Murrumbidgee Irrigation

Chemical Control Plan

August 2025

Revision History

Version	Date	Author	Revision Details
1	01/02/2016	Lindsay Golsby-Smith	Plan development
2	01/06/2016	Jeff Shaw	Review and update
3	01/08/2018	Lindsay Golsby-Smith	References to new Incident Management System. Added requirements for Ground Applicator Licence for weed spraying contractors. Update links to renewed permit
4	22/07/2019	Jeff Shaw	Update rate of chemical applications
5	13/05/2021	Lucy Smith, Joel Undy, Fern Dorricott	Update following EPL condition review and align with MI template. Added new s2.1 for guidelines, manuals, s9 showing EPL compliance. Updated Table 1. Updated Records Management s6. Updated s3 training with current requirements. Minor edits and updates throughout
6	08/08/2022	Ashlie Sleeman	Updated new chemicals used (Metsulfuron-Methyl and Valor under table 1)
7	16/08/2024	Ashlie Sleeman	Updated links (Pesticide act and factsheets). New logo and formatting. Updated details to MI's processes.
8	01/08/2025	Ashlie Sleeman	Updated links. Updated EPL requirements sections to align with changes made to the EPL.

Note: If significant changes are made to this plan, then a copy of the revised plan must be sent to the EPA for approval prior to implementation of the changes.

Document Authorisation

	Name	Position	Date
Endorsed by:	Cindy McDonald	Environmental Planning Manager	15/08/2025
Approved by:	Steven Porter	Asset Performance and Delivery General Manager	28/08/2025

© Murrumbidgee Irrigation Limited (MI)

The document contains material which is the proprietary information of MI. No part of this document may be reproduced or distributed without prior permission of MI. Unauthorised use of this document in any form whatsoever is prohibited.

Table of contents

1 Introduction

This Chemical Control Plan has been prepared in accordance with condition O3.4 of Murrumbidgee Irrigation's (MI) Environmental Protection Licence 4651.

MI has a responsibility to undertake weed control programs within the supply and drainage system and on MI land. The weed control programs assist with maintaining the operational efficiency of our infrastructure and to reduce the risk of weed species spreading outside our area of operations.

Weed control programs are developed and undertaken in accordance with the *Pesticides Act (1999)* and are implemented by accredited staff and/or contractors.

2 Chemical application

MI carries out a strategic weed management program to target both aquatic and terrestrial weed species.

2.1 Guidelines, manuals and advice

During the development of the program, MI relies on applicable industry and government guidelines, manuals, and handbooks as well as chemical supplier/ manufacturer's labelling and application guides. Where required, MI also consults with government staff, e.g., local Councils, NSW Department of Primary Industry (DPI), Local Land Services - Riverina, APVMA and other specialists, e.g., agronomists, Industry weed groups. The following references are regularly used:

- Weed Control Handbook (2025), NSW DPI
- Weed control and identification (nsw.gov.au) – DPI website page with relevant management guides and weed specific information.
- Riverina Regional Strategic Weed Management Plan 2013-2027
- DPI's NSW Weeds Action Program Guidelines 2020-2025
- NSW DPI WeedWise
- Using chemicals | Australian Pesticides and Veterinary Medicines Authority (apvma.gov.au)
- Pesticides (nsw.gov.au) – EPA website page on control of pesticide use.

2.2 Chemical use and methods

The targeted species and chemicals used by MI are summarised in *Table 1***Error! Reference source not found.**.

Table 1 – Chemicals applied for weed control in the MIA

Target species	Location	Chemical	Rate	Application method	Timing
Cumbungi Water couch Celery buttercup Johnson grass Nutgrass/ Umbrella sedge Phragmites Rushes Plantains Paspalum	Supply and drains	Glyphosate 510g/L	0.9% 6.3L/ha	Boom spray Handgun	All year
		Glyphosate 450g/L	1.1%		
		Glyphosate 360g/L	1.3%		
		Amitrole T 250g/L	2.3%		
Cat-tail	Drain	Glyphosate 510g/L	0.9% 6.3L/ha	Boom spray Handgun	All year

Target species	Location	Chemical	Rate	Application method	Timing
Common watermilfoil		Glyphosate 450g/L	1.1%		
		Glyphosate 360g/L	1.3%		
Perennial grasses Annual grasses Kikuyu Paterson's curse Bindweed Scotch thistle	Channel banks	Glyphosate 510g/L	0.9% 6.3L/ha	Boom spray Handgun	All year
		Glyphosate 450g/L	1.1%		
		Glyphosate 360g/L	1.3%		
Sagittaria Alisma	Drains/ supplies	Glyphosate 450g/L	1.1%	Boom spray Handgun	Summer
		Glyphosate 360g/L	1.3%		
Horehound	Drainage banks	Glyphosate 510g/L	0.9% 6.3L/ha	Boom spray Handgun	Summer
Bathurst burr	Channel banks/ easement	Glyphosate 510g/L	0.9% 6.3L/ha	Boom spray Handgun	Summer
		Glyphosate 450g/L	1.1%		
		Glyphosate 360g/L	1.3%		
Ribbon weed Floating pondweed Foxtail	Supply	Acrolein 950g/kg (Magnacide H)	15ppm 1.61L/ML	Boom/Drip	Nov-Mar
		Glyphosate 450g/L	1.1%	Boom Spray Handgun	All year
		Glyphosate 360g/L Dichlobenil	1.3% 2.9-3.9kg/ 10m2		
Prickly pear	Supply/ drains	Triclopyr 300g/L (Grazon)	0.5% 500mL/100L	Handgun	All year
General	Road corners	Simazine 900g/kg	10kg/ha	Boom spray Handgun	July
Rye grass (resistant trials)	Drain access	Haloxyfop 520g/L	0.1% 100mL/100L	Boom spray Handgun	Spring
Rye grass	Drain access	Parraffinic oil 582g/L Alkoxylated alcohol 240g/L	0.1% 100mL/100L	Boom spray Handgun	Spring
Alligator weed	Channel banks/ easement	Metsulfuron-Methyl 600g/kg	80g/ha	Boom spray	All year
Blackberry* Bitou bush Boneseed	Channel banks/ easement	Metsulfuron-Methyl 600g/kg	10g/100L +mineral crop oil (1L/100L)*Mineral	Handgun	All year

Target species	Location	Chemical	Rate	Application method	Timing
			oil only for blackberry 1g/L +Pulse penetrate (10mL/5L)	Gas gun	
Fennel	Channel banks/ easement	Metsulfuron-Methyl 600g/kg	10g/100L	Handgun	All year
Noogoora burr	Channel banks/ easement	Metsulfuron-Methyl 600g/kg	7.5g/100L	Handgun	All year
Paterson's curse	Channel banks/ easement	Metsulfuron-Methyl 600g/kg	15g/ha 5g/100L	Boom spray Handgun	All year
Trees	Channel access	Polyether modified polysiloxane 1020g/L (Sprinta)	0.1% 100mL/100L	Boom spray Handgun	All year
Barnyard grass Caltrop/ yellow vine Feathertop rhodes grass Fleabane Green summer grass Milk/ sow thistle Milkweed Summer grass	Channel banks/ drains	Flumioxazin 500g/kg (Valor)	560-700g/ha	See label	All year

2.3 Permit for the chemical control of Sagittaria and Alisma

MI holds a permit (PER89861) with the Australian Pesticides and Veterinary Medicines Authority (APVMA) for the use of higher concentrations of Glyphosate for the control of *Sagittaria platyphylla* and *Alisma lanceolatum*.

The permit can be viewed here: PER89861 (apvma.gov.au)

2.4 Pesticide control (Acrolein) order

This order authorises the use and possession of the restricted pesticide Acrolein. All the conditions of this control order can be found at the link below. MI engages an external contractor, with appropriate training and qualifications, to apply acrolein in MI's Area of Operations. MI have trained staff for the use of Acrolein; however, this is for work, health, and safety reasons only. No MI staff is required to apply Acrolein as part of their work duties.

Pesticide Control (Acrolein) Order 2016

3 Training and awareness

MI is committed to providing up to date training and professional development opportunities to all employees. MI staff that are required to apply chemicals for weed control are required to have the following:

- Australian Qualifications Framework Level 3 (AQF3), which includes:

- AHCCHM307 - Prepare and apply chemicals to control pest, weeds, and diseases, and
- AHCCHM304 - Transport and store chemicals

All weed spraying contractors are required to obtain a Ground Applicator Licence from the EPA. It is MI's responsibility to ensure that all contractors have this licence before they are contracted for weed spraying. Further information can be found at the EPA website link below.

https://www.epa.nsw.gov.au/your-environment/pesticides/compulsory-training-pesticides

MI's People and Culture team maintain training records, including required refresher courses. These are recorded as detailed in *Section 6* of this plan.

4 Notification procedures

In accordance with EPL conditions, MI follow the customer notification procedure (Works approval form in Laserfiche) in the instance that herbicide application is likely to cause a risk to human health or cause environmental harm when applied in or adjacent to water.

4.1 Risk assessment

Prior to MI using a new chemical for weed control, a risk assessment (Hazardous Chemical Risk Assessment Form) is to be completed and approved by the WHS advisor and Environmental Planning Manager.

As a pesticide user, MI must follow any notification requirement set out by APVMA and on all pesticide product labels and/or permits.

Herbicides are risk assessed based on their level of effectiveness whilst causing minimal harm to human health or the environment. If it is decided that a herbicide may pose a risk and there is no feasible lower-risk alternative, the Vegetation and Drains Lead will notify the Communications Coordinator where the application is taking place, and users in the vicinity will be notified in accordance with EPL requirements. The Vegetation and Drains Lead will also be responsible for ensuring signage is provided as required.

4.2 Acrolein usage

As acrolein is known to be harmful to human health and the environment, MI follows a strict procedure for the notification of potential users and the public for the application of Acrolein within supply channels. The notification procedure is in accordance with EPL 4651 Conditions O3.9 to O3.11 requirements and the chemical label.

- Potential users are notified at least seven days prior to treatment, which includes:
  - notification through SMS identifying location and date of application and Magnacide H factsheet
  - notice on MI's website with location and date of application
  - message on MI Connect ordering system
- Before application, warning notices are placed on priority channel structures to indicate the presence of chemical in the water. These notices remain in place until the 48-hour of restricted use has ended, or water testing shows the risk is acceptable.

4.3 Permit PER89861

In accordance with EPL conditions, if the application of herbicide under this permit is deemed to pose a risk to human health or the environment as a result of the risk assessment procedure (*Section 4.1*), potentially affected customers will be notified accordingly, and signage used.

5 Ordering and storage of chemicals

Chemical orders are placed via email to the rural supplier. Field Operators who are licenced for chemical transport under their AQF3 certification transport the chemical from the supplier to the depot. Alternatively, the supplier will deliver chemicals onsite to the depot. The chemical is then transferred into the designated storage area and the inventory is updated.

All chemicals are stored correctly at two secure locations:

- Leeton Depot
- Hanwood Depot

These storage facilities are accessible by authorised personnel only with sufficient access to allow easy loading and unloading of vehicles.

MI's depot storage facilities have the following:

- Well-ventilated and lit areas with fireproof cages or sheds where the chemicals are locked and stored.
- Highly visible warning signs to indicate to anyone attempting to enter the facility that chemicals are stored in this area. Each storage facility displays the relevant HAZCHEM warning signs.
- A fire extinguisher approved for chemical fires, and first aid equipment, including emergency eye wash and shower (maintained weekly).
- Emergency telephone numbers are also displayed.
- Soap and clean water are available in or close to the storage facilities for hand washing purposes.
- A spill kit containing a shovel, absorbent material and appropriate PPE is located within or close to the storage facility to contain any spillage.
- An up to date chemical storage register is maintained and safety data sheets (SDS) for all chemicals stored are readily accessible in the event of an emergency.

5.1 Disposal of containers

Herbicide containers are not re-used for any other purpose. Chemical containers are triple rinsed at the depots and disposed of at designated and licensed disposal sites.

5.2 Wash down and spill containment

MI has designated and bunded chemical mixing and wash-down areas. All wastewater from these areas at the Hanwood depot is diverted to a constructed wetland adjacent to the site. This wetland system provides a natural filtration system and evaporation basin, and together with dilution ensures any residual risk of chemicals is contained.

The Leeton Depot currently has a concrete hard stand area where chemicals are mixed. All spills or drips are cleaned up immediately to ensure no impact on stormwater drainage.

5.3 First aid

Specific first aid instructions regarding chemicals being used are located on all labels and within the Safety Data Sheets (SDS) which are available at the chemical storage areas and in all spray vehicles. Suitable first aid kits are in all MI vehicles and chemical storage areas. They are restocked if products are used and regularly checked.

In addition, emergency showers and eye wash equipment are available at each chemical storage area.

6 Record management

All chemical application records are kept in accordance with EPL 4651 and *Pesticides Regulation 2017.* Records are maintained in a database system (T1 CiAnywhere) that allows for easy accessibility, tracking and reporting.

Records for purchasing and chemical inventory are tracked and maintained via T1 CiAnywhere. Chemical labels and SDS will be reviewed and updated annually by the Vegetation and Drains Lead, with hard copies to be filed by the Vegetation & Pest Management Planning Coordinator. A reminder is also set up in Outlook for the Environmental Team.

MI retains records of all qualifications, training, and certifications for MI staff within our People and Culture team systems. Contractor qualifications are maintained in MI's Contractor Management System (RapidGlobal).

7 Incident and complaints management

Chemical containers are checked on a regular basis for residue or leaks and Safety Data Sheets (SDS) are readily available at each of the chemical storage facilities.

In the event of a major chemical spill, call '000' for response from NSW Fire Brigade/HAZMAT and the EPA are required to be notified. Our incident response procedure is outlined in the Pollution Incident Response Management Plan (PIRMP) on MI's website. Other minor spill incidents are covered under MI's Incident Management & Reporting procedure. Incidents are managed in MI's Incident Management System (Beakon).

Complaints are recorded in MI's customer complaints system (T1 CiAnywhere), which records the details of the complaint and what actions were taken in response. Complaints and enquiries can be made to our customer service team on (02) 6962 0200 or made in person at our Hanwood Office.

8 Alternative methods of weed management

MI is involved in industry-based projects focused on weed management and alternative methods to weed control. In addition, MI undertakes in-house trials to compare the effectiveness of different control measures. Alternative methods currently used for weed control or management include:

- Excavation of in-channel vegetation
- Slashing/mulching – where access is required, or line of sight is obstructed
- Grading – where access is needed, and vegetation has grown through silt
- Tilling – where access is required
- Biological agents – where applicable
- Physical removal – where chemical treatment is not the best practice

8.1 Desilting and de-weeding

Desilting and de-weeding are conducted throughout the year where silt build-up and/or weed infestations restrict water flow. It is not possible or desirable to use this method of weed control for all channels each year as it reduces the natural sealing of the channel bed, increasing the potential for groundwater accessions.

8.2 Water management

Channels are drained in some areas during winter shut down to assist with weed control and to allow for maintenance work. Several submerged weeds are sensitive to frosts and may die off before the channel is refilled.

Channels are also drained to facilitate the use of residual chemicals to retard germination rates of aquatic weeds. All residual chemicals are assessed for risk according to *Section 4.1*, and if necessary, customers are

notified accordingly, and signage is used. An external agronomist is engaged when relevant to ensure label compliance, and the Water Delivery team withhold and release water according to the withholding period as stipulated on the label. All customers affected by the water management actions are notified of potential outages and delivery delays.

8.3 Slashing/ mulching

Where access and weather permits, slashing/mulching is carried out as an alternative to chemical application, especially on access tracks. This method may promote growth on channel banks and access tracks, which can stabilise banks and compete with invasive species.

8.4 Research initiatives

MI is involved in Research and Development projects aimed at identifying best practice management for aquatic weed management. MI also undertakes trials from time to time to compare non-chemical and/or alternative chemical control methods and their effectiveness in managing weed growth.

9 EPL requirements

Table 2 details the relevant sections where the EPL conditions are covered in this plan.

Table 2 - EPL conditions and coverage under the chemical control plan

EPL O3 Process and management conditions	Plan section
Licensee to maintain a chemical control plan	This plan
O3.4 The licensee must maintain a chemical control plan. The chemical control plan must include the following:	
(a) details of all proposed chemical applications within the premises, including location, date, types and volumes of chemicals to be used, method of application and target species;	Section 2
(b) details of training undertaken by the employees involved in chemical application;	Section 3
(c) details of those mechanisms proposed to notify any occupier or user of treated land and waters of such treatment;	Section 4
(d) details of the manner in which used chemical containers are to be disposed of such that no pollution of waters occurs;	Section 5.1
(e) details of those measures to be employed to ensure that no pollution of waters occurs as a result of the washdown, service or repair of spray vehicles and equipment;	Section 5.2
(f) details of facilities used to store chemicals, including measures designed to contain spillages;	Section 5
(g) an assessment of alternative methods of chemical control for target species and justification for partial or total reliance upon chemical control.	Section 8
O3.5 Weed infestations may be treated only in accordance with best management practices as specified in the Department of Primary Industry's New South Wales Weed Control Handbook (2018) and the Department of Primary Industry's NSW WeedWise application or website.	Section 2.1
O3.6 The licensee must update and submit the updated chemical control plan to the EPA for approval if significant changes are made to the plan by the licensee.	Noted
O3.7 The licensee must comply with the terms of the updated chemical control plan once it has been approved by the EPA.	Noted
Storage of chemicals	Section 5
O3.8 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.	

Notification of intention to apply herbicides in or near water	Section 4
O3.9 When applying herbicide(s) in or near water in a manner that is likely to cause those waters to become a risk to human health or of harm to the environment, the licensee must take all reasonable steps to warn users of waters in the vicinity of the herbicide(s) application about any such risks. The licensee must erect a sign adjacent to affected waters that at a minimum: (a) is not removed until the water is safe for use; (b) is maintained to ensure it remains in place and is visible to the public until the water is safe for use; and (c) states at a minimum, in legible English, and in any other language as may be considered reasonably necessary: **WARNING** **Water may contain dangerous chemicals** **The public is advised not to use, drink or swim until further notice.** **For further information contact Murrumbidgee Irrigation Limited on 02 6962 0200**	
O3.10 In addition, the licensee must at least 7 days prior to the application of the herbicide(s) giving rise to the situation described at condition O3.9, give notification to any occupier of the waters or any occupier of land adjacent to the waters to be effected by the herbicide(s) application, of the licensee's intention to apply herbicide(s), which includes at a minimum the following details: a) what herbicide(s) is to be applied, b) when the herbicide(s) is to be applied, c) a warning not to use, drink or swim in the water until further notice, d) that further information can be obtained from the Licensee, and e) the licensee's name and contact phone number.	Section 4
O3.11 It is for the licensee to determine what other reasonable steps it may need to take to warn other water users of any risks to human health or of harm to the environment which may result from the application of herbicide(s) in or near waters and to prevent such injury or harm from occurring.	Section 4