

**Part III Form 2  
Section 11. ANNUAL REPORT.**

<b>Drinking-Water System Number:</b>	WW No. 240000075
<b>Drinking-Water System Name:</b>	Vermilion Water Treatment Plant
<b>Drinking-Water System Owner:</b>	CVRD INCO Limited
<b>Drinking-Water System Category:</b>	Municipal and Private Water Works
<b>Period being reported:</b>	January 1st 2006 to December 31st 2006

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [<input checked="" type="checkbox"/>] No [ ]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <p><b>Hardcopy Address:</b> INCO Limited 155 Balsam Street c/o Copper Cliff Sewage Treatment Plant Copper Cliff, Ontario, P0M 1N0</p> <p><b>Web Address:</b> <a href="http://www.city.greatersudbury.on.ca/waterworks/">http://www.city.greatersudbury.on.ca/waterworks/</a></p>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served: <input type="text" value="0"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [<input checked="" type="checkbox"/>]</p> <p>Number of Interested Authorities you report to: <input type="text" value="0"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [<input checked="" type="checkbox"/>]</p>
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**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Vermillion Distribution system	260006789
The Vermilion Water Treatment Plant also supplies water to the plumbing works system that is owned and operated by INCO Ltd for use by its employees and its process.	

**Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?**

Yes [] No []

**Indicate how you notified system users that your annual report is available, and is free of charge.**

**Public access/notice via the web**

<http://www.city.greatersudbury.on.ca/waterworks/>

**Public access/notice via Government Office**

**Public access/notice via a newspaper**

**Public access/notice via Public Request**

**Public access/notice via a Public Library**

**Public access/notice via other method**

CVRD INCO Limited – Copper Cliff Sewage Treatment Plant Office – by appointment call (705) 682-6548

### **Describe your Drinking-Water System**

In 1972, INCO Limited constructed the INCO Vermillion Water Treatment Plant, in order to produce process water for the INCO mining operations as well as potable drinking water for INCO staff and the surrounding communities. In 2007, INCO became CVRD INCO. The CVRD INCO Vermillion Water Treatment Plant is designed for a total production capacity of 82,000 m<sup>3</sup>/day (21.7M USGPD) and is supplied with surface water from the Vermilion River.

All process equipment is installed inside a heated and ventilated building, except for the caustic and alum storage tanks that are installed outside. The water treatment plant consists of the following main elements:

- One rapid mix tank;
- One hydraulic retention time tank;
- One PULSATUBE sludge blanket type clarifier;
- Five AQUAZUR V gravity sand filters;
- One clearwell located below the filters;
- Treated and backwash water vertical turbine pumping station;
- Air scouring blower and air instrument compressor room;
- Chemical storage and dosing system;
- External heat traced caustic and alum storage tanks;
- Liquefied Chlorine (in tonners) stored and used in Chlorination room;
- Plant control room and laboratory room.

### **PROCESS FLOW DESCRIPTION**

1. Raw water is pumped from the Vermillion River to the CVRD INCO Vermillion WTP.
2. Raw water flow control is achieved with a by-pass pipe and control valve. The by-pass control valve automatically adjusts based on the water level in the clarifier. When the

## Drinking-Water Systems Regulation O. Reg. 170/03

level in the clarifier rises, the by-pass flow control valve opens to decrease the flow to the plant. The by-pass is connected to the drain of the WTP.

### List all water treatment chemicals used over this reporting period

<ul style="list-style-type: none"> <li>- Aluminium Sulphate</li> <li>- Sodium Hydroxide</li> <li>- Liquefied Chlorine</li> <li>- Hydrofluosilicic Acid</li> <li>- Polyfloc CP 1160P</li> <li>- Polyphosphate (Flogard 6102)</li> <li>- Nalco 2 Liquid Flocculant</li> </ul>
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Were any significant expenses incurred to? **N/A**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre**

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
<b>No Notices / No Reports in 2006</b>					

**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.**

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
<b>Raw</b>	51	(N.D.) – (99)	(8) – (TNTC)	51	(50) – (TNTC)
<b>Treated</b>	51	(N.D.) – (N.D.)	(N.D.) – (N.D.)	51	(N.D.) – (50)
<b>Plumbing Works</b>	104	(N.D.) – (N.D.)	(N.D.) – (N.D.)	104	(N.D.) – (TNTC)
<b>N.D. = Non Detectable</b> <b>TNTC= To Numerous To Count</b>					

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

FINISHED WATER ANALYSIS				
OPERATOR BENCH ANALYSIS			CONTINUOUS MONITORS	
	Number of Grab Samples	Range of Results (min #)-(max #)	Number of Samples As Per Note Below	Range of Results (min #)-(max #)
Turbidity	780	(0.07 NTU)-(0.80 NTU)	8760	(0.00 NTU) - (100.0 NTU)
Chlorine	1712	(0.15)-(3.74) mg/L Free	8760	(0.01) - (5.00)
Fluoride (If the DWS provides fluoridation)	760	(0.14)-(0.93)	8760	(0.01) - (2.30)
<i>NOTE: For continuous monitors use 8760 as the number of samples.</i>				

**NOTE: Record the unit of measure if it is not milligrams per litre**

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
NO Additional Testing and Sampling required – none done				

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Unit of Measure	MDL Method Detection Limit	Result Value Year 2006		Exceedance
Antimony	ug/L	0.6	<MDL	March 14	Nil
		0.2	<MDL	September 13	
Arsenic	ug/L	2.0	<MDL	March 14	Nil
		0.5	<MDL	June 29	
		0.5	<MDL	September 13	
Barium	ug/L	2.0	15	March 14	Nil
		0.05	16.2	June 29	
		0.05	14.8	September 13	
Boron	ug/L	3.0	6.0	March 14	Nil
		1.0	6.0	June 29	
		1.0	10.0	September 13	

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**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Unit of Measure	MDL Method Detection Limit	Result Value Year 2006		Exceedance
Cadmium	ug/L	0.10	<MDL	March 14	Nil
		0.06	<MDL	June 29	
		0.06	<MDL	September 13	
Chromium	ug/L	3.0	<MDL	March 14	Nil
		0.3	0.50	June 29	
		0.3	0.90	September 13	
Lead	ug/L	0.10	<MDL	March 14	Nil
		0.02	0.49	June 29	
		0.02	0.09	September 13	
		0.02	0.13	December 15	
Mercury	ug/L	0.02	<MDL	March 14	Nil
		0.02	<MDL	June 29	
		0.02	<MDL	September 13	
Selenium	ug/L	3.0	<MDL	March 14	Nil
		3.0	<MDL	June 29	
		3.0	<MDL	September 13	
Sodium	mg/L	0.70	14.6	February 17, 2004	Nil
Uranium	ug/L	0.05	<MDL	March 14	Nil
		0.02	<MDL	June 29	
		0.02	<MDL	September 13	
Fluoride	mg/L	0.06	0.06	February 17, 2004	Nil

Parameter	Unit of Measure	Result Value Year 2006				Exceedance
		Mar 14	June 29	Sept 13	Dec 15	
Nitrite	ug/L	0.005	0.005	0.005	0.005	Nil
		<MDL	<MDL	<MDL	<MDL	
Nitrate	ug/L	0.299	0.197	0.115	0.155	Nil
Nitrate + Nitrite	ug/L	0.299	0.197	0.115	0.155	Nil

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Result Value Year 2006				Unit of Measure	Exceedance
	March 14	June 29	Sept 13	Dec 15		
Aalachlor	0.11 <MDL	0.11 <MDL	0.11 <MDL	0.11 <MDL	ug/L	Nil
Aldicarb	0.30 <MDL	0.30 <MDL	0.30 <MDL	0.30 <MDL	ug/L	Nil
Aldrin + Dieldrin	0.067 <MDL	0.067 <MDL	0.067 <MDL	0.067 <MDL	ug/L	Nil
Atrazine + N-dealkylated metabolites	0.12 <MDL	0.12 <MDL	0.12 <MDL	0.12 <MDL	ug/L	Nil
Azinphos-methyl	0.21 <MDL	0.21 <MDL	0.21 <MDL	0.21 <MDL	ug/L	Nil
Bendiocarb	0.13 <MDL	0.13 <MDL	0.13 <MDL	0.13 <MDL	ug/L	Nil

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Result Value Year 2006				Unit of Measure	Exceedance
	March 14	June 29	Sept 13	Dec 15		
Benzene	0.37 <MDL	0.37 <MDL	0.37 <MDL	0.37 <MDL	ug/L	Nil
Benzo(a)pyrene	0.004 <MDL	0.004 <MDL	0.004 <MDL	0.004 <MDL	ug/L	Nil
Bromoxynil	0.094 <MDL	0.094 <MDL	0.33 <MDL	0.33 <MDL	ug/L	Nil
Carbaryl	0.16 <MDL	0.16 <MDL	0.16 <MDL	0.16 <MDL	ug/L	Nil
Carbofuran	0.37 <MDL	0.37 <MDL	0.37 <MDL	0.37 <MDL	ug/L	Nil
Carbon Tetrachloride	0.26 <MDL	0.41 <MDL	0.41 <MDL	0.41 <MDL	ug/L	Nil
Chlordane (Total)	0.11 <MDL	0.11 <MDL	0.11 <MDL	0.11 <MDL	ug/L	Nil
Chlorpyrifos	0.18 <MDL	0.18 <MDL	0.18 <MDL	0.18 <MDL	ug/L	Nil
Cyanazine	0.18 <MDL	0.18 <MDL	0.18 <MDL	0.18 <MDL	ug/L	Nil
Diazinon	0.081 <MDL	0.081 <MDL	0.081 <MDL	0.081 <MDL	ug/L	Nil
Dicamba	0.17 <MDL	0.17 <MDL	0.20 <MDL	0.17 <MDL	ug/L	Nil
1,2-Dichlorobenzene	0.50 <MDL	0.50 <MDL	0.50 <MDL	0.50 <MDL	ug/L	Nil
1,4-Dichlorobenzene	0.20 <MDL	0.21 <MDL	0.21 <MDL	0.21 <MDL	ug/L	Nil
Dichlorodiphenyltrichloroethane (DDT) + metabolites	0.14 <MDL	0.14 <MDL	0.14 <MDL	0.14 <MDL	ug/L	Nil
1,2-Dichloroethane	0.43 <MDL	0.43 <MDL	0.43 <MDL	0.43 <MDL	ug/L	Nil
1,1-Dichloroethylene (vinylidene chloride)	0.41 <MDL	0.41 <MDL	0.41 <MDL	0.41 <MDL	ug/L	Nil
Dichloromethane	0.32 <MDL	0.34 <MDL	0.34 <MDL	0.34 <MDL	ug/L	Nil
2-4 Dichlorophenol	0.15 <MDL	0.15 <MDL	0.15 <MDL	0.15 <MDL	ug/L	Nil
2,4-Dichlorophenoxy acetic acid (2,4-D)	0.19 <MDL	0.19 <MDL	0.19 <MDL	0.19 <MDL	ug/L	Nil
Diclofop-methyl	0.13 <MDL	0.13 <MDL	0.40 <MDL	0.40 <MDL	ug/L	Nil
Dimethoate	0.12 <MDL	0.12 <MDL	0.12 <MDL	0.12 <MDL	ug/L	Nil
Dinoseb	0.084 <MDL	0.084 <MDL	0.36 <MDL	0.36 <MDL	ug/L	Nil
Diquat	1.00 <MDL	1 <MDL	1 <MDL	1 <MDL	ug/L	Nil
Diuron	0.087 <MDL	0.087 <MDL	0.087 <MDL	0.087 <MDL	ug/L	Nil
Glyphosate	6.00 <MDL	6.00 <MDL	6.00 <MDL	6.00 <MDL	ug/L	Nil
Heptachlor + Heptachlor Epoxide	0.11 <MDL	0.11 <MDL	0.11 <MDL	0.11 <MDL	ug/L	Nil
Lindane (Total)	0.056 <MDL	0.056 <MDL	0.056 <MDL	0.056 <MDL	ug/L	Nil
Malathion	0.091 <MDL	0.091 <MDL	0.091 <MDL	0.091 <MDL	ug/L	Nil
Methoxychlor	0.14 <MDL	0.14 <MDL	0.14 <MDL	0.14 <MDL	ug/L	Nil
Metolachlor	0.092 <MDL	0.092 <MDL	0.092 <MDL	0.092 <MDL	ug/L	Nil
Metribuzin	0.12 <MDL	0.12 <MDL	0.12 <MDL	0.12 <MDL	ug/L	Nil
Monochlorobenzene	0.58 <MDL	0.58 <MDL	0.58 <MDL	0.58 <MDL	ug/L	Nil
Paraquat	1.00 <MDL	1.00 <MDL	1.00 <MDL	1.00 <MDL	ug/L	Nil
Parathion	0.18 <MDL	0.18 <MDL	0.18 <MDL	0.18 <MDL	ug/L	Nil
Pentachlorophenol	0.15 <MDL	0.15 <MDL	0.15 <MDL	0.15 <MDL	ug/L	Nil
Phorate	0.11 <MDL	0.11 <MDL	0.11 <MDL	0.11 <MDL	ug/L	Nil
Picloram	0.20 <MDL	0.20 <MDL	0.25 <MDL	0.25 <MDL	ug/L	Nil
Polychlorinated Biphenyls(PCB)	0.04 <MDL	0.04 <MDL	0.04 <MDL	0.04 <MDL	ug/L	Nil
Prometryne	0.23 <MDL	0.23 <MDL	0.23 <MDL	0.23 <MDL	ug/L	Nil
Simazine	0.15 <MDL	0.15 <MDL	0.15 <MDL	0.15 <MDL	ug/L	Nil

## Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Result Value Year 2006								Unit of Measure	Exceedance
	March 14		June 29		Sept 13	Dec 15				
THM ug/L	15	28	39	92	69	28	43	<i>Latest annual average <b>44.8</b></i>	<i>Nil</i>	
Temephos	0.31 <MDL		0.31 <MDL		0.31 <MDL	0.31 <MDL		ug/L	<i>Nil</i>	
Terbufos	0.12 <MDL		0.12 <MDL		0.12 <MDL	0.12 <MDL		ug/L	<i>Nil</i>	
Tetrachloroethylene	0.48 <MDL		0.45 <MDL		0.45 <MDL	0.45 <MDL		ug/L	<i>Nil</i>	
2,3,4,6- Tetrachlorophenol	0.14 <MDL		0.14 <MDL		0.14 <MDL	0.14 <MDL		ug/L	<i>Nil</i>	
Triallate	0.10 <MDL		0.10 <MDL		0.10 <MDL	0.10 <MDL		ug/L	<i>Nil</i>	
Trichloroethylene	0.38 <MDL		0.38 <MDL		0.38 <MDL	0.38 <MDL		ug/L	<i>Nil</i>	
2,4,6-Trichlorophenol	0.25 <MDL		0.25 <MDL		0.25 <MDL	0.25 <MDL		ug/L	<i>Nil</i>	
2,4,5- Trichlorophenoxy acetic acid (2,4,5-T)	0.14 <MDL		0.14 <MDL		0.22 <MDL	0.22 <MDL		ug/L	<i>Nil</i>	
Trifluralin	0.12 <MDL		0.12 <MDL		0.12 <MDL	0.12 <MDL		ug/L	<i>Nil</i>	
Vinyl Chloride	0.14 <MDL		0.17 <MDL		0.17 <MDL	0.17 <MDL		ug/L	<i>Nil</i>	
<b>MDL = Method Detection Limit</b>										

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
None of the samples exceeded half the standard prescribed in Schedule 2 Of Ontario Drinking Water Quality Standards			

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)