advertising	\$12,270.35	\$12,270.35	\$0.00
SWEEP	\$11,535.72	\$6,219.84	\$5,315.88
Coordination	\$3,785.82	\$3,785.82	\$0.00
Collateral	\$2,942.44	\$232.62	\$2,709.82
Audit 1	\$2,201.40	\$2,201.40	\$0.00
Audit 2	\$1,756.59	\$0.00	\$1,756.59
Reporting	\$849.48	\$0.00	\$849.48
Composting & Worm Farming Workshop	\$1,432.10	\$1,432.10	\$0.00
Composting & Worm Farming Workshop	\$1,432.10	\$1,432.10	\$0.00
Project Coordination	\$2,629.26	\$2,629.26	\$0.00
Project Coordination	\$2,629.26	\$2,629.26	\$0.00
Additional items	\$2,621.49	\$2,621.49	\$0.00
Community workshop	\$896.49	\$896.49	\$0.00
Simply Cups Tube	\$1,725.00	\$1,725.00	\$0.00
	\$0.00	\$0.00	\$0.00
Total costed initiatives	\$33,371.36	\$25,893.64	\$7,477.71

Available budget 2024/25	\$30,000.00
Spent to-date 2024/25	\$25,893.64
Total remaining	\$4,106.36



FOGO Waste Education Plan 2024-25

Final version

June 2024



Education, Training, Research

Project Undertaken by



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Disclaimer

The collection of information presented in this report was undertaken to the best level possible within the agreed timeframe and should not be solely relied upon for commercial purposes. The opinions, representations, statements or advice, expressed or implied in this report are provided in good faith.

Information, statements and recommendations implied or stated in this report are limited to the nature and scope of the project and do not constitute legal advice.

Acknowledgments

EnviroCom would like to thank the staff at Orange City Council and JR Richards & Sons for their valuable assistance and cooperation during the planning and delivery of projects under Waste Education Plan 2024-25.

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1.0 Introduction

Orange City Council (Council) has commenced the eleventh year of the Food Organics and Garden Organics (FOGO) Collection Contract, managed through JR Richards & Sons (JRR). The contract includes the weekly collection of the 240-litre green lid household FOGO bin and is available to most residents within the Local Government Area (LGA). Council is part of the wider NetWaste group, which is working towards a regional approach with regard to waste minimisation and management throughout all member council areas.

The contract includes an educational component, which is developed and delivered by EnviroCom, following consultation with Council. The 2024-25 FOGO Waste Education Plan (FOGO WEP 2024-25) has been developed based on the following budget allocation:

Year	Budget (Exc. GST)
2023-24 overspend	\$59.50
2024-25 allocation	\$68,898.00
Total 2024-25 budget	\$68,838.50

Throughout the 2023-24 contract year, EnviroCom provided Council with updates and suggestions for future contract initiatives, and this combined with the understanding that several strong initiatives are to remain in the FOGO contract each year, culminated in the development of this WEP, to be delivered across the contract period (1st July 2024 – 30th June 2025) and are detailed further on the following pages.

- WEP 2024-25 project management and coordination
- Bin Inspection Program (three streams)
- Community and school waste facility tours
- Pop-up displays
- Media campaign
- Beeswax wrap workshops
- Sustainable Living Expo
- BIP collateral feedback
- Pub trivia round

All EnviroCom staff have undertaken the Australian Government's **COVID-19 Infection Control Training** eLearning course. As a team, EnviroCom employees continue to comply with all instructions given by Federal and State Government departments.

The 2024-25 WEP will be delivered by experienced environmental consultants from EnviroCom's Orange office.

1.1. Strategic links and key considerations

A number of key documents have informed the development of the 2024-25 Waste Education Plan for Council.

1.1.1. Orange Community Strategic Plan 2018 – 2028

The Community Strategic Plan 2018 - 2028 is Council's main planning document. It aims to outline the aspirations and needs of the Orange community together with expected levels of service, financial modelling, asset management and projected resources. The Community Strategic Plan is a 10-year plan to guide Council and community activity.

The Community Strategic Plan provides four key themes to guide the growth and development of the City: Live, Preserve, Prosper and Collaborate. Theme 2, Preserve, focuses on balancing the natural and built environment. The community wished to be more sustainable by promoting renewable energy, reducing waste and protecting natural resources.

- Objective 8: Managing our resources wisely
 - 8.1 Identify and deliver essential water, waste and sewer infrastructure to service the community into the future
 - 8.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community
 - 8.3 Promote the range of recycling services

1.1.2. Orange Delivery/Operational Plan 2019 – 2023

The four-year Delivery/Operational Plan details how the strategies outlined in the 10-year Orange Community Strategic Plan will be implemented over the next four years. For each strategic direction, the document sets out the objectives, strategies and tasks to be achieved over the term of the Plan.

Objective 8 of the Delivery/Operational Plan is managing our resources wisely.

- Strategy 8.3 promote the range of recycling services
 - 8.3.1 Deliver waste and recycling services:
 - Promote and offer a free annual household hazardous waste service at the ORRRC
 - Deliver education materials or services to Orange residents relating to the waste, recycling and organics contract provisions

1.1.3. NSW Waste and Sustainable Materials Strategy 2041

In June 2021, the NSW Department of Planning, Industry and Environment (DPIE) released the [NSW Waste and Sustainable Materials Strategy \(Stage 1 2021 - 2027\)](#) that updates the previous *Waste Avoidance and Resource Recovery Strategy 2014-2021*.

The Strategy supports NSW transition to a circular economy over the next 20 years with key reforms including the phasing out of problematic single-use plastic items, financial incentives for manufacturers and producers to design out problematic plastics, having government agencies prefer recycled content, mandating the separation of food and garden organics for households and selected businesses, and incentivising biogas generation from waste materials.

Strategy targets are to:

- reduce total waste generated by 10% per person by 2030

- have an 80% average recovery rate from all waste streams by 2030
- significantly increase the use of recycled content by governments and industry
- phase out problematic and unnecessary plastics by 2025
- halve the amount of organic waste sent to landfill by 2030
- reduce litter by 60% by 2030 and plastics litter by 30% by 2025
- triple the plastics recycling rate by 2030

The Strategy sets out three focus areas:

1. Meeting future infrastructure and service needs
2. Reducing carbon emissions through better waste and materials management
3. Building on our work to protect the environment and human health from waste pollution

To complement this strategy, the DPIE have also released two additional documents. The [NSW Plastics Action Plan](#) sets out how problematic plastics will be phased out, tackle litter from plastic items like cigarette butts, and support innovation and research. The [NSW Waste and Sustainable Materials Strategy: A guide to future infrastructure needs](#) sets out the investment pathway required for NSW to meet future demand for residual waste management and recycling.

2.0 WEP 2024-25 waste education initiatives

This section provides a detailed description of each of the waste education initiatives costed for delivery under FOGO WEP 2024-25, including: program overview; methodology; deliverables; requirements from Council; intended program outcomes; anticipated timeframes for delivery; and pricing.

A full budget summary is provided in section 3.0.

2.1. Program Management, WEP Development & Reporting

The 2024-25 WEP will be coordinated and delivered by experienced Environmental Consultants from EnviroCom's Orange office. Regular contact between EnviroCom and Council, via phone and email, will be maintained to allow for frequent correspondence regarding the Waste Education Program and for updates on progress in the development and delivery of each of the proposed initiatives

EnviroCom will ensure the timely delivery of all initiatives to a high standard throughout the 2024-25 contract year.

2.1.1. Methodology

Development and planning

FOGO WEP 2024-25 will be developed by EnviroCom, in consultation with Council, with initiatives delivered by the Project Coordinator and EnviroCom team.

Delivery

The Project Coordinator will plan, prepare and deliver monthly reports between July 2024 and May 2025 outlining initiative progress and budget updates, provided in email format. JRR will also be included in all updates and correspondence. EnviroCom's Orange-based staff will be available to liaise with Council on projects as required and will request approval from Council on all project initiatives.

Allowance has been made for a mid-year progress update meeting and a WEP 2025-26 contract rollover planning meeting with Council (mid-May 2025). It will be EnviroCom's intention to submit the draft 2025-26 WEP for Council approval prior to 1st July 2025. This will ensure that the 2025-26 initiatives can be planned and implemented from the start of the new contract period, and that all programs can be delivered in a timely manner across 12 months (July 2025 – June 2026).

Reporting

In addition to the monthly reports, a WEP 2024-25 Annual Report will be developed and provided to Council at the end of the contract period (late June 2025).

2.1.2. Deliverables

- Monthly reporting – ongoing as from July 2024
- Mid-year progress update meeting
- 2025-26 WEP planning meeting attendance – ~May 2025
- 2025-26 WEP planning and budget development (draft for Council approval) – June 2025
- 2024-25 WEP annual report – June 2025

2.1.3. Requirements from Council

- Approval (or comment and then final approval) of WEP 2024-25
- Ongoing liaison, feedback and approvals for initiative delivery elements
- Discussion and comment on draft WEP 2025-26

2.1.4. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Program development, WEP development & reporting	Monthly reporting – ongoing as from July 24 Mid-year progress update meeting 2025-26 WEP planning meeting attendance – May 25 2025-26 WEP planning and budget development (draft for Council approval) – June 25 2024-25 WEP annual report – June 25	\$5,497.54
Total		\$5,497.54

2.2. Bin Inspection Program: Recycling, FOGO & General Waste Streams

Results from the 2021 kerbside waste segregation audit indicated that resource loss – recyclable and organic materials presented to the general waste stream in Orange – was 57%. The largest contributor to this stream was food waste, representing 17% of all resource loss. Based on the 2022 kerbside audits, the contamination rate for the FOGO stream was very low, at 1.47%. The most common contaminant present in the stream was bagged/encased food.

The most recent Bin Inspection Program (BIP) in Orange showed that the majority (78%) of inspected recycling bins contained three or fewer contaminants, and 93% of inspected FOGO bins contained three or fewer contaminants. In the recycling stream, the most common contaminants were soft plastics (30%) and non-recyclable plastic (10%). In the FOGO stream, contaminants mainly took the form of soft plastics (31%) and bagged organic materials (22%).

Based on the success of BIPs in Orange in previous years, another two rounds of BIPs targeting the kerbside recycling, two rounds of FOGO and general waste BIPs (inspected concurrently) and one round of general waste inspections will be undertaken during the 2024-25 contract period. The BIPs aim to identify user waste generation and disposal behaviours and encourage the correct use of recycling, FOGO and general waste bins through the provision of direct feedback to residents via educational collateral. Qualitative data collected on waste disposal behaviours during these inspections will enable Orange City Council to identify the contaminants most commonly and consistently being presented in recycling and FOGO bins, and fullness of general waste bins. This data can be used to inform the future development of targeted community education and education campaigns and the potential for changing to a fortnightly general waste collection.

2.2.1. Methodology

Development and planning

EnviroCom will liaise with the Contractor (JRR) and Council to identify target areas for the visual observation of approximately 100-120 recycling, 100-120 FOGO and 150-170 general waste bins per inspection day. For the recycling and FOGO streams, bin volumes and contamination incidences will be recorded. Due to the bagged nature of most waste in the general waste stream, only presentation rates

and bin volumes will be recorded, although any obvious evidence of resource loss will also be noted.

The recycling stream followed by the FOGO and general waste streams (inspected concurrently) will be inspected twice in different areas across five consecutive days, followed by a singular round of general waste inspections (five delivery weeks in total). These will be conducted in approximately October 2024 and February 2025. As bin inspections will be carried out under the NetWaste WEP 2024-25, one round of recycling inspections will come from the NetWaste budget, with the remaining four rounds covered under the OCC FOGO WEP 2024-25.

Once suitable areas/streets are confirmed with the contractor, a bin inspection schedule will be drafted and provided to Council and the contractor for approval. Streets will be selected based on whether they have been visited previously, in order to expand the reach of the program, assisting in building a profile of individual household's waste generation and disposal behaviour across all three waste streams.

Educational bin tags have been used previously to promote desired behaviours: a 'Well done' bin tag (for no/negligible visible contamination) and an 'Oops! There's something in here that doesn't belong!' bin tag. The reverse of the tags will allow individual households to be notified about corrective behaviours i.e. highlighting observed contaminants and reiterating unacceptable materials or thanked when observed to be recycling correctly.

In addition to the performance feedback bin tags, EnviroCom will continue to employ the use of a 'no soft plastics' and 'no compostable or plastic bags' A6-sized sticker that is placed on all inspected recycling and FOGO bins respectively, to act as an ongoing point-of-source prompt to reduce the presentation of bagged recyclables and organics. A sticker for the general waste stream will also be employed, to promote the disposal of food waste in the green lid bin rather than the red lid bin. These stickers aim to encourage and sustain correct disposal behaviours.

Based on feedback received during the BIP Collateral Feedback project (section 2.8), the current design of the tags and stickers may be updated to ensure maximum cooperation from the community.

The tags and stickers will be printed by an external printing company. Budget has been allocated to cover the printing costs.

A Frequently Asked Questions (FAQs) document will be revised and provided to Council and JRR to assist with any customer service enquiries during the inspection periods.

Delivery

EnviroCom will send reminder emails, the week before delivery, to the JRR Contract Manager, as well as each day prior to inspections (this aims to ensure that bins in the inspection areas are not serviced until after the inspection has taken place). A reminder will also be sent to Council regarding the briefing of the customer service team.

The bin inspections will take place between approximately 6:00am and 8:00am over five consecutive days (unless advised otherwise by Council). Data will be recorded at each bin on a specifically designed mobile phone application. Information collected will include:

- Street and house number
- Longitude/latitude
- Bin fullness
- Contamination rating (recycling and FOGO)
- Contaminants observed (recycling and FOGO)
- Resource loss (general waste)
- Image (if required)
- Comments (if required)

Reporting

This real-time data will be uploaded to a web-based database that is then exported in Excel format post-inspection. A full report will be developed and provided to Council within ten business days of BIP completion. The information gathered in the inspections will contribute to the current BIP dataset for Council, and also be used to inform Council's capacity to transition to a fortnightly general waste collection. This snapshot assessment and the data collected for each waste stream in selected households will help to build a picture of the household's waste generation and disposal behaviours.

2.2.2. Deliverables

- Bin tag printing (for FOGO and recycling streams)
- Recycling bin sticker printing
- FOGO bin sticker printing
- Development of BIP schedules
- Visual observation of approximately 100-120 recycling bins, 100-120 FOGO and 150-170 general waste bins per inspection day by an experienced inspector (4 delivery weeks allocated in total)
- Final report at the conclusion of all BIPs and summary included in annual report

2.2.3. Requirements from Council/JRR

- Identification of target areas and streets
- Approval of BIP schedules
- Notification to any relevant Council members and customer service staff
- Notification of JRR customer service staff
- Distribution of the FAQs document to customer service staff

2.2.4. Intended program outcomes

Kerbside BIPs aim to identify user behaviours and encourage the correct use of kerbside bins through the provision of direct feedback to residents on their disposal behaviours at a household level. The provision of bin stickers and tags act as a 'point of source' prompt, serving as an ongoing reminder to residents to review and modify their waste disposal behaviours if needed. The presence of bin stickers and tags can also act as a discussion point between neighbours (known as social diffusion), effectively acting as a motivator for behaviour change so that, over time, modified and improved resource recovery behaviours become the social norm.

2.2.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Bin Inspection Program – coordination, scheduling and collateral development/printing (bin tags and stickers)	Aug 2024	\$4,020.29
Bin Inspection Program – delivery	Ongoing, beginning Sep 2024	\$9,840.14
Bin Inspection Program – reporting	May 2025	\$2,836.68
Total		\$16,697.12

2.3. Beeswax wrap workshops

Community workshops, in various forms, have been a staple of the FOGO WEP since 2016. Due to high uptake from the community in previous workshops, it is proposed that EnviroCom continues to deliver beeswax wrap making workshops across the course of the contract year.

2.3.1. Methodology

Promotion & Development

EnviroCom will deliver hands-on workshops to the community, providing participants with an opportunity to get creative and make their own beeswax wraps, while also asking questions and sharing suggestions and ideas throughout the presentation.

The workshops will be promoted via Council's channels, and the event organised by EnviroCom using Eventbrite.

Delivery

EnviroCom will manage workshop bookings and enquiries and send a reminder email within a week of workshop delivery. Workshops will be approximately one and a half hours in duration, inclusive of a brief waste and recycling presentation section at the beginning of the presentation. To maximise efficiency and to provide value for Council, a morning and afternoon workshop will be delivered on the same day.

Workshop Evaluation & Reporting

Attendees will be encouraged to fill out a short evaluation survey at the end of the session for feedback and evaluation purposes. The workshop evaluation data will be analysed and provided in the WEP 2024-25 final report.

2.3.2. Deliverables

- Liaison with beeswax wrap makers, Orange Eco
- Liaison with Council staff to book ELF
- Management of workshop attendees via Eventbrite
- Update workshop PowerPoint content and evaluation form
- Delivery of 1x day consisting of a morning and afternoon face-to-face workshop, during school holidays
- Workshop summary provided in final report

2.3.3. Requirements from Council

- Approval of all content associated with delivery/materials (as required)

2.3.4. Intended program outcomes

Community workshop attendees are provided with the knowledge and inspiration to consider practical ways to avoid and reduce waste generation, particularly through the use of beeswax wraps, with the potential for key messaging to extend to the broader community (word of mouth and social diffusion). Evaluation forms provide a form of monitoring and assessment with feedback being used to shape future programs.

2.3.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Beeswax wrap workshop delivery (x2 sessions in one day)	Summer school holidays	\$2,068.86
Total		\$2,068.86

2.4. Community and school waste facility tours

Four community waste facility tours (two weekday and two weekend) will be included under this year’s WEP budget. Due to the demand for tours from local schools, allocation will continue to be provided for primary and high school tours.

2.4.1. Methodology

Development and planning

EnviroCom will liaise with Council to confirm the community tour delivery dates. An Eventbrite page will be developed for each tour to facilitate online bookings and this page will be promoted via Council’s Facebook page. The tours will be promoted using the same content as in previous years (date changes only).

Delivery

A reminder email will be sent to all registered attendees within the same week of the delivery date to support maximum attendance, as well as a confirmation text message 48 hours prior to the tour date.

Each tour will run for approximately three hours, providing an overview of the operations and management of both sites, with attendees given a chance to see the following:

- The garbage baler, FOGO shredder and kerbside recycling transfer building at the ORRRC
- The self-haul drop-off point at the ORRRC
- The composting facility and landfill at the ERRRC
- The environmental management strategies at both sites

The allocated budget includes the delivery of two weekday tours to the ORRRC and ERRRC facilities (anticipated to align with the school holidays), and two weekend tours. Additional facility tours will be available to school groups, with the provision of a bus aimed at encouraging attendance by schools that might otherwise not have had the opportunity. An allocation for bus hire for both school and community tours has been included in the costings. The waste facility tours will be promoted to primary and high schools via an EoI form that will be emailed to schools and contact teachers at the start of Term 3 2024 and Term 1 2025.

Community tour attendees will be provided with a range of educational materials to take home, including the ORRRC map flyer; waste-themed fridge magnet (developed

under WEP 2018-19); and OCC A-Z waste guide flyer. The school group contact person will also be sent the primary school or high school (as appropriate) tour worksheet and answer sheet, developed under FOGO WEP 2023-24, for distribution to the class after the tour.

Reporting

Following each tour, community tour attendees and teachers will be sent a link to complete a feedback survey via SurveyMonkey.

The number of attendees, final delivery details, evaluation results and notable comments will be included in the corresponding monthly report, as well as provided in the FOGO WEP 2024-25 final report.

2.4.2. Deliverables

- Eventbrite promotion/bookings page development
- Review/amend and distribute Eol form to schools
- Four community waste facility tours delivered throughout contract year (two weekday, two weekend)
- School waste facility tours delivered upon request

2.4.3. Requirements from Council

- Liaison between EnviroCom and Council regarding delivery dates
- Approval of promotional materials
- Council Comms team to advertise tours on social media and website (promotional material provided by EnviroCom via email)

2.4.4. Intended program outcomes

Waste facility tours are both educational and effective at influencing positive waste-related behaviours in the community. They also create an opportunity for new community members to join the pledge network. Evaluation forms provide a form of monitoring and assessment with feedback being used to shape future programs.

2.4.5. Timing and pricing

Element	Timeframe	Cost Per Unit	Units budgeted	Allocated Budget (exc. GST)
Community weekday tour	School holidays 2024-25	\$1,686.74	2	\$3,373.48
Community weekend tour	Ongoing	\$2,020.55	2	\$4,041.10
School tour promo	Term 3 2024 and Term 1 2025	\$367.66	1	\$367.66
School tour – own bus	Ongoing, as per bookings	\$797.72	4	\$3,190.86
School tour – bus provided		\$2,053.76	7	\$14,376.34
Total				\$25,349.44

2.5. Pop-up Displays

Pop-up Displays (PUDs) provide an opportunity for residents to interact with informed education personnel and display information to clarify issues and have positive behaviours reinforced.

It is suggested that four PUDs are delivered during the 2024-25 contract period (one weekday and three weekends), focusing on correct usage of the FOGO and recycling bin services in Orange and highlighting the results from the recent bin inspections.

Note: The current pricing for PUDs does not include any allocation for the development or printing of new resources.

2.5.1. Methodology

Development and planning

EnviroCom, in consultation with Council, will coordinate the delivery of PUDs in the Orange LGA during the 2024-25 contract year. Pricing currently allows for the attendance of one EnviroCom consultant across a four-hour face-to-face period for each event; however, this can be tailored to meet the needs of specific events and pricing adjusted accordingly.

EnviroCom will aim to schedule the weekday PUD during school holiday periods where possible, to increase the likelihood of engaging resident audiences similar to weekends and provide the best value for money for Council. The PUDs will be held at popular venues in the Orange LGA. Weekday PUDs have traditionally been delivered at local shopping centres, while weekend PUDs are more commonly delivered at Farmers Markets and local fairs.

Delivery

The displays will include key OCC collateral and resources such as the A-Z waste guide, factsheets, ORRRC flyer, CRC postcard, FOGO flyer, soft plastics flyer, recycling flyer, bin magnet, caddies, Bin Bombs, and battery boxes, among any other Orange-specific collateral. Extra PUDs in the Orange LGA are also planned for delivery under NetWaste WEP 2024-25.

Reporting

EnviroCom will aim to record stall visitation through the use of a people counter, and the number of stall visitors engaged, along with any notable comments, will be included in the corresponding monthly report, as well as provided in the 2024-25 annual report.

2.5.2. Deliverables

- Delivery of four PUDs to increase resident knowledge and understanding of Council's kerbside service and facilities and the importance of correct source separation and waste disposal

2.5.3. Requirements from Council

- Approval of PUD locations and schedule

2.5.4. Intended project outcomes

Residents are supported to improve household waste management and their waste generation and disposal behaviours by interacting with experienced consultants to clarify waste-related enquiries and obtain new information.

2.5.5. Timing and pricing

Element	Timeframe	Cost per unit	Units budgeted	Allocated Budget (exc. GST)
Weekday PUD	Ongoing throughout year	\$1,442.28	1	\$1,442.28
Weekend PUD – Orange Farmers Market		\$1,510.86	3	\$4,532.59
			Total	\$5,974.87

2.6. Media campaign

2.6.1. Methodology

Development and planning

EnviroCom will design and undertake a targeted community education and engagement media campaign, with the topic to be decided in conjunction with Council. It is EnviroCom's intention to share information with the Orange community to raise awareness and understanding of key waste topics, as reiterating desired waste generation and disposal behaviours through a range of media avenues is an effective approach.

Delivery

In order to appeal to a broad community demographic, a range of mediums and media approaches are proposed. The allocated budget includes the development of a Communication (Comms) Plan with consideration given to the utilisation of the following media elements:

- Media release
- Social media posts
- Council podcast
- Pop-up waste education videos

EnviroCom will liaise with Council's Waste and Communications departments regarding the format, scheduling and release/publication of media-based elements which will be included in the Comms Plan. All content will be provided to Council for approval with final versions provided in print-ready PDF, JPEG or MP4 format.

Reporting

The official release dates of various campaign elements will be included in the corresponding monthly report, as well as provided in a summary table in the FOGO WEP 2024-25 final report.

2.6.2. Deliverables

- Development of a Comms Plan outlining topics and key content for each media strand
- Media release development (x1)
- Social media posts and blurbs (x4)
- Council podcast (x1)
- Pop-up waste education videos (x1)

2.6.3. Requirements from Council

- Approval/comment on Comms Plan
- Approval of all artwork and content
- Release and distribution of materials according to Comms Plan schedule

2.6.4. Intended project outcomes

Targeted and relevant educational messages addressing a specific issue or topic of interest supports improved user behaviours. Reiterated messages regarding the correct use of kerbside bins and Council waste facilities will encourage preferred waste generation and disposal behaviours to become the social norm, helping to reduce contamination, enhance resource recovery and divert waste from landfill.

2.6.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Develop Comms plan and associated media elements	November 2024	\$3,419.44
Total		\$3,419.44

2.7. Sustainable Living Expo 2024

Following the success of the Sustainable Living Expo 2022 and 2023, and requests for future involvement, provision has been made within this year’s WEP for participation in the Expo for 2024.

2.7.1. Methodology

Development and planning

EnviroCom will liaise with the event organisers (Rotary Club of Orange) of the Sustainable Living Expo 2024 in the lead-up to the event, and will deliver a PUD and presentation at the Expo. Allowance has been made for an EnviroCom consultant to attend for the event’s duration from 8am – 3pm.

Delivery

At the Sustainable Living Expo in 2023, EnviroCom held a stall (similar to a regular PUD) during the event and facilitated a waste sorting game/competition. If event organisers are happy to do the same, this can be repeated in 2024, or a similar workshop developed. EnviroCom will bring all stall equipment and props in preparation for delivery.

Reporting

Details of event support provided by EnviroCom will be included in the corresponding monthly report, as well as provided in the WDES WEP 2024-25 final report.

2.7.2. Deliverables

- Liaison with event organisers
- Delivery of PUD and presentation by EnviroCom, providing event attendees with an opportunity to obtain information on correct waste disposal
- Provision of summary report to Council

2.7.3. Requirements from Council

- Approval of event support/participation details

2.7.4. Intended project outcomes

The continual provision of high-quality waste education to the community, further highlighted by the waste sorting game, will assist in reducing recycling and FOGO stream contamination throughout the event, and by taking home this knowledge, residents will also be encouraged to reduce contamination in their kerbside bins.

2.7.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Delivery of PUD and presentation at Sustainable Living Expo 2024	Sunday 22 nd September 2024	\$2,628.17
Total		\$2,628.17

2.8. BIP collateral feedback

Over the years of conducting bin inspections in Orange, mixed feedback has been put forward by residents with regards to the tags/stickers employed under the program. Some residents are content with the information on the tags, and other find the stickers to be confusing. In order to choose the best design for the BIP collateral which is the most effective way of promoting accurate waste education without resulting in hostile responses from residents, it is suggested that feedback in the form of specialised pop-up displays and surveys is requested of the community.

2.8.1. Methodology

Development and planning

In conjunction with Council, EnviroCom will develop survey questions and focus questions which ask respondents to rate and comment on the tags and stickers currently used for bin inspections (all three streams). The feedback will aim to find out useful information such as the positive/negative connotations provided by the tag, and the clarity of the information on the tag and sticker.

A flyer containing information about the feedback desired by residents, inclusive of a QR code linking to the survey questions, will be designed by EnviroCom and approved by Council. This will be handed out at pop-up displays, which will be run consecutively on a Friday and Saturday at one of Orange's main shopping centres.

Delivery

The pop-up displays will be booked by EnviroCom and ideally held at Orange City Centre or similar large shopping centre in Orange. Each display will be staffed from 10am-2pm (peak traffic period) across a two-day period on a Friday and Saturday. This will allow for a wide variety of the community, who may or may not have had their bins inspected before, to take the survey and to have their feedback.

Each PUD would be staffed by two EnviroCom consultants, in order to maximise the reach of the display and increase the number of residents taking the survey during the four-hour interval when the displays will be staffed. Feedback and survey results gathered from each resident will be collated into a document which will guide the redesign of the current tags and stickers employed across the Orange LGA.

Reporting

EnviroCom would report back to Council with survey questions, the final document of community feedback and the resulting new tag/sticker designs. The new tag and sticker design could also be tailored for NetWaste, should there be budget available to incorporate the changes.

2.8.2. Deliverables

- Coordination of pop-up displays and venue hire
- Delivery of pop-up displays in Orange

- Redesign of current BIP stickers and tags (all streams)

2.8.3. Requirements from Council

- Approval of survey questions and pop-up display locations
- Approval of new BIP collateral designs

2.8.4. Intended project outcomes

Updating regularly-used BIP collateral to promote effective understanding of waste disposal will add value to the current and long-running BIP program in Orange. Hearing residents voice their opinions on the collateral and taking on board feedback will ensure that the collateral is fit-for-purpose and will receive positive feedback from residents when affixed to inspected bin lids. Such collateral is also less likely to make residents presenting contaminated bins feel singled out, and instead, will help them to feel empowered to make changes to their disposal habits.

2.8.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
<ul style="list-style-type: none"> • Coordination and delivery of pop-up displays • Redesign of BIP collateral 	August 2024	\$5,877.45
Total		\$5,877.45

2.9. Pub trivia round

To highlight the importance of correct waste disposal, and to celebrate annual events such as Plastic Free July and National Recycling Week, it is proposed that EnviroCom facilitates a round of waste-related trivia questions to be delivered during July (Plastic Free July) and November (National Recycling Week) at local pub trivia nights. Two rounds could be run during July, and one round during November.

2.9.1. Methodology

EnviroCom will develop 13 questions (one round plus one bonus question) per trivia night with a waste theme, which will be read as part of the weekly pub trivia night run by quizmaster Neil Gill (Wednesdays at the Canobolas Hotel, Thursdays at Waratahs Orange). The questions will be approved by Council and sent to Neil a week in advance of the first trivia night. If required, an EnviroCom staff member could do a brief talk about the relevant waste event prior to the commencement of the round on the night.

Following the end of the round, answers will be provided to trivia attendees as per usual, but EnviroCom will also note the percentage of teams which correctly answered each waste-related question, to understand any gaps in waste education which may need to be addressed.

2.9.2. Deliverables

- Development of trivia questions
- Liaison with quizmaster Neil Gill
- Development of summary report including question success rate

2.9.3. Requirements from Council

- Approval of trivia questions

2.9.4. Intended project outcomes

A target audience often overlooked and difficult to reach with regards to waste education is the 18-40 age bracket. As school and early learning centre waste incursions reach the younger demographic, and those over 50 are more commonly found to be following Council social media/websites to source accurate waste information, there is a large proportion of the community who do not receive this information. Instead, this demographic can be targeted through trivia nights to learn more about important waste events and disposal methods, and directed to Council's website or social media for continued waste education.

2.9.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
<ul style="list-style-type: none">• Development of trivia questions (3x rounds)• Liaison with quizmaster for facilitating questions	July 2024 and November 2024	\$975.83
Total		\$975.83

3.0 WEP 2024-25 budget summary

Budget expenditure by initiative as described in WEP 2024-25

Initiative	Details	Cost (ex. GST)
Project Coordination		
WEP management, coordination, Council liaison and reporting (monthly and annual)	<ul style="list-style-type: none"> Monthly reporting – ongoing as from July 2024 Mid-year progress update meeting 2025-26 WEP planning meeting attendance – May 2025 2025-26 WEP planning and budget development – June 2025 2024-25 WEP annual report – June 2025 	\$5,497.54
Bin Inspection Program		
Coordination & collateral	<ul style="list-style-type: none"> Ordering of BIP collateral Mapping inspection areas Scheduling inspections Liaison with JRR and Council 	\$4,020.29
Delivery	<ul style="list-style-type: none"> Delivery of 1x recycling, 2x FOGO & general waste, and 1x general waste inspection weeks (5 days each) 	\$9,840.14
Reporting	<ul style="list-style-type: none"> Collation of all BIP data Analysis of data and provision of report to Council 	\$2,836.68
Beeswax Wrap Workshops		
Beeswax wrap workshops	<ul style="list-style-type: none"> Liaison with Orange Eco Update of PowerPoint presentation Delivery of workshops during work hours 	\$2,068.86
Waste Facility Tours		
Tour promo	<ul style="list-style-type: none"> Development of promotion email, sent to Orange primary schools in Term 3 and Term 1 	367.66
Community tour – weekday x2	<ul style="list-style-type: none"> Promotion of tour via Council's social media Coordination of booking requests via Eventbrite Delivery of tour during work hours on a weekday Receiving evaluation feedback 	\$3,373.48
Community tour – weekend x2	<ul style="list-style-type: none"> Promotion of tour via Council's social media Coordination of booking requests via Eventbrite Delivery of tour on a weekend Receiving evaluation feedback 	\$4,041.10
School tour – own bus x4	<ul style="list-style-type: none"> Liaison with school Delivery of tour during school hours on a weekday Receiving evaluation feedback 	\$3,190.86
School tour – bus provided x7	<ul style="list-style-type: none"> Liaison with school and bus company Delivery of tour during school hours on 	\$14,376.34

	<ul style="list-style-type: none"> a weekday Receiving evaluation feedback 	
Pop-up Displays		
PUD – weekday x1	<ul style="list-style-type: none"> Development of promo tile for social media Liaison with shopping centre/ event organisers for booking Delivery of 4-hour PUD during work hours 	\$1,442.28
PUD – weekend x3	<ul style="list-style-type: none"> Development of promo tile for social media Liaison with shopping centre/ event organisers for booking Delivery of 4-hour PUD outside of work hours 	\$4,532.59
Media Campaign		
Media Campaign	<ul style="list-style-type: none"> Development of Comms Plan Development of content and provision to Council for distribution 	\$3,419.44
Sustainable Living Expo		
Sustainable Living Expo – PUD and demonstration	<ul style="list-style-type: none"> Liaison with event organisers and Council Delivery of 6-hour PUD outside of work hours Delivery of a practical demonstration to audience (e.g. mini audit of event bins) Provision of summary report to Council 	\$2,628.17
BIP collateral feedback		
BIP collateral feedback	<ul style="list-style-type: none"> Development of focus group and survey questions Facilitation of focus groups Collation of feedback into document Development of new collateral designs 	\$5,877.45
Pub trivia round		
Pub trivia round	<ul style="list-style-type: none"> Development of 3x rounds of trivia questions Liaison with quizmaster to facilitate trivia questions 	\$975.83
TOTAL		\$68,488.72

Budget summary of WEP 2024-25

2024-25 budget	\$68,898.00
Carryover (unspent from 2023-24)	-\$59.50
Available budget 2024-25	\$68,838.50
Allocated budget	\$68,488.72
Underspend	\$349.78



Engaging the Community in Waste Minimisation and Resource Recovery

Waste Diversion Education Strategy

Implementation Plan 2024-25

Final

June 2024



Education, Training, Research

Project Undertaken by



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Disclaimer

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Information, statements and recommendations implied or stated in this report are limited to the nature and scope of the project and do not constitute legal advice.

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1.0 Introduction

The Orange City Council 'Engaging the Community in Waste Minimisation and Resource Recovery Waste Diversion Education Strategy 2016-2021' (WDES 2016-2021) targeted an increase in the rate of waste diversion from landfill in the Orange City Council Local Government Area (LGA). The strategy identified a five-year framework aimed at achieving the ultimate goal of increasing the rates of diversion through the adoption and embedding of behaviours within the community that consider a reduction of waste generation and, for waste generated, a consideration of diversion as the preferred option over disposal.

An Implementation Plan is developed annually to deliver initiatives and elements that will support the broader Orange City Council WDES 2016-2021. An annual budget of \$30,000 (exc. GST) is provided each year to undertake these initiatives. Any unspent funds from the previous year will be carried over for use during the following contract year. This year marks the eighth year of the WDES contract, and the third year to be outside of the original overarching five-year framework.

The initiatives to be delivered under the WDES 2024-25 budget include:

- Internal Waste Assessment – staff consultation and education
- Cinema advertising
- Schools Waste Education & Engagement Program (SWEEP)
- Composting & worm farming workshop
- Project management, WDES development and reporting

The current contract period runs from 1st July 2024 to 30th June 2025. The WDES has been developed based on the following budget allocation:

Year	Budget (Exc. GST)
2023-24 underspend	\$1,346.76
2024-25 allocation	\$30,000
Total 2024-25 budget	\$31,346.76

2.0 WDES 2016-2021 Overview and Strategic Links

The Orange City Council 'Engaging the Community in Waste Minimisation and Resource Recovery Waste Diversion Education Strategy 2016-2021' (WDES 2016-2021) targeted an increase in the rate of waste diversion from landfill in the Orange City Council Local Government Area (LGA). Specifically, this document identified the need to deliver two primary mechanisms to achieve improvement in diversion targets:

1. Increase and improve presentation of appropriate materials to diversion services
2. A sustained reduction in the total amount of waste generated

WDES 2016-2021 highlighted four key areas of focus:

1. Improve householder use of recycling and FOGO waste services to reduce contamination and increase resource recovery
2. Encourage greater resource recovery from self-haul disposal
3. Improve resource recovery across the business sector
4. Increase materials efficiency through waste minimisation and avoidance

These key areas of focus are supported by targets outlined in the NSW Waste and Sustainable Materials Strategy 2041:

- Phase out problematic and unnecessary plastics by 2025
- Reduce total waste generated by 10% per person by 2030
- 80% average recovery rate from all waste streams by 2030
- Triple the plastics recycling rate by 2030
- Halve the amount of organic waste sent to landfill by 2030

The targeted improvement in materials diversion is being undertaken in a dynamic community environment that is subject to a number of key waste education and behaviour change activities. These include programs and initiatives that are being undertaken concurrently in Orange that are focused on the Food Organics and Garden Organics (FOGO) diversion stream and the regional (NetWaste) waste minimisation and resource recovery education initiatives.

The information gained from the annual general waste stream composition assessment in Orange and the assessment of waste diversion opportunities provide direct linkages to the additional education and behaviour-focused programs available in Orange. As a result, it is suggested that this is likely to improve behavioural outcomes by influencing the development, strategic targeting and implementation of both the OCC FOGO program, and the NetWaste Waste Education Program.

While the five-year WDES 2016-2021 concluded in June 2021, Council have approved for the WDES contract to be renewed on a rolling annual basis up until April 2026, continuing to emphasise and target the four key areas of focus established in the WDES 2016-2021.

3.0 WDES Implementation Plan 2024-25 Initiatives

This section provides a detailed description of each of the waste education initiatives costed for delivery within the WDES Implementation Plan 2024-25, including: program overview; methodology; deliverables; requirements from Council; intended program outcomes; anticipated timeframes for delivery; and pricing.

A full budget summary is provided in section 4.0.

3.1. Internal Waste Assessment – staff consultation and education

Under FOGO WEP 2020-21, EnviroCom undertook an internal waste assessment of ten Council-owned venues. As a follow up to the Internal Waste Assessment, EnviroCom developed a Phase 2 recommendations and opportunities report under FOGO WEP 2021-22 for Council to outline a strategic approach to consulting, educating and engaging Council staff to promote positive behaviour change and improve opportunities for waste diversion and resource recovery. The final phase of the Internal Waste Assessment is to undertake education and training once Council has implemented the recommended changes outlined in the report.

3.1.1. Methodology

Development and planning

EnviroCom will fund the purchase of Council's SimplyCups coffee cup collection bin, regular payment and servicing arrangements for which will be then taken over by Council's internal Sustainability Team. Based on the newly-implemented changes to bin placement and cleaning team processes at the Orange Civic Centre, EnviroCom will develop and deliver staff training and information sessions that will be supported by resources and collateral such as bin signage, posters and information flyers/intranet updates.

Reporting

An overview of the outcomes from the staff consultation and education and engagement sessions will be provided in the corresponding monthly report and summarised in the WEP 2024-25 final report.

3.1.2. Deliverables

- Purchase of coffee cup collection bin and liaison with Simply Cups
- Liaison and consultation with Council's Sustainability Team and cleaning staff
- Development and delivery of staff training sessions (2x face-to-face sessions allocated in budget)
- Design and development of supporting collateral e.g. posters, signage

3.1.3. Requirements from Council

- Liaison with key Council departments to promote staff training sessions
- Approval of artwork and content for supporting resources/collateral

3.1.4. Intended project outcomes

The recommendations and opportunities report highlighted steps and changes that could be adopted by Council to improve opportunities for waste diversion, waste avoidance and resource recovery within Council operations. When implemented by Council, this is likely to result in positive behaviour change by Council staff regarding

waste generation and disposal practices and result in an improved environmental outcome for Council.

3.1.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
IWA – Council staff consultation and education	July/August 2024	\$2,882.44
Total		\$2,882.44

3.2. Cinema Advertising

EnviroCom has successfully developed a suite of educational resources for Council, which have been distributed on the Council website, social media platforms and other medias. To further expand the reach of the waste education resources, particularly to the demographic which may not follow Council’s social media pages, cinema advertising will continue to be utilised at the local Odeon 5 cinema in Orange.

3.2.1. Methodology

Development, planning & delivery

A select array of animated waste education videos previously developed have been formatted for the cinema screen and distributed under WDES WEP 2023-24, including topics such as recycling contamination, using the FOGO bin for food waste, and promoting the CRC. It is proposed that a new suite of videos will be used once again to show on the silver screen. Star Media Advertising, who manages the Odeon 5 advertising, will be engaged once more to deliver the adverts.

Delivery

Two 15-second pop-up videos will be formatted and provided to the advertiser, and each video will be played prior to every movie at the Odeon 5 for 6 months, before rotating to the second video in the next half of the year. The cost of the adverts will be covered by the WDES WEP 2024-25.

3.2.2. Deliverables

- Liaison with Star Media Advertising
- Formatting of animated-style videos for cinema screen
- Inclusive of cinema advertising fees

3.2.3. Requirements from Council/JRR

- Approval of video adverts

3.2.4. Intended program outcomes

Expanding the reach of Council’s waste education messaging to the general public will provide an opportunity for all residents to engage with the information, especially for the demographic which is not often reached via Council’s social media and website (18-35 year olds).

3.2.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Cinema advertising – key waste education messaging	Ongoing	\$12,270.35
Total		\$12,270.35

3.3. Schools Waste Education & Engagement Program (SWEEP)

The Schools Waste Education & Engagement Program (SWEEP) is aimed at Orange primary schools which are looking to reduce their waste, increase their resource recovery and implement long term sustainability goals.

3.3.1. Methodology

Development, planning & delivery

Templates of the school waste plan, action plan and audit datasheet will be developed for use across all participating schools. Each plan will be tailored to the school to meet their specific needs and requirements. A promo email will also be developed and sent to Orange schools, explaining the program's inclusions and goals. From here, one school will be selected to participate in SWEEP, with other interested schools joining a waitlist for future years. As there is a deliberate unallocated proportion within the WDES budget, this could be put towards a second school within the contract period if there is enough demand.

A phone meeting with the contact teacher/s will be arranged to discuss suitable dates for conducting the initial waste audit and incursion for the school's 'eco team' or similar. Part of the school's waste plan will be to select an eco team from the student body to assist in delivering elements of the waste plan, such as collecting classroom fruit scrap bins or recycling bins to transport to the external bins or compost bins/worm farms.

An EnviroCom educator will conduct an audit of the school's bins (general waste, recycling and FOGO, as applicable), with students, such as the eco team, taking part in the activity to highlight the importance of separating waste correctly and recovering resources. Following the audit, an incursion to the eco team about the new classroom bins, signage and external bins will be delivered, the information from which the eco team can then present to their fellow students. If the school would also like extra lessons to any classes on the topic of recycling, food waste, etc., these would be booked and funded under the NetWaste Primary School Waste Education Program.

Data from the initial audit would be collated and analysed, and a report provided to Council and the school on the findings. Results from the audit would assist in generating recommendations to improve waste separation and resource recovery, which would be included in the school's waste plan.

Internal bins, signage and external bin stickers will be designed and ordered as part of the project and provided to each participating school following the audit and incursion. A worm farm and compost will also be presented to the school for use. Internal classroom bins and associated signage will be consistent in colour/style to enhance understanding and correct separation. External bin stickers will be adhered to the front of all 240L bin bases, with three different designs as per the available bin services (general waste, recycling and FOGO). This will assist in increasing resource recovery within the playground/lunch areas, and as a point-of-source prompt for students, teachers and cleaning/grounds staff. Schools who do not have a recycling and/or FOGO service will be recommended to engage JR Richards & Sons to provide these services.

Reporting

After several months of implementing the new bins, signage and source separation methods, a second and final waste audit will be conducted of the school's external

bins. As before, the school's eco team will be invited to assist with sorting the waste. The results from the follow-up waste audit will be collated into a report and will be used to finalise the school's waste plan for the long term. Positive change with regards to waste reduction and resource recovery will be highlighted in the final report, and celebrated through the development of a case study describing the school's excellent efforts and the sustainable changes adopted by staff and students. The case study can be forwarded to Council's media contacts and help to promote SWEEP for future years.

3.3.2. Deliverables

- Development of waste plan, action plan and audit datasheet templates
- Liaison with schools via program promo email
- Purchasing of bins, stickers, signage and other resources through external companies
- Bin sticker and signage design, inclusive of printing
- Delivery of two audits and incursion
- Development of reports and final case studies

3.3.3. Requirements from Council/JRR

- Approval of all collateral and resources
- Liaison with media outlets to advertise case study/program results

3.3.4. Intended program outcomes

Council's new waste program, SWEEP, will assist local primary schools in reaching waste and sustainability targets through the use of a structured plan, delivered across several stages. SWEEP will take the students and teachers on the waste journey as a collective effort in maintaining correct bin usage and education throughout the years, while also providing key resources and collateral to achieve waste reduction, high resource recovery and enhance the school's sustainable practices for the long term.

3.3.5. Timing and pricing

Element	Cost per unit	No. of units	Allocated Budget (exc. GST)
Coordination	\$3,785.82	1	\$3,785.82
Collateral (purchasing and design)	\$2,942.44	1	\$2,942.44
Delivery – audit 1 and incursion	\$2,201.40	1	\$2,201.40
Delivery – audit 2	\$1,756.59	1	\$1,756.59
Reporting (report and case study)	\$849.48	1	\$849.48
Total			\$11,535.72

3.4. Composting & Worm Farming Community Workshop

As a popular topic in the community, it is proposed that a community workshop is delivered on the topic of composting and worm farming. Budget has been allocated for the delivery of a face-to-face community workshop (after hours). However, should the SWEEP prove popular, funding could be redistributed to go towards this instead of the workshop.

3.4.1. Methodology

Planning

EnviroCom has been developing and delivering community workshops on themes such as composting and worm farming, waste reduction, recycling and food waste diversion on behalf of Council for many years. As a result, there is an existing PowerPoint presentation available that will be reviewed and amended prior to delivery. Should Council require a more specific workshop focus, then this content would need to be developed from scratch and these development costs have not been included in the current budget allocation.

The current workshop feedback form will be used for evaluation purposes. It is suggested that the ELF is selected as the designated workshop venue, as it has been in previous years for similar events.

Promotion

A bookings page will be designed for the workshop, using the Eventbrite platform, and the link will be provided to Council for promotion via Council's Facebook page and website. In addition, EnviroCom will send the workshop registration details to local special interest groups to boost the number of participants.

Delivery

EnviroCom will manage workshop bookings and enquiries and send a reminder email to registered participants the week prior to the workshop.

The workshop will be approximately 1.5 hours in duration and delivered on a weekend. Previous feedback has suggested that weekday workshops are not suitable for a large proportion of residents due to regular working hours. The workshop will be delivered via a PowerPoint presentation with the use of additional props and resources where appropriate, and a compost bin and worm farm will be purchased ahead of the workshop and given away via a lucky dip at the end of the session.

Attendees will be encouraged to fill out the feedback form (via a QR code) at the end of the session for evaluation purposes. The results will be collated and included in Council's annual reporting.

3.4.2. Deliverables

- Online promotion and booking form development
- Management and coordination of bookings and enquiries
- PowerPoint presentation review and amendment
- Workshop facilitation
- Collation of evaluations
- Workshop summary and updates included in the annual report

3.4.3. Requirements from Council

- Approval of all artwork and content associated with program promotion and delivery materials
- Coordinate further workshop promotion e.g. media release, Council newsletter and poster on community noticeboards

3.4.4. Intended program outcomes

Community workshops can be effective at influencing waste-related behaviours with the potential for key messaging to extend to the broader community (word of mouth

and social diffusion). Evaluation forms provide a form of monitoring and assessment with feedback being used to shape future programs.

3.4.5. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Community workshop (after hours)	TBC	\$1,432.10
TOTAL		\$1,432.10

3.5. Program Management, WDES Implementation Plan Development & Reporting

The 2024-25 WDES Implementation Plan will be coordinated and delivered by experienced Environmental Consultants from EnviroCom's Orange office. Regular contact between EnviroCom and Council, via phone and email, will be maintained to allow for frequent correspondence regarding the WDES Implementation Plan, and for updates on progress in the development and delivery of each of the proposed initiatives.

EnviroCom will ensure the timely delivery of all initiatives to a high standard throughout the 2024-25 contract year.

3.5.1. Methodology

Development and planning

WDES Implementation Plan 2024-25 will be developed by EnviroCom, in consultation with Council, with initiatives delivered by the Project Coordinator and EnviroCom team.

Delivery

The Project Coordinator will prepare and deliver the WDES Implementation Plan and budget for the 2024-25 contract year. EnviroCom's Orange-based staff will liaise with Council on projects as required and will request approval from Council on all project initiatives.

Having completed the 5-year Waste Diversion Education Strategy 2016-2021, WDES initiatives will be developed on a year-by-year basis for the remaining duration of the contract (until April 2026).

Reporting

EnviroCom will prepare and deliver a summary report outlining the methodology and outcomes of activities carried out under the Implementation Plan 2024-25 budget.

3.5.2. Deliverables

- Implementation Plan Planning – early June 2024
- 2024-25 Implementation Plan development – June/July 2024
- 2024-25 Implementation Plan budget development – June/July 2024
- 2024-25 WDES Implementation Plan report – June 2025
- 2025-26 Implementation Plan 'Where to next?' planning meeting attendance – May 2025
- 2025-26 planning meeting minutes & recommendations

3.5.3. Requirements from Council

- Approval (or comment and then final approval) of the WDES Implementation Plan 2024-25
- Ongoing liaison, feedback and approvals for initiative delivery elements

3.5.4. Timing and pricing

Element	Timeframe	Allocated Budget (exc. GST)
Program development, Implementation Plan development & reporting	- Implementation Plan Planning – early June 2024 - 2024-25 Implementation Plan development – June/July 2024 - 2024-25 Implementation Plan budget development – June/July 2024 - 2024-25 WDES Implementation Plan summary report – June 2025 - ‘Where to next?’ planning meeting attendance – May 2025. - 2025-26 planning meeting minutes & recommendations	\$2,629.26
Total		\$2,629.26

4.0 WDES Implementation Plan 2024-25 Budget Summary

#	Initiative	Description	Cost (exc. GST)
3.1	Internal Waste Assessment – Phase 3	<ul style="list-style-type: none"> • Liaison with Council to implement recommendations • Education for Council staff and cleaners • Education for Council staff and cleaners • Provision of resources where budget allows 	\$2,882.44
3.2	Cinema Advertising	<ul style="list-style-type: none"> • Liaison with Star Media Advertising • Formatting of video for cinema screen 	\$12,270.35
3.3	Schools Waste Education & Engagement Program (SWEEP)	<ul style="list-style-type: none"> • Development of resource templates • Purchasing of resources and collateral • Delivery of 2x audits and incursion • Development of final reports and case study 	\$11,535.72
3.4	Composting & Worm Farming Community Workshop	<ul style="list-style-type: none"> • Update of current PowerPoint presentation • Facilitation of bookings via Eventbrite • Delivery of after-hours workshop • Inclusion of evaluation results in final report 	\$1,432.10
3.5	Project Management: Implementation Plan 2023-24 development & reporting	<ul style="list-style-type: none"> • 2024-25 Implementation Plan Planning and development • Implementation Plan budget development • 2024-25 WDES Implementation Plan summary report • 2025-26 'Where to next?' planning meeting attendance, meeting minutes & recommendations 	\$2,629.26
TOTAL SPEND ON INITIATIVES			\$30,749.87
Available budget 2024-25			\$31,346.76
Potential underspend			\$596.89



APPENDIX C

WEED INSPECTION REPORTS



THE MUB RRC - EUCHARAENA ROAD SITE

Date: 03/07/2024

Time: 11:30 AM

PR No (office use only):

Property address: EUCHARAENA ROAD

Lot and DP:

WEEDS DETAILS

St John's Wort	Privet	Blackberry	Other: <u>SEPARATED TUSsock</u>
Control work required:	Yes	No	
Re-inspection required:	<u>Yes</u>	No	
Undertaking received:	Yes	No	
Direction to be issued:	Yes	No	

INSPECTOR DETAILS

Name of inspector: ROBERT CHRISTIAN

Signature: 

Enquiries: Rob Christian 0409 196 621 Roger Smith: 0419 011 002 Andrew Cole: 0428 335 164

Comments: NO MAJOR ISSUES OF CONCERN IDENTIFIED
I PERFORMED SOME SEPARATED TUSsock CONTROL IN
PREVIOUSLY IDENTIFIED AREAS. FOLLOW UP CONVERSATION
WITH WANNIE DAVIS 04/07/2024. RE-INSPECT SPRING 2024



APPENDIX D

**GROUNDWATER, SURFACE
WATER, LEACHATE AND DUST
ANALYTICAL DATA TABLES**



Table D1: ORRRC Environmental Monitoring - Groundwater Gauging Results

Ground Water Levels: 11-Sep-24

Piezometer Details:

	Piezometer Elevation (mAHD)	Date	Measured	GWL (mAHD)	Well Depth	Well Base	Water Column
BH1	841.66	11/09/2024	2.80	838.86	11.3	830.41	8.45
BH1A	841.68	11/09/2024	2.78	838.90	5.2	836.47	2.43
BH2	843.51	11/09/2024	4.62	838.89	16.5	827.01	11.88
BH2A	843.53	11/09/2024	4.44	839.09	5.3	838.23	0.86
BH3	869.69	11/09/2024	21.44	848.25	31.5	838.19	10.06
BH4	847.17	11/09/2024	2.84	844.33	10.9	836.27	8.06
BH5	835.85	11/09/2024	4.98	830.87	20.0	815.85	15.02
BH6	834.90	11/09/2024	3.05	831.85	13.5	821.40	10.45
BH7	840.89	11/09/2024	5.37	835.52	33.0	807.89	27.63
BH7A	840.93	11/09/2024	3.08	837.85	5.0	835.93	1.92

Definitions:

Stickup: Height of piezometer pipe above ground surface
 Ground Elevation: Actual elevation of ground at the piezometer relative to an arbitrary datum. All ground elevations are measured to the same datum, hence piezo GWLs are relative to each other.

GWL: Actual elevation of groundwater at the piezometer relative to an arbitrary datum.

Measured: Depth of groundwater measured from the top of the bore casing.

NMWL: No measureable water level.

Ground Water Levels: 04-Mar-25

Piezometer Details:

	Piezometer Elevation (mAHD)	Date	Measured	GWL (mAHD)	Well Depth	Well Base	Water Column
BH1	841.66	04/03/2025	2.87	838.79	11.3	830.41	8.38
BH1A	841.68	04/03/2025	2.84	838.84	5.2	836.47	2.37
BH2	843.51	04/03/2025	4.20	839.31	16.5	827.01	12.30
BH2A	843.53	04/03/2025	5.30	838.23	5.3	838.23	0.00
BH3	869.69	04/03/2025	21.20	848.49	31.5	838.19	10.30
BH4	847.17	04/03/2025	3.16	844.01	10.9	836.27	7.74
BH5	835.85	04/03/2025	4.45	831.40	20.0	815.85	15.55
BH6	834.90	04/03/2025	3.29	831.61	13.5	821.40	10.21
BH7	840.89	04/03/2025	4.30	836.59	33.0	807.89	28.70
BH7A	840.93	04/03/2025	3.49	837.44	5.0	835.93	1.51

Date	BH1		BH1A		BH2		BH2A		BH3		BH4		BH5		BH6		BH7		BH7A	
	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)
02-Mar-10	2.97	838.69	2.85	838.83	4.60	838.91	NMWL		21.82	847.87	3.60	843.57								
22-Jun-10	2.79	838.87	2.69	838.99	4.54	838.97	NMWL		21.92	847.77	2.94	844.23								
01-Sep-10	1.41	840.25	1.23	840.45	4.38	839.13	4.38	839.15	21.14	848.55	1.25	845.92								
08-Dec-10	1.03	840.63	0.94	840.74	3.92	839.59	3.96	839.57	19.67	850.02	0.97	846.20								
08-Mar-11	2.14	839.52	2.15	839.53	4.40	839.11	NMWL		18.85	850.84	1.92	845.25								
21-Jun-11	2.29	839.37	2.30	839.38	4.44	839.07	NMWL		21.01	848.68	2.13	845.04								
28-Sep-11	2.14	839.52	2.17	839.51	4.64	838.87	5.02	838.51	21.16	848.53	2.96	844.21								
07-Dec-11	2.12	839.54	2.05	839.63	4.51	839.00	NMWL		21.14	848.55	1.83	845.34								
19-Mar-12	1.54	840.12	1.42	840.26	4.33	839.18	5.12	838.41	19.31	850.38	2.76	844.41								
14-Jun-12	2.23	839.43	2.16	839.52	4.49	839.02	5.17	838.36	20.56	849.13	2.42	844.75								
12-Sep-12	1.89	839.77	1.90	839.78	4.67	838.84	4.95	838.58	20.53	849.16	1.77	845.40								
05-Mar-13	2.22	839.44	2.33	839.35	4.35	839.16	5.05	838.48	21.26	848.43	2.78	844.39								
03-Sep-13	2.54	839.12	2.46	839.22	4.62	838.89	5.13	838.40	21.33	848.36	2.73	844.44								
17-Mar-14	2.62	839.04	2.59	839.09	4.30	839.21	5.10	838.43	21.51	848.18	3.47	843.70								
18-Sep-14	2.44	839.22	2.43	839.25	4.58	838.93	4.94	838.59	21.43	848.26	2.15	845.02								
01-Jan-15	2.84	838.82	2.80	838.88	4.64	838.87	4.95	838.58	21.52	848.17	3.45	843.72								
09-Mar-15	2.57	839.09	2.51	839.17	4.46	839.05	4.96	838.57	21.42	848.27	3.10	844.07	4.78	831.07	3.69	831.21	4.01	836.88	4.06	836.87
02-Sep-15	2.41	839.25	2.38	839.30	4.33	839.18	4.52	839.01	21.34	848.35	1.91	845.26	4.66	831.19	3.60	831.30	3.88	837.01	3.77	837.16
01-Dec-15	2.76	838.90	2.76	838.92	4.62	838.89	NMWL		21.48	848.21	2.97	844.20	2.77	833.08	3.15	831.75	3.53	837.36	3.41	837.52
08-Mar-16	2.90	838.76	2.91	838.77	4.52	838.99	5.15	838.38	21.30	848.39	3.64	843.53	4.46	831.39	3.45	831.45	3.89	837.00	3.84	837.09
27-Sep-16	0.86	840.80	0.88	840.80	4.18	839.33	4.55	838.98	12.05	857.64	3.14	844.03	4.05	831.80	3.24	831.66	3.03	837.86	3.28	837.65
29-Mar-17	2.38	839.28	2.41	839.27	4.18	839.33	NMWL		20.97	848.72	2.34	844.83	3.13	832.72	2.83	832.07	3.73	837.16	3.57	837.36
12-Sep-17	2.65	839.01	2.66	839.02	4.55	838.96	4.98	838.55	21.37	848.32	3.52	843.65	4.40	831.45	3.26	831.64	3.69	837.20	3.84	837.09
17-Apr-18	2.97	838.69	2.87	838.81	4.40	839.11	4.97	838.56	21.50	848.19	3.59	843.58	4.48	831.37	3.59	831.31	4.21	836.68	4.32	836.61
30-Oct-18	2.86	838.80	2.85	838.89	4.62	838.89	5.22	838.31	21.56	848.13	4.50	842.67	4.70	831.15	3.67	831.23	3.79	837.10	4.09	836.84
07-May-19	2.94	838.72	2.94	838.74	4.50	839.01	NMWL		21.57	848.12	4.83	842.34	4.57	831.28	3.75	831.15	3.83	837.06	4.12	836.81
30-Oct-19	2.99	838.67	2.98	838.70	4.64	838.87	4.81	838.72	21.62	848.07	5.14	842.03	4.81	831.04	NMWL		3.88	837.01	NMWL	
05-May-20	2.70	838.96	2.74	838.94	4.40	839.11	5.24	838.29	21.41	848.28	3.73	843.44	2.47	833.38	3.65	831.25	2.91	837.98	2.4	838.53
30-Sep-20	2.48	839.18	2.51	839.17	4.19	839.32	NMWL		21.43	848.26	2.81	844.36	3.99	831.86	3.54	831.36	2.78	838.11	2.52	838.41
11-Mar-21	3.20	838.46	3.02	838.66	4.51	839.00	4.99	838.54	21.68	848.01	3.86	843.31	4.12	831.73	3.29	831.61	3.31	837.58	2.73	838.20
09-Nov-21	2.31	839.35	2.08	839.60	4.26	839.25	4.62	838.99	20.73	848.96	3.58	845.19	3.54	832.31	4.21	830.69	3.03	837.86	2.68	838.25
17-Mar-22	2.42	839.24	2.51	839.17	4.52	838.99	4.84	838.69	20.82	848.87	2.64	844.53	5.01	830.84	2.83	832.07	4.64	836.25	4.28	836.65
27-Sep-22	1.87	839.79	1.83	839.85	4.32	839.19	NMWL		13.98	855.71										
28-Sep-22											1.27	845.90	2.15	833.70	2.04	832.86	2.84	838.05	2.22	838.71
14-Mar-23	2.36	839.30	2.39	839.29	4.10	839.41	5.21	838.32	18.55	851.14	2.52	844.65	4.16	831.69	2.36	832.54	4.42	836.47	3.9	837.03
27-Sep-23	2.64	839.02	2.54	839.14	4.41	839.10	5.00	838.53	21.43	848.26	3.01	844.16	4.52	831.33	2.83	832.07	4.25	836.64	3.51	837.42
04-Apr-24	2.64	839.02	2.63	839.05	4.22	839.29	4.88	838.65	21.41	848.28	3.75	843.42	4.48	831.37	3.31	831.59	4.34	836.55	3.98	836.95
11-Sep-24	2.80	838.86	2.78	838.90	4.62	838.89	4.44	839.09	21.44	848.25	2.84	844.33	4.98	830.87	3.05	831.85	5.37	835.52	3.08	837.85
04-Mar-25	2.87	838.79	2.84	838.84	4.20	839.31	5.30	838.23	21.20	848.49	3.16	844.01	4.45	831.40	3.29	831.61	4.30	836.59	3.49	837.44

Table D2: ORRC Environmental Monitoring - Analytical Results, Groundwater
SEPTEMBER 2024 - MARCH 2025



Group	Analyte	LOR	Units	Criteria	Sample ID																			
					11/09/2024	BH1	BH1	BH1A	BH1A	BH2	BH2	BH2A	BH3	BH3	BH3	BH4	BH4	BH4	BH5	BH5	BH6	BH6	BH7	BH7
pH by PC Titrator	pH Value	0.01	pH Unit	6.5-8.5 ¹ , 7.0-9.0 ²	7.21	7.09	7.29	7.3	7.51	7.4	8.09	8.12	7.86	7.7	7.52	7.79	7.66	7.52	7.44	7.89	7.85	7.82	7.67	
Conductivity by PC Titrator	Electrical Conductivity @ 25°C	1	µS/cm	447 ²	265	291	244	365	2070	2080	1810	678	699	3490	3030	1950	1970	447	472	1490	1510	2280	2220	
Total Dissolved Solids dried at 180 ± 5 °C	Total Dissolved Solids @180°C	10	mg/L	3000 ³	202	220	175	270	1250	1690	1160	387	446	1960	2580	1080	1230	350	348	1160	1330	1960	2260	
Total Organic Carbon (TOC)	Total Organic Carbon	1	mg/L	-	<1	<1	6	11	6	8	12	<1	<1	11	13	11	13	<1	<1	<1	<1	3	4	
Alkalinity by PC Titrator	Bicarbonate Alkalinity as CaCO3	1	mg/L	-	152	141	142	188	594	546	676	400	357	936	859	1010	941	187	173	284	321	373	452	
	Carbonate Alkalinity as CaCO3	1	mg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Hydroxide Alkalinity as CaCO3	1	mg/L	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Total Alkalinity as CaCO3	1	mg/L	350 ³	152	141	142	188	594	546	676	400	357	936	859	1010	941	187	173	284	321	373	452	
Dissolved Metals by ICP-MS	Iron	0.05	mg/L	100 ³ , 0.2 ³	0.08	0.24	1.39	2.16	3.72	2.56	0.39	0.07	0.16	0.07	0.25	0.46	2.79	0.1	0.16	2.08	0.64	11.6	2.78	
	Manganese	0.001	mg/L	10 ³ , 0.2 ³	0.018	0.06	0.274	0.822	0.755	0.707	0.176	0.017	0.013	0.152	0.181	0.153	0.349	0.015	0.017	0.223	0.278	0.776	2.03	
	Zinc	0.005	mg/L	2 ³	0.008	0.006	0.015	0.012	0.019	0.016	0.016	0.019	0.011	0.009	0.009	0.005	0.015	0.012	0.006	0.015	0.014	0.023	0.018	
	Copper	0.001	mg/L	0.015 ¹	0.003	0.005	0.016	0.004	0.002	0.002	0.015	0.004	0.002	0.002	0.004	0.025	0.038	<0.001	<0.001	0.006	0.003	0.016	0.008	
	Aluminium	0.01	mg/L	5 ³	0.11	0.34	0.45	0.12	0.02	0.08	0.3	0.04	0.12	0.02	0.2	0.21	2.02	0.16	0.28	0.91	0.38	0.9	0.49	
Ammonia as N by Discrete Analyser	Ammonia as N	0.01	mg/L	0.5 ³	<0.05	<0.05	<0.05	<0.05	10.4	7.11	9.57	0.43	0.34	5.9	4.36	1.31	1.01	0.2	0.15	0.36	0.35	0.32	0.36	
	Nitrite as N	0.01	mg/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	<0.01	<0.01	<0.01	<0.01	
	Nitrate as N	0.01	mg/L	1 ¹	<0.01	<0.01	0.24	0.59	2.72	2	0.02	<0.01	<0.01	0.01	0.01	0.02	0.04	<0.01	<0.01	0.05	0.05	0.28	0.28	
	Nitrite + Nitrate as N (NOx) by Discrete Analyser	0.01	mg/L	-	0.97	0.39	0.14	0.01	0.07	0.03	1.34	2.1	2.27	0.04	0.02	0.06	0.04	6.99	7.33	0.09	0.22	0.07	0.1	
	Nitrite + Nitrate as N (NOx) by Discrete Analyser	0.01	mg/L	-	0.97	0.39	0.14	0.01	0.07	0.03	1.34	2.1	2.27	0.04	0.02	0.06	0.04	6.99	7.33	0.1	0.22	0.07	0.1	
	Reactive Phosphorus as P by discrete analyser	0.01	mg/L	3 ¹	0.01	0.02	0.02	0.04	<0.01	<0.01	0.09	0.05	0.04	0.08	0.06	0.06	0.04	0.08	0.07	0.01	<0.01	<0.01	<0.01	
	Sulfate (Turbidimetric) as SO4 2- by DA	1	mg/L	1000 ³ , 100 ²	3	2	<1	<1	80	72	209	16	13	77	69	6	4	29	27	649	537	1220	1060	
	Chloride by Discrete Analyser	1	mg/L	700 ³	6	6	7	8	371	375	195	10	9	569	643	183	188	10	10	11	16	6	8	
	Fluoride by PC Titrator	0.1	mg/L	2 ¹ , 20 ²	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.2	<0.1	<0.1	0.2	0.1	<0.1	<0.1	0.2	0.2	0.1	0.2	
	Dissolved Major Cations	Calcium	1	mg/L	1000 ³	23	19	17	28	183	188	86	59	69	275	294	144	152	39	35	224	218	299	314
		Magnesium	1	mg/L	-	17	20	17	27	108	110	105	45	47	246	257	165	166	27	25	84	86	154	185
Potassium		1	mg/L	-	<1	<1	1	1	7	6	16	10	9	2	2	2	2	<1	<1	1	1	2	2	
Sodium		1	mg/L	460 ³	13	14	15	16	86	91	168	26	23	32	30	59	57	15	12	47	37	23	30	
Ionic Balance		0.01	%	-	2.45	2.81	1.83	4.31	4.48	0.97	6.15	3.44	4.37	1.31	0.6	4.26	0.85	2.1	0.29	1.67	4.11	7.1	1.45	
Total Anions	Total Anions	0.01	meq/L	-	3.27	3.03	3.03	3.98	24	23	23.4	8.61	7.83	36.4	36.7	25.5	24.2	4.62	4.3	19.5	18	33	31.3	
	Total Cations	0.01	meq/L	-	3.11	3.2	2.92	4.34	21.9	22.5	20.6	8.03	8.54	35.4	37.2	23.4	23.8	4.82	4.33	20.2	19.6	28.6	32.2	
Total Petroleum Hydrocarbons	C6 - C9 Fraction	20	µg/L	100 ¹	<20	<20	<20	<20	1280	1000	20	<20	<20	50	<20	<20	<20	<20	<20	<20	<20	<20	<20	
	C10 - C14 Fraction	50	µg/L	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
	C15 - C28 Fraction	100	µg/L	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	160	210	<100	<100	<100	<100	<100	<100	<100	<100	
	C29 - C36 Fraction	50	µg/L	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
	C10 - C36 Fraction (sum)	50	µg/L	100 ¹	<50	<50	<50	<50	<50	<50	<50	<50	<50	160	210	<50	<50	<50	<50	<50	<50	<50	<50	
Total Recoverable Hydrocarbons - NEPM 2013 Fractions	C6 - C10 Fraction	20	µg/L	100 ¹	<20	<20	<20	<20	890	720	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
	C6 - C10 Fraction minus BTEX (F1)	20	µg/L	-	<20	<20	<20	<20	890	720	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
	>C10 - C16 Fraction	100	µg/L	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
	>C16 - C34 Fraction	100	µg/L	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
	>C34 - C40 Fraction	100	µg/L	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
	>C10 - C40 Fraction (sum)	100	µg/L	100 ¹	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
	>C10 - C16 Fraction minus Naphthalene	100	µg/L	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
BTEXN	Benzene	1	µg/L	-	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Toluene	2	µg/L	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
	Ethylbenzene	2	µg/L	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
	meta- & para-Xylene	2	µg/L	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
	ortho-Xylene	2	µg/L	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
	Total Xylenes	2	µg/L	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
	Sum of BTEX	1	µg/L	-	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Naphthalene	5	µg/L	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
	Total Phenol by Segmented Flow Analyser	Phenols (Total)	0.05	mg/L	0.1 ¹ , 10 ²	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	

µS/cm microsiemens per centimetre
mg/L milligrams per litre
µg/L micrograms per litre
meq/L milliequivalents per litre
LOR limit of reporting
PS primary sample

Criteria

Table D3: ORRRC Environmental Monitoring - Analytical Results, Surface Water
 JULY 2024 - MARCH 2025



Group	Analyte	LOR	Units	Criteria	Sample ID																			
					Date		SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW3	SW4	SW4							
					11/07/2024	11/09/2024	15/10/2024	30/11/2024	13/12/2024	16/01/2025	13/02/2025	13/03/2025	11/09/2024	04/03/2025										
pH by PC Titrator	pH Value	0.01	pH Unit	6.5-8.5 ¹ , 7.0-9.0 ²	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS								
Conductivity by PC Titrator	Electrical Conductivity @ 25°C	1	µS/cm	4477 ³	7.04	7.57	6.9	7.09	8.16	6.93	7.39	7.35	8.21	7.83	410	520	164	324	1310	178	253	276	395	418
Total Organic Carbon (TOC)	Total Organic Carbon	1	mg/L	-	18	36	12	26	47	13	13	7	60	53	148	153	56	109	467	62	98	92	141	138
Alkalinity by PC Titrator	Bicarbonate Alkalinity as CaCO3	1	mg/L	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Carbonate Alkalinity as CaCO3	1	mg/L	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Hydroxide Alkalinity as CaCO3	1	mg/L	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Total Alkalinity as CaCO3	1	mg/L	350 ³	148	153	56	109	467	62	98	92	141	138										
Dissolved Metals by ICP-MS	Iron	0.05	mg/L	100 ² , 0.2 ³	0.31	6.58	0.22	0.22	1.58	-	-	0.06	4.12	-	0.109	0.388	0.05	0.115	0.58	-	-	0.016	0.304	-
	Manganese	0.001	mg/L	10 ² , 0.2 ³	0.08	0.16	< 0.05	-	0.4	-	-	< 0.05	0.48	-	0.08	0.16	< 0.05	-	0.55	-	-	< 0.05	0.48	-
	Boron	0.05	mg/L	0.5 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Boron (calculated as H3BO3)	0.3	mg/L	-	0.15	0.07	0.21	0.52	1.94	0.03	0.54	0.08	0.03	0.04										
Ammonia as N by Discrete Analyser	Ammonia as N	0.01	mg/L	1 ¹	0.23	< 0.01	0.02	0.21	< 0.01	< 0.01	< 0.01	0.05	< 0.01	< 0.01	0.05	< 0.01	< 0.01	-	-	-	0.16	-	-	
Nitrite as N by Discrete Analyser	Nitrite as N	0.01	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as NO2	0.05	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate as N by Discrete Analyser	Nitrate as N	0.01	mg/L	10 ¹	1.96	0.04	0.39	2.95	< 0.01	< 0.01	< 0.01	0.63	0.05	0.01	2.19	0.04	0.41	3.16	< 0.01	< 0.01	< 0.01	0.68	0.05	0.01
Nitrite plus Nitrate as N (NOx) by Discrete Analyser	Nitrite + Nitrate as N	0.01	mg/L	-	29	38	11	22	70	12	22	29	11	8										
Sulfate (Turbidimetric) as SO4 2- by DA	Sulfate as SO4 - Turbidimetric	1	mg/L	1000 ¹ , 100 ²	21	51	12	15	103	7	9	18	41	43										
Chloride by Discrete Analyser	Chloride	1	mg/L	700 ³	21	51	12	15	103	7	9	18	41	43										
Fluoride by PC Titrator	Fluoride	0.1	mg/L	2 ¹ , 20 ²	< 0.1	0.2	0.2	< 0.1	0.2	< 0.1	< 0.1	0.8	< 0.1	0.1										
Dissolved Major Cations	Calcium	1	mg/L	1000 ³	40	33	18	29	107	20	35	28	20	17										
	Magnesium	1	mg/L	-	12	11	4	8	44	3	6	8	18	16										
	Potassium	1	mg/L	-	24	26	14	25	75	10	12	11	19	21										
	Sodium	1	mg/L	460 ³	21	49	9	18	70	6	8	13	31	28										
Ionic Balance	Ionic Balance	0.01	%	-	4.13	0.58	-	3.54	0.83	-	-	-	1.3	2.69										
	Total Anions	0.01	meq/L	-	4.15	5.29	1.69	3.29	13.7	1.69	2.67	2.95	4.2	4.14										
	Total Cations	0.01	meq/L	-	4.51	5.35	1.98	3.53	13.9	1.76	2.9	2.9	4.31	3.92										
Total Metals by ICP-MS	Iron	0.05	mg/L	100 ² , 0.2 ³	-	-	-	-	0.41	1.57	-	-	1.36											
	Manganese	0.001	mg/L	10 ² , 0.2 ³	-	-	-	-	0.24	0.474	-	-	0.351											
	Boron	0.05	mg/L	0.5 ³	-	-	-	-	0.06	0.07	-	-	0.56											
Total Petroleum Hydrocarbons	C6 - C9 Fraction	20	µg/L	100 ¹	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20										
	C10 - C14 Fraction	50	µg/L	-	< 50	< 50	610	< 50	< 50	< 50	< 50	< 50	< 50	< 50										
	C15 - C28 Fraction	100	µg/L	-	< 100	340	1110	< 100	260	< 100	< 100	< 100	< 100	< 100										
	C29 - C36 Fraction	50	µg/L	-	< 50	270	1110	< 50	190	< 50	< 50	< 50	< 50	< 50										
	C10 - C36 Fraction (sum)	50	µg/L	100 ¹	< 50	610	2830	< 50	450	< 50	< 50	< 50	< 50	< 50										
	C6 - C10 Fraction	20	µg/L	100 ¹	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20										
Total Recoverable Hydrocarbons - NEPM 2013 Fractions	C6 - C10 Fraction minus BTEX (F1)	20	µg/L	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20										
	>C10 - C16 Fraction	100	µg/L	-	< 100	< 100	640	< 100	< 100	< 100	< 100	< 100	< 100	< 100										
	>C16 - C34 Fraction	100	µg/L	-	< 100	500	1740	< 100	370	< 100	< 100	< 100	< 100	< 100										
	>C34 - C40 Fraction	100	µg/L	-	< 100	200	980	< 100	160	< 100	< 100	< 100	< 100	< 100										
	>C10 - C40 Fraction (sum)	100	µg/L	100 ¹	< 100	700	3360	< 100	530	< 100	< 100	< 100	< 100	< 100										
	>C10 - C16 Fraction minus Naphthalene	100	µg/L	-	< 100	< 100	640	< 100	< 100	< 100	< 100	< 100	< 100	< 100										
	>C10 - C40 Fraction (sum)	100	µg/L	-	< 100	< 100	640	< 100	< 100	< 100	< 100	< 100	< 100	< 100										
BTEXN	Benzene	1	µg/L	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1										
	Toluene	2	µg/L	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2										
	Ethylbenzene	2	µg/L	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2										
	meta- & para-Xylene	2	µg/L	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2										
	ortho-Xylene	2	µg/L	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2										
	Total Xylenes	2	µg/L	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2										
	Sum of BTEX	1	µg/L	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1										
	Naphthalene	5	µg/L	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5										
	Total Phenol by Segmented Flow Analyser	Phenols (Total)	0.05	mg/L	0.1 ¹ , 10 ²	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05									

µS/cm microsiemens per centimetre
 mg/L milligrams per litre
 µg/L micrograms per litre
 meq/L milliequivalents per litre
 LOR limit of reporting
 PS primary sample

Criteria
 within criteria
 criteria exceeded

- 1 LEMP provisional limit (groundwater, surface water or leachate)
- 2 Trade waste limit (Samra & McLean, 2005)
- 3 Maximum guideline limit for livestock or irrigation (ANZECC & ARMCANZ, 2000)

TABLE D4 ERRRC ENVIRONMENTAL MONITORING - GROUNDWATER LEVELS

Ground Water Levels: 05-Aug-24

Piezometer Details:

	Ground Elev (mAHD)	Stickup (m)	Elevation Top PVC (mAHD)	Date	Measured	GWL (mAHD)	Well Depth	Well Base	Water Column
HP1 (EPL 6)	596.650	0.72	597.370	05/08/2024	22.38	574.99	62.0	535.37	39.62
HP2 (EPL 7)	599.840	0.35	600.190	05/08/2024	20.76	579.43	50.8	549.39	30.04
HP3 (EPL 8)	586.560	0.41	586.970	05/08/2024	12.46	574.51	40.5	546.47	28.04
HP4 (EPL 9)	594.920	0.62	595.540	05/08/2024	12.18	583.36	46.5	549.04	34.32
HP5 (EPL 10)	596.260	0.67	596.930	05/08/2024	16.10	580.83	59.0	537.93	42.90
HP6 (EPL 11)	588.470	0.35	588.820	05/08/2024	13.62	575.20	68.0	520.82	54.38

Definitions:

- Stickup: Height of piezometer pipe above ground surface
- Ground: Actual elevation of ground at the piezometer relative to an arbitrary datum. All ground elevations are measured to the same datum, hence piezo GWLs are relative to each other.
- Elevation: Actual elevation of ground at the piezometer relative to an arbitrary datum.
- Survey: Ground elevation and elevation top of PVC determined by survey
- GWL: Actual elevation of groundwater at the piezometer relative to an arbitrary datum.
- Measured: Depth of groundwater measured from the top of the bore casing.
- NMWL: No measureable water level.

Ground Water Levels: 06-Feb-25

Piezometer Details:

	Ground Elev (mAHD)	Stickup (m)	Elevation Top PVC (mAHD)	Date	Measured	GWL (mAHD)	Well Depth	Well Base	Water Column
HP1 (EPL 6)	596.650	0.72	597.370	06/02/2025	22.19	575.18	62.0	535.37	39.81
HP2 (EPL 7)	599.840	0.35	600.190	06/02/2025	21.08	579.11	50.8	549.39	29.72
HP3 (EPL 8)	586.560	0.41	586.970	06/02/2025	12.38	574.59	40.5	546.47	28.12
HP4 (EPL 9)	594.920	0.62	595.540	06/02/2025	12.05	583.49	46.5	549.04	34.45
HP5 (EPL 10)	596.260	0.67	596.930	06/02/2025	16.55	580.38	59.0	537.93	42.45
HP6 (EPL 11)	588.470	0.35	588.820	06/02/2025	13.49	575.33	68.0	520.82	54.51

Date	HP1 (EPL 6)		HP2 (EPL 7)		HP3 (EPL 8)		HP4 (EPL 9)		HP5 (EPL 10)		HP6 (EPL 11)	
	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)	Measured	GWL (mAHD)
13-Aug-12	28.45	568.92	27.82	572.37	18.28	568.69	18.03	577.51	20.36	576.57	15.28	573.54
05-Feb-13	28.28	569.09	27.58	572.61	18.29	568.68	17.59	577.95	20.98	575.95	15.23	573.59
28-Aug-13	28.02	569.35	27.48	572.71	18.28	568.69	17.44	578.10	21.83	575.10	15.15	573.67
26-Feb-14	27.94	569.43	27.50	572.69	18.48	568.49	17.22	578.32	22.36	574.57	15.26	573.56
27-Aug-14	27.61	569.76	27.43	572.76	18.32	568.65	17.20	578.34	22.50	574.43	15.32	573.50
23-Feb-15	27.70	569.67	27.18	573.01	18.52	568.45	16.98	578.56	22.66	574.27	15.04	573.78
17-Aug-15	27.72	569.65	27.20	572.99	18.72	568.25	17.71	577.83	23.01	573.92	15.25	573.57
27-Feb-16	27.71	569.66	27.39	572.80	18.96	568.01	17.22	578.32	23.21	573.72	15.52	573.30
09-Aug-16	26.80	570.57	27.51	572.68	18.83	568.14	17.30	578.24	23.31	573.62	15.60	573.22
21-Feb-17	26.68	570.69	24.84	575.35	17.96	569.01	15.96	579.58	19.98	576.95	14.76	574.06
03-Aug-17	26.46	570.91	24.59	575.60	18.00	568.97	18.80	576.74	20.41	576.52	14.72	574.10
07-Mar-18	26.63	570.74	25.80	574.39	18.21	568.76	16.01	579.53	21.48	575.45	15.07	573.75
21-Aug-18	26.60	570.77	25.50	574.69	18.40	568.57	16.05	579.49	22.02	574.91	15.35	573.47
13-Feb-19	NMWL		25.99	574.20	18.52	568.45	16.20	579.34	22.60	574.33	15.45	573.37
26-Nov-19	NMWL		24.16	576.03	18.93	568.04	16.49	579.05	22.91	574.02	16.10	572.72
09-Dec-19	27.70	569.67	-		-		-		-		-	
06-May-20	27.85	569.52	26.92	573.27	19.08	567.89	16.86	578.68	22.98	573.95	17.82	571.00
15-Dec-20	26.22	571.15	26.45	573.74	19.85	567.12	16.81	578.73	22.15	574.78	17.39	571.43
17-Feb-21	24.60	572.77	26.43	573.76	21.43	565.54	16.26	579.28	22.62	574.31	16.53	572.29
11-Aug-21	26.99	570.38	25.95	574.24	19.40	567.57	16.38	579.16	22.48	574.45	17.41	571.41
13-Mar-22	18.90	578.47	23.39	576.80	18.37	568.60	16.09	579.45	18.62	578.31	16.58	572.24
14-Sep-22	24.36	573.01	20.62	579.57	13.55	573.42	14.50	581.04	14.29	582.64	14.37	574.45
21-Feb-23	22.91	574.46	16.87	583.32	11.07	575.90	11.83	583.71	12.11	584.82	13.23	575.59
16-Aug-23	22.39	574.98	18.69	581.50	11.37	575.60	11.81	583.73	13.95	582.98	13.32	575.50
14-Feb-24	22.43	574.94	19.91	580.28	12.13	574.84	12.00	583.54	17.74	579.19	13.50	575.32
05-Aug-24	22.38	574.99	20.76	579.43	12.46	574.51	12.18	583.36	16.10	580.83	13.62	575.20
06-Feb-25	22.19	575.18	21.08	579.11	12.38	574.59	12.05	583.49	16.55	580.38	13.49	575.33

TABLE D5 ERRRC RESULTS OF LABORATORY ANALYSIS - ENVIRONMENTAL MONITORING, GROUNDWATER
AUGUST 2024 - FEBRUARY 2025



Group	Analyte	LOR	Units	Criteria	Sample ID	HP1	HP1	HP2	HP2	HP3	HP3	HP4	HP4	HP5	HP5	HP6	HP6
					Sample Date	05/08/2024	06/02/2025	05/08/2024	06/02/2025	30/07/2024	05/02/2025	05/08/2024	05/02/2025	30/07/2024	05/02/2025	30/07/2024	05/02/2025
Physical Parameters	pH (Lab)	0.01	pH Unit	6.0 - 8.5	PS	7.75	7.1	7.88	7.25	8.1	7.61	7.84	7.26	7.79	7.59	7.83	7.61
	Electrical Conductivity (Lab)	1	µS/cm	4478	PS	3840	3620	2480	2410	1210	1160	2550	2440	1030	980	1290	1280
Alkalinity	Bicarbonate Alkalinity as CaCO3	1	mg/L	-	PS	498	464	476	440	450	423	568	533	512	489	402	380
	Carbonate Alkalinity as CaCO3	1	mg/L	-	PS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Hydroxide Alkalinity as CaCO3	1	mg/L	-	PS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
	Total Alkalinity as CaCO3	1	mg/L	350	PS	498	464	476	440	450	423	568	533	512	489	402	380
Anions	Chloride	1	mg/L	700	PS	904	956	510	558	143	166	525	585	27	25	203	225
	Fluoride	0.1	mg/L	2	PS	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	1.4	1.4
	Sulfate (SO4)	1	mg/L	-	PS	94	96	89	93	23	40	55	60	8	8	41	57
Cations	Calcium (Ca)	1	mg/L	1000	PS	289	312	198	208	83	102	192	209	87	88	126	128
	Magnesium (Mg)	1	mg/L	-	PS	188	201	118	126	50	59	122	133	73	80	35	39
	Potassium (K)	1	mg/L	-	PS	3	3	2	1	6	2	2	3	7	6	1	2
	Sodium (Na)	1	mg/L	460	PS	184	193	146	152	94	104	157	168	38	41	118	132
Forms of Carbon	Total Organic Carbon	1	mg/L	-	PS	< 1	< 1	< 1	< 1	2	16	< 1	< 1	< 1	< 1	< 1	< 1
Nutrients	Ammonia (NH3) as N	0.01	mg/L	-	PS	< 0.01	< 0.01	< 0.01	0.03	0.15	0.19	< 0.01	0.01	< 0.01	0.01	0.06	0.07
	Nitrate & Nitrite (as N)	0.01	mg/L	-	PS	5.02	5.14	9.88	11.2	1.4	0.28	2.19	2.28	11.2	11.4	< 0.01	0.25
	Nitrate (NO3) as N	0.01	mg/L	-	PS	5.01	5.12	9.88	11.2	1.37	0.28	2.19	2.28	11.2	11.4	< 0.01	0.25
	Nitrite (NO2) as N	0.01	mg/L	-	PS	0.01	0.02	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	Total Kjeldahl Nitrogen	0.1	mg/L	-	PS	0.7	0.3	0.8	0.8	1	2.5	0.5	0.4	1.2	1	0.3	0.5
	Total Nitrogen	0.1	mg/L	5	PS	5.7	5.4	10.7	12	2.4	2.8	2.7	2.7	12.4	12.4	0.3	0.8
Trace Metals	Iron (Fe)	0.05	mg/L	0.2	PS	< 0.05	< 0.05	< 0.05	< 0.05	6.37	4.63	0.08	< 0.05	< 0.05	< 0.05	0.5	0.46
	Manganese (Mn)	0.001	mg/L	0.2	PS	0.032	0.029	0.013	0.002	0.28	0.541	0.003	0.004	0.031	0.02	1.29	1.16
Ionic Balance	Total Anions	0.01	meq/L	-	PS	37.4	38.2	25.7	26.5	13.5	14	27.3	28.4	11.2	10.6	14.6	15.1
	Total Cations	0.01	meq/L	-	PS	38	40.6	26	27.4	12.5	14.5	26.5	28.8	12.2	12.9	14.3	15.4
	Ionic Balance	0.01	%	-	PS	0.75	2.98	0.47	1.71	3.86	1.94	1.49	0.63	4.38	9.64	0.99	0.86
Phenolics	Total Phenols	0.05	mg/L	-	PS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

mg/L milligrams per litre
µg/L micrograms per litre
µS/cm microsiemens per centimetre
LOR limit of reporting
PS primary sample
Criteria Criteria adopted from *Australian and New Zealand Environment and Conservation Council (ANZECC) Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) Australian and New Zealand Guidelines for Fresh and Marine Water Quality* - 'Primary Industries: Water quality for irrigation and general water use', 2000
within criteria
criteria exceeded

TABLE D6 ERRRC RESULTS OF LABORATORY ANALYSIS - ENVIRONMENTAL MONITORING, SURFACE WATER
JULY 2024 - FEBRUARY 2025



Group	Analyte	LOR	Units	Criteria	Sample ID	SW1	SW1	SW2	SW2	SWB
					Sample Date	30/07/2024	05/02/2025	30/07/2024	05/02/2025	06/12/2024
Physical Parameters	pH (Lab)	0.01	pH Unit	6.0 - 8.5	PS	6.97	7.25	7.04	7.55	7.63
	Electrical Conductivity (Lab)	1	µS/cm	4478	PS	121	206	124	247	195
	Turbidity	0.1	NTU	-	PS	250	164	73.3	14.8	235
	Total Suspended Solids	5	mg/L	-	PS	38	164	29	13	51
	Chemical Oxygen Demand	10	mg/L	-	PS	88	163	77	75	-
	Biochemical Oxygen Demand (BOD5)	2	mg/L	-	PS	7	4	7	< 2	-
	Oil and Grease	5	mg/L	-	PS	-	6	-	6	< 5
Alkalinity	Bicarbonate Alkalinity as CaCO3	1	mg/L	-	PS	33	70	47	109	87
	Carbonate Alkalinity as CaCO3	1	mg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Hydroxide Alkalinity as CaCO3	1	mg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Total Alkalinity as CaCO3	1	mg/L	350	PS	33	70	47	109	87
Anions	Chloride	1	mg/L	700	PS	12	18	7	11	12
	Fluoride	0.1	mg/L	2	PS	0.1	0.3	< 0.1	0.2	0.4
	Sulfate (SO4)	1	mg/L	-	PS	4	< 1	2	< 1	7
	Calcium (Ca)	1	mg/L	1000	PS	5	12	9	19	13
Cations	Magnesium (Mg)	1	mg/L	-	PS	2	5	3	8	7
	Potassium (K)	1	mg/L	-	PS	12	23	12	20	11
	Sodium (Na)	1	mg/L	460	PS	10	18	5	9	20
	Ammonia (NH3) as N	0.01	mg/L	-	PS	0.08	0.08	0.04	0.45	< 0.01
Nutrients	Nitrate & Nitrite (as N)	0.01	mg/L	-	PS	0.46	0.02	0.02	0.01	0.05
	Nitrate (NO3) as N	0.01	mg/L	-	PS	0.44	0.02	0.02	< 0.01	0.03
	Nitrite (NO2) as N	0.01	mg/L	-	PS	0.02	< 0.01	< 0.01	0.01	0.02
	Total Kjeldahl Nitrogen	0.1	mg/L	-	PS	< 6	-	4.6	-	-
Trace Metals	Chromium (Cr)	0.001	mg/L	0.1	PS	0.012	0.009	0.004	0.002	0.001
	Iron (Fe)	0.05	mg/L	0.2	PS	12.9	10	3.72	1.93	0.51
	Manganese (Mn)	0.001	mg/L	0.2	PS	0.135	0.816	0.11	0.802	0.161
	Lead (Pb)	0.001	mg/L	1	PS	0.004	0.003	< 0.001	< 0.001	0.002
	Arsenic (As)	0.001	mg/L	100	PS	0.001	0.003	< 0.001	0.002	0.002
	Cadmium (Cd)	0.0001	mg/L	-	PS	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	Copper (Cu)	0.001	mg/L	0.2	PS	0.009	0.008	0.004	0.001	0.006
	Mercury (Hg)	0.0001	mg/L	0.002	PS	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	Zinc (Zn)	0.005	mg/L	2	PS	0.017	0.023	0.011	< 0.005	0.02
	Nickel (Ni)	0.001	mg/L	-	PS	0.01	0.013	0.007	0.006	0.004
	Ionic Balance	Total Anions	0.01	meq/L	-	PS	1.08	1.91	1.18	2.49
Total Cations		0.01	meq/L	-	PS	1.16	2.38	1.22	2.51	2.38
Phenolics	2,4,5-Trichlorophenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2,4,6-Trichlorophenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2,4-Dichlorophenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2,4-Dimethylphenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2,6-Dichlorophenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2-Chlorophenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2-Methylphenol (o-Cresol)	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	2-Nitrophenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	3&4-Methylphenol (m&p-Cresol)	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	4-Chloro-3-methylphenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Pentachlorophenol	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	Phenol	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Total Phenols	0.05	mg/L	-	PS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
OC Pesticides	Aldrin	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Alpha BHC	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Alpha Chlordane	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Alpha Endosulfan	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Beta BHC	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Beta Endosulfan	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Delta BHC	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dieldrin	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Endosulfan sulphate	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Endrin	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Endrin aldehyde	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Endrin ketone	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Heptachlor	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Heptachlor epoxide	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Hexachlorobenzene (HCB)	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Lindane (gamma BHC)	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Methoxychlor	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	p,p'-DDD	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	p,p'-DDE	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	p,p'-DDT	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	Sum of Aldrin + Dieldrin	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Sum of DDD + DDE + DDT	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total Chlordane (sum)	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	trans-Chlordane	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

TABLE D6 ERRRC RESULTS OF LABORATORY ANALYSIS - ENVIRONMENTAL MONITORING, SURFACE WATER
JULY 2024 - FEBRUARY 2025



Group	Analyte	LOR	Units	Criteria	Sample ID	SW1	SW1	SW2	SW2	SWB
					Sample Date	30/07/2024	05/02/2025	30/07/2024	05/02/2025	06/12/2024
OP Pesticides	Azinphos-methyl	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Bromophos Ethyl	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Carbophenothion	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chlorfenvinphos	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chlorpyrifos (Chlorpyrifos Ethyl)	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chlorpyrifos-methyl	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Demeton-S-methyl	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Diazinon (Dimpylate)	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dichlorvos	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dimethoate	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Ethion	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fenamiphos	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fenthion	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Malathion	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Monocrotophos	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	Parathion-ethyl (Parathion)	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	Parathion-methyl	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
Pirimphos-ethyl	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Prothiofos	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Polynuclear Aromatic Hydrocarbons	Acenaphthene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Acenaphthylene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Anthracene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Benzo(a)anthracene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Benzo(a)pyrene	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene TEQ (zero)	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(b&j)fluoranthene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Benzo(ghi)perylene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Benzo(k)fluoranthene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Chrysene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Dibenzo(ah)anthracene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Fluoranthene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Fluorene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Indeno(1,2,3-cd)pyrene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Phenanthrene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Pyrene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
Total PAHs	0.5	µg/L	-	PS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Naphthalene	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1	
Total Petroleum Hydrocarbons	TRH C6-C9	20	µg/L	-	PS	< 20	< 20	< 20	< 20	< 20
	TRH C10-C14	50	µg/L	-	PS	< 50	< 50	< 50	< 50	< 50
	TRH C15-C28	100	µg/L	-	PS	< 100	< 100	< 100	< 100	< 100
	TRH C29-C36	50	µg/L	-	PS	< 50	< 50	< 50	< 50	< 50
	TRH C10-C36	50	µg/L	-	PS	< 50	< 50	< 50	< 50	< 50
Total Recoverable Hydrocarbons	TRH C6-C10	20	µg/L	-	PS	< 20	< 20	< 20	< 20	< 20
	TRH C6-C10 minus BTEX (F1)	20	µg/L	-	PS	< 20	< 20	< 20	< 20	< 20
	TRH >C10-C16	100	µg/L	-	PS	< 100	< 100	< 100	< 100	< 100
	TRH >C10-C16 minus Naphthalene (F2)	100	µg/L	-	PS	< 100	< 100	< 100	< 100	< 100
	TRH >C16-C34 (F3)	100	µg/L	-	PS	< 100	< 100	< 100	< 100	< 100
	TRH >C34-C40 (F4)	100	µg/L	-	PS	< 100	< 100	< 100	< 100	< 100
BTEXN Analytes	TRH C10-C40	100	µg/L	-	PS	< 100	< 100	< 100	< 100	< 100
	Benzene (F0)	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1
	Toluene	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	Ethylbenzene	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	meta- & para-Xylene	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	ortho-Xylene	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
	Total Xylenes	2	µg/L	-	PS	< 2	< 2	< 2	< 2	< 2
Sum of BTEX	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1	
Polychlorinated Biphenyls	Naphthalene	5	µg/L	-	PS	< 5	< 5	< 5	< 5	< 5
	Total Polychlorinated biphenyls	1	µg/L	-	PS	< 1	< 1	< 1	< 1	< 1

mg/L milligrams per litre
µg/L micrograms per litre
µS/cm microsiemens per centimetre
LOR limit of reporting
PS primary sample
Criteria Criteria adopted from Australian and New Zealand Environment and Conservation Council (ANZECC) Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) Australian and New Zealand Guidelines for Fresh and Marine Water Quality - 'Primary Industries: Water quality for irrigation and general water use', 2000

within criteria
criteria exceeded

TABLE D7 ERRRC RESULTS OF LABORATORY ANALYSIS - ENVIRONMENTAL MONITORING, LEACHATE
AUGUST 2024 - FEBRUARY 2025



Group	Analyte	LOR	Units	Criteria	Sample ID	L1	L1
					Sample Date	05/08/2024	05/02/2025
					PS	PS	
Physical Parameters	pH (Lab)	0.01	pH Unit	6.0 - 8.5		7.86	7.93
	Electrical Conductivity (Lab)	1	µS/cm	4478		16000	3410
	Turbidity	0.1	NTU	-		114	43500
	Total Suspended Solids	5	mg/L	-		245	45500
	Chemical Oxygen Demand	10	mg/L	-		3100	1780
	Biochemical Oxygen Demand (BOD5)	2	mg/L	-		151	354
	Oil and Grease	5	mg/L	-		< 5	16
Alkalinity	Bicarbonate Alkalinity as CaCO3	1	mg/L	-		6760	1510
	Carbonate Alkalinity as CaCO3	1	mg/L	-		< 1	< 1
	Hydroxide Alkalinity as CaCO3	1	mg/L	-		< 1	< 1
	Total Alkalinity as CaCO3	1	mg/L	350		6760	1510
Anions	Chloride	1	mg/L	700		1590	334
	Fluoride	0.1	mg/L	2		0.9	0.7
	Sulfate (SO4)	1	mg/L	-		46	3
Cations	Calcium (Ca)	1	mg/L	1000		88	174
	Magnesium (Mg)	1	mg/L	-		87	114
	Potassium (K)	1	mg/L	-		545	170
	Sodium (Na)	1	mg/L	460		1350	284
Nutrients	Ammonia (NH3) as N	0.01	mg/L	-		1320	124
	Nitrate & Nitrite (as N)	0.01	mg/L	-		0.41	0.02
	Nitrate (NO3) as N	0.01	mg/L	-		0.41	0.02
	Nitrite (NO2) as N	0.01	mg/L	-		< 0.1	< 0.01
	Total Kjeldahl Nitrogen	0.1	mg/L	-		1330	-
	Total Nitrogen	0.1	mg/L	5		1330	-
Trace Metals	Chromium (Cr)	0.001	mg/L	0.1		0.577	0.811
	Iron (Fe)	0.05	mg/L	0.2		15	848
	Manganese (Mn)	0.001	mg/L	0.2		0.497	15.9
	Lead (Pb)	0.001	mg/L	1		0.009	0.146
	Arsenic (As)	0.001	mg/L	100		0.142	0.1
	Cadmium (Cd)	0.0001	mg/L	-		0.0003	0.0008
	Copper (Cu)	0.001	mg/L	0.2		0.096	1.15
	Mercury (Hg)	0.0001	mg/L	0.002		< 0.0001	< 0.0001
	Zinc (Zn)	0.005	mg/L	2		0.305	1.56
	Nickel (Ni)	0.001	mg/L	-		0.206	0.813
Ionic Balance	Total Anions	0.01	meq/L	-		181	39.6
	Total Cations	0.01	meq/L	-		191	34.8
	Ionic Balance	0.01	%	-		2.7	6.57
Phenolics	2,4,5-Trichlorophenol	1	µg/L	-		< 1	< 5.6
	2,4,6-Trichlorophenol	1	µg/L	-		< 1	< 5.6
	2,4-Dichlorophenol	1	µg/L	-		< 1	< 5.6
	2,4-Dimethylphenol	1	µg/L	-		1.2	< 5.6
	2,6-Dichlorophenol	1	µg/L	-		< 1	< 5.6
	2-Chlorophenol	1	µg/L	-		< 1	< 5.6
	2-Methylphenol (o-Cresol)	1	µg/L	-		5.6	< 5.6
	2-Nitrophenol	1	µg/L	-		< 1	< 5.6
	3&4-Methylphenol (m&p-Cresol)	2	µg/L	-		< 2	628
	4-Chloro-3-methylphenol	1	µg/L	-		6.3	< 5.6
	Pentachlorophenol	2	µg/L	-		< 2	< 11.1
	Phenol	1	µg/L	-		< 1	88.8
	Total Phenols	0.05	mg/L	-		0.11	0.6
	OC Pesticides	Aldrin	0.5	µg/L	-		< 0.5
Alpha BHC		0.5	µg/L	-		< 0.5	< 0.5
Alpha Chlordane		0.5	µg/L	-		< 0.5	< 0.5
Alpha Endosulfan		0.5	µg/L	-		< 0.5	< 0.5
Beta BHC		0.5	µg/L	-		< 0.5	< 0.5
Beta Endosulfan		0.5	µg/L	-		< 0.5	< 0.5
Delta BHC		0.5	µg/L	-		< 0.5	< 0.5
Dieldrin		0.5	µg/L	-		< 0.5	< 0.5
Endosulfan sulphate		0.5	µg/L	-		< 0.5	< 0.5
Endrin		0.5	µg/L	-		< 0.5	< 0.5
Endrin aldehyde		0.5	µg/L	-		< 0.5	< 0.5
Endrin ketone		0.5	µg/L	-		< 0.5	< 0.5
Heptachlor		0.5	µg/L	-		< 0.5	< 0.5
Heptachlor epoxide		0.5	µg/L	-		< 0.5	< 0.5
Hexachlorobenzene (HCB)		0.5	µg/L	-		< 0.5	< 0.5
Lindane (gamma BHC)		0.5	µg/L	-		< 0.5	< 0.5
Methoxychlor		2	µg/L	-		< 2	< 2
p,p'-DDD		0.5	µg/L	-		< 0.5	< 0.5
p,p'-DDE		0.5	µg/L	-		< 0.5	< 0.5
p,p'-DDT		2	µg/L	-		< 2	< 2
Sum of Aldrin + Dieldrin		0.5	µg/L	-		< 0.5	< 0.5
Sum of DDD + DDE + DDT		0.5	µg/L	-		< 0.5	< 0.5

TABLE D7 ERRRC RESULTS OF LABORATORY ANALYSIS - ENVIRONMENTAL MONITORING, LEACHATE
AUGUST 2024 - FEBRUARY 2025



Group	Analyte	LOR	Units	Criteria	Sample ID	L1	
					Sample Date	05/08/2024	05/02/2025
					PS	PS	
	Total Chlordane (sum)	0.5	µg/L	-		< 0.5	< 0.5
	trans-Chlordane	0.5	µg/L	-		< 0.5	< 0.5
OP Pesticides	Azinphos-methyl	0.5	µg/L	-		< 0.5	< 0.5
	Bromophos Ethyl	0.5	µg/L	-		< 0.5	< 0.5
	Carbophenothion	0.5	µg/L	-		< 0.5	< 0.5
	Chlorfenvinphos	0.5	µg/L	-		< 0.5	< 0.5
	Chlorpyrifos (Chlorpyrifos Ethyl)	0.5	µg/L	-		< 0.5	< 0.5
	Chlorpyrifos-methyl	0.5	µg/L	-		< 0.5	< 0.5
	Demeton-S-methyl	0.5	µg/L	-		< 0.5	< 0.5
	Diazinon (Dimpylate)	0.5	µg/L	-		< 0.5	< 0.5
	Dichlorvos	0.5	µg/L	-		< 0.5	< 0.5
	Dimethoate	0.5	µg/L	-		< 0.5	< 0.5
	Ethion	0.5	µg/L	-		< 0.5	< 0.5
	Fenamiphos	0.5	µg/L	-		< 0.5	< 0.5
	Fenthion	0.5	µg/L	-		< 0.5	< 0.5
	Malathion	0.5	µg/L	-		< 0.5	< 0.5
	Monocrotophos	2	µg/L	-		< 2	< 2
	Parathion-ethyl (Parathion)	2	µg/L	-		< 2	< 2
	Parathion-methyl	2	µg/L	-		< 2	< 2
	Pirimphos-ethyl	0.5	µg/L	-		< 0.5	< 0.5
	Prothiofos	0.5	µg/L	-		< 0.5	< 0.5
Polynuclear Aromatic Hydrocarbons	Acenaphthene	1	µg/L	-		< 1	< 5.6
	Acenaphthylene	1	µg/L	-		< 1	< 5.6
	Anthracene	1	µg/L	-		< 1	< 5.6
	Benzo(a)anthracene	1	µg/L	-		< 1	< 5.6
	Benzo(a)pyrene	0.5	µg/L	-		< 0.5	< 5.6
	Benzo(a)pyrene TEQ (zero)	0.5	µg/L	-		< 0.5	< 2.8
	Benzo(b&j)fluoranthene	1	µg/L	-		< 1	< 5.6
	Benzo(ghi)perylene	1	µg/L	-		< 1	< 5.6
	Benzo(k)fluoranthene	1	µg/L	-		< 1	< 5.6
	Chrysene	1	µg/L	-		< 1	< 5.6
	Dibenzo(ah)anthracene	1	µg/L	-		< 1	< 5.6
	Fluoranthene	1	µg/L	-		< 1	< 5.6
	Fluorene	1	µg/L	-		< 1	< 5.6
	Indeno(1,2,3-cd)pyrene	1	µg/L	-		< 1	< 5.6
	Phenanthrene	1	µg/L	-		< 1	< 5.6
	Pyrene	1	µg/L	-		< 1	< 5.6
	Total PAHs	0.5	µg/L	-		< 0.5	< 2.8
	Naphthalene	1	µg/L	-		< 1	< 5.6
Total Petroleum Hydrocarbons	TRH C6-C9	20	µg/L	-		160	110
	TRH C10-C14	50	µg/L	-		1560	1190
	TRH C15-C28	100	µg/L	-		5260	1170
	TRH C29-C36	50	µg/L	-		240	< 50
	TRH C10-C36	50	µg/L	-		7060	2360
Total Recoverable Hydrocarbons	TRH C6-C10	20	µg/L	-		130	110
	TRH C6-C10 minus BTEX (F1)	20	µg/L	-		50	60
	TRH >C10-C16	100	µg/L	-		2380	1370
	TRH >C10-C16 minus Naphthalene (F2)	100	µg/L	-		2380	1370
	TRH >C16-C34 (F3)	100	µg/L	-		4420	850
	TRH >C34-C40 (F4)	100	µg/L	-		< 100	< 100
	TRH C10-C40	100	µg/L	-		6800	2220
BTEXN Analytes	Benzene (F0)	1	µg/L	-		3	< 1
	Toluene	2	µg/L	-		6	29
	Ethylbenzene	2	µg/L	-		21	10
	meta- & para-Xylene	2	µg/L	-		30	7
	ortho-Xylene	2	µg/L	-		16	4
	Total Xylenes	2	µg/L	-		46	11
	Sum of BTEX	1	µg/L	-		76	50
	Naphthalene	5	µg/L	-		< 5	< 5
Polychlorinated Biphenyls	Total Polychlorinated biphenyls	1	µg/L	-		< 1	< 1

mg/L milligrams per litre
µg/L micrograms per litre
µS/cm microsiemens per centimetre
LOR limit of reporting
PS primary sample
Criteria Criteria adopted from Australian and New Zealand Environment and Conservation Council (ANZECC) Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) Australian and New Zealand Guidelines for Fresh and Marine Water Quality - 'Primary Industries: Water quality for irrigation and general water use', 2000
within criteria
criteria exceeded

EPL 20104 ERRRC Environmental Monitoring				
Deposited Dust				
EPL Point	1	2	3	4
ID	North	East	South	West
Unit	g/m²/month	g/m²/month	g/m²/month	g/m²/month
Date				
Construction Phase				
4 May 2012 - 4 June 2012	1.0	0.2	0.2	0.6
4 June 2012 - 3 July 2012*	0.2	0.1	0.1	0.1
3 July 2012 - 2 August 2012**	0.6	0.2	0.2	0.2
2 August 2012 - 3 September 2012	0.6	0.3	4.4	0.7
3 September 2012 - 4 October 2012	0.4	0.3	0.3	0.8
4 October 2012 - 5 November 2012	1.5	1.0	0.4	0.7
5 November 2012 - 6 December 2012	1.5	1.4	4.2	0.9
6 December 2012 - 4 January 2013	1.1	0.4	5.2	0.9
4 January 2013 - 5 February 2013	1.3	1.3	1.0	1.3
5 February 2013 - 6 March 2013	1.0	0.6	0.2	0.8
6 March 2013 - 4 April 2013	0.7	0.6	2.4	0.9
4 April 2013 - 6 May 2013	0.8	2.3	1.1	0.7
6 May 2013 - 5 June 2013	0.6	0.2	0.2	0.6
5 June 2013 - 4 July 2013	0.2	0.2	0.5	0.4
4 July 2013 - 6 August 2013	0.7	0.2	1.1	0.3
Operational				
6 August 2013 - 6 September 2013	2.4	0.3	0.1	0.2
6 September 2013 - 4 October 2013	2.7	0.4	0.4	0.4
4 October 2013 - 5 November 2013	0.8	2.2	0.5	0.6
5 November 2013 - 5 December 2013	1.5	1.4	1.0	0.8
5 December 2013 - 6 January 2014	0.5	0.3	0.5	0.6
6 January 2014 - 6 February 2014	4.0	2.2	2.5	2.6
6 February 2014 - 6 March 2014	1.4	0.8	1.0	0.7
6 March 2014 - 7 April 2014	0.9	0.7	1.1	0.4
7 April 2014 - 6 May 2014	0.5	1.1	0.5	0.2
6 May 2014 - 6 June 2014	0.6	0.5	2.2	0.6
6 June 2014 - 7 July 2014	1.0	0.6	0.4	1.7
7 July 2014 to 6 August 2014	1.4	1.2	0.5	1.3
6 August 2014 to 5 September 2014	2.3	1.5	1.1	0.8
5 September 2014 to 3 October 2014	0.7	1.2	0.9	0.4
3 October 2014 to 4 November 2014	0.7	2.2	0.5	0.6
4 November 2014 to 5 December 2014	1.0	0.6	0.8	1.0
5 December 2014 to 5 January 2015	0.3	0.5	0.5	0.8
5 January 2015 to 6 February 2015	0.7	0.7	3.1	0.5
6 February 2015 to 6 March 2015	0.8	0.4	1.2	0.7
6 March 2015 to 7 April 2015	1.2	1.1	0.9	0.7
7 April 2015 to 8 May 2015	0.7	0.4	0.5	0.9
8 May 2015 to 9 June 2015	1.0	0.4	0.3	0.5
9 June 2015 to 8 July 2015	1.2	0.5	0.5	0.4
8 July 2015 to 7 August 2015	0.5	0.3	0.3	0.3
7 August 2015 to 7 September 2015	0.4	0.4	0.2	0.2
7 September 2015 to 8 October 2015	0.2	1.2	0.2	0.3
8 October 2015 to 9 November 2015	0.8	1.6	0.8	2.1
9 November 2015 to 11 December 2015	2.5	0.4	0.7	0.8
11 December 2015 to 11 January 2016	1.5	0.6	0.4	0.7

EPL 20104 ERRRC Environmental Monitoring				
Deposited Dust				
EPL Point	1	2	3	4
ID	North	East	South	West
Unit	g/m²/month	g/m²/month	g/m²/month	g/m²/month
Date				
11 January 2016 to 10 February 2016	1.1	0.8	2.1	0.9
10 February 2016 to 10 March 2016	0.6	0.4	4.6	2.4
10 March 2016 to 10 April 2016	4.1	1.4	2.1	7.9
10 April 2016 to 12 May 2016	0.6	0.3	0.4	0.6
12 May 2016 to 13 June 2016	0.1	0.1	0.4	1.5
13 June 2016 to 12 July 2016	0.2	0.4	0.9	1.1
12 July 2016 to 10 August 2016	0.2	0.2	0.4	1.8
10 August 2016 to 7 September 2016	0.3	0.3	0.2	0.3
7 September 2016 to 9 October 2016	5.1	0.3	0.4	0.7
9 October 2016 to 8 November 2016	3.9	0.8	0.8	0.9
8 November 2016 to 9 December 2016	1.9	2.0	8.2	9.2
9 December 2016 to 9 January 2017	1.6	2.7	0.2	0.2
9 January 2017 to 9 February 2017	0.6	0.4	0.9	1.0
9 February 2017 to 13 March 2017	0.8	0.4	0.6	0.8
13 March 2017 to 11 April 2017	0.9	0.3	0.2	0.9
11 April 2017 to 12 May 2017	0.5	1.7	0.6	1.5
12 May 2017 to 13 June 2017	2.9	0.5	1.2	0.2
13 June 2017 to 14 July 2017	0.7	1.6	0.3	0.5
14 July 2017 to 14 August 2017	0.9	0.3	0.2	0.5
14 August 2017 to 12 September 2017	1.3	0.3	2.8	0.5
12 September 2017 to 12 October 2017	1.6	1.1	3.1	1.5
12 October 2017 to 10 November 2017	0.5	0.6	4.1	0.7
10 November 2017 to 11 December 2017	1.0	1.0	5.3	0.7
11 December 2017 to 12 January 2018	1.8	1.8	15.9	2.2
12 January 2018 to 12 February 2018	0.7	0.5	1.8	1.0
12 February 2018 to 12 March 2018	1.0	0.6	20.5	1.7
12 March 2018 to 13 April 2018	1.5	2.3	3.3	2.0
13 April 2018 to 15 May 2018	1.2	0.5	2.5	0.8
15 May 2018 to 14 June 2018	0.6	0.2	6.8	0.6
14 June 2018 to 13 July 2018	0.4	0.4	0.8	0.7
13 July 2018 to 15 August 2018	1.2	1.4	2.0	5.5
15 August 2018 to 15 September 2018	3.0	3.3	4.1	2.0
15 September 2018 to 15 October 2018	1.0	2.6	1.1	1.4
15 October 2018 to 13 November 2018	1.6	3.3	1.5	8.6
13 November 2018 to 15 December 2018	2.4	7.8	2.3	25.8
15 December 2018 to 17 January 2019	10.1	10.2	8.4	11.5
17 January 2019 to 18 February 2019	1.6	2.0	2.0	1.2
18 February 2019 to 22 March 2019	2.9	2.2	3.1	3.1
22 March 2019 to 23 April 2019	1.3	3.1	0.8	1.6
23 April 2019 to 25 May 2019	1.4	1.2	0.7	1.3
25 May 2019 to 25 June 2019	0.5	0.3	0.2	1.8
25 June 2019 to 24 July 2019	2.6	0.5	0.5	0.8
24 July 2019 to 22 August 2019	1.5	1.1	0.7	1.5
22 August 2019 to 20 September 2019	1.7	0.9	0.7	1.8
20 September 2019 to 21 October 2019	6.6	7.0	6.6	8.4
21 October 2019 to 21 November 2019	6.0	7.0	5.0	13.1

EPL 20104 ERRRC Environmental Monitoring				
Deposited Dust				
EPL Point	1	2	3	4
ID	North	East	South	West
Unit	g/m²/month	g/m²/month	g/m²/month	g/m²/month
Date				
21 November 2019 to 23 December 2019	1.4	2.8	1.4	4.2
23 December 2019 to 22 January 2020	6.7	6.9	9.7	8.7
22 January 2020 to 21 February 2020	13.0	10.0	9.5	13.0
21 February 2020 to 23 March 2020	2.8	3.6	3.1	3.6
23 March 2020 to 24 April 2020	1.5	0.1	0.4	3.8
24 April 2020 to 25 May 2020	0.7	1.2	1.4	1.6
25 May 2020 to 23 June 2020	0.9	0.5	0.2	0.7
23 June 2020 to 23 July 2020	0.2	0.3	0.5	0.5
23 July 2020 to 24 August 2020	0.6	2.5	1.5	1.0
24 August 2020 to 23 September 2020	0.7	0.6	1.9	1.0
23 September 2020 to 24 October 2020	2.4	1.3	0.6	0.8
24 October 2020 to 24 November 2020	2.1	0.6	0.8	0.5
24 November 2020 to 23 December 2020	1.9	1.0	0.9	2.0
23 December 2020 to 25 January 2021	0.9	0.7	0.6	0.8
25 January 2021 to 22 February 2021	0.8	0.7	0.4	0.9
22 February 2021 to 22 March 2021	0.8	0.9	0.4	0.6
22 March 2021 to 22 April 2021	0.5	0.3	0.4	0.3
22 April 2021 to 20 May 2021	1.8	0.8	0.4	0.5
20 May 2021 to 21 June 2021	0.8	0.8	0.7	0.4
21 June 2021 to 20 July 2021	0.8	0.6	5.9	0.2
20 July 2021 to 22 August 2021	0.6	0.3	2.4	0.9
22 August 2021 to 22 September 2021	0.6	0.4	0.9	0.4
22 September 2021 to 22 October 2021	1.9	1.6	0.6	0.3
22 October 2021 to 21 November 2021	0.7	1.8	0.6	0.8
21 November 2021 to 22 December 2021	1.4	0.5	0.3	0.8
22 December 2021 to 21 January 2022	0.9	1.8	0.5	0.7
21 January 2022 to 22 February 2022	3.2	4.5	0.6	0.8
22 February 2022 to 22 March 2022	0.8	0.8	0.9	0.4
22 March 2022 to 22 April 2022	0.9	0.4	0.7	0.5
22 April 2022 to 22 May 2022	0.1	3.2	0.3	0.3
22 May 2022 to 21 June 2022	0.4	0.3	0.2	0.3
21 June 2022 to 21 July 2022	0.4	0.7	0.3	0.2
21 July 2022 to 21 August 2022	0.2	1.1	0.3	0.3
22 August 2022 to 20 September 2022	0.3	0.3	2.6	0.2
20 September 2022 to 20 October 2022	6.8	9.6	0.2	0.3
20 October 2022 to 21 November 2022	3.1	3.8	0.4	2.5
21 November 2022 to 20 December 2022	1.1	7.1	0.2	2.0
20 December 2022 to 20 January 2023	0.6	0.4	0.2	0.3
20 January 2023 to 21 February 2023	0.5	0.2	0.2	0.6
21 February 2023 to 20 March 2023	2.4	0.4	0.8	0.5
20 March 2023 to 19 April 2023	0.4	0.8	0.2	0.3
19 April 2023 to 18 May 2023	0.3	1.9	0.1	0.5
18 May 2023 to 19 June 2023	1.0	2.3	0.2	0.3
19 June 2023 to 20 July 2023	0.1	0.9	0.5	0.4
20 July 2023 to 18 August 2023	0.9	1.3	-	0.3
18 August 2023 to 15 September 2023	0.8	0.3	0.6	1.9

EPL 20104 ERRRC Environmental Monitoring				
Deposited Dust				
EPL Point	1	2	3	4
ID	North	East	South	West
Unit	g/m²/month	g/m²/month	g/m²/month	g/m²/month
Date				
15 September 2023 to 16 October 2023	1.6	0.7	0.6	1.0
16 October 2023 to 16 November 2023	0.8	1.0	0.3	1.6
16 November to 15 December 2023	0.7	0.3	0.4	0.6
15 December 2023 to 12 January 2024	3.6	0.7	0.4	0.4
12 January 2024 to 9 February 2024	0.7	0.4	0.2	0.3
9 February 2024 to 8 March 2024	0.8	0.3	0.3	1.1
8 March 2024 to 9 April 2024	0.4	0.4	0.5	0.7
9 April 2024 to 10 May 2024	0.7	1.1	0.2	0.3
10 May 2024 to 7 June 2024	0.7	0.6	0.4	0.7
7 June 2024 to 8 July 2024	0.3	0.2	1.2	1.1
8 July 2024 to 5 August 2024	0.5	0.2	2.7	0.2
5 August 2024 to 2 September 2024	0.4	0.3	0.2	0.2
2 September 2024 to 4 October 2024	0.7	0.5	0.4	0.6
4 October 2024 to 4 November 2024	3.4	2.0	0.8	0.6
4 November 2024 to 6 December 2024	3.7	4.4	0.5	1.5
6 December 2024 to 6 January 2025	2.5	0.3	0.3	1.4
6 January 2025 to 6 February 2025	4.1	1.4	0.7	1.0
6 February 2025 to 6 March 2025	1.5	1.3	0.3	0.9
6 March 2025 to 4 April 2025	2.1	1.4	0.2	0.5
4 April 2025 to 6 May 2025	3.1	0.4	0.2	0.4
6 May 2025 to 5 June 2025	1.6	1.8	0.8	0.8
5 June 2025 to 4 July 2025				



APPENDIX E

GROUNDWATER, SURFACE
WATER, LEACHATE AND DUST
ANALYSIS CHARTS



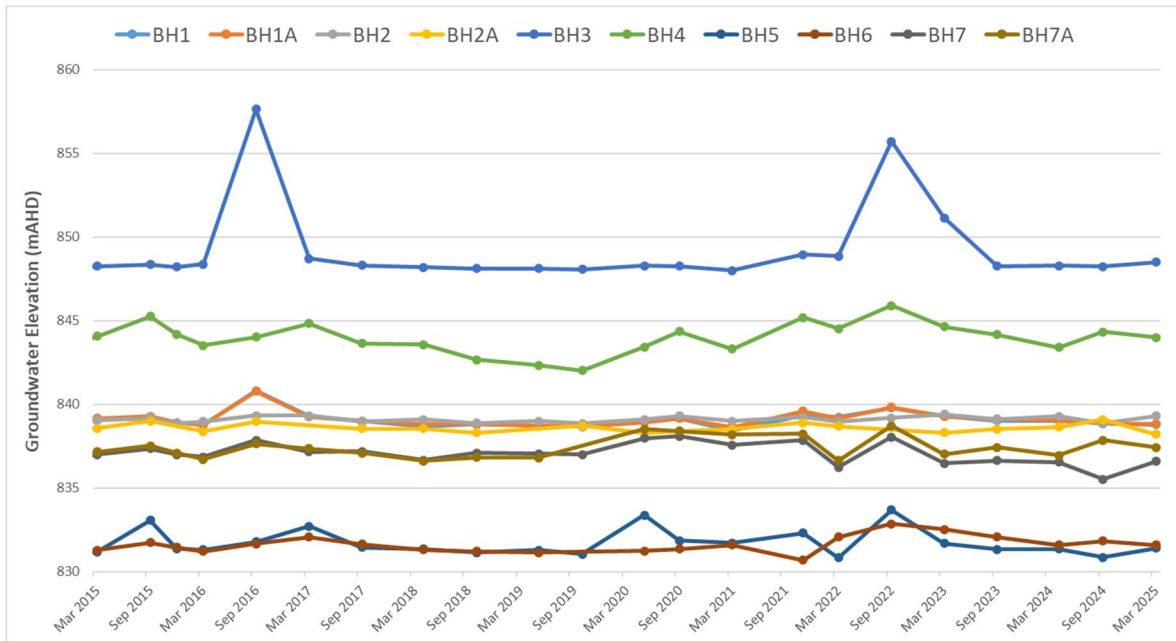


Chart E1 – ORRRC Groundwater Levels

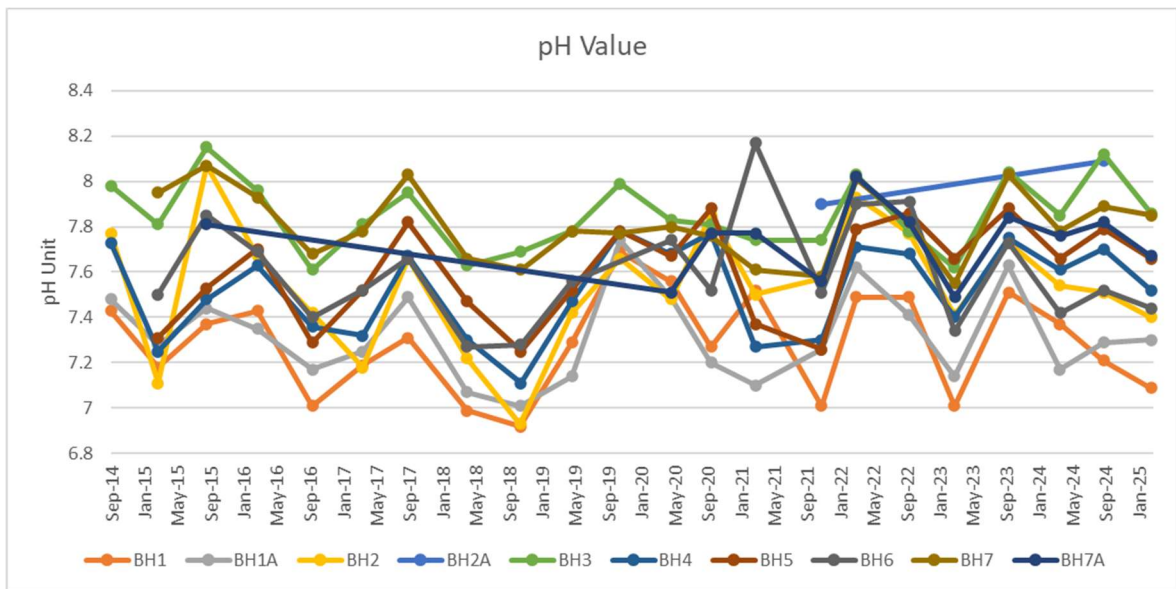


Chart E2 – ORRRC pH of Groundwater

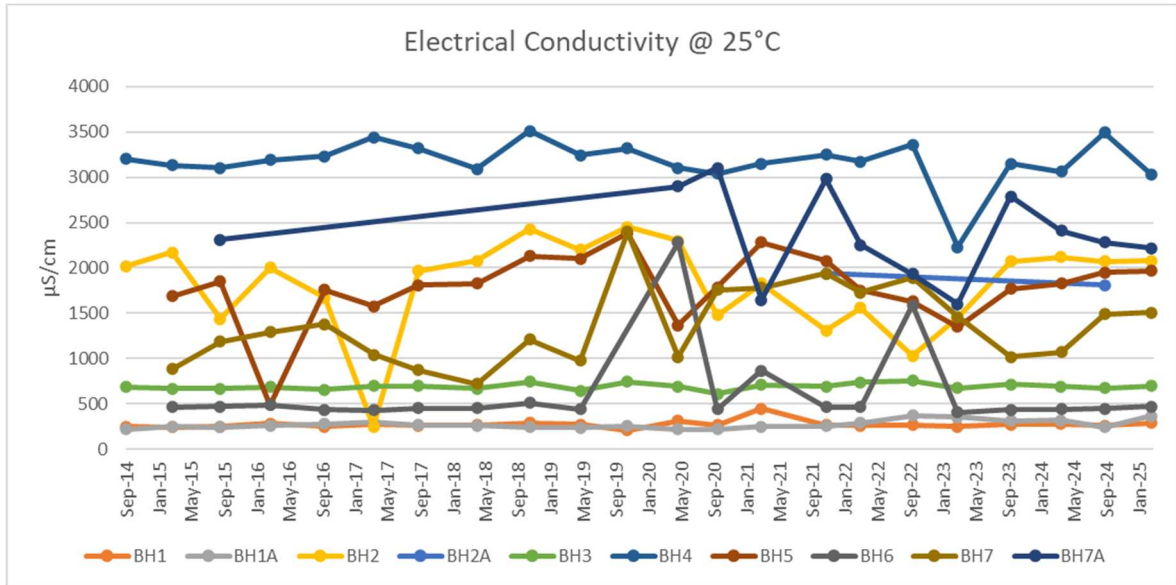


Chart E3 – ORRRC Electrical Conductivity in Groundwater

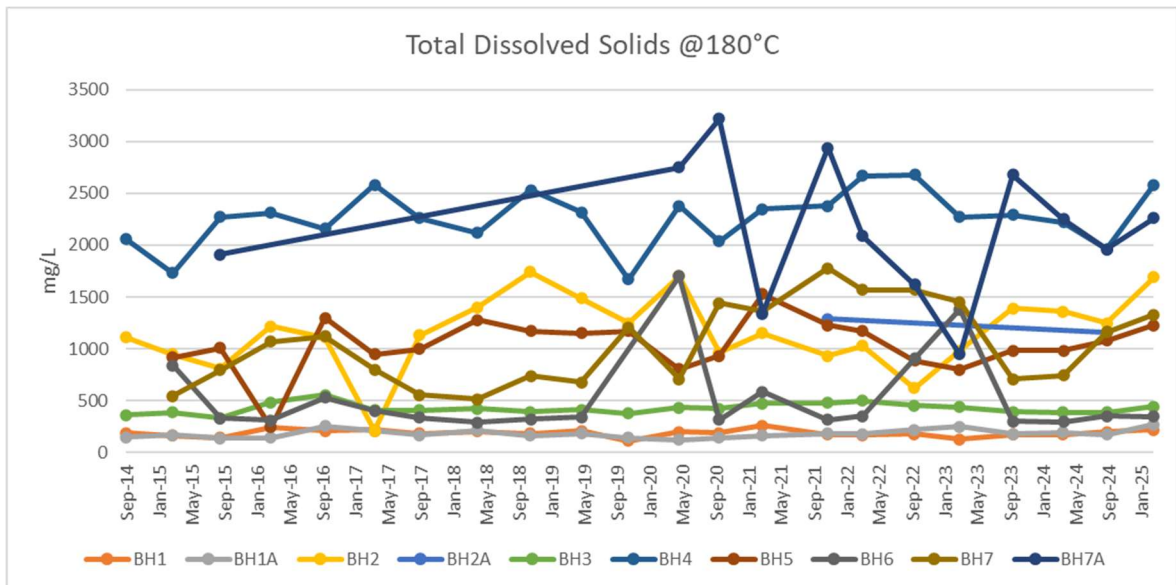


Chart E4 – ORRRC Total Dissolved Solids in Groundwater

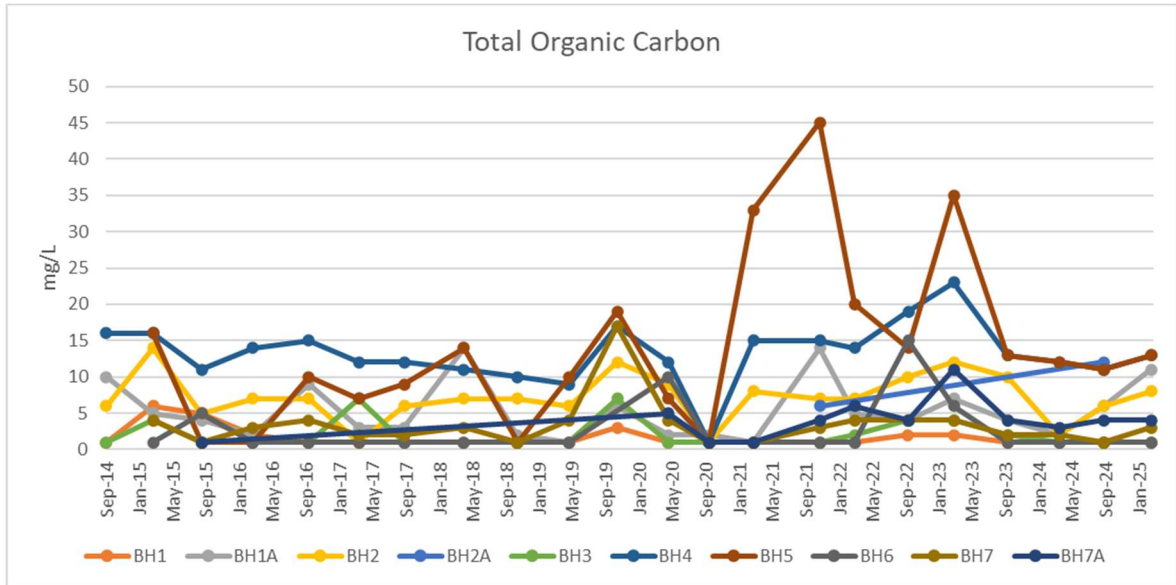


Chart E5 – ORRRC Total Organic Carbon in Groundwater

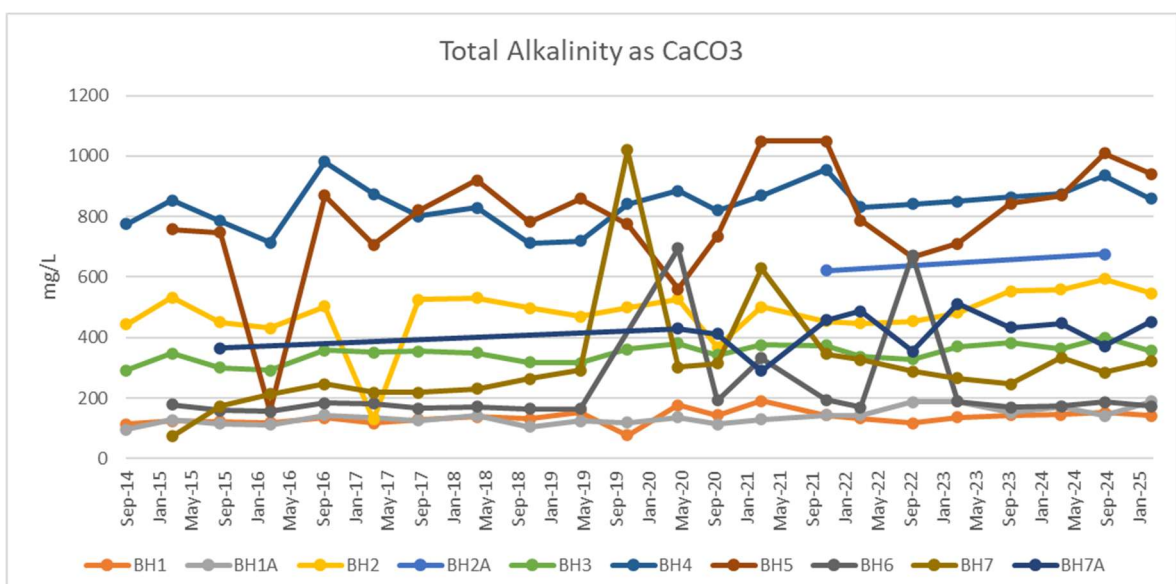


Chart E6 – ORRRC Alkalinity in Groundwater

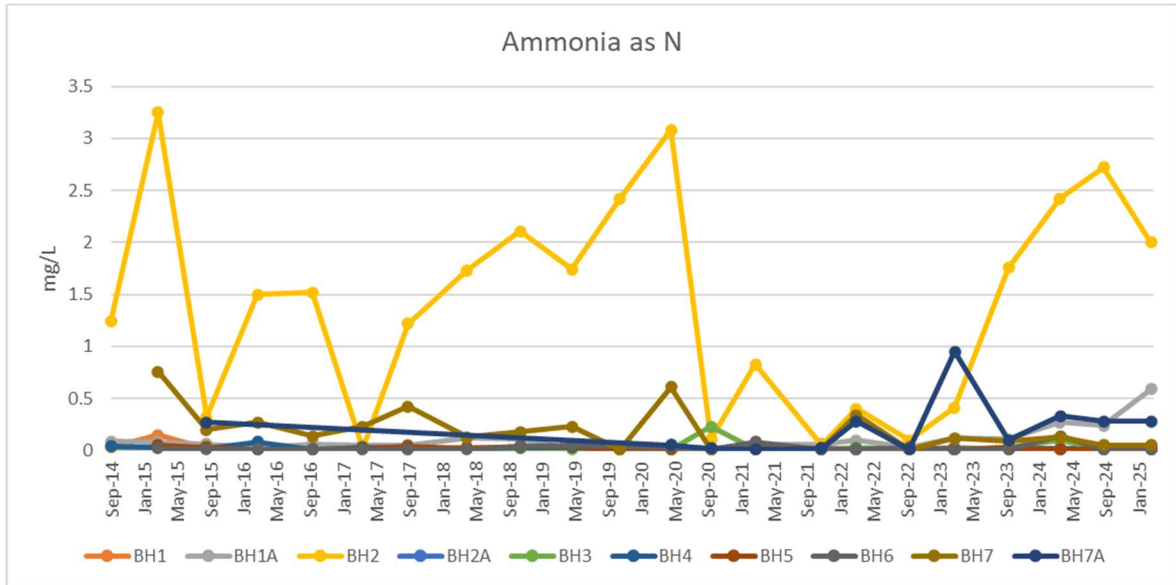


Chart E7 – ORRRC Ammonia in Groundwater (logarithmic scale on y-axis)

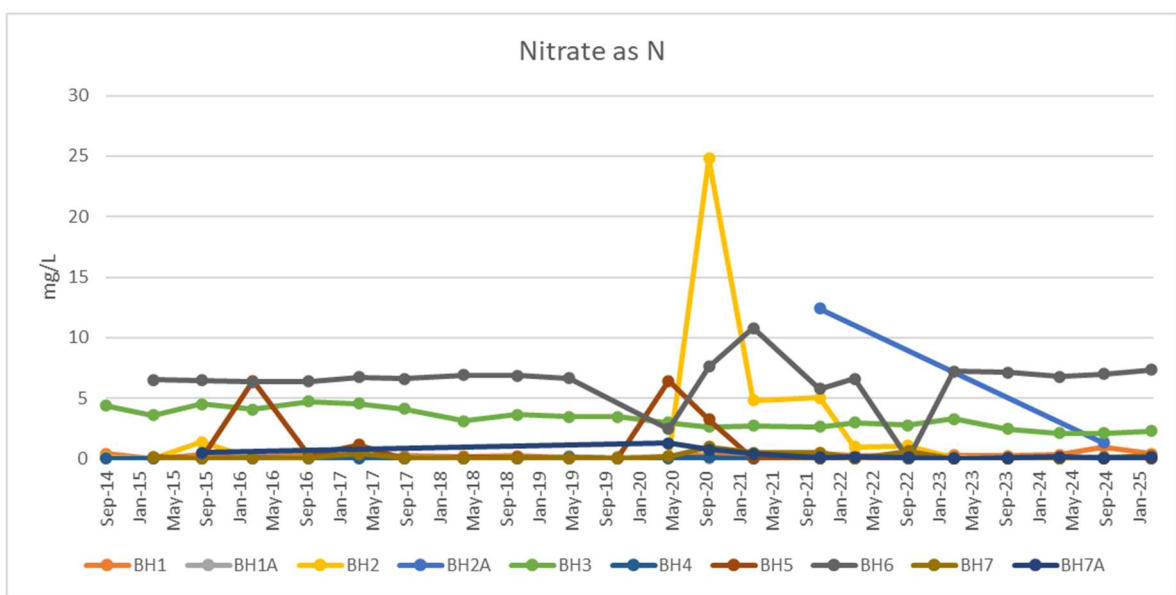


Chart E8 – ORRRC Nitrate in Groundwater

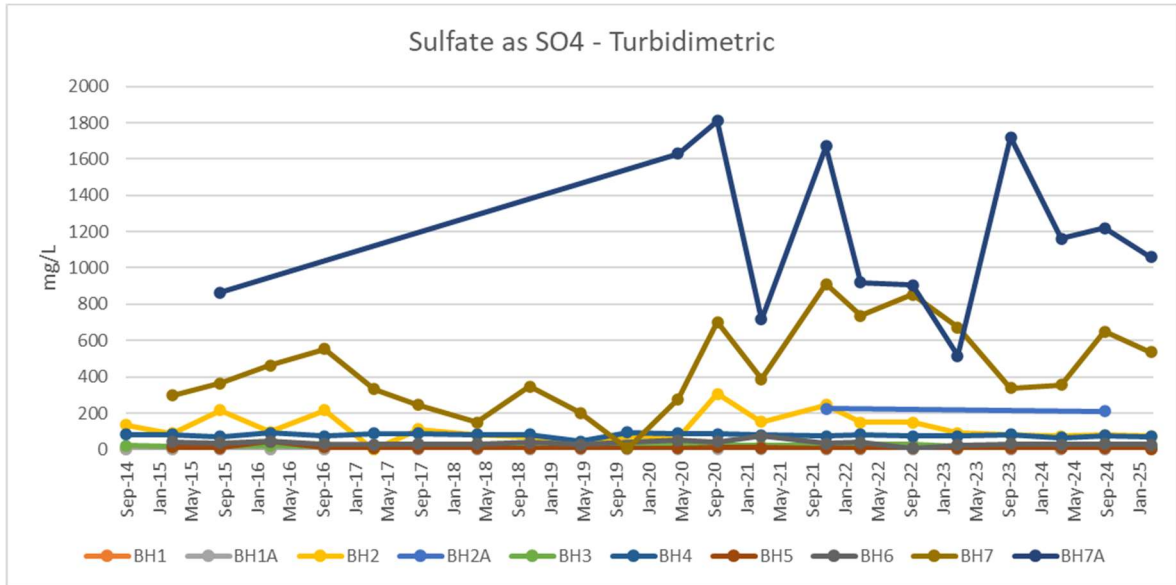


Chart E9 – ORRRC Sulfate in Groundwater

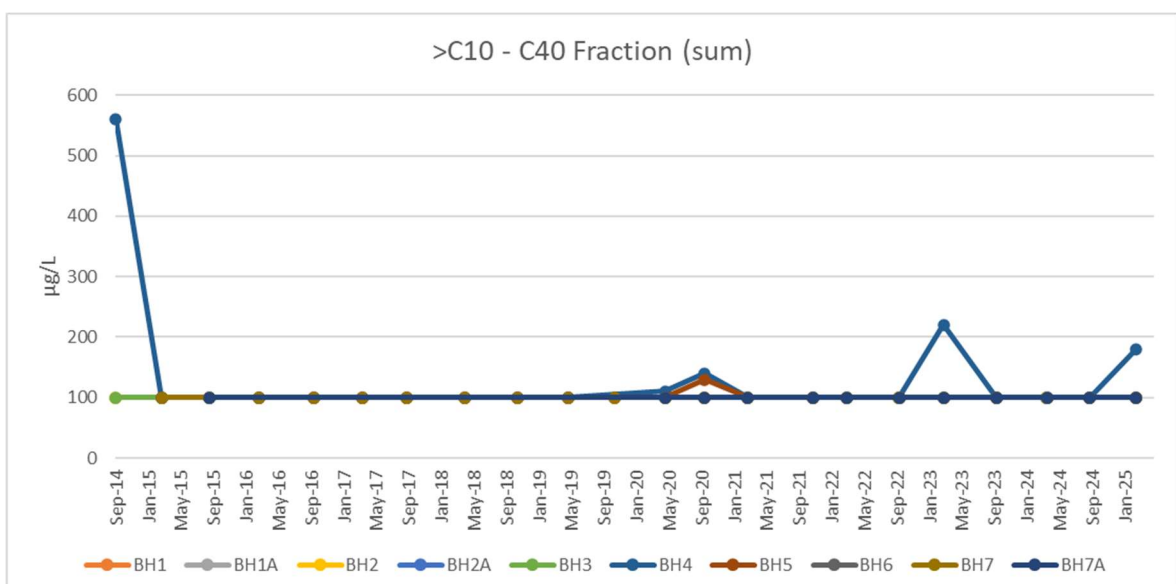


Chart E10 – ORRRC Total Recoverable Hydrocarbons (C₆-C₁₀ fraction) in Groundwater

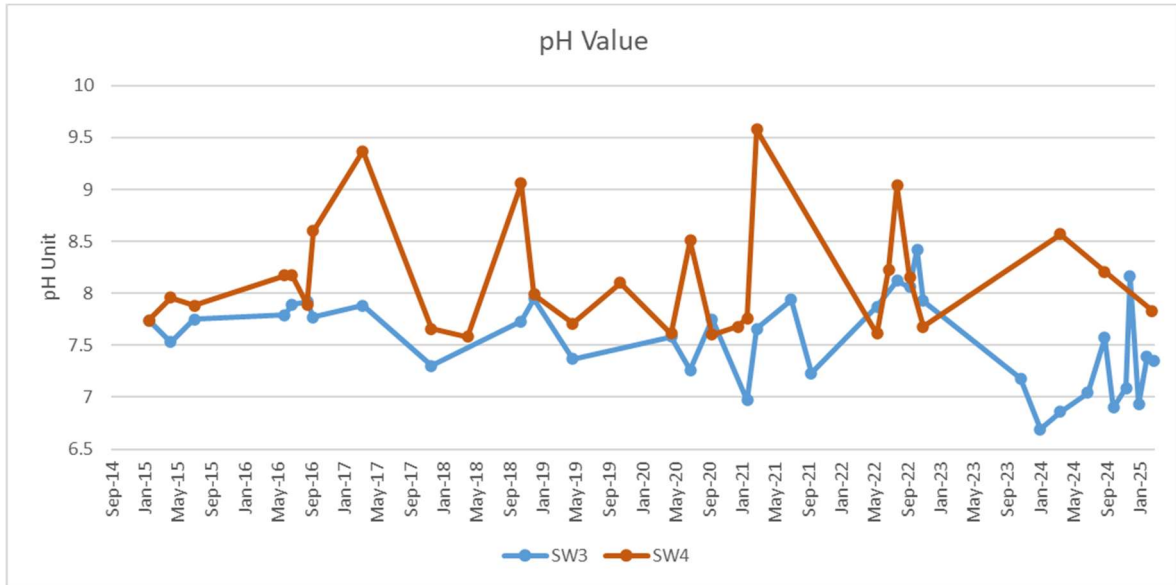


Chart E11 – ORRRC pH of Surface Water

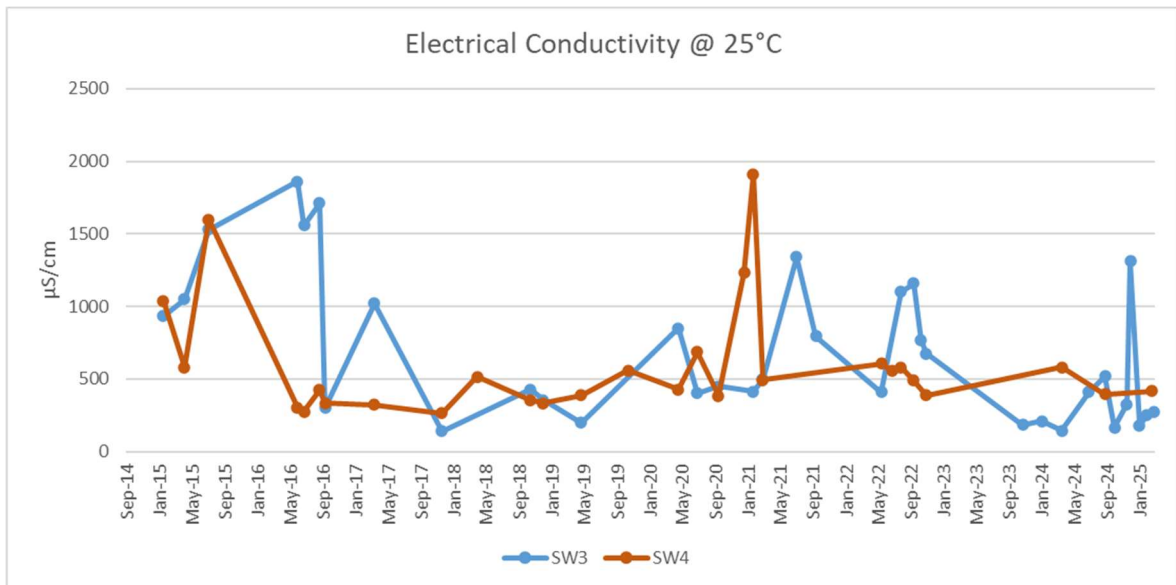


Chart E12 – ORRRC Electrical Conductivity in Surface Water

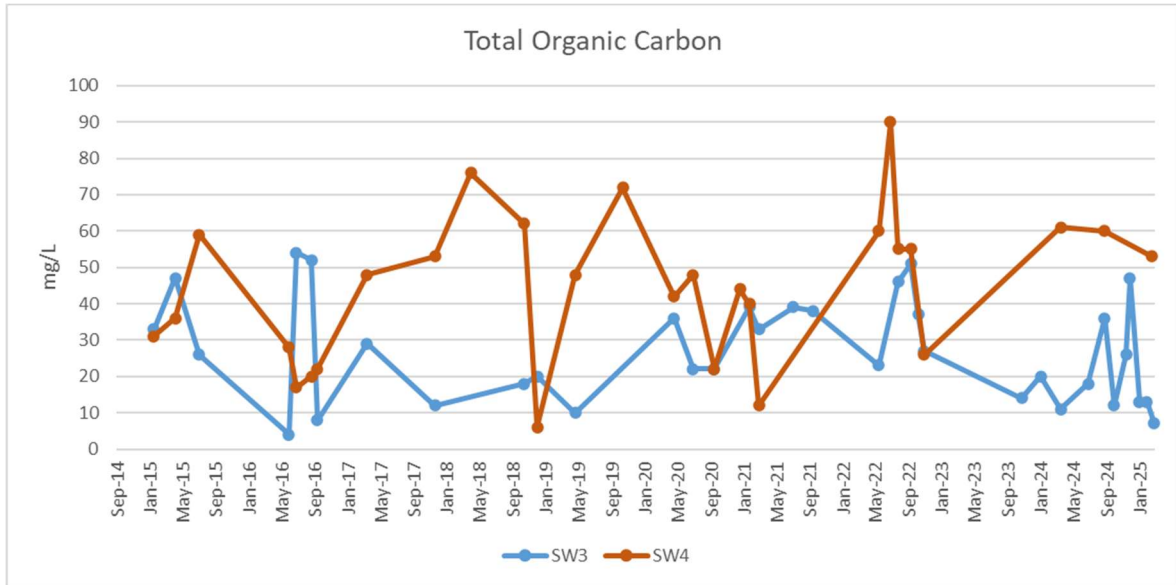


Chart E13 – ORRRC Total Organic Carbon in Surface Water

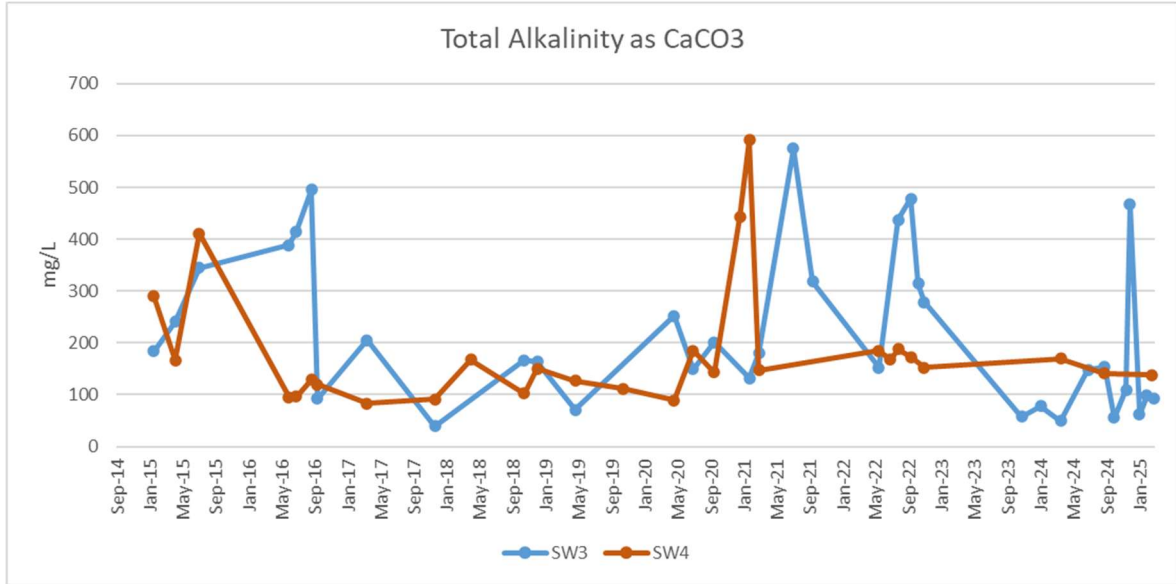


Chart E14 – ORRRC Alkalinity in Surface Water

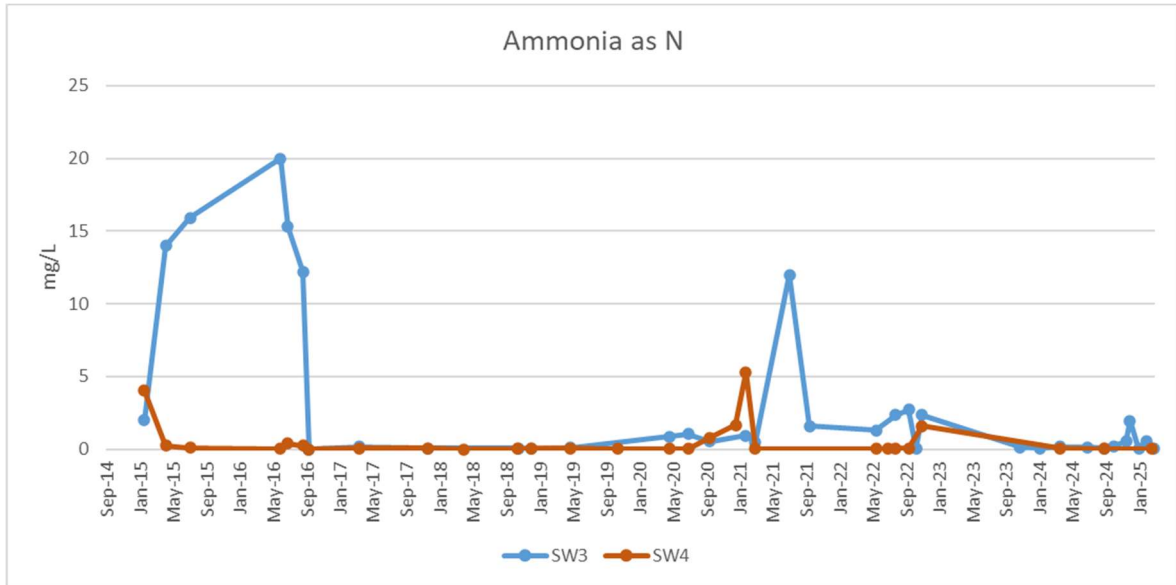


Chart E15 – ORRRC Ammonia in Surface Water (logarithmic scale on y-axis)

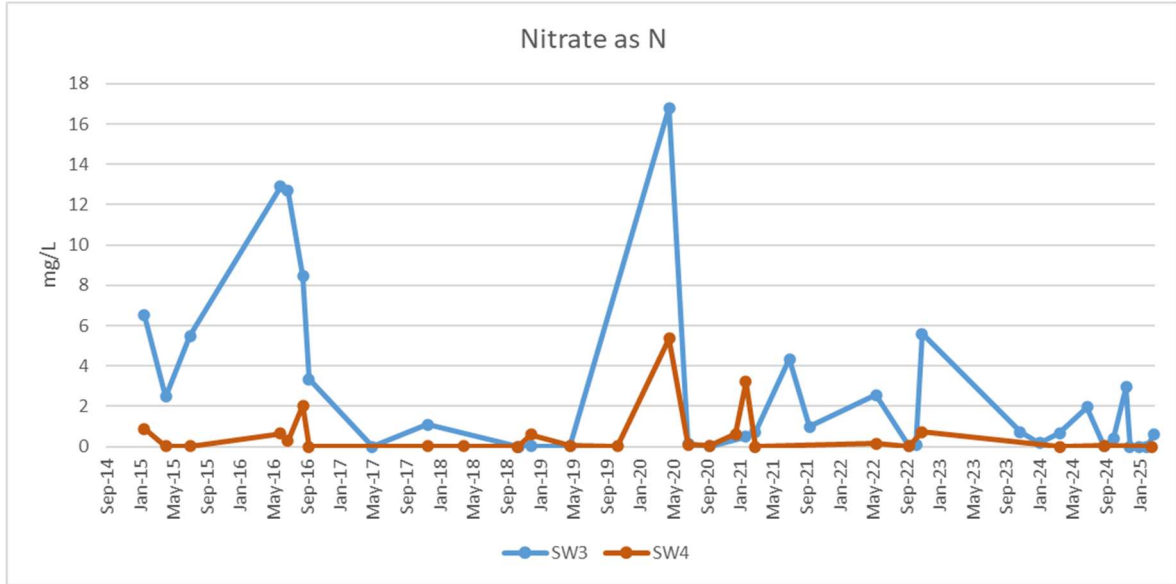


Chart E16 – ORRRC Nitrate in Surface Water (logarithmic scale on y-axis)

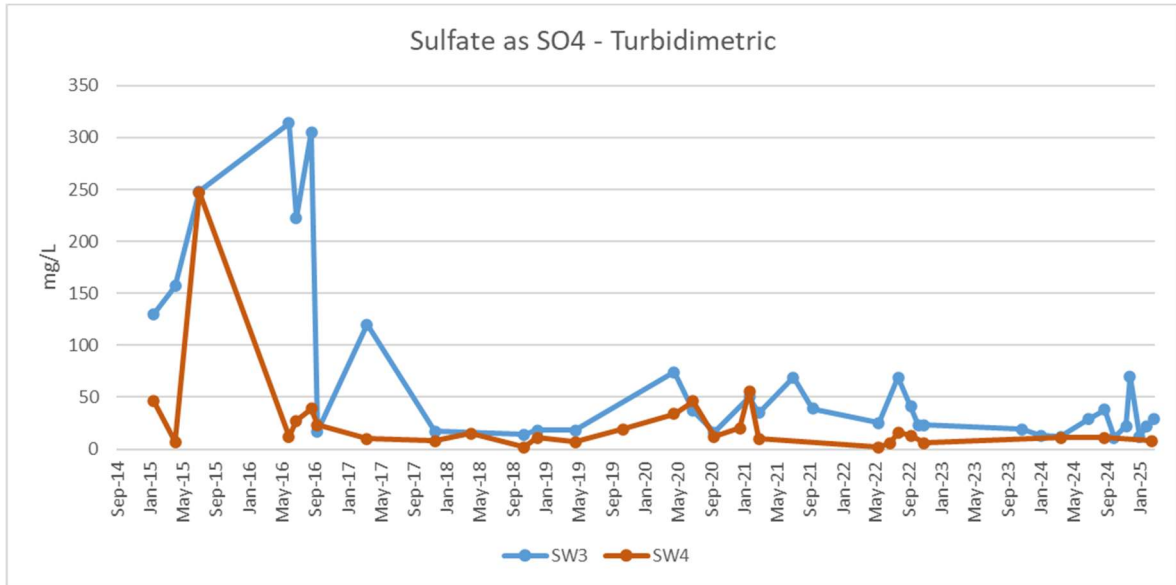


Chart E17 – ORRRC Sulfate in Surface Water

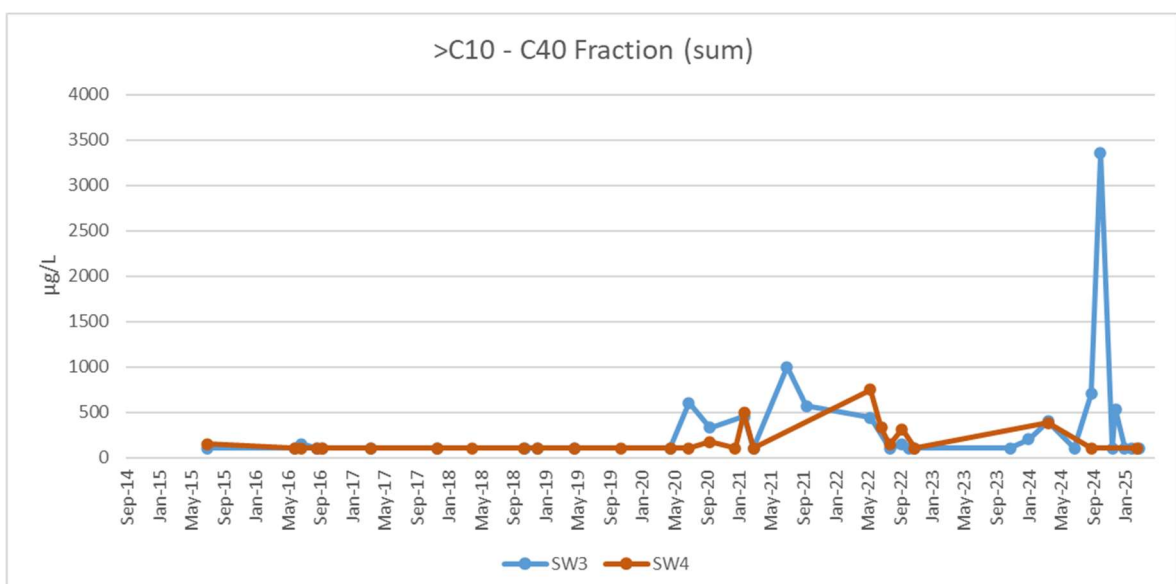


Chart E18 – ORRRC Total Recoverable Hydrocarbons (>C10-C40 fraction) in Surface Water

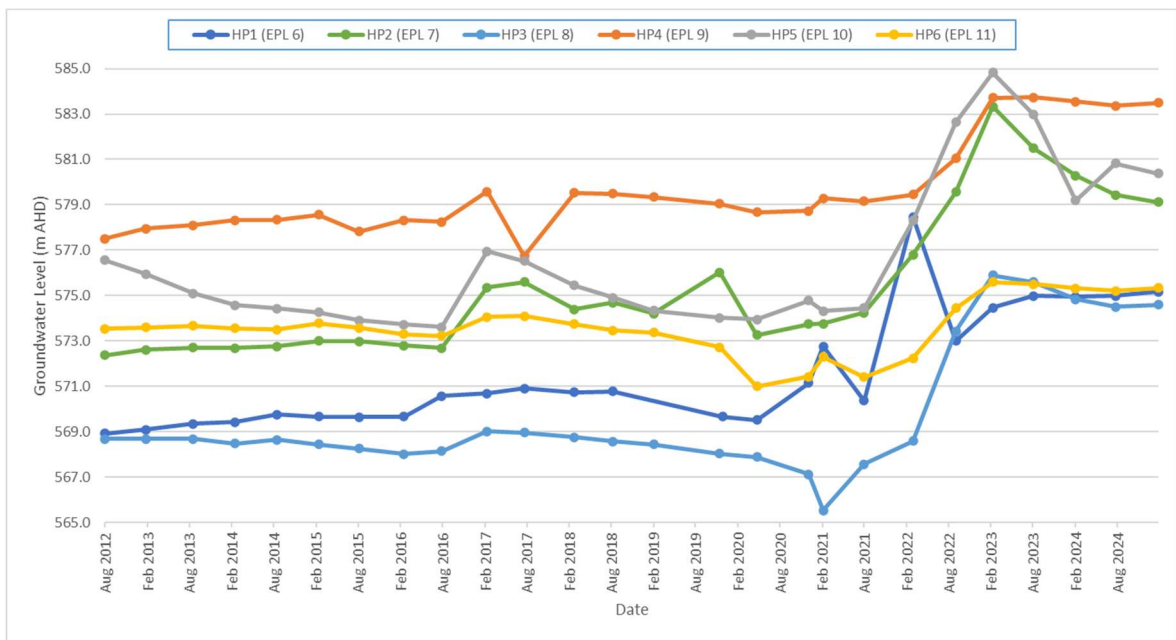


Chart E19 – ERRRC Groundwater Levels

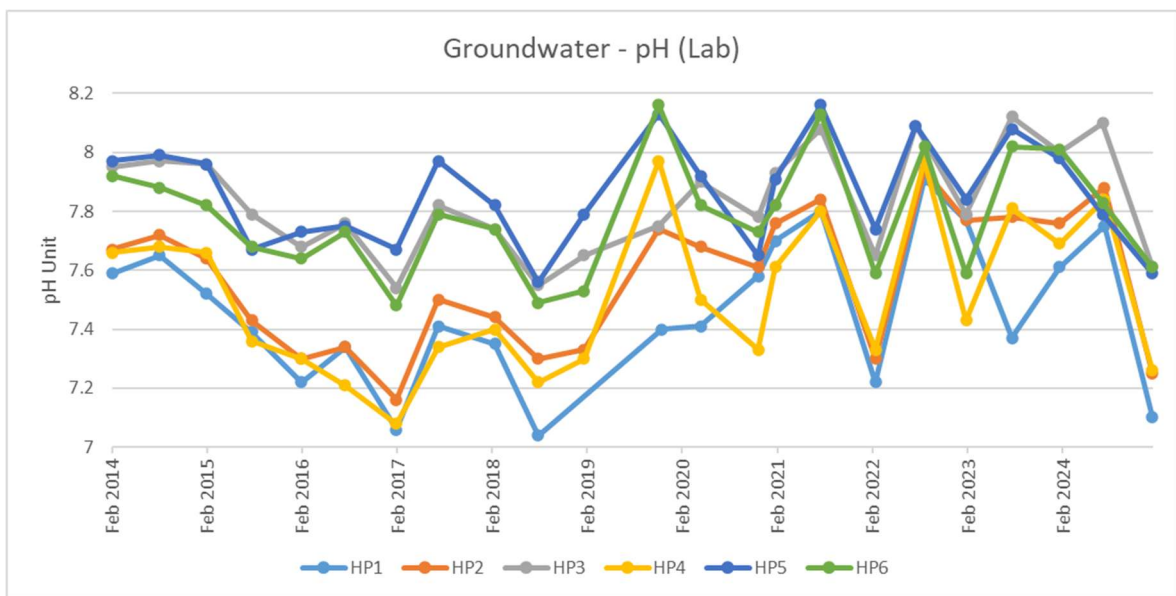


Chart E20 – ERRRC pH of Groundwater

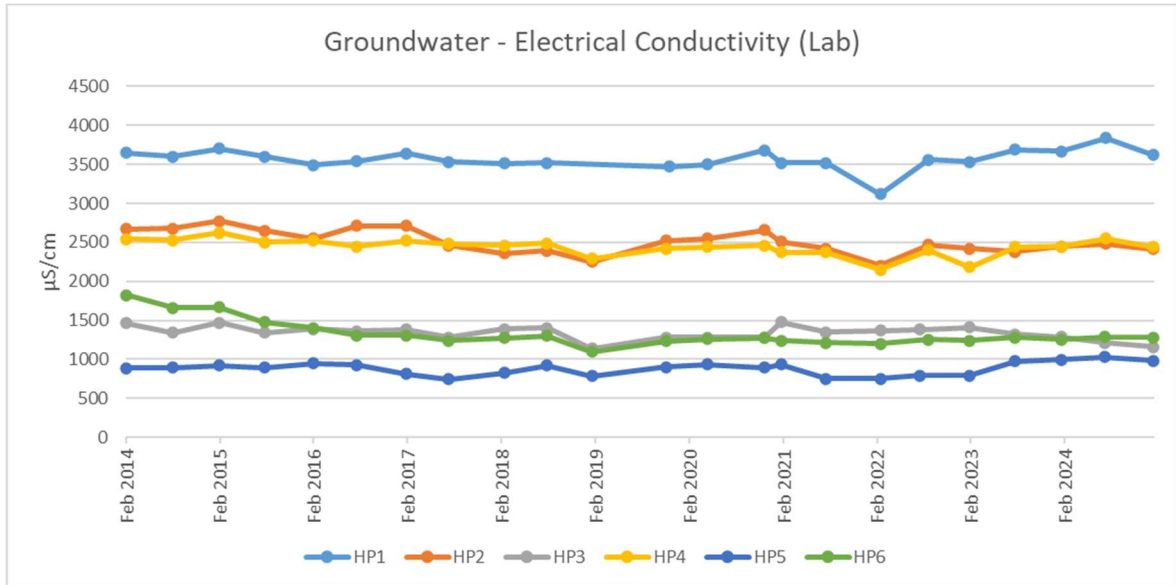


Chart E21 – ERRRC Electrical Conductivity in Groundwater

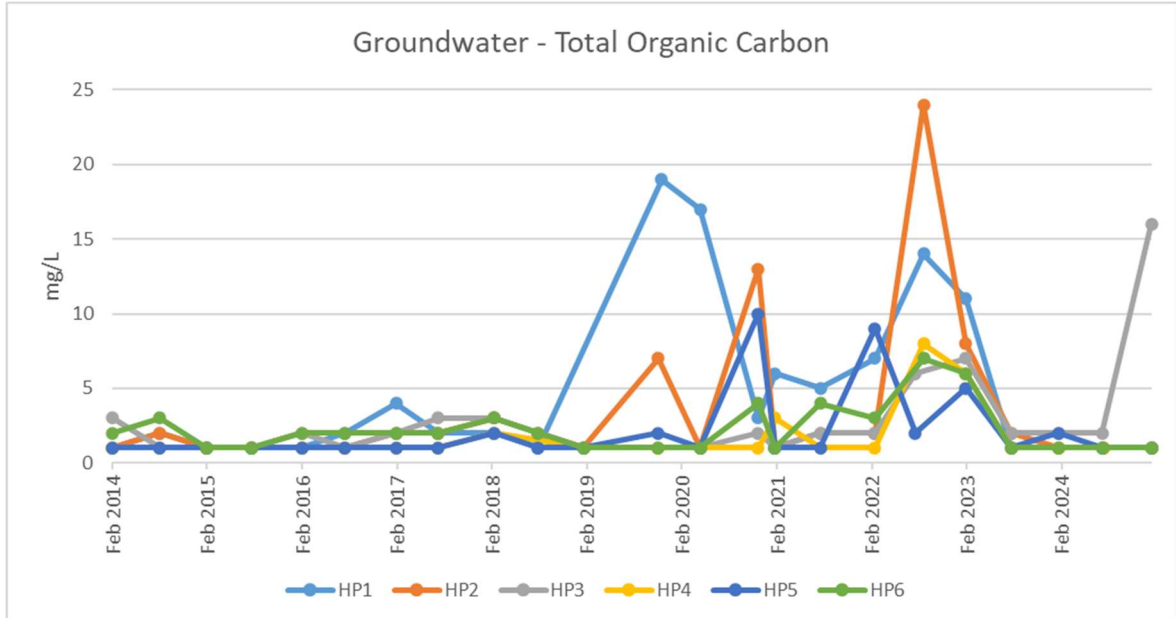


Chart E22 – ERRRC Total Organic Carbon in Groundwater

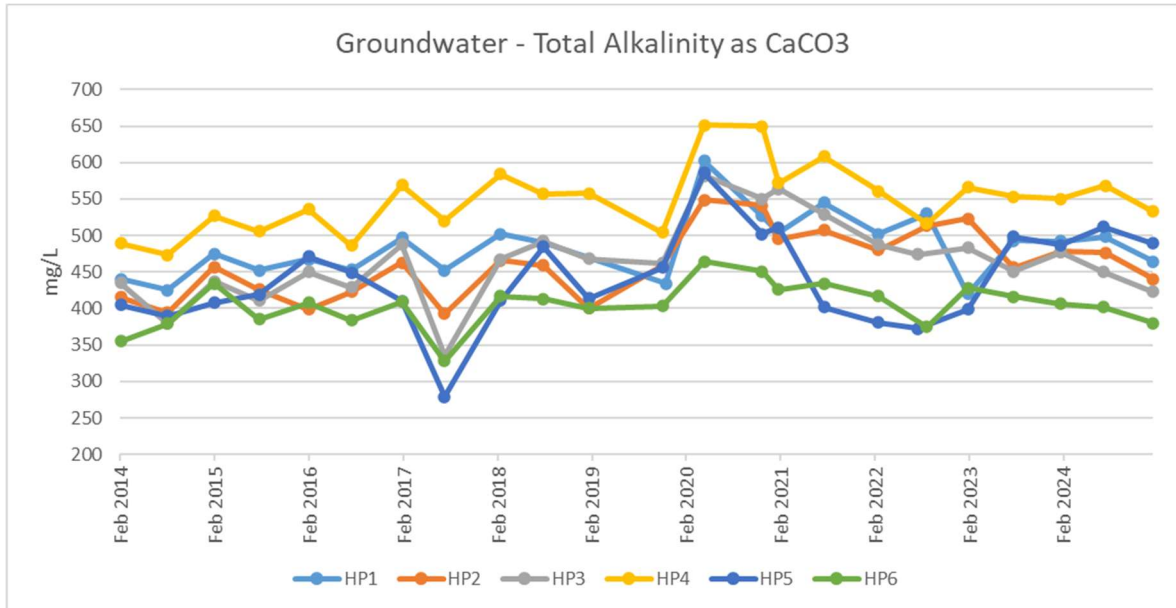


Chart E23 – ERRRC Alkalinity in Groundwater

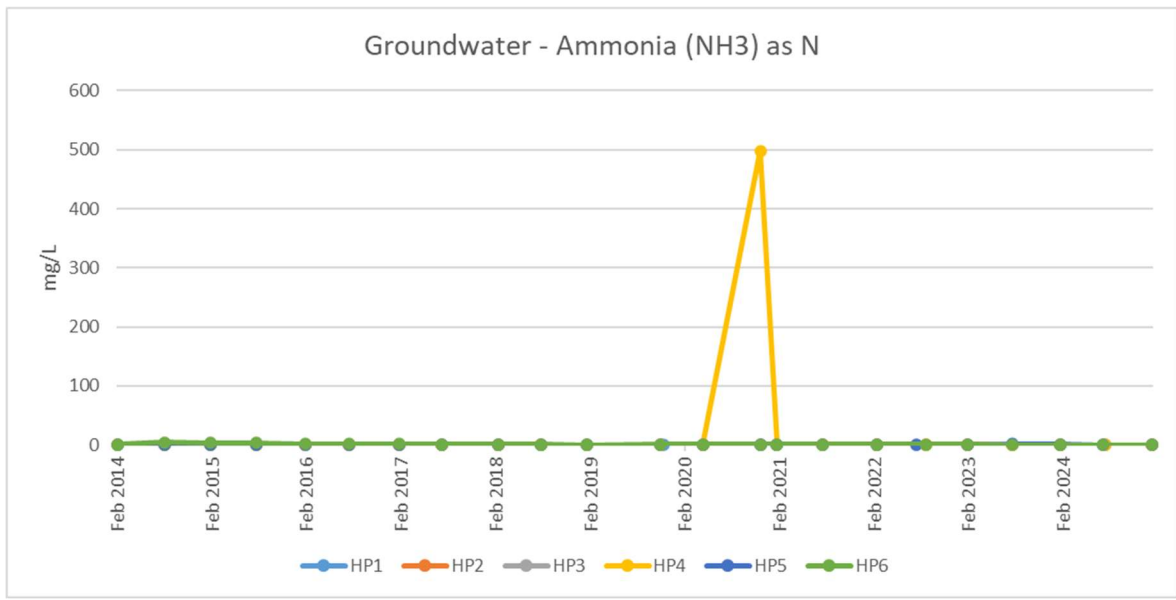


Chart E24 – ERRRC Ammonia in Groundwater

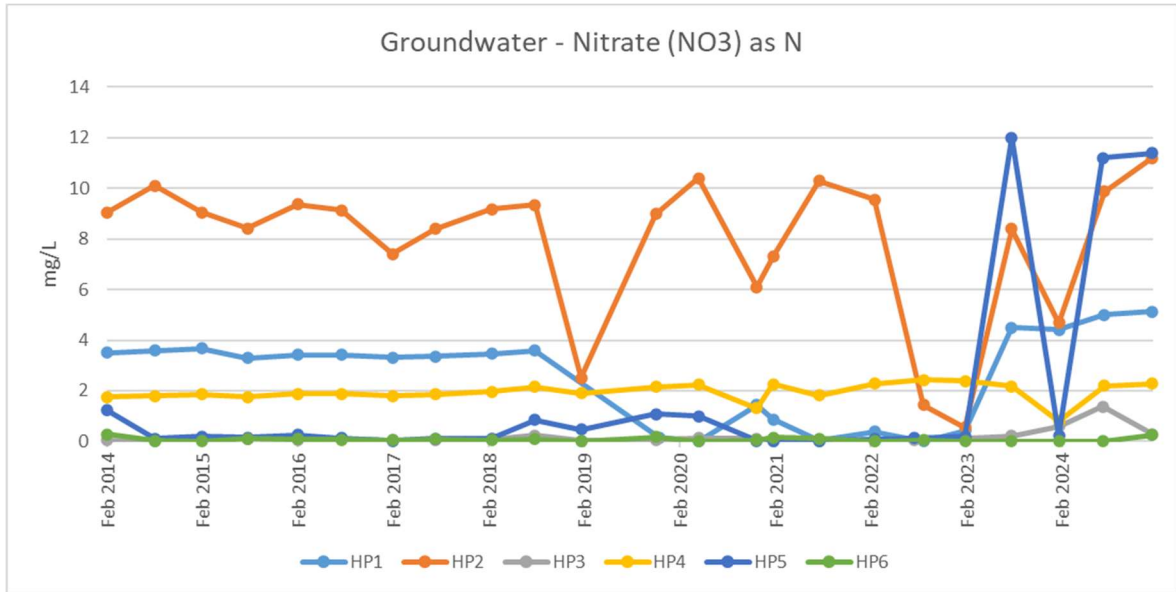


Chart E25 – ERRRC Nitrate in Groundwater

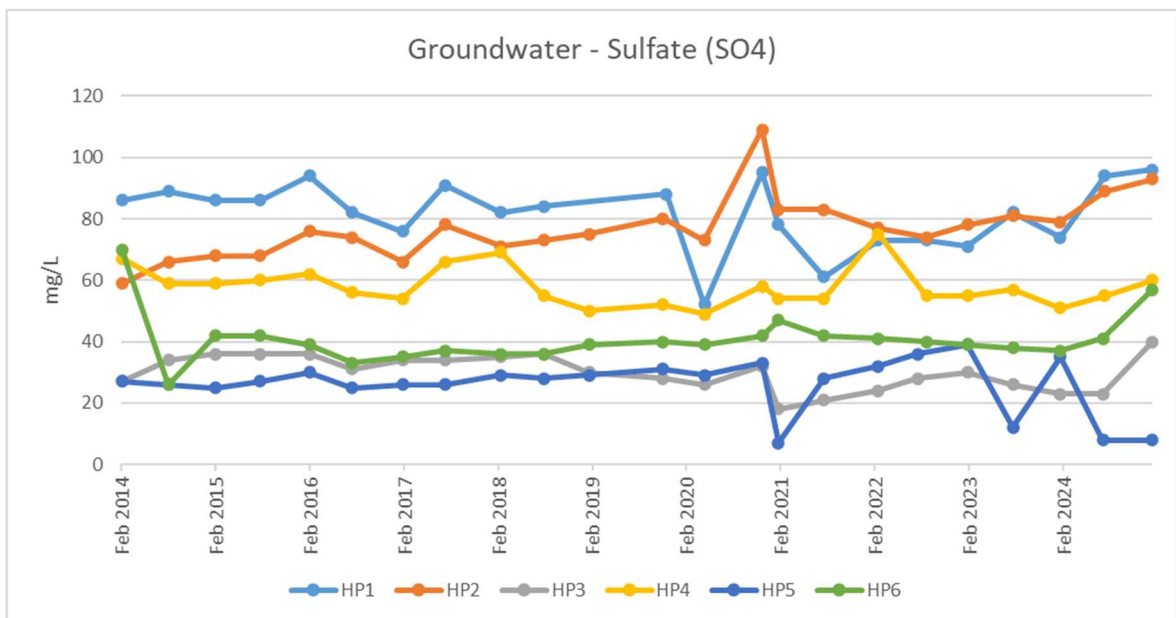


Chart E26 – ERRRC Sulfate in Groundwater

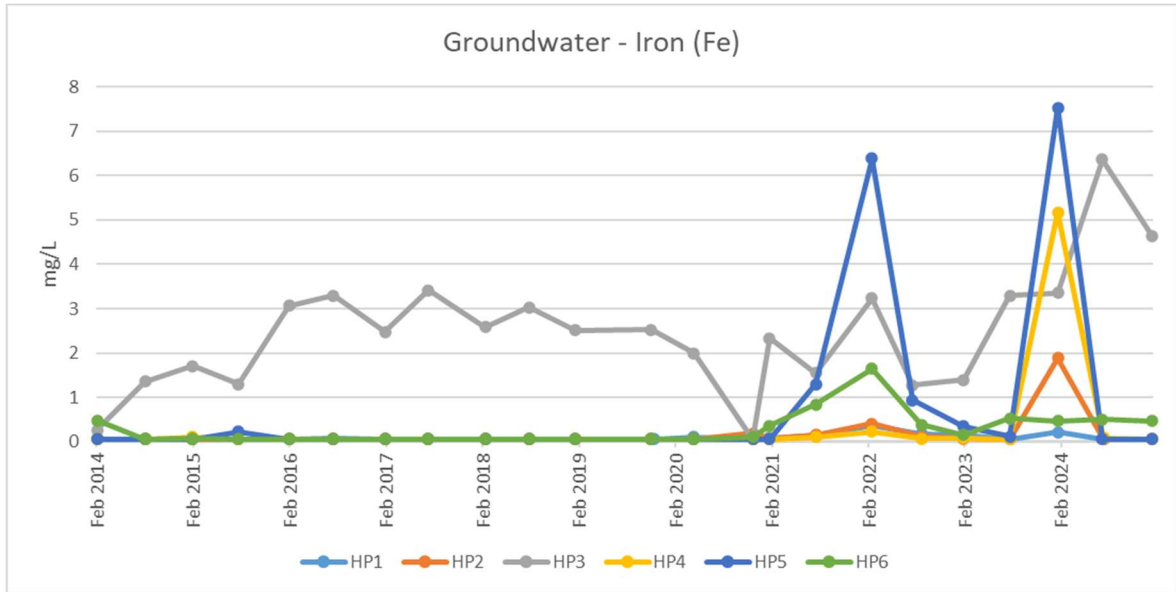


Chart E27 – ERRRC Iron in Groundwater

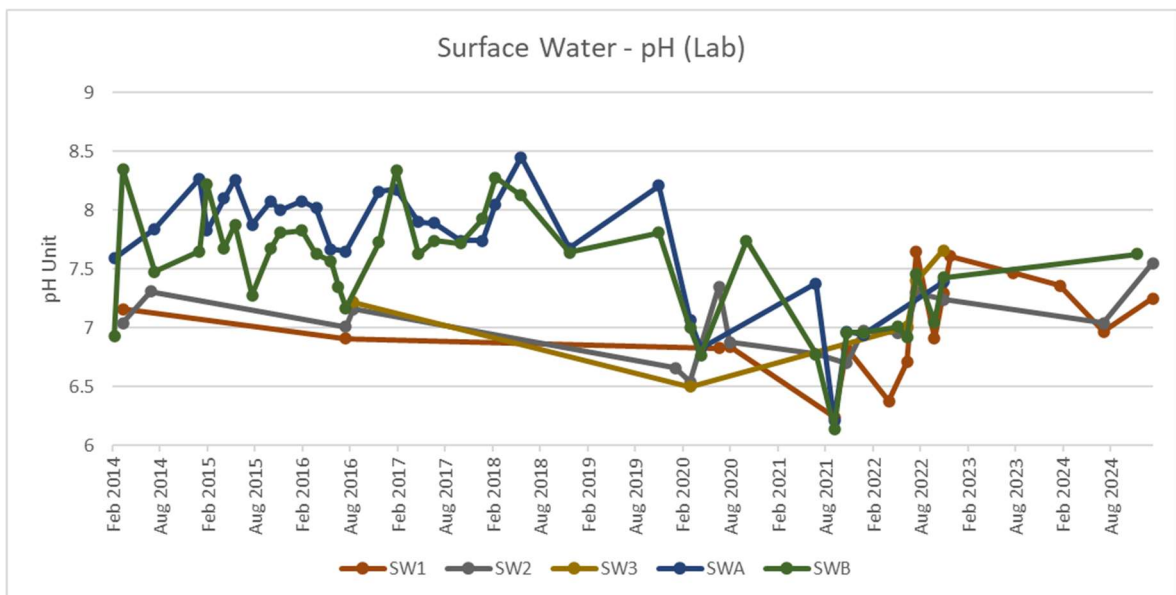


Chart E28 – ERRRC pH of Surface Water

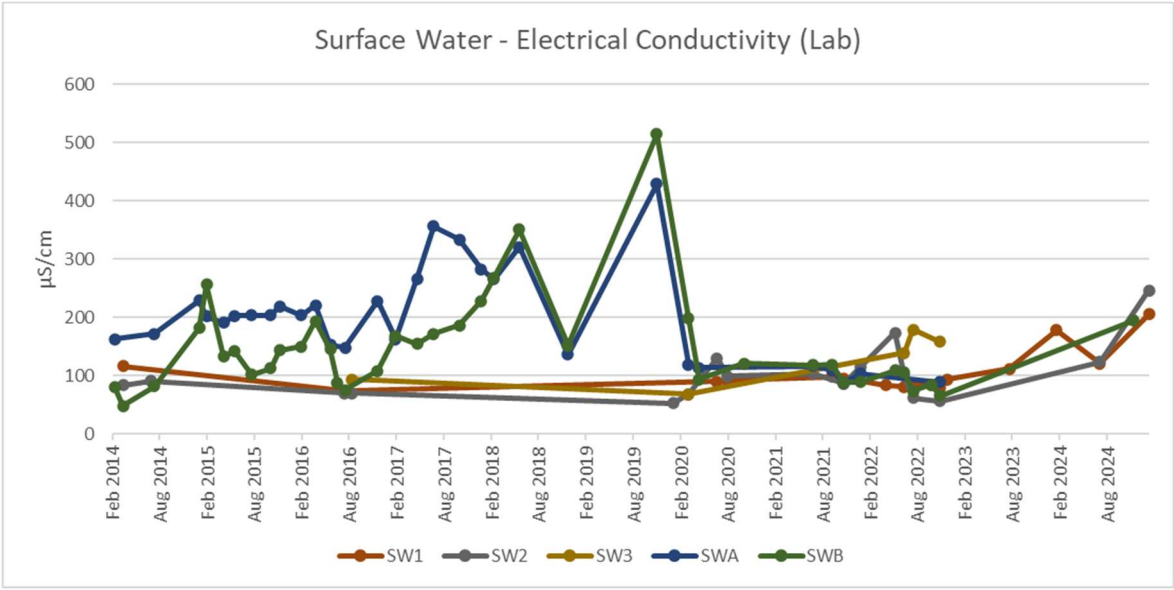


Chart E29 – ERRRC Electrical Conductivity in Surface Water

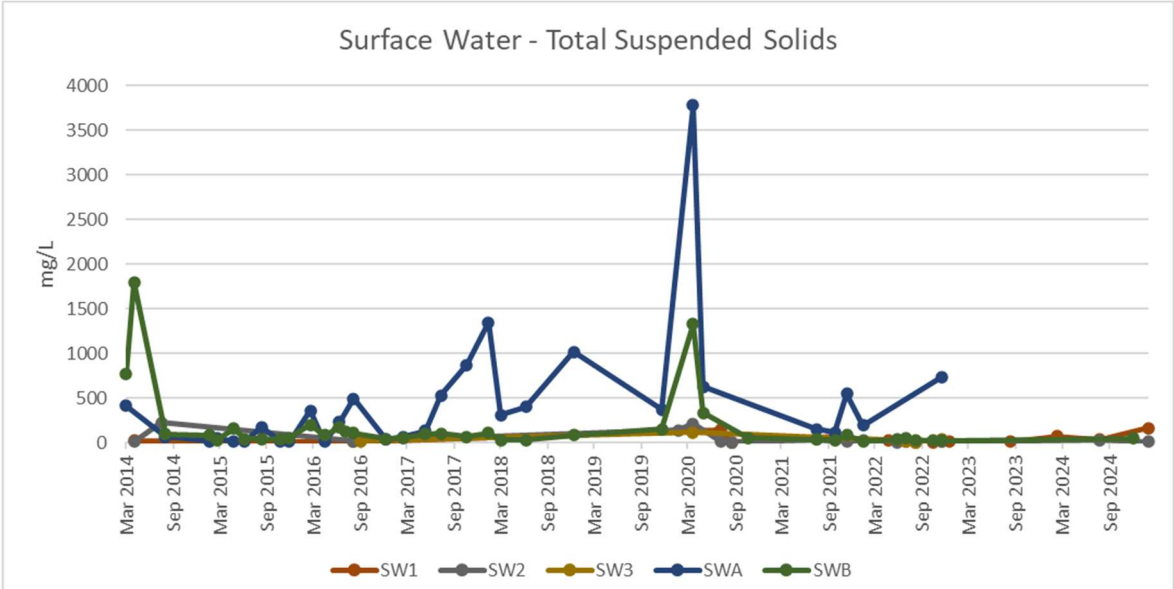


Chart E30 – ERRRC Suspended Solids in Surface Water

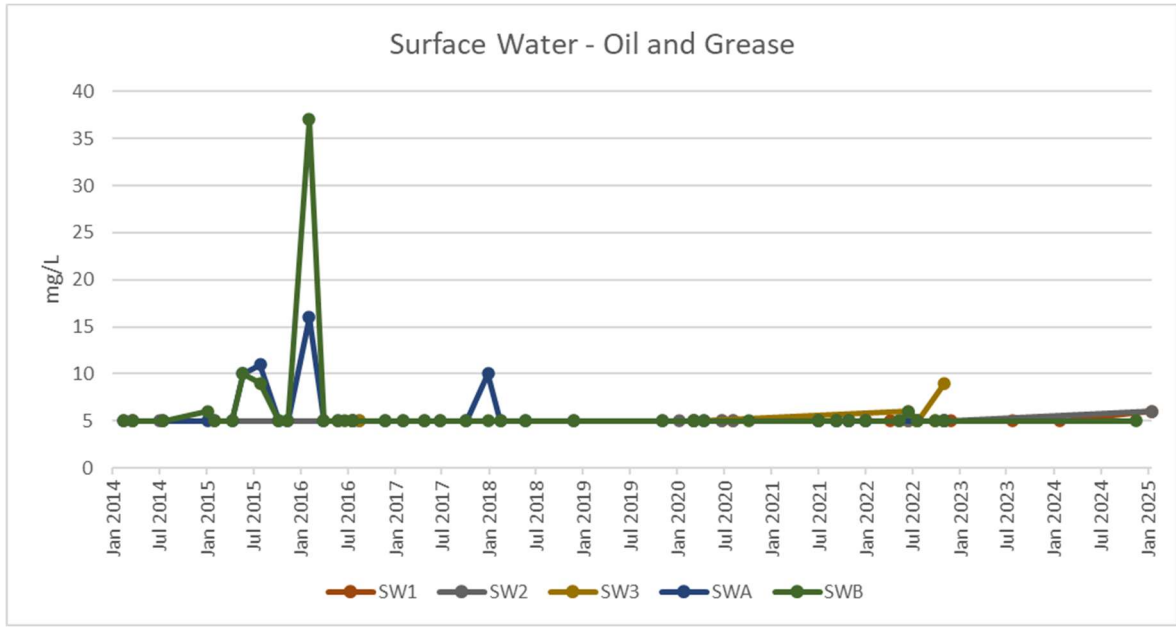


Chart E31 – ERRRC Oil & Grease in Surface Water

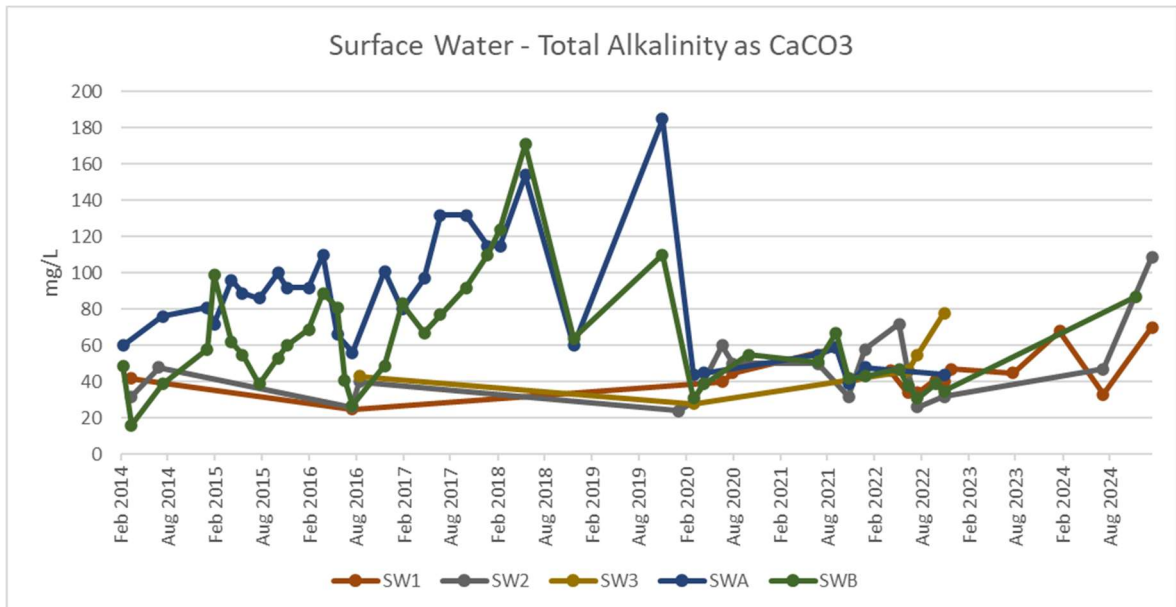


Chart E32 – ERRRC Alkalinity in Surface Water

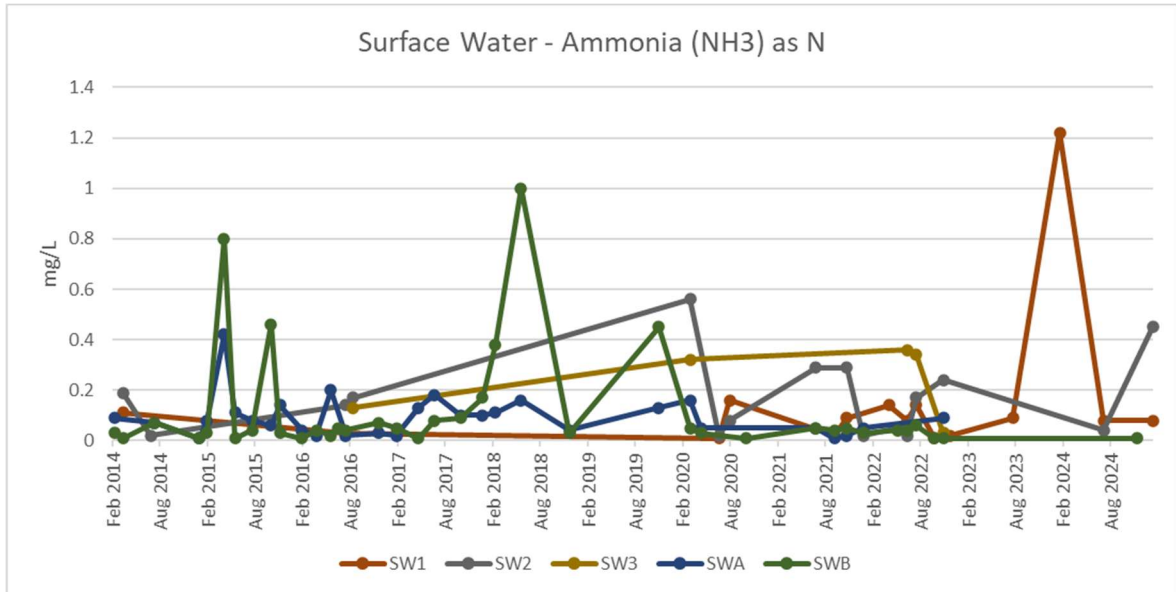


Chart E33 – ERRRC Ammonia in Surface Water

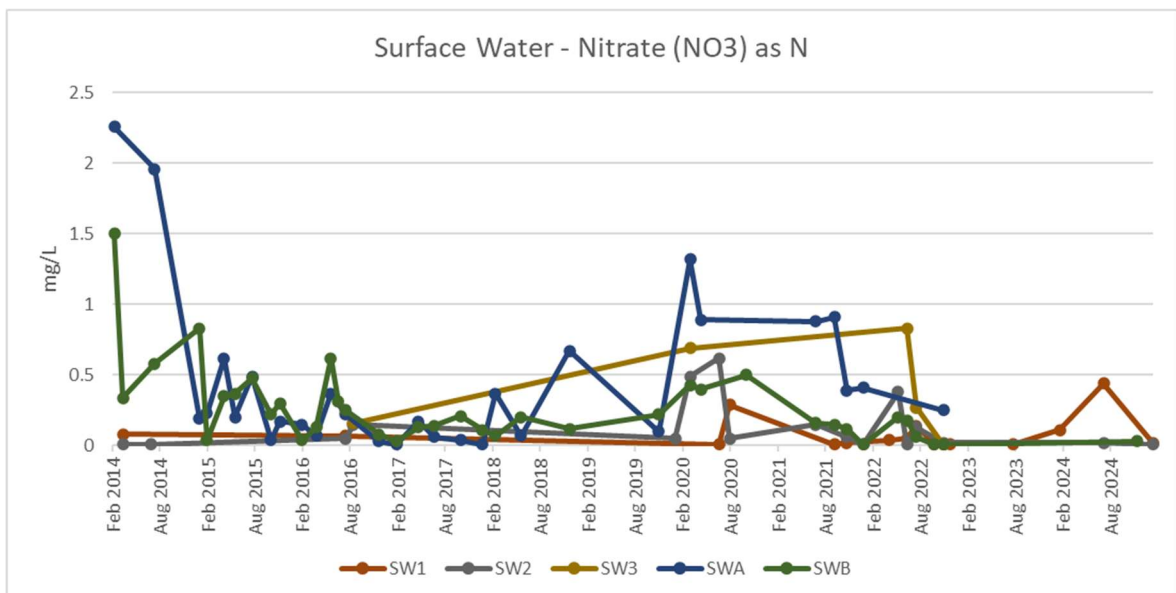


Chart E34 – ERRRC Nitrate in Surface Water

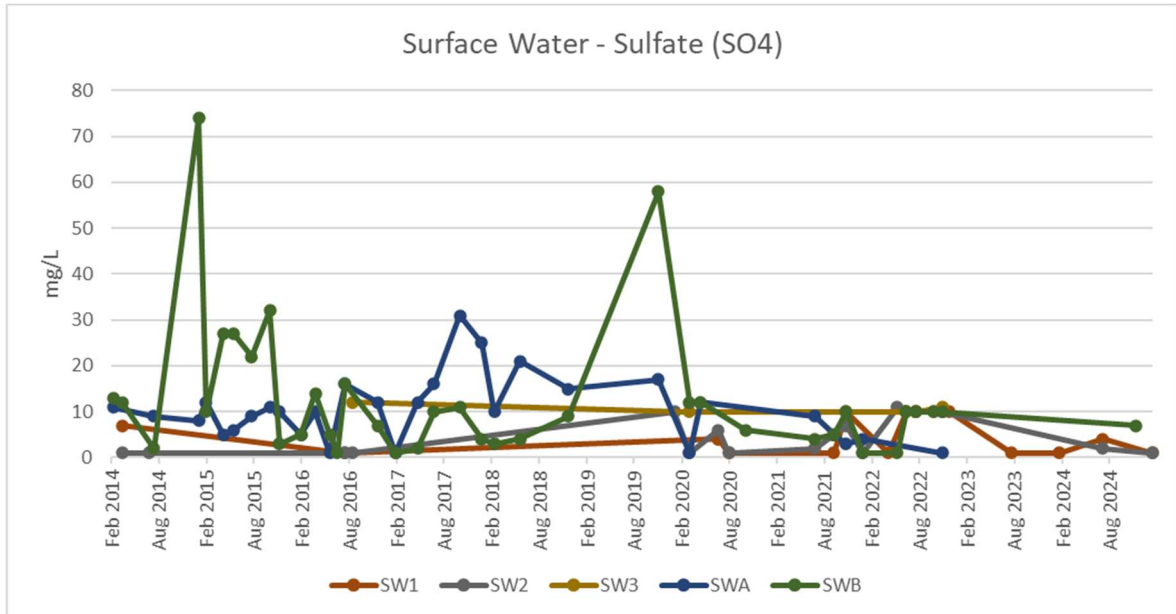


Chart E35 – ERRRC Sulfate in Surface Water

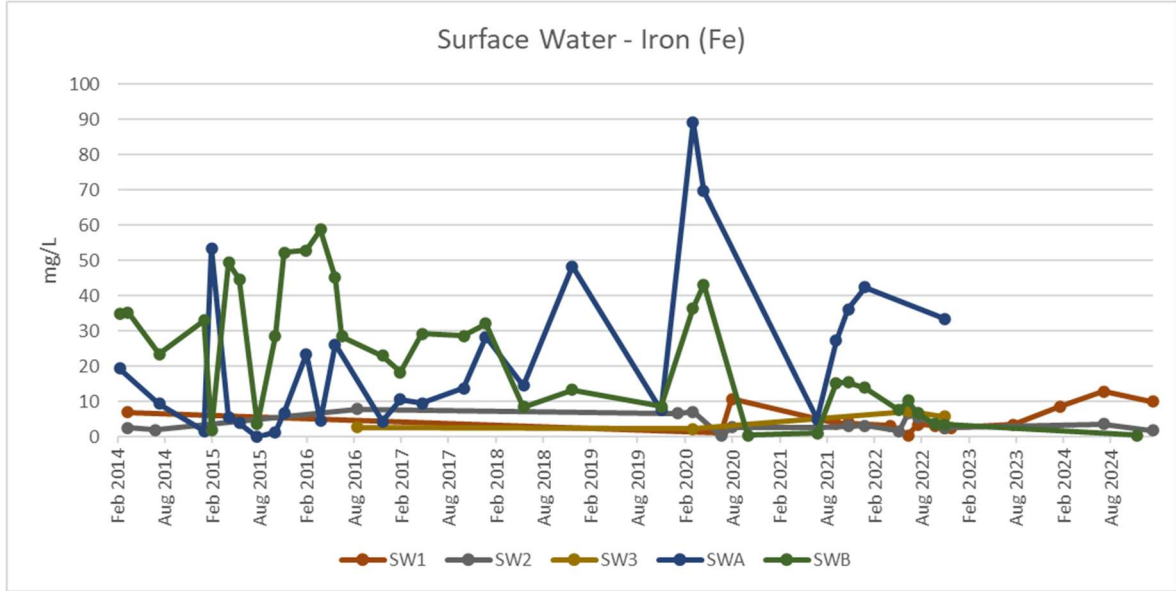


Chart E36 – ERRRC Iron in Surface Water

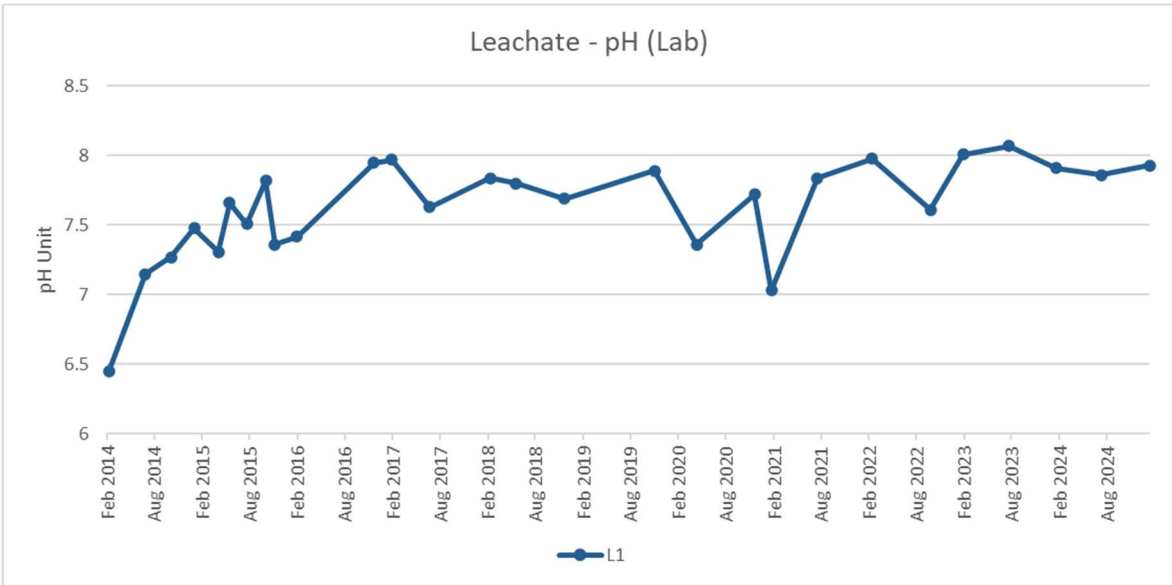


Chart E37 – ERRRC pH of Leachate

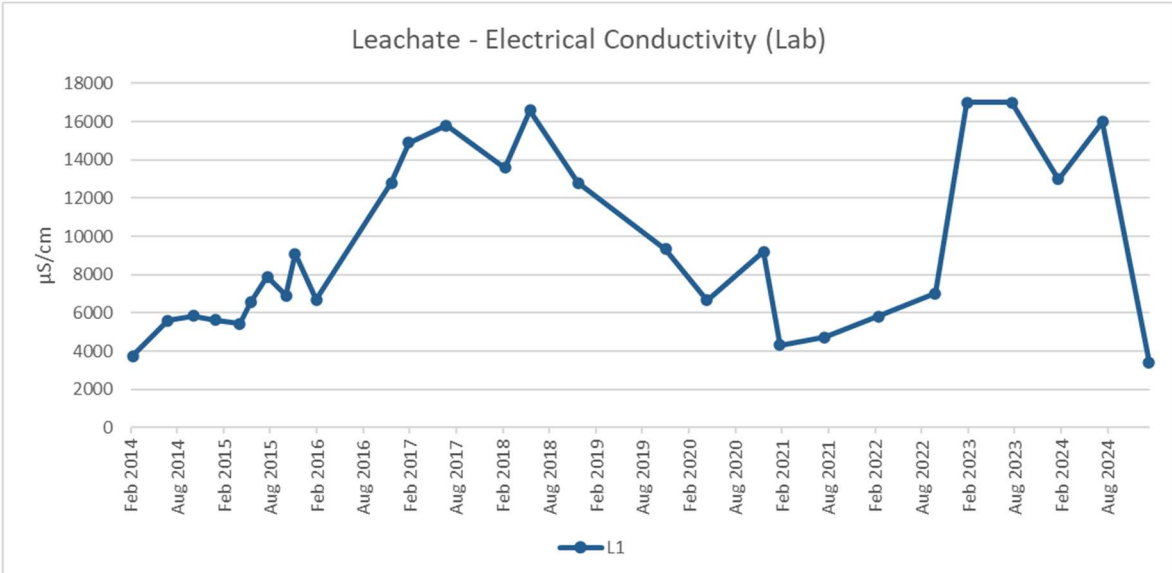


Chart E38 – ERRRC Electrical Conductivity in Leachate

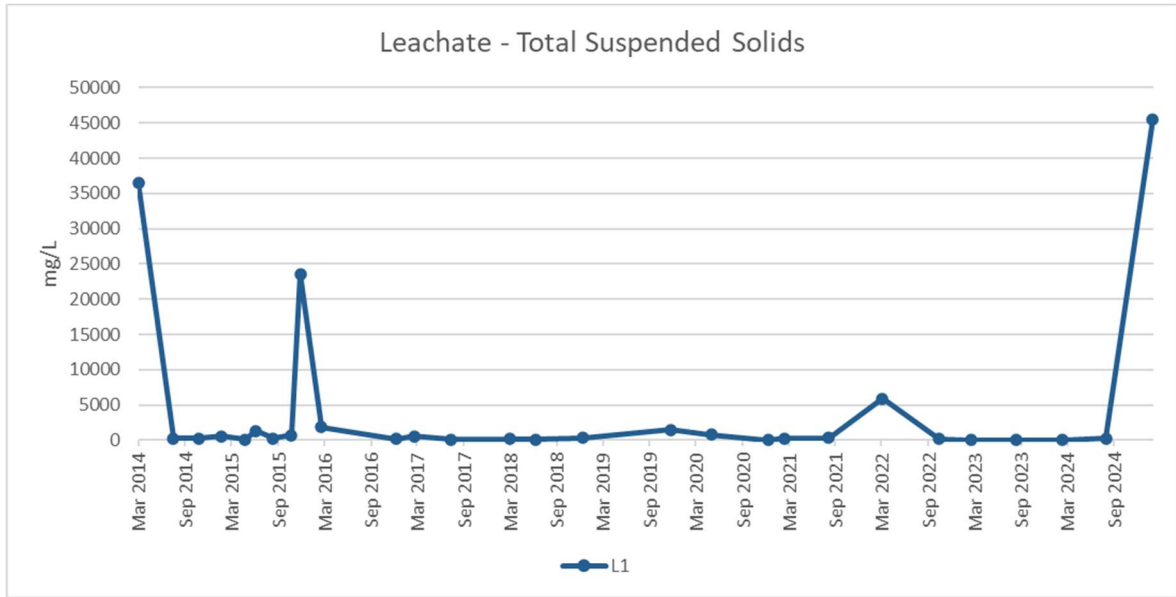


Chart E39 – ERRRC Suspended Solids in Leachate

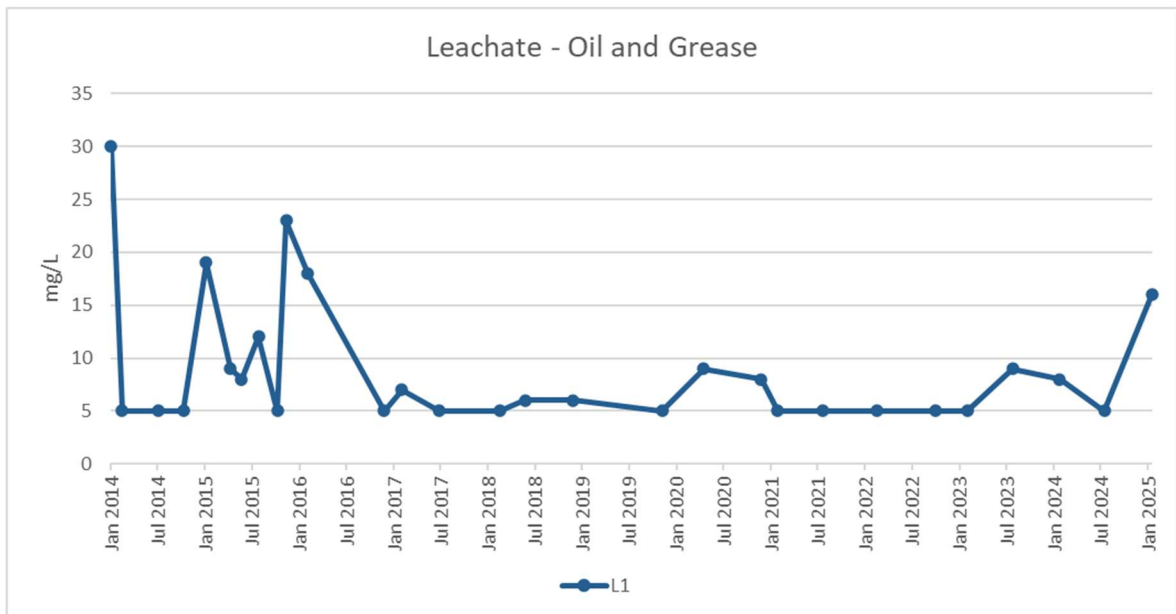


Chart E40 – ERRRC Oil & Grease in Leachate

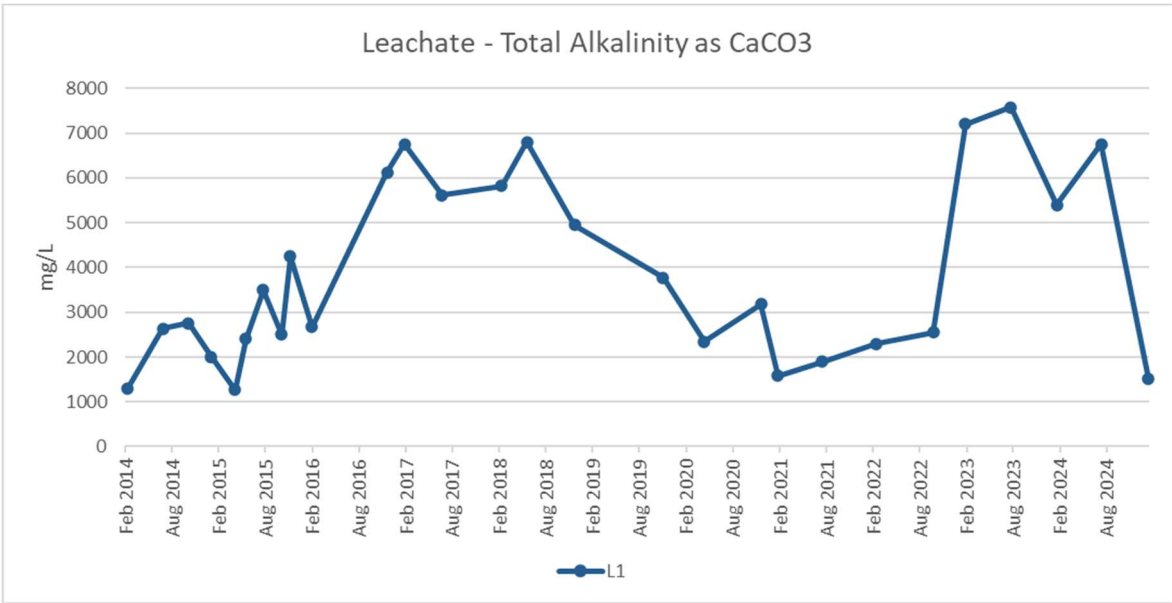


Chart E41 – ERRRC Alkalinity in Leachate

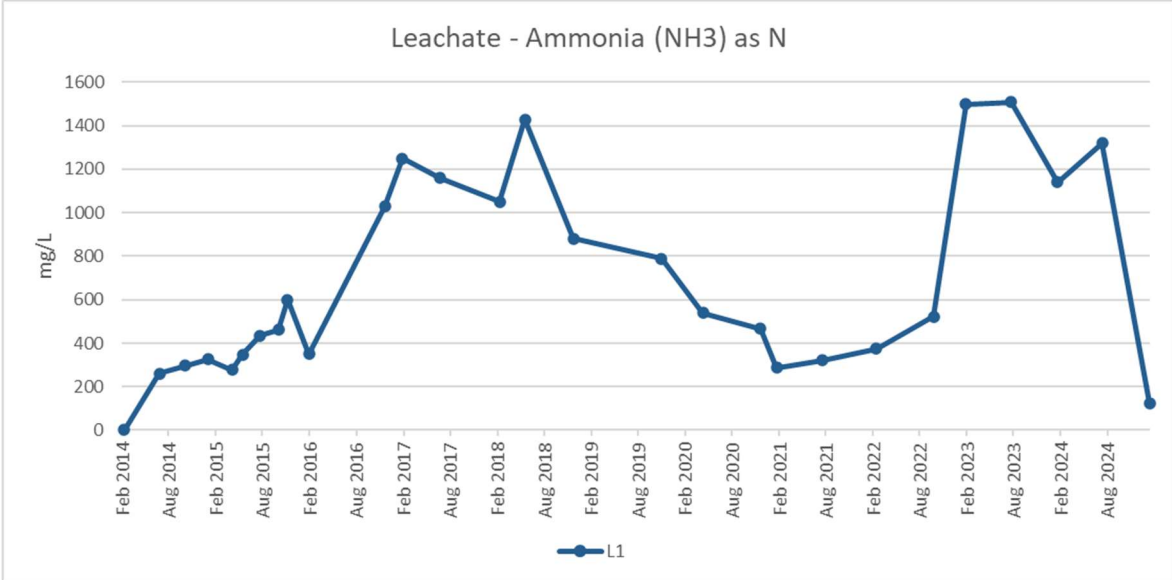


Chart E42 – ERRRC Ammonia in Leachate

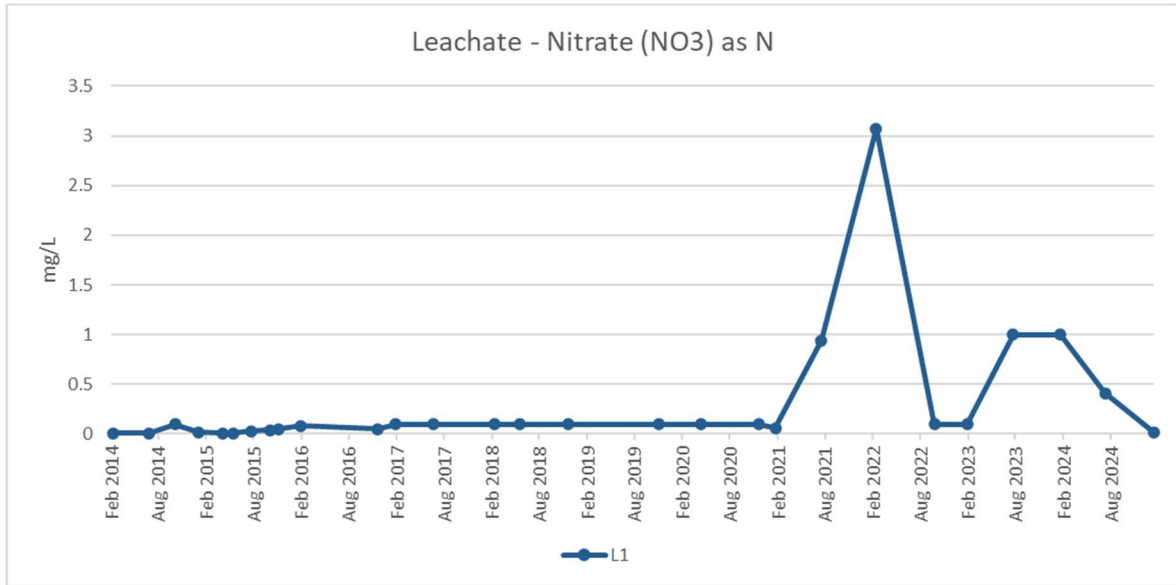


Chart E43 – ERRRC Nitrate in Leachate

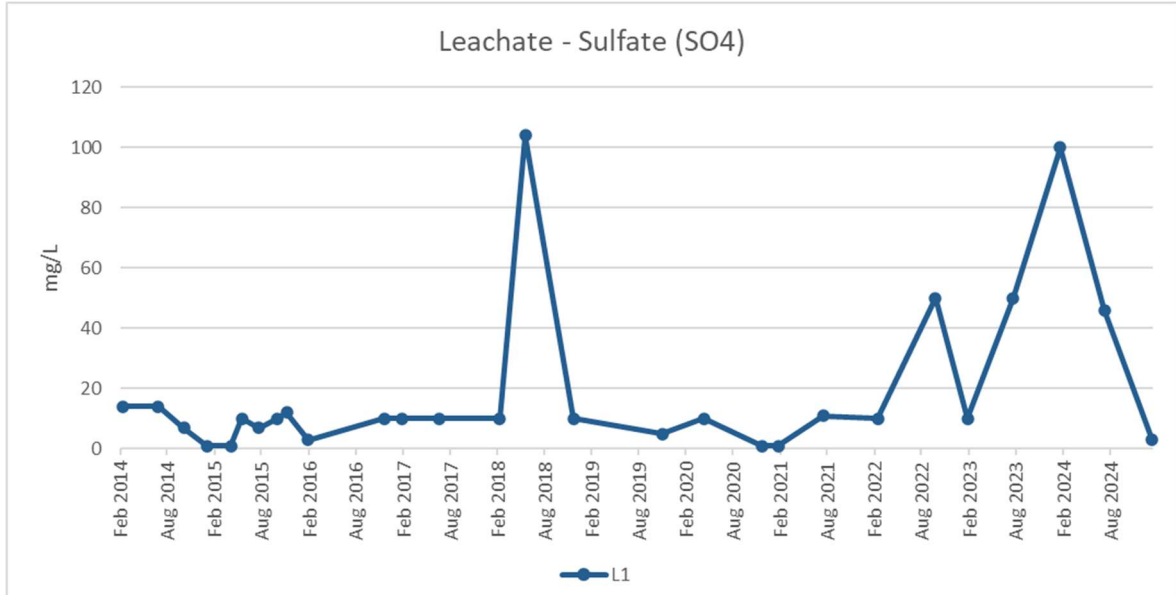


Chart E44 – ERRRC Sulfate in Leachate

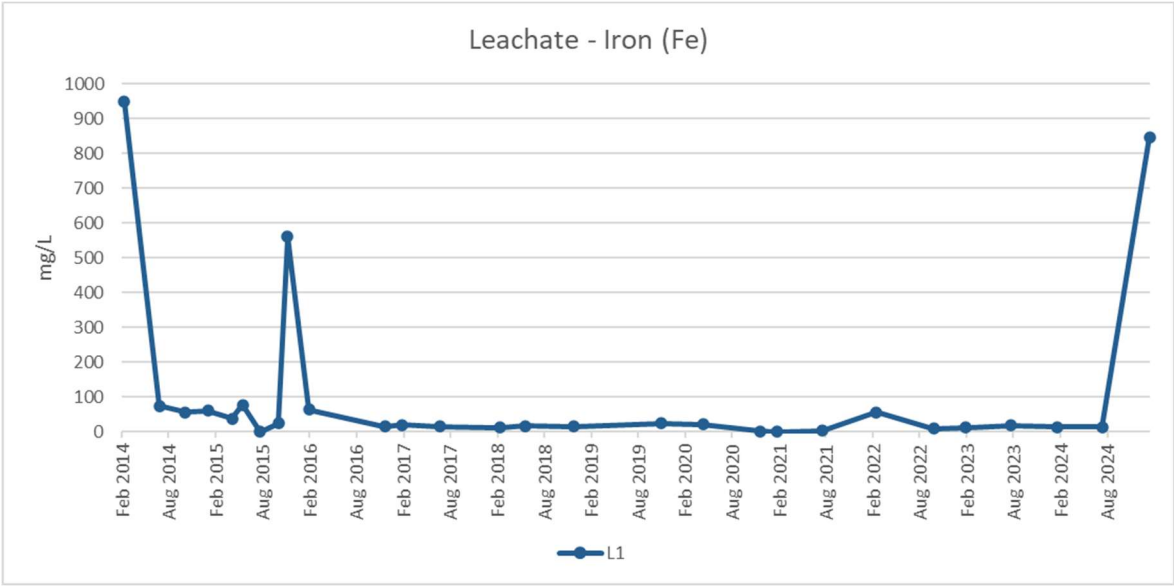


Chart E45 – ERRRC Iron in Leachate

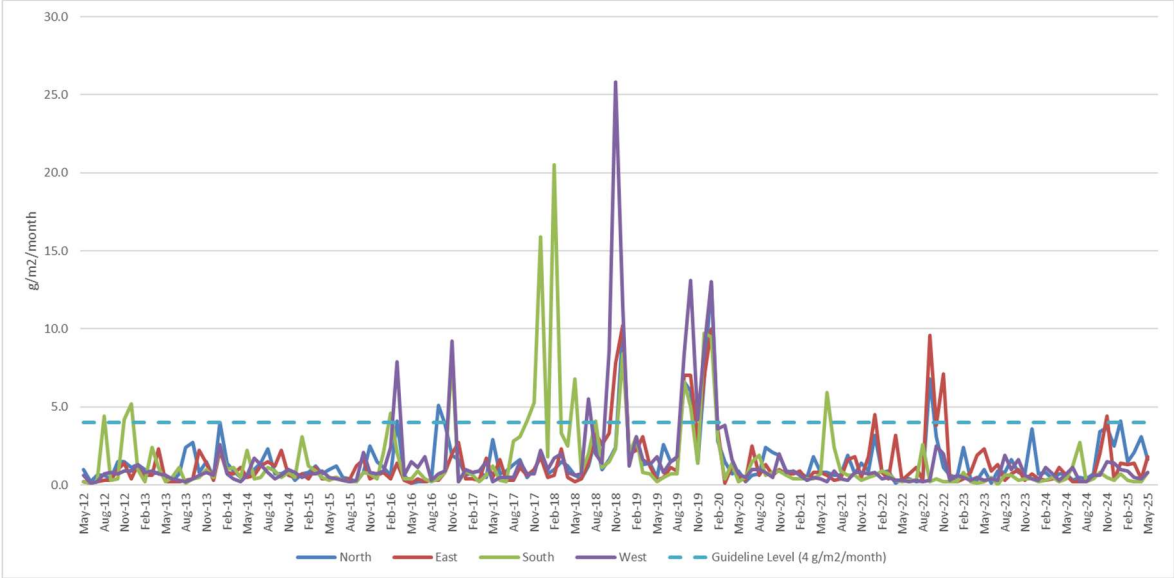


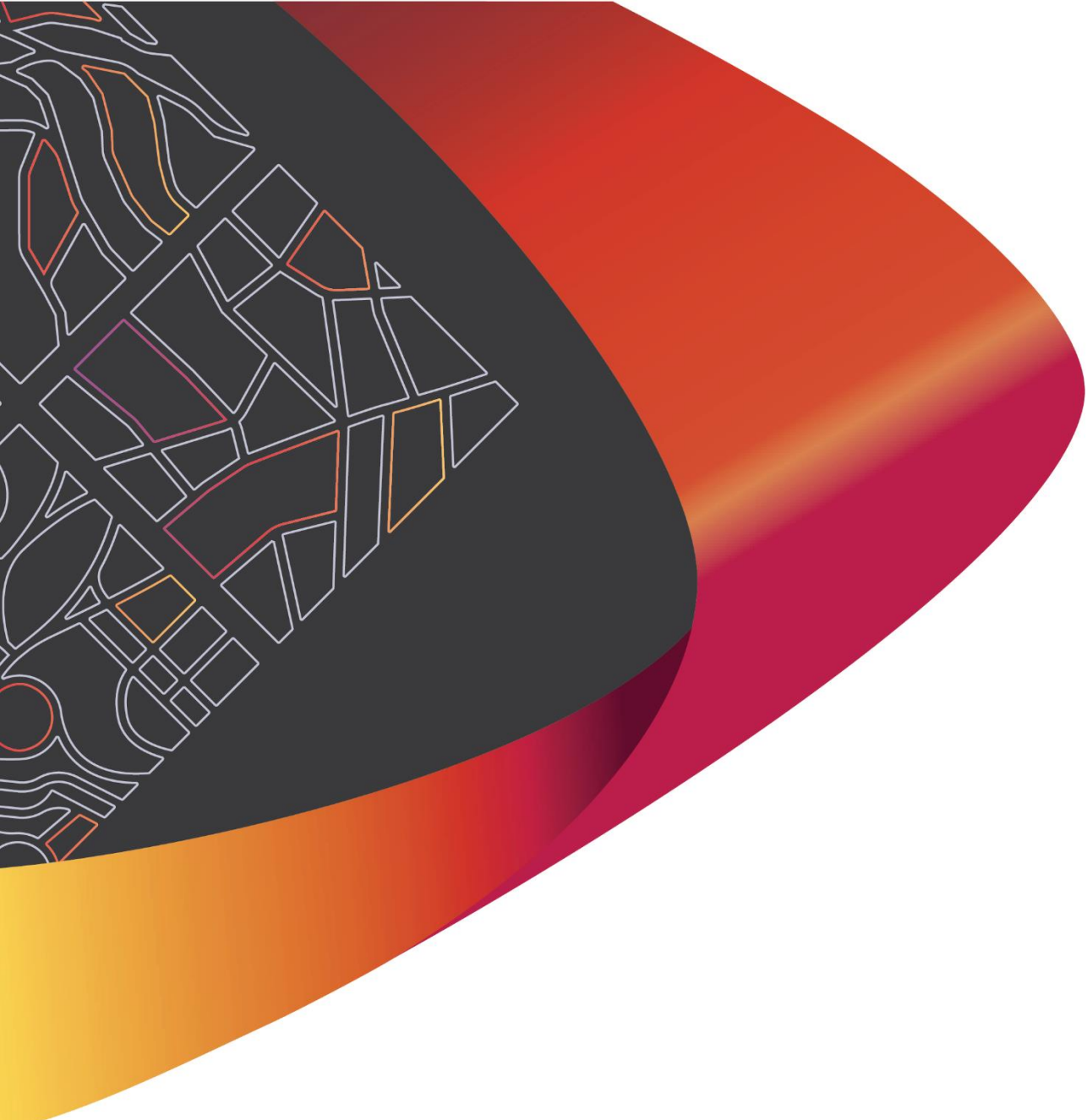
Chart E46 – ERRRC Dust Gauge Monitoring Results



APPENDIX F

**ERRRC ANNUAL CONSERVATION
AGREEMENT REPORT AND
REVIEW**





**EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION AGREEMENT**

Landholder Annual Report and Review

Orange City Council

Rev: B

28 August 2025






Premise

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Document Reference: 223158 Landholder Annual Report and Review 2025 01 REV B.docx

Document Authorisation					
Revision	Revision Date	Proposal Details			
A	25/08/2025	Draft Annual Report and Review for OCC review			
B	28/08/2025	Final Landholder Annual Report and Review 2025			
Prepared by		Reviewed by		Authorised by	
Michelle Lindsay		Sally Kirby		Michelle Lindsay	



Conservation Agreement – Landholder Annual Report and Review	
Reporting year of conservation agreement site: Year 12 Annual report due date: 10 September 2025 Site visit date: To be confirmed. BCT Reviewer: Corey Tatz	Conservation agreement ID: Euchareena Road Resource Recovery Centre CA0370 Name of landowner/site contact: Orange City Council/Wayne Davis Property address: Euchareena Road, Molong NSW 2866

Management Actions as per agreement		Annual Report – Landholder to complete		Review of annual report by BCT	
		Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail))	Action completed Yes/No N/A	Reviewer comments and recommendations
Weed Control	Carrying out weed control using the appropriate control methods - Refer to Annexure C, Item 1 (a)(i)-(vii)	<p>Slashing: <u>Location:</u> Access tracks, open areas and remnant woodland (where accessible) in the western and eastern remnant woodland, Southern Rehabilitation Corridor (SRC), Northern Rehabilitation Corridor (NRC), Bund 1, northern and southern rehabilitation islands (NRI and SRI), and Landscape Area 1 (LA1) <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A</p>	<p>Slashing: <u>Completion Dates:</u> Slashing/mowing was undertaken by Lawns R Us on: 6.11.24, 7.11.24, 12.11.24, 14.11.24, 15.11.24, 19.11.24, 20.11.24, 21.11.24, 27.11.24, 28.11.24, 29.11.24, 9.12.24, 26.2.25, 27.2.25, 28.2.25, 14.3.25, 27.3.25, 31.3.25, 19.6.25, 20.6.25, 23.7.25, 4.8.25, 5.8.25, 11.8.25, 12.8.25 and 14.8.25. <u>Action Timing in Work Schedule of Revegetation Plan (Year 4: Summer):</u> Inconsistent as slashing occurred Year 4 Spring, Summer and Autumn, and Year 5 Winter. <u>Visual Observation:</u> At the time of vegetation survey (March 2025), recent, regular slashing had contributed to reduced covers of exotic grasses (Phalaris). However, St Barnaby's Thistle still dominated most of the site. Weed species still occur in low to high covers in the following areas:</p> <ul style="list-style-type: none"> • St Barnaby's Thistle (<i>Centaurea solstitialis</i>): High covers throughout the conservation area • White Horehound (<i>Marrubium vulgare</i>): western remnant woodland and the western extent of the eastern remnant woodland, particularly under trees where slashing is unable to occur. • Phalaris (<i>Phalaris aquatica</i>), Paspalum (<i>Paspalum dilatatum</i>), Serrated Tussock (<i>Nassella trichotoma</i>) and 		



Management Actions as per agreement		Annual Report – Landholder to complete		Review of annual report by BCT	
		Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail)	Action completed Yes/No N/A	Reviewer comments and recommendations
			<p>Saffron Thistle (<i>Carthamus lanatus</i>): scattered throughout the site in low covers.</p> <ul style="list-style-type: none"> • Skeleton Weed (<i>Chondrilla juncea</i>): Scattered throughout the site in low covers but higher covers occur in the southern-extent of the NRC near L2. • St John's Wort (<i>Hypericum perforatum</i>): Scattered throughout the site in low covers but higher covers occur in the NRC. • Bathurst Burr (<i>Xanthium spinosum</i>): Scattered throughout the eastern and western remnant woodland in proximity to Kangaroo camps. <p>Slashing has contributed to increased native grass covers across the Conservation Area, particularly in the SRC and NRC which are dominated by which is dominated by Wallaby Grass (<i>Rytidosperma</i> spp.) and Red Grass (<i>Bothriochloa macra</i>). Other native grasses such as Speargrass (<i>Austrostipa scabra</i>), (<i>Austrostipa bigeniculata</i>), Wheatgrass (<i>Anthosachne scabra</i>), Windmill Grass (<i>Chloris truncata</i>), Slender Rat's Tail Grass (<i>Sporobolus creber</i>) are also prominent throughout the site.</p> <p><u>Other Comments and Outcomes:</u> Additional weed control methods (i.e., spot spraying) were undertaken in the July 2025 in preparation for the upcoming plantings in late August to early September.</p> <p><u>Annexure C Item 1:</u> Consistent with section a(i, iv and vi).</p> <p><u>Progress towards management action goal</u> (reduction in cover of weed species; Ensure area of weed cover does not increase in size): Weed cover has generally reduced throughout the site for exotic grasses. However, the cover of St Barnaby's Thistle has increased throughout the site.</p> <p><u>Reason for Non-completion:</u> N/A</p>		
		<p>Spot spraying: <u>Location:</u> SRC <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A</p>	<p>Spot spraying: <u>Completion Dates:</u> May 2025 and 23.7.2025 <u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 4: Spring and Autumn): Consistent (Autumn 2025) and inconsistent</p>		



Management Actions as per agreement	Annual Report – Landholder to complete		Review of annual report by BCT	
	Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail)	Action completed Yes/No N/A	Reviewer comments and recommendations
		<p>but spraying focused on planting areas for the upcoming plantings in late August to early September.</p> <p><u>Visual Observation:</u> Numerous priority weeds and High Threat Weeds were recorded on the site including St Barnaby's Thistle (dominant), White Horehound (primarily under trees), Saffron Thistle, St John's Wort and Bathurst Burr which were scattered throughout the site (see Appendix E for locations).</p> <p><u>Other Comments and Outcomes:</u> Slashing and targeted spot spraying has successfully continued to reduce the cover of weeds throughout the site, particularly in the SRC and southern western remnant woodland. Localised infestations still occur in areas where slashing is unable to occur (under trees in remnant woodland). It is recommended these areas are targeted for spot spraying (St John's Wort, Bathurst Burr and White Horehound)</p> <p><u>Annexure C Item 1:</u> Consistent with section a(ii, iii and vi)</p> <p><u>Progress towards management action goal</u> (reduction in cover of weed species; Ensure area of weed cover does not increase in size): Weed cover is continuing to slowly decrease annually. However, the composition of weeds has transitioned from Phalaris dominant in 2024 to St Barnaby's Thistle dominant in 2025. High Threat Weeds predominately occur as isolated infestations.</p> <p>Reason for Non-completion: N/A</p>		
	<p>Weed Monitoring: A Property Inspection Report was completed in the 2024-2025 monitoring period (Appendix D). <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A</p>	<p>Weed Monitoring: <u>Completion Dates:</u> 22/08/2025 <u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 4: Spring and Autumn): Inconsistent but completed as required <u>Other Comments and Outcomes:</u> According to the Property Inspection Report, the site is relatively free from weeds introduced through machinery movements and external factors. The report indicates the extent of the Serrated Tussock infestation has increased from its origin in the SRC to the eastern and western remnant woodland. The extent of St John's Wort has significantly reduced due to well timed slashing and now occurs in the northern extent of the eastern remnant woodland. However, White</p>		



Management Actions as per agreement		Annual Report – Landholder to complete		Review of annual report by BCT	
		Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail)	Action completed Yes/No N/A	Reviewer comments and recommendations
			<p>Horehound continues to be widespread throughout the property and biological controls have been recommended.</p> <p><u>Annexure C Item 1</u>: N/A</p> <p><u>Progress towards management action goal</u> (reduction in cover of weed species; ensure area of weed cover does not increase in size): No major concerns identified but an annual inspection has been recommended.</p> <p><u>Reason for Non-completion</u>: N/A</p>		
		<p>Jute matting:</p> <p>As part of the annual review of the 2024 monitoring report, BCT confirmed that jute matting would no longer be used and that the cost would be diverted to invest in better quality tree guards. Jute matting will not be considered further.</p>	N/A		
Pest Control	<p>Monitoring impacts to the conservation area by pest animals and undertaking on-going control programs for pest animals if appropriate – Refer to</p>	<p>Installation of Netting and Gravel Underneath Gates:</p> <p><u>Location</u>: Gravel under two access gates on the main entrance road, as well two internal gates: south-eastern corner of the Operational Area and the gate connecting LA1 to eastern remnant woodland.</p> <p><u>Variation</u>: According to the 5 Year Action Plan, the pest control measures include the installation of netting underneath the two access gates on the</p>	<p>Installation of Netting and Gravel Underneath Gates:</p> <p><u>Completion Dates</u>: Gravel was installed in December 2022</p> <p><u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 1: Winter/Spring): Inconsistent, gravel was installed in Year 2: Summer.</p> <p><u>Visual Observation</u>: Extensive kangaroo damage to plantings and tree guards was observed on Bund 1, LA1, NRC and SRC. Damage included the displacement of tree guards, stakes and jute matting leaving young saplings unprotected, often resulting in lower success rates. During the March 2025 surveys, 50</p>		



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	<p>Annexure C, Item 1 (b)(i)-(iii)</p>	<p>main entrance road and the installation of gravel under the following gates: north-eastern corner of Operational Area (connecting eastern remnant woodland with NRC), north-western corner of Operational Area (connecting NRC with western remnant woodland) and the Shades Creek Road entrance. The installation of netting has not occurred. Gravel was installed under different internal gates.</p> <p><u>Reason for Variation:</u> Due to the frequency of visitors for maintenance and monitoring, gravel was preferred over netting for the two access road gates. According to the 2022 BCT Annual Report, the installation of gravel underneath the gates at either end of the NRC was considered unnecessary as all gates were to remain open for fauna dispersal.</p> <p>The reasoning behind the installation of gravel under gates at the south-eastern corner of the Operational Area (connecting eastern remnant woodland with SRC) and the corner connecting LA1 to eastern remnant woodland is likely to reduce macropod dispersal through the open gate areas.</p>	<p>kangaroos were observed in the western remnant woodland, while 300 were recorded in the eastern remnant woodland.</p> <p>Gravel installed underneath the two internal gates remains intact, however the access gates require additional gravel.</p> <p><u>Other Comments:</u> The local kangaroo population remains high with several hundred remaining on the site. In Spring 2025, a drone survey will be undertaken to assess current kangaroo numbers and determine if further culling will be required.</p> <p><u>Annexure C Item 1 b(i):</u> Kangaroos moving throughout the site were observed during the March 2025 vegetation surveys, as well as numerous scats on Bund 1 and Landscape Area 1, and camps in the remnant woodland.</p> <p><u>Annexure C Item 1 b(ii and iii):</u> N/A – participation in community pest control programs and implementation of control methods (i.e., shooting, trapping and use of poisonous baits) have not occurred.</p> <p><u>Progress towards management action goal</u> (reduction in occurrence of pest animal species): In late 2024, OCC and BCT discussed the need to implement additional kangaroo management actions (i.e., culling). In November 2024, OCC were approved to complete a conservation cull of up to 125 kangaroos in consultation with NWPS. The ongoing impact of the local kangaroo population will be monitored throughout the 2025-2026 monitoring year to determine the need for additional management actions.</p>		
		<p>Feral Animal Monitoring:</p> <p><u>Location:</u> Four enclosure plots and two remote cameras have been installed by the BCT.</p> <p><u>Variation:</u> N/A</p> <p><u>Reason for Variation:</u> N/A</p>	<p>Feral Animal Monitoring:</p> <p><u>Completion Dates:</u> March 2024 and July 2024</p> <p><u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 3: Spring and Autumn): Consistent and conducted as required.</p> <p><u>Visual Observation:</u> N/A.</p> <p><u>Other Comments:</u> The local kangaroo population remains high with several hundred remaining on the site. In Spring 2025, a drone survey will be undertaken to assess current kangaroo</p>		



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			<p>numbers and determine if further culling will be required. The local hare population has caused damage to young plantings as they are encouraged by the condensation on the tree guard and grass growth around the planting. According to OCC, those plantings without jute or guards have a higher survival rate. OCC will trial new plantings without jute or guards to assess survival rates.</p> <p><u>Annexure C Item 1 a(v):</u> Consistent</p> <p><u>Progress towards management action goal</u> (reduction in occurrence of pest animal species): Ongoing – exclosures and cameras installed to monitor the size of the kangaroo population and inform future management. A conservation cull of up to 125 kangaroos was completed in late 2024.</p> <p><u>Reason for Non-completion:</u> Cameras and exclosure plots installed as seen fit by BCT.</p>		
<p>Grazing management</p>	<p>As per BCT letter dated 18 September 2020 – Livestock grazing is to be excluded for the next five years.</p>	<p>Livestock Grazing: According to Kevin Beatty (lessee of the grazing paddock), all stock was removed from the Conservation Area in June/July 2019.</p>	<p>Livestock Grazing: <u>Completion Dates:</u> Stock removed June/July 2019 <u>Action Timing in Work Schedule of Revegetation Plan</u> (Ongoing): Consistent <u>Visual Observations/Outcomes and Other Comments:</u> Since the 2024 Annual Reviews, vegetation cover within all plots has increased (75-95%). However, almost all plots are dominated by exotic species, particularly St Barnaby's Thistle, excluding R2 which is dominated by <i>Rytidosperma racemosum</i> (Wallaby Grass). Native species richness remains consistent with 2024 data but has increased in C2. Native grasses and regenerating forbs persist between thistles. Litter covers have decreased since 2024 which experienced high litter loads due to recently slashed Phalaris. Regularly slashing during the 2024-2025 monitoring period has reduced the occurrence of Phalaris throughout the site but favoured the emergence of St Barnaby's Thistle. The structure and composition of the plots continue to change annually. In 2021, all plots were dominated by exotic species but by 2022, the cover of native species was gradually increasing. However, exotics (St Barnaby's Thistle) remained prevalent in most locations. By 2023, plots C1 and R1 and transects L2 and F1 were dominated by native grasses (Wallaby Grass, <i>Microlaena</i></p>		



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			<p><i>stipoides</i> [Weeping Grass] and <i>Carex inversa</i> [Knob Sedge], while exotic species (Phalaris and Wild Oats (<i>Avena fatua</i>)) dominated plots C2 and R2, and transects L1, B1 and F2. During this time, exotic perennials (Phalaris) remained in high covers in Bund 1 and LA1. Native species cover and abundance (Wallaby Grass, Red Grass, Knob Sedge, Windmill Grass and Slender Rat’s Tail Grass) continued to increase in 2024, while exotic species mostly occurred in low to moderate covers throughout the site with some localized weed infestations still occurring. Comparatively, the 2025 vegetation surveys identified the dominance of St Barnaby’s Thistle throughout the site with native species (Wallaby Grass, Windmill Grass, Slender Rat’s Tail Grass and Red Grass) dominating open areas, particularly the SRC and the southern extent of the western remnant woodland. White Horehound dominated most remnant woodland areas where slashing could not occur under trees, while other exotic species (St John’s Wort, Saffron Thistle, Bathurst Burr, Phalaris, Serrated Tussock and Paspalum) have scattered occurrences throughout the site as per Appendix E.</p> <p><u>Progress towards management action goal</u> (increase in native species diversity and cover; decrease in exotic species cover): Native species diversity, cover and dominance continue slowly increase throughout the site. However, the growth of native species is often hindered by the dominance of St Barnaby’s Thistle which has increased since 2024 monitoring.</p>		
Fire Management	<p>As per BCT letter dated 18 September 2020 – to manage fire risk during the period of livestock grazing exclusion:</p> <p>a. Undertake strategic slashing</p>	<p>Strategic Slashing: refer to Weed Control section for location, variation and reason for variation</p> <p>No crash grazing of cattle has occurred</p>	<p>Slashing:</p> <p>Refer to Weed Control section for completion dates, action timing in work schedule of Revegetation plan and reasons for non-completion.</p> <p><u>Visual Observations/Outcomes and Other Comments:</u> Ongoing slashing is recommended, as per the Revegetation Plan Works Schedule (Appendix A) to continue to reduce the cover of exotic species.</p> <p><u>Progress towards management action goal</u> (Reduce bushfire risk and overdominance of exotic plant species): Exotic grass species cover has reduced in slashed areas, however St Barnaby’s Thistle dominates most of the site.</p>		



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	b. Strategic crash grazing of cattle for short periods with prior agreement from the BCT.				
	Suppression of all wildfires occurring in the conservation area as quickly as possible	No wildfires have occurred in the Conservation Area	Not applicable.		
	Undertaking fire hazard reduction to protect the conservation area, in appropriate locations, with any required approvals and/or permits using: a. Raking and hand clearing	No fire hazard reduction activities have been undertaken.	Not applicable.		



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	b. Pile burning, and/or c. Fuel reduction burns.				
	Using fire hazard reduction burns and controlled burning which take into account the recommended fire intervals – Refer to Annexure C, Item 1 (d) (iii) and (iv)	No fire reduction burns or controlled burning have been undertaken.	Not applicable		
Vehicle access	Vehicle access restricted to formed trails except for management purposes, research, firefighting or and any emergency requirements.	All vehicles involved in site maintenance and monitoring have been restricted to formed trails.	Access to the Conservation Area is restricted to maintenance/monitoring personnel with key access. Prior to site visitation, all vehicles, machinery and equipment were cleaned to reduce the risk of the introduction or spread of weeds and plant pathogens into the site. <u>Action Timing in Work Schedule of Revegetation Plan:</u> N/A <u>Visual Observation:</u> No off-trail vehicle tracks observed during the March 2025 vegetation surveys. <u>Progress towards management action goal:</u> N/A		
Threatened species	Implementing any measures included in recovery	Signage: <u>Location:</u> access gates including the main entrance on Euchareena Road	Signage: <u>Completion Dates:</u> Spring 2021		



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	plans or other specific management advice for any threatened species or communities which are or may be found in the conservation area.	and the Shades Creek Road access gate. <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A	<u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 1: Winter/Spring): Consistent <u>Visual Observation:</u> Installed signage reads 'Conservation area. Site contains high quality remnant vegetation and threatened species. Collection of firewood prohibited' (Appendix B). <u>Other Comments:</u> During the 2024 annual review, BCT recommended investigating whether BCT signage is required on the access gates. This is yet to be completed. <u>Progress towards management action goal</u> (Development of on-site markers; Utilisation of maps for remnant protection, rehabilitation or maintenance work): Achieved in 2021.		
		Open Gates: <u>Location:</u> According to the 5 Year Action Plan, all gates within the NRC are to remain open to allow for wildlife dispersal throughout the site. <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A	Open Gates: <u>Completion Dates:</u> Unknown <u>Action Timing in Work Schedule of Revegetation Plan:</u> N/A <u>Visual Observation:</u> All internal gates were observed as open during March 2025 fieldwork <u>Progress towards management action goal:</u> N/A <u>Reason for Non-completion:</u> N/A		
Restoration	Restoration of native vegetation using the preferred method of encouraging and retaining natural regeneration as per the Conservation Management Plan.	Installation of Exlosures: <u>Location:</u> As marked in Figure 1 of the 5 Year Action Works Plan <u>Variation/ Reason for Variation:</u> Addressed in BCT Annual Report 2021-2022	Installation of Exlosures: <u>Completion Dates / Action Timing in Work Schedule of Revegetation Plan:</u> Addressed in BCT Annual Report 2021-2022 <u>Visual Observation:</u> The species composition of enclosure plots was assessed using Rapid Assessment Spot Samples (RASS). RASS were undertaken by recording all plant species within each enclosure. Each species was given an abundance rating according to the following approximate scale: Abundant (>50 individuals), Common (11 to 50), Occasional (6 to 10), Uncommon (3 to 5) and Rare (1 or 3). The results of the March 2024 RASS are as follows: <ul style="list-style-type: none"> • Enclosure 1 (SRC): This enclosure was almost exclusively dominated by Phalaris with <i>Euphorbia davidii</i> rarely occurring, despite the surrounding paddock being dominated by native species. Native species were uncommon to rare and included Red 		

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			<p>Grass and <i>Carex inversa</i>. These findings are somewhat consistent with 2024 surveys when the enclosure was also dominated by Phalaris with <i>Euphorbia davidii</i>, however the native Wallaby Grass was not recorded in the plot during 2025 surveys.</p> <ul style="list-style-type: none"> • Exclosure 2 (eastern remnant woodland): This enclosure was dominated by native species including <i>Austrostipa bigeniculata</i> and Red Grass, with Speargrass and Wallaby Grass also occasionally occurring. The dominant exotic species was the High Threat Weed Saffron Thistle, however <i>Conyza bonariensis</i> (Flaxleaf Fleabane) and Phalaris also occurred. This enclosure has retained a consistently high litter load since 2024. The species composition has changed since as some grasses (Slender Rat's Tail Grass, <i>Juncus</i> spp., <i>Lomandra</i> spp.) were not recorded. However, the plot remains dominated by <i>Austrostipa</i> spp. • Exclosure 3 (NRC): This enclosure was dominated by native species including Wheatgrass, Red Grass, Slender Rat's Tail Grass with <i>Paspalidium jubiflorum</i> (Warrego Grass) and <i>Epilobium billardioreanum</i> uncommonly occurring. Common exotic species included <i>Bromus hordeaceus</i> (Soft Brome), St Barnaby's Thistle and Phalaris with the occasional <i>Hypochaeris radicata</i> (Catsear). The species composition of enclosure 3 has remained predominately consistent with 2024, except the High Threat Weed St John's Wort no longer occurs. • Exclosure 4 (western remnant woodland): This enclosure contained low species diversity and was dominated by the exotic Flaxleaf Fleabane and St Barnaby's Thistle. The native grasses Slender Rat's Tail Grass and <i>Lomandra filiformis</i> (Wattle Mat-rush) continue to persist but are uncommon. This is contrary 		



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			<p>to the 2024 surveys as the enclosure plot was dominated by native species (Wheatgrass, Red Grass, Wallaby Grass and Hairy Panic [<i>Panicum effusum</i>] with few exotic species including St Barnaby's Thistle.</p> <p><u>Progress towards management action goal</u> (Improve condition of fenced remnants): On target - Native groundcover species dominated two of the four exclosures. Most exclosures contained low species diversity with a different species composition to the surrounding groundcover. The condition of the vegetation community is continuing to slowly improve since the removal of grazing and the use of suitable weed control measures (slashing).</p>		
		<p>Firewood Harvesting / Fallen Timber Removal Monitoring / Clearance and Disturbance Monitoring: <u>Location:</u> Entire Conservation Area</p>	<p>Firewood Harvesting / Fallen Timber Removal Monitoring / Clearance and Disturbance Monitoring: <u>Completion Dates:</u> Ongoing <u>Action Timing in Work Schedule of Revegetation Plan</u> (Firewood harvesting and fallen timber removal monitoring: Year 3: Autumn, Year 4: Winter; Clearance and disturbance monitoring: Year 3: Spring/ an, Year 4: Autumn): Consistent - ongoing <u>Visual Observation:</u> No evidence of firewood harvesting, timber removal, clearance or disturbance. <u>Progress towards management action goal</u> (Elimination of firewood harvesting; Elimination of fallen timber removal; Prevention of future clearing and disturbance): On target - No evidence of firewood harvesting, timber removal or clearance and disturbance.</p>		
		<p>Erosion Monitoring: <u>Location:</u> Entire Conservation Area <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A</p>	<p>Erosion Monitoring: <u>Completion Dates:</u> Ongoing with additional photos taken on 6/5/25 and 5/6/25. <u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 1: Spring/Autumn): Consistent – ongoing <u>Visual Observation:</u> Erosion was predominately observed in drainage lines within the eastern remnant woodland and NRC. The extent of erosion will be monitored annually via Photopoint 37 (Appendix E).</p>		



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Revegetation – Refer to Annexure C, Item 1 (m) and the 5 year Works Plan	<p>Soil Preparation – boring holes with auger and ripping trenches: <u>Location:</u> SRC vegetation islands. <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A</p>	<p>Soil Preparation – boring holes with auger and ripping trenches: <u>Completion Dates:</u> 23.7.25 <u>Other Comments:</u> soil preparation for the September 2024 replacement plantings was documented in the 2024 Annual Report. Additional planting preparations for the late August to early September plantings are yet to occur. <u>Action Timing in Work Schedule of Revegetation Plan (Year 2: Spring/Summer):</u> Inconsistent – soil preparation occurred in Year 5 Winter due to delayed plantings. <u>Progress towards management action goal (Improve remnant connectivity):</u> Soil preparation for plantings has occurred in areas where remnant connectivity may be improved through successful plantings. <u>Reason for Non-completion:</u> Year 2 Autumn and Year 3 Spring plantings were delayed until Year 3 Spring, Year 4 Winter and Year 5 Winter.</p>		
	<p>Plantings - Installation of Tree Guards/Stakes, Water Crystals, Fertiliser and Mycorrhizal Landscape Inoculant: <u>Location:</u> SRC (500 trees) <u>Variation:</u> Action timing is inconsistent with the Revegetation Plan works schedule. <u>Reason for Variation:</u> Previous plantings were delayed and the need for replacement plantings was established due to the impact of macropods.</p>	<p>Plantings - Installation of Tree Guards/Stakes, Water Crystals, Fertiliser and Mycorrhizal Landscape Inoculant: <u>Completion Dates:</u> 15.9.24 <u>Other Comments:</u> According to Lawns R Us invoices, plantings in September 2024 replaced those impacted by herbivory. Additional plantings are planned to occur between late August and early September. <u>Action Timing in Work Schedule of Revegetation Plan:</u></p> <ul style="list-style-type: none"> Plantings and installing tree guards/stakes (Year 2: Autumn and Year 3: Winter): inconsistent – occurred in Year 4 Spring. 		



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		<ul style="list-style-type: none"> Water-holding crystals and mycorrhizae (Year 2: Autumn and Year 3: Winter): inconsistent – occurred in Year 4 Spring. <p><u>Visual Observation:</u> Photographic evidence of plantings throughout the NRI and SRI are provided in Appendix B. A low-moderate success rates of Year 3 and Year 4 plantings were observed in the western extent of the NRC which are protected by black tree guards. The plantings in open areas of the NRC and SRC have experienced high mortality due to macropod damage and the use of less resilient green tree guards. The focus of the 2024-2025 monitoring year was planting maintenance which included reframing plantings with tree guards and replacing dead plantings.</p> <p><u>Annexure C Item 1 (m):</u> On target – plantings designed to maintain the structure of the vegetation community were sourced locally by Kristine Robbins who propagated the seeds for tubestock planting.</p> <p><u>Progress towards management action goal</u> (Improve condition of fenced remnants; Improve remnant connectivity): On track but dependent on planting survival.</p> <p><u>Reason for Non-completion:</u> Previous plantings were delayed until Year 4 Spring and additional plantings were completed as replacements.</p>		
	<p>Watering: <u>Location:</u> NRI and SRI <u>Variation:</u> N/A <u>Reason for Variation:</u> N/A</p>	<p>Watering: <u>Completion Dates:</u> 15.9.25, 26.10.24, 3.2.25, 4.2.25, 8.2.25, 21.2.25, 22.2.25, 28.2.25 <u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 4: Summer): Somewhat consistent due to delayed plantings <u>Visual Observation:</u> During vegetation surveys in March 2025, plantings (that had survived) appeared in good condition. <u>Progress towards management action goal</u> (Improve condition of fenced remnants; Improve remnant connectivity): On track but dependent on planting survival. <u>Reason for Non-completion:</u> N/A</p>		



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		<p>Monitoring Damage to Plantings: <u>Location:</u> SRC</p>	<p>Monitoring Damage to Plantings: <u>Completion Dates:</u> 15.9.24, 26.10.24, 2.6.25, 7.6.25, 13.6.25, 14.6.25, 25.6.24, 23.7.25, 4.8.25, 5.8.25, 11.8.25, 12.8.25 and 14.8.25. <u>Other Comments:</u> According to Lawns R Us invoices, maintenance of existing plantings included removing dead plantings, and replacing stakes and tree guards around remaining plantings in the SRC. In July 2025, Lawns R Us completed head counts of surviving 2024 plantings and measured the distance between surviving trees, marking areas to fill in the gaps with new plantings in late August to early September. Locating and marking existing planted trees and collecting litter of displaced tree guards was also undertaken in August 2025 in preparation for the upcoming plantings. Premise conducted drone surveillance over ERRRC in July 2025 with the intention to monitor the remnant woodland and progression of plantings overtime. The drone imagery is provided in Appendix B. <u>Action Timing in Work Schedule of Revegetation Plan</u> (Year 4: Autumn and Year 5: Winter): Somewhat consistent due to delayed plantings. The maintenance of existing plantings aligned with the timing of other maintenance activities conducted by Lawns R Us. <u>Visual Observation:</u> During vegetation surveys in March 2025, kangaroo damage to tree guards/stake, jute matting and plantings along Bund 1, Landscape Area 1 and open areas in the NRC was extensive. Tree guards were still present around established plantings (>1 m tall) in the SB-NRC (near L2) and Bund 1 (near B1). Lawns R Us completed planting maintenance in June and August 2025 in the SRC. <u>Progress towards management action goal</u> (Improve condition of fenced remnants; Improve remnant connectivity): On track but dependent on planting survival.</p>		
Seed collection	Seed collection for the purposes of	<p>Seed Order, Collection and Propagation: <u>Location:</u> Seed was ordered from Kristine Robbins who collects and</p>	<p>Seed Order, Collection and Propagation: <u>Completion Dates:</u> 500 native tree and shrub tubestock was ordered in August 2025 for the supplementary late August to early September planting event. Seeds are generally collected in</p>		



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	<p>revegetation – Refer to Annexure C, Item 1 (n) (i)-(v) and the 5 year Works Plan</p>	<p>propagates native seeds from the Molong district.</p>	<p>Spring and Summer, while plants are propagated on an ongoing basis.</p> <p><u>Action Timing in Work Schedule of Revegetation Plan:</u></p> <ul style="list-style-type: none"> Seed order (Outside the scope of 2025 activities): Inconsistent, however additional plantings occur in consultation with BCT in response to herbivory damage and the need to complete supplementary plantings. Seed collection (Outside the scope of 2025 activities): Inconsistent but as required. Seed propagation (Outside the scope of 2025 activities): Inconsistent but ongoing. <p><u>Annexure C Item 1 (n: ii and v):</u> Seed was collected locally in the Molong district from within endangered ecological communities containing species structure and composition consistent with what species would have been present on the Conservation Area prior to grazing.</p> <p><u>5 Year Action Plan</u> ('Supplementary plantings to improve condition within remnants using seeds from on-site species where possible.'): All plantings undertaken since the commencement of the 5 Year Action Plan, have used seed collected from the Molong district. No seed has been collected on-site, however the collection locations contain species consistent with that on the Conservation Area.</p> <p><u>Progress towards management action goal</u> (Improve condition of fenced remnants; Improve remnant connectivity): On track but dependent on planting survival.</p> <p><u>Reason for Non-completion:</u> N/A</p>		
<p>Thinning of Indigenous vegetation</p>	<p>Thinning of regenerating species which are altering the vegetation structure and/or reducing</p>	<p>N/A</p>	<p>N/A</p>		



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	conservation values. Note: Thinning should only be planned in consultation with the BCT.				
Cultural Heritage	Recording and management of any newly identified Aboriginal objects, where encountered	Not applicable as no new Aboriginal objects have been identified	N/A		
Visitation and research	Visitation, research and community use at a level that does not adversely impact the conservation area. Research projects should be discussed with the BCT.	N/A	N/A		



Management Actions as per agreement		Annual Report – Landholder to complete		Review of annual report by BCT	
		Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail)	Action completed Yes/No N/A	Reviewer comments and recommendations
Developments	Carrying out developments as described in Clause 2.3 of the Agreement and maintaining developments (i.e. fire trails and fences) in accordance with the conditions outlined in Annexure C Item 1 r) i)-vii)	<p>Temporary fencing maintenance.</p> <p>Maintenance of fire trails is outlined in the Weed Control (slashing) section</p>	<p><u>Completion Dates:</u> mid-2025 and late 2025.</p> <p><u>Visual observation:</u> During the March fieldwork it was observed that a juvenile tree (Appendix E Plate 19) and a larger tree had fallen onto the fence near Landscape Area 1 and the southern dam in the ERW, respectively. Temporary fencing maintenance was completed by the Resource Recovery Centre (RRC) Supervisor in mid- 2025. However, a fencing contractor will be commissioned in late 2025.</p> <p><u>Action Timing in Work Schedule of Revegetation Plan (Year 4 Spring):</u> Inconsistent but as required.</p> <p><u>Annexure C Item 1 (r: iv):</u> Fencing maintenance is proposed for late 2025.</p>		
Monitoring	Monitoring of the conservation values & Aboriginal Heritage will be done in accordance with the Conservation Management Plan and the clause below: Complete an annual flora monitoring report, and an annual Aboriginal heritage	<p>An overview of progress in relation to the actions outlined in the 5 Year Action Work Plan has been provided throughout this document.</p> <p>The updated Revegetation Plan Works Schedule (work plan of management actions to be undertaken) is provided in Appendix A.</p> <p>Evidence of actions undertaken including photographs, invoices and correspondence have been provided in Appendices B-D.</p> <p>The completed Annual Flora and Aboriginal Heritage Monitoring Report is provided in Appendix E. This report includes the condition of the conservation values and changes occurring in the Conservation Area.</p>	<p><u>Other Comments:</u> A review of the 5 Year Action Plan and Revegetation Plan is required before the 5 Year Action Plan ends in Autumn 2026. This will help inform management in the future. It is recommended that a meeting between OCC, BCT and Premise is undertaken to identify key management goals and priorities for the future, as well as further reporting requirements.</p>		




Management Actions as per agreement		Annual Report – Landholder to complete		Review of annual report by BCT	
		Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail)	Action completed Yes/No N/A	Reviewer comments and recommendations
	<p>monitoring report and qualitative monitoring using the Department’s template (this template), including the condition of the conservation values, changes occurring in the conservation area and an annual work plan of management actions to be undertaken. A copy of all annual monitoring reports should be forwarded to the Department.</p>				
Any other comments or observations regarding the conservation site (landholder to complete)					
Regeneration of native tree species continues to occur in open areas of the ERW (<i>Eucalyptus</i> spp.) and along the SB-NRC (<i>Acacia</i> spp.).					
Details of incidents or events that have had an adverse effect on biodiversity values on conservation area (landholder to complete)					
Description of incident or event (e.g. prohibited or natural events)			Action taken and proposed recommended actions		



Management Actions as per agreement	Annual Report – Landholder to complete		Review of annual report by BCT	
	Description of actions undertaken (including where undertaken, any variations and the reasons for variation)	Visual observations/outcomes and other comments, completion dates, (including progress towards management action goal and reasons for non-completion. (use guidance notes for units of measure and detail)	Action completed Yes/No N/A	Reviewer comments and recommendations
N/A		N/A		



BCT approval of annual report			
Signature of auditor:		Authorisation signature:	
Name of auditor:	Michelle Lindsay	Name of authorising officer:	
Position of auditor:	Senior Ecologist	Position of authorising officer:	
Date:	28 August 2025	Date:	



APPENDIX A

REVEGETATION PLAN WORKS SCHEDULE



Works schedule

	2021				2022				2023				2024				2025				2026			
	Y1				Y2				Y3				Y4				Y5							
	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut				
Baseline Monitoring	✓																							
Installation of signage	-	✓																						
Establish 4 exclosures	-	-	✓																					
Installation of two gates	-	-	-	✓																				
Install gravel under three gates and netting under two entrance gates	-	-	-	-	-	-	✓																	
Replace 360m of fencing along the northern extent of the Southern Rehabilitation Corridor	-	-	✓																					
Initial spot spraying of weeds	-	-																						
Remove livestock (all zones)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Fencing maintenance	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓						
Weed and feral animal monitoring	-	-	-	-	-	-	✓	-	✓	✓	-	-	✓	-	-	✓	✓							



	2021				2022				2023				2024				2025				2026			
	Y1				Y2				Y3				Y4				Y5							
	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut				
Erosion Monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Firewood harvesting monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Fallen timber removal monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Clearance and disturbance monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Order seed from Nursery Contractor for replanting (Years 3-5 only if required)	-	-	-	-	-	-	-	-	✓	✓	-	-	✓	-	-	-	✓							
Seed collection on site/locally	-	✓	✓	-	-	✓	✓	-	-	✓	-	-	-	✓	✓	-	-							
Plant propagation	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Prepare soil for planting (boring holes with auger)	-	✓	-	✓	✓	✓	-	-	-	✓	-	-	✓	-	-	-	✓							
Plant tubestock			✓	-	✓	✓	-	-	-	✓	-	-	✓	✓	-	-	✓							
Apply mulch	-	-	-	-	-	-	-	-	-	✓	-	-	✓	✓	-	-	✓							
Apply jute matting	-	-	✓	-	✓	✓	-	-	-	✓	-	-	✓	N/A										

	2021		2022				2023				2024				2025				2026			
	Y1				Y2				Y3				Y4				Y5					
	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut	Win	Spr	Sum	Aut		
Water-holding crystals and mycorrhizae	-	-	✓	-	✓	✓	-	-	-	✓	-	-	✓	✓	-	-	-					
Slashing	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Watering	-	-	✓	-	-	-	✓	-	-	✓	✓	-	✓	✓	✓	-	-					
Remnant connectivity maintenance (check tree guards, control weeds)	-	-	✓	✓	✓	✓	✓	-	-	✓	-	-	✓	✓	-	-	✓					
Review Management Plan and measure progress against predicted gain	N/A																-	-				



APPENDIX B

ADDITIONAL PHOTOGRAPHS

Plate 1. Native dominated grassland in the SRC (Date: 11.3.2025, Time: 9am, Location: SRC)



Plate 2. Unprotected eucalypt planting in R2 (Date: 11.3.2025, Time: 11am, Location: NRC)



Plate 3. Displaced tree guards (Date: 11.3.2025, Time: 11 am, Location: NRC near F2)



Plate 4. Slashed DNG (Date: 11.3.2025, Time: 1:15pm, Location: east of SR)



Plate 5. Low covers of St John's Wort (Date: 11.3.2025, Time: 11:16am, Location: NRC near F2)



Plate 6. Planting with tree guard (Date: 11.3.2025, Time: 8:47am, Location: western extent of SRC near R1)



Plate 7. Open gate (Date:11.3.2025, Time: 9.30am, Location: western extent of SRC near R1)



Plate 8. LA1 Plantings (Date: 11.3.2025, Time: 9:06am, Location: LA1)



Plate 9. St Barnaby's Thistle infestation in woodland (Date: 11.3.2025, Time: 9.42am, Location: ERW)



Plate 10. Slashed woodland (Date: 11.3.2025, Time: 1:00pm, Location: WRW)



Plate 11. Natural eucalypt regeneration (Date:11.3.2025, Time: 9:30am, Location: ERW)



Plate 12. Intact fence line (Date: 11.3.2025, Time: 9:03am, Location: SRC near LA1)



Plate 13. Plantings with native dominated groundcover (Date: 11.3.2025, Time: 10:07am, Location: between the northern boundary of the operational area and Bund 1)



Plate 14. Plantings with native dominated groundcover (Date: 11.3.25, Time: 10.15am, Location: SB-NRC)



Plate 15. Open gate (Date: 11.3.2025, Time: 9:45am, Location: north-east corner of operational area)



Plate 16. Unprotected eucalypt planting within F2 (Date: 11.3.2025, Time: 10:38am, Location: F2 – NRC)



Plate 17. Established plantings along Bund 1 (Date: 11.3.2025, Time: 11.30pm, Location: Bund 1)



Plate 18. Planted trees and shrubs (Date: 11.3.2025, Time: 11:44pm, Location: Bund 1)



Plate 19. Established plantings requiring tree guard removal. (Date 11.3.2025, Time: 10:00pm, Location: southern extent of NRC)



Plate 20. High cover of Bathurst Burr (Date: 11.3.2025, Time: 1.24pm, Location: WRW near C1)



Plate 21. Black tree guard plantings (Date: 11.3.2025, Time: 11:59am, Location: western extent of NRC – vegetation islands)



Plate 22. High mortality for plantings with black tree guards (Date: 11.3.2025, Time: 11:59am, Location: western extent of NRC – vegetation islands)



Plate 23. Successful planting in black tree guards (Date: 11.3.2025, Time: 11:59am, Location: western extent of NRC – vegetation island)



Plate 24. Successful planting in black tree guards (Date: 11.3.2025, Time: 11:59am, Location: western extent of NRC – vegetation islands)



Plate 25. Western side of scar tree (Date: 11.3.2025, Time: 12.14pm, Location: WRW)



Plate 26. Eastern extent of scar tree with lost limb (Date: 11.3.2025, Time: 12:13pm, Location: WRW)



Plate 27. Base of scar tree (Date: 11.3.2025, Time: 12.14pm, Location: WRW)



Plate 28. White Horehound infestation (Date: 11.3.2025, Time: 1:00pm, Location: WRW)



Plate 29. LA 2 plantings with native groundcover (Date: 11.3.2025, Time: 1:38pm, Location: LA2)



Plate 30. LA 2 plantings with native groundcover (Date: 11.3.2025, Time: 1:38pm, Location: LA2)



Plate 31. Exclosure 1 (Date: 11.3.2025, Time: 8:53am, Location: SRC)



Plate 32. Exclosure 1 (Date: 11.3.2025, Time: 8:53am, Location: SRC)



Plate 33. Exclosure 2 (Date: 11.3.2025, Time: 9:30am, Location: eastern remnant woodland)



Plate 34. Exclosure 2 (Date: 11.3.2025, Time: 9:30am, Location: eastern remnant woodland)



Plate 35. Exclosure 3 (Date: 11.3.2025, Time: 11:52pm, Location: NRC)



Plate 36. Exclosure 3 (Date: 11.3.2025, Time: 11:52pm, Location: NRC)



Plate 37. Exclosure 4 (Date: 11.3.2025, Time: 12:45pm, Location: western remnant woodland)



Plate 38. Exclosure 4 (Date: 11.3.2025, Time: 12:45pm, Location: western remnant woodland)



Plate 39. Surface erosion (Date: 6.5.2025, Time: 3.54pm, Location: open areas of the eastern remnant woodland)



Plate 40. Surface erosion (Date: 6.5.2025, Time: 3.57pm, Location: open areas of the eastern remnant woodland)



Plate 41. Drainage line erosion (Date: 6.5.2025, Time: 4.10pm, Location: south of the southern dam in the eastern remnant woodland)



Plate 42. Drainage line erosion (Date: 6.5.2025, Time: 4.14pm, Location: south of the southern dam in the eastern remnant woodland)



Plate 43. Surface erosion (Date: 6.5.2025, Time: 4.17pm, Location: open areas of the eastern remnant woodland)



Plate 44. Surface erosion (Date: 6.5.2025, Time: 4.19pm, Location: west of the southern dam in the eastern remnant woodland)



Plate 45. Drone Imagery of ERRRC (Date: 12.7.2025, Time: 12pm, Location: conservation area)



Plate 46. Drone Imagery of ERRRC (Date: 12.7.2025, Time: 12pm, Location: SRC and LA1)



Plate 47. Drone Imagery of ERRRC (Date: 12.7.2025, Time: 12pm, Location: NRC and Bund 1)



APPENDIX C

EXCLOSURE PLOT SPECIES LIST



Scientific Name	Common Name	Native, Exotic or High Threat Weed	Abundance			
			Exclosure 1	Exclosure 2	Exclosure 3	Exclosure 4
<i>Anthosachne scabra</i>	Wheatgrass	N	-	-	A	-
<i>Austrostipa bigeniculata</i>	-	N	-	C	-	-
<i>Austrostipa scabra</i>	Speargrass	N	-	O	-	-
<i>Avena fatua</i>	Wild Oats	E	-	-	-	-
<i>Bothriochloa macra</i>	Red Grass	N	U	C	C	-
<i>Bromus hordeaceus</i>	Soft Brome	E	-	-	C	-
<i>Carex inversa</i>	-	N	R	-	-	-
<i>Carthamus lanatus</i>	Saffron Thistle	HTW	-	C	-	-
<i>Cirsium vulgare</i>	Spear Thistle	E	-	-	-	-
<i>Centaurea solstitialis</i>	St Barnaby's Thistle	E	-	-	C	C
<i>Conyza bonariensis</i>	Flaxleaf Fleabane	E	-	U	-	A
<i>Epilobium billardioreanum</i>	-	N	-	-	U	-
<i>Euphorbia davidii</i>	-	E	R	-	-	-
<i>Hypericum perforatum</i>	St John's Wort	HTW	-	-	-	-
<i>Hypochaeris radicata</i>	Catsear	E	-	-	O	-
<i>Juncus subsecundus</i>	Finger Rush	N	-	-	-	-
<i>Lomandra filiformis</i>	Wattle Mat-rush	N	-	-	-	U
<i>Paspalidium jubiflorum</i>	Warrego Grass	N	-	-	U	-
<i>Phalaris aquatica</i>	Phalaris	E	A	U	C	-
<i>Plantago lanceolata</i>	Lamb's Tongues	E	-	O	-	-
<i>Rytidosperma caespitosum</i>	Ringed Wallaby Grass	N	-	-	-	-
<i>Rytidosperma racemosum</i>	Wallaby Grass	N	-	O	-	-
<i>Senecio quadridentatus</i>	Cotton Fireweed	N	-	-	-	-
<i>Sporobolus creber</i>	Slender Rat's Tail Grass	N	-	-	C	U
<i>Trifolium subterranean</i>	Subterranean Clover	E	-	-	-	O

*Exotic species

High Threat Weeds

Abundant (>50), Common (11 to 50), Occasional (6 to 10), Uncommon (3 to 5) and Rare (1 or 3)

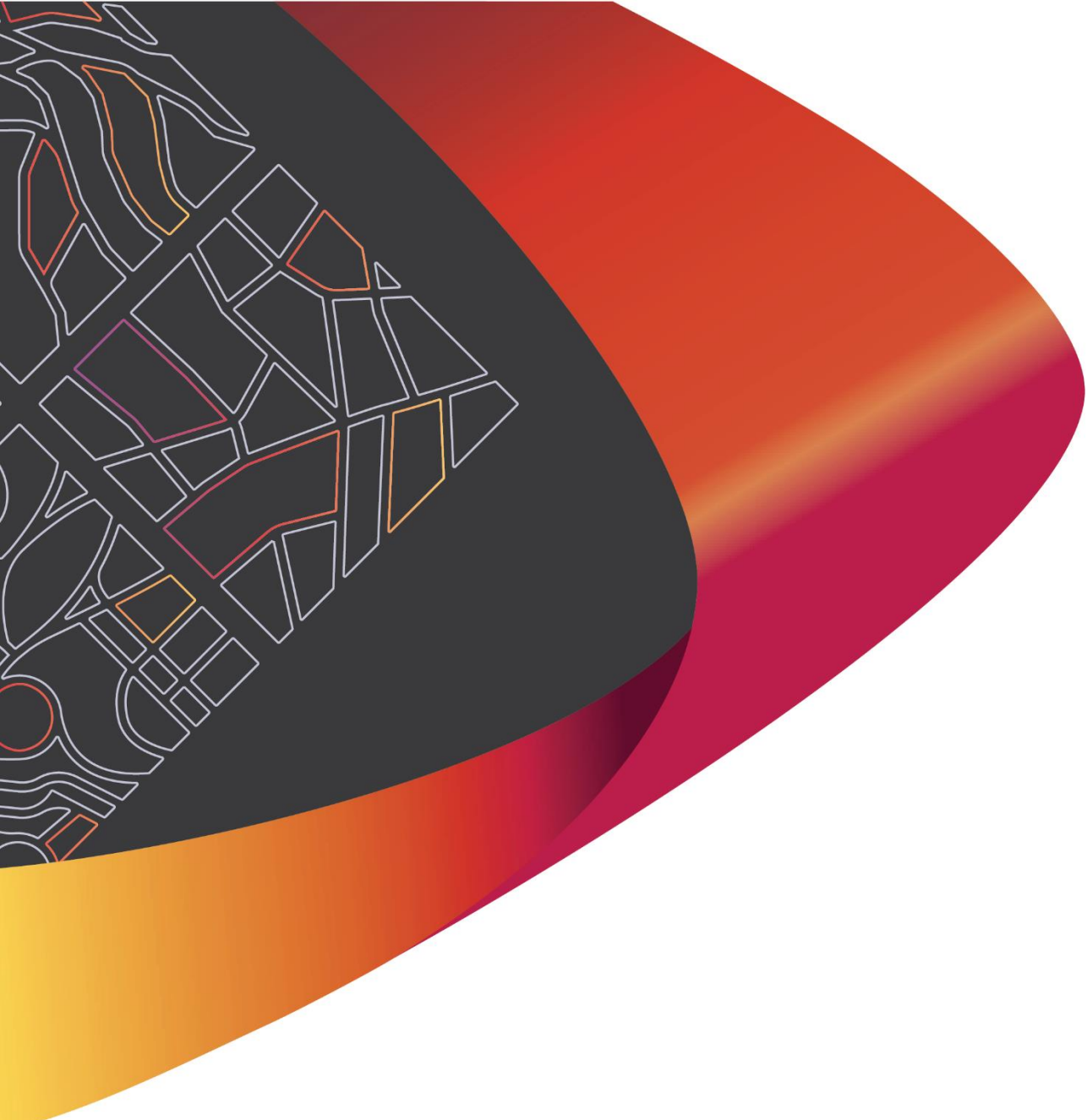




APPENDIX G

ERRRC FLORA AND ABORIGINAL
HERITAGE MONITORING REPORT





EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
Annual Flora and Aboriginal Heritage Monitoring Report
Orange City Council

Rev: B
28 August 2025







Premise

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Document Authorisation					
Revision	Revision Date	Proposal Details			
A	25/08/2025	Draft Annual Flora and Aboriginal Heritage Monitoring Report for OCC review			
B	28/08/2025	Final Annual Flora and Aboriginal Heritage Monitoring Report			
Prepared by		Reviewed by		Authorised by	
Michelle Lindsay		Sally Kirby		Michelle Lindsay	
Latisha Ryall					



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1. INTRODUCTION

1.1 Background

Premise Australia was engaged by Orange City Council to undertake annual flora and Aboriginal Heritage monitoring as part of the approved Conservation Management Plan (CMP) prepared in May 2011 and revised in March 2013 (Version 2) for the Euchareena Road Resource Recovery Centre (ERRRC).

The focus of monitoring is the conservation reserve attached to the ERRRC site that contains an Aboriginal scarred tree, and native vegetation classified as Box-Gum Woodland Critically Endangered Ecological Community (CEEC) (Box-Gum Woodland).

This report covers the 2025 scheduled flora and Aboriginal heritage monitoring period and is the 14th annual survey period. Prior survey periods have been conducted annually since 2011 between December and March.

Box-Gum Woodland refers to a community which is listed under two different names at the state and federal level, including *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions CEEC* listed under the NSW Biodiversity Conservation Act 2016 (BC Act) and *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC* listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

The Box-Gum Woodland on the site comprises remnant woodland and rehabilitation areas (Drawing 53B_EV02). The following section identifies the tasks required for rehabilitation and management of both areas of Box-Gum Woodland as identified in the CMP.

The Aboriginal heritage on the site refers to the scarred box eucalypt tree within the western remnant woodland area at the site.

1.1.1 CONSERVATION MANAGEMENT PLAN

1.1.1.1 Five Year Works Action Plan

A Five Year Works Action Plan of management has been developed to assist in the recovery of the site after drought and guide actions to meet management obligations under the CMP. This was implemented in Winter 2021 for a period of five years. The results of this Five Year Works Action Plan will be the subject of monitoring in 2025. The 2025 annual monitoring also follows existing methods and will provide information on the status of the site with regards to the CMP and provide a baseline for comparison with the results of the Works Action Plan.

1.1.1.2 Remnant woodland management measures

Table 1 provides management measures for remnant woodland rehabilitation and has been extracted from Appendix C of the CMP.

Table 1 – Remnant woodland rehabilitation and management measures

Category	Task	Responsibility
1	Prior to construction works commencing	

Category		Task		Responsibility
A	Fencing of regeneration areas	i	The two remnant box-gum woodland areas are to be fenced off from the remainder of the site, in accordance with the attached plans. The fencing is to be provided outside of the dripline of the trees on the outermost extent of indicated areas. The fencing shall be designed to minimize detrimental impacts on native fauna.	OCC
B	Baseline Information	i	Permanent quadrats/transects shall be established, by a suitably qualified person, across the remnant woodland areas to enable periodic monitoring to record the extent of flora regrowth in these areas.	OCC
		ii	An initial assessment of the woodland areas, by a suitably qualified person and based on the identified quadrats/transects, to identify deficiencies in species diversity.	OCC
		iii	An initial planting program may be developed, by a suitably qualified person, subject to the above initial assessment.	OCC
		iv	Establishment of a monitoring program, by a suitably qualified person, for the remnant woodland areas to monitor and record the extent of flora regrowth.	OCC
C	Stock control	i	Those areas of the site that are not directly affected by the proposed activity shall be de-stocked and remain free of grazing by domestic stock.	OCC
2	During construction			
A	Woodland Enhancement	i	Implementation of the initial planting program in the remnant woodland areas.	OCC
3	Prior to operation of the ERRRC			
A	Weed & Pest Management Regular inspections of the site;	i	A Weed Management Program shall be prepared, by a suitably qualified person, that incorporates: <ul style="list-style-type: none"> > Regular inspections of the site; > Education of staff with respect to weed identification and control; and > Continual monitoring and control of identified noxious weeds. This shall form part of the Operational Environmental Management Plan (OEMP).	OCC
		ii	A Pest Control Plan shall be formulated, that includes the control of foxes and feral cats and any other pest that may be considered a problem. This shall form part of the OEMP.	OCC
4	During operation of ERRRC			



Category		Task	Responsibility
A	Heritage & Biodiversity Awareness	i A suitably sized copy of Drawing 19B_EV02 shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
B	Woodland Monitoring	i Implementation of the woodland monitoring program.	OCC
		ii Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs may be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii Any supplementary plantings are to be suitably protected through fencing or suitable tree guards.	OCC
C	Weed & Pest Management	i Implementation of the Weed Management Program.	OCC
		ii Implementation of the Pest Control Plan.	OCC
D	Groundcover Management	i Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	OCC
		ii <p>Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that a diverse ground layer of native species is encouraged.</p> <p>Grazing regimes will be guided by:</p> <ul style="list-style-type: none"> > Appropriate location of grazing > Triggers to change grazing regime e.g. Changes to abundance of selected key species. > Triggers for grazing to be excluded e.g. During flowering and seeding of particular species. > Seasons where grazing may be desirable e.g. Reduction in seeding of particular weed species. > Exclusion of grazing for a required number of years or until certain outcomes have been achieved. <p>Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows:</p> <ul style="list-style-type: none"> > Ensure stock camps are not established > Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area. 	



Category		Task		Responsibility
			<ul style="list-style-type: none"> > Mustering of livestock with the use of working dogs and horses is permitted. > Fodder or any stock feed may not be brought into the remnant woodland areas. > Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area for at least a week immediately prior to their introduction. > Pasture improvement or fertilisation is not permitted. > Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences. 	
		iii	Any grazing and implementation of grazing regime requires prior written agreement from OEH (now NSW Department of Climate Change, Energy, the Environment and Water [NSW DCCEEW]), subject to monitoring reports.	OCC
		iv	Reducing the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation and inhibiting natural regeneration, and the owner is granted a license to cull under Section 121 of the NPW Act 1974.	OCC

1.1.1.3 Rehabilitation corridors management measures

Table 2 lists rehabilitation and management measures for the rehabilitation corridors on site and has been extracted from Appendix D of the CMP. The flora monitoring program addresses various tasks relating to rehabilitation corridors that are highlighted below.

Table 2 – Rehabilitation corridors rehabilitation and management measures

Category		Task		Responsibility
1	Prior to construction works commencing			
a	Baseline Information	i	An initial planting program is to be developed, by a suitably qualified person, based on this methodology.	OCC
		ii	Establishment of a Rehabilitation Area monitoring program, by a suitably qualified person, for the rehabilitation areas to monitor and record the extent of flora growth. This program shall incorporate the principles outlined in this appendix.	OCC



Category		Task	Responsibility
b	Stock control	i Those areas of the site that are not directly affected by the proposed activity shall be de-stocked and remain free of grazing by domestic stock (except in accordance with any management plan).	OCC
2 During construction			
a	Woodland Enhancement	ii Implementation of the initial planting program in the rehabilitation corridor.	OCC
3 Prior to the operation of the ERRRC			
a	Weed & Pest Management	i Creation of a Weed Management Program, by a suitably qualified person, that includes: <ul style="list-style-type: none"> > Regular inspections of the site; > Education of staff with respect to weed identification and control; and > Continual monitoring and control of identified noxious weeds. This shall form part of the OEMP.	OCC
		ii A Pest Control Plan shall be formulated, that includes the control of foxes and feral cats and any other pest that may be considered a problem. This shall form part of the OEMP.	OCC
4 During operation of ERRRC			
b	Woodland Monitoring	i Implementation of the rehabilitation corridor monitoring program.	OCC
		ii Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii Any supplementary plantings are to be suitably protected through fencing or suitable tree guard, as outlined in this Appendix.	OCC
c	Weed & Pest Management	i Implementation of the Weed Management Program.	OCC
		ii Implementation of the Pest Control Plan.	OCC
d	Groundcover Management	i Groundcover management within the rehabilitation areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times. Trees and shrubs are to be protected from cattle in	OCC



Category		Task		Responsibility
			accordance with the principles outlined in this Appendix.	
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (Appendix C).	OCC

1.1.1.4 Landscaped bunds management measures

Table 3 lists rehabilitation and management measures for the landscaped bunds on site and has been extracted from Appendix E of the CMP. The flora monitoring program addresses various tasks relating to landscaped bunds that are highlighted below

Table 3 – Landscaped bunds rehabilitation and management measures

Category		Task		Responsibility
1	Prior to construction works commencing			
a	Landscape screening	i	The landscape strip to the north of Bund 1 shall be established in accordance with this Appendix.	OCC
		ii	The perimeter tree screening areas are to provide an appropriate alternative nectar source away from the landfilling operation. These species shall be selected in consultation with the NSW DCCEEW.	OCC
b	Baseline information	i	Establishment of a Landscaped Bund/Strip monitoring program, by a suitably qualified person, consistent with this Appendix, for the landscaped bund areas to monitor and record the extent of flora growth.	OCC
2	During construction			
a	Landscaped Bunds	i	During the construction of the Stage 1 landfill Cell, Bund 1 is to be constructed and landscaped in accordance with this Appendix.	OCC
3	Prior to the operation of the ERRRC			
a	Weed & Pest Management	i	Creation of a Weed Management Program, by a suitably qualified person, that includes: Regular inspections of the site; > Education of staff with respect to weed identification and control; and > Continual monitoring and control of identified noxious weeds. This shall form part of the OEMP.	OCC
		ii	A Pest Control Plan shall be formulated, that includes the control of foxes and feral cats and	OCC



Category		Task		Responsibility
			any other pest that may be considered a problem. This shall form part of the OEMP.	
4	During operation of ERRRC			
a	Landscaped Bunds	i	The landscaped bunds shall be constructed and landscaped in accordance with this Appendix.	OCC
b	Heritage & Biodiversity Awareness	i	A suitably sized copy of Drawing 16B_EV02 shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
c	Monitoring	i	Implementation of the Landscaped Bund/Strip monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
d	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
e	Groundcover Management	i	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (Appendix C).	OCC
c	Monitoring	i	Implementation of the Landscaped Bund/Strip monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
d	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
e	Groundcover Management	i	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (Appendix C).	OCC



1.1.1.5 Landscapes area management measures

Table 4 lists rehabilitation and management measures for the landscaped areas on site, and has been extracted from Appendix F of the CMP. The flora monitoring program addresses various tasks relating to landscaped areas that are highlighted below.

Table 4 – Landscaped Area Rehabilitation and Management Measures

Category		Task		Responsibility
1	Prior to operation of the ERRRC			
a	Landscape Screening Plantings	i	Prior to operation of the RRC, the landscaped area shall be planted as outlined in this appendix.	OCC
		ii	The perimeter tree screening areas are to provide an appropriate alternative nectar source away from the landfilling operation. These species shall be selected in consultation with NSW DCCEEW.	OCC
b	Baseline information	i	Establishment of a monitoring program, by a suitably qualified person, for the landscaped area to monitor and record the extent of flora growth.	OCC
c	Weed & Pest Management	i	Creation of a Weed Management Program, by a suitably qualified person, that includes: <ul style="list-style-type: none"> > Regular inspections of the site; > Education of staff with respect to weed identification and control; and > Continual monitoring and control of identified noxious weeds. This shall form part of the OEMP.	OCC
		ii	A Pest Control Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other pest that may be considered a problem. This shall form part of the OEMP.	OCC
3	During operation of ERRRC			
a	Heritage & Biodiversity Awareness	i	A suitably sized copy of Drawing 17C_EV02 shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
b	Monitoring	i	Implementation of the landscaped area monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC



Category		Task		Responsibility
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	OCC
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (Appendix C).	OCC

2. FLORA MONITORING

2.1 Introduction

Flora monitoring for the Box-Gum Woodland has included the establishment of permanent monitoring sites at four locations throughout the Box-Gum Woodland CEEC in both regenerating and remnant woodland habitat (refer to Drawing 53C_EV02).

2.1.1 PLOTS

The following plots were established within the Box-Gum Woodland surrounding the proposed ERRRC in December 2011:

- > two plots as control sites in remnant woodland areas (C1 and C2); and
- > two plots in the rehabilitation corridors (R1 and R2).

The four monitoring plots were initially selected based on spatial representation, habitat condition, and structure.

The control plots (C1 and C2) located in remnant *Eucalyptus albens* (White Box) woodland were originally selected based on the highest quality representation of the woodland community and contain a range of fauna habitat such as logs, trees, native groundcover and rocks in areas of low disturbance.

One control plot (C1) is located in the south-western section of the remnant woodland while the other control plot (C2) is located in the north-eastern remnant woodland to allow for spatial representation of the broader site.

Rehabilitation plots (R1 and R2) were established in both the southern and northern rehabilitation corridors (SRC and NRC) and located within proximity of original or existing tracks and roads. Habitat structure in the rehabilitation areas is restricted to groundcover.



2.1.2 TRANSECTS

The following transects were established within the Box-Gum Woodland surrounding the proposed ERRRC in December 2011:

- > one transect in remnant woodland also acting as a control site (F1, C1); and
- > one transect in the northern rehabilitation area also acting as a plot site (F2, R2).

Two permanent transects (F1 and F2) are located within the remnant woodland and northern rehabilitation area of the site to quantify weed encroachment and native recruitment within each of these habitats.

Transects L1 and B1 were established on prior vehicular tracks and earthwork disturbances to the site and according to recommendations by the Department of Planning, Industry and Environment (now the NSW DCCEE).

Transect L2 was established in the 2016 survey period to incorporate the newly planted rehabilitation area immediately north of the northern facility perimeter fence line.

Two additional transects were established during the January 2013 flora monitoring period in the Landscaped Area and Bund Number 1 (refer to Drawing 53C_EV02). These transects (L1 and B1, respectively) were established to monitor the success of landscaping and bund rehabilitation once incorporated.

An additional transect (L2) was established in the 2016 survey period to incorporate the newly planted rehabilitation area immediately north of the northern facility perimeter fence line.

2.1.3 SUMMARY

A summary of transects and plots is provided in **Table 5**.

Table 5 – Transect Summary

Type	ID	Established	Area
Plot (Control Sites)	C1	December 2011	Remnant woodland area (south-western section)
	C2	December 2011	Remnant woodland area (north-eastern section)
Plot	R1	December 2011	Southern rehabilitation corridor
	R2	December 2011	Northern rehabilitation corridor
Transect (Control Site)	F1 (C1)	December 2011	Remnant woodland area
Transect (Plot Site)	F2 (R2)	December 2011	Northern rehabilitation area
Transect	L1	January 2013	Landscaped area
Transect	B1	January 2013	Bund number 1
Transect	L2	March 2016	Rehabilitation area immediately north of the northern facility perimeter fence line.

2.2 Methodology

2.2.1 CONTROL AND REHABILITATION PLOTS

The control plots (C1 and C2) and rehabilitation plots (R1 and R2) were surveyed using 25 metre (m) x 25 m plots and field sheets compiled to measure the following:

- > dominant species in each stratum type;
- > crown cover assessed within the larger plot and expressed as a percentage vertical projection of the crowns for each stratum as per Walker and Hopkins (1990);
- > the average percentage foliage cover of plants that dominate the control sites compared to those in the rehabilitation sites;
- > a visual estimation of the height range for each stratum within the larger plots and comparisons between strata heights of the rehabilitation and control sites made following the accumulation of 5 years of data;
- > groundcover classified into one of four categories: leaf litter, bare ground, vegetation cover or log cover; and
- > photo points established for each plot.

2.2.2 CONTROL AND REHABILITATION TRANSECTS

Two transects (F1 and F2) were surveyed using progressive 10 m x 10 m plots that extend 50 m in the direction of existing disturbance areas. Field sheets were compiled to measure the following:

- > plant dominance based on a measure of abundance obtained using the modified Braun-Blanquet system for measuring cover abundance;
- > numbers of all exotic and native species within each plot; and
- > photo points established at each progressive plot point.

2.2.3 LANDSCAPE REHABILITATION TRANSECTS

Three transects (L1, L2 and B1) were surveyed from progressive 10 m transects along the width of the planting lot. These extend 50 m long and field sheets compiled to measure the following:

- > adherence to recommended landscape planting plan;
- > fatality or success rate of landscape plantings;
- > numbers of all exotic and native species within each plot; and
- > photo points established at each plot.

3. RESULTS

3.1 Rehabilitation and Control Plots

The field sheets for each rehabilitation plot (R1 and R2) and control plot (C1 and C2) are included in **Appendix A**.

3.2 Rehabilitation and Control Transects

The field sheets for the control transect (F1) and rehabilitation transect (F2) are included in **Appendix B**.

3.3 Landscape Rehabilitation Transects

The field sheets for the landscape rehabilitation transects (L1, L2 and B1) are included in **Appendix C**.

3.4 2025 Monitoring Survey Constraints

Annual flora monitoring was conducted on 11th March 2025. This survey period followed four months of generally average rainfall: November 2024 92.0 mm (long-term average 60.6 mm), December 2024 79.0 mm (long-term average 64.1 mm), January 2025 49.0 mm (long-term average 69.8 mm) and February 2025 71.0 mm (long-term average 57.0 mm) (BOM, 2025). These conditions meant flowering parts of plants were evident and native grasses and forbs were increasing in cover compared to recent drought years. Vegetation cover within plots was between 75-95%, while litter ranged from 4-15%. Higher vegetation covers were associated with lower litter loads and the recovery of groundcover species following slashing. Populations of native perennials have recovered after the drought as well as exotic annuals and some perennials.

During 2018 and early 2019, stock had access to all areas of the Conservation Area which significantly reduced groundcover, resulting in a bare understorey. Stock have been excluded from the Conservation Area since June/July 2019, allowing the groundcover vegetation to recover after overgrazing and drought. The regeneration of native grasses and forbs has been aided by slashing (occurred between winter 2021 and Winter 2025). Conversely, the cover and abundance of exotic species is generally reducing. However, exotic species (*Phalaris aquatica* [Phalaris]) and High Threat Weeds (HTW) (*Centaurea solstitialis* [St Barnaby's Thistle], *Marrubium vulgare* [White Horehound], *Carthamus lanatus* [Saffron Thistle] and *Xanthium spinosum* [Bathurst Burr]) are still prevalent throughout the site. Open areas on the site were slashed throughout 2025, reducing the dominance of Phalaris. However, exotic grass tussocks and mats of stems continue to hinder the regeneration of native grasses and forbs in some areas, favouring the presence of exotic forbs. Past disturbance and selective grazing by livestock have promoted thistle and White Horehound infestations.

Kangaroo populations utilising the Conservation Area remain consistently high. This is likely due to recent rainfall which has promoted grass growth in the region. Although the local macropod population utilises the Conservation Area as part of a wider foraging range, large mobs still occur within remnant woodland areas on the site (particularly the NRC, and eastern and western remnant woodland) as indicated by numerous scats and camps (patches of flattened grass). During vegetation surveys in March 2025, approximately 300 kangaroos were observed in the eastern remnant woodland, while 50 were observed in the western remnant woodland. These individuals are likely to impact the structure and composition of woodland and grassland within the Conservation Area. The population size, and associated grazing pressure, continues to increase. In some woodland areas, macropod camps hinder the recovery of native groundcover species. In 2024, ERRRC neighbours and the Mayor of Cabonne raised their concerns regarding the overabundance of kangaroo on the site. In November 2024, OCC were approved to complete a conservation cull of up to 125 kangaroos in consultation with National Parks and Wildlife Services (NPWS). In Spring 2025, a drone survey will be undertaken to assess current kangaroo numbers and determine if further culling will be required.

Damage to young trees during 2019 and early 2020 from grazing livestock was extensive. Stock had grazed upon foliage, broken stems and branches and collapsed tree guards. Since stock exclusion, these plantings continue to produce new growth and regeneration can be found in plot L1 and L2.

Low numbers of Acacias that were directly seeded in 2010 across the Southern Boundary of the Northern Rehabilitation Corridor (SB-NRC) (near L2) are now established shrubs despite being heavily grazed during 2019 and early 2020.

In 2022 extensive plantings were undertaken in the following areas as per the Revegetation Plan Works Schedule:

- > Year 1 - January 2022 plantings: 70 trees/shrubs in Landscape Area 1 (LA1) and 280 trees/shrubs in Bund 1.
- > Year 2 - July 2022 plantings: 32 trees and 32 shrubs per vegetation island in both the NRC and SRC, 22 trees and 20 shrubs in the SB-NRC, and 10 trees/shrubs in Landscape Area 2 (LA2).
- > Year 2 – September 2022: 500 trees and shrubs in vegetation islands in both the NRC and SRC.

During vegetation surveys in February and March 2022, extensive kangaroo damage to the January 2022 plantings was observed as these areas appear to be thoroughfares for kangaroo dispersal. Evidence of kangaroo damage includes the displacement of tree guards, stakes and jute matting, leaving young saplings unprotected, often resulting in lower success rate. Ongoing kangaroo damage to plantings was also identified between 2023 and 2025. Vegetation islands across the eastern extent of the NRC and LA1 were particularly affected.

The 2024 BCT annual review recommended ongoing monitoring for active erosion and the establishment of a photo monitoring point to determine erosion stabilisation. Numerous photographs of erosion were recorded throughout the conservation area which have been documented in Appendix B of the Annual Report and Review. The selected photopoint (Plate 37) has been documented in Section 7.

4. ABORIGINAL HERITAGE MONITORING

4.1 Introduction

In accordance with Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act), OCC (as the Owner) is required to preserve and protect Aboriginal places, Aboriginal objects and other sites of cultural heritage significance in the conservation area. It is noted that two recorded Aboriginal sites of significance are located on land associated with the ERRRC (Lot 102, DP1183238).

These sites have been recorded on the Aboriginal Heritage Information Management System (AHIMS) in 2003-2004. A verified AHIMS search was undertaken on 5 March 2025 (Client Service ID : 981813). The AHIMS Sites are identified as:

- > AHIMS Site ID #44-1-0080 (Molong ST1)
- > AHIMS Site ID #44-1-0081 (Molong OS1)

The AHIMS search is shown in **Figure 1**.

AHIMS #44-1-0080 is located west of the ERRRC facility. This site is identified as a culturally modified tree. Previous assessments have identified that the tree has cultural scarring to both the eastern and western sides of the trunk. Further investigations by the Premise archaeologist and on review of the original site card prepared for the site (ASR, 2003), AHIMS #44-1-0080 has only one (1) cultural modification. This modification is classified as a shield scar located on the western elevation. Natural scarring has occurred to the eastern elevation, possibly from animal or stock movement or weather events and has now been removed from discussion to avoid confusion.

A condition of the Conservation Agreement between OCC and the Minister administering the NPW Act stipulates that an annual Aboriginal heritage monitoring program be developed for the identified scarred tree for the operational life of the facility. This condition has been fulfilled with the incorporation of monitoring of the Aboriginal heritage item on site concurrently with the annual flora monitoring.

Culturally modified trees, referred to as scarred trees, are created by Aboriginal people through the deliberate removal of bark or wood for use in a variety of ways (Long 2005). The bark was versatile for use in construction of shelters, watercraft and containers. Other forms of tree modification include deliberate marking (such as tree carving), the removal of wood for artefact manufacture, and the cutting of the centre of the hollow tree for collecting food and/or for making tree climbing holds (Long 2005). Threats to scarred trees increase over time due to natural ageing and decay, timber cutting, and environmental problems such as salinity and fire. Monitoring of the scarred tree provides an opportunity to observe whether the item is under threat of disturbance.

A site inspection was undertaken on 6 March 2025 by a qualified Archaeologist. Monitoring, reporting and recording of the culturally modified tree was undertaken in guidance of Section 3.4 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010).

The Aboriginal heritage item (AHIMS #44-1-0080) is shown in **Plates 31-36**.



Figure 1 – AHIMS Sites within the Conservation Area



AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 223158_Basic_2025

Client Service ID : 981813

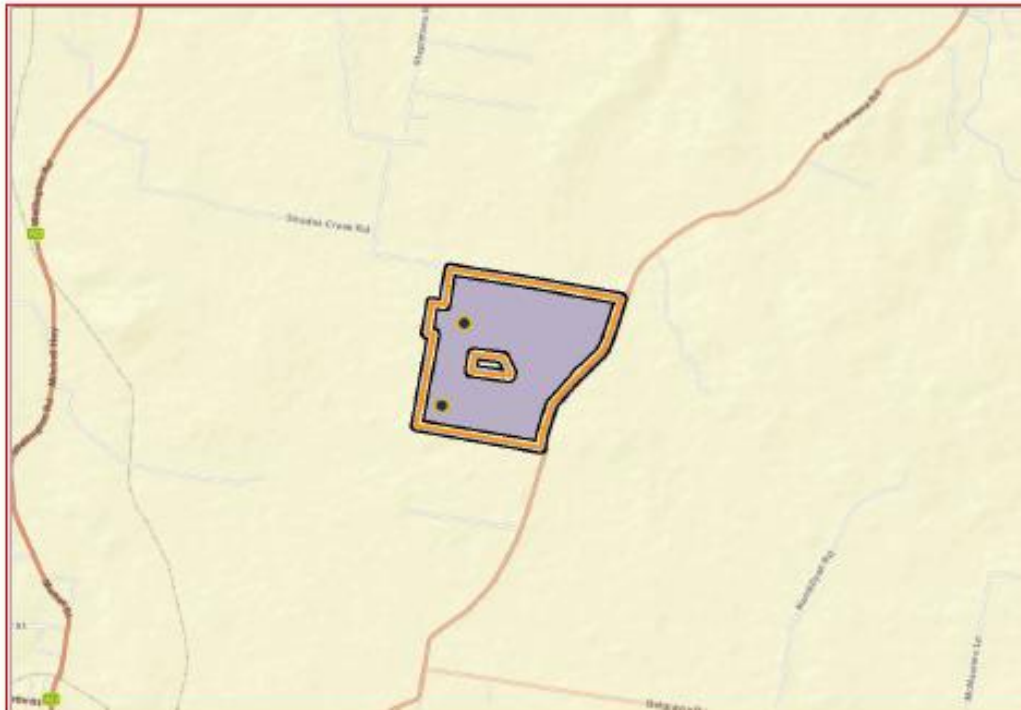
Premise Australia Pty Ltd
154 Peisley Street
Orange New South Wales 2800
Attention: Latisha Ryall
Email: latisha.ryall@premise.com.au

Date: 05 March 2025

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 102, DP:DP1183238, Section : - with a Buffer of 50 meters, conducted by Latisha Ryall on 05 March 2025.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

4.2 Monitoring Considerations

Monitoring of the scarred tree takes into account:

- > The condition of the modified tree;
- > Impacts occurring through animal disturbance (e.g. if stock rub against the scar tree it should be fenced off to avoid such impacts); and
- > Impacts from bark regrowth and closure of the scar. Whether or not the scarred tree is closing over. If this occurs, consultation with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) and the Local Aboriginal Land Council (LALC) shall be undertaken to determine what measures, if any, should be undertaken to rectify the situation; and
- > Environmental factors such as recent weather events.

4.3 Monitoring Outcomes

The 2025 site conditions have remained consistent as previous years. The locality and surrounding context of the site has not changed and the tree remains within the conservation area.

The scarred tree AHIMS Site ID #44-1-0080 is located on the eastern side of a moderate slope, positioned amongst an open woodland community, with several similarly sized trees located within a 50 -100 metre radius.

The tree remains in moderate health, however, does have crown damage which is now seven years old. On observation the loss of a large limb on the south-eastern facing side of the tree is likely to occur during a large weather event. Ground logs and fallen limbs are also present to the immediate north and west of the tree, with limb fall observed from the surrounding trees. Consistent with the 2024 monitoring report, regeneration of new foliage has occurred at the base of the tree.

The scarred tree is protected through implementation of a temporary screening fence, consisting of four 1200 x 3400 mm metal gates that have been chained together and fastened to star pickets to form a barrier. The fence is located at an approximate distance of 1500 mm from the tree. A fabric protective screen erected between June 2022 and February 2023 has since deteriorated. It is noted that this screening requires replacement to deter digging animals. It is recommended that the temporary fence barrier remain in place to act as an adequate buffer and minimise impacts to the tree.

The tree shows little change in trunk damage from initial survey photographs. The internal cavity has not significantly increased in size and does not show evidence of termite damage. Evidence of a small amount of rot to the dead heartwood of the scar continues to occur and spider infestation was present.

The tree is not subject to stock or macropod interference due to the exclusion of stock grazing in this area. Vegetation immediately surrounding the area did not show high levels of macropod movement and ground visibility was extremely low due to dense ground coverage. A high density of rock outcrop surrounds the site. Areas of vegetation regrowth were more prominent at the base of the western side of the tree; however vegetation regrowth is occurring around all sides of the trunk.

Scar measurements taken during the 2025 survey period are as follows and are compared to the original 2004 site recording.



Table 6 – Scar Measurements

Recording Year	Length of scar (cm)	Width of scar (cm)	Girth mid scar (cm)	Depth of bark (cm)	Height (cm)	Blaze Shape
2003	147	16	247	15	90	Elliptical
2025	145	15.5	247	15	90	Elliptical

In summary, the cultural scar measures approximately 90 cm above ground surface. The blaze is approximately 145 cm long and 15.5 cm at its widest part. The exposed heart-wood averages 15 cm deep from the outer bark surface. There have been no changes since the 2024 survey for this scar.

No significant change to the culturally modified scar has occurred since the 2024 monitoring period.

AHIMS #44-1-0081 is recorded as an isolated find (grindstone or muller) and is located in the south-western portion of Lot 102, DP1183238. This site was not inspected, however previous recommendations for inspecting this site are still encouraged.



5. REFERENCES

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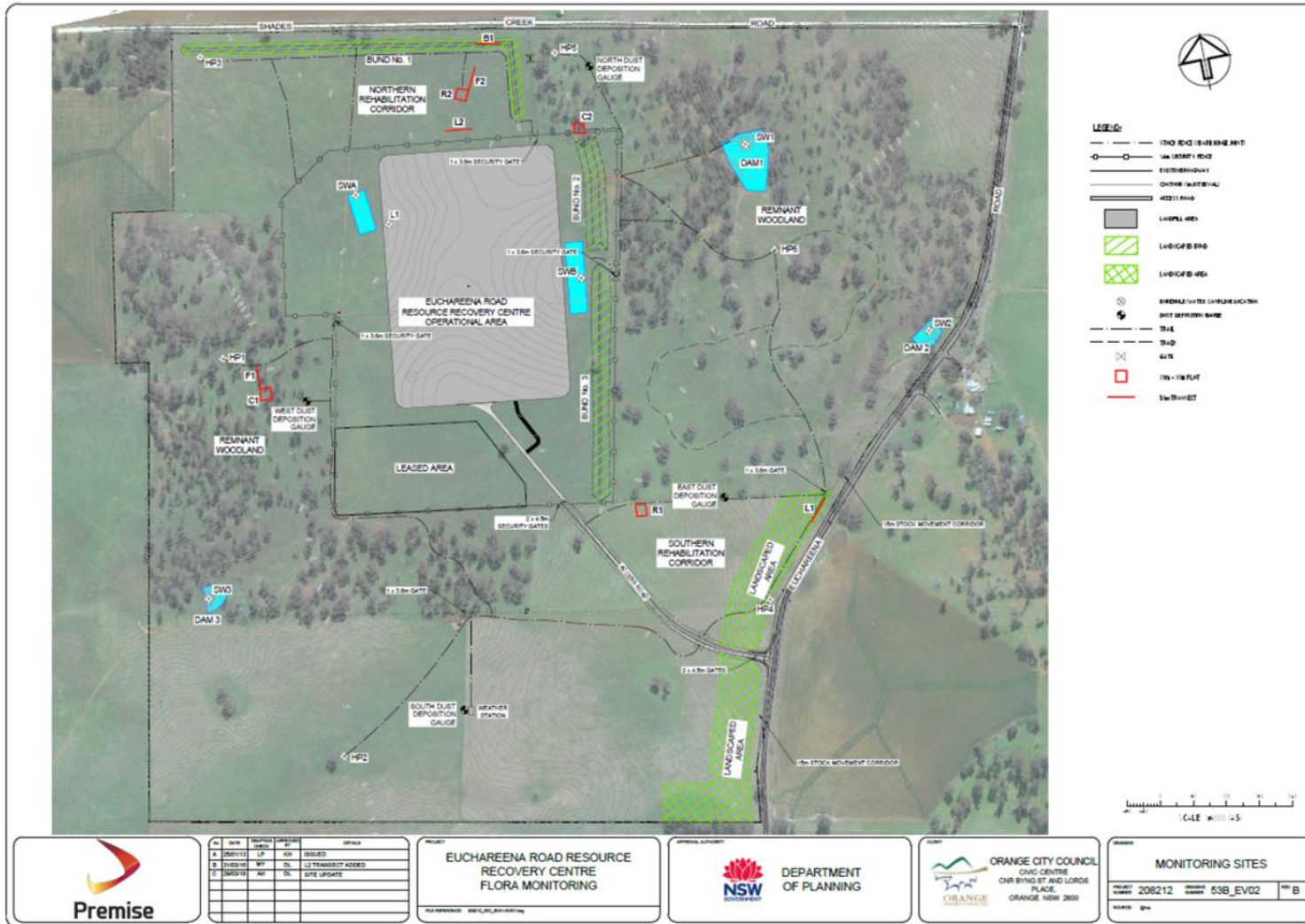
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Heritage NSW Aboriginal Heritage Information Management Systems

6. DRAWINGS



7. PLATES

Plate 1 – Facing north between Corner B and C of Plot R1



Since the 2024 survey period, the exotic species cover of Plot R1 has increased (particularly St Barnaby's Thistle), while native cover has decreased. Native grasses (Wallaby Grass and Red Grass) are still present as the dominant native species. This area contains a mixed groundcover up to 40 cm tall.

Plate 2 – Looking north-east from Corner C of Plot R2



This open community has changed since 2024. Native Wallaby Grass remains dominant in this area however, the exotic species cover of Plot R2 has increased (particularly St Barnaby’s Thistle and Skeleton Weed).

Plate 3 – Looking north-east from Corner D of Plot C1



The vegetation structure of this plot comprises a woodland community with mid-storey absent. The species composition in this area has significantly changed since 2024 with exotic species (particularly St Barnaby’s Thistle) now dominating.



Plate 4 – Facing north between Corner B and C of Plot C2

The vegetation structure of this plot comprises a woodland community with mid-storey absent. The species composition in this area has changed since 2024 with exotic species (particularly St Barnaby's Thistle) now dominating. Native grasses remain suppressed by high litter loads, however *Lomandra* spp. and *Sida* spp. persist amongst the thistles.

Plate 5 – Looking east over 10 m sampling point of Transect F1



Litter loads in this area are consistently high. Exotic cover in this area has significantly increased (particularly St Barnaby's Thistle and White Horehound) which are now dominant. Disturbance tolerant native species remain in low abundances.

Plate 6 – Looking east over 20 m sampling point of Transect F1



Plate 7 – Looking east over 30 m sampling point of Transect F1



Plate 8 – Looking east over 40 m sampling point of Transect F1



Plate 9 – Looking east over 50 m sampling point of Transect F1



Plate 10 – Looking east over 10 m sampling point of Transect F2



Species composition in this area has improved in condition between 2024-2025 with the native Wallaby Grass dominate in this area. Exotic species cover is still high in some areas and includes Phalaris, St Barnaby's Thistle, Skeleton Weed and St John's Wort. The prevalence of St Barnaby's Thistle has increased since 2024.



Plate 11 – Looking east over 20 m sampling point of Transect F2



Plate 12 – Looking east over 30 m sampling point of Transect F2



Plate 13 – Looking east over 40 m sampling point of Transect F2



Plate 14 – Looking east over 50 m sampling point of Transect F2



Plate 15 – Looking south over 10 m sampling point of Transect L1



This transect is moderately impacted by macropod movement following the boundary fenceline. Most trees have established beyond the height of interference by kangaroos, however lower shrubs and 2022-2023 plantings have minor herbivory damage. Since 2024 the cover and dominance of exotic species (Phalaris and St Barnaby’s Thistle) has increased. Native grass species are still present (Speargrass, Wallaby Grass, Red Grass, Windmill Grass and Slender Rat’s Tail Grass) at lower covers due to increased competition with Phalaris.

Plate 16 – Looking south over 20 m sampling point of Transect L1



Plate 17 – Looking south over 30 m sampling point of Transect L1



Plate 18 – Looking south over 40 m sampling point of Transect L1



Plate 19 – Looking south over 50 m sampling point of Transect L1



Plate 20 – Looking west over 10 m sampling point of Transect B1



Since 2024 the cover and dominance of Phalaris has increased. Native species (Warrego Grass, Hairy Panic and Slender Rat’s Tail Grass) occur in very low covers, indicating slow recovery following slashing in 2024. This area continues to act as a thoroughfare for macropod dispersal. The growth of established trees is being hindered by the presence of black tree guards and stakes which require removal.



Plate 21 – Looking west over 20 m sampling point of Transect B1



Plate 22 – Looking west over 30 m sampling point of Transect B1



Plate 23 – Looking west over 40 m sampling point of Transect B1



Plate 24 – Looking west over 50 m sampling point of Transect B1



Plate 25 – Looking west over 10 m sampling point of Transect L2 (Southern boundary of Northern Rehabilitation Corridor adjacent to northern perimeter fence)



Transect L2 was dominated by native grasses during the 2023 surveys. However, during the 2024 surveys it was observed to be dominated by exotic species including St Barnaby’s Thistle, Skeleton Weed and St John’s Wort. Native grasses persist in low abundances and include Slender Rat’s Tail Grass, Red Grass and Wallaby Grass. Most trees have established beyond the height of interference by kangaroos and the removal of tree guards and stakes is required for established trees >1 m.

Plate 26 – Looking west over 20 m sampling point of Transect L2



Plate 27 – Looking west over 30 m sampling point of Transect L2



Plate 28 – Looking west over 40 m sampling point of Transect L2



Plate 29 – Looking west over 50 m sampling point of Transect L2



Plate 30 – Facing east, east of L2, where the new tree-lot adjoins woodland associated with C2



Plate 31 – Western side scar, unchanged from 2024 survey



Plate 32 – Eastern side scar, unchanged since 2024 survey



Plate 33 – Scarred Tree View North West



Plate 34 – Scarred Tree View South East



Plate 35 – Scarred Tree View East



Plate 36 – Scarred Tree View North



Plate 37 – Erosion Stabilisation Monitoring



APPENDIX A

REHABILITATION AND CONTROL PLOT FIELD SHEETS



Date: 11/3/2025	Plot No: R1	Elevation: 615m	Size: 25 x 25 m	Initials: ML
Easting & Northing of Plot Corners A to D (WGS 84)	A	B	C	D
	678116 mE	678116 mE	678099 mE	678097 mE
	6340650 mN	6340634 mN	6340635 mN	6340651 mN
Photo point Description	Plate 1: Looking north between corner C and B of Plot R1			
Crown cover:	0.25-20			
Foliage Cover (%)	Canopy: <1	Midstorey: 0	Groundcover: 95	
Dominant plant species & height	N/A	N/A	St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 40 cm Wallaby Grass (<i>Rytidosperma racemosum</i>) 20 cm Red Grass (<i>Bothriochloa macra</i>) 40 cm	
Remaining species	N/A	N/A	Tall Speargrass (<i>Austrostipa bigeniculata</i>) Knotty Speargrass (<i>Austrostipa nodosa</i>) Wild Oats* (<i>Avena fatua</i>) Shepherds Purse* (<i>Capsella bursa-pastoris</i>) Knob Sedge (<i>Carex inversa</i>) Skeleton Weed* (<i>Chondrilla juncea</i>) Flaxleaf Fleabane* (<i>Conyza bonariensis</i>) Cocksfoot* (<i>Dactylis glomerata</i>) Stinkgrass* (<i>Eragrostis cilianensis</i>) Paddock Lovegrass (<i>Eragrostis leptostachya</i>) Yellow Box (<i>Eucalyptus melliodora</i>) x2 <i>Euphorbia davidii</i> * White Horehound* (<i>Marrubium vulgare</i>) Weeping Grass (<i>Microlaena stipoides</i>) Red-flowered Mallow* (<i>Modiola caroliniana</i>) Grassland Wood-sorrel (<i>Oxalis perennans</i>) Hairy Panic (<i>Panicum effusum</i>) Lamb's Tongues* (<i>Plantago lanceolata</i>) Phalaris* (<i>Phalaris aquatica</i>) Swamp Dock (<i>Rumex brownii</i>) Ringed Wallaby Grass (<i>Rytidosperma caespitosum</i>) Cotton Fireweed (<i>Senecio quadridentatus</i>) Slender Rat's Tail Grass (<i>Sporobolus creber</i>)	



Date: 11/3/2025	Plot No: R1	Elevation: 615m	Size: 25 x 25 m	Initials: ML
			Subterranean clover* (<i>Trifolium subterraneum</i>) Twiggy Mullein* (<i>Verbascum virgatum</i>)	
Dominant Species and Weed cover (%)	N/A	N/A	St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 40% Wallaby Grass (<i>Rytidosperma racemosum</i>) 20% Red Grass (<i>Bothriochloa macra</i>) 15%	
Groundcover Type (%)	Bare Ground: 1	Vegetation Cover: 95	Leaf Litter: 4	Logs: 0
Disturbance Type	Fire: N/A	Grazing: Macropod grazing present	Drought: No	Flood: N/A
Notes: Dominated by St Barnaby's Thistle, and the native grasses Red Grass and Wallaby Grass. No HTW are present. One planting requires a tree guard to be replaced. Plantings appear to be in good condition and most guards and stakes are in place. Evidence of macropod grazing (scats).				

*Exotic species



Date: 11/3/2025	Plot No: R2	Elevation: 606m	Size: 25 x 25 m	Initials: ML
Easting & Northing of Plot Corners A to D (WGS 84)	A	B	C	D
	677948 mE	677938 mE	677922 mE	677932 mE
	6341451 mN	6341434 mN	6341438 mN	6341457 mN
Photo point Description	Plate 2: Looking northeast from corner C of Plot R2			
Crown cover:	0.25-20			
Foliage Cover (%)	Canopy: <1	Midstorey: 0	Groundcover: 90	
Dominant plant species & height	N/A	N/A	Wallaby Grass (<i>Rytidosperma racemosum</i>) 50 cm St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 50 cm Skeleton Weed* (<i>Chondrilla juncea</i>) 70cm	
Remaining species	N/A	N/A	Speargrass (<i>Austrostipa scabra</i>) Wild Oats* (<i>Avena fatua</i>) Red Grass (<i>Bothriochloa macra</i>) <u>Saffron Thistle* (<i>Carthamus lanatus</i>)</u> Flaxleaf Fleabane* (<i>Conyza bonariensis</i>) Cocksfoot* (<i>Dactylis glomerata</i>) Purple Lovegrass (<i>Eragrostis lacunaria</i>) Yellow Box (<i>Eucalyptus melliodora</i>) x2 (40 cm) <u>St John's Wort* (<i>Hypericum perforatum</i>)</u> Prickly Lettuce* (<i>Lactuca serriola</i>) Perennial Ryegrass* (<i>Lolium perenne</i>) White Horehound* (<i>Marrubium vulgare</i>) Woolly Burr Medic* (<i>Medicago minima</i>) Weeping Grass (<i>Microlaena stipoides</i>) Hairy Panic (<i>Panicum effusum</i>) Warrego Grass (<i>Paspalidium jubiflorum</i>) Phalaris* (<i>Phalaris aquatica</i>) Lamb's Tongues* (<i>Plantago lanceolata</i>) Swamp Dock (<i>Rumex brownii</i>) Ringed Wallaby Grass (<i>Rytidosperma caespitosum</i>) Slender Rat's Tail Grass (<i>Sporobolus creber</i>) Subterranean clover* (<i>Trifolium subterraneum</i>)	



Date: 11/3/2025	Plot No: R2	Elevation: 606m	Size: 25 x 25 m	Initials: ML
Dominant Species and Weed cover (%)	N/A	N/A	Wallaby Grass (<i>Rytidosperma racemosum</i>) 45% St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 20% Skeleton Weed* (<i>Chondrilla juncea</i>) 15%	
Groundcover Type (%)	Bare Ground: 2	Vegetation Cover: 90	Leaf Litter: 8	Logs: 0
Disturbance Type	Fire: N/A	Grazing: Macropod grazing present	Drought: No	Flood: No
<p>Notes:</p> <p>Weeds requiring spraying include St John's Wart and Saffron Thistle (present in low abundance). Tree guards and stakes around planted eucalypts require replacing. Evidence of macropod grazing (scats). Open areas in this paddock are dominated by native grasses. Areas close to plantings dominated by St Barnaby's Thistle* and Skeleton Weed*.</p>				

*Exotic species

High Threat Weeds



Date: 11/3/2025	Plot No: C1	Elevation: 597m	Size: 25 x 25 m	Initials: ML
Easting & Northing of Plot Corners A to D (WGS 84)	A	B	C	D
	677473 mE	677487 mE	677485 mE	677467 mE
	6341000 mN	6340997 mN	6340975 mN	6340978 mN
Photo point Description	Plate 3: Looking northeast from Corner D of Plot C1			
Crown cover:	20-50			
Foliage Cover (%)	Canopy: 30	Midstorey: 0	Groundcover: 75	
Dominant plant species & height	Blakely's Red Gum (<i>Eucalyptus blakelyi</i>) 30 m Blakely's Red Gum (<i>Eucalyptus blakelyi</i>) 25 m	N/A	St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 80 cm White horehound* (<i>Marrubium vulgare</i>) 60 cm	
Remaining species	N/A	N/A	Knob Sedge (<i>Carex inversa</i>) <u>Saffron Thistle* (<i>Carthamus lanatus</i>)</u> Skeleton Weed* (<i>Chondrilla juncea</i>) Spear Thistle* (<i>Cirsium vulgare</i>) Cocksfoot* (<i>Dactylis glomerata</i>) Small Crumbweed (<i>Dysphania pumilio</i>) Patterson's Curse* (<i>Echium plantagineum</i>) Climbing Saltbush (<i>Einadia nutans</i>) Paddock Lovegrass (<i>Eragrostis leptostachya</i>) Variable Glycine (<i>Glycine tabacina</i>) Prickly Lettuce* (<i>Lactuca serriola</i>) Wattle Mat-rush (<i>Lomandra filiformis</i>) Weeping Grass (<i>Microlaena stipoides</i>) Grassland Wood-sorrel (<i>Oxalis perennans</i>) Warrego Grass (<i>Paspalidium jubiflorum</i>) Phalaris* (<i>Phalaris aquatica</i>) Pigweed (<i>Portulaca oleracea</i>) Wallaby Grass (<i>Rytidosperma racemosum</i>) Vervain* (<i>Salvia verbenaca</i>) Variegated Thistle* (<i>Silybum marianum</i>) Black-berry Nightshade* (<i>Solanum nigrum</i>) Subterranean clover* (<i>Trifolium subterraneum</i>)	



Date: 11/3/2025	Plot No: C1	Elevation: 597m	Size: 25 x 25 m	Initials: ML
			Bathurst Burr* (<i>Xanthium spinosum</i>)	
Dominant Species and Weed cover (%)	30% Blakely's Red Gum (<i>Eucalyptus blakelyi</i>)	N/A	St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 65 % White Horehound* (<i>Marrubium vulgare</i>) 5 %	
Groundcover Type (%)	Bare Ground: 10	Vegetation Cover: 75	Leaf Litter: 15	Logs: 23 m
Disturbance Type	Fire: N/A	Grazing: Macropod grazing present	Drought: No	Flood: No
Notes: This area is dominated by exotic species (St Barnaby's Thistle and White Horehound) with native grasses persisting in open areas. There is evidence of macropod grazing (scats). St John's Wort and Bathurst Burr require spraying.				

*Exotic species

[High Threat Weeds](#)



Date: 11/3/2025	Plot No: C2	Elevation: 604m	Size: 25 x 25 m	Initials: ML
Easting & Northing of Plot Corners A to D (WGS 84)	A	B	C	D
	678121 mE	678128 mE	678147 mE	678138 mE
	6341341 mN	6341358 mN	6341350 mN	6341335 mN
Photo point Description	Plate 4: Looking northwest from Corner D of Plot C2			
Crown cover:	20-50			
Foliage Cover (%)	Canopy: 40	Midstorey: 0	Groundcover: 95	
Dominant plant species & height	White Box (<i>Eucalyptus albens</i>) 25 m	N/A	St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 80 cm Lamb's Tongues* (<i>Plantago lanceolata</i>) 70 cm	
Remaining species	N/A	N/A	Wheatgrass (<i>Anthosachne scabra</i>) Tall Speargrass (<i>Austrostipa bigeniculata</i>) Knotty Speargrass (<i>Austrostipa nodosa</i>) Bearded Oats* (<i>Avena barbata</i>) Speargrass (<i>Austrostipa scabra</i>) Tarvine (<i>Boerhavia domini</i>) Red Grass (<i>Bothriochloa macra</i>) Soft Brome* (<i>Bromus hordeaceus</i>) Knob Sedge (<i>Carex inversa</i>) <u>Saffron Thistle* (<i>Carthamus lanatus</i>)</u> Windmill Grass (<i>Chloris truncata</i>) Spear Thistle* (<i>Cirsium vulgare</i>) Small Crumbweed (<i>Dysphania pumilio</i>) Climbing Saltbush (<i>Einadia nutans</i>) <i>Euphorbia davidii</i> * Common Cranesbill (<i>Geranium retrorsum</i>) Native Geranium (<i>Geranium solanderi</i>) Twining Glycine (<i>Glycine clandestina</i>) Variable Glycine (<i>Glycine tabacina</i>) Argentine Peppercross* (<i>Lepidium bonariense</i>) Wattle Mat-rush (<i>Lomandra filiformis</i> subsp. <i>filiformis</i>) 20 cm White Horehound* (<i>Marrubium vulgare</i>) Weeping Grass (<i>Microlaena stipoides</i>) <u>Paspalum* (<i>Paspalum dilatatum</i>)</u>	



Date: 11/3/2025	Plot No: C2	Elevation: 604m	Size: 25 x 25 m	Initials: ML
			Phalaris* (<i>Phalaris aquatica</i>) Snowgrass (<i>Poa sieberiana</i>) Swamp Dock (<i>Rumex brownii</i>) Ringed Wallaby Grass (<i>Rytidosperma caespitosum</i>) Wallaby Grass (<i>Rytidosperma racemosum</i>) Cotton Fireweed (<i>Senecio quadridentatus</i>) Corrugated Sida (<i>Sida corrugata</i>) Slender Rat's Tail Grass (<i>Sporobolus creber</i>) White Clover* (<i>Trifolium repens</i>)	
Dominant Species and Weed cover (%)	N/A	N/A	St Barnaby's Thistle* (<i>Centaurea solstitialis</i>) 90 % Lamb's Tongues* (<i>Plantago lanceolata</i>) 5 %	
Groundcover Type (%)	Bare Ground: -	Vegetation Cover: 95	Leaf Litter: 5	Logs: 18
Disturbance Type	Fire: N/A	Grazing: Macropod grazing present	Drought: N/A	Flood: N/A
Notes: Rubbish is present along the fenceline. Native species (i.e., <i>Lomandra</i> spp., <i>Glycine</i> spp. and <i>Sida</i> spp.) persist but are predominately suppressed by competition from St Barnaby's Thistle. Wallaby Grass persists in open areas where St Barnaby's Thistle are absent. Saffron Thistle and Paspalum require spraying.				

*Exotic species

High Threat Weeds



APPENDIX B

REHABILITATION AND CONTROL TRANSECT FIELD SHEETS



11th March 2025 FLORA MONITORING PROGRAM – 50m transect F1

Quadrat Sampling Point	10 m	20 m	30 m	40 m	50 m
Easting	677469	677468	677469	677470	677469
Northing	6341034	6341024	6341011	6341004	6340997
Photo Point Number	5	6	7	8	9

Table B.1 – Flora Monitoring Program – Transect F1

FAMILY/Scientific Name	Common Name	Cover Abundance (CA) per 10m x 10m quadrant				
		0-10	10-20	20-30	30-40	40-50
ASPARAGACEAE						
<i>Lomandra filiformis</i>	Wattle Mat-rush	-	-	-	-	1
ASTERACEAE						
* <i>Carthamus lanatus</i>	Saffron thistle	4	2	1	3	-
* <i>Centaurea solstitialis</i>	St. Barnaby's Thistle	3	4	6	5	3
* <i>Chondrilla juncea</i>	Skeleton Weed	-	1	-	-	-
* <i>Cirsium vulgare</i>	Spear Thistle	1	-	2	2	2
* <i>Conyza bonariensis</i>	Flaxleaf Fleabane	2	3	3	3	1
<i>Cotula australis</i>	Carrot Weed	1	-	-	-	-
* <i>Silybum marianum</i>	Variegated Thistle	-	-	2	-	-
* <i>Xanthium spinosum</i>	Bathurst Burr	-	-	-	-	1
CHENOPODIACEAE						
<i>Dysphania pumilio</i>	Small Crumbweed	2	1	1	-	2
<i>Einadia nutans</i>	Climbing Saltbush	1	1	-	-	-
CYPERACEAE						
<i>Carex invera</i>	Knob Sedge	2	2	2	2	5
FABACEAE						
* <i>Medicago minima</i>	Woolly Burr Medic	-	-	-	1	-
JUNCACEAE						
<i>Juncus usitatus</i>	-	-	-	1	-	-
LAMIACEAE						
* <i>Marrubium vulgare</i>	White horehound	-	4	3	1	1
MALVACEAE						
<i>Sida corrugata</i>	Corrugated sida	1	-	-	-	-
OXALIDACEAE						
<i>Oxalis perennans</i>	Grassland Wood-sorrel	1	-	1	-	-
PLANTAGINACEAE						
* <i>Plantago lanceolata</i>	Lamb's Tongue	-	-	-	1	-
POACEAE						
<i>Anthosachne scabra</i>	Wheatgrass	3	-	-	-	-

FAMILY/Scientific Name	Common Name	Cover Abundance (CA) per 10m x 10m quadrant				
		0-10	10-20	20-30	30-40	40-50
<i>Austrostipa scabra</i>	Speargrass	2	-	-	-	-
<i>Bothriochloa macra</i>	Red Grass	-	-	-	2	-
* <i>Bromus hordeaceus</i>	Soft Brome	3	-	-	3	-
<i>Rytidosperma racemosum</i>	Wallaby Grass	2	-	-	-	1

Notes: Saffron Thistle requires spraying.

C/A Cover Abundance (Modified Braun Blanquet)

1: <5% cover and few individuals **2:** <5% cover and many individuals **3:** 5-25% cover
4: 25% - 50% **5:** 50% - 75% **6:** 75% - 100%

*Exotic species

[High Threat Weeds](#)



11th March 2025 FLORA MONITORING PROGRAM – 50m transect F2

Quadrat Sampling Point	10 m	20 m	30 m	40 m	50 m
Easting	677967	677963	677961	677953	677949
Northing	6341489	6341479	6341470	6341461	6341451
Photo Point Number	10	11	12	13	14

Table B.2 – Flora Monitoring Program – Transect F2

FAMILY/Scientific Name	Common Name	Cover Abundance (CA) per 10m x 10m quadrant				
		0-10	10-20	20-30	30-40	40-50
ASTERACEAE						
* <i>Carthamus lanatus</i>	Saffron thistle	1	1	1	1	1
* <i>Centaurea solstitialis</i>	St. Barnaby's Thistle	2	3	4	3	2
* <i>Chondrilla juncea</i>	Skeleton Weed	1	3	3	3	5
* <i>Hypochaeris radicata</i>	Catsear	1	2	2	-	-
* <i>Conyza bonariensis</i>	Flaxleaf Fleabane	2	2	2	-	-
* <i>Tragopogon porrifolius</i>	Salsify	1	-	-	-	-
FABACEAE						
* <i>Medicago sativa</i>	Lucerne	-	1	-	-	-
HYPERICACEAE						
* <i>Hypericum perforatum</i>	St John's Wort	1	1	2	3	-
LAMIACEAE						
* <i>Marrubium vulgare</i>	White horehound	-	-	-	-	1
PLANTAGINACEAE						
* <i>Plantago lanceolata</i>	Ribwort Plantain	2	1	-	-	1
POACEAE						
* <i>Avena fatua</i>	Wild Oats	-	1	-	1	-
<i>Bothriochloa macra</i>	Red Grass	-	-	1	-	-
* <i>Dactylis glomerata</i>	Cocksfoot	-	2	2	-	-
<i>Digitaria brownii</i>	Cotton Panic Grass	-	-	1	-	-
<i>Panicum effusum</i>	Hairy Panic	-	-	-	1	-
<i>Paspalidium jubiflorum</i>	Warrego Grass	3	3	2	-	2
* <i>Phalaris aquatica</i>	Phalaris	2	2	1	3	3
<i>Rytidosperma caespitosum</i>	Ringed Wallaby Grass	3	-	1	-	-
<i>Rytidosperma racemosum</i>	Wallaby Grass	5	5	4	4	3
<i>Sporobolus creber</i>	Slender Rat's Tail Grass	4	-	3	-	-
POLYGONACEAE						
<i>Rumex brownii</i>	Swamp Dock	-	1	1	1	1

Notes: Saffron Thistle and St John's Wort require spraying.

C/A Cover Abundance (Modified Braun Blanquet)

- | | | |
|--|---|-----------------------|
| 1: <5% cover and few individuals | 2: <5% cover and many individuals | 3: 5-25% cover |
| 4: 25% - 50% | 5: 50% - 75% | 6: 75% - 100% |

*Exotic species

[High Threat Weeds](#)



APPENDIX C

LANDSCAPE AND REHABILITATION TRANSECT FIELD SHEETS



11th March 2025 FLORA MONITORING PROGRAM – 50m transect L1

Quadrat Sampling Point	10 m	20 m	30 m	40 m	50 m
Easting	678401	678394	678390	678382	678380
Northing	6340590	6340584	6340575	6340567	6340558

Table 1 - Flora Monitoring Program – Transect L1

	0-10 m	10-20 m	20-30 m	30-40 m	40-50 m
Total alive plantings	8	8	6	5	7
Total No plantings	35	30	36	33	31
Success Rate (%)	23	27	17	15	23
Initial row spacing (meters)	<1	<1	<1	<1	<1
Initial tree spacing (meters)	<1	<1	<1	<1	<1
Weed species	* <i>Centaurea solstitialis</i> * <i>Phalaris aquatica</i> * <i>Coryza bonariensis</i> <u>*<i>Carthamus lanatus</i></u> <u>*<i>Hypericum perforatum</i></u> * <i>Plantago lanceolata</i>				
Weed species Cover Abundance	5	5	4	5	4
Comments > Minor herbivory damage to plantings. > Saffron Thistle and St John’s Wort require spraying. > Tree guards need to be removed from trees > 1 m. > Tree guards to be replaced on trees < 1 m. > Dominant native species include: <i>Austrostipa scabra</i> , <i>Rytidosperma racemosum</i> , <i>Austrostipa bigeniculata</i> , <i>Bothriochloa macra</i> , <i>Anthosachne scabra</i> and <i>Sporobolus creber</i> .					

*Exotic species

High Threat Weeds



13th March 2024 FLORA MONITORING PROGRAM – 50m transect L2

Quadrat Sampling Point	10 m	20 m	30 m	40 m	50 m
Easting	677921	677908	677899	677885	677870
Northing	6341410	6341413	6341414	6341416	6341417

Table 2 - Flora Monitoring Program – Transect L2

	0-10 m	10-20 m	20-30 m	30-40 m	40-50 m
Total alive plantings	5	3	5	6	6
Total No plantings	15	16	18	14	14
Success Rate (%)	33	19	28	43	43
Initial row spacing (meters)	5	5	5	5	5
Initial tree spacing (meters)	<5	<5	<5	<5	<5
Weed species	* <i>Chondrilla juncea</i> * <i>Centaurea solstitialis</i> * <i>Conyza bonariensis</i> * <i>Hypericum perforatum</i> * <i>Plantago lanceolata</i> * <i>Carthamus lanatus</i> * <i>Marrubium vulgare</i>				
Weed species Cover Abundance	5	5	5	5	4
Comments > Minor herbivory damage to plantings. > Native grasses persisting between weeds. > Saffron Thistle and St John’s Wort require spraying. > Tree guards need to be removed from trees >1 m. > Tree guards to be replaced on trees <1 m. > Dominant native species include: <i>Sporobolus creber</i> , <i>Bothriochloa macra</i> , <i>Rytidosperma racemosum</i> , <i>Microlaena stipoides</i> and <i>Austrostipa scabra</i> .					

*Exotic species

High Threat Weeds



11th March 2025 FLORA MONITORING PROGRAM – 50m transect B1

Quadrat Sampling Point	10 m	20 m	30 m	40 m	50 m
Easting	678032	678022	678004	679001	678991
Northing	6341519	6341524	6341526	6341524	6341527

Table 3 - Flora Monitoring Program – Transect B1

	0-10 m	10-20 m	20-30 m	30-40 m	40-50 m
Total alive plantings	5	4	4	4	3
Total No plantings	8	8	8	5	7
Success Rate (%)	63	50	50	80	43
Initial row spacing (meters)	6	6	7	6	6
Initial tree spacing (meters)	5	6	6	6	6
Weed species	* <i>Phalaris aquatica</i> * <i>Marrubium vulgare</i> * <i>Paspalum dilatatum</i> * <i>Eragrostis cilianensis</i> * <i>Avena fatua</i> * <i>Amaranthus powellii</i> * <i>Centaurea solstitialis</i> * <i>Dactylis glomerata</i>				
Weed species Cover Abundance	6	6	6	5	6
Comments > Minor herbivory damage to plantings. > Paspalum requires weed control. > Tree guards need to be removed from trees >1 m. > Tree guards to be replaced on trees <1 m. > Dominant native species include: <i>Paspalidium jubiflorum</i> , <i>Sporobolus creber</i> , <i>Panicum effusum</i> , <i>Oxalis perennans</i> and <i>Rumex brownii</i> .					

*Exotic species

High Threat Weeds

APPENDIX D

BIODIVERSITY CONSERVATION DIVISION MONITORING REPORT



OVERVIEW

Description of work undertaken			Source of funding and amount	Date completed
Flora and Aboriginal Heritage Monitoring Program of the Euchareena Road Resource Recovery Centre			Orange City Council 2024/2025 financial year	Ongoing. (Annual monitoring program)
FIRE HISTORY	Area burnt (% of c.a./approx. ha)	Reason (hazard red./wild)	Intensity (low/medium/high)	
Date of fire				
No fire history from past 10 years.				

VISITATION

Average No. of Visitors per year	Purpose of Visitation	Visitation effects	Strategies to overcome effects
Visitation to rehabilitation site restricted to monitoring, management staff, maintenance personnel and neighbouring landholders.	Equipment repair and installation; scheduled water and flora monitoring; native vegetation planting; dust monitoring; land management; stock management and movement.	Access is primarily restricted to existing tracks and slashed areas. Low impact on existing vegetation and communities.	N/A

COMMUNITY CONSULTATION AND INPUT INTO DECISION MAKING

Type of Involvement	Numbers involved	Outcomes
No community involvement in the past year	N/A	N/A



PHOTO-MONITORING

Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
Monitoring point 1 Plot R1 Flora Monitoring Point	Derived Grassland, prior pasture	Moderate	<p>Livestock grazing has not occurred in this area since 2019. The SRC was slashed in late 2024 and early 2025 resulting in lower cover and abundance of exotic groundcover species. Vegetation cover (95%) has increased since 2024, while litter cover (4%) and bare ground (1%) have decreased. This area contains high species diversity but is dominated by St Barnaby's Thistle (40%) which has increased in cover since 2024 (3%). Dominant native grasses include Wallaby Grass (20% and 20 cm tall) and Red Grass (15% and 40 cm tall). Native trees and shrubs were planted in open areas of the SRC in 2022, including two Yellow Box trees., which persist within R1. Native species richness has remained consistent since 2023 with 16 native species recorded in the plot accounting for 57% of the overall species recorded. This has increased since 2024 (51% of overall species were native) due to a reduction in the number of exotic species present.</p> <p>The area contains evidence of kangaroo grazing (scats), with animals selectively grazing native, more palatable species.</p> <p>One planting within Plot R1 required maintenance (i.e., displaced tree guard), however the plantings in this area appear in moderate to good condition with most tree guards and stakes in-situ.</p> <p>No High Threat Weeds were recorded in Plot R1, however the cover of St Barnaby's Thistle was extensive in the SRC.</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to grassland areas. > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > Weeds: St Barnaby's Thistle occurs in moderate abundances > Tree guards around plantings require maintenance and replacement in some areas. > Wildfire.
Monitoring point 2 Plot R2 Flora Monitoring Point	Derived Grassland, prior cropping and pastureland.	Moderate	<p>Livestock grazing has not occurred in this area since 2019. The NRC was slashed in late 2024 and early 2025 resulting in lower cover of Phalaris and Cocksfoot. However, the cover of St Barnaby's Thistle (20% and 50 cm tall) has increased since 2024 (10%). Vegetation cover (90%) has increased since 2024 and continues to be dominated by native groundcover, while litter</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to grassland areas. > Impact by kangaroos on the recruitment and establishment of



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
			<p>cover (8%) bare ground cover (2%) have decreased. The groundcover continues to be dominated by Wallaby Grass (45%, 50 cm tall), while exotic species still remain prevalent (St Barnaby's Thistle: 20% and 50 cm tall; Skeleton Weed: 15% and 70 cm tall) and slowly increasing in abundance. Native trees and shrubs were planted in open areas of the NRC in 2022, including three Yellow Box trees., of which two persist within R2. Although native species richness significantly increased between 2023 (25% - 5 species) and 2024 (44% - 11 species), it has remained consistent during the 2024-2025 monitoring year.</p> <p>The area contains evidence of kangaroo grazing (scats), with animals selectively grazing native, more palatable species.</p> <p>The High Threat Weeds St John's Wort and Saffron Thistle were observed in low abundances, primarily in proximity to the plantings where slashing is restricted. St Barnaby's Thistle infestations were moderate in most areas with White Horehound occasionally occurring. Open areas of the NRC are dominated by native grasses.</p> <p>Plantings in the NRC require maintenance (i.e., displaced tree guards).</p>	<p>native species and the further establishment of weed species.</p> <ul style="list-style-type: none"> > Poorly timed or managed spraying and slashing events. > High Threat Weeds: St John's Wort and Saffron Thistle occur in low abundances > Weeds: White Horehound and St Barnaby's Thistle. > Tree guards around plantings require maintenance and replacement in some areas. > Wildfire.
<p>Monitoring point 3 Plot C1 Flora Monitoring Point</p>	<p>Open Box Woodland remnant</p>	<p>Poor</p>	<p>Livestock grazing has not occurred in this area since 2019. Open areas in the western remnant woodland were slashed in 2025. Since 2024, vegetation cover 75% (2024: 40%) and bare ground cover (10%) (2024: 1%) have increased, while litter load has significantly decreased (15%). Plot C1 is dominated by St Barnaby's Thistle (65% and 80cm tall) and White Horehound (5% and 60 cm tall) which is contrary to 2024 when the plot was dominated by the native Wallaby Grass. The native species richness has slightly increased (48% - 12 species) compared to 2024 (44% - 11 species). However, the overall species richness remains low due to the</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to woodland areas. > Impact by kangaroos and rabbits on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events.



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
			<p>dominance of St Barnaby's Thistle which outcompetes other species in most areas.</p> <p>Both Blakely's Red Gum individuals within the plot are still recovering from the effects of drought and trees within the wider woodland patch have experienced extreme limb loss from recent weather.</p> <p>The area contains evidence of kangaroo grazing (scats), with animals selectively grazing native, more palatable species.</p> <p>The High Threat Weeds St John's Wort, Saffron Thistle and Bathurst Burr were recorded in low-moderate abundances and require spraying. St Barnaby's Thistle was dominant with moderate covers of White Horehound throughout the woodland patch.</p>	<ul style="list-style-type: none"> > High Threat Weeds: Bathurst Burr, Saffron Thistle and St John's Wort. > Weeds: St Barnaby's Thistle and White Horehound occur in high abundances. > Timber collection. > Wildfire.
<p>Monitoring point 4 Plot C2 Flora Monitoring Point</p>	<p>Open Box Woodland (Internode between derived grassland and woodland)</p>	<p>Poor</p>	<p>Livestock grazing has not occurred in this area since 2019. Open areas in the eastern remnant woodland were slashed in 2024. During the 2024-2025 monitoring period Plot C2 was dominated by St Barnaby's Thistle (90% and 80 cm tall) and Lamb's Tongue (5% and 70 cm). Native species were uncommon and only persist in open areas where St Barnaby's Thistle is less prominent. The cover of native forbs (i.e., <i>Lomandra</i> spp. <i>Glycine</i> spp. and <i>Sida</i> spp.) has decreased since 2024 due to over competition from St Barnaby's Thistle. However, the native species richness (64%). Since 2024, vegetation cover has increased from 35% to 95%, while litter cover has decreased from 60% to 5%. Native species richness continues to gradually increase to 22 native species (64% richness).</p> <p>The area contains evidence of kangaroo grazing (scats and camps), with animals selectively grazing native, more palatable species.</p> <p>The establishment of young eucalypts in the immediate area of C2 and Dust Monitoring Point 4 continues with varying levels of success.</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to woodland areas. > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > The dominance of slashed grasses (litter) inhibiting native groundcover growth > High Threat Weeds: Saffron Thistle and Paspalum persist in low abundances. Spraying is required to avoid transportation to better quality woodland in the surround.



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
			<p>The High Threat Weeds Saffron Thistle and Paspalum persist in low abundances and require spraying. St Barnaby's Thistle remains dominant throughout the woodland patch.</p> <p>Pieces of soft plastic, bone fragments and small plastic items continue to be deposited along the perimeter fence woodland in the vicinity of C2. This rubbish is transported from ERRRC by wind, scavenging birds and overland waterflow.</p>	<ul style="list-style-type: none"> > Weeds: St Barnaby's Thistle and White Horehound > Timber collection. > Wildfire.
<p>Monitoring points 5 to 9 Transect F1</p>	<p>Open Box Woodland remnant</p>	<p>Poor to Moderate</p>	<p>Livestock grazing has not occurred in this area since 2019. Open areas in the western remnant woodland were slashed in 2025. In 2024, transect F1 was dominated by native grasses (Wallaby Grass and Knob Sedge). However, in 2025 transect F1 was dominated by the exotics St Barnaby's Thistle, Saffron Thistle, Flaxleaf Fleabane and White Horehound. Native species, particularly Knob Sedge, persist in open areas with higher bare ground cover, and native species account for 52% of the overall F1 species richness which has slightly decreased since 2024 (56%).</p> <p>The White Box trees within the plot are still recovering from the effects of drought and trees within the wider woodland patch have experienced extreme limb loss from recent weather.</p> <p>The area contains evidence kangaroo grazing (scats and camps), with animals selectively grazing native, more palatable species.</p> <p>The High Threat Weeds Saffron Thistle and Bathurst Burr occur in low to moderate covers in this area and required spraying. St Barnaby's Thistle is also prolific in the woodland patch with low abundances of White Horehound.</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to woodland areas. > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > High Threat Weeds: Bathurst Burr and Saffron Thistle occur in low to moderate covers. > Weeds: St Barnaby's Thistle and White Horehound. > Timber collection. > Wildfire.
<p>Monitoring Points 10 to 14 Transect F2</p>	<p>Derived Grassland, prior cropping and pastureland.</p>	<p>Poor to moderate</p>	<p>Livestock grazing has not occurred in this area since 2019. The NRC was slashed in late 2024 resulting in lower cover of Phalaris and Cocksfoot. However, St Barnaby's Thistle has increased in dominance throughout this open area. Other prominent exotic</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to grassland areas.



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
			<p>species include Skeleton Weed and Phalaris which is regenerating between the thistles. The High Threat Weeds Saffron Thistle and St John’s Wort occur in low covers, as well as White Horehound. Native species persist in open areas between thistles and include Warrego Grass, Wallaby Grass and Slender Rat’s Tail Grass. The native species richness has decreased from 47% richness in 2024 to 38% in 2025 due to over competition from exotic species.</p> <p>Vegetation islands in the NRC were planted with native trees and shrubs in July 2022. These predominantly occur in good condition, however those plantings in proximity to transects B1 and F2 occur in poor condition due to kangaroo damage which has displayed tree guards, stakes and jute matting. Planting maintenance is an ongoing activity throughout the year.</p>	<ul style="list-style-type: none"> > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > High Threat Weeds: St John’s Wort and Saffron Thistle in low covers > Weeds: White Horehound and regenerating Phalaris and Cocksfoot > Tree guards around new plantings require maintenance. > Wild-fire impact. > Loss of young trees by neglect, kangaroo damage, drought or fire.
Monitoring Points 15 to 19 Transect L1	Derived Grassland, prior cropping and pastureland. Revegetation area.	Moderate	<p>Livestock grazing has not occurred in this area since 2019. This area contains moderate covers of native species including <i>Austrostipa</i> spp., Wallaby Grass, Red Grass, Wheatgrass and Slender Rat’s Tail Grass. Exotic species persist between the plantings and include St Barnaby’s Thistle, Phalaris, Flaxleaf Fleabane, Lamb’s Tongue and the High Threat Weeds Saffron Thistle and St John’s Wort which require spraying. Weed species cover has significantly changed in recent years and coincides with the timing of slashing. Weed cover had decreased from 75-100% in 2023 to 5-25% in 2024, however has increased to 25-75% in 2025.</p> <p>This transect is heavily impacted by kangaroo movement following the boundary fence line. Most trees have established beyond the height of interference by kangaroos, however lower shrubs and</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to grassland areas. > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > High Threat Weeds: St John’s Wort and Saffron Thistle > Wild-fire impact.



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
			<p>2022 plantings continue to be impacted. Kangaroo movement has also resulted in the displacement of tree guards, stakes and jute matting around recent plantings which is regularly monitored throughout the year. Tree guards should be removed from trees >1 m tall to prevent inhibited growth.</p>	<ul style="list-style-type: none"> > Impacts on future revegetation areas through low maintenance of establishing trees and shrubs. (i.e. watering young trees during dry-stress periods, clearing dense grass/thistle from tree lots during establishment/emergent phase, re-erecting fallen guards and stakes). > Loss of young trees by neglect, kangaroo damage, drought or fire.
<p>Monitoring Point 20 Transect B1</p>	<p>Derived Grassland. Perimeter Bund Revegetation area.</p>	<p>Poor</p>	<p>Livestock grazing has not occurred in this area since 2019. Bund 1 was slashed in 2022 and 2023. However, annual slashing is recommended due to the dominance of Phalaris which is inhibiting the growth of other species. White Horehound, Paspalum, Stink Grass, Wild Oats and St Barnaby's Thistle, persist in the occasional open spaces. Native species cover continues to increase from one species (Warrego Grass) in 2024 to five species (Warrego Grass, Slender Rat's Tail Grass, Panic Grass, Grassland Wood-sorrel and Swamp Dock) in 2025.</p> <p>The area north of Bund 1 was slashed in late 2024 and mid-2025 and has been dominated by the natives Red Grass and Slender Rat's Tail Grass. Unlike 2023, when this area was dominated by St John's Wort, the High Threat Weed is now rarely present.</p> <p>The growth of established trees (planted as seedling tubestock in late winter 2016) is being hindered by the presence of tree guards and stakes which require removal. Trees and shrubs planted in January 2022 predominantly occur in moderate condition, however, continue to be impacted by kangaroo dispersal across Bund 1. Tree guards are regularly monitored and reattached throughout the year.</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to grassland areas. > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > Continuing presence of Phalaris, St Barnaby's Thistle and White Horehound. > High Threat Weed: Paspalum occurs in moderate abundances and St John's Wort occurs in low abundances. > Wild-fire impact. > Impacts on future revegetation areas through low maintenance of



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
				<p>establishing trees and shrubs. (i.e. watering young trees during dry-stress periods, clearing dense grass/thistle from tree lots during establishment/emergent phase, re-erecting fallen guards and stakes).</p> <ul style="list-style-type: none"> > Loss of young trees by neglect, kangaroo damage, drought or fire.
<p>Monitoring Point 21 Transect L2</p>	<p>Derived Grassland, prior cropping and pastureland. Revegetation area.</p>	<p>Moderate</p>	<p>Livestock grazing has not occurred in this area since 2019. The NRC was slashed in late 2024 and mid-2025 resulting in lower cover of Phalaris and Cocksfoot. However, the cover of other exotic species (Skeleton Weed, St Banaby's Thistle, Flaxleaf Fleabane and White Horehound) has increased. The High Threat Weeds St John's Wort and Saffron Thistle occur in low to moderate abundance and require spraying. Despite the high weed cover (predominately 50-75%), native grasses such as Slender Rat's Tail Grass, Red Grass, Wallaby Grass, Weeping Grass and Speargrass continue to regenerate between thistles. Ongoing, annual slashing is recommended to encourage native groundcover recovery.</p> <p>Despite early losses and damage to tree guards, most trees (planted in July 2015) have established beyond the height of interference by kangaroos, and the removal of tree guards and stakes is required for most established trees to prevent inhibited growth. Some eucalyptus regeneration has occurred since 2021, while isolated Acacia species (direct seeded in 2010) removed by grazing stock in 2019 are recovering.</p> <p>The adjacent tree lot (SB-NRC) was planted in July 2015 and isolated <i>Acacia</i> spp. were planted in 2010. Despite early losses and damage to tree guards, individuals continue to recover with foliage cover increasing each year. These plantings occur in</p>	<ul style="list-style-type: none"> > Overgrazing and compaction if grazing management is reintroduced to grassland areas. > Impact by kangaroos on the recruitment and establishment of native species and the further establishment of weed species. > Poorly timed or managed spraying and slashing events. > High Threat Weeds: St John's Wort and Saffron Thistle. > Weeds: St Barnaby's Thistle occurs in high abundances while White Horehound is less common. > Wild-fire impact. > Impacts on future revegetation areas through low maintenance of establishing trees and shrubs. (i.e. watering young trees during dry-stress periods, clearing dense grass/thistle from tree lots during



Monitoring Point	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
			<p>moderate condition. However, some tree guards, stakes and jute matting have been displaced and require maintenance.</p>	<p>establishment/emergent phase, re-erecting fallen guards and stakes).</p> <ul style="list-style-type: none"> > Loss of young trees by neglect, kangaroo damage, drought or fire.
<p>Monitoring Point 21 Aboriginal Scarred Tree</p>	<p>N/A – Scarred Tree</p>	<p>Moderate</p>	<p>Upper limb loss in December 2016. No further crown damage in last monitoring year. Tree health remains stable. A new gate barrier was erected in 2021 as a buffer zone around the scarred tree. A fabric protective screen (erected between June 2022 and February 2023) has been affixed to the fence to deter digging animals.</p> <p>A very small amount of rot has degraded the dead-wood within the scar on the eastern side.</p> <p>No detrimental damage resulting from animals, insects, or storms has occurred in the past monitoring year.</p> <p>On observation in 2024 the loss of a large limb on the south-eastern facing side of the tree is likely to occur during a large weather event. There has been no changes to the scar since 2024.</p>	<ul style="list-style-type: none"> > Dimensions and physical attributes of tree and scar recorded annually. > Fire threat, potential for small animal damage and insect attack, storm damage, undermining by rabbits, > Storm damage threat to old eucalypts.



CONSERVATION VALUES

	Conservation Values noted in Agreement and its significance	Current condition	Current and emerging threats	Level (<i>severe, high, moderate or low</i>) and extent (<i>throughout, widespread, scattered or localised</i>) of threats	New findings; any other relevant information.
Native vegetation	Box Woodland and Derived Grassland	Poor to Moderate	<ol style="list-style-type: none"> 1. Weed infestation (i.e., St John's Wort, St Barnaby's Thistle, Saffron Thistle, White Horehound and Bathurst Burr) 2. Tree dieback 3. Loss of natural and planted young trees and shrubs 4. Low maintenance of tree guards 5. Ongoing kangaroo population presence - continued and repetitive use of kangaroo camps 6. Rubbish from resource recovery centre 	<ol style="list-style-type: none"> 1. Moderate to high threat (scattered and localised) 2. Low (localised) 3. Moderate (scattered) 4. Moderate (throughout) 5. High (widespread) 6. Low (localised) 	<p>Livestock grazing was removed from the site in 2019. The impacts of grazing can still be seen in some areas, particularly the western remnant woodland which is slowly recovering native groundcover species in open areas. Exotic species (St Barnaby's Thistle and White Horehound) remain dominant in most woodland areas. Ongoing slashing activities have been successful in reducing the cover of Phalaris and Saffron Thistle. However, spot-spraying is required to target Bathurst Burr and St John's Wort which are scattered throughout the site. Slashing continues to have an overall positive effect on reducing exotic groundcover and increasing opportunities for native species regeneration (Wallaby Grass, Speargrass, Slender Rat's Tail Grass and Red Grass).</p> <p>Thunderstorms in late 2024 and early 2025 resulted in mass limb loss across the site, particularly the western remnant woodland near the southern dam and the far eastern remnant woodland near Euchareena Road.</p> <p>Many plantings have experienced damage due to the movement of kangaroos throughout the site. Plantings on the conservation area are regularly</p>



	Conservation Values noted in Agreement and its significance	Current condition	Current and emerging threats	Level (<i>severe, high, moderate or low</i>) and extent (<i>throughout, widespread, scattered or localised</i>) of threats	New findings; any other relevant information.
					<p>monitored and tree guards are maintained throughout the year.</p> <p>The local population of kangaroos continues to be an ongoing management issue and OCC was granted permission to undertake a conservation cull of up to 125 kangaroos in late 2024. During the 2025 fieldwork 350 kangaroos were observed in remnant woodland and Bund 1 and LA1 continue to serve as camps and thoroughfares between the site and surrounds.</p> <p>Rubbish from the recovery centre predominately accumulates along the operational area fenceline in the western remnant woodland.</p>
EECs	White Box, Yellow Box, Blakely's Red Gum CEEC	Poor to Moderate	<ol style="list-style-type: none"> 1. Weed infestation (i.e., St Barnaby's Thistle, Saffron Thistle, St John's Wort, Bathurst Burr, Serrated Tussock and White Horehound) 2. Tree dieback 3. Declining regeneration 4. Poor recruitment and revegetation 	<ol style="list-style-type: none"> 1. Moderate to high threat (scattered and localised) 2. Low (localised) 3. Moderate to high (scattered to widespread) 4. Low (scattered) 5. High (widespread) 	<p>Livestock grazing was removed from the site in 2019. The impacts of grazing can still be seen in some areas, particularly the western remnant woodland which is slowly recovering native groundcover species in open areas. Exotic species remain dominant in most woodland areas, particularly St Barnaby's Thistle and White Horehound. Low to moderate covers of Saffron Thistle (R2, C1, C2, F1, F2, L1 and L2), St John's Wort (R2, F2, L1 and L2), Bathurst Burr (C1 and F1), Paspalum (C2 and B1) and Serrated Tussock also occur throughout the EEC. Ongoing spot treatment of these weeds is required.</p>



	Conservation Values noted in Agreement and its significance	Current condition	Current and emerging threats	Level (<i>severe, high, moderate or low</i>) and extent (<i>throughout, widespread, scattered or localised</i>) of threats	New findings; any other relevant information.
			5. Ongoing kangaroo population presence		<p>Thunderstorms in late 2024 and early 2025 resulted in mass limb loss across the site, particularly the western remnant woodland near the southern dam and the far eastern remnant woodland near Euchareena Road.</p> <p>Natural regeneration continues to occur particularly in open areas of the eastern remnant woodland, south and west of the northern dam. Recruitment also occurs in the southern remnant woodland.</p> <p>The local population of kangaroos continues to be an ongoing management issue and OCC was granted permission to undertake a conservation cull of up to 125 kangaroos in late 2024. During the 2025 fieldwork 350 kangaroos were observed in remnant woodland and Bund 1 and LA1 continue to serve as camps and thoroughfares between the site and surrounds.</p>
Threatened fauna	Brown Treecreeper, Koala, Large Bent-winged Bat, Superb Parrot, Grey Headed Flying Fox.	Moderate	<ol style="list-style-type: none"> Loss of hollows due to storm events and tree die-back Competition for nesting and foraging resources by pest species 	<ol style="list-style-type: none"> Low to Moderate threat Widespread 	<p>Superb Parrots have been regularly recorded on site and there is likely to be a resident and transient population. Superb Parrots were observed during site visit in June 2021 and have been recorded in the 2025 Property Inspection Report.</p> <p>It is recommended that targeted threatened fauna surveys are undertaken within the associated survey period (as outlined in the BioNet</p>



	Conservation Values noted in Agreement and its significance	Current condition	Current and emerging threats	Level (<i>severe, high, moderate or low</i>) and extent (<i>throughout, widespread, scattered or localised</i>) of threats	New findings; any other relevant information.
					Threatened Biodiversity Database Collection) to improve understanding on which threatened species are utilising the site for breeding and/or foraging. This would inform future management actions and recommendations.
Threatened flora	None listed in Agreement	-	-	-	-
Aboriginal Cultural Heritage	Scarred Tree	Moderate	1. Wild-fire 2. Dieback	1. Low threat 2. Localised	Aboriginal Heritage Information System; Molong ST1, Site ID 44-1-0080
Research/education	None listed	-	-	-	-
Other	-	-	-	-	-



MANAGEMENT ISSUES	Describe the Issue (Short description of current extent of impacts, new sightings and any other relevant information)	Description of planning and implementation of control measures being and to be undertaken, and duration
<p>Weeds (where applicable, infestation can be given as a % of total vegetation).</p>	<p>Moderate, isolated to widespread weed infestations remain throughout the site. The very dry years during 2019/2020 growing period, combined with grazing by domestic stock and kangaroos has impacted heavily on less robust pasture species and natives. Ongoing slashing continues to reduce exotic cover overall. However, infestations of St Barnaby's Thistle have become more prominent in the 2025 monitoring year as this species replaces exotic tussock grasses such as Phalaris and Cocksfoot.</p> <p>Monitoring plots contained the following weed species:</p> <ul style="list-style-type: none"> > R1: St Barnaby's Thistle (40%), and low- moderate covers of White Horehound, Phalaris, and Skeleton Weed. > R2: St Barnaby's Thistle (45%), Skeleton Weed (15%), and low-moderate covers of Saffron Thistle, St John's Wort, White Horehound and Phalaris. > C1: St Barnaby's Thistle (65%) and White Horehound (5%), and low-moderate covers of Saffron Thistle, Skeleton Weed, Phalaris and Bathurst Burr. > C2: White Horehound (90%), and low-moderate covers of Soft Brome, Spear Thistle, White Horehound, Paspalum and Phalaris <p>The afore mentioned weeds are prominent in the following areas:</p> <ul style="list-style-type: none"> > St Barnaby's Thistle: Throughout the conservation area > White Horehound: western remnant woodland and the western extent of the eastern remnant woodland, particularly under trees. 	<p>No grazing is to occur throughout the duration of the Five Year Action Plan (2020-2025) in any area of the site.</p> <p>Slashing has occurred for three consecutive years throughout the conservation area to reduce Phalaris cover. This has been successful, however the St Barnaby's Thistle has increased. Slashing has occurred in access tracks, open areas and remnant woodland (where accessible) SRC, NRC and LA1. Ongoing slashing (as per the Rehabilitation Plan Works Schedule) is recommended to maintain reduced covers of weed infestations and provide opportunities for native groundcover.</p> <p>Spot spraying of weeds occurred July 2025, in preparation for the upcoming plantings in late August or early September. Spot treatment is recommended for St John's Wort, Bathurst Burr, White Horehound, Serrated Tussock and Saffron Thistle which predominately occur in remnant woodland where slashing is inaccessible. Control when weeds are actively growing and prior to seed set. Only herbicides that are registered in NSW for the control of targeted species are to be applied in accordance with the label and registered off label use.</p> <p>The 2025 Property Inspection Report recommends an annual inspection targeting Serrated Tussock, St John's Wort and White Horehound.</p> <p>Continued monitoring of problem weed areas, especially after slashing occurs.</p>



MANAGEMENT ISSUES	Describe the Issue (Short description of current extent of impacts, new sightings and any other relevant information)	Description of planning and implementation of control measures being and to be undertaken, and duration
	<ul style="list-style-type: none"> > Phalaris, Paspalum, Serrated Tussock and Saffron Thistle: scattered throughout the site in low covers, however Bund 1 is dominated by Phalaris due to inaccessibility for slashing. > Skeleton Weed: Scattered throughout the site in low covers but higher covers occur in the southern-extent of the NRC near L2. > St John’s Wort: Scattered throughout the site in low covers but higher covers occur in the NRC. > Bathurst Burr: Scattered throughout the eastern and western remnant woodland in proximity to Kangaroo camps. <p>The abundance and cover of dominant weeds (particularly St Barnaby’s Thistle) has generally increased throughout the site since 2024 monitoring. It is recommended that regular slashing is continued and spot treatment is increased to target High Threat Weeds.</p> <p><i>Nassella trichotoma</i> (Serrated Tussock) was not observed during the March 2025 field investigations. This species was identified in the SRC and western remnant woodland within the Property Inspection Report.</p>	
<p>Pest Animals</p> <ul style="list-style-type: none"> > Feral > Domestic > Native 	<p><u>Feral:</u> Resident rabbit populations remain low on the site with no new warrens or refuges identified. Low level rabbit activity still exists in the remnant woodland, Foxes were not observed during site visits. However, they are expected to occur due to access to food waste and rubbish.</p> <p><u>Domestic:</u></p>	<p>According to the Revegetation Plan Works Schedule, feral animal monitoring is to occur bi-annually in Spring and Autumn</p> <p><u>Feral:</u> Rabbit populations should be monitored and any warrens destroyed. Fox numbers should be monitored and any increased activity within the ERRRC compound addressed. Access holes under the compound fence should be regularly located and repaired.</p> <p><u>Native:</u></p>



MANAGEMENT ISSUES	Describe the Issue (Short description of current extent of impacts, new sightings and any other relevant information)	Description of planning and implementation of control measures being and to be undertaken, and duration
	<p>No domestic cats or dogs were observed during the March 2025 site visit are unlikely to occur due to the location of the site away from urban areas.</p> <p><u>Native:</u></p> <p>The local population of kangaroos continues to increase, particularly in the remnant woodland which serve as camps and thoroughfares between the site and surrounds. During vegetation surveys in March 2025, approximately 50 kangaroos were observed in the western remnant woodland, while 300 were observed in the eastern remnant woodland. The local population of kangaroos continues to be an ongoing management issue and OCC was granted permission to undertake a conservation cull of up to 125 kangaroos in late 2024.</p> <p>The impact of kangaroos on plantings on the site is considered a moderate to high risk due to the ongoing displacement of tree guards and herbivory damage to plantings in the NRC and SRC, including LA1.</p>	<p>The local kangaroo population is monitored throughout the year. BCT and OCC also consult regularly to determine the impacts and further actions (i.e., culling). The local kangaroo population remains high with several hundred remaining on the site. In Spring 2025, a drone survey will be undertaken to assess current kangaroo numbers and determine if further culling will be required.</p> <p>Kangaroos and wallabies observed to be trapped within the fenced compound should be allowed to escape through opened perimeter fence gateways. All gates within the Conservation Area are to remain open to allow for dispersal of macropods throughout the site.</p>
Natural regeneration	<p>Saplings resulting from natural recruitment within woodland communities were interfered with by stock during dry periods (2019/2020) when groundcover was reduced by grazing. Isolated saplings were subject to higher levels of interference by grazing stock and kangaroos than the clusters of young trees, or trees located within woodland communities. Limited regeneration of these saplings has occurred in the past four years despite stock exclusion and an above average rainfall year. However, regeneration of native forbs (<i>Lomandra</i> spp. and <i>Sida</i> spp.) and grasses (<i>Austrostipa</i> spp., Red Grass, Slender Rat's Tail Grass, Wallaby Grass) continue to occur, especially across the northern extent of the</p>	<p>No grazing is to occur throughout the duration of the Five Year Action Plan (2021-2026) in any area of the site.</p> <p>Slashing has occurred for three consecutive years throughout the conservation area to reduce Phalaris cover. This has been successful, however the St Barnaby's Thistle has increased. Slashing has occurred in access tracks, open areas and remnant woodland (where accessible) SRC, NRC and LA1. Ongoing slashing (as per the Rehabilitation Plan Works Schedule) is recommended to maintain reduced covers of weed infestations and provide opportunities for native groundcover.</p>



MANAGEMENT ISSUES	Describe the Issue (Short description of current extent of impacts, new sightings and any other relevant information)	Description of planning and implementation of control measures being and to be undertaken, and duration
	<p>eastern remnant woodland and derived native grassland areas in the NRC and SRC.</p> <p>Natural recruitment of <i>Eucalyptus</i> spp. continues to occur on the site, particularly in the southern extent of the western remnant woodland and the open areas of the eastern remnant woodland, south and east of the northern dam.</p> <p>Scattered and isolated Acacias (direct seeded in 2010) across the NRC were removed or damaged by sheep during 2019/2020. These shrubs are continuing to recover and are now established beyond the height susceptible to kangaroo damage.</p> <p>Ongoing slashing continues to slowly decrease exotic species cover and encourage the natural regeneration of native grasses and forbs.</p>	<p>Spot spraying of weeds occurred July 2025, in preparation for the upcoming plantings in late August or early September. Spot treatment is recommended for St John's Wort, Bathurst Burr, White Horehound and Saffron Thistle which predominately occur in remnant woodland where slashing is inaccessible. Control when weeds are actively growing and prior to seed set. Only herbicides that are registered in NSW for the control of targeted species are to be applied in accordance with the label and registered off label use.</p> <p>Continued monitoring of problem weed areas, especially after slashing occurs.</p>
Fire Management	<p>Fuel loads across the broad open regeneration areas has decreased substantially in the last four years due to slashing. Slashing continues to gradually decreased the cover of exotic grasses and thistle, allowing native groundcover species to increase in abundance.</p>	<p>Implement and maintain a system of firebreaks around the enclosure and perimeter of the site.</p> <p>Maintain perimeter roads and tracks to prevent weed dominance.</p> <p>Access tracks are regularly slashed, including in January 2022, February 2023, Spring 2023 and Summer/Autumn 2024.</p> <p>Slashing has occurred across most of the Conservation Area (excluding LA2) for weed control and bushfire management, and in preparation for the upcoming Winter 2025 to Spring 2025 plantings (SRC).</p>
Revegetation	<p>Poor establishment and survival success within the existing tree-lots have been caused by a range of factors including low maintenance of tree guard, past overgrazing of stock, persistence of kangaroo camps, weed infestation/competition and poorly timed planting events (spring rather than autumn/winter).</p>	<p>During the 2024-2025 monitoring year, there was a focus on planting maintenance (removing dead plantings and replacing stakes and tree guards around remaining plantings in the southern rehabilitation corridor), particularly in September 2024, October 2024, June 2025 and August 2025. In September 2024, replacement plantings were undertaken in the SRC and supplementary plantings are expected to occur in late 2025.</p>



MANAGEMENT ISSUES	Describe the Issue (Short description of current extent of impacts, new sightings and any other relevant information)	Description of planning and implementation of control measures being and to be undertaken, and duration
		<p>During the March 2025 site assessment, it was observed that tree guard removal is still required for plantings > 1 m in Bund 1, LA1 and the southern boundary of the NRC as some tree guards are inhibiting the growth of plantings which are now established beyond the height of interference.</p> <p>Future plantings to be planned and managed so that monitoring/maintenance during establishment period is allocated. Response time to issues effecting survival needs to be rapid (e.g. watering before extreme dry stress of young trees sets in).</p> <p>The development of additional monitoring transects is recommended across the NRC and SRC vegetation islands to quantify the success rate of 2022-2025 plantings.</p>
Threatened species; endangered ecological communities, etc	Lack of ongoing and updated recording response of fauna to rehabilitation and remnant management areas.	<p>Any sightings of threatened species should be recorded and uploaded to BioNet Atlas. It is recommended that threatened species targeted surveys are completed to determine which threatened species are utilising the site for foraging and/or breeding. This may identify the presence of new threatened species not outlined in the Conservation Agreement and help inform management actions (i.e., the incorporation of nest boxes) and objectives in the future.</p> <p>Continue to monitor EEC through established photopoints to maintain a record of factors such as recruitment, die-back, storm damage and vegetation structure and composition.</p> <p>Undertake regular drone surveys to document management activities and the success of plantings overtime.</p> <p>Identification of any good-quality areas of native vegetation where regeneration and recruitment are occurring well. Such areas can be added to the monitoring program and used as a benchmark for rehabilitation sites.</p>



MANAGEMENT ISSUES	Describe the Issue (Short description of current extent of impacts, new sightings and any other relevant information)	Description of planning and implementation of control measures being and to be undertaken, and duration
Cultural Heritage Management	Potential degradation or damage to scar tree.	Annual measurement, summary and photographic record of the scar tree is recorded. Maintenance of the fencing to discourage digging animals. Metal fence is to be retained as a protective buffer zone.
Visitor Impact Management	Not applicable to revegetation areas. Access tracks and roads used for management and monitoring purposes outside of compound areas.	Slash or spray weeds and overgrowth on access perimeter tracks.
Community Consultation and input into decision making.	-	-
Research/ Education programs	-	-
Other issues Litter Vehicle access	Scavenging birds and foxes continue to remove small food scraps and litter from the landfill and transport it to the nearby remnant woodland fringes. Winds and overland flows transport rubbish from the Resource Recovery Centre to the western remnant woodland.	Slash or grade perimeter tracks/firebreak. Slashing occurred in throughout 2025 to prevent the spread of weeds by vehicles and reduce bushfire risk. Collection of rubbish from the perimeter fence and from outside the fence line, particularly after windy periods to prevent the wider spread of rubbish. This was not documented for the 2024-2025 monitoring year. Wherever possible, restrict access by vehicle to existing tracks and roadways. If access is made off-track within woodlands or grassland areas, do not repeat-follow the wheel tracks. This is to avoid ground compaction and establishment of any new trails or stock pads.



WORKPLAN TO ADDRESS MANAGEMENT ISSUES

Action to be completed or ongoing action (discuss on site and where necessary confirm details later)	Description	Cost and possible funding sources	Completion Date	Responsibility
Revegetation	Refer to Revegetation Plan	Refer to Revegetation Plan	July 2026	OCC
Weed Control	Refer to 5 Year Action Plan	Refer to 5 Year Action Plan	July 2026	OCC
Pest Species Control	Refer to 5 Year Action Plan	Refer to 5 Year Action Plan	July 2026	OCC
Grazing Management	Refer to 5 Year Action Plan	Refer to 5 Year Action Plan	July 2026	OCC





APPENDIX H

ERRRC 5-YEAR WORKS ACTION PLAN



Five-Year Works Action Plan

Zones include the Northern Rehabilitation Corridor (northern vegetation islands and Southern Boundary of Northern Rehab Corridor) and the Southern Rehabilitation Corridor (southern vegetation islands and Landscape Area 1 and 2) (*Figure 1*).

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
Stock Exclusion and Fencing (<i>Figure 3</i>)	<i>High diversity and cover of native plants in the ground layer</i>	<i>All</i>		<i>Stock excluded from Conservation Area</i>	<i>Increase in native species diversity and cover; decrease in exotic species cover</i>	<i>For duration of Five-Year Works Action Plan</i>	<i>Increase in cover of diversity native trees and shrubs in all zones.</i>	Property manager (OCC) responsible for ensuring stock exclusion. Environmental Consultant to conduct monitoring.
	<i>Wildlife-fence collisions reduced to zero</i>	<i>All</i>		<i>Some interior fencing replaced and removed; top barbs removed from existing fencing</i>	<i>One section of fence replaced with wildlife-friendly fencing; top barbs removed from existing fencing</i>	<i>For duration of the CMP Agreement.</i>	<ol style="list-style-type: none"> <i>1. 360 m of fencing along the northern extent of the Southern Rehabilitation Corridor is to be replaced with wildlife friendly fencing (Figure 3).</i> <i>2. Fencing replaced within duration of Five-Year Works Action Plan and old wire removed from site (Figure 3).</i> <i>3. Top barb removed within first two years of Five-Year Works Action Plan and barbed wire taken off site (Figure 3).</i> 	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
							4. All gates within the North Rehabilitation Corridor are to remain open to allow for wildlife dispersal throughout the site.	
Weed Control	<i>Low cover/abundance of High Threat Weeds</i>	<i>All</i>	<i>Targeted weed control</i>		<i>Reduction in cover of weed species.</i>	<i>For duration of the CMP Agreement. Spring and Autumn visit by property manager.</i>	<ol style="list-style-type: none"> 1. Spot spraying to occur prior to tubestock planting 2. Slashing to occur across open areas, excluding the grazing exclosures (Figures 1-3), to maintain native groundcover species. 3. Application of mulch and jute matting to all vegetation islands, landscape areas, Bund 1 and the Southern Boundary of the Northern Rehab Corridor. 4. Control when weeds are actively growing and prior to seed set. 5. Only herbicides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use 6. Target for the Rehabilitation Corridors is reduction of weed species to less than 50% cover. 	Property manager (OCC)
Relevant Weeds								
	Saffron Thistle		<i>Bi-annual</i>					

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
	<p><i>(Carthamus lanatus)</i></p> <p>Yellow Star-thistle <i>(Centaurea solstitialis)</i></p> <p>Phalaris (<i>Phalaris</i> sp.)</p> <p>Bathurst Burr <i>(Xanthium spinosum)</i></p> <p>St John's Wort <i>(Hypericum perforatum)</i></p>		<i>control treatment & monitoring.</i>		<i>Ensure area of weed cover does not increase in size.</i>	<i>For duration of the CMP Agreement</i>	<p>1. <i>Control when weeds are actively growing and prior to seed set.</i></p> <p>2. <i>Only herbicides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use</i></p> <p>3. <i>Continue with current weed management occurring bi-annually in Spring and Autumn</i></p>	Property manager (OCC)
Feral Animal Control	<i>Low occurrence and impact of feral animals: cat, fox, rabbit, goats, pigs (and other species as they are detected)</i>	<i>All</i>	<i>Control and monitor for pest species bi-annually or as required; integrate with neighbours' programs. Continue with</i>		<i>Reduction in occurrence of feral animal species.</i>	<i>For duration of the CMP Agreement</i>	<p>1. <i>Only pesticides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use.</i></p> <p>2. <i>Treatment of pests and euthanasia to be in accordance with relevant legislation and guidelines: Euthanasia https://pestsmart.org.au/methods-of-euthanasia/ and Animal welfare codes:</i></p>	Property manager (OCC). Consult Local Land Services

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
			<i>established program.</i>				<i>https://pestsmart.org.au/animal-welfare/humane-codes/ 3. Use of Firearms must comply with relevant legislation.</i>	
Erosion Control	<i>Healthy ground-cover and stable slopes; non-incising gullies</i>	<i>All</i>	<i>Monitor for sign of potential & real erosion sites every 6 months</i>		<i>Development of erosion points eliminated.</i>	<i>For duration of the CMP Agreement</i>	<i>Bi-annual surveys for evidence of erosion points. Monitoring to be adaptive e.g. post-storm/torrential rain and bushfire events, to minimise soil loss and facilitate detection of potential erosion points.</i>	<i>Property manager (OCC)</i>
Firewood Harvesting	<i>Sustain the presence of living trees, stags and material on ground</i>	<i>Remnant Woodland</i>	<i>Monitor for sign of firewood harvesting every 6 months</i>		<i>Elimination of firewood harvesting</i>	<i>For duration of the CMP Agreement</i>	<i>1. Bi-annual surveys for evidence of tree, stag or groundcover removal. 2. Installation of signage at site entrance points and access roads prohibiting collection of firewood on site.</i>	<i>Property manager (OCC)</i>
Fallen Timber Removal	<i>Sustain the presence of fallen limbs in understorey</i>	<i>Remnant Woodland</i>	<i>Monitor for sign of fallen limb removal every 6 months</i>		<i>Elimination of fallen timber removal</i>	<i>For duration of the CMP Agreement</i>	<i>1. Bi-annual surveys for evidence of fallen timber removal. 2. Installation of signage at site entrance points and access roads prohibiting the removal of fallen timber (Figure 3).</i>	<i>Property manager (OCC)</i>
Regenerating Fencing Remnants (Figure 2)	<i>Improve condition of fenced remnants</i>	<i>All</i>	<i>Active regeneration of fencing remnants and monitor</i>		<i>Improve condition of fenced remnants</i>	<i>For duration of the CMP Agreement</i>	<i>1. Elimination of stock grazing through maintenance of fencing. 2. Soil to be prepared by boring holes using auger in all vegetation</i>	<i>Property manager (OCC). Environmental Consultant to</i>

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
			<i>for presence and effects of feral animals and weeds</i>				<p><i>islands and Southern Boundary of Northern Rehab Corridor (Figure 2).</i></p> <p><i>3. Supplementary plantings to improve condition within remnants using seeds from on-site species where possible.</i></p> <p><i>4. Control when weeds are actively growing and prior to seed set. Only herbicides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use.</i></p> <p><i>5. Feral animal exclusion and removal through NSW registered pesticides; pest treatment, euthanasia, and firearm usage in accordance with relevant afore mentioned legislation (Feral Animal Control).</i></p> <p><i>6. Success of native grassland regeneration post grazing removal assessed by monitoring exclusion structures (one per zone) (Figures 1-3)</i></p>	conduct monitoring.
Installation of On-site Markers (Figure 3)	<i>Increase communications with</i>			<i>Utilisation of on-site markers for</i>	<i>Development of on-site markers</i>	<i>Year 1 of the Five-Year Works Action Plan</i>	<i>1. Install on-site signage to notify maintenance staff to the presence of high-quality remnants and the presence of a threatened species.</i>	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
	<i>maintenance staff</i>			<i>maintenance work</i>			<i>2. Signage to be installed at entrances along Euchareena Rd and Shades Creek Rd in first year of Five-Year Works Action Plan (Figure 3).</i>	
Clearing and Disturbance	<i>Protect site from further clearing and disturbance</i>	<i>All</i>	<i>Monitor for sign of clearing and disturbance</i>		<i>Prevention of future clearing and disturbance</i>	<i>For duration of the Agreement</i>	<p><i>1. On-site signage notifying public of private property and prohibition of firewood harvesting and fallen timber removal.</i></p> <p><i>2. Signage to be installed at entrances along Euchareena Rd and Shades Creek Rd in first year of Five-Year Works Action Plan (Figure 3).</i></p> <p><i>3. Supplementary plantings to improve condition within remnants using seeds from on-site species where possible.</i></p> <p><i>4. Survey for disturbance post-storm/torrential rain and bushfire events, identify need for and establishment of additional plantings for habitat regeneration.</i></p>	Property manager (OCC)
Remnant Connectivity (Figure 2)	<i>Increase connectivity within remnants</i>	<i>North and South Rehab Corridors</i>	<i>Revegetate site</i>		<i>Improve remnant connectivity</i>	<i>For duration of the Agreement. Initial planting in</i>	<i>1. Initial plantings and then supplementary plantings in Year 2 of Five-Year Works Action Plan to improve connectivity within remnants using cuttings or seeds</i>	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
						<i>August or September 2021. Secondary plantings in Autumn or Winter 2022.</i>	<i>from on-site species. Refer to Revegetation Plan and Figure 2. 2. Removal of non-native species, including noxious weeds, pasture species and environmental weeds, as well as garden escapes, olives and pines. 3. Removal of feral animals to prevent habitat loss and modification.</i>	
Mapping Remnants (Figure 3)	<i>Map remnant locations to assist activities</i>	<i>Remnant Woodland</i>	<i>Identify remnant locations</i>		<i>Utilisation of maps for remnant protection, rehabilitation or maintenance work</i>	<i>Within year 1 of Five-Year Works Action Plan</i>	<i>1. On-site signage to notify maintenance staff to the presence of high-quality remnants and the presence of a threatened species. 2. Signage to occur at entrances along Euchareena Rd and Shades Creek Rd (Figure 3).</i>	Property manager (OCC)
Groundcover Management	<i>Maintain adequate level of groundcover</i>	<i>North and South Rehab Corridors</i>	<i>Slashing of open areas</i>		<i>Reduce bushfire risk and overdominance of exotic plant species</i>	<i>For duration of the Five-Year Action Plan, occurring annually in Summer. Review outcome at</i>	<i>1. Minimum bi-annual slashing is to occur. This frequency may be increased at property manager's discretion based on monitoring of excessive biomass or the overdominance of exotic plant species. 2. Slashing is to occur in open areas to reduce weed cover and bushfire</i>	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	Required Minimum Standard – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
						<i>end of 5 years.</i>	<i>risk, as well as to assist regeneration of native grassland. 3. Slashing is to avoid grazing exclosures (one per corridor area) (Figures 1-3).</i>	



EPSC:28355 Prepared by: Michelle Lindsay Date: 15/6/2021 Directory: O:\Synergy\Projects\208\208212\Out\GIS\208212_Reveg_Action_Plans.dwg

LEGEND

- | | | |
|-------------------------------|--|---------------|
| Study Area | Southern Boundary of Northern Rehab Corridor | Bund 1 |
| ERRRC Operational Area | Vegetation Islands | Exlosures |
| North Rehabilitation Corridor | Landscaped Area | Access Gates |
| South Rehabilitation Corridor | | Access Tracks |



**Euchareena Road Conservation Area
Figure 1 - Site Layout**

Source: NSW Six Maps

Figure 1. Planned site layout of Euchareena Road Conservation Area, showing all zones where planting of native tree, shrub or groundcover species will occur during 5 Year Works Action Plan. Also shows location of access tracks, gates and planned grazing exclosures.



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LEGEND

- | | |
|--|---|
|  Study Area |  Exlosures |
|  ERRRC Operational Area |  Access Tracks |
|  Vegetation Islands |  Access Gates |
|  Contour Island Plantings | |



Euchareena Road Conservation Area
Figure 2 - Contour Island Plantings

Source: NSW Six Maps

Figure 2. Map showing the planned location and layout of contour island plantings within the Euchareena Road Conservation Area, for implementation via the 5 Year Works Action Plan.



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LEGEND

- | | | |
|----------------------------|-----------------------------------|-----------------------|
| Study Area | Retain Fencing
remove top barb | Gravel Under
Gates |
| ERRRC Operational Area | Replace Fencing | Exclosures |
| Areas for Soil Preparation | Gates to be Added | Signage |
| Access Tracks | Netting Under Gates | |



Euchareena Road Conservation Area

Figure 3 - Site Preparation

Source: NSW Six Maps

Figure 3. Map showing the site preparation that is required within the duration of the 5 Year Works Action Plan, to facilitate ongoing management of Euchareena Road Conservation Area



APPENDIX I

INDEPENDENT ENVIRONMENTAL
AUDIT (2024) ACTION PLAN



2024 ORANGE WASTE PROJECT (MP09_0025) INDEPENDENT ENVIRONMENTAL AUDIT ORANGE CITY COUNCIL RESPONSE

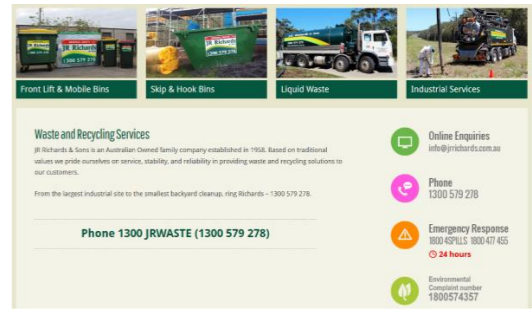
DEFINITIONS	
EPA	Environment Protection Authority - NSW
EPL	Environment Protection Licence
DPHI	Department of Planning Housing & Infrastructure
ERRRC	Euchareena Road Resource Recovery Centre
ORRRC	Ophir Road Resource Recovery Centre
OEMP	Operational Environmental Management Plan
OCC	Orange City Council
OWP	Orange Waste Project

NON-CONFORMANCE					
Condition Number (Non-Conformance ID)	Compliance Requirements	Independent Audit Finding	Independent Audit Recommendation	Proponent's Proposed Action/Action taken/Response (as applicable)	Proposed Action Due Date
Schedule 5, Condition 7c (NC1)	Schedule 5, Condition 7: <i>Unless the Director-General agrees otherwise, the Proponent shall:</i> <i>(c) minimise the tracking of mud and waste from the site on public roads;</i>	Site inspection verified that there is a sealed internal road network to mitigate risk of tracking mud. However, in the 2019 audit mud tracking onto Euchareena Road was observed. Council committed at that time to put in place measures to minimise the tracking of mud and waste by vehicles leaving the premises. In 2019, immediately following the audit Council provided photographic evidence of the cleaning of tracked mud at the ERRRC site. Council also advised that the OEMP would be updated in the Sept/Oct 2019 scheduled update to include provision for wheel wash down with the onsite water tanker when mud is prevalent on site to mitigate the tracking of mud. However, Section 4.13.1 of OEMP 2023 states that: "There is limited potential for vehicles to inadvertently collect mud and litter on the wheels as they proceed to and from the active landfilling area. Only heavy machinery used for stacking bales and placing and spreading bulky waste will enter the active landfilling area. Therefore, no operational controls for the cleaning of vehicles have been adopted." There was no evidence available during the 2024 site audit that measures were in place to wash mud from the wheels of vehicles although it is noted that the audit was undertaken in relatively dry conditions and so mud tracking was not observable. Council has created a Work Activity Procedure for cleaning muddy wheels when mud tracking is a risk, but that procedure was created in the week beginning 1/7/24 following conduct of the site audit.	Procedures need to be implemented for wheel washing at ERRRC during mud prevalent times. Section 4.13.1 of the OEMP should be revised and updated to reflect implementation of the relevant procedure.	Council will update the OEMP to include the new Work Activity Procedure (WAP) for cleaning muddy wheels when mud tracking is a risk and update Section 4.13.1 of the OEMP to reflect the procedures outlined in the WAP. This update will be toolboxed with staff so they are aware of the update and trained in the new WAP.	31 December 2024
EPL 20104, Condition O5.5 (NC4)	O5.5 <i>The licensee must take all practicable measures to minimise the tracking of mud and waste by vehicles leaving the premises.</i>	Section 9.6 JR Richards Procedural Documentation including transport code of conduct and Euchareena Road access procedure confirms that Council has procedures in place to comply with all the requirements of this condition. Auditor travelled to and from site on and off the heavy vehicle route. Heavy vehicles only observed on heavy vehicle route and all loads were covered. Incident 17, 12/10/22, incident 20, 19/10/22 and incident 24, 1/3/24 all involved truck movements during school bus hours.	Council needs to work with JR Richards to ensure that no heavy vehicles associated with the project use Euchareena Road during the regular school bus operations on that road.	Council has worked with JR Richards following the reported breaches and has amended the Transport Code of Conduct and its operations to mitigate the risk of utilising the Euchareena Road within the regular school bus operations. These amendments and procedures have been approved by the DPHI.	COMPLETE

MP09_0025 – ORANGE WASTE PROJECT – 2024 INDEPENDENT ENVIRONMENTAL AUDIT REPORT AND RESPONSE

1 August 2024

NON-CONFORMANCE					
Condition Number (Non-Conformance ID)	Compliance Requirements	Independent Audit Finding	Independent Audit Recommendation	Proponent's Proposed Action/Action taken/Response (as applicable)	Proposed Action Due Date
EPL 5956, Condition R4.2 (NC3)	R4.2 <i>The licensee or its employees or agents must notify the occurrence of all fires on the premises in accordance with conditions R2.1 and R2.2 as soon as practical after becoming aware of the fire.</i>	Records of incident reports sighted. Email correspondence provided by council show that EPA and NSW DPE were contacted within 7 days for three of the fires: incident 15 - 1 day, incidents 19 and 23 - 2 days. OCC advised auditor that incident 18 was not reported as it was a small bin fire with no likelihood of environmental harm. R4.2 states all fires must be reported.	Council must notify the occurrence of all fires on the premises in accordance with the timings in conditions R2.1 and R2.2.	Council will update the OEMP to reflect that all fires must be reported to the EPA. This update will be toolboxed with staff so they are aware of the update.	31 December 2024

OPPORTUNITIES FOR IMPROVEMENT					
Condition Number	Compliance Requirements	Independent Audit Finding	Independent Audit Recommendation	Proponent's Proposed Action/Action taken/Response (as applicable)	Proposed Action Due Date
EPL 20140 Condition G2.1a	G2.1 <i>The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:</i> <i>a) respond at all times to incidents relating to the premises; and</i> <i>b) contact the licensee's senior employees or agents authorised at all times to:</i> <i>i) speak on behalf of the licensee; and</i> <i>ii) provide any information or document required under this licence.</i>	JRR has 24 hr emergency hotline listed on https://www.jrrichards.com.au/ 1800 477 455. Auditor rang the number at 18:48 AEST 27/6/24. Went to voice mail and auditor left a message with auditor's name and number and clarifying that this was an audit check and for the recipient of the call to ring back. No return call received. JRR Regional Manager subsequently advised that the number which should be rung is the complaints line 1800 574 357 which can be found on the page https://www.jrrichards.com.au/documents/ This number was rung at 7:26am on Sunday 7/7/24 and was immediately answered.	The complaints number is not immediately obvious as the 24/7 contact line and is halfway down a secondary webpage rather than in a prominent location on the home page. It is recommended that this number be clearly visible on the home page without it necessarily being moved from its current position.	JR Richards have updated their website to ensure the Emergency Contact number is more prominent and viewed on the JR Richards home page: www.jrrichards.com.au 	COMPLETE
EPL 20140 Condition R1.5	R1.5 <i>The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date'). (August 30)</i>	Annual returns pertaining to the reporting periods of 1 July 2018-30 June 2019, 1 July 2019-30 June 2020, 1 July 2020-30 June 2021, 1 July 2021-30 June 2022 and 1 July 2022-30 June 2023 sighted. The reporting period commences on the 1 July, and lodgement is due on 29/8. The EPL summary on the EPA website shows the date the ARs were lodged, and all were lodged by the due date. Evidence shows that all lodgements were done using eConnect (EPA Online Services). JRR confirmed Annual Returns are submitted only using this method. However, the Condition states registered post must be used. As all have been submitted by the due date and duly accepted by EPA this has been assessed as compliant although technically it is not.	A variation of the EPL should be sought to update the lodgement method to permit the use of eConnect.	JR Richards & Sons acknowledge the issue with the NSW EPA moving to the new online reporting portal, which has resulted in misalignment with some of the original licence terminology issued by the NSW EPA. JR Richards will seek a variation during the next five-year risk-based licence review to update the lodgement method to permit the use of eConnect. The next EPL review is due 12 July 2027.	12 July 2027
Appendix 1A Statement of Commitments - Apiary Industry	SoC – Apiary Industry <i>Comprehensive training would also be undertaken for all personnel working on the Euchareena Road Site to ensure that the bale placement and covering of wastes within optimum periods is undertaken in accordance with the approved procedures.</i>	The condition for comprehensive training for bale placement and covering of wastes used to be covered under WAP 009- Landfill Disposal. Council advised that WAP 009 was changed to SWMS RRC004 – Landfill Disposal. Section 5.1.4 of the OEMP still states that “staff will be trained in relevant SOPs and WAPs which include SOP 09 - Compromised Bales Returned to ORRRC and WAP 009-Landfill Disposal.”	Any reference in the OEMP or other documentation which refers to WAP 009 should now be SWMS RRC 004 – Landfill Disposal.	Council will update the OEMP to ensure all references to WAP 009 should now be updated to SWMS RRC 004 – Landfill Disposal.	31 December 2024

OPPORTUNITIES FOR IMPROVEMENT																												
Condition Number	Compliance Requirements	Independent Audit Finding	Independent Audit Recommendation	Proponent’s Proposed Action/Action taken/Response (as applicable)	Proposed Action Due Date																							
Schedule 5 Condition 8	<p>Schedule 5, Condition 8 <i>Unless the Director-General agrees otherwise, the Proponent shall ensure that</i></p> <p>a) <i>the enclosed tunnel is a composting system that has:</i></p> <ul style="list-style-type: none"> • rigid side walls; • a top cover that in combination with the side walls constitutes a tunnel-like chamber; • a perimeter sealing system which effectively manages the emissions of odour from the enclosure; and • an enclosure that can be operated consistent with the requirements of the Apiculture Risk Management Plan. <p>b) <i>any receival and transfer area is to be:</i></p> <ul style="list-style-type: none"> • capable of being operated consistent with the requirements of the Apiculture Risk Management Plan; • capable of being operated consistent with the project requirements for odour management; and • constructed and operated such that leachate cannot escape from the area. <p>c) <i>windrow composting operations are managed in accordance with:</i></p> <ul style="list-style-type: none"> • AS 4454-2003: Composts, Soil Conditioners and Mulches (Appendix N) or the latest version of this standard; or • protective measures set out in the Composting & Related Organics Processing Facilities guideline. 	<p>Compost analysis results dated 4 August 2020 and 5 May 2022 were viewed. Analysis results showed concentration improvements in May 2022 for most parameters (e.g. pH, total organic carbon, calcium), however concentrations for ammonium nitrogen and zinc were not within the AS4454 guideline. Continuous improvement of these concentrations will be managed via the Molong Organics Operations Manual dated August 2023. It is noted that AS4454 is a guideline and that compliance with chemical parameters is not mandatory. It is further noted that the condition does not require compliance with the chemical parameters in the standard but rather that the management methods are in accordance with the standard. Finally, JR Richards has advised that "To address the levels of ammonium nitrogen, our compost is further turned after initial testing. This additional turning process enhances aeration and microbial activity, which helps in reducing the ammonium nitrogen levels to more acceptable ranges. This step ensures that by the time the compost is ready for final use, it meets or closely aligns with the desired quality standards." Taking all of the above into consideration it is the auditor's opinion that the composting operations meet the intent of this condition.</p>	<p>Look for ways to manage and improve concentrations of ammonium nitrogen and zinc contents in compost.</p>	<p>Council and JR Richards appreciate the acknowledgment of our composting results. JR Richards always ensure that our compost is fit for purpose and used appropriately. JR Richards will continue to manage and improve the concentrations of ammonium nitrogen and zinc in our compost through the methods outlined in the Molong Organics Operations Manual dated August 2023.</p>	<p>COMPLETE</p>																							
Schedule 5, Condition 24	<p>Sch 5, Condition 24 <i>The Proponent shall ensure that dust generated by the project does not cause additional exceedances of the criteria listed in Tables 1 to 3 at any residence on, or on more than 25 percent of any privately owned land surrounding the site.</i></p> <table border="1"> <caption>Table 1: Long term impact assessment criteria for particulate matter</caption> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>30 µg/m³</td> </tr> </tbody> </table> <table border="1"> <caption>Table 2: Short term impact assessment criteria for particulate matter</caption> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24 hour</td> <td>50 µg/m³</td> </tr> </tbody> </table> <table border="1"> <caption>Table 3: Long term impact assessment criteria for deposited dust</caption> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2 g/m²/month</td> <td>4 g/m²/month</td> </tr> </tbody> </table> <p><small>Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.</small></p>	Pollutant	Averaging period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³	Pollutant	Averaging period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month	<p>Air Quality Monitoring of the criteria in Table 1 and Table 2 of this condition requires Total Suspended Particulate (TSP) and PM₁₀ be monitored. Regularly, measuring suspended particulates is neither practical nor meaningful. Correspondence from Council to DPHI was sighted justifying that the revised Air Quality Monitoring Program approved by the Department on 13 June 2012 was considered adequate and that the ongoing dust deposition monitoring should be enough to satisfy the air quality monitoring requirements. There is no need for monitoring TSP and PM₁₀. Council has been waiting for a response from the Department until this time.</p>	<p>Council needs to follow-up with DPHI to resolve this matter.</p>	<p>Council will resubmit correspondence to DPHI to seek resolution on this matter</p>	<p>31 August 2024</p>
Pollutant	Averaging period	Criterion																										
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