



**Department of Environment and Conservation**

**2009 Annual Report**

**Industrial Effluent Compliance**

**Pollution Prevention Division**

**April 2010**

## Table of Contents

<b>1)</b>	<b>Executive Summary.....</b>	<b>1</b>
<b>2)</b>	<b>Metal Mines</b>	
	<b>a) Anaconda Mining Inc.....</b>	<b>2</b>
	<b>b) Crew Gold (Canada) Ltd.....</b>	<b>2</b>
	<b>c) Iron Ore Company of Canada.....</b>	<b>2</b>
	<b>d) Rambler Metals and Mining Canada Ltd.....</b>	<b>9</b>
	<b>e) Teck Resources Ltd.....</b>	<b>9</b>
	<b>f) Vale Inco Newfoundland and Labrador Ltd. (Voisey’s Bay     Mine/Mill Project Site).....</b>	<b>9</b>
	<b>g) Wabush Mines.....</b>	<b>9</b>
<b>3)</b>	<b>Petroleum Refining</b>	
	<b>a) North Atlantic Refining Ltd.....</b>	<b>19</b>
<b>4)</b>	<b>Pulp and Paper</b>	
	<b>a) Abitibi-Consolidated Company of Canada – Grand Falls     Division.....</b>	<b>19</b>
	<b>b) Corner Brook Pulp and Paper Ltd.....</b>	<b>19</b>
<b>5)</b>	<b>Thermal Generating</b>	
	<b>a) Newfoundland and Labrador Hydro.....</b>	<b>19</b>
<b>6)</b>	<b>Other</b>	
	<b>a) Atlantic Barite.....</b>	<b>25</b>
	<b>b) Atlantic Minerals Ltd.....</b>	<b>25</b>
	<b>c) Beaver Brook Antimony Mine Inc.....</b>	<b>25</b>
	<b>d) Newfoundland Transshipment Terminal.....</b>	<b>25</b>
	<b>e) Vale Inco Newfoundland and Labrador Ltd. (Argentia     Hydrometallurgical Demonstration Plant).....</b>	<b>25</b>
	<b>f) Vale Inco Newfoundland and Labrador Ltd. (Long Harbour     Hydrometallurgical Plant).....</b>	<b>25</b>
<b>7)</b>	<b>Conclusion.....</b>	<b>48</b>
<b>8)</b>	<b>Appendix A: Acronyms and Abbreviations.....</b>	<b>49</b>

## List of Tables

<b>Table 1: Anaconda Mining Inc.....</b>	<b>3</b>
<b>Table 2: Crew Gold (Canada) Ltd.....</b>	<b>4</b>
<b>Table 3: Iron Ore Company of Canada.....</b>	<b>5</b>
<b>Table 4: Rambler Metals and Mining.....</b>	<b>10</b>
<b>Table 5: Teck Resources Ltd.....</b>	<b>11</b>
<b>Table 6: Vale Inco (Mine Site).....</b>	<b>12</b>
<b>Table 7: Wabush Mine.....</b>	<b>13</b>
<b>Table 8: North Atlantic Refining Ltd. ....</b>	<b>20</b>
<b>Table 9: Abitibi Bowater Grand Falls.....</b>	<b>21</b>
<b>Table 10: Corner Brook Pulp and Paper Ltd.....</b>	<b>22</b>
<b>Table 11: Holyrood Thermal Generating Station.....</b>	<b>23</b>
<b>Table 12: Atlantic Minerals Ltd.....</b>	<b>26</b>
<b>Table 13: Beaver Brook Antimony Mine Inc.....</b>	<b>29</b>
<b>Table 14: Newfoundland Transshipment Ltd.....</b>	<b>30</b>
<b>Table 15: Vale Inco (Argentina).....</b>	<b>35</b>
<b>Table 16: Vale Inco (Long Harbour).....</b>	<b>36</b>

## 1) Executive Summary

The Newfoundland and Labrador Department of Environment and Conservation (NLDOEC) regulates industrial effluent under the Environmental Control Water and Sewage Regulations (ECWSR). In April 2009, an amendment was made to the ECWSR that affected the mining, petroleum, and pulp and paper industrial sectors operating in the province. The amendment adopted specific limits from the corresponding federal regulations for each of these respective industrial sectors. Industries operating under a certificate of approval from the Pollution Prevention division have effluent streams identified and subsequent monitoring schedules developed to characterize the effluent. These schedules are designed to ensure that the effluent discharged from the industry meets regulatory requirements and is protective of the receiving environment.

Copies of the ECWSR, Metal Mining Effluent Regulations, the Pulp and Paper Effluent Regulations and the Petroleum Refinery Liquid Effluent Regulations can be obtained at: [www.assembly.nl.ca/Legislation/sr/Regulations/rc030065.htm](http://www.assembly.nl.ca/Legislation/sr/Regulations/rc030065.htm)  
<http://www.canlii.org/en/ca/laws/regu/sor-2002-222/latest/sor-2002-222.html>  
<http://www.canlii.org/en/ca/laws/regu/sor-92-269/latest/sor-92-269.html>  
<http://www.canlii.org/en/ca/laws/regu/crc-c-828/latest/crc-c-828.html>

In 2009 there were more than 20 industries reporting effluent quality to the NLDOEC on a consistent basis. This report is designed to provide a brief summary of the effluent quality discharged at the major industries within the province of Newfoundland and Labrador. It is important to note that the summaries provided are for the major locations at each industry and for the parameters for which compliance can be ascertained only. Most industries conduct additional monitoring for general water quality characterization at the discharge points as well as other locations in proximity to operations.

It is important to note, even though the amendment occurred, the tables that follow indicate the limits from the ECWSR prior to the April 2009 amendment. Some of the exceedences noted may not be valid for May to December 2009. For example, at mines, prior to April 2009, ammonia had a limit of 2 mg/l; subsequent to the amendment, there was no limit. The first quarter limits were carried through and will be adjusted in the 2010 annual report.

### Disclaimer:

- The data presented is based upon reports submitted to the NLDOEC by industry, as of March 31, 2010.
- The actual laboratory documentation is available upon request to verify analysis as required.
- Some of the tables in this report indicated zero values. These are actually non-detected values and the detection limits can be made available upon request. For ease of manipulation, zeros were utilized.
- Average pH values have been corrected to reflect the logarithmic nature of the parameter.
- Bioassays are total number of daphnia magna and rainbow trout tests completed. Some industries monitor only rainbow trout and others monitor both.

## **2) Metal Mines**

### **a) Anaconda Mining Inc.**

Anaconda Mining Inc. has one discharge location at the Polishing Pond outflow. The effluent monitoring program for compliance consists of 14 parameters and an acute lethality test (ALT). In 2009, between 1 and 4 samples per month were taken for the months of January, and March-September (13 samples total) for water quality determination. There were no samples collected in February, October, November or December. Total dissolved solids (TDS) exceeded the allowed concentration 3 times in 2009, copper was reported as higher than the allowed discharge concentration once, and ammonia exceeded the allowed concentration a total of 9 times. ALT occurred during each month that samples were taken, and both daphnia magna and rainbow trout failed this test twice. See Table 1: Anaconda Mining Inc. 2009 Effluent Discharge Criteria Summary.

### **b) Crew Gold (Canada) Ltd.**

Crew Gold (Canada) Ltd. has one discharge location at the Polishing Pond. The effluent monitoring program consists of 10 parameters along with ALT. There was no discharge during the months of January, February, June, and September. For the remainder of the year there was one sample taken per month, with 2 samples being taken in April. There was one ammonia sample that was above 2 mg/l, and all ALT analysis passed. See Table 2: Crew Gold (Canada) Ltd. 2009 Effluent Discharge Criteria Summary.

### **c) Iron Ore Company of Canada (IOCC)**

Iron Ore Company of Canada has five discharge points, FDP- MD5, FDP-TIA (Julienne Narrows), FTP-Hakim Culvert, PD 19, and PD 28. The effluent monitoring program for FDP-MD5, FDP-TIA and FDP-Hakim Culvert discharge points consists of 14 parameters and ALT. PD 19 monitors for TPH only, and PD 28 has 5 parameters. In 2009, FDP-MD5 did not have any discharge from January-April and December, with 24 samples taken throughout the remainder of the year. There were no exceedences for MD5. FDP-TIA had a total of 49 samples taken, with no exceedences. FDP-Hakim Culvert did not have any discharge from January-March, with 38 samples taken during the remainder of the year. Exceedences included 1 for TSS, 12 for ammonia, and 14 for nitrate. There were 14 ALTs performed, and rainbow trout failed 3 times. PD 19 and PD 28 each had 12 samples taken, and there were no exceedences. In 2009, Wabush Lake was designated as the tailings impoundment area (TIA) under the Metal Mining Effluent Regulation (MMER). See Table 3: Iron Ore Company of Canada 2009 Effluent Discharge Criteria Summary.

## Anaconda-Effluent Summary 2009

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Polishing Pond</b>													
<b>Samples</b>	1		2	3	1	2	2	1	1				13
TPH, Maximum	<0.1												<0.1
TPH, Violations	0												0
TSS, Maximum	4		4	8	3	2	4	3	<1				8
TSS, Violations (>30)	0		0	0	0	0	0	0	0				0
TDS, Maximum	1110		1350	823	520	454	496	213	338				1350
TDS, Violations (>1000)	1		2	0	0	0	0	0	0				3
Fe, Maximum	0.21		<0.5	0.1	0.19	0.31	0.27	0.28	0.12				0.31
Fe, Violations (> 10)	0		0	0	0	0	0	0	0				0
pH, Maximum	7.89		7.91	7.67	7.85	7.99	7.59	7.31	7.45				7.99
pH, Minimum	7.89		7.89	7.17	7.85	7.73	7.47	7.31	7.45				7.17
pH, Violations (<5.5, >9.0)	0		0	0	0	0	0	0	0				0
Ammonia, Maximum	11		15	8.8	5.2	4.5	3.3	0.67	0.22				15
Ammonia, Violations (>2)	1		2	2	1	2	1	0	0				9
Nitrate, Maximum	0.18		0.2	0.57	0.51	1.8	1.8	1.2	1.8				1.8
Nitrate, Violations (>10)	0		0	0	0	0	0	0	0				0
As, Maximum	<0.002		<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002				0
As, Violations (>1)	0		0	0	0	0	0	0	0				0
Cd, Maximum	<0.0003		<0.003	<0.003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003				0
Cd, Violations	0		0	0	0	0	0	0	0				0
Cu, Maximum	0.76		0.44	0.013	0.018	0.019	0.013	0.014	0.009				0.76
Cu, Violations (>0.6)	1		0	0	0	0	0	0	0				1
Pb, Maximum	<0.0005		<0.005	<0.005	<0.0005	<0.0005	<0.0005	0.0014	<0.0005				0.0014
Pb, Violations (>0.4)	0		0	0	0	0	0	0	0				0
Hg, Maximum	0.00001		<0.00001	<0.00001	<0.000013	<0.000013	<0.000013	<0.000013	<0.000013				0.00001
Hg, Violations	0		0	0	0	0	0	0	0				0
Ni, Maximum	0.007		0.007	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002				0.007
Ni, Violations (>1)	0		0	0	0	0	0	0	0				0
Zn, Maximum	<0.002		0.013	0.01	<0.005	0.13	0.017	0.015	0.011				0.13
Zn, Violations (>1)	0		0	0	0	0	0	0	0				0
<b>ALT, Pass (RT)</b>				1	1	1	1	1	1				6
<b>ALT, Fail (RT)</b>	1		1										2
<b>ALT, Pass (DM)</b>				1	1	1	1	1	1				6
<b>ALT, Fail (DM)</b>	1		1										2

Table 1: Anaconda Mining Inc. 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

## Crew Gold - Richmond Mines Effluent Summary 2009

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Year To Date
<b>Polishing Pond Composite</b>													
<b>Samples</b>			1	2	1		1	1		1	1	1	9
TSS, Maximum			2	<2	3		3	<2		3	<2	2	3
TSS, Violations (>30)			0	0	0		0	0		0	0	0	0
pH, Maximum			7.33	6.91	7.52		7.57	7.66		7.55	7.72	7.77	7.77
pH, Minimum			7.33	6.85	7.52		7.57	7.66		7.55	7.72	7.77	6.85
pH, Violations (<5.5, >9.0)			0	0	0		0	0		0	0	0	0
Ammonia, Maximum			0.11	0.21	0.74		0.73	1.2		0.9	1.21	5.30	5.3
Ammonia, Violations (>2)			0	0	0		0	0		0	0	1	1
Nitrate, Maximum			2.3	0.5	4.5		4.9	4.6		5.5	6.6	5.3	6.6
Nitrate, Violations (>10)			0	0	0		0	0		0	0	0	0
As, Maximum			0.062	0.013	0.123		0.121	0.15		0.16	0.12	0.076	0.16
As, Violations (>1)			0	0	0		0	0		0	0	0	0
Cu, Maximum			0.012	0.012	0.013		0.008	0.01		0.06	0.01	0.01	0.06
Cu, Violations (>0.6)			0	0	0		0	0		0	0	0	0
Pb, Maximum			<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	0
Pb, Violations (>0.4)			0	0	0		0	0		0	0	0	0
Hg, Maximum			0.00003	0.00003	<0.00002		<0.00002	<0.00002		<0.00002	<0.00002	<0.00002	0.00003
Hg, Violations			0	0	0		0	0		0	0	0	0
Ni, Maximum			0.004	0.003	0.007		0.006	0.004		0.003	0.003	0.003	0.007
Ni, Violations (>1)			0	0	0		0	0		0	0	0	0
Zn, Maximum			0.006	0.01	0.003		0.005	0.005		<0.001	0.002	0.002	0.01
Zn, Violations (>1)			0	0	0		0	0		0	0	0	0
<b>ALT, Pass (RT)</b>			1	2	1		1	1		1	1	1	9
<b>ALT, Fail (RT)</b>													0
<b>ALT, Pass (DM)</b>			1	2	1		1	1		1	1	1	9
<b>ALT, Fail (DM)</b>													0

Table 2: Crew Gold (Canada) Ltd. 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

**IOCC Effluent Summary Sheet  
2009**

<b>FDP-MD5</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Year To Date</b>
<b>Samples</b>					<b>2</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>		<b>24</b>
TPH, Maximum						<0.1	<0.1	<0.1	<0.1				<0.1
TPH, Violations						0	0	0	0				0
TSS, Maximum					2	4	15	4	1	2	2		15
TSS, Violations (>30)					0	0	0	0	0	0	0		0
TDS, Maximum						48	160	150	210				210
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						0.63	0.3	0.13	0.35				0.63
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum					7.3	7.67	7.47	7.95	7.92	8.42	7.61		8.42
pH, Minimum					6.96	6.03	7.29	7.08	7.3	7.33	7.18		6.03
pH, Violations (<5.5, >9.0)					0	0	0	0	0	0	0		0
Ammonia, Maximum						0.15	<0.05	0.13	0.17				0.17
Ammonia, Violations (>2)						0	0	0	0				0
Nitrate, Maximum						<0.05	0.11	0.08	0.35				0.35
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum					<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002
As, Violations (>1)					0	0	0	0	0	0	0		0
Cd, Maximum						<0.0003	<0.0003	<0.0003	<0.0003				<0.0003
Cd, Violations						0	0	0	0				0
Cu, Maximum					<0.002	0.003	<0.002	<0.002	0.004	0.002	<0.002		0.004
Cu, Violations (>0.6)					0	0	0	0	0	0	0		0
Pb, Maximum					<0.0005	0.0006	<0.0005	0.0076	<0.0005	<0.0005	<0.0005		0.0076
Pb, Violations (>0.4)					0	0	0	0	0	0	0		0
Hg, Maximum						<0.000013	<0.000013	0.000017	<0.000013				0.000017
Hg, Violations						0	0	0	0				0
Ni, Maximum					<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002
Ni, Violations (>1)					0	0	0	0	0	0	0		0
Zn, Maximum					0.009	0.01	0.008	0.007	0.009	0.008	0.009		0.01
Zn, Violations (>1)					0	0	0	0	0	0	0		0
<b>ALT, Pass (RT)</b>						1	2	1	1				5
<b>ALT, Fail (RT)</b>													0
<b>ALT, Pass (DM)</b>						1	2	1	1				5
<b>ALT, Fail (DM)</b>													0

Table 3: Iron Ore Company of Canada 2009 Effluent Discharge Criteria summary (all values in mg/l, unless otherwise specified)



<b>FDP-TIA (Julienne Narrows)</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Yr. to Date</b>
<b>Samples</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>49</b>
TPH, Maximum						<0.1	<0.1	<0.1	<0.1				<0.1
TPH, Violations						0	0	0	0				0
TSS, Maximum	5	<2	<2	<2	1	2	3	4	3	2	<2	3	5
TSS, Violations (>30)	0	0	0	0	0	0	0	0	0	0	0	0	0
TDS, Maximum						45	76	57	68				76
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						0.08	0.06	<0.13	0.07				0.08
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum	8.17	7.16	7.26	7.62	7.46	7.48	8.15	8.08	7.83	7.54	7.87	8.25	8.25
pH, Minimum	7.05	6.99	6.86	7.14	7.14	6.47	7.41	7.28	7.32	7.42	7.26	7.24	6.47
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.43	<0.05	0.05	<0.17				0.43
Ammonia, Violations (>2)						0	0	0	0				0
Nitrate, Maximum						0.93	0.81	1	1.1				1.1
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
As, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cd, Maximum						<0.0003	<0.0003	<0.0003	<0.0003				<0.0003
Cd, Violations						0	0	0	0				0
Cu, Maximum	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.002
Cu, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum	<0.0002	0.0004	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0004
Pb, Violations (>0.4)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hg, Maximum						<0.000013	<0.000013	<0.013	<0.013				<0.013
Hg, Violations						0	0	0	0				0
Ni, Maximum	<0.001	<0.001	<0.001	<0.001	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ni, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum	<0.002	0.006	<0.002	0.003	<0.005	0.006	0.009	0.007	<0.005	0.005	0.006	<0.005	0.009
Zn, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>ALT, Pass (RT)</b>			1	1	1	1	1	1	1		1	1	9
<b>ALT, Fail (RT)</b>													0
<b>ALT, Pass (DM)</b>			1	1	1	1	1	1	1		1	1	9
<b>ALT, Fail (DM)</b>													0

Table 3: Continued (all values in mg/l, unless otherwise specified)

<b>FDP-Hakim Culvert</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Yr. to Date</b>
<b>Samples</b>				<b>1</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>38</b>
TPH, Maximum					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1
TPH, Violations					0	0	0	0	0	0	0		0
TSS, Maximum				158	12	15	2	1	1	4	<2	3	158
TSS, Violations (>30)				1	0	0	0	0	0	0	0	0	1
TDS, Maximum					430	380	300	250	310	220	180		430
TDS, Violations (>1000)					0	0	0	0	0	0	0		0
Fe, Maximum					1.4	1.1	0.22	<0.13	0.1	<0.05			1.4
Fe, Violations (> 10)					0	0	0	0	0	0			0
pH, Maximum				7.76	7.95	7.77	7.92	8.01	7.87	8.65	7.77	7.87	8.65
pH, Minimum					7.58	7.46	7.44	7.32	7.04	7.53	7.34	7.45	7.04
pH, Violations (<5.5, >9.0)				0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum					27	18	9.2	5.4	7.7	7.5	4		27
Ammonia, Violations (>2)					2	4	2	1	1	1	1		12
Nitrate, Maximum					43	59	28	21	27	19	11		59
Nitrate, Violations (>10)					3	4	3	1	1	1	1		14
As, Maximum				<0.005	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003
As, Violations (>1)				0	0	0	0	0	0	0	0	0	0
Cd, Maximum					<0.003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003			<0.0003
Cd, Violations					0	0	0	0	0	0			0
Cu, Maximum				0.02	0.004	<0.002	<0.002	<0.002	0.006	0.005	<0.002	<0.002	0.02
Cu, Violations (>0.6)				0	0	0	0	0	0	0	0	0	0
Hg, Maximum					<0.00001	<0.000013	<0.000013	<0.000013	<0.000013	<0.000013	<0.000013		<0.000013
Hg, Violations					0	0	0	0	0	0	0		0
Pb, Maximum				0.002	0.0007	<0.0005	<0.0005	0.0092	<0.0005	<0.0005	<0.0005	<0.0005	0.0092
Pb, Violations (>0.4)				0	0	0	0	0	0	0	0	0	0
Ni, Maximum				0.01	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.01
Ni, Violations (>1)				0	0	0	0	0	0	0	0	0	0
Zn, Maximum				0.03	0.009	0.012	0.022	0.010	0.009	0.007	0.007	0.007	0.03
Zn, Violations (>1)				0	0	0	0	0	0	0	0	0	0
<b>ALT, Pass (RT)</b>						3	2	1	1	1	2	1	11
<b>ALT, Fail (RT)</b>				1	1	1							3
<b>ALT, Pass (DM)</b>				1	1	4	2	1	1	1	2	1	14
<b>ALT, Fail (DM)</b>													0

Table 3: Continued (all values in mg/l, unless otherwise specified)

<b>PD 19 (Smallwood Pit)</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Yr. to Date</b>
<b>Samples</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>12</b>
TPH, Maximum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH, Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PD 28 (Humphrey West Pit)</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Yr. to Date</b>
<b>Samples</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>12</b>
TPH, Maximum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH, Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
TSS, Maximum						5	31	<1	2				31
TSS, Violations (>30)						0	1	0	0				1
TDS, Maximum						250	380	380	560				560
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						0.54	0.31	0.12	0.27				0.54
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum	8.3	8	8.03	7.93	8.02	7.5	7.95	7.98	7.76	8.45	7.83	8.22	8.45
pH, Minimum	8.3	8	8	7.93	8.02	7.5	7.95	7.98	7.76	8.45	7.83	8.22	7.5
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3: Continued (all values in mg/l, unless otherwise specified)

**d) Rambler Metals and Mining Canada Ltd.**

Rambler has one discharge point that empties into South Brook pond. The effluent monitoring program consists of 14 parameters and ALT for compliance. In 2009, there was no discharge for February, August, and December. For the remainder of the year, 11 samples were taken. Of the samples collected, there were 5 instances when TDS exceeded the allowed discharge criteria. There were 3 ALTs taken throughout the year, and all passed. See Table 4: Rambler Metals and Mining 2009 Effluent Discharge Criteria Summary.

**e) Teck Resources Ltd.**

Teck Resources Ltd., Duck Pond Mine has one discharge point at Polishing Pond outlet (DamC). The effluent monitoring program for discharge criteria compliance consists of 14 parameters and ALT. In 2009, there was no discharge during the month of February. For the remainder of the year, 28 samples were taken. Of the samples collected, ammonia exceeded allowed discharge criteria 14 times, and copper exceeded 3 times. Of the 11 bioassay tests, daphnia magna failed 4 times. See Table 5: Teck Resources Ltd. 2009 Effluent Discharge Criteria Summary.

**f) Vale Inco Newfoundland and Labrador Ltd. (Voisey's Bay Mine/Mill Project Site)**

Vale Inco Mine Site has one discharge point at the Water Treatment Plant (Treated Effluent Discharge). The effluent monitoring program consists of 14 parameters and ALT for discharge criteria compliance. In 2009, there were a total of 54 samples taken. Of the samples collected, TDS exceeded allowable discharge criteria 40 times, and pH exceeded once. Of the 51 bioassay tests, rainbow trout failed 21 times, while daphnia magna failed 50 times. The Voisey's Bay Mine Site has experienced intermittent toxicity issues at the wastewater treatment plant. They are currently conducting an extensive toxicity identification evaluation (TIE) program to identify the source of toxicity, and as such, a larger number of bioassays are being conducted than are actually required. As part of this TIE, a pilot plant has been designed and it currently in operation on site, with expectations of a full scale plant being built in 2010-2011. See Table 6: Vale Inco (Mine Site) 2009 Effluent Discharge Criteria Summary.

**g) Wabush Mines**

Wabush Mines has 6 discharge points, Flora Lake, East Pit Dewatering East, Deep Well, Knoll Lake, West Pit Settling Pond, and Tailings Discharge. The effluent monitoring program consists of 11 parameters and ALT for discharge compliance. In 2009, 46 samples were taken at Flora Lake discharge, East Pit Dewatering East, Deep Well, and West Pit Settling Pond. TSS exceeded allowable discharge criteria 4 times at Flora Lake, 20 times at East Pit Dewatering East, and 3 times at West Pit Settling Pond. The only additional exceedences occurred at East Pit Dewatering East, with 1 for iron, and 4 for ammonia. ALTs were performed 8 times at Flora Lake, with one Rainbow Trout failure; and 4 times at East Pit Dewatering East and West Pit Settling Pond, with no failures. Thirty-five samples were taken from Knoll Lake, with TSS exceeding the allowable discharge criteria 14 times. All four ALTs passed. Thirteen samples were obtained from Tailings Discharge. The only exceedences of the allowable discharge criteria were 9 TSS. In 2009, Flora Lake was designated as Wabush's TIA under MMER. See Table 7: Wabush Mines 2009 Effluent Discharge Criteria Summary.

## Rambler - Effluent Summary Sheet 2009

Treated Mine Effluent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Samples</b>	1		2	1	2	1	1		1	1	1		11
TPH, Maximum			<0.1	<0.1		<0.1					<0.1		<0.1
TPH, Violations			0	0		0					0		0
TSS, Maximum	2		9	<2	6	3	6		5	6	3		9
TSS, Violations (>30)	0		0	0	0	0	0		0	0	0		0
TDS, Maximum	2050		2100	2300		1770					2310		2310
TDS, Violations (>1000)	1		1	1		1					1		5
Fe, Maximum	<0.5		<0.5	<0.5		<0.5					<0.5		<0.5
Fe, Violations (> 10)	0		0	0		0					0		0
pH, Maximum	8.59		7.66	7.48		7.43					7.08		8.59
pH, Minimum			7.6										7.6
pH, Violations (<5.5, >9.0)	0		0	0		0					0		0
Ammonia, Maximum	0.19		1.9	1.5		0.89					1.1		1.9
Ammonia, Violations (>2)	0		0	0		0					0		0
Nitrate, Maximum	2		1.6	0.96		0.55					1.4		2
Nitrate, Violations (>10)	0		0	0		0					0		0
As, Maximum	<0.02				<0.02	<0.02	<0.02		<0.02	<0.02	<0.02		<0.02
As, Violations (>1)	0				0	0	0		0	0	0		0
Cd, Maximum	0.007					<0.003					<0.003		0.007
Cd, Violations	0					0					0		0
Cu, Maximum	0.049		0.062	0.064	0.036	0.031	0.041		0.037	0.066	0.03		0.066
Cu, Violations (>0.6)	0		0	0	0	0	0		0	0	0		0
Pb, Maximum	<0.005				<0.005	<0.005	<0.005		<0.005	<0.005	<0.005		<0.005
Pb, Violations (>0.4)	0				0	0	0		0	0	0		0
Hg, Maximum	0.00001					<0.000013					0.000015		0.000015
Hg, Violations	0					0					0		0
Ni, Maximum	0.03				<0.02	0.032	<0.02		<0.02	0.030	<0.02		0.032
Ni, Violations (>1)	0				0	0	0		0	0	0		0
Zn, Maximum	0.52		0.55	0.35	0.12	0.27	0.13		0.13	0.55	0.12		0.55
Zn, Violations (>1)	0		0	0	0	0	0		0	0	0		0
<b>ALT, Pass (RT)</b>			1			1					1		3
<b>ALT, Fail (RT)</b>													0

Table 4: Rambler Metals and Mining 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

### Duck Pond - Effluent Summary Sheet 2009

DPM - DAMC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to date
<b>Samples</b>	2		1	2	2	3	4	3	3	1	2	5	28
TPH, Maximum TPH, Violations													
TSS, Maximum TSS, Violations (>30)	<2 0		<2 0	3 0	<2 0	2 0	2 0	3 0	2 0	<2 0	2 0	3 0	3 0
TDS, Maximum TDS, Violations (>1000)	586 0		489 0	380 0	420 0	549 0	600 0	891 0	651 0	637 0	549 0	726 0	891 0
Fe, Maximum Fe, Violations (> 10)	0.05 0		0.28 0	0.27 0	0.12 0	0.17 0	0.15 0	0.13 0	0.1 0	0.06 0	0.12 0	0.09 0	0.28 0
pH, Maximum pH, Minimum pH, Violations (<5.5, >9.0)	8.48 7.6 0		7.19  0	7.26 7.09 0	7.16 7.05 0	6.87 6.79 0	7.18 7.01 0	7.39 7.26 0	7.54 7.18 0	7.2  0	7.34 7.13 0	7.69 7.36 0	8.48 6.79 0
Ammonia, Maximum Ammonia, Violations (>2)	0.62 0		1.37 0	1.5 0	2.18 1	1.83 0	2.44 2	3 1	3.42 3	2.8 1	3.56 1	6.09 5	6.09 14
Nitrate, Maximum Nitrate, Violations (>10)	3.61 0		1.98 0	1.15 0	1.99 0	3.04 0	2.26 0	2.35 0	2.53 0	2.6 0	2.23 0	1.96 0	3.61 0
As, Maximum As, Violations (>1)	0.009 0		<0.008 0	<0.008 0	<0.008 0	<0.008 0	<0.008 0	0.0036 0	<0.008 0	<0.008 0	<0.008 0	0.009 0	0.009 0
Cd, Maximum Cd, Violations	<0.002 0		<0.002 0	<0.002 0	<0.002 0	<0.002 0	<0.002 0	0.00101 0	0.003 0	<0.002 0	<0.002 0	0.003 0	0.003 0
Cu, Maximum Cu, Violations (>0.6)	1.61 2		0.248 0	0.194 0	0.074 0	0.082 0	0.169 0	0.196 0	0.332 0	0.169 0	0.197 0	0.133 0	1.61 2
Pb, Maximum Pb, Violations (>0.4)	0.005 0		0.008 0	0.007 0	0.006 0	0.013 0	0.034 0	0.032 0	0.061 0	0.02 0	0.034 0	0.041 0	0.061 0
Hg, Maximum Hg, Violations	<0.0001 0		0.0001 0	<0.0001 0	<0.0001 0	<0.0001 0	0.0003 0	<0.0001 0	<0.0001 0	<0.0001 0	<0.0001 0	<0.0001 0	0.0003 0
Ni, Maximum Ni, Violations (>1)	<0.01 0		<0.01 0	<0.01 0	<0.01 0	<0.01 0	<0.01 0	0.0015 0	<0.01 0	<0.01 0	<0.01 0	0.01 0	0.01 0
Zn, Maximum Zn, Violations (>1)	0.05 0		0.14 0	0.09 0	0.06 0	0.13 0	0.17 0	0.22 0	0.42 0	0.21 0	0.38 0	0.48 0	0.48 0
<b>ALT, Pass (RT)</b> <b>ALT, Fail (RT)</b>	1 0		1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	11 0
<b>ALT, Pass (DM)</b> <b>ALT, Fail (DM)</b>	1 1		1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	7 4

Table 5: Teck Resources Ltd. 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

## Vale Inco - Voisey's Bay Mine / Mill Effluent Summary 2009

Treated Effluent Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Samples</b>	4	4	5	4	4	5	4	6	4	5	5	4	54
TPH, Maximum				0.3	0.2	0.2	0.2	0.4	0.2		0.3	0.4	0.4
TPH, Violations				0	0	0	0	0	0		0	0	0
TSS, Maximum	2	3	7	7	5	1	1	10	2	1	1	1	10
TSS, Violations (>30)	0	0	0	0	0	0	0	0	0	0	0	0	0
TDS, Maximum	1020	1050	1100	1040	1090	981	926	1070	1130	1130	1130	1110	1130
TDS, Violations (>1000)	3	3	5	3	4	0	0	4	4	5	5	4	40
Fe, Maximum	<0.5	<0.5	2.2	1.6	1.3	<0.5	<0.5	0.95	<0.5	<0.5	<0.5	<0.5	2.2
Fe, Violations (> 10)	0	0	0	0	0	0	0	0	0	0	0	0	0
pH, Maximum	7.07	6.71	6.7	6.83	6.62	6.65	6.47	6.3	6.48	6.69	7.39	6.93	7.39
pH, Minimum	6.8	6.55	6.44	6.53	5.4	6.14	6.03	5.79	5.88	5.76	6.46	6.58	5.4
pH, Violations (<5.5, >9.0)	0	0	0	0	1	0	0	0	0	0	0	0	1
Ammonia, Maximum	0.39	0.37	0.45	0.45	0.46	0.41	0.38	0.37	0.34	0.37	0.35	0.31	0.46
Ammonia, Violations (>2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate, Maximum	0.39	0.33	0.35	0.35	0.39	0.45	0.48	0.44	0.36	0.35	0.30	0.31	0.48
Nitrate, Violations (>10)	0	0	0	0	0	0	0	0	0	0	0	0	0
As, Maximum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
As, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cd, Maximum	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cd, Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cu, Violations (>0.6)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pb, Violations (>0.4)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hg, Maximum (µg/l)	0.01	<0.01	<0.01	<0.01	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.022	0.018	0.022
Hg, Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum	0.038	0.028	<0.02	0.04	0.045	0.059	0.15	0.17	0.16	0.1	0.047	0.038	0.17
Ni, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zn, Violations (>1)	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>ALT, Pass (RT)</b>	3	3	1	2	1	2	3	1	2	4	5	3	30
<b>ALT, Fail (RT)</b>	1	1	4	2	3	3	1	4	2	0	0	0	21
<b>ALT, Pass (DM)</b>	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>ALT, Fail (DM)</b>	3	4	5	4	4	5	4	5	4	4	5	3	50

Table 6: Vale Inco (Mine Site) 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

## Wabush Mines

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>FLORA LAKE DISCHARGE</b>													
<b>Samples</b>	5	4	5	4	4	5	4	4	5	4	1	5	50
TSS, Maximum	7	5	20	2	48	44	17	16	16	18	14	6	48
TSS, Violations (>30)	0	0	0	0	2	2	0	0	0	0	0	0	4
TDS, Maximum						71	53	49	38				71
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						0.99	0.26	0.76	0.468				0.99
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum	7.34	7.48	7.19	7.28	7.01	7.66	7.66	7.89	7.62	7.51	7.03	7.48	7.89
pH, Minimum	6.54	6.45	6.9	6.88	6.93	7.04	7.4	7.21	7.15	7.35		7.24	6.45
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.01	0.04	0.03	<0.01				0.04
Ammonia, Violations (>2)						0	0	0	0				0
Nitrate, Maximum						0.09	0.09	0.7	0.8				0.8
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum	<0.001	<0.001	<0.001	<0.001	0.008	<0.001	0.001	<0.001	<0.001		<0.001	<0.001	0.008
As, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Cu, Maximum	<0.001	<0.001	<0.001	0.001	0.004	0.001	<0.001	0.002	0.007		0.001	0.001	0.007
Cu, Violations (>0.6)	0	0	0	0	0	0	0	0	0		0	0	0
Pb, Maximum	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002		<0.002	<0.002	<0.002
Pb, Violations (>0.4)	0	0	0	0	0	0	0	0	0		0	0	0
Ni, Maximum	0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	0.001	0.003		0.001	0.001	0.003
Ni, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Zn, Maximum	<0.005	<0.005	<0.005	<0.005	0.006	0.011	0.01	0.006	0.029		<0.005	0.006	0.029
Zn, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
<b>ALT, Pass (RT)</b>				1	1	1	1	1		2			7
<b>ALT, Fail (RT)</b>									1				1

Table 7: Wabush Mines 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)



Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>East Pit Dewatering East</b>													
<b>Samples</b>	5	4	5	4	4	5	4	4	5	4	1	5	50
TSS, Maximum	15	2	6	28	78	62	324	187	46	96	3	34	324
TSS, Violations (>30)	0	0	0	0	3	3	4	4	3	3	0	1	21
TDS, Maximum						114	142	109	94				142
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						1.24	21.3	8.51	2.34				21.3
Fe, Violations (>10)						0	1	0	0				1
pH, Maximum	7.28	7.55	7.09	7.26	7.11	7.38	7.35	7.5	7.36	7.46	7.05	7.48	7.55
pH, Minimum	6.48	7.1	6.88	6.98	6.99	6.92	7.06	6.85	7.08	7.22		7.02	6.48
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						2.88	3.81	3.11	2.16				3.81
Ammonia, Violations (>2)						1	1	1	1				4
Nitrate, Maximum						5.3	7.4	6.6	4.9				7.4
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum	<0.001	<0.001	0.016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	0.016
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0		0	0	0
Cu, Maximum	0.003	<0.001	<0.001	0.002	0.003	0.004	0.012	0.006	0.002		0.002	0.002	0.012
Cu, Violations (>0.6)	0	0	0	0	0	0	0	0	0		0	0	0
Pb, Maximum	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.008	0.004	<0.002		<0.002	<0.002	0.008
Pb, Violations (>0.4)	0	0	0	0	0	0	0	0	0		0	0	0
Ni, Maximum	0.001	0.002	0.001	0.002	0.003	0.006	0.019	0.008	0.002		0.002	0.001	0.019
Ni, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Zn, Maximum	0.005	0.006	<0.005	0.009	0.009	0.013	0.036	0.019	0.008		0.009	0.016	0.036
Zn, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
<b>ALT, Pass (RT)</b>				1			1	1		1			4
<b>ALT, Fail (RT)</b>													0

Table 7: Continued (all values in mg/l, unless otherwise specified)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
<b>DEEP WELL DISCHARGE</b>													
<b>Samples</b>	5	4	5	4	4	5	4	4	5	4	1	4	49
TSS, Maximum	<2	<2	<2	<2	<2	<2	<2	<2	<2	2	<2	<2	2
TSS, Violations (>30)	0	0	0	0	0	0	0	0	0	0	0	0	0
TDS, Maximum						68	41	46	35				68
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						0.022	0.012	0.065	0.012				0.065
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum	7.13	7.38	7.24	7.1	6.98	7.3	7.39	7.61	7.19	7.33	6.82	7.36	7.61
pH, Minimum	6.31	6.93	6.74	6.67	6.59	6.67	6.92	7.14	7.02	6.85		6.82	6.31
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						<0.01	0.04	0.03	<0.01				0.04
Ammonia, Violations (>2)						0	0	0	0				0
Nitrate, Maximum						0.2	0.2	0.2	0.2				0.2
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum		<0.001	0.015	<0.001	0.009	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	0.015
As, Violations (>1)		0	0	0	0	0	0	0	0		0	0	0
Cu, Maximum		<0.001	<0.001	0.001	0.002	<0.001	<0.001	0.001	0.002		0.001	0.001	0.002
Cu, Violations (>0.6)		0	0	0	0	0	0	0	0		0	0	0
Pb, Maximum		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002	<0.002
Pb, Violations (>0.4)		0	0	0	0	0	0	0	0		0	0	0
Ni, Maximum		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002		<0.001	<0.001	0.002
Ni, Violations (>1)		0	0	0	0	0	0	0	0		0	0	0
Zn, Maximum		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005
Zn, Violations (>1)		0	0	0	0	0	0	0	0		0	0	0

Table 7: Continued (all values in mg/l, unless otherwise specified)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>KNOLL LAKE</b>													
<b>Samples</b>	5	4	5	4	4	5	4	4	5	4	1	4	49
TSS, Maximum	1450	59	24	28	26	223	106	34	42	105	38	68	1450
TSS, Violations (>30)	2	1	0	0	0	3	1	1	2	3	1	1	15
TDS, Maximum						65	67	47	48				67
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						1.38	0.581	0.522	2.64				2.64
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum	7.25	7.29	7.13	7.15	7.16	7.53	7.37	7.28	7.5	7.48	7.12	7.33	7.53
pH, Minimum	6.46	7.19	6.97	6.85	7.03	6.99	7.13	7.02	7.07	7.34		6.82	6.46
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.48	0.37	0.92	0.35				0.92
Ammonia, Violations (>2)						0	0	0	0				0
Nitrate, Maximum						2	2.6	3	1.9				3
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	0.001
As, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Cu, Maximum	0.022	0.003	0.002	0.003	0.002	0.001	<0.001	0.002	0.001		0.002	0.001	0.022
Cu, Violations (>0.6)	0	0	0	0	0	0	0	0	0		0	0	0
Pb, Maximum	0.009	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002	0.009
Pb, Violations (>0.4)	0	0	0	0	0	0	0	0	0		0	0	0
Ni, Maximum	0.005	0.001	0.002	0.002	0.001	0.003	0.002	0.001	0.001		0.002	0.001	0.005
Ni, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Zn, Maximum	0.015	0.006	0.015	0.009	0.011	0.021	0.053	0.02	0.008		0.008	0.007	0.053
Zn, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
<b>ALT, Pass (RT)</b>				1			1	1		1			4
<b>ALT, Fail (RT)</b>													0

Table 7: Continued (all values in mg/l, unless otherwise specified)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>WEST PIT SETTLING POND</b>													
<b>Samples</b>	5	4	5	4	4	5	4	4	5	4	1	4	49
TSS, Maximum	5	16	42	22	18	71	9	9	15	34	4	121	121
TSS, Violations (>30)	0	0	1	0	0	1	0	0	0	1	0	1	4
TDS, Maximum						34	42	37	50				50
TDS, Violations (>1000)						0	0	0	0				0
Fe, Maximum						0.102	0.116	0.357	0.325				0.357
Fe, Violations (> 10)						0	0	0	0				0
pH, Maximum	7.26	7.39	7.06	7.01	6.82	7.39	7.37	7.47	7.22	7.35	6.97	7.35	7.47
pH, Minimum	6.4	6.73	6.82	6.98	6.7	6.73	6.58	6.87	7.01	6.98		6.54	6.4
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						1.57	0.7	0.95	0.44				1.57
Ammonia, Violations (>2)						0	0	0	0				0
Nitrate, Maximum						2.2	1.4	1.5	1.2				2.2
Nitrate, Violations (>10)						0	0	0	0				0
As, Maximum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
As, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Cu, Maximum	<0.001	0.004	<0.001	0.002	0.002	<0.001	<0.001	<0.001	0.002		0.002	<0.001	0.004
Cu, Violations (>0.6)	0	0	0	0	0	0	0	0	0		0	0	0
Pb, Maximum	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002	<0.002
Pb, Violations (>0.4)	0	0	0	0	0	0	0	0	0		0	0	0
Ni, Maximum	<0.001	0.002	<0.001	<0.001	0.001	<0.001	0.002	0.001	0.002		0.001	<0.001	0.002
Ni, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
Zn, Maximum	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	0.007	0.009	0.009		0.006	0.007	0.009
Zn, Violations (>1)	0	0	0	0	0	0	0	0	0		0	0	0
<b>ALT, Pass (RT)</b>				1			1	1		1			4
<b>ALT, Fail (RT)</b>													0

Table 7: Continued (all values in mg/l, unless otherwise specified)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Tailings Discharge</b>													
Samples	5	3							1			1	10
TSS, Maximum	737000	60500							613			187000	737000
TSS, Violations (>30)	5	3							1			1	10
TDS, Maximum									40			30	40
TDS, Violations (>1000)									0			0	0
Fe, Maximum									5.38			534	534
Fe, Violations (> 10)									0			1	1
pH, Maximum	7.28	7.13							7.52			7.13	7.52
pH, Minimum	6.34	6.68											6.34
pH, Violations (<5.5, >9.0)	0	0							0			0	0
Ammonia, Maximum									0.05			0.95	0.95
Ammonia, Violations (>2)									0			0	0
Nitrate, Maximum									0.3			1.7	1.7
Nitrate, Violations (>10)									0			0	0
As, Maximum	0.002	<0.001							<0.001			0.003	0.003
As, Violations (>1)	0	0							0			0	0
Cu, Maximum	0.459	0.13							0.001			0.06	0.459
Cu, Violations (>0.6)	0	0							0			0	0
Pb, Maximum	0.252	0.192							0.002			0.127	0.252
Pb, Violations (>0.4)	0	0							0			0	0
Ni, Maximum	0.388	0.11							0.001			0.075	0.388
Ni, Violations (>1)	0	0							0			0	0
Zn, Maximum	0.824	0.302							0.006			0.219	0.824
Zn, Violations (>1)	0	0							0			0	0
<b>ALT, Pass (RT)</b>													
<b>ALT, Fail (RT)</b>													

Table 7: Continued (all values in mg/l, unless otherwise specified)

### **3) Petroleum Refining**

#### **a) North Atlantic Refining Ltd.**

North Atlantic has one discharge point, which empties into Placentia Bay. The effluent monitoring program for discharge criteria compliance consists of 6 parameters, plus continuous flow monitoring, and ALT analysis. In 2009, a total of 156 samples were collected from the discharge area. Of the samples collected, exceedences included; 8 in oil and grease, 45 in ammonia nitrogen, and 14 in TSS. See Table 8: North Atlantic Refining Ltd. 2009 Discharge Criteria Summary.

### **4) Pulp and Paper**

#### **a) Abitibi-Consolidated Company of Canada – Grand Falls Division**

Abitibi-Consolidated Company of Canada has one discharge point at the combined North Sewer. The effluent monitoring program for discharge criteria compliance consists of 2 parameters (TSS and BOD) and ALT. In 2009, there were 365 TSS samples taken, and 176 BOD samples taken. It should be noted however, that production ceased as of March 2009. All parameters were of acceptable quality and all ALTs passed. See Table 9: Abitibi Bowater Grand Falls 2009 Effluent Discharge Criteria Summary.

#### **b) Corner Brook Pulp and Paper Ltd.**

Corner Brook Pulp and Paper Ltd. has two discharge points, Secondary Clarifier (Effluent Treatment) and East Sewer. The effluent monitoring program for discharge compliance consists of 2 parameters (TSS and BOD) and ALT. In 2009, there were 365 TSS samples taken, and 157 BOD samples taken. All parameters were of acceptable criteria, and all ALTs passed. See Table 10: Corner Brook Pulp and Paper 2009 Effluent Discharge Criteria Summary.

### **5) Thermal Generating**

#### **a) Newfoundland and Labrador Hydro**

The Holyrood Thermal Generating Station (HTGS) has two discharge locations; the continuous basin outfall, and the periodic basin (batch reactor). The effluent discharge is being monitored for 5 parameters and ALT analysis for discharge criteria compliance. In 2009, the continuous basin did not have any discharge during the month of August. During the remainder of the year, 43 samples were taken, with no violations on any of the parameters listed in the HTGS discharge criteria. Of the 10 ALTs performed, there were 2 failures for rainbow trout. The periodic basin had a total of 36 samples taken, again with no violations of discharge criteria. All ALTs for the periodic basin passed. See Table 11: Holyrood Thermal Generating Station 2009 Effluent Discharge Criteria Summary.

<b>North Atlantic Refining Limited</b>														<b>Year To Date</b>
	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>		
<b>Samples Taken</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>12</b>	<b>13</b>	<b>13</b>	13	13	13	13	13	14	<b>156</b>	
<b>Reference Crude Rate (bbls / stream day)</b>	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	
<b>Average Flow (Cdn. gal/day)</b>	119076 9	193083 3	190857 1	181333 3	114307 7	178307 7	926923	101461 5	960000	1110000	1404615	1620714	<b>1400544</b>	
<b>pH</b>														
Average	7.6	7.5	7.5	7.4	7.6	7.8	7.4	7.5	7.9	7.6	7.6	7.7	<b>7.6</b>	
Maximum	7.9	7.8	8.0	7.8	8.0	8.4	7.8	7.8	8.1	8.1	8.1	8.0	<b>8.4</b>	
Minimum	7.3	7.0	7.1	7.1	7.1	7.4	7.0	7.3	7.7	7.3	7.3	7.0	<b>7.0</b>	
Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
<b>Oil &amp; Grease</b>														
Average (mg/l)	14.01	5.75	7.68	1.45	2.54	1.25	2.28	2.09	2.17	12.65	2.22	2.15	<b>4.7</b>	
Maximum (mg/l)	31.70	20.10	18.40	3.10	15.50	4.30	8.50	5.10	4.30	58.60	7.60	11.70	<b>58.6</b>	
Violations (>15 mg/l)	5	1	1	0	1	0	0	0	0	2	0	0	<b>8</b>	
<b>Phenol</b>														
Average (mg/l)	0.02	0.02	0.02	0.03	0.05	0.02	0.02	0.02	0.03	0.03	0.02	0.02	<b>0.03</b>	
Maximum (mg/l)	0.07	0.03	0.05	0.06	0.35	0.04	0.03	0.02	0.10	0.05	0.03	0.02	<b>0.35</b>	
Violations (>.10 mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
<b>Sulphide</b>														
Average (mg/l)	0.05	0.03	0.03	0.04	0.05	0.04	0.04	0.05	0.03	0.03	0.03	0.03	<b>0.04</b>	
Maximum (mg/l)	0.22	0.04	0.07	0.08	0.20	0.07	0.07	0.18	0.03	0.04	0.06	0.03	<b>0.22</b>	
Violations (>.50 mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
<b>Ammonia Nitrogen</b>														
Average (mg/l)	3.70	1.53	2.22	2.14	0.99	0.84	4.38	0.75	0.68	2.20	2.13	0.73	<b>1.86</b>	
Maximum (mg/l)	7.40	3.50	4.40	5.70	1.50	1.20	10.80	3.00	2.10	5.70	4.90	1.30	<b>10.80</b>	
Violations (>2 mg/l)	9	3	6	4	0	0	11	1	1	6	4	0	<b>45</b>	

Table 8: North Atlantic Refining Ltd. 2009 Discharge Criteria Summary (note: averages are weighted with flow values)

<b>TSS</b>													
Average (mg/l)	18.38	18.42	21.28	12.50	15.77	18.00	19.15	15.23	29.08	21.85	15.23	14.71	<b>18.30</b>
Maximum (mg/l)	28.00	78.00	87.00	31.00	31.00	35.00	27.00	24.00	224.00	40.00	39.00	35.00	<b>224.00</b>
Violations (>30 mg/l)	0	1	2	1	1	1	0	0	1	4	1	2	<b>14</b>
<b>pH at Outfall</b>													
Samples	31	26	31	28	31	30	31	31	30	31	30	30	<b>360</b>
Average	7.5	7.6	7.5	7.4	7.7	7.9	7.4	7.5	7.9	7.6	7.5	7.7	<b>7.6</b>
Maximum	7.9	8.1	8.0	7.8	8.5	8.4	7.9	8.0	8.2	8.1	8.1	8.0	<b>8.5</b>
Minimum	7.2	7.0	7.1	7.0	7.1	7.4	6.8	7.1	7.5	7.3	7.1	7.0	<b>6.8</b>
Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>

Table 8: Continued (note: averages are weighted with flow values)

### Abitibi - Effluent Data Summary 2009

Observations in mg/L				TSS Concentration		BOD Concentration		48 Hr LC50 (DM)	96 Hr LC50 (RT)
Date	Average Production Tonne/Day	Average TSS Discharge		North Sewer mg/L	Average BOD Discharge		North Sewer mg/L	North Sewer	North Sewer
		Ton./Day	Kg / FMT		Tonne/Day	Kg / FMT			
Jan-09	419.8	1.3	3.1	39	0.2	0.6	3.3	Pass	Pass
Feb-09	537.0	0.4	0.7	16	0.2	0.3	6.9	Pass	Pass
Mar-09	0.0	0.2		13	0.031		2.2	Pass	Pass
Apr-09	0.0	0.0		3	0.0		0.0	Pass	Pass
May-09	0.0	0.02		19	0.0		1.8	Pass	Pass
Jun-09	0.0	0.02		19	0.0		1.8	Pass	Pass
Jul-09	0.0	0.0		11	0.0		0.0	Pass	Pass
Aug-09	0.0	0.0		8	0.0		0.0	Pass	Pass
Sep-09	0.0	0.0		3	0.0		0.0	Pass	Pass
Oct-09	0.0	0.0		3	0.0		0.0	Pass	Pass
Nov-09	0.0	0.0		1	0.0		0.0	Pass	Pass
Dec-09	0.0	0.0		2	0.0		0.0	Pass	Pass

Table 9: Abitibi Bowater Grand Falls 2009 Effluent Discharge Criteria Summary



### Corner Brook - Effluent Data Summary Sheet 2009

				TSS Concentration				BOD Concentration		Toxicity (% by volume)			
	Average Production	Average TSS Discharge		East Sewer	Effluent Treatment	Average BOD Discharge		East Sewer	Effluent Treatment	96 Hr LC50		48 Hr LC50	
Date										East Sewer	Effluent Treatment	East Sewer	Effluent Treatment
Month	Tonne/Day	Tonne/Day	kg / FMT	mg/L	mg/L	Tonne/Day	kg / FMT	mg/L	mg/L	Sewer	Treatment	Sewer	Treatment
Jan-09	886.3	1.6	1.8	4.97	25.00	0.4	0.4	1.92	5.38	Pass	Pass	Pass	Pass
Feb-09	867.3	1.4	1.6	4.71	21.71	0.4	0.5	1.67	5.92	Pass	Pass	Pass	Pass
Mar-09	824.3	1.0	1.2	4.68	13.9	0.5	0.6	1.54	7.15	Pass	Pass	Pass	Pass
Apr-09	676.3	0.7	1.0	4.86	10.47	0.3	0.4	1.82	3.77				
May-09	567.2	0.8	1.5	6.19	12.23	0.3	0.5	2.75	4.24	Pass	Pass	Pass	Pass
Jun-09	639.1	0.9	1.5	4.77	14.37	0.4	0.6	1.42	5.15	Pass	Pass	Pass	Pass
Jul-09	662.5	1.5	2.3	6.94	21.71	0.3	0.5	1.71	4.14	Pass	Pass	Pass	Pass
Aug-09	696.6	1.4	2.1	7.26	20.97	0.3	0.5	1.58	4.42	Pass	Pass	Pass	Pass
Sep-09	609.6	0.8	1.3	4.70	13.30	0.3	0.4	1.43	4.00	Pass	Pass	Pass	Pass
Oct-09	347.3	0.8	2.2	3.97	20.81	0.2	0.5	1.00	4.08	Pass	Pass	Pass	Pass
Nov-09	706.3	0.9	1.3	5.58	14.87	0.2	0.3	1.33	2.92	Pass	Pass	Pass	Pass
Dec-09	542.3	1.0	1.8	4.71	19.35	0.3	0.6	2.20	4.53	Pass	Pass	Pass	Pass

Table 10: Corner Brook Pulp and Paper 2009 Effluent Discharge Criteria Summary

<b>NL Hydro - Summary 2009</b>													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
<b>CONTINUOUS BASIN</b>													
<b>Samples</b>	4	4	4	4	3	3	3		3	5	5	5	<b>43</b>
<b>pH Maximum</b>	6.5	6.8	6.7	6.7	7	6.7	6.5		7.1	7.1	7.1	7.1	<b>7.1</b>
<b>pH Minimum</b>	6.2	6.3	6.4	6.4	6.9	6.2			6.9	6.9	6.9	6.9	<b>6.2</b>
<b>pH Violations</b>	0	0	0	0	0	0	0		0	0	0	0	<b>0</b>
<b>Fe Maximum</b>	0.08	0.05	0.07	0.1	0.15	0.83	0.16			<0.5	0.07	0.5	<b>0.83</b>
<b>Fe Violations</b>	0	0	0	0	0	0	0			0	0	0	<b>0</b>
<b>Ni Maximum</b>	0.01	0.003	0.01	0.03	0.022	0.06	0.01			0.02	0.02	0.05	<b>0.06</b>
<b>Ni Violations</b>	0	0	0	0	0	0	0			0	0	0	<b>0</b>
<b>V Maximum</b>	0.04	0.04	0.06	0.05	0.09	0.03	0.02			0.09	0.1	0.05	<b>0.1</b>
<b>V Violations</b>	0	0	0	0	0	0	0			0	0	0	<b>0</b>
<b>TSS Maximum</b>	0.6	0.4	4.4	1.3	0.9	1.3	1.2			1.4	0.7	2.4	<b>4.4</b>
<b>TSS Violations</b>	0	0	0	0	0	0	0			0	0	0	<b>0</b>
<b>ALT, Pass (RT)</b>	2			1	1	1	1				1	1	<b>8</b>
<b>ALT, Fail (RT)</b>					1	1							<b>2</b>
<b>ALT, Pass (DM)</b>													
<b>ALT, Fail (DM)</b>													

Table 11: Holyrood Thermal Generating Station 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

<b>PERIODIC BASIN (WWTP)</b>													
<b>Samples</b>	4	3	4	3	1	2	3	3	3	4	3	3	<b>36</b>
<b>pH Maximum</b>	8.4	8.4	8.5	8.8	8.3	8.6	8.5	8.5	8.7	8.5	8.5	8.7	<b>8.8</b>
<b>pH Minimum</b>	8.3	8.2	8.4	8.3		8.5	8.4	8	8.4	8.4	8.4	8.5	<b>8</b>
<b>pH Violations</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Fe Maximum</b>	<0.5	0.50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.50	<b>0.5</b>
<b>Fe Violations</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Ni Maximum</b>	0.08	0.08	0.05	0.06	0.05	0.03	0.03	0.04	0.04	0.03	0.03	0.04	<b>0.1</b>
<b>Ni Violations</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>V Maximum</b>	0.08	0.02	<0.02	0.03	<0.02	<0.02	0.02	0.07	0.03	0.06	0.05	0.06	<b>0.1</b>
<b>V Violations</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>TSS Maximum</b>	1.7	0.9	2.4	0.6	4.5	5.8	2.9	3.9	3.2	1.6	2.2	3.2	<b>5.8</b>
<b>TSS Violations</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>ALT, Pass (RT)</b>	1	1	3	3	1	1		3	4	3	1	2	<b>23</b>
<b>ALT, Fail (RT)</b>													<b>0</b>
<b>ALT, Pass (DM)</b>													
<b>ALT, Fail (DM)</b>													

Table 11: Continued (all values in mg/l, unless otherwise specified)

## **6) Other**

### **a) Atlantic Barite**

Atlantic Barite is operated as a zero discharge site, and did not require any emergency discharge during 2009.

### **b) Atlantic Minerals Ltd.**

Atlantic Minerals Ltd. has 3 discharge points; Site #1, Site #2, and Duck Pond (DL-HC Quarry). The effluent monitoring program for discharge criteria compliance consists of 11 parameters. In 2009, discharge only occurred during June and August. There were no exceedences at any of the sites. See Table 12: Atlantic Minerals Ltd. 2009 Effluent Discharge Criteria Summary.

### **c) Beaver Brook Antimony Mine Inc.**

Beaver Brook Antimony Mine Inc. has one discharge point at Site 16. The effluent monitoring program for discharge criteria compliance consists of 14 parameters and ALT analysis. In 2009, discharge occurred during the months of May, July, Sept, November, and December. There were 10 samples taken, with no exceedences of the allowable discharge criteria. All ALTs passed. See Table 13: Beaver Brook Antimony Mine Inc. 2009 Effluent Discharge Criteria Summary.

### **d) Newfoundland Transshipment Terminal**

Newfoundland Transshipment Terminal has 9 discharge points; Tank No. 1 – Sump No. 1, Tank No. 2 – Sump No. 2, Tank No. 3 – Sump No. 3, Tank No. 4 – Sump No. 4, Tank No. 5 – Sump No. 5, Tank No. 6 – Sump No. 6, Support Tank/Sump 7, Containment Pond, and Oily Water Tank Separator. The effluent monitoring program for discharge criteria compliance consists of 3 parameters, with ALT analysis at Containment Pond and Oily Water Tank Separator. There were no exceedences of the allowable discharge criteria, and there was only 1 fail for ALT, at Containment Pond. See Table 14: Newfoundland Transshipment Terminal 2009 Effluent Discharge Criteria Summary.

### **e) Vale Inco Newfoundland and Labrador Ltd. (Argentina Hydrometallurgical Demonstration Plant)**

Vale Inco, Argentina Hydrometallurgical Site has one discharge point at the polishing pond. The effluent monitoring program for discharge criteria compliance consists of 14 parameters and ALT. In 2009, there was discharge for the months of March, April, September, and November only. A total of 5 samples were taken, with no exceedences of the allowable discharge criteria. All ALTs passed. See Table 15: Vale Inco (Argentina) 2009 Effluent Discharge Criteria Summary.

### **f) Vale Inco Newfoundland and Labrador Ltd. (Long Harbour Hydrometallurgical Plant)**

Vale Inco, Long Harbour Hydrometallurgical Plant had 12 active discharge points; D2, D3, D5, and D11-D19, during 2009. Site D1, D4, and D6-D10 did not have any discharge. In 2009, there was no discharge from January-August for discharge points D2, and D12. There were 11 samples collected for D2, with TSS exceeding allowable

discharge criteria 9 times, and pH and ammonia exceeding once. There were 15 samples for D12, with 12 TSS exceedences. For D13, there was no discharge from January-September, with 13 samples collect during the remainder of the year. There were 5 TSS exceedences and 1 pH. Discharge points D3, D5, D11, D15, D17, and D18 had discharge during November and December only. There were 7 samples collected from each of these sites, and the only exceedences, other than TSS, of allowable discharge criteria occurred at D11, where there were also 3 ammonia exceedences, and 4 pH exceedences. TSS exceeded 7 times as D3, 4 times at D11, D15, and D17, and twice at D5 and D18. Discharge points D14 and D16 had discharge during the month of November only. There was 1 sample taken from each site, with TSS exceeding discharge criteria at D14. D19 had discharge during December only. There were 4 samples taken during this month, and no exceedences of allowable discharge criteria occurred. See Table 16: Vale Inco (Long Harbour) 2009 Effluent Discharge Criteria Summary.

**ATLANTIC MINERALS LTD.  
Lower Cove Effluent**

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Site # 1</b>													
<b>Samples</b>						1		1					2
TSS, Maximum						<2		3					3
TSS, Violations (>30)						0		0					0
TDS, Maximum								145					145
TDS, Violations (>1000)								0					0
Fe, Maximum								<0.050					<0.05
Fe, Violations (> 10)								0					0
pH, Maximum								7.89					7.89
pH, Minimum													
pH, Violations (<5.5,>9.0)								0					0
Ammonia, Maximum						<0.05		0.1					0.1
Ammonia, Violations (>2)						0		0					0
Nitrate, Maximum								0.25					0.25
Nitrate, Violations (>10)								0					0
As, Maximum								<0.002					<0.002
As, Violations (>1)								0					0
Cu, Maximum								0.005					0.005
Cu, Violations (>0.6)								0					0
Pb, Maximum								0.0027					0.0027
Pb, Violations (>0.4)								0					0
Ni, Maximum								<0.002					<0.002
Ni, Violations (>1)								0					0
Zn, Maximum								0.014					0.014
Zn, Violations (>1)								0					0

Table 12: Atlantic Minerals Ltd. 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Site # 2</b>													
<b>Samples</b>						1		1					2
TSS, Maximum						<1		2					2
TSS, Violations (>30)						0		0					0
TDS, Maximum								143					143
TDS, Violations (>1000)								0					0
Fe, Maximum								0.11					0.11
Fe, Violations (> 10)								0					0
pH, Maximum								8.01					8.01
pH, Minimum													
pH, Violations (<5.5, >9.0)								0					0
Ammonia, Maximum						<0.05		0.08					0.08
Ammonia, Violations (>2)						0		0					0
Nitrate, Maximum								0.42					0.42
Nitrate, Violations (>10)								0					0
As, Maximum								<0.002					<0.002
As, Violations (>1)								0					0
Cu, Maximum								<0.002					<0.002
Cu, Violations (>0.6)								0					0
Pb, Maximum								0.0044					0.0044
Pb, Violations (>0.4)								0					0
Ni, Maximum								<0.002					<0.002
Ni, Violations (>1)								0					0
Zn, Maximum								0.01					0.01
Zn, Violations (>1)								0					0

Table 12: Continued (all values in mg/l, unless otherwise specified)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Duck Pond (DL-HC Quarry)</b>													
<b>Samples</b>						1		1					2
TSS, Maximum						6		4					6
TSS, Violations (>30)						0		0					0
TDS, Maximum								113					113
TDS, Violations (>1000)								0					0
Fe, Maximum								<0.05					<0.05
Fe, Violations (> 10)								0					0
pH, Maximum								7.94					7.94
pH, Minimum													
pH, Violations (<5.5, >9.0)								0					0
Ammonia, Maximum						<0.05		0.12					0.12
Ammonia, Violations (>2)						0		0					0
Nitrate, Maximum								0.31					0.31
Nitrate, Violations (>10)								0					0
As, Maximum								<0.002					<0.002
As, Violations (>1)								0					0
Cu, Maximum								<0.002					<0.002
Cu, Violations (> 0.6)								0					0
Pb, Maximum								0.0022					0.0022
Pb, Violations (>0.4)								0					0
Ni, Maximum								<0.002					<0.002
Ni, Violations (>1)								0					0
Zn, Maximum								0.006					0.006
Zn, Violations (>1)								0					0

Table 12: Continued (all values in mg/l, unless otherwise specified)

## Beaver Brook Effluent Summary 2009

Site 16	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Samples</b>					1		1		1		3	4	10
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum					207		12		13		9	7	207
TSS, Violations (>30)					1		0		0		0	0	1
TDS, Maximum					318								318
TDS, Violations (>1000)					0								0
Fe, Maximum					5.78								5.78
Fe, Violations (>10)					0								0
pH, Maximum					8		8		8.9		8.3	8.3	8.9
pH, Minimum											8.2	8.2	8.2
pH, Violations (<5.5, >9.0)					0		0		0		0	0	0
Ammonia, Maximum					1.16								1.16
Ammonia, Violations (>2)					0								0
Nitrate, Maximum					22.5								22.5
Nitrate, Violations (>10)					1								1
As, Maximum					0.125		0.018		0.013		0.028	0.033	0.125
As, Violations (>1)					0		0		0		0	0	0
Cd, Maximum					<0.0003								<0.0003
Cd, Violations					0								0
Cu, Maximum					<0.002		<0.002		<0.002		<0.002	<0.002	<0.002
Cu, Violations (>0.6)					0		0		0		0	0	0
Pb, Maximum					0.142		0.0023		0.006		0.0016	0.006	0.142
Pb, Violations (>0.4)					0		0		0		0	0	0
Hg, Maximum					<0.00005								<0.00005
Hg, Violations					0								0
Ni, Maximum					0.022		0.008		0.004		0.025	0.032	0.032
Ni, Violations (>1)					0		0		0		0	0	0
Zn, Maximum					0.036		0.014		0.005		0.065	0.011	0.065
Zn, Violations (>1)					0		0		0		0	0	0
<b>ALT, Pass (RT)</b>							1		1		1	1	4
<b>ALT, Fail (RT)</b>													0

Table 13: Beaver Brook Antimony Mine Inc. 2009 Effluent Discharge Criteria Summary (all values in mg/l unless otherwise specified)



**IMTT- NTL Data Summary,  
2009**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
<b>Tank No. 1- Sump No. 1</b>													
<b>Number of Samples</b>	1			1			1		1				4
TSS													
Average (mg/l)	4.4			11.8			2.6		1.8				5.15
Maximum (mg/l)	4.4			11.8			2.6		1.8				11.8
Prov. Violations (> 30 mg/l)	0			0			0		0				0
pH													
Average	6.1			7.9			8.1		7.8				7.475
Maximum	6.1			7.9			8.1		7.8				8.1
Minimum													
Prov. Violations (< 5.5, > 9.0)	0			0			0		0				0
Fats/Oils/Grease													
Average (mg/l)	7			2.2			0.6		6.9				4.175
Maximum (mg/l)	7			2.2			0.6		6.9				7
Prov. Violations (> 15 mg/l)	0			0			0		0				0
<b>Tank No. 2- Sump No. 2</b>													
<b>Number of Samples</b>	1			1			1		1				4
TSS													
Average (mg/l)	3.3			3			<1.6		1.8				2.7
Maximum (mg/l)	3.3			3			<1.6		1.8				3.3
Prov. Violations (> 30 mg/l)	0			0			0		0				0
pH													
Average	6.2			7.8			8		7.8				7.45
Maximum	6.2			7.8			8		7.8				8
Minimum													
Prov. Violations (< 5.5, > 9.0)	0			0			0		0				0
Fats/Oils/Grease													
Average (mg/l)	8.1			3.4			1		7.8				5.075
Maximum (mg/l)	8.1			3.4			1		7.8				8.1
Prov. Violations (> 15 mg/l)	0			0			0		0				0

Table 14: Newfoundland Transshipment Terminal 2009 Effluent Discharge Criteria Summary  
(all values in mg/l, unless otherwise specified)

<b>Tank No. 3- Sump No. 3</b>												
<b>Number of Samples</b>	1			1			1		1			4
TSS												
Average (mg/l)	2.6			3.6			<1.6		<1.6			3.1
Maximum (mg/l)	2.6			3.6			<1.6		<1.6			3.6
Prov. Violations (> 30 mg/l)	0			0			0		0			0
pH												
Average	6.5			7.9			7.9		7.9			7.55
Maximum	6.5			7.9			7.9		7.9			7.9
Minimum												
Prov. Violations (< 5.5, > 9.0)	0			0			0		0			0
Fats/Oils/Grease												
Average (mg/l)	7.4			3.1			1.5		6.4			4.6
Maximum (mg/l)	7.4			3.1			1.5		6.4			7.4
Prov. Violations (> 15 mg/l)	0			0			0		0			0
<b>Tank No. 4- Sump No. 4</b>												
<b>Number of Samples</b>	1			1			1		1			4
TSS												
Average (mg/l)	2.7			2.5			<1.6		3.2			2.8
Maximum (mg/l)	2.7			2.5			<1.6		3.2			3.2
Prov. Violations (> 30 mg/l)	0			0			0		0			0
pH												
Average	6.1			7.5			7.8		7.6			7.25
Maximum	6.1			7.5			7.8		7.6			7.8
Minimum												
Prov. Violations (< 5.5, > 9.0)	0			0			0		0			0
Fats/Oils/Grease												
Average (mg/l)	7.1			3.3			1.4		4.7			4.125
Maximum (mg/l)	7.1			3.3			1.4		4.7			7.1
Prov. Violations (> 15 mg/l)	0			0			0		0			0

Table 14: Continued (all values in mg/l, unless otherwise specified)

<b>Tank No. 5- Sump No. 5</b>												
<b>Number of Samples</b>	1			1			1		1			4
TSS												
Average (mg/l)	3.7			1.9			<1.6		2.6			2.733333
Maximum (mg/l)	3.7			1.9			<1.6		2.6			3.7
Prov. Violations (> 30 mg/l)	0			0			0		0			0
pH												
Average	7.3			7.5			7.7		7.4			7.475
Maximum	7.3			7.5			7.7		7.4			7.7
Minimum												
Prov. Violations (< 5.5, > 9.0)	0			0			0		0			0
Fats/Oils/Grease												
Average (mg/l)	7.5			3.3			1.5		8.2			5.125
Maximum (mg/l)	7.5			3.3			1.5		8.2			8.2
Prov. Violations (> 15 mg/l)	0			0			0		0			0
<b>Tank No. 6- Sump No. 6</b>												
<b>Number of Samples</b>	1			1			1		1			4
TSS												
Average (mg/l)	3.9			2			<1.6		1.8			2.566667
Maximum (mg/l)	3.9			2			<1.6		1.8			3.9
Prov. Violations (> 30 mg/l)	0			0			0		0			0
pH												
Average	7.4			7.6			7.7		7.4			7.525
Maximum	7.4			7.6			7.7		7.4			7.7
Minimum												
Prov. Violations (< 5.5, > 9.0)	0			0			0		0			0
Fats/Oils/Grease												
Average (mg/l)	8.2			4.7			1.5		5.1			4.875
Maximum (mg/l)	8.2			4.7			1.5		5.1			8.2
Prov. Violations (> 15 mg/l)	0			0			0		0			0

Table 14: Continued (all values in mg/l, unless otherwise specified)

<b>Support Tank /Sump 7</b>													
<b>Number of Samples</b>	1			1				1		1		4	
TSS													
Average (mg/l)	4.4			<1.6				<1.6		2.3		3.35	
Maximum (mg/l)	4.4			<1.6				<1.6		2.3		4.4	
Prov. Violations (> 30 mg/l)	0			0				0		0		0	
pH													
Average	6.1			8				8.1		8		7.55	
Maximum	6.1			8				8.1		8		8.1	
Minimum													
Prov. Violations (< 5.5, > 9.0)	0			0				0		0		0	
Fats/Oils/Grease													
Average (mg/l)	8.7			7.5				1		1		4.55	
Maximum (mg/l)	8.7			7.5				1		1		8.7	
Prov. Violations (> 15 mg/l)	0			0				0		0		0	
<b>Containment Pond</b>													
<b>Number of Samples</b>				1						2		2	5
TSS													
Average (mg/l)				<1.6						4.6		1.8	3.2
Maximum (mg/l)				<1.6						4.6		1.8	4.6
Prov. Violations (> 30 mg/l)				0						0		0	0
pH													
Average				6.6						6.9		6.4	6.633333
Maximum				6.6						6.9		6.4	6.9
Minimum													
Prov. Violations (< 5.5, > 9.0)				0						0		0	0
Fats/Oils/Grease													
Average (mg/l)				8.7						8.2		9.2	8.7
Maximum (mg/l)				8.7						8.2		9.2	9.2
Prov. Violations (> 15 mg/l)				0						0		0	0
<b>ALT, Pass (RT)</b>										1		1	3
<b>ALT, Fail (RT)</b>													1

Table 14: Continued (all values in mg/l, unless otherwise specified)

Oily Water Tank Separator												
<b>Number of Samples</b>			1					1		1		3
(Discharged to Containment Pond)												
TSS												
Average (mg/l)			<1.6					<1.6		2.2		2.2
Maximum (mg/l)			<1.6					<1.6		2.2		2.2
Prov. Violations (> 30 mg/l)			0					0		0		0
pH												
Average			6.9					6.9		6.7		6.833333
Maximum			6.9					6.9		6.7		6.9
Minimum												
Prov. Violations (< 5.5, > 9.0)			0					0		0		0
Fats/Oils/Grease												
Average (mg/l)			6.4					8		3.9		6.1
Maximum (mg/l)			6.4					3.9		3.9		6.4
Prov. Violations (> 15 mg/l)			0					0		0		0
TDS												
Average (mg/l)			660					1208		540		802.6667
Maximum (mg/l)			660					1208		540		1208
Prov. Violations (> 36000 mg/l)			0					0		0		0
<b>ALT, Pass (RT)</b>												
<b>ALT, Fail (RT)</b>												

Table 14: Continued (all values in mg/l, unless otherwise specified)

**Vale Inco Demonstration Hydromet Argentia, NL - Effluent Summary 2009**

<b>Polish Pond Discharge</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Year to Date</b>
<b>Samples</b>			1	2					1		1		<b>5</b>
TPH, Maximum			<0.1	<0.1					<0.1		<0.1		<b>&lt;0.01</b>
TPH, Violations			0	0					0		0		<b>0</b>
TSS, Maximum			1	2					3		<1		<b>3</b>
TSS, Violations (>30)			0	0					0		0		<b>0</b>
TDS, Maximum			2550	1710					1660		1180		<b>2550</b>
TDS, Violations (>1000)			1	2					1		1		<b>5</b>
Fe, Maximum			<0.5	0.64					<0.5		<0.5		<b>0.64</b>
Fe, Violations (> 10)			0	0					0		0		<b>0</b>
pH, Maximum			7.52	7.42					7.28		6.75		<b>7.52</b>
pH, Minimum				7.35									<b>7.35</b>
pH, Violations (<5.5, >9.0)			0	0					0		0		<b>0</b>
Ammonia, Maximum			<0.05	<0.05					<0.05		<0.05		<b>&lt;0.05</b>
Ammonia, Violations (>2)			0	0					0		0		<b>0</b>
Nitrate, Maximum			0.31	0.2					<0.05		<0.05		<b>0.31</b>
Nitrate, Violations (>10)			0	0					0		0		<b>0</b>
As, Maximum			<0.02	<0.02					<0.02		<0.02		<b>&lt;0.02</b>
As, Violations (>1)			0	0					0		0		<b>0</b>
Cd, Maximum			<0.003	<0.003					<0.003		<0.003		<b>&lt;0.003</b>
Cd, Violations			0	0					0		0		<b>0</b>
Cu, Maximum			<0.02	<0.02					<0.02		<0.02		<b>&lt;0.02</b>
Cu, Violations (>0.6)			0	0					0		0		<b>0</b>
Pb, Maximum			<0.005	<0.005					<0.005		<0.005		<b>&lt;0.005</b>
Pb, Violations (>0.4)			0	0					0		0		<b>0</b>
Hg, Maximum			<0.00001	<0.00001					<0.000013		<0.000013		<b>&lt;0.000013</b>
Hg, Violations			0	0					0		0		<b>0</b>
Ni, Maximum			0.21	0.32					0.21		0.17		<b>0.32</b>
Ni, Violations (>1)			0	0					0		0		<b>0</b>
Zn, Maximum			<0.05	<0.05					<0.05		<0.05		<b>&lt;0.005</b>
Zn, Violations (>1)			0	0					0		0		<b>0</b>
<b>ALT, Pass (RT)</b>			1	2							1		<b>4</b>
<b>ALT, Fail (RT)</b>													<b>0</b>

Table 15: Vale Inco (Argentia) 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

## Vale Inco Long Harbour Plant Site

D2 - Plant Site Diversion Ditch North Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
<b>Samples</b>									1	3	3	4	11
TPH, Maximum									<0.1				0
TPH, Violations									0				0
TSS, Maximum									56	74	740	270	740
TSS, Violations (>30)									1	1	3	4	8
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum									4	1.2	0.51	5.8	5.8
Fe, Violations (> 10)									0	0	0	0	0
pH, Maximum									5.62	6	7.12	6.94	7.12
pH, Minimum										5.43	6.56	6.39	5.43
pH, Violations (<5.5, >9.0)									0	1	0	0	1
Ammonia, Maximum									<0.05	0.1	2.1	0.97	2.1
Ammonia, Violations (>2)									0	0	1	0	1
Nitrate, Maximum									<0.05	0.32	5.3	1.7	5.3
Nitrate, Violations (>10)									0	0	0	0	0
As, Maximum									0.013	0.004	0.007	0.013	0.013
As, Violations (>1)									0	0	0	0	0
Cd, Maximum									<.0003	<.0003	0.003	0.004	0.004
Cd, Violations									0	0	0	0	0
Cu, Maximum									0.02	0.007	0.008	0.036	0.036
Cu, Violations (>0.6)									0	0	0	0	0
Pb, Maximum									0.061	0.013	0.013	0.095	0.095
Pb, Violations (>0.4)									0	0	0	0	0
Hg, Maximum									0.000027	0.000037	0.000050	0.000045	0.00005
Hg, Violations									0	0	0	0	0
Ni, Maximum									0.003	<0.002	<0.002	0.005	0.005
Ni, Violations (>1)									0	0	0	0	0
Zn, Maximum									0.042	0.015	0.046	0.071	0.071
Zn, Violations (>1)									0	0	0	0	0

Table 16: Vale Inco (Long Harbour) 2009 Effluent Discharge Criteria Summary (all values in mg/l, unless otherwise specified)

D3 - Plant Site Diversion Ditch South Discharge													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples											3	4	7
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											280	820	820
TSS, Violations (>30)											3	4	7
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											0.77	9.2	9.2
Fe, Violations (> 10)											0	0	0
pH, Maximum											7.41	7.83	7.83
pH, Minimum											6.32	6.63	6.32
pH, Violations (<5.5, >9.0)											0	0	0
Ammonia, Maximum											0.13	0.21	0.21
Ammonia, Violations (>2)											0	0	0
Nitrate, Maximum											0.39	0.21	0.39
Nitrate, Violations (>10)											0	0	0
As, Maximum											0.004	0.021	0.021
As, Violations (>1)											0	0	0
Cd, Maximum											<0.003	0.006	0.006
Cd, Violations											0	0	0
Cu, Maximum											0.008	0.05	0.05
Cu, Violations (>0.6)											0	0	0
Pb, Maximum											0.016	0.14	0.14
Pb, Violations (>0.4)											0	0	0
Hg, Maximum											0.000053	0.000092	0.000092
Hg, Violations											0	0	0
Ni, Maximum											<0.002	0.012	0.012
Ni, Violations (>1)											0	0	0
Zn, Maximum											0.014	0.11	0.11
Zn, Violations (>1)											0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)



D5 - Laydown Pad Storm Pond Discharge													Year To Date
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Samples											3	4	7
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											1500	51	1500
TSS, Violations (>30)											1	1	2
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											0.88	1.2	1.2
Fe, Violations (> 10)											0	0	0
pH, Maximum											6.55	7.16	7.16
pH, Minimum											5.66	5.67	5.66
pH, Violations (<5.5, >9.0)											0	0	0
Ammonia, Maximum											0.68	0.17	0.68
Ammonia, Violations (>2)											0	0	0
Nitrate, Maximum											2.80	0.53	2.80
Nitrate, Violations (>10)											0	0	0
As, Maximum											<0.002	<0.002	<0.002
As, Violations (>1)											0	0	0
Cd, Maximum											<0.003	<0.003	<0.003
Cd, Violations											0	0	0
Cu, Maximum											0.004	0.003	0.004
Cu, Violations (>0.6)											0	0	0
Pb, Maximum											0.0013	0.0029	0.0029
Pb, Violations (>0.4)											0	0	0
Hg, Maximum											0.000140	0.000027	0.00014
Hg, Violations											0	0	0
Ni, Maximum											<0.002	<0.002	<0.002
Ni, Violations (>1)											0	0	0
Zn, Maximum											0.006	0.012	0.012
Zn, Violations (>1)											0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D11 - Quarry 2 Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
													To Date
Samples											3	4	7
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											67	92	92
TSS, Violations (>30)											1	3	4
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											1.1	3.5	3.5
Fe, Violations (> 10)											0	0	0
pH, Maximum											5.83	6.16	6.16
pH, Minimum											5.17	5.08	5.08
pH, Violations (<5.5, >9.0)											1	3	4
Ammonia, Maximum											3.3	4	4
Ammonia, Violations (>2)											1	2	3
Nitrate, Maximum											8.10	9.6	9.6
Nitrate, Violations (>10)											0	0	0
As, Maximum											<0.002	<0.003	<0.003
As, Violations (>1)											0	0	0
Cd, Maximum											<0.0003	<0.0003	<0.0003
Cd, Violations											0	0	0
Cu, Maximum											0.004	0.01	0.01
Cu, Violations (>0.6)											0	0	0
Pb, Maximum											0.0029	0.008	0.008
Pb, Violations (>0.4)											0	0	0
Hg, Maximum											0.00004	0.000038	0.00004
Hg, Violations											0	0	0
Ni, Maximum											<0.002	0.003	0.003
Ni, Violations (>1)											0	0	0
Zn, Maximum											0.01	0.022	0.022
Zn, Violations (>1)											0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D12 - Plant Site Runoff													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples									1	5	5	4	15
TPH, Maximum									<0.1				0
TPH, Violations									0				0
TSS, Maximum									47	380	7000	420	7000
TSS, Violations (>30)									1	4	4	3	12
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum									4.7	1.2	0.36	8.4	8.4
Fe, Violations (> 10)									0	0	0	0	0
pH, Maximum									5.64	6.71	6.91	7.16	7.16
pH, Minimum										5.60	6.24	6.67	5.60
pH, Violations (<5.5, >9.0)									0	0	0	0	0
Ammonia, Maximum									<0.05	1.8	6.3	3.2	6.3
Ammonia, Violations (>2)									0	0	1	2	3
Nitrate, Maximum									<0.05	3.7	17.00	5.1	17
Nitrate, Violations (>10)									0	0	1	0	1
As, Maximum									0.014	0.004	0.008	0.029	0.029
As, Violations (>1)									0	0	0	0	0
Cd, Maximum									<0.0003	<0.0003	<0.0003	0.0009	0.0009
Cd, Violations									0	0	0	0	0
Cu, Maximum									0.021	0.008	0.012	0.06	0.06
Cu, Violations (>0.6)									0	0	0	0	0
Pb, Maximum									0.066	0.017	0.0098	0.2	0.2
Pb, Violations (>0.4)									0	0	0	0	0
Hg, Maximum									0.00005	0.000072	0.000033	0.000047	0.000072
Hg, Violations									0	0	0	0	0
Ni, Maximum									0.003	<0.002	<0.002	0.009	0.009
Ni, Violations (>1)									0	0	0	0	0
Zn, Maximum									0.044	0.014	0.044	0.12	0.12
Zn, Violations (>1)									0	0	0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D13 - USM Site 2 Discharge													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples										4	5	4	13
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum										35	120	52	120
TSS, Violations (>30)										2	2	1	5
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum										1.9	2.6	2.1	2.6
Fe, Violations (> 10)										0	0	0	0
pH, Maximum										6.09	6.43	6.41	6.43
pH, Minimum										5.47	5.53	6.01	5.47
pH, Violations (<5.5, >9.0)										1	0	0	1
Ammonia, Maximum										0.17	0.25	0.27	0.27
Ammonia, Violations (>2)										0	0	0	0
Nitrate, Maximum										1.3	0.92	0.85	1.3
Nitrate, Violations (>10)										0	0	0	0
As, Maximum										<0.002	<0.002	<0.002	<0.002
As, Violations (>1)										0	0	0	0
Cd, Maximum										<0.0003	<0.0003	<0.0003	<0.002
Cd, Violations										0	0	0	0
Cu, Maximum										0.003	0.003	0.005	0.005
Cu, Violations (>0.6)										0	0	0	0
Pb, Maximum										0.0015	0.0013	0.0038	0.0038
Pb, Violations (>0.4)										0	0	0	0
Hg, Maximum										0.000035	0.000028	0.000022	0.000035
Hg, Violations										0	0	0	0
Ni, Maximum										<0.002	<0.002	<0.002	<0.002
Ni, Violations (>1)										0	0	0	0
Zn, Maximum										0.008	0.008	0.014	0.014
Zn, Violations (>1)										0	0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D14 - USM 1 Site Discharge													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples											1		1
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											92		92
TSS, Violations (>30)											1		1
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											3.4		3.4
Fe, Violations (> 10)											0		0
pH, Maximum											6.28		6.28
pH, Minimum													
pH, Violations (<5.5, >9.0)											0		0
Ammonia, Maximum											<0.05		<0.05
Ammonia, Violations (>2)											0		0
Nitrate, Maximum											<0.05		<0.05
Nitrate, Violations (>10)											0		0
As, Maximum											0.008		0.008
As, Violations (>1)											0		0
Cd, Maximum											<0.0003		<0.0003
Cd, Violations											0		0
Cu, Maximum											0.006		0.006
Cu, Violations (>0.6)											0		0
Pb, Maximum											0.013		0.013
Pb, Violations (>0.4)											0		0
Hg, Maximum											0.000040		0.00004
Hg, Violations											0		0
Ni, Maximum											<0.002		<0.002
Ni, Violations (>1)											0		0
Zn, Maximum											0.018		0.018
Zn, Violations (>1)											0		0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D15 - USM Site #1 Southwest Discharge													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples											3	4	7
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											120	100	120
TSS, Violations (>30)											2	2	4
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											0.19	0.47	0.47
Fe, Violations (> 10)											0	0	0
pH, Maximum											6.91	6.6	6.91
pH, Minimum											6.53	6.21	6.21
pH, Violations (<5.5, >9.0)											0	0	0
Ammonia, Maximum											0.37	0.09	0.37
Ammonia, Violations (>2)											0	0	0
Nitrate, Maximum											1.20	0.87	1.2
Nitrate, Violations (>10)											0	0	0
As, Maximum											<0.002	<0.002	<0.002
As, Violations (>1)											0	0	0
Cd, Maximum											<0.0003	<0.0003	<0.0003
Cd, Violations											0	0	0
Cu, Maximum											0.003	0.003	0.003
Cu, Violations (>0.6)											0	0	0
Pb, Maximum											<0.0005	0.0006	0.0006
Pb, Violations (>0.4)											0	0	0
Hg, Maximum											0.000040	0.000022	0.00004
Hg, Violations											0	0	0
Ni, Maximum											<0.002	<0.002	<0.002
Ni, Violations (>1)											0	0	0
Zn, Maximum											<0.005	0.014	0.014
Zn, Violations (>1)											0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D16 - USM #4 Runoff	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
													To Date
Samples											1		1
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											22		22
TSS, Violations (>30)											0		0
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											1.8		1.8
Fe, Violations (> 10)											0		0
pH, Maximum											6.52		6.52
pH, Minimum													
pH, Violations (<5.5, >9.0)											0		0
Ammonia, Maximum											1.6		1.6
Ammonia, Violations (>2)											0		0
Nitrate, Maximum											2.10		2.1
Nitrate, Violations (>10)											0		0
As, Maximum											<0.002		<0.002
As, Violations (>1)											0		0
Cd, Maximum											<0.0003		<0.0003
Cd, Violations											0		0
Cu, Maximum											0.003		0.003
Cu, Violations (>0.6)											0		0
Pb, Maximum											0.0017		0.0017
Pb, Violations (>0.4)											0		0
Hg, Maximum											0.000020		0.00002
Hg, Violations											0		0
Ni, Maximum											<0.002		<0.002
Ni, Violations (>1)											0		0
Zn, Maximum											0.006		0.006
Zn, Violations (>1)											0		0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D17 - Discharge from P25 to Forgotten Pond													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples											3	4	7
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											360	620	620
TSS, Violations (>30)											2	2	4
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											0.87	1.7	1.7
Fe, Violations (> 10)											0	0	0
pH, Maximum											7.08	6.26	7.08
pH, Minimum											5.93	5.94	5.93
pH, Violations (<5.5, >9.0)											0	0	0
Ammonia, Maximum											0.24	0.06	0.24
Ammonia, Violations (>2)											0	0	0
Nitrate, Maximum											0.39	0.14	0.39
Nitrate, Violations (>10)											0	0	0
As, Maximum											0.002	0.003	0.003
As, Violations (>1)											0	0	0
Cd, Maximum											<0.0003	<0.0003	<0.0003
Cd, Violations											0	0	0
Cu, Maximum											0.007	0.007	0.007
Cu, Violations (>0.6)											0	0	0
Pb, Maximum											0.011	0.017	0.017
Pb, Violations (>0.4)											0	0	0
Hg, Maximum											0.000072	0.000073	0.000073
Hg, Violations											0	0	0
Ni, Maximum											<0.002	<0.002	<0.002
Ni, Violations (>1)											0	0	0
Zn, Maximum											0.011	0.021	0.021
Zn, Violations (>1)											0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)



D18 - EPCM Discharge													Year
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	To Date
Samples											3	4	7
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum											3	720	720
TSS, Violations (>30)											0	2	2
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum											0.25	5.2	5.2
Fe, Violations (> 10)											0	0	0
pH, Maximum											6.78	6.57	6.78
pH, Minimum											6.22	6.01	6.01
pH, Violations (<5.5, >9.0)											0	0	0
Ammonia, Maximum											0.07	0.07	0.07
Ammonia, Violations (>2)											0	0	0
Nitrate, Maximum											<0.05	0.18	0.18
Nitrate, Violations (>10)											0	0	0
As, Maximum											<0.002	0.003	0.003
As, Violations (>1)											0	0	0
Cd, Maximum											<0.0003	<0.0003	<0.0003
Cd, Violations											0	0	0
Cu, Maximum											0.004	0.014	0.014
Cu, Violations (>0.6)											0	0	0
Pb, Maximum											<0.0005	0.016	0.016
Pb, Violations (>0.4)											0	0	0
Hg, Maximum											0.000027	0.000055	0.000055
Hg, Violations											0	0	0
Ni, Maximum											<0.002	0.003	0.003
Ni, Violations (>1)											0	0	0
Zn, Maximum											0.02	0.026	0.026
Zn, Violations (>1)											0	0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

D19 - Quarry 3 Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
													To Date
Samples												4	4
TPH, Maximum													0
TPH, Violations													0
TSS, Maximum												1300	1300
TSS, Violations (>30)												4	4
TDS, Maximum													0
TDS, Violations (>1000)													0
Fe, Maximum												1.3	1.3
Fe, Violations (> 10)												0	0
pH, Maximum												7.15	7.15
pH, Minimum												6.66	6.66
pH, Violations (<5.5, >9.0)												0	0
Ammonia, Maximum												0.36	0.36
Ammonia, Violations (>2)												0	0
Nitrate, Maximum												0.76	0.76
Nitrate, Violations (>10)												0	0
As, Maximum												0.011	0.011
As, Violations (>1)												0	0
Cd, Maximum												<0.0003	<0.0003
Cd, Violations												0	0
Cu, Maximum												0.008	0.008
Cu, Violations (>0.6)												0	0
Pb, Maximum												0.0086	0.0086
Pb, Violations (>0.4)												0	0
Hg, Maximum												0.000083	0.000083
Hg, Violations												0	0
Ni, Maximum												<0.002	<0.002
Ni, Violations (>1)												0	0
Zn, Maximum												0.014	0.014
Zn, Violations (>1)												0	0

Table 16: Continued (all values in mg/l, unless otherwise specified)

## **7) Conclusion**

The NLDOEC regulates effluent discharged from the industrial sectors of the province. As can be concluded from this short summary report, the nature of these industries and the types of effluent generated are very different and specific; no two industries can be viewed exactly the same. Differences within the industrial facilities and the receiving environment make this a dynamic field that has to be constantly followed.

The industries operating within Newfoundland and Labrador are diligent in working with the NLDOEC to achieve the mutual goals of environmental sustainability and protection.

For further information related to industrial effluent quality and monitoring within Newfoundland and Labrador, please contact:

Pollution Prevention Division  
Newfoundland and Labrador  
Department of Environment and Conservation  
PO Box 8700  
St. John's, NL  
A1B 4J6

(709) 729-4273

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Appendix A  
Abbreviations and Acronyms

## **Abbreviations and Acronyms**

ALT – Acute Lethality Test

BOD – Biological Oxygen Demand

ECWSR – Environmental Control Water and Sewer Regulations

HTGS – Holyrood Thermal Generating Station

IOCC – Iron Ore Company of Canada

MMER – Metal Mining Effluent Regulations

NLDOEC – Newfoundland and Labrador Department of Environment and Conservation

TDS – Total Dissolved Solids

TIA – Tailings Impoundment Area

TIE – Toxicity Identification Evaluation

TPH – Total Petroleum Hydrocarbons

TSS – Total Suspended Solids