



TRADE WASTE BYLAW 2014

QUEENSTOWN LAKES DISTRICT COUNCIL TRADE WASTE BYLAW 2014

PART 1 - ADMINISTRATION

1 TITLE AND COMMENCEMENT

- (1) The Queenstown Lakes District Council makes the Queenstown Lakes District Council Trade Waste Bylaw 2014.
- (2) This bylaw is made pursuant to sections 145, 146 and 148 of the Local Government Act 2002.
- (3) This bylaw is "The Queenstown Lakes District Council Trade Waste Bylaw 2014".
- (4) Clauses x-x of this bylaw shall come into force on 1 August 2015.
- (5) Clauses x-x of this bylaw shall come into force on a date to be resolved by Council.
- (5) This bylaw applies to all premises that discharge trade waste as well as all tankered waste discharged within the Queenstown Lakes District.

2 PURPOSE

- (1) The purposes of this bylaw are to:
 - (a) protect the water quality within the district's rivers and lakes
 - (b) give effect to Queenstown Lakes District Council's obligations under National Environmental Standards, Regional Plan rules and achieve compliance with the resource consents that apply within the Queenstown Lakes District.
 - (c) protect the health, safety and wellbeing of people within the Queenstown Lakes District

- (d) Ensure that the Queenstown Lakes District Council can meet its obligations under the Resource Management Act 1991 and the Local Government Act 2002
- (e) protect the wastewater network (including the treatment plant) from substances that have a detrimental effect on its operation and asset life;
- (f) optimise the capacity of wastewater infrastructure and treatment assets;
- (g) ensure compliance with resource consent conditions;
- (h) provide a basis for monitoring discharges from industry and trade premises;
- (i) encourage waste minimisation;
- (j) encourage water conservation.

3 SCOPE

- (1) This bylaw provides for the:
 - (a) Establishment of three grades of trade waste: Permitted, Conditional and Prohibited.
 - (b) Acceptance of long-term, intermittent, or temporary discharges of trade waste that are controlled or permitted into the wastewater network and the exclusion of prohibited trade waste;
 - (c) Specification of permitted discharges so that the capacity of the wastewater network are not exceeded.
 - (d) Regulation of trade waste that may increase the operational and maintenance costs of the wastewater network and treatment system.
 - (e) Prohibition of trade waste that decrease the effectiveness of the wastewater treatment system.
 - (f) Correct storage of materials in order to protect the wastewater network from spillage of hazardous substances;
 - (g) Pre-treatment of waste before it is accepted for discharge to the wastewater network;
 - (h) Dischargers of trade waste to be required to undertake sampling and monitoring of trade waste to ensure compliance with the bylaw;
 - (i) Council to accept or refuse a trade waste discharge of specified characteristics;
 - (j) Charges to be set to cover the cost of administration and monitoring of a trade waste scheme;
 - (k) Disconnection of premises from the wastewater network in the event of unauthorised discharges of trade waste.
 - (l) Use of enforcement powers, including penalties to be applied to persons who discharge or permit discharges of trade waste in a manner that does not comply with this bylaw.

OTHER LEGAL REQUIREMENTS NOT AFFECTED

- (1) Compliance with this bylaw does not remove the need to comply with all other applicable Acts, regulations, bylaws, regional plans, district plans or resource consents.

INTERPRETATION

- (1) Any expression used in this bylaw, which is not defined, shall have the same meaning as given to such expression in any of the following legislation: the Resource Management Act 1991, the Building Act 1991, the Local Government Act 2002, the Health Act 1956, and any subsequent amendments.
- (2) In the event that the provisions of this bylaw conflict with the provisions of the Local Government Act 2002 the provisions of the Local Government Act 2002 shall prevail.
- (3) Explanatory notes and additional information following the clauses of this bylaw are for information purposes only, do not form part of this bylaw and may be made, amended, revoked or replaced by the Council at any time.
- (4) The words used in this bylaw have the following meanings:
 - Approved Device** means a device that meets the accuracy and other specifications set by the Council for measurement or monitoring of waste characteristics.
 - Conditional** trade waste means a trade waste which has, or is likely to have no prohibited characteristics and which exceeds any one or more of the characteristic set out in Schedule 1A of this bylaw;
 - Consent** means a trade waste consent, with conditions given in writing by the Queenstown Lakes District Council to an owner or occupier of a trade premises with a wastewater service connection.
 - Discharge** includes emit, deposit, and allow to escape on a continuous, intermittent or temporary basis.
 - Food business** has the same meaning as section 10 of the Food Act 2014¹

¹ Section 10 of the Food Act 2014 provides: “**food business**—

(a) means a business, activity, or undertaking that trades in food (whether in whole or in part); and

Food premises means premises from which a food business operates

Hazardous materials means raw material, products or wastes containing corrosive, toxic, biocidal, radioactive, flammable, or explosive materials, or any material which when mixed with the wastewater stream is likely to generate toxic, flammable, explosive or corrosive materials or any other material likely to be deleterious to the Council Sewer or the health and safety of Council staff and the public; or any hazardous substance as defined in the Hazardous Substances and New Organisms Act 1996.

Management plan means the plan for management of trade waste operations on the Premises, and may include provision for Cleaner Production, waste minimization, monitoring and recording of discharges, Contingency Management Procedures, and any relevant industry Code of Practice.

Permitted trade waste means a trade waste with the characteristics set out in Schedule 1A of this bylaw;

Person includes a person, the Crown, a corporation sole, and also a body of persons, whether corporate or unincorporated.

Point of discharge is the connection point between the wastewater network and a private drain.

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 or part of a building that has been defined as an individual unit by a crosslease, 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 which are separately leased or separately occupied.

Prohibited trade waste means a trade waste with the characteristics set out in Schedule 1B of this bylaw;

Tankered Waste means water or other liquid, including waste matter in solution or suspension, which is conveyed by vehicle for disposal, but excludes Domestic Sewage discharged directly from house buses, caravans, buses and similar vehicles.

Temporary discharge means any discharge of an intermittent or short duration and includes the short-term discharge of an unusual waste from Premises subject to an existing Consent.

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 Sewage to the wastewater network and includes any land or Premises wholly or mainly used for agricultural or horticultural purposes.

Trade Waste is any liquid or gas, with or without matter in suspension or solution, that is or may be discharged from a Trade Premises to the Council'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 excludes condensing or cooling waters and stormwater which cannot be practically separated, or domestic sewage.

Wastewater means water or other liquid, including waste matter in solution or suspension, discharged by any method from any Premises to the wastewater network.

Wastewater Network means the system for collection, treatment and disposal of wastewater and trade waste, including all sewers, pumping stations, storage tanks, sewage treatment plants,

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- (b) includes a business, activity, or undertaking that—
 - (i) sells food on the Internet; or
 - (ii) is declared by the Governor-General, by Order in Council made under [section 393](#), to be a food business for the purposes of this Act; but
 - (c) does not include a business, activity, or undertaking—
 - (i) merely because it carries on a business other than trading in food and, in the course of doing so, acts as an intermediary between persons who trade in food by providing, for reward, a place (including mobile premises) or services (for example, an Internet service provider or an auction site on the Internet); or
 - (ii) that is declared by the Governor-General, by Order in Council made under [section 393](#), not to be a food business for the purposes of this Act.”

outfalls, and other related structures operated by the Council and used for the reception, treatment and disposal of trade waste.

PART 2 - DISCHARGE OF TRADE WASTE TO THE WASTEWATER NETWORK

DUTY TO CONTROL DISCHARGES

- (1) No person may discharge trade waste into the wastewater network, in a manner contravenes this bylaw.
- (2) No person may discharge trade waste with constituents or characteristics that exceed the parameters specified in schedule 1A unless a trade waste consent has first been obtained.
- (3) No person may discharge solid waste into the wastewater network.
- (4) No person may discharge trade waste with constituents or characteristics in a manner that contravenes a trade waste consent.
- (5) No person may discharge, or allow to be discharged tankered waste into the wastewater network other than at an approved location.
- (6) No person may make any false or inaccurate statement or disclosure as to the contents of any tankered waste or any trade waste.
- (7) No person may discharge trade waste with constituents or characteristics that are specified as prohibited in Schedule 1B.
- (8) The Council may prohibit the discharge of trade waste which contravene this bylaw by removing, closing or modifying the wastewater connection access point in a manner that prevents a discharge of trade waste from the premises.
- (9) Occupiers of trade premises shall maintain service and maintenance contracts for pre-treatment devices at the occupier's expense.
- (10) The occupier must, at its expense, use processes, equipment or storage facilities to control -
 - (a) the quality, quantity and rate of trade waste discharged from the trade premises; and
 - (b) the constituents, or characteristics in trade waste in accordance with any trade waste consent conditions -prior to the point of discharge into the wastewater network.

CONTROL OF TRADE WASTE DISCHARGES

- (1) Where the trade waste includes, or is likely to include, fats, grease or oils in excess of 100 grams per 1000 litres each day-
 - (a) grease traps must be installed at the trade premises; and
 - (b) occupiers must use and maintain the grease traps.

CONTROL OF TRADE WASTE FROM FOOD PREMISES

- (1) Refuse or garbage grinders, and macerators shall not be used to dispose of solid waste from food premises to the wastewater network unless approved by Council.

Explanatory note: *premises such as Marae, churches, public halls and facilities, school catering facilities or kitchens must fit grease traps and obtain a trade waste consent.*

NO DILUTION OF TRADE WASTE

- (1) No person may add or permit the addition of any potable, condensing, cooling water or stormwater to any trade waste stream in order to vary the characteristics of the waste, unless the Council has granted a trade waste consent;

DISCHARGE OR STORAGE OF HAZARDOUS MATERIALS

- (1) No person may discharge hazardous waste into the wastewater network.
- (2) No person shall store at any trade premises raw material, products or waste containing:
 - (a) corrosive, toxic, biocidal, radioactive, flammable, or explosive materials; or any material which, when mixed with the wastewater stream, is likely to generate toxic, flammable, explosive or corrosive materials in quantities likely to be hazardous, or
 - (b) any other material likely to be harmful to the wastewater network or the health and safety of people:

without taking all reasonable steps to prevent entry into the wastewater network from leakage, spillage or other mishap.

PART 3 – TRADE WASTE CONSENTS

APPLICATION FOR A TRADE WASTE CONSENT

- (1) Every person who discharges, or is likely to discharge, trade waste or tankered waste is required to apply in the prescribed form for a trade waste consent:
 - (a) in the case of trade premises or tankered waste operation that exists at 1 August 2015, an application must be made prior to 1 December 2015; or
 - (b) in all other cases prior to the commencement of a discharge of trade waste.
- (2) Every person who discharges, or is likely to discharge trade waste with characteristics that may exceed the limits specified in a trade waste consent is required to apply for a variation of the trade waste consent;
- (3) Every person who changes or is likely to change an approved means of pre-treatment for a discharge that is permitted by a trade waste consent is required to apply for a variation of the trade waste consent.
- (4) All applications must be made in the prescribed form and be accompanied by the application fees.
- (5) No discharges of trade waste with volumes, characteristics or constituents prohibited by this bylaw shall be approved to be discharged into the wastewater network.
- (6) Within 10 working days of receiving an application for a trade waste consent to discharge from any premises or to vary a trade waste consent, the Council may require the applicant to:
 - (a) submit any additional information which it considers necessary to determine the application;
 - (b) submit a trade waste management plan;
 - (c) obtain an independent report or producer statement completed by a suitably experienced and qualified person to verify any or all information supplied by the applicant, including any management plan;
 - (d) present an analysis of the trade waste together with a report interpreting those results.

DECISION ON APPLICATION

- (1) The Council must determine an application for a trade waste consent and issue its decision to:
 - (a) Grant the application as a permitted trade waste where the characteristics of the trade waste meet the parameters in schedule 1A; 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 specific trade waste agreement with the Council).
 - (d) Decline the application as the trade waste has prohibited characteristics.

APPLICATION CONSIDERATION CRITERIA

- (1) The Council is not required to issue a trade waste consent until it receives any charge or fee fixed by it in relation to the application consent.
- (2) In considering any application for a trade waste consent to discharge from any trade premises or to discharge tankered waste into the wastewater network on such a consent, the Council must have regard to the following matters:
 - (a) the quality, volume, and rate of discharge of the trade waste from such premises or tanker;
 - (b) The health and safety of people;
 - (c) The limits and/or maximum values for characteristics of trade waste as specified in Schedule 1A of this Bylaw;
 - (d) The extent to which the trade waste may react with other trade waste or wastewater to produce an undesirable effect, e.g. settlement of solids,
 - (e) production of odours, accelerated corrosion and deterioration of the wastewater network;
 - (f) The flows and velocities in the wastewater network and the material or construction of the wastewater network;
 - (g) The capacity of the wastewater network and other facilities;
 - (h) 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;

- (i) The timing and balancing of flows into the wastewater network;
- (j) 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);
- (k) The effect of the trade waste discharge on the ultimate receiving environment;
- (l) The conditions on Resource Consents for the wastewater network and the residuals from it;
- (m) The possibility of unscheduled, unexpected or accidental events and the degree of risk these could cause to humans, the wastewater network or the environment;
- (n) Consideration of other existing or future discharges;
- (o) Amenability of the trade waste to pre-treatment;
- (p) Existing pre-treatment works on the premises and the potential for their future use;
- (q) Cleaner Production techniques and waste minimisation practices;
- (r) Requirements and limitations related to wastewater sludge disposal and reuse;
- (s) Requirements to control and isolate stormwater;
- (t) Any Management Plan;
- (u) Tankered waste being discharged at an approved location/s; and
- (v) Whether it would be more appropriate for the discharge to be controlled pursuant to a trade waste agreement

CONDITIONS OF TRADE WASTE CONSENT - GENERAL

- (1) A trade waste consent may be granted for a period of up to 5 years.
- (2) A trade waste consent to discharge may impose restrictions on trade waste discharges by:
 - (a) specifying mass, volume, pH, temperature and concentration limits for any constituent or characteristic;
 - (b) specifying the rate of discharge of any constituent or characteristic;
- (3) Any Consent may be granted subject to such conditions that the Council may impose, including but not limited to:
 - (a) The particular public part of the wastewater network 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 by the processing officer;
 - (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 safe and reasonable access to drains for sampling and inspection;
 - (i) The provision and maintenance of a sampling and analysis programme, and flow measurement requirements, at the Consent Holder's expense;
 - (j) The method or methods to be used for the measuring flow rates and/or volume and taking samples of the discharge for use in determining compliance with the 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 calibration of such meters;
 - (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 including safe sampling points of access as may be required;
 - (m) At times specified, the provision in a Council approved format by the Consent Holder to the Council of all flow and/or volume records and results of analyses;
 - (n) Risk assessment of damage to the environment due to an accidental discharge of a chemical;
 - (o) The provision and implementation of a management plan;
 - (p) Waste minimisation and management;
 - (q) Cleaner Production techniques;
 - (r) Remote monitoring and/or control of discharges;
 - (s) Third party treatment, carriage, discharge or disposal of by-products of pre-treatment of trade waste (including sewage sludge disposal);

- (t) Requirement to provide a bond or insurance in favour of the Council where failure to comply with the consent could result in damage to the Council's Sewerage System, its treatment plants, or could result in the Council being in breach of any statutory obligation; and
- (u) The amount, if any, of cooling water, condensing water or stormwater which cannot practically be separated from trade wastes, that may be included with the discharge;
- (v) The cessation of a consent to discharge putrescible wastes to the wastewater network when the Council has provided or arranged an alternative commercial collection and disposal system;
- (w) prescribe a sampling and monitoring programme to be carried out by the consent holder or occupier of the trade premises or tinkered waste operation.

TANKERED WASTE

- (1) Tankered waste shall not be discharged into the Council's wastewater network by any person or Consent Holder not compliant with the Liquid and Hazardous Wastes Code of Practice.
- (2) Council may accept tankered waste for discharge at an approved location.
- (3) Tankered waste 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 Council 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) 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
- (3) The discharger of tankered waste must give 24 hours' notice for the disposal of wastes other than those sourced from domestic septic tanks.

CONDITIONS OF TRADE WASTE CONSENT FOR TANKERED WASTE - MASS, VOLUME, RATE, CONCENTRATION, TEMPERATURE AND PH VALUES

- (1) Limits on the mass, volume, concentration, pH or temperature may be imposed for any constituent. Any characteristic that is subject to mass limit restrictions shall also have its maximum concentration limited.
- (2) When setting mass, volume and concentration limit restrictions for a particular constituent in a trade waste consent the Council must have regard to:
 - (a) Conditions in the wastewater network near the trade waste discharge point and elsewhere in the wastewater network; and
 - (b) The extent to which the available industrial capacity for the Constituent was met during the Council's preceding financial year, and the expected levels of the Constituent for the forthcoming financial year; and
 - (c) If the applicant uses cleaner production techniques, and
 - (d) If the applicant has established a programme to achieve a programme to achieve cleaner production techniques to the satisfaction of the Council within a satisfactory period; and
 - (e) If in the opinion of the Council, there is any advantage to increasing the discharge of a particular constituent in exchange for decreasing the discharge of another constituent; and
 - (f) Any requirements of the Council to meet resource consent conditions or regional plan rules
 - (g) Any requirements of the Council to reduce the pollutant discharge of the trade waste or wastewater; and
 - (h) How great a proportion the mass flow of a constituent of the discharge will be of the total mass flow of that characteristic in the wastewater; and
 - (i) The total mass of the constituent allowable in the wastewater, and the proportion (if any) to be reserved for future allocations of discharge of such constituents to other consent holders, and
 - (j) If there is an interaction with other constituents which increases or decreases the effect of their characteristic on the wastewater network including reticulation, treatment process, or receiving water (or land).

REVIEW OF TRADE WASTE CONSENT

- (1) The Council may at any time during the term of a trade waste consent, by written notice to the consent holder review the trade waste consent and vary any condition of the trade waste consent where a change to a condition is necessary:
 - (a) following a review of the performance of pre-treatment devices or processes;
 - (b) to meet any new Resource Consent imposed on the discharge from the Council's Wastewater network;
 - (c) to comply with any other legal requirements that must be met by the Council.

TRANSFER OF TRADE WASTE CONSENT

- (1) A trade waste consent to discharge shall be issued in the name of the given Consent Holder.
- (2) The Consent Holder shall not, unless written approval is obtained from Council:
 - (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
- (3) Transfer 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.
- (4) When an occupier ceases to occupy a premises from which trade waste are discharged into the wastewater network, any trade waste consent shall terminate, unless a transfer is effected prior to vacating the premises.
- (5) The consent holder remains liable for the failure to meet any obligations existing at the date of termination notwithstanding termination of the trade waste consent.

CANCELLATION OF TRADE WASTE CONSENT

- (1) The Council may suspend or cancel any consent to discharge at any time following not less than 20 working days' notice, to the consent holder or person discharging or person allowing a discharge of any trade waste, where in the opinion of an enforcement officer:
 - (a) the consent holder has failed to comply with any condition of the trade waste consent;
 - (b) the consent holder has failed to maintain control over the discharge;
 - (c) the consent holder is discharging or allowing the discharge of any prohibited trade waste.
 - (d) the consent holder has failed to provide and when appropriate update a Management Plan as required for a Conditional trade waste consent;
 - (e) Failure to pay any applicable fees.
- (2) The Council may suspend or cancel any trade waste consent to discharge at any time following not less than 24 hours' notice to the Consent Holder or person discharging any trade waste or tinkered waste where in the opinion of an enforcement officer:
 - (a) any breach of a Resource Consent held by the Council, has arisen from (whether wholly or partly) by the trade waste discharge;
 - (b) Any act or omission of the consent holder is, or is likely to -
 - (i) adversely affect the safety of the wastewater network;
 - (ii) damage to any part of the wastewater network; or
 - (iii) adversely affect the health of any person
 - (iv) adversely affect the safety of any person.
 - (v) adversely affect the environment
 - (c) it is necessary for the Council to comply with any other legal requirement.

PART 5 – ENFORCEMENT

POWERS OF ENTRY

- (1) All enforcement officers or authorised agents of the Council, 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
 - (c) Taking samples for testing, of any solid, liquid, or gaseous material or any combination or mixture of such materials being discharged.

MONITORING OF TRADE WASTE

- (1) As determined by the Council 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 permitted, conditional, or prohibited
 - (c) A discharge complies with the provisions of Schedule 1A of this bylaw for a permitted discharge and any trade waste consent to discharge; and
- (2) The taking, preservation, transportation, and analysis of the sample shall be undertaken by an authorised officer or agent, or the person discharging, in accordance with accepted industry standard methods, or by a method specifically approved by the Council.
- (3) Sampling must be undertaken using the sampling procedure set out in Schedule 1C.
- (4) 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.

ENFORCEMENT

- (1) The Council may use all its powers under the Local Government Act 2002 to enforce this bylaw.

OFFENCES AND PENALTIES

- (1) Every person who contravenes or permits a contravention of this bylaw commits an offence.
- (2) Every person who commits an offence under this bylaw is liable to a penalty under section 242(4) of the Local Government Act 2002, or to a penalty under the Health Act 1956.

ADMINISTRATIVE INFORMATION

- (1) These bylaws are made under the Local Government Act 2002.
- (2) These bylaws are administered by the Queenstown Lakes District Council.
- (3) The initial resolution to make this Bylaw was passed by the Queenstown Lakes District Council at an ordinary meeting of the Council held on the <date> and was confirmed, following consideration of submissions received during the special consultative procedure, by a resolution of the Council at a subsequent ordinary meeting of the Council on <date>.

SCHEDULE 1A - PERMITTED DISCHARGE CHARACTERISTICS

1A.1 Introduction

1A.1.1 The nature and levels of the characteristics of any Trade Waste discharged to QLDC's wastewater network shall comply at all times with the following requirements, except where the nature and levels of such characteristics are varied by QLDC 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 2 m ³ .	Flows larger than the Guideline values should be Conditional Trade Waste Consent. Conditional Consents will be dependant 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">• Cause increased damage to sewer structures;• Increase the potential for anaerobic conditions to form in the wastewater;• Promote the release of gases such as H₂S and NH₃ (can adversely affect the safety of operations and maintenance personnel); and• Reflect poor energy efficiency. <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
<p>a) Non-faecal gross solids shall have a maximum dimension that shall not exceed 15 mm.</p> <p>b) The suspended solids content of any Trade Waste shall have a maximum concentration that shall not exceed 2000 g/m³. For significant industry this may be reduced to 600 g/m³.</p> <p>c) The settleable solids content of any Trade Waste shall not exceed 50mL/L.</p> <p>d) The total dissolved solids concentration in any Trade Waste shall be subject to the approval of QLDC, having regard to the volume of the waste to be 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.</p>	<p>Gross solids can cause sewer blockages. In case of conditional consents fine screening may be appropriate</p> <p>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/m³ and 600 g/m³. The ANZECC Guidelines recommend a limit of 600 g/m³.</p> <p>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/m³ may be used as a guideline.</p>

1A.2.4 Oil and grease

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
a) There shall be no free or floating layer.	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.
b) Fat, oil or grease shall not exceed 100 g/m ³	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 ³ . 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.

1A.2.5 Solvents and other organic liquids

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

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/m³ or the concentration agreed with QLDC.</p> <p>b) QLDC 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 QLDC'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>'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>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>Emulsion may colour the WWA treatment plant influent such that % UVT is unacceptably reduced.</p> <p>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
Radioactivity levels shall not exceed National Radiation Laboratory Guidelines.	Refer National Radiation Laboratory <i>Code of safe practice for the use of unsealed radioactive materials</i> NRL C1.

1A.2.8 Colour

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
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.	Colour may cause aesthetic impairment of receiving waters, and adverse affects 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.

1A.2.9 Liquid Waste from Pharmacies

These are generally products returned by customers in accordance with the Health and Disability Services Standards – Pharmacy Services Standard NZS 8134.7:2010.

Limits (except containing cytotoxic ingredients, which are prohibited, refer 1B.2.2(i))

Volume Limit	Active Concentration
10 Litres	125mg / 5 ml
5 Litres	250mg / 5 ml
3 Litres	Above 250mg / 5ml

1A.3 Chemical Characteristics

1A.3.1 pH value

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
The pH shall be between 6.0 and 10.0 at all times.	<p>Extremes in pH:</p> <ul style="list-style-type: none"> • Can adversely affect biological treatment processes; • Can adversely affect the safety of operations and/or maintenance personnel; • Cause corrosion of sewer structures; and • Increase the potential for the release of toxic gases such as H₂S and HCN. <p>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.</p>

1A.3.2 Organic Strength

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
<p>Where there is no council treatment system for organic removal the BOD₅ shall not exceed 1000 g/m³. For significant Industry this may be reduced to 600 g/m³</p>	<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.</p> <p>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.</p> <p>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/m³.</p>

1A.3.3 Maximum concentrations

Bylaw Requirements	Commentary from NZS 9201: Part 23: 2004
<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>	<p>Where appropriate, maximum daily limits (kg/day) for mass limit Permitted Discharges may also be given.</p>

Table 1 — General Chemical Characteristics

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

Characteristic	Maximum concentration (g/m ³)	Mass Limits (kg/day)	Reason for limit
MBAS (Methylene blue active substances)	500	1.5	<p>MBAS is a measure of anionic surfactants. High MBAS can:</p> <ul style="list-style-type: none"> Adversely affect the efficiency of activated wastewater sludge plants; and Impair the aesthetics of receiving waters. <p>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/m³.</p>
Ammonia (measured as N)			<p>High ammonia:</p> <ul style="list-style-type: none"> May adversely affect the safety of operations and maintenance personnel; and May significantly contribute to the nutrient load to the receiving environment.
— free ammonia	50	0.25	
— ammonium salts	200	1.0	
Kjeldahl nitrogen	150	1.0	<p>High Kjeldahl nitrogen may significantly contribute to the nutrient load of the receiving environment. A value of 50 g/m³ should be used as a guideline for sensitive receiving waters.</p>
Total phosphorus (as P)	50	0.75	<p>High phosphorus nitrogen may significantly contribute to the nutrient load of the receiving environment. A value of 10 g/m³ should be used as a guideline for sensitive receiving waters.</p>
Sulphate (measured as SO ₄)	500 1500 (with good mixing)	2.5	<p>Sulphate:</p> <ul style="list-style-type: none"> May adversely affect the wastewater network; and May increase the potential for the generation of sulphides in the wastewater if the wastewater network is prone to becoming anaerobic.
Sulphite (measured as SO ₂)	15	0.075	<p>Sulphite has potential to release SO₂ 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.</p>
Sulphide— as H ₂ S on acidification	5	0.025	<p>Sulphides in wastewater may:</p> <ul style="list-style-type: none"> Cause corrosion of the wastewater network, particularly the top non-wetted part of a sewer; Generate odours in sewers which could cause public nuisance; and Release the toxic H₂S gas that could adversely affect the safety of operations and maintenance personnel. <p>Under some of the conditions above sulphide should be <2.0 g/m³</p>

Characteristic	Maximum concentration (g/m ³)	Mass Limits (kg/day)	Reason for limit
Chlorine (measured as Cl ₂) Free chlorine Hypochlorite	3 30	0.015 0.15	Chlorine: <ul style="list-style-type: none"> Can adversely affect the safety of operations and maintenance personnel; and Can cause corrosion of the wastewater network. ARMCANZ/ANZECC Guidelines for sewerage systems utilize a figure of 10 g/m ³ .
Dissolved aluminium	100	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	100	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 ₂)	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 ³ .
Cyanide — weak acid dissociable (as CN)	5	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)

Metal	Maximum Concentration¹ (g/m³)	Mass Limit² (kg/day)	Metal	Maximum Concentration (g/m³)	Mass Limit (kg/day)
Antimony	10.0	0.025	Manganese	10.0	0.025
Arsenic	5.0	0.025	Mercury	0.05	0.0001
Barium	10.0	0.025	Molybdenum	10.0	0.025
Beryllium	0.005	0.0001	Nickel	10.0	0.050
Cadmium	0.5	0.001	Selenium	10.0	0.025
Chromium	5.0	0.050	Silver	2.0	0.010
Cobalt	10.0	0.025	Thallium	10.0	0.025
Copper	10.0	0.050	Tin	10.0	0.025
Lead	10.0	0.025	Zinc	10.0	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 (VI) 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.

¹ It is intended that these maximum concentrations refer to the total metal fraction

² 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 concentration³ (g/m³)	Mass Limits⁴ (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 ⁵	1	0.001	Because of their stability and chemical properties these compounds may: <ul style="list-style-type: none"> • Adversely affect the treatment process; • Impair the quality of the receiving environment; and • Adversely affect the safety of operations and maintenance personnel.
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.

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

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

⁵ These compounds shall be accepted up to the given maximum concentration only when specifically approved

Compound	Maximum concentration ³ (g/m ³)	Mass Limits ⁴ (kg/day)	Reason for limit
Halogenated aromatic hydrocarbons (HAHs)	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
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"> • May adversely affect the treatment processes; • May impair the quality of the receiving environment; and • May adversely affect the safety of operations and maintenance personnel.
Organophosphate pesticides ^{6,7} - excludes pesticides not registered for use in New Zealand - These compounds shall be accepted up to the given maximum concentration only when specifically approved.	0.1	0.0001	

⁶ These compounds shall be accepted up to the given maximum concentration only when specifically approved

⁷ Excludes pesticides not registered for use in New Zealand.

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 QLDC 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 QLDC.

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.
- i) Pharmaceutical liquid waste containing cytotoxic ingredients.

SCHEDULE 1C - SAMPLING PROCEDURE

1C.1 Sampling equipment

1C.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.

1C.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).

1C.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.

1C.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 3 spot samples must be combined using equal volumes of all 3 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 4-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 4-hour average sample.

The 4-hour flow period used when taking a 4-hour average sample shall be a continuous period of 4 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 maybe 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.

1C.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 Hamilton City 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
BSEN 25667-1: 1994	Water quality. Sampling. Guidance on the design of

BS 6068-6.1:1981	sampling programmes
BSEN 25667-2: 1993 BS 6068-6.2:1981	Water quality. Sampling. Guidance on sampling techniques
BSEN 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 Guideline
