PRE-TREATMENT GUIDELINES
FOR
TRADE WASTE DISCHARGES

Provider Services

TRADE WASTE SECTION

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PRE-TREATMENT GUIDELINES FOR TRADE WASTE DISCHARGES

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TRADE WASTE POLICY
Pre-treatment Guidelines for Trade Waste Discharges

1.0 INTRODUCTION

As part of its Trade Waste Policy Council will strictly regulate the discharge of trade waste to the sewer. All discharges must comply with the Sewer Admission Limits as set out in the Trade Waste Policy Statement.

The following information is provide as a **GUIDE ONLY** to assist waste generators. As waste quality may vary between individual generators of a given industry, pre-treatment requirements will need to be verified for each application. These guidelines centre around the use of arrestors as a minimum requirement for pre-treatment for small discharges. Their effectiveness is dependent on proper sizing and regular maintenance. The design and sizing of pre-treatment devices must be approved by Council. There may be situations where alternative pre-treatment devices or processes are more appropriate.

2.0 WASTE FROM COMMERCIAL AND SERVICE INDUSTRIES

Both the Owner and the trade waste Generator, where the Owner is not the Generator, of a premises where commercial or service enterprises are undertaken, or likely to be undertaken, must apply to Council for approval to discharge waste to the sewer. Discharge without Council approval is illegal and subject to penalties defined in the current Standard Sewerage Law 1998.

In most cases discharges from these businesses will, after appropriate pre-treatment as indicated in Appendix 1, be suitable for discharge to the sewer as Category 1 or Category 2 waste. Depending on the size of the business and the nature of the waste there may, however, be instances when some of these businesses will discharge Category 3 waste.

Requirements for the cleaning and maintenance of all pre-treatment devices by the owner/generator will be written into Approvals and Agreements.

Commercial and service enterprises include, but are not limited to, the following:

Restaurants, coffee shops, cafes

Fastfood outlets/take aways

Butchers

Bakers/hot bread shops

Seafood shops

Delicatessens

Pie/pastry outlets

Ice-cream parlours

Hotels

Motels

Hospitals

Clubs

Laundromats

Hairdressers

Nursing homes

Medical surgeries (includes dental, veterinary, chiropractic businesses which have X-ray facilities)

Garbage collection areas in Commercial buildings

Service stations/ other automotive related businesses (small scale)

Small Engineering works

Photographic/x-ray/graphic arts/mini labs

Air-conditioning wastes – condensates, cooling tower wastes

Commercial Refrigeration condensates

Swimming pool backwash water

Supermarkets/Shopping centres

3.0 GREASE ARRESTOR REQUIREMENTS

The use of solvents, enzymes, bacterial cultures, odour control agents or pesticides in grease arrestors is prohibited unless specifically approved by Council. Conditional approval may be given to allow the discharger to demonstrate to Council that the product to be used does not adversely impact on the sewerage system.

The maximum capacity of an individual grease arrestor shall be 2000 litres. Where the capacity requirement for a premises is greater than 2000 litres, additional arrestors shall be used, with each arrestor to be a discrete installation separately treating a defined waste stream.

Appendix 2 outlines a method for estimating the size of grease arrestors. The final determination of adequate capacity will be done by the Trade Waste Officer. Cleaning and maintenance of grease arrestors will be carried out by a Council approved liquid waste disposal contractor as specified in the Approval/Agreement conditions.

4.0 WASTE FROM MAJOR MANUFACTURING/PROCESSING INDUSTRIES

Both the Owner and the trade waste Generator, where the Owner is not the Generator, of all premises where major manufacturing and industrial processing are undertaken, or likely to be undertaken, must apply to Council for approval to discharge waste to the sewer. Discharge without Council approval is illegal and subject to penalties defined in the current Standard Sewerage Law 1998.

Most of the industries in the list below will fall into Category 3, although they may be included in Category 1 or 2 if the business is small or waste has been pre-treated to the extent of meeting the classification requirements for these categories.

While Council staff can provide general advice to industry on waste management and disposal matters, dischargers in this category should seek advice from the Environmental Protection Agency or consultants on matters such as:

- appropriate treatment strategies to meet sewer admission limits;

- waste minimisation and water conservation methods;

- treatment and disposal of waste generated by pre-treatment and other wastes not suitable for sewer discharge.

Advice on the disposal of non-sewerable waste may be obtained from:

Trade Waste Officer : or

Waste Management Officer : or

Environmental Protection Agency

Major industrial, manufacturing and processing industries likely to fall into Category 3 include, but are not limited to, the following:

Food/Beverage
Fruit/vegetable processing (canning, freezing, juicing)
Meat Processing/small goods manufacturing
Abattoirs – Meat/poultry
Rendering
Seafoods
Dairy products
Breweries
Wineries/distilleries
Soft drink/cordial manufacturing
Confectionery
Large scale baking (bread, biscuits, pastries etc)
Grain milling
Oil seed/oil extraction

Fermentation/yeast
Sugar
Starch

Chemical Related
Chemical manufacturing – general (organic and inorganic)
Soap, detergent and associated product manufacturing/formulating
Explosives
Pharmaceuticals/cosmetics
Fertilisers
Pesticides/herbicides
Chlor-alkali
Plastics
Resins, Adhesives/latex
Paints/varnishes/lacquers
Fibreglass
Rubber – natural/synthetic

Apparel/Textile
Tanneries
Textiles (wool, cotton, synthetics; includes dye wastes)
Wool scouring
Industrial/commercial laundries

Materials
Paper and Cardboard processing/manufacturing
Printing/publications/graphic arts/photographic (large scale)
Cement
Asphalt/Bitumen
Timber preservation
Veneer/plywood
Glass/ceramics manufacturing

Metal
Mining/Minerals industries
Smelting/refining
Foundries
Electroplaters/galvanisers
Metal processing
Metal finishing
Fabrication and powder coating

Automotive/Engineering/Petroleum
Engineering (large scale)
Petroleum refining
Waste oil refining

Service
Laboratories – scientific and pathology
Electrical manufacturing/processing
Electronics
Commercial swimming pools/ornamental ponds
Repackaging activities
Industrial/commercial storage areas/warehouses
Recyclers
Industrial/commercial wash areas – car, bus, truck, stables, garbage collection
Power generation

5.0 SPECIFICATIONS FOR PRE-TREATMENT DEVICES

5.1 Oil Arrestors

For the purpose of this policy, the term oil arrestors refers to triple baffle oil interceptor, coalescing plate separator, hydrocyclone or any other device which separates oils from other liquid waste.

Oil arrestors are to be of a type and to be installed in order for the discharge to Council's sewer system that shall comply to the admissible standards set out in Appendix 2.

Only "Quick Break Detergents/Degreasers" are to be used where waste is discharged to the sewer via the oil arrestor.

Maintenance cleaning of oil arrestors shall be carried out on a regular basis in accordance with the conditions of the Trade Waste Approval or Legal Agreement by a Council approved Liquid Removal Contactor.

The minimum size of an individual arrestor shall be 550 litres.

Oil arrestors are to cause no odour nuisance.

Oil arrestors shall be installed so as not to allow stormwater to enter them. The surrounding ground shall be graded away from the arrestor.

5.2 Grease Arrestors

All grease arrestors shall be fitted with gas tight lids.

Venting arrangements for grease arrestors shall be via 2 x 100mm vents. One 100 mm vent shall be on the upstream line and shall terminate in accordance with AS3500. The other vent shall be on the grease arrestor and shall terminate approximately 1.2 metres above the finished height of the other vent. This allows for more effective cooling of the grease arrestor contents which leads to a more effective performance of the trap.

5.3 Silt Traps

Silt traps are to be regularly cleaned and the material removed after dewatering may be disposed at the land fill site.

5.4 Neutralising Tanks

Neutralising traps are to be regularly cleaned and the trap refurbished with clean media to ensure effective operation of the trap.

6.0 STANDARD DRAWINGS

A complete set of standard drawings are to be submitted before any approval shall be given. The information on the drawings shall include but is not confined to:

- a site plan
- a floor plan
- the location of drains, sewers and stormwater system
- the location of the pre-treatment equipment
- details of pre-treatment equipment including stormwater diversion if applicable
- location of any bunding
- sampling points
- details of any structures associated with pre-treatment e.g. roof

Appendix 1

GENERAL PRE-TREATMENT GUIDELINES FOR MINOR TRADE WASTE GENERATORS

(WILL BE SATISFACTORY FOR MOST CATEGORY 1 AND 2 DISCHARGES)

Generator/Source	Characteristics of Waste	General Treatment Requirements
Automotive/Engineering Industries		
Wreckers	oil, grease	solids oil arrestor (1)
Detailing	grease, oil, solids, detergents	oil arrestor (1)
Engine/gear box reconditioning (small operation)	lead, grease, oil, solids, detergents, kerosene	oil arrestor (1)
Equipment Hire Company	oil, grease, kerosene, solids, detergent	oil arrestor (1)
Lawn Mower Repairs	oil, grease, grass, solids, detergents	oil arrestor (1)
Mechanical Workshops	oil grease, kerosene, solids, detergents	oil arrestor (1)
Panel Beating/Spray Painting	suspended solids, oil and grease	General purpose pit, oil arrestor (1)
Service Stations:		
- work shop only	oil and grease	oil arrestor (1)
- covered forecourt	oil and grease	oil arrestor (1)
Car Wash Areas – Residential:		
- open areas	oil, grease, solids, rain	silt trap, 550 L minimum capacity
- roofed and bunded (to prevent storm water ingress)	oil, grease, solids	silt trap, 550 L minimum capacity
Car Wash Areas – Commercial:		
- open areas	oil, grease, solids, rain	stormwater diversion pit, first flush collection pit "first 10mm of rain", oil arrestor (1), rainwater controls, pumped discharge, flow measurement
- roofed and bunded	oil, grease, solids	oil arrestor (1)
Radiator Repair (small operation)	Suspended solids, pH, toxic metals	pH adjustment prior to solid settlement and pH adjustment before discharge to sewer; may require oil separation and metal precipitate removal
Commercial Food Outlets:		
Hot Bread, Bakery Pies, cakes, pastries	flour products, grease	dry arrestor or removal basket in-floor waste collection; grease arrestor (2)
Butcher, small, retail	grease (washing floors and utensils)	fixed mesh screen & basket in sink and basins, grease arrestor (2)
Chick (fresh) retail meat cutting and preparation	grease	fixed mesh screens & baskets in-floor waste collection, mesh sinks and basins; grease arrestor (2)
Fish – fresh - no cooking	scales, fish guts	fixed mesh screen & basket in-floor waste; dry arrestor pit
Fish Shop retail and cooking on site	scales, grease	fixed mesh screen & basket in-floor waste; screens in sink & basin; grease arrestor (2)
Canteen/Cafeteria (with hot food preparation)	grease	grease arrestor (2)
Caterer	grease	grease arrestor (2)
Community Halls (food preparation)	grease	grease arrestor (2)
Sandwich/Coffee Shop -no hot foods prepared	nil	no requirements
Sandwich Bar with hot food take-away	grease	grease arrestor (2)
Coffee Shop, hot food prepared and served	grease	grease arrestor (2)
Take Away food outlets	grease	grease arrestor (2)
Take Away food outlets -large outlets eg. McDonalds, Pizza Hut, Kentucky Fried, BBQ and Charcoal Chicken etc.	grease	grease arrestor (2)
Commercial Kitchen	grease	grease arrestor (2)
Hospital Kitchens	grease and oil, high temperatures	grease arrestor, capacity to cool hot discharge water to less than 38^{o}C
Nursing Homes/kitchen	grease/solids	grease arrestor (2)

NOTES:

(1) oil arrestors should be of the (**coalescing plate type minimum capacity 1 kL/hour for some other specification**); use only quick break detergents (detergent cleans by emulsifying oils and grease; the emulsion formed should break in less than 1 hour to allow separation of the oil from the water in the arrestor)

(2) See Appendix 2 for guidelines for sizing of grease arrestors

GENERAL PRE-TREATMENT GUIDELINES FOR MINOR TRADE WASTE GENERATORS, continued

(WILL BE SATISFACTORY FOR MOST CATEGORY 1 AND 2 DISCHARGES)

Generator/Source	Characteristics of Waste	General Treatment Requirements
Restaurant	grease	grease arrestor (2)
Hotel with counter lunches/restaurant	grease	grease arrestor (2)
Motel, kitchen/restaurants	grease	grease arrestor (2)
Boarding Houses/kitchen	grease	grease arrestor (2)
Bistro	grease, oil	grease arrestor (2)
Ice Cream Parlour – with hot food, take-away	grease	grease arrestor (2)
Shopping Centres preparation	grease and solids	grease arrestor (2)
Supermarkets - incorporating butcher and/or bakery	grease and flour	grease arrestor (2) and basket traps; dry arrestor pit or basket in-floor waste collection
Other Commercial/Service Industries:		
Garbage Can Cleaning units/hotels/restaurants	grease, solids	fixed screen over floor waste; if grease arrestor installed, waste to pass via arrestor
Hairdressing Salon	No threat	non pre-treatment; avoid discharge through grease arrestor
Hobby Clubs		
- < 200L per day	suspended solids	no pre-treatment
- 200L – 1000L per day	suspended solids	plaster arrestor
- > 1000L per day	suspended solids	solids settlement pit 1000L, min of 1 hour retention
Dental/Medical/Veterinary		
Surgeries	solids	bottle trap
- no plaster casts	solids	plaster arrestor
- plaster casts	rinse water and spent solutions	to sewer after silver recovery (refer
- X-rays		Photographic Industry Code of Practice)
Photographic waste		
- Fast Photo	rinse water and spent solutions	to sewer after silver recovery (refer
- X-rays		Photographic Industry Code of Practice)
School-Home Science, Tuck Shops (hot food)	grease	grease arrestor (2)
- laboratory	acid/alkali, chemicals	sediment & neutralising trap
Optical (<200L / day)	suspended solids	bottle trap under sink
Laundromat	lint, temperature	lint screens 1mm mesh; cooling pit if temperature >38^{o}C (washing machine internal screens acceptable)
Kennels	solids	dry arrestor pit; open area controls

NOTES:

(3) oil arrestors should be of the (**coalescing plate type minimum capacity 1 kL/hour for some other specification**); use only quick break detergents (detergent cleans by emulsifying oils and grease; the emulsion formed should break in less than 1 hour to allow separation of the oil from the water in the arrestor)

(4) See Appendix 2 for guidelines for sizing of grease arrestors

Appendix 2

GUIDELINES FOR SIZING GREASE ARRESTORS

I: The capacity of a grease arrestor may be calculated from the following capacity allowances for various fixtures and fittings in Commercial Premises

FIXTURE/FITTING	CAPACITY (LITRES)
Commercial Kitchen Sink	140
Double Bowl or Pot Sink	280
Basin	30
Water Heated Baine Marie	40
Dishwasher	
- small (under bench)	400
- medium (upright)	800
- large (more than one outlet)	1200
Potato Peeler	
- small (bench)	100
- medium (upright)	200
- large	400
Steamer/Hydrotherm/Boiling pots/Stock pots	100
Wok Burner	140
Mixing Bowl	140
Glass Washers (not in liquor sales area)	200

OR II: If a restaurant, coffee shop, hotel, motel, hostel, nursing home etc does not have fixture or fittings in excess of 250 litres capacity the following criteria shall apply:

SERVICING CAPACITY	MINIMUM SIZE GREASE ARRESTOR
0 – 40 persons	550 L
40 – 90 persons	1000 L

OR III: MINIMUM GREASE ARRESTOR TRAP CAPACITIES

Business	**Arrestor Size**	**Comment**
Takeaways Delicatessens Retail Seafood outlets (no processing/cooking) Ice-cream Parlours	250 L – 500 L	No Cooking Chicken, No Woks
Hot Bread Shop Pizza Shop Takeaway and Delicatessen Coffee Shop (0-40 persons) Restaurant (0-40 persons) Retail Butcher	550 L – 1000 L	Depending on Fixtures/fittings/seating capacity
Coffee Shop (40–90 persons) Restaurants (40–90 persons)	1000 L – 2000 L	
Coffee Shop (91-180 persons) Restaurants (91-180 persons) Nursing Homes Hostel Hotel Hospital Retail Chicken Shopping Centres (combination shops)	2000 L	

Appendix 3

SEWER ADMISSION LIMITS

The upper limits for the quality of trade waste discharged to the sewer for all categories are set out below. These admission limits shall apply from…….. They are subject to periodic review.

I. GENERAL LIMITS

Parameter	Concentration mg/L except*
Temperature *	<38°C
pH *	6 – 10
Biochemical Oxygen Demand (BOD_5) +	
Chemical Oxygen Demand (COD) +	
Total Organic Carbon (TOC) +	
Suspended Solids +	
Total dissolved solids (TDS) +	
Total oil/grease (freon extractable)	200
Gross solids *	non faecal gross solids shall have a maximum linear dimension of less than 20mm and a quiescent settling rate of less than 3m/hr.
Colour *	limited such as not to give any discernible colour in treatment works discharge
Odour *	not detectable in 1% dilution or causing an odour problem in Council's sewerage system
Chlorine (as Cl_2)	10
Sulphate (as SO_4^{--})#	2000
Sulphite (as SO_2)	100
Surfactants – Anionic (MBAS)	500
Aluminium (as Al)#	100
Iron (as Fe)#	100
Ammonia plus ammonium ion (as N)#	100
total Kjeldahl Nitrogen (as N)#	150
Phosphorus (Total P)#	50
Manganese (as Mn)	100

NOTE:

+ the total mass load and the capacity of the sewerage system to accept the load shall be considered for each application.

Council may in some circumstances accept waste containing higher concentrations of these substances. Additional charges for treatment (clause 7.6) will apply.

II. PROHIBITED DISCHARGES

Flammable/explosive substances.
Radioactive substances except as allowed for under the Queensland Radioactive Substances Act.
Pathological and infectious waste and Cytotoxic waste except as allowed for under the *National Guidelines for the Management of Clinical and Related Wastes*, National Health and Medical Research Council, 1988.
Genetically engineered organisms.
Rainwater and uncontaminated water.

III. SPECIFIC LIMITS - INORGANIC

Parameter	Concentration mg/L
Boron (B)	100
Bromine (Br_2)	10
Flouride (F^-)	30
Cyanide (CN^-)	5
Sulphide (S^{--})	5

IV. SPECIFIC LIMITS - METALS

Parameter	Maximum Concentration mg/L	Lower Daily Mass Load, g/day
Arsenic (As)	5	15
Cadmium (Cd)	2	6
Chromium (Cr)		
Total	20	75*
Hexavalent	10	
Cobalt (Co)	10	30
Copper (Cu)	10	75
Lead (Pb)	10	30
Mercury (Hg)	0.05	0.15
Nickel (Ni)	10	30
Selenium (Se)	5	15
Silver (Ag)	5	15
Tin (Sn)	10	30
Zinc (Zn)	10	75

NOTE
The concentration values apply to dischargers having a daily mass load between the Lower Daily Mass Load (LDML) and the Upper Daily Mass Load (UDML). For small dischargers with a daily mass load below the LDML, no concentration limits apply. Dischargers who exceed Council's UDML limits will be required to take measures to meet the UDML. This may involve treating to a lower concentration than indicated above.

* For discharges below the Lower Daily Mass Load, hexavalent Cr must be reduced to trivalent Cr.

V. SPECIFIC LIMITS - ORGANIC

Council may request specific demonstrable evidence based on degradability and toxicity concerning substances listed below:

Parameter	Maximum Concentration mg/L
Formaldehyde (HCHO)	50
Phenolic compounds (as Phenol)	100
Pentachlorophenol	5
Petroleum hydrocarbons	30
Halogenated Aliphatic hydrocarbons	5
Halogenated Aromatic Hydrocarbons (HAHs)	0.002
Polychlorinated biphenyls (PCBs)	0.002
Polybrominated biphenyls (PBBs)	0.002
Polynuclear Aromatic Hydrocarbons (PAHs)	5
Pesticides: General (insecticides/herbicides/fungicides) +	1.0
Pesticides: Organophosphates	0.1
Azinphos-methyl	
Azinphos-ethyl	
Coumaphos	
Demeton	
Dichlorvos	
Dimethoate	
Disulfoton	
Fenitrothion	
Fenthion	
Malathion	
Methamidophos	
Mevinphos	
Omethoate	
Oxydemeton-methyl	
Parathion	
Triazophos	
Trichlorfon	

SPECIFIC LIMITS – ORGANIC, continued

Parameter	Maximum Concentration mg/L
Pesticides – Organochlorines	
Aldrin	0.001
Chlordane	0.006
DDT	0.003
Dieldrin	0.001
Heptachlor	0.003
Lindane	0.100

NOTE
+ This category covers all pesticides other than those specifically listed under organophosphate and organochlorine pesticides.

VI. Any substance not listed in the above tables is a prohibited discharge and may not be discharged without prior approval of Council. Council may request specific demonstrable evidence based on degradability and toxicity for any substance when assessing acceptance to sewer.

Appendix 4

CATEGORIES FOR DISCHARGE

All trade waste accepted to the sewer will be classified according to the following three categories for the purposes of approval, control and charging.

Category 1

Low strength / low volume discharges:
- BOD and Suspended Solids < 300 mg/L
- and/or COD < 600 mg/L
- volume < 500 kL/annum;

Approval to discharge required – Approval;

Charge – Approval fee.

Category 2

Low strength / high volume discharges:
- BOD5 and Suspended Solids < 300 mg/L
- and/or COD < 600 mg/L
- volume > 500 kL/annum;

Approval to discharge required – Approval;

Charge – Approval fee + Quantity charge on total annual flow; Minimum fee applies.

Category 3

High strength discharges:
- BOD and Suspended Solids > 300 mg/L
- and/or COD > 600 mg/L
- volume: any;

Approval to discharge required – Agreement between Council and both the Owner (or Authorised Agent) and the trade waste Generator when the Owner is not the Generator;

Charge – Agreement fee + Quantity and Quality charge on total annual load; Minimum fee applies.

Acceptance of waste under any category is conditional on the waste meeting Council's Sewer Admission Limits (Appendix 3) unless otherwise specified in the Approval or Agreement.

It is the responsibility of the generator to install, operate and maintain "best practice" pre-treatment facilities to ensure sewer admission limits are not exceeded.

In the event of a significant change in the strength or volume or a waste approved under Category 1 or Category 2, the waste will be treated as a Category 3 waste for the purposes of charging and monitoring.