UrbanUtilities

qCRAC

Using trade waste approvals to manage contaminants in sewage

[or what you can and can't control with the "rules"]

21 October 2021

LEGISLATION

Water Supply (Safety and Reliability) Act 2008

'...a person must not discharge trade waste to a sewerage service provider's infrastructure without the sewerage service provider's approval...'

Basically, you need approval to discharge waste into our system (Trade Waste Approval).

[But there are three options …]

Trade Waste is "water-borne waste from business, trade or manufacturing, other than waste that is a prohibited substance, human waste or stormwater".

181 Approval may be conditional

The sewerage service provider may give a trade waste approval or seepage water approval on conditions …

Our Powers

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180 Approvals for discharge of trade waste

A sewerage service provider may give an approval (a ***trade waste approval***) to discharge trade waste into the sewerage infrastructure;

Before giving an approval, the sewerage service provider must consider the effect of the proposed discharge on any existing or potential re-use of waste water or sludge.

The sewerage service provider may give an approval only if the sewerage service provider is satisfied—

(a) having regard to the amount, type and strength of the proposed discharge, the discharge will not harm the sewerage or the health and safety of anyone working on the sewerage; and

(b) the sewage treatment plant to treat the discharge is capable of treating the discharge to an acceptable standard.

Also, if the sewerage service provider has a trade waste plan, the provider may give a trade waste approval only if satisfied the proposed discharge into the sewerage is consistent with the plan.

TRADE WASTE POLICY

We will accept trade waste provided:

- It doesn't contain substances that are toxic, detrimental to sewerage assets or treatment processes, or hazardous to personnel or the environment;
- It has been pre-treated to meet sewer acceptance criteria, and
- Our system has adequate capacity to collect, transport and treat the trade waste.

Conditions of Trade Waste Approval

Pre-Treatment Devices Maintenance Requirements

Approval Holders must, at their cost, ensure proper maintenance of all trade waste pre-treatment infrastructure in accordance with Trade Waste Approval conditions.

Ensuring Proper Disposal of Residual and Regulated Wastes

The Approval Holder must ensure that pre-treatment Residual Waste is removed by a properly licensed waste transporter and in accordance with state environmental and waste management legislation.

The Approval Holder must ensure that the waste transporter engaged to remove Residual Waste from pre-treatment devices records the service using the WasteID electronic waste tracking system.

Trade Waste Additives and Enzymes

The use of trade waste additives and enzymes in pre-treatment infrastructure and drainage cannot be a substitute for pre-treatment device maintenance.

Self-Monitoring and Reporting

QUU may require any Approval Holder to undertake self-monitoring at QUU's discretion.

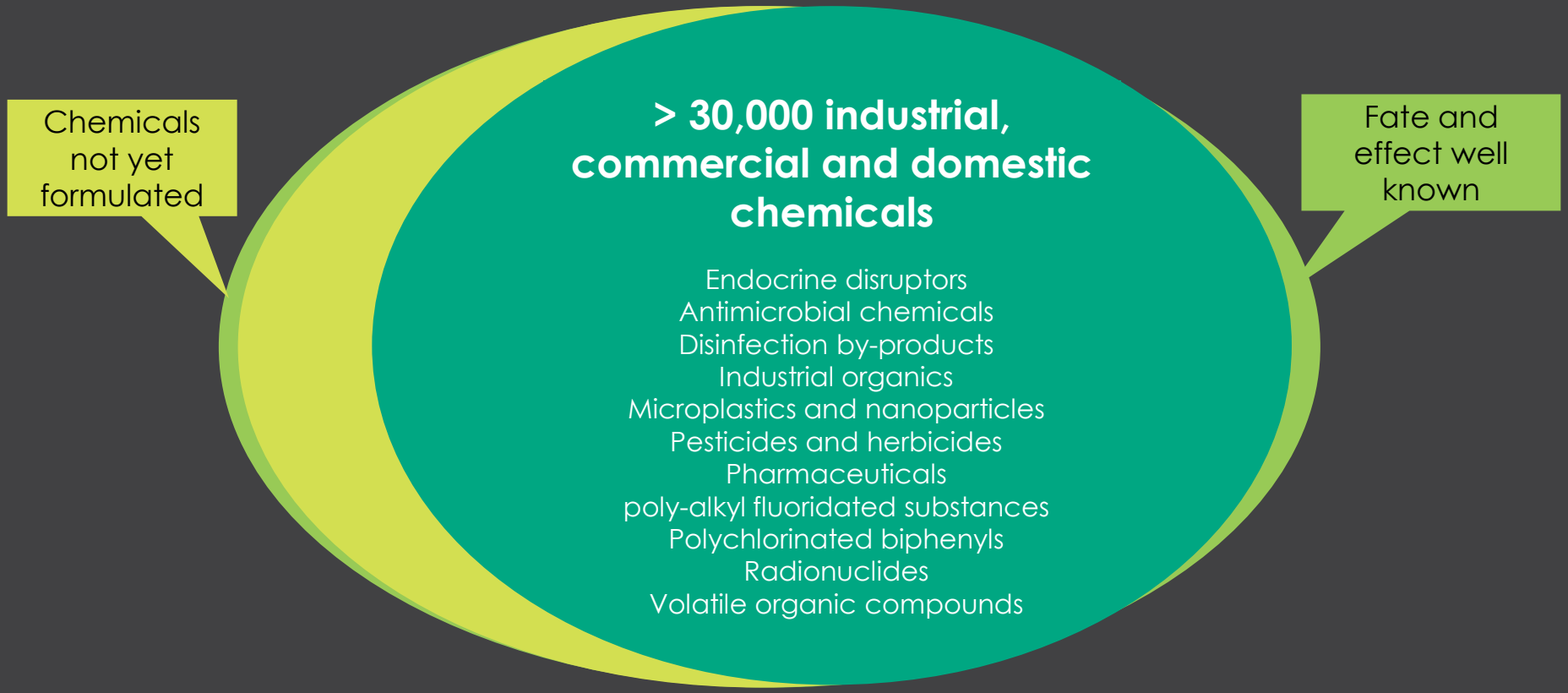
Notification of Changed Conditions

Approval Holders must promptly advise QUU of any change that might alter the volume or quality of Trade Waste discharged under their Trade Waste Approval.

Sewer Acceptance Criteria

Parameter	Maximum Limit
Ammonia (as N)	150 mg/L
Biochemical Oxygen Demand (BOD_5)	1000 mg/L
Boron (as B)	100 mg/L
Bromine (Br_2)	10 mg/L
Chemical Oxygen Demand (COD)	2000 mg/L
Chlorine (Cl_2)	10 mg/L
Colour	Not noticeable after 100 times dilution
Cyanide – weak acid dissociable (as CN)	5 mg/L
Fluoride (as F)	30 mg/L
Oil and Grease (total)	200 mg/L
pH	Minimum: 6 Maximum: 10.5
Salts – Total Dissolved (TDS)	5000 mg/L
Solids – gross	13mm (max linear dimension), 3 m/hr QSV
Solids – Suspended (SS)	500 mg/L
Sulphate(as SO_4)	2000 mg/L
Sulphide – dissolved (as S^{2-})	1 mg/L
Sulphite (as SO_2)	100 mg/L
Temperature	<38°C

Contaminants of Emerging Concern



We require methods that can cope with unknowns and uncertainty

Some Principles to Cope with Uncertainty

- **Take a collaborative approach, recognising and building on existing science and sharing information.**
- **Demonstrate leadership, because our CEC hotspots present important opportunities to study and address CECs.**
- **Manage CECs with a risk-based approach (i.e supply affect-free products rather than chemical-free products).**

Risk-based Approach

Drinking water
Trade waste
Treated wastewater
Recycled water
Biosolid
Other product

Analytical methods
Diagnostic assays
Predicted exposure
Monitoring programs

Weight of evidence
Assessment models
Mixture effect models

Underpinned by continuous upskilling and collaboration with expert organisations

PFAS as an Illustrative Example

A

Characteristics of Contaminant Fate properties:
high persistence, high bioaccumulation potential

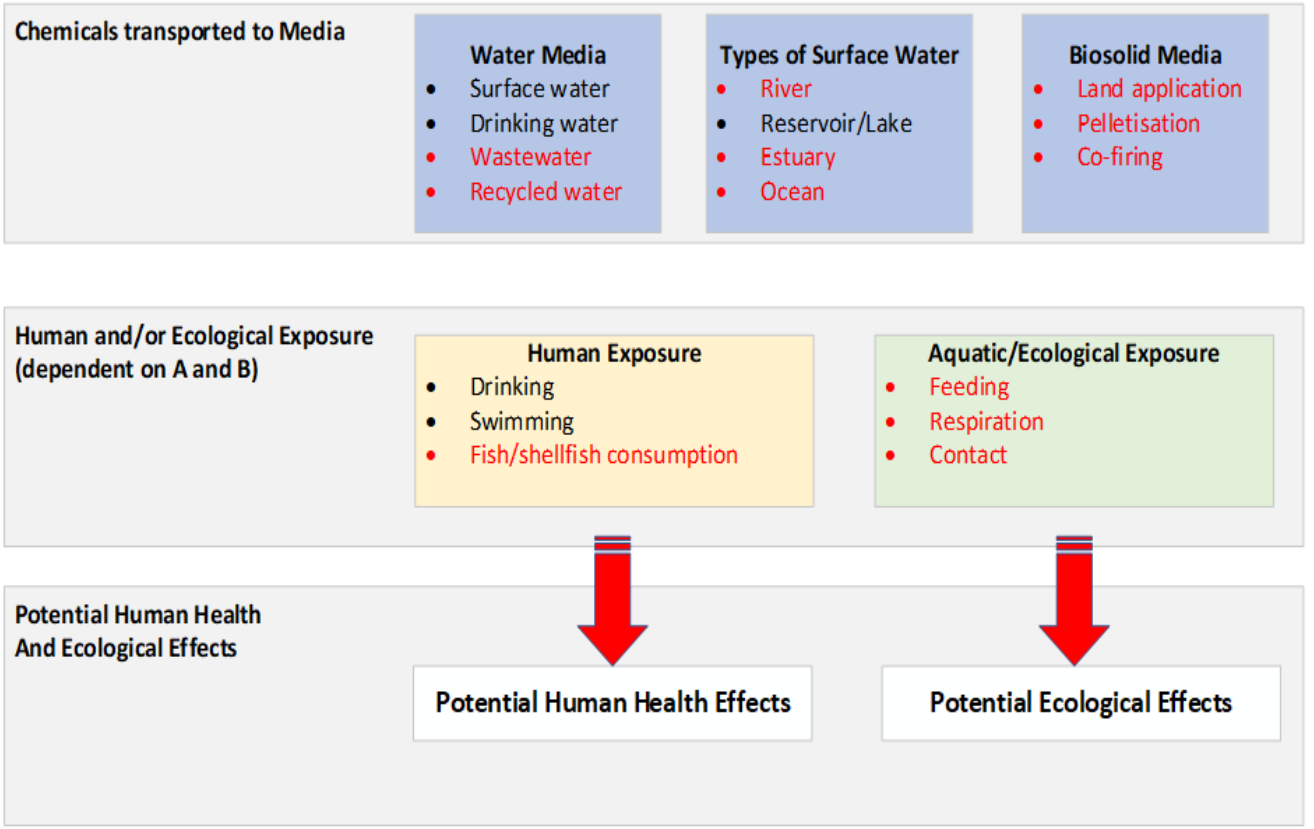
Treatability:
(wastewater): medium,
(recycling): medium
(potable reuse): high
(biosolids): low

Uses:
domestic products, firefighting foams, fire retardants, non-stick surfaces, fabric treatments

Transfer pathways:
drain to sewer, split to biosolid and effluent during activated sludge treatment

Primary effect:
toxicity, endocrine disruption, potential carcinogen

B



Detectable CECs in Urban Utilities' Operations

Class of CEC	Detected	Contaminant at interest level in treated wastewater
Endocrine disruptors (EDCs)	Yes	Dioxin (2,3,7,8-tetrachlorodibenzo para dioxin) - Goodna STP
Antimicrobial chemicals	Yes	EDTA (ethylenediaminetetraacetic acid) - All catchments
Disinfection by-products (DPSs)	Yes	None at concern level
Industrial organics	Yes	EDTA - All catchments
Microplastics and nanoparticles	Yes	Preliminary assessment - Expected in all catchments
Pesticides and herbicides	Yes	Glyphosate (N-phosphonomethyl glycine) - Oxley Creek STP
Pharmaceuticals	Yes	None at concern level
per / poly-alkyl fluoridated substances (PFAS)	Yes	PFAS - All catchments
Polychlorinated biphenyls (PCBs)	Yes	PCBs - Goodna STP
Radionuclides	Yes	None at concern level
Volatile organic compounds (VOCs)	Yes	None at concern level