Environmental Choice[M] Program

CERTIFICATION CRITERIA DOCUMENT

CCD-042

Product: Photofinishing Services

Preamble

Pursuant to paragraph 54 (1)(*b*) of the *Canadian Environmental Protection Act, 1999*, the Minister of the Environment is pleased to publish the following national guideline on ***photofinishing services*** under the auspices of the Environmental Choice[M] Program.

The Environmental Choice Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and services available to Canadians.

It was estimated that some 60 million rolls of 35mm film were processed in Canada in 1992. Minilab operations account for at least 50% of all non-professional photofinishing work done. The photofinishing industry as a whole has taken steps in recent years to reduce chemical discharges into municipal sewer systems. Some of these improvements have been initiated by those who supply the industry. Even so, there are still photofinishing services that operate without pollution abatement procedures in place.

The major environmental issues associated with photofinishing services are use of chemicals; water use during processing; generation and disposal of processing effluent and solid waste.

There are two types of effluent resulting from photofinishing: spent chemical solutions and wash waters. The cumulative effects of large numbers of labs discharging their waste solutions and washwaters is significant for silver. Untreated photofinishing effluent may pose problems for sewage treatment operations and may have negative impacts on effluent and sludge quality.

Photoprocessing laboratories use chemicals that, if mishandled, may adversely affect air, water, and land. Control measures include requirements for proper handling and storage of chemicals, the use of less toxic chemicals where possible, ventilation, and the use of appropriate protective equipment and tools.

Most of the solid waste that is generated consists of packaging and related materials.

Based on a review of currently available life cycle information, the service category requirements will produce an environmental benefit through:

- a reduction in loading of waste water to waste water treatment plants;
- a reduction in the quantity of materials going to landfill;
- a reduction in emissions to the workplace; and
- an encouragement of resource conservation and pollution prevention.

Life cycle review is an ongoing process. As information and technology change, the service category requirements will be reviewed and possibly amended.

Environment Canada anticipates that providers of **photofinishing services** which conform to this guideline will apply to the Environmental Choice Program for verification and subsequent authority to label the qualifying services with the Environmental Choice EcoLogo[M].

Notice

Any reference to a standard means to the latest edition of that standard.

The Environmental Choice Program reserves the right to accept equivalent test data for the test methods specified in this guideline.

Interpretation

1. In the following guideline:

"biochemical oxygen demand" or **"**BOD_5**"**means the amount of dissolved oxygen required for the biodegradation of the organic matter in water, when tested in accordance with the 5 day test set out in the *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub-part 5210, jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation;

"bleach" means the bleaching bath in colour processing which performs three functions: (1) Stops the action of the developer by lowering the pH, (2) Oxidizes the insoluble, light sensitive silver halide so that it can react with the bleach to form a soluble silver compound, and, (3) Converts any incompletely formed dye into visible dye. The bleach solution may contain chemicals such as dilute acetic acid, iron or ferric ammonium EDTA;

"bleach-fix" means the bleach fixing bath in colour processing which performs several functions: (1) Stops the action of the developer by lowering the pH, (2) Oxidizes the insoluble, light sensitive silver halide so that it can react with the bleach toform a soluble silver compound, (3) The ammonium or sodium thiosulphate dissolves the silver halides so they can be removed from the paper either in the bleach fix or the final water wash, and, (4) Completes the formation of the cyan dye. The bleach-fix solution may contain chemicals such as acetic acid or ferric ammonium EDTA;

"commercial lab" means a photofinishing lab providing a range of photofinishing services to professionals, students, institutional and industrial customers. It includes custom, school and studio labs offering only limited direct service to the general public;

"developer" means a weak reducing alkaline solution that is used during the first step in creating an image on light sensitive medium. In this step the developing agent acts upon all the exposed silver halides to convert them to visible black metallic silver. These are the silver crystals which form the final visible image on the paper. In colour processing wherever black metallic silver has been formed, the oxidized developer combines with the coupler to form complementary coloured dye clouds. The developer may contain chemicals such as p-aminophenol, p-phenylene diamine, borax, potassium bromide, hydroquinone or sodium sulphite;

"EDTA" means ethylene diaminetetra-acetic acid (also known as ethylene dinitrilotetraacetic acid) or any of its salts;

"film processing" means a machine process that takes colour or black and white photographic film and guides it through a series of tanks filled with chemical processing solutions, using carefully controlled times, temperatures, and agitation;

"fixer" means a thiosulphate solution used to dissolve the remaining unexposed silver on the film. The dissolved silver leaves the emulsion and remains in the fixing bath (solution). In colour photofinishing, most of the silver is converted in the bleach to silver halide so that in the fixer, all the silver is removed. The fixer solution may contain chemicals such as dilute acetic acid , aluminum sulphate, ammonium/sodium thiosulphate, silver, sodium sulphite or sulphuric acid;

"iron" means the amount of iron, when tested in accordance with the test set out in the *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub part 3500 jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control;

"kjeldahl nitrogen" means the sum of organic and ammonia nitrogen, when tested in accordance with the test set out in the *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub part 4500 jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control;

"minilab" means an establishment having a colour and/or black and white film processor and a combined paper printer and processor, capable of providing on-site photographic film and paper processing and printing services to the general public;

"overflow" means the action of chemistry flowing into the tank overflow drains, when replenisher is added to the processing tanks, during the actual film processing cycle;

"paper processing" means a machine process that takes colour or black and white photographic paper and

guides it through a series of tanks filled with chemical processing solutions, using carefully controlled times, temperatures, and agitation;

"phosphorus" means the amount of phosphate when tested in accordance with the test set out in *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub part 4500 jointly published by the American Public Health Association, the American Water Works Association and Water Pollution Control;

"photofinishing services" means photo processing services performed by minilabs, wholesale labs and commercial labs;

"photographic film" means any polyester or acetate-based material on which there are thin, light-sensitive, water permeable, gelatinous layers where the image is formed and stored;
"PMAI" means Photo Marketing Association International;

"photographic paper" means any resin-based material on which there are thin, light sensitive water permeable, gelatin layers where the image is formed and stored;

"photo processing laboratory" means a facility where photo finishing services are performed;

"photo processing" means a sequence of chemical treatments or baths that convert a latent image in a photographic emulsion into a stable and visible one, and, then if applicable, transfer it to a receiving material;

"printing" means a process that uses a photographic device to shine a beam of light through an enlarging lens and a negative to focus on image on colour or black and white paper, and then produces a colour or black and white print;

"recycle" means to take a component that can no longer be reused and treat it so that it may be reused in a different process or product;

"regeneration" means the treatment of a spent processing solution to make it, in part, reusable. Typically, regeneration involves discarding a portion (approximately 30%) of the used solution and adding a regenerating concentrate to a pre-treated, de-silvered overflow solution. Solutions often regenerated include bleach, bleach-fix solutions, and certain film and paper developers;

"replenishment chemical" or **"replenisher"** means the chemical added to a process at a prescribed flow rate. Different chemicals may be replenished at different rates, e.g. developer A replenishes at a different rate from developer B. Replenishment maintains a stable chemical environment as it compensates for chemicals consumed during film or paper processing;

"reuse" means to take a component that can no longer be used in a process or product but can be disassembled and/or treated to be put back into the same process or product to be used over again;

"stabilizer" means a solution that is used to preserve the colour film dyes against oxidation and ultraviolet degradation;

"sulfate" means the amount of sulfate when tested in accordance with the test set out in *Standard Methods for the Examination of Water and Waste Water*, latest edition, Sub part 4500 jointly published by the American Public Health Association, the American Water Works Association and Water Pollution Control;

"volatile organic compound" or **"VOC"** means any organic compound which participates in atmospheric photochemical (*i.e.* in the presence of sunlight) reactions. It excludes those organic compounds which the ECP designates as having negligible photochemical reactivity;
Note: Atmospheric *photochemical* reactions are not to be confused with *photographic chemicals*.

"washless processing configuration" means a chemical rinse or an ultra-low replenished distilled water rinse is used rather than the high volumes of heated wash water used in wash systems. Washless, or unplumbed systems, use 95% less water than the wash systems;

"waste materials" means materials such as spent single-use cameras, plastic cartridges, canisters, bottles, drums and rolls, metal film cassettes and magazines, non-photographic paper (e.g. fine paper, corrugated cardboard) and wooden pallets, that would otherwise go to landfill; and

"wholesale lab" means a large-scale automated photofinishing lab providing a range of photofinishing services

to retail outlets such as grocery stores and drug stores. There is a limited direct service to the general public.

Category Definition

2. This category includes all ***photofinishing services*** as further defined in the subcategories in this section.

   The subcategories are:

   a) minilab;

   b) wholesale lab, and

   c) commercial lab.

General Requirements

3. To be authorized to carry the EcoLogo ***photofinishing service*** must:

   (a) meet or exceed all applicable governmental and industrial safety and performance standards; and

   (b) operate in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the *Fisheries Act* and the *Canadian Environmental Protection Act* (CEPA).

Process Specific Requirements

4. To be authorized to carry the EcoLogo the ***photofinishing service*** must:

   (a) not use cleaners manufactured or formulated with VOCs in excess of 35% by weight, as measured by *EPA Method 24-24A, 40 C.F.R., Part 60, Appendix A (1991), or Method 18,48 Federal Register 48, no. 202, October 18, 1983, or Method 1400 NIOSH Manual of Analytical Methods, Volume 1, February 1984, or Environmental Protection Agency Method 8240 GC/MS Method for Volatile Organics, September 1986*; or as demonstrated through calculation from records of the amounts of constituents used to make the product;

   (b) not use stabilizers containing formaldehyde at a level greater than 1.0 g/L.

   (c) reuse or recycle waste materials, where programs exist; and

5. To be authorized to carry the EcoLogo, the ***photofinishing service*** must also meet criteria specific to its subcategory.

5.1 Minilab photofinishing services must:

   (a) use a washless processing configuration;

   (b) operate in a manner so as to comply with the *Environmental Code of Management Practices for Minilabs* (PMAI, November 1994); and

   (c) not use cleaners containing hexavalent chromium or permanganate for cleaning racks and tanks.

5.2 Wholesale and commercial lab photofinishing services must:

   (a) use a system that reduces and/or recycles photoprocessing wash waters such that no more than 5L of water/roll is required, assuming one 135-24 roll of film and corresponding set of prints;

   (b) recover silver from spent photo processing chemicals and wash waters such that the resulting level of silver does not exceed 5 mg/L after the terminal silver recovery unit(s). Acceptable analysis methods are either the Atomic Absorption (AA) Spectrometry or the Inductively

Coupled Plasma (ICP) Spectrometry;

(c) operate in a manner such that liquid chemical effluent is in compliance with applicable local sewer use by-laws or, in the absence of such by-laws, the following minimum criteria:

(*i*) biochemical oxygen demand of 300 mg/L;

(*ii*) total kjeldahl Nitrogen of 100 mg/L;

(*iii*) sulphate of 1500 mg/L;

(*iv*) total phosphorus of 10 mg/L; and

(v) iron of 50 mg/L;

Note: Effluent samples to be taken at the sewer access nearest to the photofinishing establishment.

(d) use low replenishment chemicals (i.e, replenishers), or achieve at least a 70% regeneration rate for the following chemical solutions where applicable;

(*i*) film developer;

(*ii*) paper developer;

(*iii*) film bleach; and

(*iv*) bleach fixers.

(e) have a prevention and emergency response plan for spills.

Verification

6. To verify a claim that a service meets the criteria listed in the guideline, the Environmental Choice Program will require access, as is its normal practice, to relevant quality control and production records and the right of access to production facilities on an announced basis.

7. Compliance with section 3(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the service. The Environmental Choice Program shall be advised in writing immediately by the licensee of any noncompliance which may occur during the term of the license. On the occurrence of any noncompliance, the license may be suspended or terminated as stipulated in the license agreement. In the event of a dispute related to the suspension or termination of the license, the license agreement provides for arbitration.

Conditions for EcoLogo Use

7. The EcoLogo may appear on wholesale or retail packaging, or on the product itself, provided that the product meets the requirements in this guideline.

8. It is recommended that a criteria statement appear with the EcoLogo whenever the EcoLogo is used in association with the ***photofinishing service(s)***. The intent of this statement is to provide clarification as to why the product was certified and to indicate constraints to which the certification is limited. This is to ensure no ambiguity over, or misrepresentation of, the reason(s) for certification.

Regardless of its assigned sub-category, the ECP suggested criteria statement wording for this product type is "*Photofinishing Service*". The licensee may propose other wording for the criteria statement, but any such proposed wording must be approved by the Environmental Choice Program.

9. All licensees and authorized users must comply with the Environmental Choice Program's *Guide to Proper Use of the EcoLogo*^{M} regarding the format and usage of the EcoLogo.

10. Any accompanying advertising must conform with the relevant requirements stipulated in this guideline, the license agreement and the Environmental Choice Program's *Guide to Proper Use of the EcoLogo*^{M}.

For more information about the EcoLogo™ Program, please direct your inquiry to:
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