

# Grey District Council Trade Waste Bylaw

**This bylaw was first adopted by the  
Grey District Council on 10 December 2007.**

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13 August 2018 following consideration of  
submissions received as part of the  
Special Consultative procedure.**

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# GREY DISTRICT COUNCIL TRADE WASTE BYLAW

## FOREWORD

This Bylaw has been prepared using the New Zealand Standard “NZS 9201: Part 23: 2004 Model General Bylaws — Trade Waste” as a base document.

## 1.0 TRADE WASTE BYLAW

### 1.1 INTRODUCTION

1.1.1 This Bylaw regulates the discharge of Trade Waste to Grey District Council's (GDC) wastewater network.

1.1.2 This Bylaw sets out uniform requirements for contributors into the wastewater network of GDC and will assist GDC to comply with all applicable consents required by the Resource Management Act 1991 (RMA).

1.1.3 The objectives of the Trade Waste Bylaw are:

- To protect the health and safety of all people working in the wastewater network by applying strict standards for harmful substances;
- To protect receiving waters from toxic substances contained in Trade Waste discharges;
- To protect the wastewater network and the Wastewater Treatment Plant from damage due to harmful substances from Trade Waste sources;
- To assist GDC to meet relevant environmental and other regulations;
- To assist wastewater processing operations to produce effluent and bio-solids to a guaranteed quality;
- To encourage waste minimisation and Cleaner Productions in the commercial and industrial sector;
- To encourage and enable water conservation;
- To ensure adequate monitoring of trade wastes; and
- To provide information for the purpose of allowing charging for Trade Waste.

1.1.4 This Bylaw provides for the regulation of contributors to the wastewater network and provides for the issue of Trade Waste Consents, which will define monitoring, and reporting requirements for GDC.

### 1.2 COMMENCEMENT AND APPLICATION

1.2.1 This Bylaw was adopted on 10 December 2007 and came into effect on 1 July 2008, and any subsequent amendment or review shall come into force on the date of its confirmation by Council.

### 1.3 SCOPE OF THE BYLAW

1.3.1 The Bylaw provides for the:

- a) Acceptance of long-term, intermittent, or temporary discharge of Trade Waste to the wastewater network;
- b) Establishment of three grades of Trade Waste: Permitted, Conditional and Prohibited;
- c) Evaluation of individual Trade Waste discharges against specified criteria;
- d) Correct storage of materials in order to protect GDC's wastewater network from spillage;
- e) Installation of flow meters, samplers or other devices to measure flow and quality of the Trade Waste discharge;
- f) Pre-treatment of waste before it is accepted for discharge to the wastewater network;
- g) Sampling and monitoring of Trade Waste discharges to ensure compliance with the Bylaw and facilitate charging for the reception, treatment and disposal of Trade Waste;
- h) GDC to accept or refuse a Trade Waste discharge;

- i) The payment of charges to be set annually by the Council in its annual plan process to cover the cost of conveying, treating and disposing of, or reusing, Trade Waste and the associated costs of administration and monitoring;
- j) Administrative mechanisms for the operation of the Bylaw; and
- k) Establishment of waste minimisation and management programmes (including sludges) for Trade Waste producers.

### 1.3.2 Compliance with other acts:

Nothing in this Bylaw shall derogate from any of the provisions of the Health Act 1956, Health and Safety in Employment Act 1992, Resource Management Act 1991, Building Act 2004, Hazardous Substances and New Organisms Act 1996 and its regulations or any other relevant statutory or regulatory requirements. In the event of any inconsistency between legislation, the more stringent requirement applies.

### 1.3.3 Trade premises and other users to which the Bylaw applies:

This Bylaw shall apply to all trade premises within Grey District where Trade Wastes are discharged, or sought, or likely to be discharged, to the wastewater network operated by GDC or its agents. The Bylaw shall also apply to tankered wastes collected for the purpose of discharge to the wastewater network operated by GDC or its agents. Pursuant to Section 196 of the Local Government Act 2002, GDC may refuse to accept any type of Trade Waste that is not in accordance with this Bylaw.

## 1.4 DEFINITIONS

### 1.4.1 For the purposes of this Bylaw, the following definitions shall apply:

**ACCESS POINT** is a place where access may be made to a private drain for inspection (including sampling or measurement), cleaning or maintenance. The location of the access point shall be in accordance with the New Zealand Building Code.

**ANALYST** means a testing laboratory approved in writing by an authorised officer on behalf of the GDC.

**APPROVAL** or **APPROVED** means approval or approved in writing by GDC, either by resolution of GDC or by an authorised officer of GDC authorised for that purpose.

**AUTHORISED OFFICER** means any officer appointed by GDC as an enforcement officer under Section 177 of the LGA with powers of entry as prescribed by Sections 171 to 174 of the LGA.

**BIOSOLIDS** means wastewater sludge derived from a Wastewater Treatment Plant that has been treated and/or stabilised to the extent that it is able to be safely and beneficially applied to land and does not include products derived solely from industrial Wastewater Treatment Plants. The term biosolid/s is used generically throughout this document to include products containing biosolids (e.g. composts).

**CHARACTERISTIC** means any of the physical or chemical characteristics of a Trade Waste and may include the level of a characteristic.

**CLEANER PRODUCTION** means the implementation on trade premises, of effective operations, methods and processes appropriate to the goal of reducing or eliminating the quantity and toxicity of wastes. This is required to minimise and manage Trade Waste by:

- a) Using energy and resources efficiently, thereby avoiding or reducing the amount of wastes produced;
- b) Producing environmentally sound products and services;
- c) Achieving less waste, fewer costs and higher profits.

**CONDENSING WATER** or **COOLING WATER** means any water used in any trade, industry, or commercial process or operation in such a manner that it does not take up matter into solution or suspension.

**CONDITIONAL TRADE WASTE** means a Trade Waste discharge which exceeds the physical and chemical characteristics defined in Schedule 1A of this Bylaw, and which is not a Prohibited Trade Waste.

**CONSENT** means a Consent in writing given by GDC and signed by an authorised officer authorising a person to discharge Trade Wastes to the wastewater network.

**CONSENT HOLDER** means the person occupying trade premises who has obtained a Consent to discharge or direct the manner of discharge of Trade Waste from any premises to GDC's wastewater network, and includes any person who does any act on behalf or with the express or implied Consent of the Consent Holder (whether for reward or not) and any licensee of the Consent Holder.

**CONTAMINANT** includes any substance (including gases, odorous compounds, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy or heat:

- a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or
- b) When discharged onto, or into land, or into air, changes, or is likely to change the physical, chemical, or biological condition of the land or air onto, or into, which it is discharged; or
- c) As described or contained in the RMA.

**CONTINGENCY MANAGEMENT PROCEDURES** means those procedures developed and used to avoid, remedy, or mitigate the actual and/or potential adverse effects of these activities on the environment from an unexpected or unscheduled event resulting in the discharge, or potential discharge, of contaminants of concern into the wastewater network.

**DISCONNECTION** means the physical cutting and sealing of any of GDC's water services, utilities, drains or wastewater network for use by any person.

**DISTRICT** means Grey District.

**DOMESTIC WASTEWATER** means liquid waste (with or without matter in solution or suspension therein) discharged from premises used solely for residential purposes, or wastes of the same character discharged from other premises; but does not include any solids, liquids, or gases that may not lawfully be discharged into the wastewater network and may include geothermal water.

**HAZARDOUS WASTES** means hazardous substances as defined by the Hazardous Substances and New Organisms Act 1996.

**GDC** means the Grey District Council, including its authorised agents responsible for the collection, treatment and disposal of wastewater and Trade Waste.

**HSNO** means the Hazardous Substances and New Organisms Act 1996.

**INFRINGEMENT** means an offence as specified by this Bylaw under Section 243 and 259 of the LGA.

**LGA** means the Local Government Act 2002.

**LONG TERM PLAN (LTP)** means a long term plan adopted by GDC under Section 93 of the LGA.

**MANAGEMENT PLAN** means a plan for management of the operations on the premises from which Trade Wastes come, and may include provision for Cleaner Production, waste minimisation, discharge, contingency management procedures, or any relevant industry Code of Practice.

**MASS LIMIT** means the total mass of any characteristic that may be discharged to GDC's wastewater network over any stated period from any single point of discharge or collectively from several points of discharge.

**MAXIMUM CONCENTRATION** means the instantaneous peak concentration that may be discharged at any instant in time.

**OCCUPIER** means the person occupying trade premises connected to the wastewater network.

**PERMITTED TRADE WASTE** means a Trade Waste discharge that is permitted by this Bylaw, so long as it continues to comply with the physical and chemical characteristics defined in Schedule 1A of this Bylaw.

**PERSON** includes a corporation sole and also a body of persons whether incorporated or unincorporated.

**POINT OF DISCHARGE** is the boundary between the public wastewater network and a private drain but for the purposes of monitoring, sampling and testing, shall be as designated in the Trade Waste Consent.

**PRE-TREATMENT** means any processing of Trade Waste designed to reduce or vary any characteristic in a waste before discharge to the wastewater network in order to comply with a Trade Waste Consent.

**PREMISES** means either:

- a) A property or allotment which is held under a separate certificate of title or for which a separate certificate of title may be issued and in respect to which a building consent has been or may be issued; or
- b) A building that has been defined as an individual unit by a cross-lease, unit title or company lease and for which a certificate of title is available; or
- c) Land held in public ownership (e.g. reserve) for a particular purpose; or
- d) Individual units in buildings that are separately leased or separately occupied.

**PRIVATE DRAIN** means that section of drain between the premises and the point of connection to GDC's wastewater network.

**PROHIBITED TRADE WASTE** means a Trade Waste discharge that has any of the prohibited characteristics as defined in Schedule 1B.

**RMA** means the Resource Management Act 1991.

**SCHEDULE OF RATES AND CHARGES** means the list of items, terms and prices for services associated with the discharge of Trade Waste as approved from time to time by GDC (these charges do not form part of this bylaw).

**SEWER** means the pipework drainage system that conveys wastewater from the point of discharge. The public sewer is owned, administered, and maintained by GDC.

**SIGNIFICANT INDUSTRY** is a term to indicate the relative size of a given industry compared to the capacity of the wastewater network (including Wastewater Treatment Plant), which serves that industry. Industry size relates to volume and/or loads discharging into the wastewater network. Loads can be the conventional loadings of BOD5 and SS or some other particular contaminant (e.g. boron, chromium) that will have an effect or the propensity to have an effect on the sizing of the wastewater network, the on-going network operation and/or the quality of the treated effluent that is discharged.

**STORMWATER** means surface water run-off resulting from precipitation.

**TANKERED WASTE** is water or other liquid, including waste matter in solution or suspension, which is conveyed by vehicle for disposal, excluding domestic wastewater discharged directly from house buses, caravans, buses and similar vehicles.

**TEMPORARY DISCHARGE** means any discharge of an intermittent or short duration. Such discharges include the short-term discharge of an unusual waste from premises subject to an existing Consent.

**TERRITORIAL AUTHORITY (TA)** means a city council or district council.

**TRADE PREMISES** means:

- a) Any premises used or intended to be used for any industrial or trade purpose; or
- b) Any premises used or intended to be used for the storage, transfer, treatment, or disposal of waste materials or for other waste management purposes, or used for composting organic materials; or
- c) Any other premises from which a contaminant is discharged in connection with any industrial or trade process;
- d) Any other premises discharging other than domestic wastewater; and includes any land or premises wholly or mainly used for agricultural or horticultural purposes.

**TRADE WASTE** is any liquid, with or without matter in suspension or solution, that is or may be discharged from a trade premises to GDC's wastewater network in the course of any trade or industrial process or operation, or in the course of any activity or operation of a like nature; and may include condensing or cooling waters; stormwater which cannot be practically separated, or domestic wastewater.

**WASTEWATER** means domestic wastewater and may include Trade Wastes.

**WASTEWATER NETWORK** means the collection, treatment and disposal of wastewater and Trade Wastes, including all sewers, pumping stations, storage tanks, Wastewater Treatment Plants, outfalls, and other related structures operated by GDC and used for the reception, treatment and disposal of Trade Wastes.

**WASTEWATER SLUDGE** means the material settled out and removed from wastewater during the treatment process.

**WORKING DAY** means any day of the week other than:

- a) A Saturday, a Sunday, Waitangi Day, Good Friday, Easter Monday, Anzac Day, the Sovereign's birthday, Labour Day; and
- b) A day in the period commencing with the 25<sup>th</sup> day of December in a year and ending with the 2<sup>nd</sup> day of January in the following year.

## 1.5 ABBREVIATIONS

°C	degrees Celsius
ANZECC	Australian New Zealand Environment and Conservation Council
B	boron
BOD5	Biochemical Oxygen Demand
Br2	bromine
Cl2	chlorine
CN	cyanide
COD	Chemical Oxygen Demand
DAF	dissolved air floatation
DP	deposited plan
DS	dry solids
F	fluoride
FOGs	fats, oils and greases
g/m3	grams per cubic metre

GST	goods and services tax
H <sub>2</sub> S	hydrogen sulphide
HAHs	halogenated aromatic hydrocarbons
HCHO	formaldehyde
HCN	hydrogen cyanide
Hr	hour
HSNO	Hazardous Substances and New Organisms Act 1996
kg/day	kilogram per day
L	litre
L/s	litre per second
LGA	Local Government Act 2002
LTP	Council's long term plan
m <sup>3</sup>	cubic metre
max.	maximum
MBAS	methylene blue active substances
MfE	Ministry for the Environment
mg/L	milligram per litre
mL/L	millilitre per litre
mm	millimetres
MSDS	material safety data sheets
N	nitrogen
NH <sub>3</sub>	ammonia
NH <sub>3</sub> -N	ammoniacal nitrogen
P	phosphorus
PAHs	polycyclic (or polynuclear) aromatic hydrocarbons
PBBs	polybrominated biphenyls
PCBs	polychlorinated biphenyls
pH	measure of acidity/alkalinity
RMA	Resource Management Act 1991
s	second
SBR	sequencing batch reactor
SO <sub>4</sub>	sulphate
SS	suspended solids concentration
TAs	territorial authorities
UV	ultra violet
UVT	ultra violet transmission
WC	water closet
GDC	wastewater authority

## **1.6 GENERAL**

- 1.6.1 In this Bylaw one gender includes all genders, the singular includes the plural and the plural includes the singular.
- 1.6.2 The word "shall" identifies a mandatory requirement for compliance with the Bylaw. The word "should" refers to practices that are advised or recommended.

## **2.0 COMPLIANCE WITH THE BYLAW**

### **2.1 CONTROL OF DISCHARGES**

- 2.1.1 No Person shall:
- a) Discharge, or allow to be discharged, any Trade Waste to the wastewater network except in accordance with the provisions of this Bylaw and any Consent which may be granted to discharge Conditional Trade Waste or in accordance with a separate Trade Waste Agreement with GDC;
  - b) Discharge, or allow to be discharged, a prohibited Trade Waste into the wastewater network;



- c) Add or permit the addition of condensing or cooling water to any Trade Waste which discharges into the wastewater network unless specific approval is given in a Consent; or
- d) Add or permit the addition of stormwater to any Trade Waste which discharges into the wastewater network unless specific approval is given in a Consent.

2.1.2 In the event of failure to comply with 2.1.1 a) to d), GDC may physically prevent and / or divert and remove at offenders cost discharge to the wastewater network if a reasonable alternative action cannot be established with the discharging party or parties.

2.1.3 Any person discharging to GDC's wastewater network shall also comply with the requirements of the HSNO and the RMA. Where any breach of this Bylaw causes GDC to breach the terms of its consent, the Trade Waste discharger may be liable under the RMA.

## **2.2 STORAGE, TRANSPORT, HANDLING AND USE OF HAZARDOUS OR HARMFUL MATERIALS**

- a) All persons on trade premises shall take all reasonable steps to prevent the accidental entry of any of the materials listed in 2.2 c) of this Bylaw from entry into the wastewater network as a result of leakage, spillage or other mishap;
- b) No person shall store, transport, handle or use, or cause to be stored, transported, handled or used any hazardous substance as defined by HSNO or any of the materials listed in 2.2 c) in a manner that may cause the material to enter the wastewater network and cause harmful effects.
- c) Materials referred to in 2.2 a) and b) are those:
  - i. Products or wastes containing corrosive, toxic, biocidal, radioactive, flammable or explosive materials
  - ii. Likely to generate toxic, flammable, explosive or corrosive materials in quantities likely to be hazardous, when mixed with the wastewater stream
  - iii. Likely to be deleterious to the health and safety of the GDC's staff, approved contractors and the public, or to be harmful to the wastewater network.

## **3.0 TRADE WASTE DISCHARGES AND CONSENTS**

### **3.1 CLASSIFICATION OF TRADE WASTE DISCHARGES**

3.1.1 Trade Waste discharges shall be classified as one of the following types:

- a) Permitted Trade Waste is a Trade Waste discharge that is permitted by this Bylaw, so long as it continues to comply with the physical and chemical characteristics defined in Schedule 1A of this Bylaw (Consent not required);
- b) Conditional Trade Waste is a Trade Waste discharge which exceeds the physical and chemical characteristics defined in Schedule 1A of this Bylaw, and which is not a Prohibited Trade Waste (Consent required); or
- c) Prohibited Trade Waste is a Trade Waste discharge that has any of the prohibited characteristics as defined in Schedule 1B (not Consentable).

3.1.2 GDC is not obliged to accept any Conditional Trade Waste. No application for a Trade Waste Consent shall be approved where the Trade Waste discharge would contain, or is likely to contain, characteristics that are prohibited.

3.1.3 No person shall discharge, or cause to be discharged, any Trade Waste to the wastewater network except in accordance with the provisions of this Bylaw.

### **3.2 APPLICATION FOR A TRADE WASTE CONSENT**

#### **3.2.1 Formal Application**

Every person who does, proposes to, or is likely to:

- a) Discharge into the wastewater network any Trade Waste (other than a permitted Trade Waste), either continuously, intermittently or temporarily; or
- b) Vary the characteristics of a Permitted Trade Waste discharge in a manner which may cause it to fail to meet the standards for a permitted trade waste; or
- c) Vary the conditions of consent to discharge that has previously been granted; or
- d) Significantly change the method or means of pre-treatment for discharge under an existing consent.

Shall be required to apply in the prescribed form for the consent of the GDC, for the discharge of that Trade Waste, or for consent to the proposed variations.

- 3.2.2 GDC reserves the right to deal with the owner as well as the occupier of any trade premises.
- 3.2.3 Where the trade premises produces Trade Waste from more than one area of the premises, a separate copy of the "Description of Trade Waste and Premises" shall be included in any application for Trade Waste discharge for each area. This applies whether or not the separate areas are part of a single or separate trade process.
- 3.2.4 The applicant shall ensure that the application and every other document conveying required information is properly executed and any act done for, or on behalf of, the eventual Consent Holder (whether for reward or not) in making any such application shall be deemed to be an act of the Consent Holder.
- 3.2.5 GDC may require an application to be supported by an independent report/statement completed by a suitably experienced and external auditor to verify any or all information supplied by the applicant, and this may include a Management Plan.
- 3.2.6 Every application shall be accompanied by a Trade Waste application fee in accordance with the GDC's Schedule of Rates and Charges.

### **3.3 PROCESSING OF AN APPLICATION**

- 3.3.1 GDC shall acknowledge the application in writing within 10 working days of receipt of the application.

### **3.4 INFORMATION AND ANALYSIS**

- 3.4.1 On the receipt of any application for a Trade Waste Consent to discharge from any premises or to alter an existing discharge, GDC may:
  - a) Require the applicant to submit any additional information which it considers necessary to reach an informed decision;
  - b) Require the applicant to submit a Management Plan to the satisfaction of GDC;
  - c) Whenever appropriate have the discharge investigated and analysed as provided for in clauses 6.1 and 6.3 of this Bylaw.
  - d) Direct GDC staff to investigate the premises to confirm the nature of discharge.
- 3.4.2 GDC shall notify the applicant of any requirement under clause 3.4.1 within 10 working days of receipt of the application.

### **3.5 CONSIDERATION OF AN APPLICATION**

- 3.5.1 Within 15 working days (or such greater time as may be allowed by GDC) of the receipt of an application complying with this Bylaw, and/or all requirements under clause 3.4, whichever is the later, GDC shall, after considering the matters in clause 3.6 of this Bylaw, action one of the following in writing:
  - a) Grant the application as a Permitted Trade Waste and inform the applicant of the decision by issuing the appropriate notice; or

- b) Grant the application as a Conditional Trade Waste Discharge Consent and inform the applicant of the decision and the conditions imposed on the discharge by issuing the appropriate notice of consent to the discharge; or
- c) Decline the application and notify the applicant of the decision giving a statement of the reasons for refusal (this may include a requirement that the applicant enter into a special Trade Waste agreement with GDC).

### **3.6 CONSIDERATION CRITERIA**

3.6.1 In considering any application for a Trade Waste Consent to discharge from any trade premises or to discharge tankered waste into the wastewater network and in imposing any conditions on such a consent, GDC shall take into consideration the quality, volume, and rate of discharge of the Trade Waste from such premises or tanker in relation to:

- a) The health and safety of GDC staff, GDC's agents and the public;
- b) The limits and/or maximum values for characteristics of Trade Waste as specified in Schedules 1A and 1B of this Bylaw;
- c) The extent to which the Trade Waste may react with other Trade Waste or produce an undesirable effect, e.g. settlement of solids, production of odours, accelerated corrosion and deterioration of the wastewater network, etc.;
- d) The flows and velocities in the sewer, or sewers and the material or construction of the sewer or sewers;
- e) The capacity of the sewer or sewers and the capacity of any Wastewater Treatment Plant, and other facilities;
- f) The nature of any wastewater treatment process and the degree to which the Trade Waste is capable of being treated in the Wastewater Treatment Plant;
- g) The timing and balancing of flows into the wastewater network;
- h) Any statutory requirements relating to the discharge of raw or treated wastewater to receiving waters, the disposal of wastewater sludges, beneficial use of biosolids, and any discharge to air (including the necessity for compliance with any Resource Consent, discharge permit or water classification);
- i) The effect of the Trade Waste discharge on the ultimate receiving environment;
- j) The conditions on Resource Consents for the wastewater network and the residuals from it;
- k) The possibility of unscheduled, unexpected or accidental events and the degree of risk these could cause to humans, the wastewater network or the environment;
- l) Consideration of other existing or future discharges;
- m) Amenability of the Trade Waste to pre-treatment;
- n) Existing pre-treatment works on the premises and the potential for their future use;
- o) Cleaner Production techniques and waste minimisation practices;
- p) Requirements and limitations related to wastewater sludge disposal and reuse;
- q) Control of stormwater;
- r) Any Management Plan;
- s) Tankered waste being discharged at an approved location/s; and
- t) Whether it would be more appropriate for the discharge to be controlled pursuant to a special Trade Waste agreement.

### **3.7 CONDITIONS OF TRADE WASTE CONSENT**

3.7.1 Any Trade Waste Consent to discharge may be granted subject to such conditions that GDC may impose, including, but not limited to:

- a) The particular public sewer or sewers to which the discharge will be made;
- b) The maximum daily volume of the discharge and the maximum rate of discharge, and the duration of maximum discharge;
- c) The maximum limit or permissible range of any specified characteristics of the discharge, including concentrations and/or mass limits determined in accordance with clause 3.8 of this Bylaw;
- d) The period or periods of the day during which the discharge, or a particular concentration, or volume of discharge may be made;
- e) The degree of acidity, or alkalinity of the discharge at the time of discharge;

- f) The temperature of the Trade Waste at the time of discharge;
- g) The provision by, or for the Consent Holder, at the Consent Holder's expense, of screens, grease traps, silt traps or other pre-treatment works to control Trade Waste discharge characteristics to the consented levels;
- h) The provision and maintenance at the Consent Holder's expense of inspection chambers, manholes or other apparatus or devices to provide reasonable access to drains on consent holders property for sampling and inspection;
- i) The provision and maintenance of a sampling, analysis and testing programme and flow measurement, at the Consent Holder's expense;
- j) The method or methods to be used for measuring flow rates and/or volume and taking samples of the discharge for use in determining compliance with the Trade Waste Bylaw consent and for determining the amount of any Trade Waste charges applicable to that discharge;
- k) The provision and maintenance by, and at the expense of, the Consent Holder of such meters or devices as may be required to measure the volume or flow rate of any Trade Waste being discharged from the premises, and for the testing of such meters; meters to be situated on consent holders property or Council property;
- l) The provision and maintenance, at the Consent Holder's expense of such services, (whether electricity, water or compressed air or otherwise), which may be required, in order to operate meters and similar devices;
- m) At times specified, the provision in an GDC approved format by the Consent Holder to GDC of all flow and/or volume records and results of analyses (including pre-treatment by-products, e.g. wastewater sludge disposal);
- n) The provision and implementation of a Management Plan;
- o) Risk assessment of damage to the environment due to an accidental discharge of a chemical;
- p) Waste minimisation and management;
- q) Cleaner Production techniques;
- r) Remote control of discharges;
- s) Third party treatment, carriage, discharge or disposal of by-products of pre-treatment of Trade Waste (including wastewater sludge disposal);
- t) Requirement to provide a bond or insurance in favour of GDC if requested by GDC where failure to comply with the consent could result in damage to GDC's wastewater network, its Wastewater Treatment Plants, or could result in GDC being in breach of any statutory obligation;
- u) Remote monitoring of discharges;
- v) Specific discharge related capital costs GDC would incur for altering the wastewater network and or Wastewater Treatment Plant in order to accommodate the discharge; and
- w) Specific discharge related operational costs GDC would incur for operating the wastewater network and or Wastewater Treatment Plant in order to accommodate the discharge.

### **3.8 DURATION**

#### **3.8.1 Permitted Discharges**

A Permitted Trade Waste is able to be discharged until:

- a) The discharge fails to comply with the permitted standards;
- b) In the opinion of GDC, the discharge changes or is likely to change to such an extent that it becomes a Conditional or Prohibited Trade Waste; or
- c) GDC changes the Trade Waste management procedures by implementation of changed Trade Waste Bylaw conditions or any amendment to, or replacement of, its Trade Waste Bylaw and the discharge is not permitted by the new provisions.

In all cases, after appropriate consultation, the person shall apply within 10 working days of this change occurring for a Conditional Consent, in accordance with clause 3.2 of this Bylaw.

#### **3.8.2 Conditional Consents**

Subject to clauses 3.9 and 7.1 of this Bylaw, Conditional Consents under this Bylaw shall expire at the end of a term fixed by GDC subject to the following:

- a) Conditional Consents may be granted for a term not exceeding five years to an applicant who at the time of application satisfies GDC that:
  - i. The nature of the trade activity, or the process design and/or management of the premises are such that the applicant has a demonstrated ability to meet the conditions of the consent during its term; and/or
  - ii. Cleaner Production techniques are successfully being utilised, or that a responsible investment in Cleaner Production equipment or techniques is being made; and/or.
  - iii. Significant investment in pre-treatment facilities has been made, such that a longer period of certainty for the amortising of this investment is considered reasonable.
 Notwithstanding the above, GDC retains the right to review the conditions at an earlier time. The reasons for such a review may include:
  - i. The level of Consent Holder compliance, including any accidents including spills or process mishaps;
  - ii. Matters pertaining to GDC's Resource Consents for the wastewater network;
  - iii. Matters pertaining to GDC's environmental policies and outcomes;
  - iv. New control and treatment technologies and processes;
  - v. Any of the matters outlined in Section 4 of this Bylaw; and
  - vi. Matters pertaining to GDC's legal obligations
- b) In all other cases the term of a Conditional Trade Waste Consent will not exceed two years; and
- c) Consents are not transferable and in all cases where either the Consent Holder or the owner of the premises changes, or there is a change of use, a new application for a Conditional Trade Waste Consent shall be made. It shall be the responsibility of the owner or occupier of the premises to lodge the new application.

### **3.9 TECHNICAL REVIEW AND VARIATION**

- 3.9.1 GDC at any time may require a person discharging a Permitted Trade Waste to apply for a consent in accordance with clause 3.8.1 of this Bylaw.
- 3.9.2 GDC may at any time during the term of a Trade Waste Consent, by written notice to the Consent Holder (following a reasonable period of consultation), vary any condition to such an extent as GDC considers necessary following a review of the technical issues considered when setting conditions of consent, or to meet any new Resource Consent imposed on the discharge from GDC's Wastewater Treatment Plant, or with any other legal requirements imposed on GDC.
- 3.9.3 A Consent Holder may at any time during the term of a consent, by written application to GDC, seek to vary any condition of consent, as provided for in clause 3.7 of this Bylaw.

### **3.10 CANCELLATION OF THE RIGHT TO DISCHARGE**

#### **3.10.1 Suspension or Cancellation on Notice**

GDC may suspend or cancel any consent to discharge at any time following not less than 20 working days (during which consultation has occurred) notice to the Consent Holder or person discharging any Trade Waste:

- a) For the failure to comply with any condition of the consent;
- b) For the failure to maintain effective control over the discharge;
- c) In the event of any negligence which, in the opinion of GDC, threatens the safety of, or threatens to cause damage to any part of the wastewater network or the Wastewater Treatment Plant, or threatens the health or safety of any person;
- d) If any occurrence happens that, in the opinion of GDC, poses a serious threat to the environment;
- e) In the event of any breach of a Resource Consent held by GDC issued under the RMA caused in whole or in part by the Trade Waste discharge;
- f) Failure to provide and when appropriate update a Management Plan as required for a Conditional Consent;

- g) Failure to follow the Management Plan provisions at the time of an unexpected, unscheduled or accidental occurrence;
- h) Failure to pay any Trade Waste charges; or
- i) If any other circumstances arise which, in the opinion of GDC, render it necessary in the public interest to cancel the right to discharge.

### 3.10.2 **Summary Suspension or Cancellation**

Further to clause 3.9.1 of this Bylaw, any Trade Waste Consent or discharge may at any time be summarily suspended or cancelled by GDC, on giving to the Consent Holder or person discharging, 24 hours written notice of summary cancellation, if:

- a) They discharge any prohibited substance;
- b) GDC is lawfully directed to withdraw or otherwise to terminate the consent summarily;
- c) If the continuance of the discharge is, in the opinion of GDC, a threat to the environment or public health;
- d) If the continuance of the discharge may, in the opinion of GDC, result in a breach of a Resource Consent held by GDC; or
- e) In the opinion of GDC, the continuance of the discharge puts at risk the ability of GDC to comply with the conditions of a Resource Consent and/or requires identified additional treatment measures or costs to seek to avoid a breach of any such Resource Consent.

## **4.0 TRADE WASTE APPROVAL CRITERIA**

### **4.1 PRE-TREATMENT**

- 4.1.1 GDC may approve a Trade Waste discharge subject to the provision of appropriate pre-treatment systems to enable the person discharging to comply with the Bylaw. Such pre-treatment systems shall be provided, operated and maintained by the person discharging, at their expense.
- 4.1.2 Refuse or garbage grinders, and macerators shall not be used to dispose of solid waste from trade premises to the wastewater network unless approved by GDC.

### **4.2 MASS LIMITS**

- 4.2.1 A Conditional Trade Waste Consent to discharge may impose controls on a Trade Waste discharge by specifying mass limits for any characteristic. Any characteristic permitted by mass limit shall also have its maximum concentration limited to the value scheduled unless approved otherwise.
- 4.2.2 When setting mass limit allocations for a particular characteristic, GDC shall consider:
  - a) The operational requirements of and risk to the wastewater network, and risks to occupational health and safety, public health, and the ultimate receiving environment;
  - b) Whether or not the levels proposed pose a threat to the planned or actual beneficial reuse of biosolids or wastewater sludge;
  - c) Conditions in the wastewater network near the Trade Waste discharge point and elsewhere in the wastewater network;
  - d) The extent to which the available industrial capacity was used in the last financial period and is expected to be used in the forthcoming period;
  - e) Whether or not the applicant uses Cleaner Production techniques within a period satisfactory to GDC;
  - f) Whether or not there is any net benefit to be gained by the increase of one characteristic concurrently with the decrease of another, to justify any increased application for industrial capacity;
  - g) Any requirements of GDC to reduce the pollutant discharge of the wastewater network;
  - h) How great a proportion the mass flow of a characteristic of the discharge will be of the total mass flow of that characteristic in the wastewater network;
  - i) The total mass of the characteristic allowable in the wastewater network, and the proportion (if any) to be reserved for future allocations; and

- j) Whether or not there is an interaction with other characteristics that increases or decreases the effect of either characteristic on the wastewater network, treatment process, or receiving water (or land).

## **5.0 DILUTION OF TRADE WASTE**

### **5.1 POTABLE, CONDENSING, COOLING WATER IN STORMWATER**

- 5.1.1 The person discharging shall not, unless approved by GDC, add or permit the addition of any potable, condensing, cooling water or stormwater to any Trade Waste stream in order to vary the level of any characteristics of the waste.
- 5.1.2 No person or occupier shall add or permit the addition of condensing or cooling water to any wastewater unless specific approval is given in a consent.
- 5.1.3 No person or occupier shall add or permit the addition of stormwater to any wastewater unless:
  - a) The area from which the stormwater originates is part of the trade premises and is included in any Trade Waste Consent and appropriate detention or treatment devices are in place and maintained in accordance with the Trade Waste Consent; or
  - b) Prior written approval has been obtained from GDC or an authorised officer.

## **6.0 SAMPLING, TESTING AND MONITORING**

### **6.1 FLOW METERING**

- 6.1.1 Flow Metering may be required by GDC:
  - a) On discharges when there is not a reasonable relationship between a metered water supply to the premises, and the discharge of Trade Waste;
  - b) When GDC will not approve a method of flow estimation; or
  - c) When the discharge represents a significant proportion of the total flow/load received by GDC.
- 6.1.2 The Consent Holder shall be responsible for the supply, installation, reading and maintenance of any meter required by GDC for the measurement of the rate or quantity of discharge of Trade Waste. These devices shall be subject to the approval of GDC, but shall remain the property of the Consent Holder.
- 6.1.3 Records of flow and/or volume shall be available for viewing at any time by the GDC, and shall be submitted to GDC at prescribed intervals by the Consent Holder in a format approved by GDC.
- 6.1.4 Meters shall be located in a position approved by GDC that provides the required degree of accuracy and should be readily accessible for reading and maintenance. The meters shall be located in the correct position according to the manufacturer's installation instructions.
- 6.1.5 The Consent Holder shall arrange for in situ calibration of the flow metering equipment and instrumentation by a person and method approved by GDC upon installation, and at least once a year thereafter to ensure its performance. The meter accuracy should be  $\pm 10\%$ , but with no greater a deviation from the previous meter calibration than  $\pm 5\%$ . A copy of independent certification of each calibration result shall be submitted to GDC.
- 6.1.6 Should any meter, after being calibrated, be found to have an error greater than that specified in clause 6.1.5 of this Bylaw, as a repeatable measurement, GDC may make an adjustment in accordance with the results shown by such tests, back-dated for a period at the discretion of GDC, but not exceeding 12 months. The Consent Holder shall pay or be credited a greater or lesser amount according to such adjustment.

## **6.2 ESTIMATING DISCHARGE**

6.2.1 Where no meter or similar apparatus is warranted, GDC may require that a percentage of the water supplied to the premises (or other such basis as seems reasonable) be used for estimating the rate or quantity of flow for the purposes of charging.

6.2.2 Should any meter be out of repair or cease to register, or be removed, GDC shall estimate the discharge for the period since the previous reading of such meter (based on the average of the previous 12 months charged to the person discharging), and they shall pay according to such estimate. Provided that when by reason of a large variation of discharge due to seasonal or other causes, the average of the previous 12 months would be an unreasonable estimate of the discharge, then GDC may take into consideration other evidence for the purpose of arriving at a reasonable estimate, and the person discharging shall pay according to such an estimate.

6.2.3 Where in the opinion of GDC, a meter has been tampered with, GDC (without prejudice to the other remedies available) may declare the reading void and estimate discharge as provided above.

## **6.3 SAMPLING AND ANALYSIS**

6.3.1 As determined by GDC sampling, testing and monitoring may be undertaken to determine if:

- a) A discharge complies with the provisions of this Bylaw;
- b) A discharge is to be classified as a Permitted, Controlled, Conditional, or Prohibited (refer to clause 3.1 of this Bylaw);
- c) A discharge complies with the provisions of Schedule 1A of this Bylaw for a Permitted Discharge and any consent to discharge; and
- d) Trade Waste Consent charges are applicable to that discharge.

6.3.2 The taking, preservation, transportation, and analysis of the sample shall be undertaken by an authorised officer or agent of GDC, or the person discharging, in accordance with accepted industry standard methods, or by a method specifically approved by GDC. The person discharging shall be responsible for all reasonable costs.

Where a dispute arises as to the validity of the methods or procedures used for sampling or analysis, the dispute may be submitted to a mutually agreed independent arbitrator.

6.3.3 All authorised officers or authorised agents of GDC, or any analyst may enter any premises believed to be discharging Trade Waste at any time in order to determine any characteristics of any actual or potential discharge by:

- a) Taking readings and measurements;
- b) Carrying out an inspection; and/or
- c) Taking samples for testing, of any solid, liquid, or gaseous material or any combination or mixture of such materials being discharged.

Authorisation for entry to premises is given under the LGA and entry shall be in compliance with the health and safety policies of that particular site.

## **6.4 MONITORING**

### **6.4.1 Monitoring for compliance**

GDC is entitled to monitor and audit any Trade Waste discharge for compliance. Whether for a Permitted Trade Waste or a Conditional Trade Waste, monitoring may be carried out as follows:

- a) GDC or its authorised agent will take the sample and arrange for this sample to be analysed in an approved laboratory by agreed/approved analytical methods;
- b) The sampling procedure will be appropriate to the Trade Waste and the analysis;



- c) GDC will audit the sampling and analysis carried out by a self-monitoring Trade Waste discharger. Analysis will be performed by an approved laboratory. Interlaboratory checks are to be part of this process;
- d) GDC will audit the sampling and analysis carried out by an analyst. Analysis will be performed by an approved laboratory. Inter-laboratory checks are to be part of this process; and
- e) GDC will audit the Trade Waste Consent conditions including any Management Plans.

6.4.2 At the discretion of GDC, all costs of monitoring shall be met by the discharger either through direct payment to the laboratory or to GDC.

#### 6.4.3 **Sampling methodology**

Normally a single grab or composite sample is sufficient. If required, the grab or composite sample can be split equally into three, as follows:

- a) One portion of the sample goes to the Trade Waste discharger for appropriate analysis and/or storage;
- b) A second portion of the sample shall be analysed at a laboratory approved by GDC;
- c) A third portion of the sample is retained by GDC for 20 working days, for additional analysis if required.

Due consideration will be applied to any changes that could occur in retained Trade Waste samples, and provisions to mitigate against changes will be adopted where practicable. In all cases the samples shall be handled in an appropriate manner such that the characteristics being tested for are, as far as reasonably possible, preserved. All samples shall be preserved, handled, transported and delivered to an approved laboratory according to best possible practice and approved standards.

#### 6.4.4 **Tankered wastes**

Tankered wastes shall not be discharged into GDC's wastewater network by any person or Consent Holder not compliant with the Liquid and Hazardous Wastes Code of Practice. GDC may accept tankered wastes for discharge at an approved location.

Tankered wastes shall:

- a) Be transported by a Consent Holder to discharge domestic septic tank or industrial wastes;
- b) Have material safety data sheets (MSDS) supplied to GDC detailing the contents of a waste;
- c) Be tested to determine their character if the contents of the waste are not known. specialist advice on pre-treatment or acceptance may be required. The cost of all testing and advice shall be borne by the Consent Holder;
- d) Not be picked up and transported to the disposal site until appropriate arrangements and method for disposal have been determined by GDC;
- e) To prevent cross-contamination between tanker loads, the tanker shall be thoroughly washed prior to collecting a load for disposal into the wastewater network; and
- f) Have 24 hours' notice given for the disposal of wastes other than those sourced from domestic septic tanks.
- g) Any person illegally disposing of, or causing to be disposed, tankered waste either by incorrect disclosure of contents (characteristics and/or amount) or dumping into GDC's wastewater network other than the prescribed location will be in breach of the Bylaw.

## 7.0 **BYLAW ADMINISTRATION**

### 7.1 **REVIEW OF DECISIONS**

7.1.1 If any person is dissatisfied with any decision by an authorised officer made under this Bylaw, that person may, by notice delivered to the Manager Water & Waste Services of GDC, not later than 20 working days after the decision by the authorised officer is served upon that person,

request that the Manager Water & Waste Services review any such decision. The Manager Water & Waste Services' decision shall be final.

7.1.2 Nothing in this clause shall affect any right of appeal under the LGA.

## **7.2 ACCIDENTS AND NON-COMPLIANCE**

7.2.1 The person discharging, shall inform GDC immediately on discovery of any accident, including spills or process mishaps, which may cause a breach of this Bylaw.

7.2.2 In the event of any accident occurring when the person holds a Conditional Consent, then GDC may review the Consent under clause 3.9 of this Bylaw. GDC may require the Consent Holder to review their contingency management procedures and re-submit their Management Plan for approval by GDC, within 20 working days of written notification of this requirement.

7.2.3 In the event of an accident occurring on the premises of a Permitted Discharge, GDC may require the person discharging to apply for a Conditional Consent.

## **7.3 CHARGES AND PAYMENTS**

### **7.3.1 Charges**

GDC may recover fees and charges in accordance with the LGA. GDC's Trade Waste Charges are outlined in its Schedule of Fees and Charges. Schedule 1C of this Bylaw outlines a regime of indicative charges.

### **7.3.2 Invoicing**

All charges, shall be invoiced in accordance with GDC's standard commercial practice. The invoice shall provide each person discharging with a copy of the information and calculations used to determine the extent of any charges and fees due, in regard to a discharge.

### **7.3.3 Cease to Discharge**

The person discharging shall be deemed to be continuing the discharge of Trade Waste and shall be liable for all charges, until notice of disconnection is given.

### **7.3.4 Failure to Pay**

All fees and charges payable under this Bylaw shall be recoverable as a debt. If the person discharging fails to pay any fees and charges under this Bylaw, GDC may cancel the right to discharge in accordance with clause 3.10 of this Bylaw.

### **7.3.5 Recovery of Costs**

GDC may recover costs under the LGA relating to Sections 150 and 151, for wilful damages or negligent behaviour (Section 175 of the LGA) and remedying damage arising from a breach of this Bylaw (Section 176 of the LGA).

## **7.4 AUTHORISED OFFICERS**

7.4.1 All authorised officers of GDC, or other persons authorised under Sections 174 or 177, or paragraph 32 of Schedule 7 of the LGA, shall possess and produce, on request, warrants of authority and evidence of identity.

7.4.2 Any authorised officers may at any reasonable time enter any premises believed to be discharging Trade Wastes, to determine any characteristic of any discharge by:

a) Taking readings and measurements; or

- b) Taking samples or any solids, liquids or gaseous material or any combination or mixtures of such materials being discharged; or
- c) Observing accidental occurrences and clean up.

7.4.3 The extent and level of delegation to authorised officers will be in accordance with the GDC's Register of Statutory Delegations and Warrants.

7.4.4 Authorisation for entry to any premises is given under the LGA and entry shall be in compliance with the health and safety policies of that particular site.

## **7.5 TRANSFER OR TERMINATION OF RIGHTS AND RESPONSIBILITIES**

7.5.1 A Trade Waste Consent to discharge shall be issued in the name of the given Consent Holder. The Consent Holder shall not, unless written approval is obtained from GDC:

- a) Transfer to any other party the rights and responsibilities provided for under this Bylaw, and under the Consent;
- b) Allow a point of discharge to serve another premises, or the private drain to that point to extend by pipe, or any other means, to serve another premises; or
- c) In particular and not in limitation of the above, allow wastewater from any other party to be discharged at their point of discharge.

7.5.2 Renewal of a Trade Waste Consent on change of ownership of a premises shall not be unreasonably withheld if the characteristics of the wastewater remain unchanged.

7.5.3 The person discharging shall give 48 hours' notice in writing to GDC of their requirement for disconnection of the discharge connection and/or termination of the discharge consent, except where demolition or relaying of the discharge drain is required, in which case the notice shall be within seven working days. The person discharging shall notify GDC of the new address details for final invoicing.

7.5.4 On permanent disconnection and/or termination, the person discharging may, at GDC's discretion, be liable for Trade Waste charges to the end of the current charging period.

7.5.5 When a person discharging ceases to occupy a premises from which Trade Wastes are discharged into the wastewater network, any consent granted shall terminate, but without relieving the person discharging from any obligations existing at the date of termination.

## **7.6 SERVICE OF DOCUMENTS**

### **7.6.1 Delivery or Post**

Any notice or other document required to be given, served or delivered under this Bylaw to a person discharging, may (in addition to any other method permitted by law) be given or served or delivered by being:

- a) Sent by pre-paid ordinary mail, courier, or facsimile, or email to the person discharging at the person discharging's last known place of residence or business;
- b) Sent by pre-paid ordinary mail, courier, or facsimile, or email to the person discharging at any address for service specified in a consent to discharge;
- c) Where the person discharging is a body corporate, sent by pre-paid ordinary mail, courier, or facsimile, or email to, or left at its registered office; or
- d) Personally served on the person discharging.

### **7.6.2 Service**

If any notice or other document is:

- a) Sent by post it will be deemed received on the first day (excluding weekends and public holidays) after posting;

- b) Sent by facsimile or email and the sender's facsimile or email machine produces a transmission report indicating that the facsimile or email was sent to the addressee, the report will be prima facie evidence that the facsimile or email was received by the addressee in a legible form at the time indicated on that report; or
- c) Sent by courier and the courier obtains a receipt or records delivery on a courier run sheet, the receipt or record of delivery on a courier run sheet will be prima facie evidence that the communication was received by the addressee at the time indicated on the receipt or courier run sheet, or left at a conspicuous place at the trade premises or is handed to a designated person(s) nominated by the Consent Holder then that shall be deemed to be service on, or delivery to the Consent Holder at that time.

### **7.6.3 Signature**

Any notice or document to be given, served or delivered shall be signed by an authorised officer.

## **7.7 OFFENCES**

7.7.1 Every person or Consent Holder or owner or occupier of trade premises who:

- a) Fails to comply with or acts in contravention of any provision of this Bylaw;
- b) Breaches the conditions of any consent to discharge granted pursuant to this Bylaw; or
- c) Fails to comply with a notice served under this Bylaw, commits an offence under Section 239 of the LGA, and is liable to a fine as specified in Section 242 of the LGA, or the issue of an infringement notice under Section 245 of the LGA.

7.7.2 In all cases GDC may recover costs associated with damage to GDC wastewater network and/or breach of this Bylaw in accordance with Sections 175 and 176 of the LGA respectively.

## **7.8 TRANSITIONAL PROVISIONS**

### **7.8.1 Applications**

Any application for a consent to discharge Trade Waste, made under GDC Trade Waste Bylaw, for which a consent has not been granted at the time of this new Bylaw coming into force, shall be deemed to be an application made under clause 3.2 of this Bylaw.

7.8.2 Existing Trade Waste Consents:

Every existing Trade Waste Consent shall continue in force as if it were a consent under this Bylaw until it reaches its expiry date, provided that no consent shall run beyond 31 August 2018.

## SCHEDULE 1A - PERMITTED DISCHARGE CHARACTERISTICS

### 1A.1 INTRODUCTION

1A.1.1 The nature and levels of the characteristics of any Trade Waste discharged to GDC's wastewater network shall comply at all times with the following requirements, except where the nature and levels of such characteristics are varied by GDC as part of a consent to discharge Trade Waste.

### 1A.2 PHYSICAL CHARACTERISTICS

#### 1A.2.1 Flow

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
a) The 24-hour flow volume shall be less than 5 m <sup>3</sup> .	Flows larger than the Guideline values should be Conditional Trade Waste Consent. Conditional Consents will be dependent on the Contaminant concentration/mass load.
b) The maximum instantaneous flow rate shall be less than 2.0 L/s.	

#### 1A.2.2 Temperature

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
The temperature shall not exceed 40°C.	<p>Higher temperatures:</p> <ul style="list-style-type: none"> <li>• Cause increased damage to sewer structures;</li> <li>• Increase the potential for anaerobic conditions to form in the wastewater;</li> <li>• Promote the release of gases such as H<sub>2</sub>S and NH<sub>3</sub> (can adversely affect the safety of operations and maintenance personnel); and</li> <li>• Reflect poor energy efficiency.</li> </ul> <p>It should be noted that this temperature has been reduced from 50°C to come into line with the ARMCANZ/ANZECC Guidelines for sewerage systems.</p> <p>A lower maximum temperature may be require for large volume discharges.</p>

#### 1A.2.3 Solids

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
a) Non-faecal gross solids shall have a maximum dimension that shall not exceed 15 mm.	a) Gross solids can cause sewer blockages. In case of conditional consents fine screening may be appropriate
b) The suspended solids content of any Trade Waste shall have a maximum concentration that shall not exceed 2000 g/m <sup>3</sup> . For significant industry this may be reduced to 600 g/m <sup>3</sup> .	b) High suspended solids contents can cause sewer blockages and overload the treatment processes. Where potential for such problems is confirmed, a lower limit appropriate to the risk may be set. A lower limit may be set between 2000 g/m <sup>3</sup> and 600 g/m <sup>3</sup> . The ANZECC Guidelines recommend a limit of 600 g/m <sup>3</sup> .
c) The settleable solids content of any Trade Waste shall not exceed 50mL/L.	
d) The total dissolved solids concentration in any Trade Waste shall be subject to the approval of GDC, having regard to the volume of the waste to be	

<p>discharged, and the suitability of the wastewater network and the Wastewater Treatment Plant to accept such waste.</p> <p>e) Fibrous, woven, or sheet film or any other materials which may adversely interfere with the free flow of wastewater in the wastewater network or Wastewater Treatment Plant shall not be present. High total dissolved solids reduce effluent disposal options and may contribute to soil salinity. Where potential for such problems exists, a limit of 10,000 g/m<sup>3</sup> may be used as a guideline.</p>	
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#### 1A.2.4 Oil and Grease

<b>Bylaw Requirements</b>	<b>Commentary from NZS 9201: Part 23: 2004</b>
<p>a) There shall be no free or floating layer.</p> <p>b) A Trade Waste with mineral oil, fat or grease unavoidably emulsified, which in the opinion of GDC is not biodegradable, shall not exceed 200 g/m<sup>3</sup> as petroleum ether extractable matter when the emulsion is stable at a temperature of 15 °C, and when the emulsion is in contact with and diluted by a factor of 10 by raw wastewater, throughout the range of pH 6.0 to pH 10.0.</p> <p>c) A Trade Waste with oil, fat or grease unavoidably emulsified, which in the opinion of GDC is biodegradable, shall not exceed 500 g/m<sup>3</sup> when the emulsion is stable at a temperature of 15 °C and when the emulsion is in contact with and diluted by a factor of 10 by raw wastewater throughout the range of pH 4.5 to pH 10.0.</p> <p>d) Emulsified oil, fat or grease shall not exceed 100 g/m<sup>3</sup> as petroleum ether extractable matter when the emulsion is unstable at a temperature of 15 °C and when the emulsion is in contact with and diluted by a factor of 10 by raw wastewater throughout the range of pH 4.5 to pH 10.0.</p>	<p>a) Oils and greases can cause sewer blockages, may adversely affect the treatment process, and may impair the aesthetics of the receiving water. Where the Wastewater Treatment Plant discharges to a sensitive receiving water, lower values should be considered.</p> <p>b) If the WWA only has screening and/or primary treatment prior to discharge, it is recommended that oil and grease be reduced to 100 g/m<sup>3</sup>.</p> <p>c) In the terms of oil and greases, biodegradable refers to the bio-availability of the oil and greases and the bio-chemicals thereby produced, and means the oil and grease content of the waste decreases by 90% or more when the wastewater is subjected to a simulated wastewater treatment process which matches the WWS treatment system.</p> <p>d) If quick break detergents are being used, it should be ensured that proper separation systems are being used by the Consent Holder. If not, oil will reappear in drainage systems as a free layer.</p>

#### 1A.2.5 Solvents and Other Organic Liquids

<b>Bylaw Requirements</b>	<b>Commentary from NZS 9201: Part 23: 2004</b>
<p>There shall be no free layer (whether floating or settled) of solvents or organic liquids.</p>	<p>Some organic liquids are denser than water and will settle in sewers and traps.</p>

### 1A.2.6 Emulsions of Paint, Latex, Adhesive, Rubber, Plastic

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
<p>a) Where such emulsions are not treatable these may be discharged into the wastewater network subject to the total suspended solids not exceeding 1000 g/m<sup>3</sup> or the concentration agreed with GDC.</p> <p>b) GDC may determine that the need exists for pre-treatment of such emulsions if they consider that Trade Waste containing emulsions unreasonably interferes with the operation of GDC's Wastewater Treatment Plant, e.g. reduces % UVT (ultra violet transmission).</p> <p>c) Such emulsions of both treatable and non-treatable types, shall be discharged to the wastewater network only at a concentration and pH range that prevents coagulation and blockage at the mixing zone in the public wastewater network.</p>	<p>a) 'Treatable' in relation to emulsion wastewater, means the Total Organic Carbon content of the waste decreases by 90% or more when the wastewater is subjected to a simulated wastewater treatment process that matches the WWA treatment system.</p> <p>b) Emulsions vary considerably in their properties and local treatment works may need additional restrictions depending on the experience of the specific treatment plant and the quantity of emulsion to be treated.</p> <p>c) Emulsion may colour the WWA treatment plant influent such that % UVT is unacceptably reduced. Emulsions will coagulate when unstable and can sometimes cause sewer blockage. Emulsions are stable when dilute or in the correct pH range.</p>

### 1A.2.7 Radioactivity

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
<p>Radioactivity levels shall not exceed National Radiation Laboratory Guidelines.</p>	<p>Refer National Radiation Laboratory Code of safe practice for the use of unsealed radioactive materials NRL C1.</p>

### 1A.2.8 Colour

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
<p>No waste shall have colour or colouring substance that causes the discharge to be coloured to the extent that it impairs wastewater treatment processes or compromises the treated wastewater discharge Consent.</p>	<p>Colour may cause aesthetic impairment of receiving waters, and adverse effects on lagoon treatment processes and ultra-violet disinfection. Where potential for such problems exists, a level of colour that is rendered not noticeable after 100 dilutions may be used as a Guideline. Where UV disinfection is used special conditions may apply</p>

## 1A.3 CHEMICAL CHARACTERISTICS

### 1A.3.1 pH Value

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
<p>The pH shall be between 6.0 and 10.0 at all times.</p>	<p>Extremes in pH:</p> <ul style="list-style-type: none"> <li>• Can adversely affect biological treatment processes;</li> <li>• Can adversely affect the safety of operations and/or maintenance personnel;</li> <li>• Cause corrosion of sewer structures; and</li> <li>• Increase the potential for the release of toxic gases such as H<sub>2</sub>S and HCN.</li> </ul>

	Relaxation of these limits to 5.5 and 11.0 is acceptable for low pressure premises which discharge into a large flow. Significant industries may need to be restricted to limits between 6.0 and 9.0.
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### 1A.3.2 Organic Strength

<b>Bylaw Requirements</b>	<b>Commentary from NZS 9201: Part 23: 2004</b>
The Biochemical Oxygen Demand (carbonaceous BOD5) shall be less than 10 kg/day	<p>The loading on a treatment plant is affected by Biochemical Oxygen Demand BOD5 rather than Chemical Oxygen Demand (COD). For any particular waste type there is a fixed ratio between COD and BOD5. For domestic wastewater it is about 2.5:1 (COD: BOD5), but can range from 1:1 to 100:1 for Trade Waste. Therefore BOD5 is important for the treatment process and charging, but because of the time taken for testing, it is often preferable to use COD for monitoring. However, the use of COD testing shall be balanced by the possible environmental effects of undertaking such tests due to the production of chromium and mercury wastes. Where a consistent relationship between BOD5 and COD can be established the discharge may be monitored using the COD test. If the treatment plant BOD5 capacity is not limited, and sulphides are unlikely to cause problems, there may be no need to limit BOD5. High COD may increase the potential for the generation of sulphides in the wastewater. A BOD5 limit which is too stringent may require the installation of Pre-treatment systems by some Consent Holders, imposing unnecessary costs because the most cost effective treatment method may be the WWA treatment plant.</p> <p>The concentration and mass loads of BOD5 may be set to reflect WWA treatment plant capacity: e.g. ARMCANZ/ANZECC Guidelines for sewerage systems use a concentration of 600 g/m<sup>3</sup>.</p>

### 1A.3.3 Maximum Concentrations

<b>Bylaw Requirements</b>	<b>Commentary from NZS 9201: Part 23: 2004</b>
<p>The maximum concentrations permissible for the chemical characteristics of an acceptable discharge are set out in the following tables:</p> <p>Table 1 - General Chemical Characteristics</p> <p>Table 2 - Heavy Metals</p> <p>Table 3 - Organic Compounds and Pesticides</p>	Where appropriate, maximum daily limits (kg/day) for mass limit Permitted Discharges may also be given.



**TABLE 1 - GENERAL CHEMICAL CHARACTERISTICS**

(Mass limits may be imposed, refer to clause 4.2 of this Bylaw)

Characteristic	Maximum concentration (g/m <sup>3</sup> )	Mass Limits (kg/day)	Reason for limit
MBAS (Methylene blue active substances)	300	1.5	MBAS is a measure of anionic surfactants. High MBAS can: <ul style="list-style-type: none"> <li>Adversely affect the efficiency of activated wastewater sludge plants; and</li> <li>Impair the aesthetics of receiving waters. For Wastewater Treatment Plants that suffer from the effects of surfactants the maximum concentration could be reduced significantly, e.g. Sydney Water utilise a level of 100 g/m<sup>3</sup>.</li> </ul>
Ammonia (measured as N) <ul style="list-style-type: none"> <li>free ammonia</li> <li>ammonium salts</li> </ul>	50 200	0.25 1.0	High ammonia: <ul style="list-style-type: none"> <li>May adversely affect the safety of operations and maintenance personnel; and</li> <li>May significantly contribute to the nutrient load to the receiving environment.</li> </ul>
Kjeldahl nitrogen	250	1.0	High Kjeldahl nitrogen may significantly contribute to the nutrient load of the receiving environment. A value of 50 g/m <sup>3</sup> should be used as a guideline for sensitive receiving waters.
Total phosphorus (as P)	150	0.75	High phosphorus nitrogen may significantly contribute to the nutrient load of the receiving environment. A value of 10 g/m <sup>3</sup> should be used as a guideline for sensitive receiving waters.
Sulphate (measured as SO <sub>4</sub> )	500 1500 (with good mixing)	2.5	Sulphate: <ul style="list-style-type: none"> <li>May adversely affect the wastewater network; and</li> <li>May increase the potential for the generation of sulphides in the wastewater if the wastewater network is prone to becoming anaerobic.</li> </ul>
Sulphite (measured as SO <sub>2</sub> )	15	0.075	Sulphite has potential to release SO <sub>2</sub> gas and thus adversely affect the safety of operations and maintenance personnel. It is a strong reducing agent and removes dissolved oxygen thereby increasing the potential for anaerobic conditions to form in the wastewater.
Sulphide — as H <sub>2</sub> S on acidification	5	0.025	Sulphides in wastewater may: <ul style="list-style-type: none"> <li>Cause corrosion of the wastewater network, particularly the top no wetted part of a sewer;</li> <li>Generate odours in sewers which could cause public nuisance; and</li> <li>Release the toxic H<sub>2</sub>S gas that could adversely affect the safety of operations and maintenance personnel. Under some of the conditions above sulphide should be &lt;2.0 g/m<sup>3</sup></li> </ul>

Characteristic	Maximum concentration (g/m <sup>3</sup> )	Mass Limits (kg/day)	Reason for limit
Chlorine (measured as Cl <sub>2</sub> )	3 30	0.015 0.15	Chlorine: <ul style="list-style-type: none"> <li>• Can adversely affect the safety of operations and maintenance personnel; and</li> <li>• Can cause corrosion of the wastewater network. ARMCANZ/ANZECC Guidelines for sewerage systems utilize a figure of 10 g/m<sup>3</sup>.</li> </ul>
Dissolved aluminium	300	1.5	Aluminium compounds, particularly in the presence of calcium salts, have the potential to precipitate on a scale that may cause a sewer blockage.
Dissolved iron	300	1.5	Iron salts may precipitate and cause a sewer blockage. High concentrations of ferric iron may also present colour problems depending on local conditions.
Boron (as B)	25	0.125	Boron is not removed by conventional treatment. High concentration in wastewater may restrict irrigation applications. Final wastewater use and limits should be taken into account.
Bromine (as Br <sub>2</sub> )	5	0.025	High concentrations of bromine may adversely affect the safety of operations and maintenance personnel.
Fluoride (as F)	30	0.15	Fluoride is not removed by conventional wastewater treatment, however pre-treatment can easily and economically reduce concentrations to below 20 g/m <sup>3</sup> .
Cyanide — weak acid dissociable (as CN)	1	0.005	Cyanide may produce toxic atmosphere in the sewer and adversely affect the safety of operations and maintenance personnel.

**TABLE 2 — HEAVY METALS**

(Mass limits may be imposed, refer to clause 4.2 of this Bylaw)

<b>Metal</b>	<b>Maximum Concentration<sup>1</sup> (g/m<sup>3</sup>)</b>	<b>Mass Limit<sup>2</sup> (kg/day)</b>	<b>Metal</b>	<b>Maximum Concentration (g/m<sup>3</sup>)</b>	<b>Mass Limit (kg/day)</b>
Antimony	5.0	0.025	Manganese	5.0	0.025
Arsenic	5.0	0.025	Mercury	0.005	0.001
Barium	5.0	0.025	Molybdenum	5.0	0.025
Beryllium	0.005	0.0001	Nickel	5.0	0.050
Cadmium	0.5	0.001	Selenium	5.0	0.025
Chromium	5.0	0.050	Silver	2.0	0.010
Cobalt	5.0	0.025	Thallium	5.0	0.025
Copper	5.0	0.050	Tin	5.0	0.025
Lead	5.0	0.025	Zinc	5.0	0.050

Note:

Heavy metals have the potential to:

- a) Impair the treatment process;
- b) Impact on the receiving environment; and
- c) Limit the reuse of wastewater sludge and effluent.

Where any of these factors are critical it is important that local acceptance limits should be developed.

The concentration of chromium includes all valent forms of the element. Chromium (V1) is considered to be more toxic than chromium (III), and for a discharge where chromium (III) makes up a large proportion of the characteristic, higher concentration limits may be acceptable. Specialist advice should be sought. Metals will be tested as total, not dissolved. If sludge is used as a biosolid then metal concentration/mass are important such that the Biosolids Guidelines are met.

<sup>1</sup> It is intended that these maximum concentrations refer to the total metal fraction.

<sup>2</sup> It is intended that these mass limits refer to the total metal fraction.

**TABLE 3 — ORGANIC COMPOUNDS AND PESTICIDES**

(Mass limits may be imposed, refer to 4.2)

Compound	Maximum Concentration <sup>3</sup> (g/m <sup>3</sup> )	Mass Limits <sup>4</sup> (kg/day)	Reason for limit
Formaldehyde (as HCHO)	50	0.25	Formaldehyde in the sewer atmosphere can adversely affect the safety of operations and maintenance personnel.
Phenolic compounds (as phenols) Excluding chlorinated Phenols	50	0.25	Phenols may adversely affect biological treatment processes. They may not be completely removed by conventional treatment and subsequently impact on the environment.
Chlorinated phenols	0.02	0.001	Chlorinated phenols can adversely affect biological treatment process and impair the quality of the receiving environment.
Petroleum hydrocarbons	30	0.15	Petroleum hydrocarbons may adversely affect the safety of operations and maintenance personnel.
Halogenated aliphatic compounds <sup>5</sup>	1	0.001	Because of their stability and chemical properties these compounds may: <ul style="list-style-type: none"> <li>• Adversely affect the treatment process;</li> <li>• Impair the quality of the receiving environment; and</li> <li>• Adversely affect the safety of operations and maintenance personnel.</li> </ul>
Monocyclic aromatic hydrocarbons	5	0.025	These compounds (also known as benzene series) are relatively insoluble in water, and are normally not a problem in Trade Waste. They may be carcinogenic and may adversely affect the safety of operations maintenance personnel.
Polycyclic (or polynuclear) aromatic hydrocarbons (PAHs) Including specifically: dibenzo [a,h] anthracene benzo [a] anthracene benzo[a] pyrene benzo [b] fluoranthene benzo [k] fluoranthene chrysene indeno [a,2,3-cd] pyrene	0.05	0.001	Many of these substances have been demonstrated to have an adverse effect on the health of animals. Some are also persistent and are not degraded by conventional treatment processes.
Halogenated aromatic hydrocarbons (HAHs)	0.002	.0001	Because of their stability, persistence and ability to bioaccumulate in animal tissue these compounds have been severely restricted by health and environmental regulators

<sup>3</sup> Where several compounds are grouped into a generic type, the sum of individual concentrations is not to exceed the maximum listed.

<sup>4</sup> Where several compounds are group into a generic type, the sum of individual mass quantities is not to exceed the maximum listed.

<sup>5</sup> These compounds shall be accepted up to the given maximum concentration only when specifically approved.

Compound	Maximum Concentration <sup>3</sup> (g/m <sup>3</sup> )	Mass Limits <sup>4</sup> (kg/day)	Reason for limit
Polychlorinated biphenyls (PCBs) Polybrominated biphenyls (PBBs) Including specifically the following congeners using the IUPAC nomenclature: PCB-28 PCB-52 PCB-77 PCB-81 PCB-101 PCB-105 PCB-114 PCB-118 PCB-123 PCB-126 PCB-138 PCB-153 PCB-156 PCB-157 PCB-167 PCB-169 PCB-180 PCB-189	0.002	0.0001	Because of their stability, persistence and ability to bioaccumulate in animal tissue these compounds have been severely restricted by health and environmental regulators
Pesticides (general) (includes insecticides, herbicides, fungicides and excludes organophosphate, organochlorine and any pesticides not registered for use in New Zealand)	0.002 each 0.2 in total	0.0001	Pesticides: <ul style="list-style-type: none"> <li>• May adversely affect the treatment processes;</li> <li>• May impair the quality of the receiving environment; and</li> <li>• May adversely affect the safety of operations and maintenance personnel.</li> </ul>
Organophosphate pesticides <sup>6 7</sup>	0.1	0.0001	

#### 1A.3.4 Inhibitor Chemicals

No waste being diluted at a ratio of 100 to 1 of wastewater shall inhibit the performance of the wastewater treatment process, such that GDC is significantly at risk, or prevented from achieving its environmental statutory requirements.

After dilution with de-chlorinated water, at a ratio of 15 to 1 of wastewater, a discharge which has an acute result when subjected to the Whole Effluent Toxicity Testing, will be deemed to have inhibitory chemicals. Whole Effluent Toxicity Testing will be undertaken using organisms selected by the GDC.

<sup>6</sup> These compounds shall be accepted up to the given maximum concentration only when specifically approved.

<sup>7</sup> Excludes pesticides not registered for use in New Zealand.

## **SCHEDULE 1B - PROHIBITED CHARACTERISTICS**

### **1B.1 INTRODUCTION**

1B.1.1 Schedule 1B defines Prohibited Trade Wastes.

### **1B.2 PROHIBITED CHARACTERISTICS**

#### **1B.2.1 Characteristics**

Any discharge has prohibited characteristics if it has any solid, liquid or gaseous matters, or any combination or mixture of such matters, which by themselves or in combination with any other matters, will immediately or in the course of time:

- a) Interfere with the free flow of wastewater in the wastewater network;
- b) Damage any part of the wastewater network;
- c) In any way, directly or indirectly, cause the quality of the treated wastewater or residual biosolids and other solids from any Wastewater Treatment Plant in the catchment to which the waste was discharged to breach the conditions of a consent issued under the RMA, or water right, permit or other governing legislation;
- d) Prejudice the occupational health and safety risks faced by wastewater workers;
- e) After treatment be toxic to fish, animals or plant life in the receiving waters;
- f) Cause malodorous gases or substances to form which are of a nature or sufficient quantity to create a public nuisance; or
- g) Have a colour or colouring substance that causes the discharge from any Wastewater Treatment Plant to receiving waters to be coloured.

1B.2.2 Discharge has a prohibited characteristic if it has any amount of:

- a) Harmful solids, including dry solid wastes and materials that combine with water to form a cemented mass;
- b) Liquid, solid or gas which could be flammable or explosive in the wastes, including oil, fuel, solvents (except as allowed for in Schedule 1A of this Bylaw), calcium carbide, and any other material which is capable of giving rise to fire or explosion hazards either spontaneously or in combination with wastewater;
- c) Asbestos;
- d) The following organo-metal compounds: Tin (as tributyl and other organotin compounds);
- e) Any organochlorine pesticides;
- f) Genetic wastes, as follows: All wastes that contain or are likely to contain material from a genetically modified organism that is not in accordance with an approval under the HSNO. The material concerned may be from premises where the genetic modification of any organism is conducted or where a genetically modified organism is processed;
- g) Any health care waste prohibited for discharge to a Wastewater Network by NZS 4304 or any pathological or histological wastes; or
- h) Radioactivity levels in excess of the National Radiation Laboratory Guidelines.

## SCHEDULE 1C - TRADE WASTE CHARGES

### 1C.1 FEES AND CHARGES

GDC will set the fees and charges applicable to Trade Waste every year. Current fees and charges for trade wastes are outlined in GDC's Schedule of Fees and Charges. Examples of the types of fees and charges that GDC may set are outlined in Table 4.

NOTE — A wide range of categories has been provided in the following table to leave options open and promote awareness for future changes in the GDC's wastewater network requirements. Fees and charges will be set by GDC annually, through the special consultative procedure undertaken on its annual plan.

**TABLE 4 — GDC INDICATIVE TYPES OF FEES AND CHARGES**

<b>Category</b>	<b>Description</b>
Connection fee	Payable on application for connection to discharge.
Compliance monitoring	The cost of sampling and analysis of Trade Waste discharges.
Disconnection fee	Payable following a request for disconnection from the wastewater network.
Trade Waste application fee	Payable on an application for a Trade Waste discharge.
Inspection fee	Payable for each inspection visit by GDC
Special rates for loan charges	Additional rates for servicing loans raised for the purposes of constructing or improving the wastewater network.
Temporary discharge fee	Payable prior to receipt of a temporary discharge.
Annual Trade Waste charges	An annual management fee for a Trade Waste discharge to cover GDC's costs associated with, for example: a) Administration; b) General compliance monitoring; c) General inspection of Trade Waste Premises; d) Use of the Wastewater Network. This charge may vary depending on the Trade Waste sector and category of the discharger.
Rebates for trade premises within the District	Reduction in fees is provided for in Section 150(2) of the LGA. Section 150(4) of the LGA states that the fees prescribed by GDC shall not provide for GDC to recover more than the reasonable cost incurred by GDC for the matter for which the fee is charged. In no event shall the resultant charge be less than GDC's wastewater charge for the equivalent period.
New or additional trade premises	Pay the annual fees and a pro rata proportion of the various Trade Waste charges relative to flows and loads.
Volume	Payment based on the volume discharged \$/m <sup>3</sup>
Flow rate	Payment based on the flow rate discharged \$/L/s
Suspended solids	Payment based on the mass of suspended solids \$/kg
Organic loading	Biochemical oxygen demand or chemical oxygen demand \$/kg
Nitrogen	Payment based on the defined form(s) of nitrogen \$/kg
Phosphorous	Payment based on the defined form(s) of phosphorous \$/kg
Metals	Payment based on the defined form(s) of the metal(s) \$/kg
Transmissivity	A charge based on the inhibiting nature of the Trade Waste to UV light used by the GDC's disinfection process
Screenable solids	Payment based on the mass of screenable solids \$/kg
Toxicity charge	Payment based on the defined form(s) of the toxic substance(s) \$/kg and/or \$/m <sup>3</sup> .
Incentive rebate	A rebate for discharging materials beneficial to the GDC's wastewater network \$/kg and/or \$/m <sup>3</sup> .

Category	Description
Depreciation	Operating cost related to capital and normally spread across the volume and mass charges
Capital	Apportioned upfront or term commitment capital cost of specific infrastructure required to accommodate a conditional Consent
Tankered Wastes	Set as a fee(s) per tanker load, or as a fee(s) per cubic metre, dependent on Trade Waste category



## SCHEDULE 1D - SAMPLING PROCEDURE

### 1D.1 SAMPLING EQUIPMENT

#### 1D.1.1 Sample Containers

The laboratory responsible for analysing the samples should be consulted about the type of container that should be used for sample collection and subsequent sample, storage and transportation. Desirable factors to be considered when selecting sample containers are:

- a) High resistance to breakage;
- b) Good sealing efficiency;
- c) Ease of reopening;
- d) Good resistance to temperature extremes;
- e) Practical size, shape and mass;
- f) Good potential for cleaning and re-use;
- g) Availability and cost; and
- h) Ability to be clearly labelled.

The sample container needs to prevent losses due to adsorption, volatilisation and contamination by foreign substances. Plastic containers are recommended for most characteristics. Some exceptions exist where glass containers only should be used, examples of such analyses include:

- a) Oil and grease;
- b) Hydrocarbons;
- c) Detergents; and
- d) Pesticides.

#### 1D.1.2 Apparatus

The sampling procedures set out in this section assume the use of manual sampling equipment. The simplest equipment used for taking effluent samples consists of a bucket, ladle, or wide-mouthed container that may be mounted on a handle of a suitable length. The volume should not be less than 100 ml. Where manual samples are to be used for the preparation of composite samples, the volume of the bucket, ladle or container should be well defined and known to a precision of within  $\pm 5\%$ . Manual samples can also be taken with a Ruttner or Kemmerer sampler, consisting of a 1 litre to 3 litre volume tube with a hinged lid at each end of the tube, or other samplers operating on a similar principle.

Manual sampling equipment should be made of an inert material that does not influence the analyses that will be carried out on the samples later. Before starting sampling, the equipment should be cleaned with detergent and water, or as directed by the equipment manufacturer, and finally rinsed with water. The sampling equipment may be washed before use in the wastewater stream from which the sample is taken in order to minimise the risk of contamination. Special attention should be paid to rinsing after cleaning, if the analyses under study are detergents. The sampling equipment cannot be washed in the waste stream where this will influence the analysis carried out later (e.g. analysis of oil and grease, and microbiological analysis).

#### 1D.1.3 Sampling Locations

*Safety precautions:* In all cases when selecting sampling locations, health and safety aspects should be observed.

The sampling location shall be the first manhole or other access point upstream of the point of discharge, unless, because of poor mixing or some other reason, a location giving more representative samples can be found.

The sampling location should be kept clean by removing scale, sludge, bacterial film etc. from the walls.

If turbulent flow conditions do not exist at the sampling location they shall be induced by restricting the flow, for example with a baffle or weir. The restriction should be made in such a way that sedimentation upstream of the restriction does not occur. The sampling intake point should always be located downstream of the restriction. The inlet of the sampling equipment should preferably face the direction of flow, but may face downstream if too many blockages result. If mixing is good just upstream of the obstacle, then the intake can be located there, taking care that sediment is not sampled and ensuring that the intake remains below liquid level.

As a general rule, the sampling point should be one-third of the wastewater depth below the surface.

It may be necessary to sample the surface by skimming, in order that qualitative information about emulsified and floating material can be obtained. Guidance on the choice of suitable containers for this sampling technique should be sought from the receiving laboratory.

#### 1D.1.4 **Choice of Sampling Methods**

##### *Types of sample*

It is common to distinguish between two sample types:

1. Spot (or grab) samples; and
2. Composite samples.

##### *Spot sample*

A spot sample is defined as a discrete sample taken randomly (with regard to time and/or location) from the Trade Waste.

In a spot sample, the whole sample volume is taken at one time. Spot samples are useful for determining the wastewater composition at a certain time. In cases with small variations in the volume and composition of the waste stream, a spot sample can be representative of the composition during a longer period.

For certain determinations, spot samples only can be used. For example, oil and grease, dissolved oxygen, chlorine and sulphide. Here the result will differ if the analyses are not carried out (or started) immediately after collection of the sample, and if the whole sample volume is not used at a time.

##### *Composite sample*

A composite sample is defined as two or more samples or sub-samples, mixed together in appropriate known proportions (either discretely or continuously), from which the average result of a desired characteristic may be obtained. The proportions are usually based on time or flow measurements.

Composite samples are prepared by mixing a number of spot samples or by collection of a continuous fraction of the waste stream.

In sampling, each of the spot samples should be greater than 50 ml in volume. Often it is advisable that spot samples are 200 ml to 300 ml in volume, to ensure the collection of representative samples.

##### *Instantaneous composite sample*

An instantaneous sample is a composite sample taken using the following method:

- Three spot samples of the discharge shall be taken at intervals of not less than 1 minute nor more than 5 minutes.

- The three spot samples must be combined using equal volumes of all three samples to obtain the instantaneous sample.

An instantaneous sample shall be used for all routine compliance monitoring unless otherwise specified.

#### *Four-hour average composite sample*

A four-hour average sample is a composite sample taken using the following method:

- No less than 12 spot samples shall be taken from the discharge at reasonably even intervals over the whole period.
- The intervals between the samples must not be less than 5 minutes nor more than 30 minutes.
- The samples shall be mixed using equal volumes of all samples to obtain the four-hour average sample.

The four-hour flow period used when taking a 4-hour average sample shall be a continuous period of four hours during which the discharge is occurring and:

1. Shall as far as practical be representative of the discharge occurring on a typical working day, and
2. Shall exclude periods of decreased discharge prior to or after the day's operations.

#### *Twenty-four hour flow proportionate sample*

A 24-hour flow proportionate sample is obtained using the following method:

- Spot samples shall be taken from the discharge over a continuous 24-hour period.
- The samples shall be taken at reasonably even intervals over the whole period.
- The intervals between the samples must not be less than 15 minutes nor more than 60 minutes.
- Whenever more than one sample is taken within a 60 minute period the samples must be of equal quantity and may be stored with other samples taken during that 60 minute period in a common container.

If the discharge usually flows for a period less than 24 hours then no less than 18 spot samples shall be taken as described in paragraph a) above, to represent the nominated 24-hour period.

The 24-hour flow proportionate sample is then obtained by taking a part of the contents of each container and mixing all such samples together. The size of the part of each container sample that is used shall be in direct proportion to the volume of discharge that occurred from the time a sample was first placed in the particular container to the time a sample was first placed in the next container.

#### *Automatic Sampling*

Automatic sampling machines facilitate recovery of time proportional samples during the entire working day. Typically a sampler machine is able to collect at least 24 samples. The sample period is determined by consideration of the daily duration of the Trade Waste discharge and the number of samples able to be collected by the sampler machine. The volume of each sample is sized such that the total volume collected during the sampling period is 5 litres or more.

Flow proportional samples are obtained by taking samples each time a pre-set wastewater volume is measured as passing through the sample point. The pre-set wastewater volume is usually determined by dividing the expected total daily discharge by the number of samples to be taken (minimum typically 24). The volume of each sample is sized such that the total volume collected during the sampling period is 5 litres or more.

### 1D.1.5 Frequency, Number and Timing for Samples

#### *Frequency and number of samples*

Analyses shall be based on sampling discharge periods that are representative of peak discharge. Such analyses shall be undertaken at a frequency of at least once per year unless otherwise specified in the Trade Waste Discharge Consent. The samples should be composite samples, unless the determinations to be carried out prohibit the use of a composite sample. The choice of the necessary number of samples taken during each year should be decided on the basis of when the peak discharge occurs and the size of the discharge in relation to the total discharge from all industry in the Grey District area served.

#### *Sampling programme*

The objective of a sampling programme often dictates when and how a sample is collected.

When sampling Trade Waste, allowance should be made for the following sources of variation in quality:

- Diurnal variations (i.e. within-day variability);
- Variations between days of the week; and
- Variations between seasons (if applicable).

If the identification of the nature and magnitude of peak load are important, sampling should be restricted to those periods when peak loads are known to occur.

The most appropriate type of sampling method (grab or composite) may be dependent on the magnitude of the variation in quality.

Relating the times of sampling to the particular process being monitored may be very important when considering discharges that are either seasonal or operated on a batch basis. In either case, the discharge will not be continuous and the sampling programme will need to take this fact into account.

If taking more than one sample, the samples should normally be taken at fixed intervals during the whole control period. The control period shall normally be one month.

#### *Sampling period*

The overall sampling period may vary from a few hours, where tracing studies on volatile organics are being monitored, to several days, where stable inorganic species are being monitored.

This subclause deals with the selection of the period over which a composite sample has to be taken. When selecting the period, the following two factors should be considered:

- The objective of the sampling. For example, it may be necessary to assess the average organic load in a flow over several 24-hour periods, in which case diurnal flow proportional composite samples will be adequate.
- The stability of the sample. In the example given in (a), it would not necessarily be practical to extend the sampling period to longer than 24 hours, since the organic component in the sample under study may deteriorate.
- The stability of the sample may often limit the duration of the sampling period. In such cases, reference should be made to the specific analytical techniques to be employed and the receiving laboratory should be consulted, so correct preservative measures can be used.

#### *Sample preservation and storage*

The most common way of preserving wastewater samples is to cool to a temperature between 0°C and 4°C. When cooled to this temperature and stored in the dark, most samples are normally

stable for up to 24 hours. For some determinants, long-term stability may be obtained by deep freezing (below 18°C).

When collecting composite samples during extended periods, preservation should be an integral part of the sampling operation.

It may be necessary to use more than one sampling device, to allow both preserved and unpreserved samples to be taken.

The laboratory responsible for analysing the samples should always be consulted with regard to the selection of the preservation method and subsequent transport and storage.

#### *Transportation of samples*

- a) Samples may include infectious substances;
- b) Segregation of packages of dangerous goods for road transport is necessary;
- c) Wastewater is classified in the Land Transport Rule Dangerous Goods 1999 Rule 45001 as Class 6.2 — Infectious Substance and may be carried by road and air transport as a Diagnostic Specimen in limited amounts;
- d) By road the maximum volume of liquid in any one package should not be greater than 5 litres. By air the limit per package is 4 litres;
- e) Containers shall be sufficiently robust to remain intact and continue to contain goods safely and without leaking for normal conditions of handling and loading;
- f) Three layers of packaging shall be used;
- g) Primary containers and one other layer of packaging shall be leak proof;
- h) Ensure that you have filled out the appropriate documentation; and
- i) Check with the laboratory that you are using, that they supply containers that meet the required standards.

#### *Sample identification and records*

A printed form for the sampling report should as a minimum include at least the following information:

- Name of the trade premises;
- Trade Waste Consent number;
- Sampling point;
- Date, start and stop of sampling;
- Time, start and stop of sampling;
- Duration of the sampling period;
- Details of the sampling method;
- Preservation method;
- Details of any field tests;
- Name of the person who carried out the sampling; and
- Information required for a complete chain of custody.

There are many publications that may assist in the development of a sampling programme. These include:

- AS/NZS 5667: Water quality — Sampling
  - Part 1:1998 - Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
  - Part 10:1998 - Guidance on sampling of waste waters
  - BS 6068: Water quality
  - Part 6: Sampling
  - Section 6.10:1993 - Guidance on sampling of waste waters
- BS EN 25667-1: 1994/BS 6068-6.1:1981 Water quality. Sampling. Guidance on the design of sampling programmes

- BS EN 25667-2: 1993/BS 6068-6.2:1981 - Water quality. Sampling. Guidance on sampling techniques
- BS EN 5667-3: 2003/BS 6068-6.3:2003 - Water quality. Sampling. Guidance on the preservation and handling of water samples
- New Zealand Municipal Wastewater Monitoring Guidelines

## SCHEDULE 1E - DISCHARGERS PRODUCING TRADE WASTE

Any discharge other than from a domestic dwelling may be required to apply for a Trade Waste Consent. It is possible that GDC may require a condition to be placed upon any discharge in which case it then becomes subject to a Conditional Trade Waste Consent. Table 6 provides examples of premises and processes that are likely to discharge Permitted, Controlled or Conditional Trade Waste, however this is not an exhaustive list.

**TABLE 5 — EXAMPLES OF PREMISES/PROCESSES PRODUCING TRADE WASTE**

Permitted	Conditional	Conditional
Beautician	Approved stormwater discharged to sewer	Manufacturers of fabricated metal products, machinery and equipment
Building Construction — slab formation	Beverage manufacturers (including wineries)	Manufacturers of fertilizer
Cafes (no cooking)	Bakeries	Manufacturers of paper and paper products
Carpet cleaning mobile units	Cafes	Marae
Ceramics and pottery (Hobby Club)	Churches (with catering facilities)	Mechanical workshops/service stations
Community hall (no hot food cooked)	Clothing manufactures	Medical laboratories Metal finishers
Day care centre (with no hot food cooked and served on site)	Concrete batching plants	Mortuaries
Delicatessen (no meat cooked on site). No hot food prepared or served)	Dairy processing plants	Municipal swimming pool
Doctors surgery (excluding day care surgical facilities)	Day care centre (with hot food cooked and served on site)	Optical factory
Dog groomers	Dentists	Photo processors
Florist	Doctor's surgeries/medical centres (with day care surgical facilities)	Premises with commercial macerators
Fruit & vegetable market (retail)	Drycleaners	Printers
Funeral parlour	Electroplaters	Restaurants (excluding those with commercial macerators)
Hairdressing salon	Fellmongers	Scientific and other laboratories
Ice cream parlour	Fish Processors	Spray painting facilities
Kennels	Food processors including canneries	Stock sale yards
Nut shop	Foundries	Takeaway premises
Optical processes	Fruit and vegetable processors including canneries	Tanker wastes
Painter (small commercial)	Galvanisers	Tanneries and leather finishing (including fellmongers)
Pet shop (retail)	Hospitals (including day care surgical facilities)	Textile fibre and textile processors
Pizzas cooking/re-heating (no preparation nor washing up on site, pizza heated in retail container and sold for consumption off-site)	Hotels and motels with catering facilities	Truck wash facilities
Sandwich bar/salad bar	Laundries	Vaccine manufacturers
Coffee lounge (no cooking)	Landfills (leachate discharge)	Vehicle wash facilities
School canteen (no cooking)	Manufacturers of chemicals and of chemicals, petroleum, coal, rubber and plastic products	Veterinary surgeries
School ceramic and pottery	Manufacturers of clay, glass, plaster, masonry and mineral products	Waste management processes
Swimming pool (non-municipal)		Wholesalers/retailers including butchers, greengrocers and fishmongers (excluding those with commercial macerators)
Takeaway food (no hot food)		Wool scourers
Venetian blind cleaning		