

SCHEDULE "K"

CODE OF PRACTICE FOR PHOTOGRAPHIC IMAGING OPERATIONS BYLAW NO. 2922

(Bylaw 4530)

1.0 APPLICATION

- 1.1 This code of practice prescribes conditions governing the discharge of waste from photographic imaging operations directly or indirectly into a sewer connected to a sewage facility.
- 1.2 The term "treatment works" in this code of practice means the works referred to in Sections 2.2(b) and 2.4.

2.0 DISCHARGE REGULATIONS

- 2.1 An operator of a photographic imaging operation must not discharge waste which, at the point of discharge into a sewer, contains:
- (a) silver in a concentration that is in excess of 5 milligrams per litre (mg/L); or
 - (b) prohibited waste as set out in Schedule "A".
- 2.2 An operator of a photographic imaging operation that produces liquid waste containing silver must either:
- (a) collect and transport the waste from the photographic imaging operation for off-site waste management; or
 - (b) treat the waste at the photographic imaging operation site prior to discharge to the sewer using one of the following silver recovery technologies:
 - (i) two chemical recovery cartridges connected in series;
 - (ii) an electrolytic recovery unit followed by two chemical recovery cartridges connected in series; or
 - (iii) any other silver recovery technology, or combination of technologies, capable of reducing the concentration of silver in the waste discharged to sewer to 5 mg/L or less where valid analytical test data has been submitted to, and accepted by, the sewage control manager.
- 2.3 An operator of a photographic imaging operation must install and maintain silver recovery technology referred to in Section 2.2 according to the manufacturer's instructions and specifications.
- 2.4 An operator of a photographic imaging operation must collect all liquid waste containing silver in a holding tank and must deliver this waste to the electrolytic recovery unit and/or chemical recovery cartridges using a metering pump.
- 2.5 An operator of a photographic imaging operation must calibrate the metering pump referred to in Section 2.4 in accordance with the manufacturer's instructions and specifications.
- 2.6 An operator of a photographic imaging operation must locate the silver recovery system and any stored liquid waste collection containers in such a manner that an accidental spill, leak or container failure will not result in liquid waste containing silver entering any sewer.
- 2.7 If a location referred to under Section 2.6 is not available, an operator of a photographic

imaging operation must do one of the following:

- (a) install spill containment to contain spills or leaks from the silver recovery system or stored liquid waste collection containers; or
 - (b) cap all floor drains into which liquid spilled from the silver recovery system or stored liquid waste collection containers would normally flow.
- 2.8 When using two separate chemical recovery cartridges, an operator of a photographic imaging operation must test the discharge from the first cartridge for silver content at least once per month of operation using either silver test paper or a silver test kit.
- 2.9 When the discharge from the first chemical recovery cartridge referred to in Section 2.8 cannot be sampled, an operator of a photographic imaging operation must:
- (a) install a cumulative flow meter on the silver recovery system; and
 - (b) test the discharge from the second chemical recovery cartridge once per week of operation using silver test paper or a silver test kit.
- 2.10 An operator of a photographic imaging operation must replace the chemical recovery cartridges when any one of the following occurs:
- (a) the manufacturer's specified expiry date, as shown on each cartridge, has been reached;
 - (b) eighty percent (80%) of the manufacturer's specified capacity, or total cumulative flow, for each cartridge has been reached;
 - (c) test data, using silver test paper or a silver test kit, indicates that the discharge from the first cartridge is greater than 1000 mg/L; or
 - (d) analytical data from an accredited laboratory using a method of analysis outlined in Standard Methods, or an alternative method of analysis approved by the Manager, having a method detection limit of 0.5 mg/L silver or lower, indicates that the concentration of silver in the discharge from the silver recovery system is greater than, or equal to, 5 mg/L.
- 2.11 If treatment of liquid waste with two chemical recovery cartridges connected in series is the only silver recovery technology being used, then the operator of the photographic imaging operation must replace both chemical recovery cartridges when one of the events referred to in Section 2.10 occurs.
- 2.12 Despite Section 2.11, if treatment of liquid waste with two chemical recovery cartridges connected in series is used following treatment by an electrolytic recovery unit, the second cartridge may replace the used first cartridge and a new second cartridge may be installed when one of the events referred to in Section 2.10 occurs.
- 2.13 Despite Section 2.12, both chemical recovery cartridges used following an electrolytic recovery unit must be replaced by the operator of the photographic imaging operation when one of the events referred to in Section 2.10 occurs if this is recommended by the manufacturer of the cartridges.
- 2.14 An operator of a photographic imaging operation who installs treatment works must locate the treatment works so that they are readily and easily accessible for inspection, maintenance, repair or replacement.
- 2.15 An operator of a photographic imaging operation who installs treatment works must not locate the treatment works in a confined space.

- 2.16 An operator of a photographic imaging operation who installs treatment works must:
- (a) designate the outlet from the silver recovery system, at a location upstream of the point of discharge of other waste, as a monitoring point; and
 - (b) locate the monitoring point so that it is readily and easily accessible at all times for inspection and monitoring purposes.

2.17 The monitoring point referred to in Section 2.16 is considered to be the point of discharge into a sewer.

3.0 RECORD KEEPING AND RETENTION

3.1 An operator of a photographic imaging operation who installs a silver recovery system must keep, at the photographic imaging operation site, an operation and maintenance manual pertaining to all equipment used in the silver recovery system.

3.2 An operator of a photographic imaging operation who installs two chemical recovery cartridges connected in series must keep records, available for inspection on request, at the photographic imaging operation site that includes the following information recorded for the previous two years:

- (a) serial number of each chemical recovery cartridge used;
- (b) installation date of each chemical recovery cartridge used;
- (c) expiry date of each chemical recovery cartridge used (where provided by manufacturers or suppliers);
- (d) maximum recommended capacity, or total cumulative flow, of each chemical recovery cartridge used;
- (e) dates of all metering pump calibrations through the silver recovery system when the chemical recovery cartridge is replaced and any additional manufacturer recommended calibrations;
- (f) silver test results on the discharge from the first chemical recovery cartridge per calendar month of operation; or where the discharge from the first cartridge cannot be sampled, silver test results on the discharge from the second chemical recovery cartridge and cumulative flows through the silver recovery system per calendar week of operation; and
- (g) dates and descriptions of all maintenance, repair, or replacement activities associated with the operation of the chemical recovery cartridges.

3.3 An operator of a photographic imaging operation who installs an electrolytic recovery unit in addition to two chemical recovery cartridges connected in series must keep records, available for inspection on request, at the photographic imaging operation site that includes the following information recorded for the previous two years:

- (a) all information specified under section 3.2 as applicable;
- (b) date of each removal of silver from the electrolytic recovery unit; and
- (c) dates and descriptions of all maintenance or repair activities associated with the operation of the electrolytic recovery unit.

- 3.4 An operator of a photographic imaging operation must keep a record, including relevant receipts or invoices, of all disposal or recycling services used for off-site waste management, disposal or recycling of wastewater, chemical recovery cartridges, and silver-contaminated residue, including the:
- (a) name, civic and postal address, and telephone number of each disposal or recycling company or facility used by the photographic imaging operation;
 - (b) type of material transferred to each company or facility;
 - (c) quantity of material transferred to each company or facility; and
 - (d) date of material transferred to each company or facility.
- 3.5 The records required under Sections 3.2, 3.3 and 3.4 must be retained for a period of five years and must be available for inspection on request by an officer.