



Industrial Water Survey: Mineral Extraction Industries, 2005

Collected under the authority of the *Statistics Act*,
Revised Statutes of Canada, 1985, Chapter S19.

This document is confidential when completed.

Version française disponible

Correct pre-printed information, if necessary,
using the corresponding boxes below:

Legal name
0001 _____

Business name
0002 _____

C/O
0003 _____

Last name of contact
0028 _____

First name of contact
0008 _____

Address
0004 _____

City _____ Province/Territory or State _____

0005 _____ 0006 _____

Country _____ Postal code/Zip code _____

0052 _____ 0007 _____

Please read before completing

Survey Purpose

This survey collects detailed information on water use in Canada by the manufacturing, mining and electrical power generating industries. The survey asks information on who uses water, how much, where and at what cost. This data will be used to track the state of stocks of water on a regional basis in Canada and will also be used in the development of environmental accounts and indicators.

Return of Questionnaire(s)

Please return the completed questionnaire(s) to Statistics Canada within 30 days of receipt by mail, using the enclosed envelope. If you are unable to do so, call **1 866 855-8594** to inform us of the expected completion date. You can also fax it at 1 800 755-5514. Lost the return envelope, need help to complete your questionnaire(s)? Call us at 1 866 855-8594.

Fax or Other Electronic Transmission Disclosure

Statistics Canada advises you that there could be a risk of disclosure during the facsimile or other electronic transmission. However, upon receipt, Statistics Canada will provide the guaranteed level of protection afforded to all information collected under the authority of the *Statistics Act*.

Authority

This survey is conducted under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S19. **COMPLETION OF THIS QUESTIONNAIRE IS A LEGAL REQUIREMENT UNDER THE STATISTICS ACT.**

Confidentiality

Statistics Canada is prohibited by law from publishing any statistics which would divulge information obtained from this survey that relates to any identifiable business. The data reported on this questionnaire will be treated in strict confidence.

Data-sharing Agreements

In an effort to reduce respondent burden, Statistics Canada has entered into an agreement with Environment Canada under **Section 12 of the *Statistics Act*** for sharing of data herein. Environment Canada has undertaken to keep the information confidential and to use it for statistical purposes only. This Section 12 agreement shall not apply if an authorized officer or person of your company objects **in writing to the Chief Statistician and mails that letter to the Operations and Integration Division of Statistics Canada** with the completed questionnaire. **Your responses are not shared with Canada Revenue Agency.**

Planned Data Linkage

In order to enhance the analytic possibilities of this survey, Statistics Canada intends to combine the information from the Industrial Water Survey with the information your company/business provided on the Annual Census of Mines.

Person primarily responsible for completing this questionnaire, if different from above:

0026	1 <input type="radio"/> Mr. 2 <input type="radio"/> Mrs. 3 <input type="radio"/> Miss 4 <input type="radio"/> Ms 5 <input type="radio"/> Dr.	0017	Telephone number _____ extension 0027 _____
0054	Last name _____	0016	Fax number _____
0013	First name _____	0020	Website address _____
0014	Title _____	0018	E-mail address _____

For Statistics Canada use only

Rec. <small>y</small> <small>M</small> <small>D</small>	Ed. <small>y</small> <small>M</small> <small>D</small>	Kyd. <small>y</small> <small>M</small> <small>D</small>	Bat. _____	Coll. _____	FSC _____
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REPORTING YEAR: JANUARY 1, 2005 TO DECEMBER 31, 2005

NOTE i) Water volumes are to be reported in the units in use at the establishment; please check only one box and use this unit of measure throughout the questionnaire.

Line
1

C0101

1 cubic metres

2 cubic feet

3 thousands imperial gallons

4 thousands U.S. gallons

5 other (please specify)

- ii) Please report all cost items to the nearest thousand Canadian dollars (\$000).
- iii) **Where data are not available, please estimate.**

SECTION 1: MONTHLY AND ANNUAL TOTAL WATER INTAKE AND DISCHARGE

INSTRUCTIONS

- (i) In this section, under intake, please report by month the quantity of “new water” brought into your operation. For the purpose of this questionnaire “new water” is defined as water introduced for the first time into this establishment **regardless of source or quality** (including sanitary/domestic water intake).
- (ii) Where you supply water to adjacent or tenant industry(ies) or municipality(ies), please report estimated water intake for your establishment only.
- (iii) Under discharge, please report the quantity of water routed to its ultimate point of discharge (including sanitary/domestic discharge). In mining operations please include waste water pumped from the mine and not used for any other purpose, as discharge water only.
- (iv) Under discharge **do not report** the volume of water released to ponds, lagoons or basins and intended for recirculation or reuse until such water is actually discharged to a location beyond the control of the mine or plant.
- (v) Under discharge **do not include** any water lost in production through evaporation, permanently held in open or closed storage, or otherwise consumed (e.g. included in a final product or slurry), include such water only as intake.
- (vi) Annual total discharge may be greater than annual total intake as explained above in item (iii).

Month	Volume per month	
	Intake	Discharge
1 January	C1001	C1101
2 February	C1002	C1102
3 March	C1003	C1103
4 April	C1004	C1104
5 May	C1005	C1105
6 June	C1006	C1106
7 July	C1007	C1107
8 August	C1008	C1108
9 September	C1009	C1109
10 October	C1010	C1110
11 November	C1011	C1111
12 December	C1012	C1112
13 ANNUAL TOTAL	C1013	C1113

14 Of the annual volume of discharge water at Line 14, C1113, what volume originated as waste water pumped from the mine?

SECTION 2: WATER INTAKE BY SOURCE AND KIND

INSTRUCTIONS

- (i) Please report your volumes of intake water by source and its usual characteristic. Unless you know otherwise, report volumes received from public water utility systems as "Fresh".
- (ii) Fresh water is defined as water containing less than 300 parts per million total dissolved solids.
- (iii) Hard water is defined as water containing 300 - 900 parts per million total dissolved solids.
- (iv) Saline water is defined as water containing more than 900 parts per million of total dissolved solids.
- (v) The sum of all volumes should equal the annual total as reported in Line 14, C1013 on previous page.

Where data are not available, please estimate.

Source	Volume per year		
	Fresh	Hard	Saline
16 Public water utility system	C2001	C2101	XXXX
17 Self-supplied surface water system (lake, river, etc.)	C2002	C2102	XXXX
18 Self-supplied groundwater system (well, spring, etc.)	C2003	C2103	C2203
19 Self-supplied tide water (salt water) body (estuary, bay, ocean, etc.)	XXXX	XXXX	C2204
20 Other sources (<i>specify</i>) <input type="text" value="C2000"/>	C2005	C2105	C2205

Estimated annual cost of water acquisition:

	\$'000's
21 Payment to public utility	C2301 \$
22 Estimated annual operating and maintenance costs of intake water acquisition (excluding water treatment costs which are covered on the next page). Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and maintain your systems that bring water into your facility. ...	C2302 \$
23 If applicable, cost of your facility's annual intake licence (estimate if permit not purchased annually)	C2303 \$

SECTION 3: INTAKE WATER - TREATMENT

24 Did this establishment treat any **intake** water?

C3001 1 Yes

3 No → *If no, go to Section 4*

INSTRUCTIONS

(i) Indicate the volume of **intake water** treated within your facility prior to use.

Where data are not available, please estimate.

	Volume per year
Category of treatment	
25 Screening	C3201
26 Filtration	C3202
27 Chlorination - disinfection (includes for process and for biological control)	C3203
28 Corrosion and slime control	C3204
29 Alkalinity control	C3205
30 Hardness (or water softening)	C3206
31 Coagulation / flocculation	C3207
32 Other (specify) <input type="text" value="C3213"/>	C3210
Other (specify) <input type="text" value="C3214"/>	C3211
Other (specify) <input type="text" value="C3215"/>	C3212
33 Estimated annual operating and maintenance cost of your intake water treatment. Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and maintain systems to treat water brought into your facility...	<div style="text-align: right;">\$'000's</div> <div style="text-align: right;">C3101</div> <div style="text-align: right;">\$</div>

SECTION 4: WATER INTAKE BY PURPOSE

INSTRUCTIONS

- (i) Report the amount of water within your establishment by **initial** use. This section should not include recirculated water except as stated in Line 34 (for a definition of "recirculated water", see section 5).
- (ii) In Line 37 "Other uses" should not include water pumped by the establishment, and intended for initial use outside the establishment.

Where data are not available, please estimate.

	Purpose	Volume per year
34	Process water - This is water that serves in any level of the mining process. It includes all water which comes in direct contact with products and/or materials. It also includes water which is used in the sanitation of process equipment, water which is consumed in milling and special processes, water which is included in final output or water which has been used for another purpose, and is undergoing its final use as process water	C4101
35	Cooling, condensing and steam - This is water which does not come in direct contact with the products, materials or by-products of the processing operation. It includes pass-through water used in the operation of cooling or process equipment (including air conditioning) and water introduced into boilers for the production of steam for either process operations or electric power.....	C4102
36	Sanitary service/Domestic use - This is water used for toilets, janitorial services, lawn watering, washing of vehicles, etc.	C4103
37	Other uses (<i>specify</i>) <input style="width: 400px;" type="text" value="C4000"/>	C4104
38	Total (Lines 33 to 36 should equal sum of figures reported in Line 14, C1013)	C4105
39	Of the annual volume of intake water for process reported in Line 34, what volume of water was consumed or lost (i.e. not returned to original source)?	C4301
40	Of the annual volume of intake water for cooling, condensing or steam production reported in Line 35, what volume of water was consumed or lost (i.e. not returned to original source)?	C4302

FOR INFORMATION ONLY

SECTION 5: WATER RECIRCULATED OR REUSED BY PURPOSE

Recirculated water refers to water used more than once in an industrial establishment and applies mainly to cooling and processing activities. It does not refer to water used a number of times within a particular system (i.e. **it excludes closed-loop systems**). It only refers to water that leaves a particular subsystem and re-enters it or is used in another subsystem.

- 41 Did this establishment recirculate or reuse water? ^{C5001} 1 Yes
 3 No → **If no, go to Section 6**

INSTRUCTIONS

(i) Please report the volume of water recirculated or reused.

Where data are not available, please estimate.

Purpose		Volume per year
42	Process	C5101
43	Cooling, condensing and steam	C5102
44	Other uses (specify) <input type="text" value="C5000"/>	C5103
45	Total (Lines 42 to 44)	C5104

- 46 Does this operation have a tailings pond(s)? ^{C5201} 1 Yes 3 No



- 47 If yes, indicate the volume of water recirculated or re-used from the tailings pond(s).....

Volume per year
C5302

- 48 Estimated annual operating and maintenance cost of water recirculation.
 Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and maintain systems to recirculate water in your facility

\$'000's
C5201
\$

SECTION 6: TREATMENT AND DISCHARGE OF WATER

INSTRUCTIONS

- (i) Please report the volume of all water routed by this facility to its ultimate point of discharge by treatment process.
- (ii) Do not report the volume of water released to ponds, lagoons or basins and intended for recirculation or reuse until such water is actually discharged to a location beyond the control of the establishment.
- (iii) Do not include the volume of water lost in production through evaporation, permanently held in open or closed storage or otherwise consumed and not brought to the ultimate point of discharge.

- 49 Is discharge volume metered or otherwise measured? C6001 1 Yes
 3 No (If no, please provide your best estimate.)

Where data are not available, please estimate.

Treatment	Point of discharge (volume per year)				
	Public utilities	Surface water bodies	Ground water	Tanks, Ponds or Injected to Producing Formations	Other
50 Water not treated at this facility before discharge	C6101	C6102	C6103	C6105	C6104
51 Primary or mechanical (the physical removal of large solids using grates, screens and settling tanks)	C6201	C6202	C6203	C6205	C6204
52 Secondary or biological (the promotion of bacterial growth and other microbes that break down the organic wastes)	C6301	C6302	C6303	C6305	C6304
53 Tertiary or advanced (the reduction of concentrations of phosphorus or nitrogen through biological or chemical processes)	C6401	C6402	C6403	C6405	C6404

- 54 Estimated annual operating and maintenance cost for treatment of water discharge. Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and maintain systems to treat water discharged by your facility

\$'000's
C6501 \$

- 55 Please indicate if your final plant effluent is monitored by self or any agency for:

					Frequency
Biochemical Oxygen Demand	C6601	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6701
Chemical Oxygen Demand	C6602	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6702
Suspended Solids	C6603	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6703
Phenols	C6604	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6704
Toxicity	C6605	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6705
pH	C6606	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6706
Oil & Grease	C6607	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6707
Temperature	C6608	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6708
Colour	C6609	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6709
Acute lethality	C6610	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6710
Other (specify) <input type="text" value="C6801"/>	C6611	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6711
Other (specify) <input type="text" value="C6802"/>	C6612	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6712
Other (specify) <input type="text" value="C6803"/>	C6613	1 <input type="checkbox"/> Yes	3 <input type="checkbox"/> No		C6713

SECTION 7: OTHER DETAILS

\$'000's
C7010
\$

56 Total **capital expenditures** on water intake, discharge or treatment facilities made at this establishment for 2005

Comments

Approximately how long did it take to collect the data and complete this survey? C9910 Hour(s) C9909 Minutes

We invite your comments or suggestions on the following or any other topic related to the *Industrial Water Survey*. We appreciate your assistance.

- Questionnaire content
- New questions of interest to your industry
- Clarity of questions
- Order and flow of questions
- Timing of receipt of questionnaire and the period given for response
- Alternative sources of information to further reduce response burden

C9920

C9913

C9914

FOR INFORMATION ONLY

If you have questions, please contact us.
Telephone (toll free): 1 866 855-8594
Fax: 1 800 755-5514 (within Canada)

Please return this questionnaire in the envelope provided
THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY!