Greywater Reuse Policy – Factsheet (Part 1)

Mount Isa City Council

1 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 drinking water resources. Whilst 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 factsheet provides advice on how to safely reuse greywater and reduce the risks associated with reuse of greywater, including minimising the risk of increased lead exposure.

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

1.1 What is greywater?

There are two types of wastewater created in a home:

1. **Greywater** is wastewater from non-toilet plumbing fixtures such as washing machines, baths, showers, basins and taps.
2. **Blackwater** is water that has been mixed with waste from the toilet. **The reuse of blackwater is not permitted under the greywater reuse policy**.

Note:

Wastewater from kitchens and dishwashers cannot legally be diverted to greywater systems in sewered areas in Queensland. In unsewered areas, kitchen wastewater must be discharged to an on-site sewerage facility or greywater treatment plant. In these circumstances the wastewater from a kitchen must be connected to a grease arrestor before diverting to the greywater treatment plant.

1.2 What is in greywater?

The quality of greywater generated by each household will vary significantly and will be influenced by the sources of greywater, the number of occupants, their age, health, products used (soaps, shampoos, detergents), as well as any other chemicals that may be added into greywater inappropriately, such as garden chemicals or solvents.

Greywater from bathroom (bath, basin and shower) may contain soaps, toothpaste, shampoos, hair and hair dyes, body fats and cleaning products. It may contain some faecal matter and associate pathogens from body washing.

Greywater from laundry (basin and washing machine) may contain soaps, oils, greases, lint, chemicals and cleaning products, nutrients and other contaminants from soiled clothes. Laundry greywater may also contain faecal matter and associated pathogens.

Greywater from washing machine varies in quality between water from the wash cycle, which will contain detergent, and water from the rinse cycles that contains much lower levels of detergent.

Greywater may become contaminated with lead and other heavy metals if work clothing worn on mine sites is being washed at home. To minimise the possibility of lead and other heavy metals being added to greywater, it is necessary for all employees and contractors

working at mine sites to comply with the mandatory work procedures that include showering on completion of each shift and on-site laundering of work clothes. As there is limited knowledge on heavy metals removal by greywater treatment plants, it is uncertain whether this type of treatment reduces the concentration of metals. Therefore, greywater with a potentially elevated concentration of heavy metals is **not** suitable for reuse.

Kitchen greywater may contain food particles, cooking oils, grease, detergents, and other cleaning products such as dishwashing powders. Kitchen greywater is **not** suitable for reuse in sewered areas.

1.3 What are the risks of using greywater?

Homeowners and occupiers should have a clear understanding of the potential public health risks and environmental impacts associated with the reuse of greywater. The reuse of greywater needs to be properly managed to minimise health risks and degradation of the environment.

1.3.1 Public Health Considerations

Greywater may contain disease-causing microorganisms including bacteria, viruses, protozoa and parasites. These disease-causing microorganisms may be transferred through the direct contact with greywater into hands and broken skin or inhalation of greywater spray; or indirectly through contact with contaminated items such as toys, garden equipment, grass and soil. Disease-causing microorganisms can also be transmitted by flies, cockroaches and other pests such as rats and mice. Even household pets may transmit disease by carrying disease-causing microorganisms into the home or when petted by children if they have been in direct contact with greywater.

1.3.2 Reducing exposure to lead

In Mount Isa greywater is **not** permitted for internal use.

It is recognised by council, that in Mount Isa area greywater may contain lead in concentration above the health threshold value identified in the *Australian Drinking Water Guidelines* (the ADWG).

Despite the existing requirements for colour-coded identification of greywater pipe and installation of backflow prevention devices, there is still a possibility of cross connections between the greywater connected to a house, and potable drinking water system. If this occurs, lead may be present in a drinking water tap in concentration above the Australian Drinking Water Guidelines.

Mount Isa City Council does not permit the use of greywater in buildings, including toilet flushing and cold water supply to washing machines to ensure greywater will not contaminate drinking water in the event of occasional cross-connection and the health risks are appropriately managed.

Treated greywater can be used for cleaning vehicles, fences or footpaths and spray irrigation of lawns and gardens. However, Mount Isa City Council does not recommend these uses for households with young children.

Treated greywater may be potentially contaminated with lead at the levels above the Australian Drinking Water Guidelines. Exposure to lead from greywater may occur from accidental ingestion of greywater from an outside tap, dermal contact, exposure to aerosols which occurs during watering, indirect ingestion via contact with plants, lawns and other

surfaces. Absorption of water-soluble lead appears to be higher in children than in adults. Though the exposure from these uses of greywater may not be significant, it may contribute to a higher daily intake of lead from all sources.

Appendix 7, Greywater Reuse Policy – Technical Addendum provides an assessment of potential lead exposure from greywater.

1.3.3 Environmental Considerations

Potential environmental risks from reusing greywater include overloading the garden with chemicals, which may degrade soil structures, potential runoff of polluted water into groundwater and other people's property, causing offensive odours.

1.3.4 Nutrients

Some nutrients supplied by the greywater are of benefit to lawns and gardens, however others can adversely affect plants or soil structure and are difficult to remove. Detergents and other products, which contain boron, should be avoided, as boron can be toxic to plants in high concentrations.

Phosphorus and nitrogen are nutrients necessary for plant growth. The reuse of greywater has the potential to reduce the need for fertiliser application on gardens and lawns. However excessive nutrient loads should be avoided to prevent damage to soil and plants. Too much phosphorus can be toxic to some native plants and harmful to the environment. The amount of nutrients in greywater can be managed by the selection of appropriate laundry detergents (and similar products) that are low in nitrogen and phosphorus. Section 2.5 provides further advice on the selection of detergents.

1.3.5 pH levels

The pH level of soil is very important to plant health. Greywater tends to be slightly alkaline, with a pH range of typically between 6.5 and 9.0, and the extensive use of greywater for irrigation could cause the soil to become progressively more alkaline. Shade loving and acid loving plants do not like the alkalinity of greywater. These include azaleas, camellias, gardenias, begonias, and ferns.

1.3.6 Salts

The amount of salt in greywater can largely be managed by the types of products used within a household. Generally, powdered detergents contain the most salt as it is used in washing powders as filler. Concentrated powders generally contain less salt than normal powdered detergents, and liquid detergents contain the least salt of all washing detergents. Section 2.5 provides further advice on the selection of detergents.

2 Guide to reusing greywater

There are two options for greywater reuse

1. Use of untreated greywater – greywater diversion
2. Use of treated greywater - greywater treatment

2.1 Use of untreated greywater – greywater diversion

Untreated greywater can be reused for irrigation of lawns, gardens or outdoor pot plants, excluding Council owned verges.

The simplest way to reuse greywater is to manually bucket greywater collected from the shower or laundry, or use a temporary hose fitted to the washing machine outlet to drain water to a lawn or garden. These practices enable reuse of small quantities of untreated greywater, saving drinking water and have the potential to improve the health and appearance of the lawn and plants.

A **greywater diversion device**, permanently attached to plumbing, can significantly increase the reuse of greywater. The greywater diversion device can be connected to a laundry or bathroom waste pipe and will divert greywater without storage or treatment.

It is important that homeowners and occupiers follow the recommended control measures **Do's** and **Don'ts** in section 2.1.4 when using untreated recycled water to ensure that public health and the environment are protected.

2.1.1 Conditions of Approval

Council approval **is not** required for:

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

Council approval **is** required for:

- Installation of a greywater diversion device.

2.1.2 Greywater diversion device

Picture source: http://www.everhard.com.au

Greywater diversion devices consist of a filter that screens out hair, lint and other solids. It does not treat water. The system must automatically divert greywater to the sewer if there is a blockage or if the pump fails. Greywater diversion devices must be fitted with a switch to divert greywater through to a subsurface or covered surface irrigation system. In some circumstances, a pump may be necessary to distribute diverted 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.

Homeowners can control irrigation with the volume and type of greywater diverted. It is important for homeowners to recognise that a greywater diversion devices must be treated like a garden tap. The diverter should only be turned on when the garden needs watering, at all other times it must be turned off. If the diverter is turned on all the time, overwatering has the potential to significantly damage plants and soil, as well as increase the risk to residents' health. Any greywater that cannot be reused immediately must be diverted to sewer.

Not all diversion devices available on a market meet the requirements of Australian Standards. A greywater diversion device must be certified under the Water Mark Product Certification Scheme before installation. Standards Australia can provide more information on this scheme. Homeowners and plumbers must ensure that the device holds the Watermark Level 2 Accreditation at a minimum. A licensed plumber will need to install a diversion system. Homeowners are required to obtain a written approval from Council prior to the installation of a diversion system.

2.1.3 Greywater irrigation system—untreated greywater

Untreated greywater can be distributed through the following types of irrigation systems:

- **Sub-soil irrigation**—greywater is distributed into trenches dug into the ground through gravity. This method 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 deep rooted plants are watered.
- **Sub-surface irrigation**—greywater is distributed through a system that is usually pressurised and installed 100 mm below the ground. The greywater is distributed through small-diameter perforated pipes or dripper lines and applied directly to the root zone at rates required by the plants so that the plants can utilise the water without excessive run-off or leaching.
- **Covered surface drip irrigation**—greywater is applied directly to the surface of the soil under a layer of mulch. The greywater is distributed under pressure from small diameter perforated pipes or dripper lines at rates required by the plants.

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. Table 1 identifies the minimum greywater application area that is required for households irrigating with greywater. Alternatively, homeowners can perform their own calculations using the formulas and look up tables found in the Greywater Reuse Policy – Technical Addendum.

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

2.1.4 Using untreated greywater safely

The following principles should be adhered to, when using untreated greywater, to minimise the potential health risks to humans and environmental damage to soils, ground water, and waterways caused by increased nutrient and chemical levels.

DO's:

- Only bucket greywater to areas that are inaccessible to children and pets.
- Apply greywater in several locations, to prevent pooling. Too much greywater can clog the soil, causing the development of grey/green slime areas, which create odours and attracts insects.
- Check with your nursery for plant or lawn advice.
- Monitor plant and soil response to irrigation with greywater.
- Select washing detergents that are low in salt – consider using a powder concentrate, or a liquid washing detergent as they produce better quality, less saline greywater.
- Select garden-friendly detergents that are biodegradable and low in phosphorus, sodium, boron and chloride.
- Water from the rinse cycles of the washing machine is much more suitable for watering the garden. Rinse water contains low levels of the detergent used. The final rinse contains the lowest levels of contaminants.
- Wash your hands after reusing greywater.

Don'ts:

- DON'T reuse greywater during rain.
- DON'T store greywater. When the immediate use of greywater is not practical it should be diverted to the sewerage system. Greywater stored for more than 24 hours may become septic, give off an offensive odour and provide conditions that breed micro-organisms and mosquitoes.
- DON'T leave a diversion device on all the time. Treat it like a garden tap and only reuse greywater when the garden needs watering.
- DON'T let greywater go beyond the property boundary and cause a nuisance to neighbours.
- DON'T use greywater on vegetables or edible plants.
- DON'T use greywater from washing of nappies or heavily soiled loads.
- DON'T use greywater when a household resident has an infectious disease.
- DON'T let any inappropriate chemicals to enter a greywater system, including paints, automotive oils and greases, garden chemicals or solvents.

2.2 Use of treated greywater – greywater treatment

The potential end use depends on the quality of effluent produced by the treatment plant.

The *Plumbing and Drainage Act 2002* (the PDA) and *Queensland Plumbing and Wastewater Code* (the QPW code) amendments permit the use of treated greywater for:

- toilet flushing (**not permitted** under this policy)
- cold water supply to washing machines (**not permitted** under this policy)
- washing of paths, walls or vehicles
- lawn and garden irrigation, excluding Council owned verges (including sub-surface and surface irrigation).

The PDA and associated regulations set out the responsibilities of councils for greywater management. When approving the installation of a greywater treatment plant, local council must consider all relevant issues, particularly environmental and health issues.

2.2.1 Conditions of Approval

Council approval is required for installation of an approved greywater treatment plant (by licensed plumbers).

2.2.2 Greywater treatment plants

A greywater treatment plant collects, stores, treats, and disinfects greywater. They treat organic waste but are not designed to remove chemicals such as sodium, nitrate or phosphorus. 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.

All greywater treatment plants require approval under the PDA and must undergo stringent testing prior to approval being granted for greywater re-use. A list of approved greywater treatment systems can be found on the Department of Housing and Public Works website: http://dlgp.qld.gov.au/plumbing/greywater-treatment-plants.html.

A licensed plumber must install greywater treatment plants. Homeowners must obtain a written approval from Council prior to installation of a greywater treatment plants.

Homeowners and businesses that install a greywater treatment plant must participate in Council's Greywater Audit Program. Fees may apply.

2.2.3 Greywater irrigation system—treated greywater

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**—greywater is distributed into trenches dug into the ground through gravity. This method 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 deep rooted plants are watered.
- **Sub-surface irrigation**—greywater is distributed through a system that is usually pressurised and installed 100 mm below the ground. The greywater is distributed through small-diameter perforated pipes or dripper lines and applied directly to the root zone at rates required by the plants so that the plants can utilise the water without excessive run-off or leaching.
- **Covered surface drip irrigation**—greywater is applied directly to the surface of the soil under a layer of mulch. The greywater is distributed under pressure from small diameter perforated pipes or dripper lines at rates required by the plants.
- **Surface drip irrigation**— greywater is applied 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.

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.

2.2.4 Using treated greywater safely

The following '**DOs**' and '**DON'Ts**' will reduce the risks associated with reuse of greywater and will ensure the treatment plant installed and maintained appropriately.

DO's:

- Install removable handles on all tap fittings that supply greywater and remove all tap handles when greywater is not in use.
- Mark and label all pipes and use signs to indicate treated greywater on outlets and install removable handles on all tap fittings.
- Ensure greywater will not contaminate any source of drinking water. Avoid cross connections by using colour-coded pipe and install backflow prevention devices where required.
- Use appropriately treated greywater for an approved use.
- Select garden-friendly detergents that are biodegradable and low in phosphorus, sodium, boron and chloride. Select liquid washing detergents, as they are comparatively low in salts.
- Avoid bleaches or softeners and products that are used to clean drains.
- Monitor plant and soil response to treated greywater irrigation.
- Ensure that regular maintenance of the treated greywater system is undertaken and wash hands immediately after contact with greywater.

Don'ts:

- Don't let any inappropriate chemicals to enter a greywater system, including paints, automotive oils and greases; garden chemicals or solvents.
- Don't irrigate with greywater during rain.
- Don't use greywater to top up rainwater tanks or swimming pools.
- Don't use greywater on plants that will be eaten raw or where fruit has fallen to the ground.
- Don't use greywater so that it flows into the streets or down stormwater drains.
- Don't let greywater go beyond the premise and cause a nuisance to neighbours.
- Don't drink or allow pets or animals to drink greywater.

2.3 Signage, pipe labels and tap colour requirements

Greywater plumbing components and irrigation systems must be marked, labelled and have signage that is in accordance with AS/NZ 3500 series and other Australian Standards.

All distribution pipes for the greywater system—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 and marked with the following in accordance with AS1345: 'WARNING: RECYCLED OR RECLAIMED WATER—DO NOT DRINK'

Greywater diversion components should be labelled: 'WARNING: RECYCLED OR RECLAIMED WATER—DO NOT DRINK'.

2.4 Maintenance

Once installed, a greywater diversion device or greywater treatment plant has to be maintained so as to not compromise public health or the environment. This is the

responsibility of the owner. The maintenance procedures provided by the manufacturer and any conditions of the council approval have to be carried out as specified for the life of the system.

Greywater diversion device and subsurface irrigation distribution systems require regular cleaning and replacing of filters, periodic desludging of the surge tank, regular inspection of the irrigation system, and soil condition evaluation.

The filter in the greywater device is important because it removes a variety of materials that may clog the diversion device, pump or irrigation system. If the filter becomes clogged, less greywater can get to the garden.

Rubber gloves and a mask should be worn and thorough washing of hands and clothes should take place immediately afterwards.

Greywater treatment plant 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.

2.5 How to select environmentally friendly household cleaning products

When using treated or untreated greywater on lawn or garden, residents should consider the type of household detergents, soaps, or other chemicals they use.

Generally, when choosing a laundry powder look for laundry powders that:

- are phosphate-free
- are low in sodium
- are concentrated or liquid (cheaper powders contain extra salt as a bulking ingredient)
- can be used in cold water (hot water can damage plants and soil).

More information about various washing detergents and personal care products can be found at the following websites:

- The salt, nitrogen and phosphorus content of various washing detergents available in Australia can be found at www.lanfaxlabs.com.au.
- **GreySmart** project have assessed more than 142 different household products (available in Australia) and assigned a rank of greywater friendliness based on impacts on the environment where they are used. The GreySmart website can assist in selecting greywater friendly household cleaning and personal care products at www.savewater.com.au/how-to-save-water/in-the-home/greysmart.
- **Choice** have tested and compared liquid or powder detergents to determine which are better for general soil removal, stain removal, wastewater recycling, and which are safe to use on our garden. Choice have developed a comparison table of laundry detergent tests to determine if greywater is suitable for reuse in the garden www.choice.com.au/detergents.
- ''Phosphorus-Free Detergents list' can be downloaded from www.sercul.org.au/pap.html website. The list was compiled as a part of the Phosphorus Awareness Project and their education campaign.
- **Planet Ark** evaluates and supports products which meet certain environmental standards and offer a more environmentally responsible alternative to the commonly used products that are on the market, while still being a good, quality product. More information is available from http://products.planetark.org/ website.

2.6 Other links on greywater reuse

The following information on greywater reuse is available from http://www.dlgp.qld.gov.au/plumbing/greywater-treatment-plants.html

- list of approved greywater systems
- list of available greywater diversion devices
- greywater guidelines for councils
- greywater guidelines for plumbers
- Queensland Plumbing and Wastewater Code

Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) are available from http://www.ephc.gov.au/taxonomy/term/39/ website.

HB 326—2008 Urban Greywater Installation Handbook for Single Households published by Standards Australia

3 Application for a greywater device

3.1 Before Applying

Homeowners must consider the types of greywater diversion devices and treatment plants available. The information about diversion devices and approved treatment plants is available from the Department of Housing and Public Works website http://dlgp.qld.gov.au/plumbing/greywater-treatment-plants.html.

Plumbers can work with homeowners to plan a greywater system and lodge an application with council by:

- advising on the potential uses of treated greywater
- developing options for greywater systems
- calculating whether there is sufficient land area to distribute the greywater
- drafting plans for council approval.

Table 1 identifies the minimum land area required for greywater use, depending on the number of residents in the house and sources of greywater. If a homeowner wishes to deviate from the areas identified in Table 1, there is a technical addendum to the greywater reuse policy that contains the necessary information to perform the calculations.

Table 1 Land application area – minimum area requirements*

	Land Application Area required (m^2)		
Number of residents	Laundry only (35L/person/day)	Bathroom only (60L/person/day)	Laundry and bathroom Combined (95L/person/day)
1	17	30	47
2	35	60	95
3	52	90	142
4	70	120	190
5	87	150	237
6	105	180	285

* Areas based on assumption of a design irrigation rate of 2mm for medium to heavy clays (AS/NZS 1547:2012 Table M1)

If a homeowner would like to deviate from the areas identified in Table 1 they may engage the services of a soil evaluator who will assess the soil and land available to use. Additional calculations are identified in the Greywater Reuse Policy – Factsheet (Part 2) – Technical Addendum. The report should be submitted with the application and should state the suitability of the soil and land to accept irrigation with greywater, and recommend appropriate irrigation areas.

3.2 Application for installation of a greywater diversion device or treatment plant

An application must be lodged with council and must include the completed application form (Appendix 2) and a site plan showing:

- details of proposed or existing buildings or structures on the premises

- the location of the greywater application area
- distances from the area to the boundary of the premises
- location of any swimming pool, shed, paths or paved areas
- the connection from the greywater diversion device or greywater treatment plant to sewer
- the report of the soil evaluation
- any other relevant plumbing and drainage details.

A flowchart (**Appendix 1**) has been developed to assist applicants to understand the Application Process.

Greywater assessment application form checklist (**Appendix 2**) will assist in providing the required information for assessment.

3.2.1 Assessing applications

The applications will be assessed against the QPW Code and Council's greywater policy.

When assessing the suitability of land for greywater irrigation, Council will take into consideration flood potential, exposure, slope, landform, potential for run-off, upslope seepage, site drainage, fill, buffer distances and geology. A checklist is provided in Table 9 (Greywater Reuse Policy - Technical Addendum **Appendix 4**).

A checklist for soil assessment is provided in Table 10 (Greywater Reuse Policy - Technical Addendum **Appendix 4**) and will be used by councils in determining the suitability of land for greywater irrigation.

Appendix 1: Greywater Application Process

1. •Consider options for greywater reuse and the types of greywater diversion devices and treatment plants available
2. •Calculate the area of land available for greywater irrigation taking into account the required setbacks (refer to Appendix 4 - Greywater Reuse Policy - Technical Addendum)
3. •Calculate the volume of greywater you are likely to generate (refer to Table 1)
4. •Complete an assessment of the volume of greywater generation and land application area requirements (refer to Table 1)
5. •Select an approved greywater diversion device or treatment plant
6. •Prepare and submit to the council an application form including all nessasary information required for assessment
7. •Obtain a written approval from council prior to starting work
8. •Once you have received Council's approval in writing, contact your licenced plumber to arrange installation of your greywater use system
9. •Install the irrigation system as approved by the council
10. •Your plumber will then need to arrange for an inspection
11. •Council will send you a plumbing compliance certificate after your plumber has had the final plumbing inspection.
12. •Once approved your greywater use facility will be added to the Mount Isa City Council Greywater Use Register for auditing purposes.
13. •Once a system is installed it becomes the homeowner's or occupier's responsibility to ensure it is maintained. Greywater systems will require regular maintenance, such as cleaning or replacing of filters, as well as regular servicing in accordance with the manufacturer's specifications.

Appendix 2: Greywater application

Applicant details:

Name: _____

Postal address: _____

Daytime contact number:_____

Property information:

Street address: _____

Property description: Lot: _____ Plan: _____

Siting details: Site plans attached _____Photographs attached_____

Estimated greywater volume (litres/day):_____

Land application area (required m^2): _____Land application area (available m^2):_____

Type of greywater system:

Greywater Treatment Plant ☐

Greywater Diversion Device ☐

Intended greywater use:

Subsurface irrigation of lawns and gardens ☐

Surface irrigation of lawns and gardens ☐

Other_____ ☐

Not recommended for households with young children:

Spray irrigation of lawns and gardens ☐

Cleaning vehicles, fences or footpaths ☐

Assessment details:

Buffer distances: ☐

Boundary of premises ☐

Swimming pool ☐

Buildings ☐

Bore or a dam used or likely to be used for human and or domestic consumption ☐

Retaining wall footings ☐

Permanent water course ☐

Other_____ ☐

Other_____ ☐

Is there sufficient land area available for land application systems? Yes ☐ No ☐

Exposure: Is the land application area exposed to sunlight and to prevailing winds? Yes ☐ No ☐

Run-on seepage:

Does the land have high run-on and upslope seepage with no practical diversion? Yes ☐ No ☐

Erosion potential: Does the land show signs of high erosion e.g. rills, mass movement/slope failure present? Yes ☐ No ☐

Site drainage: Does the land show visible signs of surface dampness, such as moisture-tolerant vegetation, (eg. bottle brush, paper bark trees, or ferns), seepages, soaks and springs? Yes ☐ No ☐

Landfill: Has the property been cut and filled, or sited on imported fill Yes ☐ No ☐

Flood potential:

Land application area above 1 in 20 year flood level ☐

Land application area above 1 in 100 year flood level ☐

Electrical components above 1 in 100 year flood level ☐

Slope:

☐0-10% ☐10-20% ☐>20%

Groundwater:
Horizontal distance to groundwater well used for domestic water supply: _____(m)

Bores in the area and their purpose: _____

Soil:
Depth to bedrock or hardpan: _____

Depth to high episodic or seasonal water table: _____

Types, characteristics, permeability: _____

_____

Other matters: e.g. density of allotments within the area_____