

Greywater Reuse Policy

Mount Isa City Council

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1 Definitions

Greywater means wastewater from non-toilet plumbing fixtures such as washing machines, laundry sinks, baths, showers, basins and taps.

Greywater reuse means the irrigation of gardens and lawns with greywater. **Blackwater** means water that has been mixed with waste from the toilet. **Greywater**

diversion device means a diversion device that

- a) diverts greywater to a greywater irrigation area; and
- b) removes solids from greywater through a coarse filtering system; and
- c) automatically diverts greywater to a sanitary drainage if the device is not operating; and d) can be manually operated to divert greywater to a sanitary drainage

Greywater treatment plant means a treatment plant that collects, stores, treats, and disinfects greywater to the minimum standard identified in the Queensland Plumbing and Wastewater Code.

Greywater irrigation area means an area that is irrigated with greywater by way of surface or sub-surface irrigation.

Sub-soil irrigation means irrigating through a trench or a system of trenches buried at depth beneath the topsoil. This method of irrigation is usually associated with septic systems and water disposal rather than beneficial use. **This type of irrigation is not recommended as it is not the most efficient use of the water, unless plants with deep roots are watered.**

Sub-surface irrigation means irrigating through a system that is usually pressurised and installed between 100 mm and 150 mm below the ground, usually in grassed areas. The irrigation water is distributed through small-diameter perforated pipes or dripper lines and applied directly to the root zone at a control rate so that the plants can utilise the water. Adequate filtration is required to ensure pipe perforation or drip holes are not clogged with suspended solids in the irrigation water.

Covered surface drip irrigation means irrigating directly to the surface of the soil under a layer of mulch. The irrigation water is distributed under pressure from small diameter perforated pipes or dripper lines. This system is usually applied to plants and fruit trees.

Surface drip irrigation means irrigating with an exposed dripper that allows irrigation water to drip slowly to the roots of plants via narrow tubes that deliver water directly to the base of a plant. This type of irrigation is also known as trickle or micro irrigation.

2 Introduction

Water conservation is a high priority for Mount Isa. Mount Isa City Council is committed to the establishment of a greywater policy that provides guidance to homeowners wishing to conserve water through the reuse of greywater on gardens and lawns.

The reuse of greywater on gardens and lawns has many advantages, including the conservation of our drinking water resources. While being a valuable resource, greywater can also contain high levels of pathogenic microorganisms and chemicals, and therefore a level of caution is required when reusing greywater. This policy identifies how Mount Isa City Council will facilitate the reuse of greywater whilst ensuring the risks associated with reuse of greywater are managed, including minimising the risk of increased lead exposure.

This policy has also been developed to assist the Backyard Improvement Program, which encourages the Mount Isa community to reduce the amount of bare soil in back yards that are accessible to young children, thereby promoting a healthier lifestyle and reducing exposure to lead found in soils in and around Mount Isa.

This policy should be read in conjunction with the greywater Reuse Policy – Factsheet (Part 1) and Greywater Reuse Policy Factsheet (Part 2) – Technical Addendum.

3 Objective

To establish a policy that

- provides clear direction on the reuse of greywater on gardens and lawns
- identifies the obligations and responsibilities of homeowners wishing to reuse greywater
- ensures that the reuse of greywater does not increase the risk to public health, including exposure to lead.

4 Scope

This policy applies to the reuse of greywater for the irrigation of lawns and gardens. This policy does not apply to

- the reuse of greywater **within** a premises or dwelling
- the reuse of blackwater or greywater from a kitchen or dishwasher in a sewered area
- the reuse of greywater on Council owned verges

5 Reducing lead exposure

This policy provides for an alternative source of water to reduce the occurrence of bare soils in back yards and reduce exposure to dusts and soils that may be affected by lead. In allowing residents to reuse greywater, it is vital to ensure that the reuse of greywater will not increase exposure to lead.

Sewage wastewater monitoring indicates that in Mount Isa, lead occurs in sewage wastewaters in levels higher than the recommended health threshold for drinking water.

Whilst greywater is not the same as sewage wastewater, this gives an indication of the levels of lead that could occur in greywater (at present all household waters are discharged to the sewer).

When reusing an alternative non-potable source of water, the highest risk to public health is from accidental cross connections. This occurs when a pipe containing non-potable water (greywater) is accidentally connected to a pipe containing drinking water, resulting in direct ingestion of non-potable water. To reduce the risk of cross connections, Mount Isa City Council will not permit the reuse of greywater within a premise or dwelling.

Further exposure can occur during outdoor use by exposure to sprays and ponded water. To reduce the risk of exposure from outdoor reuse of greywater, untreated greywater will be permitted to be used only via subsurface irrigation and only treated

greywater water will be permitted to be surface drip irrigated. It should be noted that surface spray irrigation is not permitted under this policy.

An assessment of lead exposure is provided in Appendix 7, Greywater Reuse Policy Factsheet (Part 2) – Technical Addendum.

6 Policy

That the reuse of greywater for the irrigation of gardens and lawns will be permitted in accordance with the guidelines identified in this policy. This policy is accompanied by the following documents

- Greywater Reuse Policy – Factsheet (Part 1)
- Greywater Reuse Policy - Factsheet (Part 2) – Technical Addendum

7 Guidelines for greywater reuse

Under the Plumbing and Drainage Act 2002(PDA) and the Queensland Plumbing and Wastewater Code(QPW Code), all greywater use facilities consisting of either a greywater diversion device or greywater treatment plant, and greywater land application area or other end uses must be approved by council.

To manage greywater use effectively councils must:

- assess applications—consider all relevant issues when approving the installation or operation of a greywater diversion device or treatment plant, particularly environmental and health issues
- set approval conditions—specify specific conditions of approval to operate and maintain greywater diversion device or treatment plant
- monitor systems—undertake inspections and audits to make sure that homeowners comply with approval conditions
- communicate with homeowners— educate the community on the safe and appropriate use of greywater; improve understanding of their responsibilities, and describe the application process.

7.1 Approval Requirements

Council approval is required for

- installation of a greywater diversion system; and/or
- installation of an approved greywater treatment plant.

Council approval is **not** required for:

- Manual bucketing of greywater from shower or washing machine onto the lawn or garden; and/or
- Connection of one end of the flexible hose to a washing machine outlet and another end of the hose outside to pump out greywater onto the lawn or garden.

The ongoing reuse of greywater must comply with this policy, the QPW Code and all approval conditions. Compliance with this policy does not negate the requirements of any other relevant legislation.

7.2 Greywater diversion devices – untreated greywater

- Diversion devices are restricted to premises generating up to 3000 litres of greywater per day. A greywater treatment plant must be installed for premises generating more than 3000 litres per day.
- All greywater diversion devices must be certified under the Water Mark Product Certification Scheme before installation. All devices must hold the Watermark Level 2 Accreditation at a minimum.
- A licensed plumber must install all greywater diversion system.
- Homeowners are required to obtain a written approval from Council prior to installation of a diversion system.

Distribution of untreated greywater must be through the following types of irrigation systems:

- Sub-soil irrigation
- Sub-surface irrigation.
- Covered surface drip irrigation.

The area irrigated with greywater is known as the greywater application area. The size of this area depends on the volume of greywater produced by the household. Calculations for determining the size of a greywater application area are provided in Appendix 3 of the Greywater Reuse Policy Factsheet (Part 2) – Technical Addendum.

All irrigation systems must be designed to ensure that greywater is not applied at rates that exceed the absorption capacity of the soil. Homeowners may install their own irrigation systems providing these comply with the approved plans for the system. For further information, AS/NZS 1547:2012 outlines in details information on the design, installation and maintenance of subsurface and surface irrigation systems.

7.3 Greywater treatment plants – treated greywater

- All greywater treatment plants require approval under the PDA and must undergo stringent testing prior to approval being granted for greywater re-use.
- Treated greywater must be treated to the standards specified in the QPW code. QPW

code specifies the level of treatment required for a particular end use.

- Greywater treatment plants must be installed by a licensed plumber.
- Homeowners must obtain a written approval from Council prior to installation of a greywater treatment plant.
- Homeowners and businesses that install a greywater treatment plant must participate in Council's Greywater Audit Program. Fees may apply.

Distribution of treated greywater can be through the following types of irrigation systems, dependent on the level of treatment and the specifics of site to be irrigated:

- Sub-soil irrigation
- Sub-surface irrigation
- Covered surface drip irrigation
- Surface drip irrigation

7.4 Signage, pipe labels and tap colour requirements

- All outdoor taps that supply greywater must be fitted with removable tap handles.
Tap handles must not remain in place unless greywater is being used.
- Marking, labelling and signage of the greywater plumbing and irrigation systems must be in accordance with AS/NZ 3500 series and other Australian Standards.
- All distribution pipes for greywater systems – gravity feed irrigation or pressurised irrigation systems – must be coloured purple and clearly and permanently marked ‘WARNING: RECYCLED OR RECLAIMED WATER – DO NOT DRINK’.
- All pipes, pipe sleeves, identification tapes and outlets must be coloured purple in accordance with AS2700.
- All pipes, pipe sleeves and identification tapes must be marked with the following in accordance with AS1345: ‘WARNING: RECYCLED OR RECLAIMED WATER – DONOT DRINK’
- Greywater diversion components should be labelled: ‘WARNING: RECYCLED ORRECLAIMED WATER – DO NOT DRINK’.

7.5 Maintenance

All greywater diversion devices and greywater treatment plants must be maintained regularly and in accordance with manufacturer’s specifications and any conditions of approval.

Greywater treatment plants must

- Be maintained by an authorised service person in accordance with the manufacturer’s specifications.
- A minimum annual inspection is required to be conducted as part of the maintenance requirements.
- At each inspection a service report must be completed by the service person. The original shall be given to the owner, the duplicate forwarded to the Council and the triplicate retained by the service contractor.