Department of Environment and Conservation

2008 Annual Report

Industrial Effluent

Pollution Prevention Division

May 2009

Table of Contents

List of Tables

1) Executive Summary

The Newfoundland and Labrador Department of Environment and Conservation (NLDOEC) regulate industrial effluent under the Environmental Control Water and Sewage Regulations. 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.

A copy of the Environmental Control Water and Sewage Regulations can be obtained in Appendix A of this document or at:
www.assembly.nl.ca/Legislation/sr/Regulations/rc030065.htm,

In 2008 there were more than 25 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 discharge 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 sites as well as other locations in proximity to operations.

Disclaimer:

- The data presented is based upon reports submitted to the NLDOEC by industry.
- The actual laboratory documentation is available upon request to verify analysis as required.
- Some of the tables presented in this report indicate 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. These numbers can be verified or separated upon request.

1) 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 2008, there were no discharges from the site. Three samples were taken during the months of September and December for water quality determination. In one of these analyses, ammonia was reported as slightly higher than the allowable discharge criteria. There were no ALTs conducted in 2008. See Table 1: Anaconda Mining Inc. 2008 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 February, March, July or October. For the remainder of the year, there were 11 samples taken during discharges. One pH value was out of range of the pH criteria. There were 16 ALT analyses conducted and all passed. See Table 2: Crew Gold (Canada) Ltd. 2008 Effluent Discharge Criteria Summary.

c) Iron Ore Company of Canada (IOCC)

Iron Ore Company of Canada has six discharge points, FDP-MD5, FDP-TIA, FDP-BB, FDP-OCF, FDP-MT and FDP-OTPH. The effluent monitoring program for each discharge point consists of 14 parameters and ALT. In 2008, FDP-MD5 did not have any discharge from January to April or in December. There were 25 samples taken during the remainder of the year. Of the samples taken, the exceedences included 1 for TSS and 1 for pH. FDP-TIA did not have any discharge from January to July. For the remainder of the year, there were 21 samples taken with no violations. FDP-BB did not have any discharge during October and December. There were 35 samples taken during the rest of the year and exceedences included 27 for TSS, 2 for iron and 2 for pH. FDP-OCF did not have any discharge in November or December. For the remainder of the year, 38 samples were taken. Of the samples taken, exceedences included 38 for TSS, 4 for iron, 3 for pH and 2 for ammonia. FDP-MT had a total of 49 samples taken throughout the year. Exceedences included 48 for TSS, 5 for iron, 3 for pH, 5 for ammonia, 6 for arsenic and 8 for zinc. FDP-OTPH had a total of 44 samples taken with 23 exceedences for TSS. TSS and pH are currently considered for informational purposes only. All bioassay analysis conducted at each discharge location passed. In 2008, IOCC was in the process of having Wabush Lake designated as its tailings impoundment area (TIA) under the Metal Mining Effluent Regulation (MMER). As such, there was a compliance agreement in place that encompassed FDP-BB, FDP-OCF, FDP-MT and FDP-OTPH. See Table 3: Iron Ore Company of Canada 2008 Effluent Discharge Criteria Summary.

Table 1: Anaconda Mining Inc. 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

Polishing Pond	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Year To Date**
Samples									1			2	3
TPH, Maximum									<0.10				0
TPH, Violations									0				0
TSS, Maximum									<5.00			<1.00	0
TSS, Violations (>30)									0			0	0
TDS, Maximum									450.00				450.00
TDS, Violations (>1000)									0				0
Fe, Maximum									0.08				0.08
Fe, Violations (> 10)									0				0
pH, Maximum (pH units)									7.57				7.57
pH, Minimum (pH units)													0
pH, Violations (<5.5, >9.0)									0				0
Ammonia, Maximum									0.87			5.00	5.00
Ammonia, Violations (>2)									0			1	1
Nitrate, Maximum									4.50				4.50
Nitrate, Violations (>10)									0				0
As, Maximum (mcg/L)									<2.00				0
As, Violations (> 0.5)									0				0
Cd, Maximum (mcg/L)									<0.30				0
Cd, Violations									0				0
Cu, Maximum (mcg/L)									6.00				6.00
Cu, Violations (> 0.3)									0				0
Pb, Maximum (mcg/L)									<0.50				0
Pb, Violations (>0.2)									0				0
Hg, Maximum (mcg/L)									<0.01				0
Hg, Violations									0				0
Ni, Maximum (mcg/L)									<2.00				0
Ni, Violations (>0.5)									0				0
Zn, Maximum (mcg/L)									<0.05				0
Zn, Violations (>0.5)									0				0

Table 2: Crew Gold (Canada) Ltd. 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

Polishing Pond Composite	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Year To Date**
Samples	1			2	3	1		1	1		1	1	11
TSS, Maximum	<2.00			<2.00	5.00	2.00		2.00	2.00		2.00	4.00	5.00
TSS, Violations (>30)	0			0	0	0		0	0		0	0	0
pH, Maximum (pH units)	7.26			6.63	11.80	7.57		7.62	7.42		7.32	7.28	11.80
pH, Minimum (pH units)				6.16	6.32								6.16
pH, Violations (<5.5, >9.0)	0			0	1	0		0	0		0	0	1
Ammonia, Maximum	0.72			0.27	1.06	1.54		0.84	0.71		0.89	0.69	1.54
Ammonia, Violations (>2)	0			0	0	0		0	0		0	0	0
Nitrate, Maximum	3.00			4.26	2.90	4.32		3.17	4.10		5.90	2.70	5.90
Nitrate, Violations (>10)	0			0	0	0		0	0		0	0	0
As, Maximum	0.08			0.04	0.08	0.13		0.12	0.13		0.16	0.12	0.16
As, Violations (> 0.5)	0			0	0	0		0	0		0	0	0
Cu, Maximum	0.01			0.02	0.01	0.01		0.01	0.01		0.01	0.01	0.02
Cu, Violations (> 0.3)	0			0	0	0		0	0		0	0	0
Pb, Maximum (mcg/L)	<20.00			<2.00	<2.00	<2.00		<1.00	<2.00		<2.00	<2.00	0
Pb, Violations (>0.2)	0			0	0	0		0	0		0	0	0
Hg, Maximum (mcg/L)	<0.02			<0.02	0.03	<0.02		0.04	<0.02		<0.02	<0.02	0.04
Hg, Violations	0			0	0	0		0	0		0	0	0
Ni, Maximum (mcg/L)	5.00			4.00	5.00	7.00		6.00	6.00		6.00	7.00	7.00
Ni, Violations (>0.5)	0			0	0	0		0	0		0	0	0
Zn, Maximum (mcg/L)	2.00			8.00	10.00	5.00		5.00	10.00		4.00	10.00	10.00
Zn, Violations (>0.5)	0			0	0	0		0	0		0	0	0
Bioassay, Pass	2			2	2	2		2	2		2	2	16
Bioassay, Fail													

Table 3: Iron Ore Company of Canada 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

FDP - MD5	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples					4	5	4	4	5	1	2		25
TPH, Maximum						<0.10		<0.10	<0.10		0.1		0.1
TPH, Violations						0		0	0		0		0
TSS, Maximum					58.00	7.00	<5.00	6.00	14.00	18.00	15.00		58.00
TSS, Violations (>30)					1	0	0	0	0	0	0		1
TDS, Maximum						97.00		130.00	124.00		162.00		162.00
TDS, Violations (>1000)						0		0	0		0		0
Fe, Maximum						0.68		0.46	0.45		0.82		0.82
Fe, Violations (> 10)						0		0	0		0		0
pH, Maximum (pH units)					7.85	8.43	8.2	9.21	8.79	7.17	8.87		9.21
pH, Minimum (pH units)					7.17	7.07	7.24	7.7	7.73		7.35		7.73
pH, Violations (<5.5, >9.0)					0	0	0	1	0	0	0		1
Ammonia, Maximum						<0.05		<0.05	0.10		0.17		0.17
Ammonia, Violations (>2)						0		0	0		0		0
Nitrate, Maximum						<0.05		<0.05	<0.05		0.12		0.12
Nitrate, Violations (>10)						0		0	0		0		0
As, Maximum (mcg/L)					<50.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00		<50.00
As, Violations (> 0.5)					0	0	0	0	0	0	0		0
Cd, Maximum (mcg/L)						<0.10		<0.10	<0.01		<0.10		<0.10
Cd, Violations						0		0	0		0		0
Cu, Maximum (mcg/L)					50.00	<1.00	<1.00	<1.00	1.00	1.00	<5.00		50
Cu, Violations (> 0.3)					0	0	0	0	0	0	0		0
Pb, Maximum (mcg/L)					20.00	0.20	<2.00	1.00	<0.20	0.30	0.30		20.00
Pb, Violations (>0.2)					0	0	0	0	0	0	0		0
Hg, Maximum (mcg/L)						<25.00		<25.00	<25.00		<25.00		<25.00
Hg, Violations						0		0	0		0		0
Ni, Maximum (mcg/L)					50.00	<1.00	2.00	1.00	2.00	2.00	1.00		50.00
Ni, Violations (>0.5)					0	0	0	0	0	0	0		0
Zn, Maximum (mcg/L)					200.00	4.00	<2.00	<2.00	3.00	2.00	4.00		200.00
Zn, Violations (>0.5)					0	0	0	0	0	0	0		0
Bioassays Passed					2	2	2	2	2				10
Bioassay, Fail													

Table 3: Continued (All values in mg/L, unless otherwise specified)

FDP - TIA (Julianne Narrows)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples								3	5	4	4	5	21
TPH, Maximum TPH, Violations									<0.10		<0.10 0		<0.10 0
TSS, Maximum TSS, Violations (>30)								<5.00 0	<5.00 0	<5.00	4.00 0	<2.00 0	4.00 0
TDS, Maximum TDS, Violations (>1000)									68.00 0	63.00 0	67.00 0		68.00 0
Fe, Maximum Fe, Violations (> 10)									0.05 0	0.05 0	0.04 0		0.05 0
pH, Maximum (pH units) pH, Minimum (pH units) pH, Violations (<5.5, >9.0)								8.67 7.18 0	8.48 7.54 0	8.09 6.42 0	8.03 6.86 0	8.02 7.27 0	8.67 6.42 0
Ammonia, Maximum Ammonia, Violations (>2)									<0.05 0	<0.05 0	<0.05 0		<0.05 0
Nitrate, Maximum Nitrate, Violations (>10)									1.19 0	1.15 0	1.28 0		1.28 0
As, Maximum (mcg/L) As, Violations (> 0.5)								<1.00 0	<1.00 0	<1.00 0	<1.00 0	<1.00 0	<1.00 0
Cd, Maximum (mcg/L) Cd, Violations									<0.01 0	<0.01 0	<1.00 0		<1.00 0
Cu, Maximum (mcg/L) Cu, Violations (> 0.3)								3.00 0	2.00 0	1.00 0	2.00 0	1.00 0	3.00 0
Pb, Maximum (mcg/L) Pb, Violations (>0.2)								0.60 0	2.00 0	0.10 0	0.20 0	<0.20 0	2.00 0
Hg, Maximum (mcg/L) Hg, Violations									<25.00 0	<25.00 0	<25.00 0		<25.00 0
Ni, Maximum (mcg/L) Ni, Violations (>0.5)								2.00 0	<1.00 0	<1.00 0	<1.00 0	1.00 0	2.00 0
Zn, Maximum (mcg/L) Zn, Violations (>0.5)								4.00 0	2.00 0	<2.00 0	6.00 0	<2.00 0	6.00 0
Bioassay, Pass Bioassay, Fail									2				2

Table 3: Continued (All values in mg/L, unless otherwise specified)

FDP - BB	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	5	4	5	4	4	5	4	1	1		2		35
TPH, Maximum						<0.10		<0.10			<0.10		<0.10
TPH, Violations						0		0			0		0
TSS, Maximum	390.00	368.00	238.00	352.00	625.00	453.00	40.00	13.00	<5.00		227.00		625.00
TSS, Violations (>30)	5	4	5	4	3	4	1	0	0		1		27
TDS, Maximum						136.00		140.00					140.00
TDS, Violations (>1000)						0		0					0
Fe, Maximum						59.70		26.60					59.70
Fe, Violations (> 10)						1		1					2
pH, Maximum (pH units)	8.88	9.05	8.28	9.70	8.94	9.82	7.95	8.59	8.67		8.96		9.82
pH, Minimum (pH units)	6.97	6.95	7.26	7.59	7.62	7.08	7.62				8.42		6.95
pH, Violations (<5.5, >9.0)	0	1	0	1	0	0	0	0	0		0		2
Ammonia, Maximum						<0.05		0.67					0.67
Ammonia, Violations (>2)						0		0					0
Nitrate, Maximum						0.13		0.59					0.59
Nitrate, Violations (>10)						0		0					0
As, Maximum (mcg/L)	7.00	9.00	6.00	9.00	40.00	10.00	<5.00	<5.00	<1.00		<10.00		40.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0		0		0
Cd, Maximum (mcg/L)						<0.5		<0.5					<0.5
Cd, Violations						0		0					0
Cu, Maximum	6.00	<5.00	8.00	<5.00	10.00	40.00	<5.00	<5.00	<1.00		<10.00		40.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0		0		0
Hg, Maximum (mcg/L)						<25.00		<25.00					<25.00
Hg, Violations						0		0					0
Pb, Maximum (mcg/L)	2.00	2.00	1.00	2.00	3.00	2.00	<1.00	2.00	<0.2		4.00		4.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0		0		0
Ni, Maximum (mcg/L)	8.00	5.00	<5.00	6.00	10.00	<5.00	<5.00	<5.00	2.00		<10.00		10.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0		0		0
Zn, Maximum	0.09	0.04	0.02	0.01	0.02	0.01	0.01	0.02	0.02		0.08		0.09
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0		0		0
Bioassay, Pass		2				2		2					6
Bioassay, Fail													

Table 3: Continued (All values in mg/L, unless otherwise specified)

FDP - OCF	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	5	4	5	4	4	5	4	1	3	3			38
TPH, Maximum						0.1		<0.10	<0.10				0.1
TPH, Violations						0		0	0				0
TSS, Maximum	39100	18200	33700	20300	25400	12900	867	363	1100	2190			39100
TSS, Violations (>30)	5	4	5	4	4	5	4	1	3	3			38
TDS, Maximum						187.00		78.00	67.00	65.00			187.00
TDS, Violations (>1000)						0		0	0	0			0
Fe, Maximum						1870.00		73.70	418.00	190.00			1870.00
Fe, Violations (> 10)						1		1	1	1			4
pH, Maximum (pH units)	8.91	8.86	8.85	9.41	9.23	9.12	8.86	8.83	8.9	8.84			9.41
pH, Minimum (pH units)	8.38	7.62	7.46	8.41	8.39	7.11	8.13		8.53	7.71			7.11
pH, Violations (<5.5, >9.0)	0	0	0	1	1	1	0		0	0			3
Ammonia, Maximum						3.80		2.30	0.67	0.76			3.80
Ammonia, Violations (>2)						1		1	0	0			2
Nitrate, Maximum						1.07		2.50	1.16	1.35			2.50
Nitrate, Violations (>10)						0		0	0	0			0
As, Maximum (mcg/L)	300.00	120.00	8.00	200.00	30.00	130.00	<5.00	5.00	17.00	8.00			300.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0			0
Cd, Maximum (mcg/L)						<5.00		<0.50	<0.10	<0.05			0
Cd, Violations						0		0	0	0			0
Cu, Maximum (mcg/L)	200.00	<100.00	<5.00	10.00	1200.00	50.00	<5.00	<5.00	7.00	5.00			1200.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0			0
Hg, Maximum (mcg/L)						120.00		<25.00	<25.00				120.00
Hg, Violations						0		0	0				0
Pb, Maximum (mcg/L)	<20.00	<20.00	<1.00	<20.00	<200.00	10.00	<1.00	<1.00	1.00	0.80			10.00
Pb, Violations (>0.2)		0	0	0	0	0	0	0	0	0			0
Ni, Maximum (mcg/L)	60.00	<100.00	<5.00	<100.00	<1000.00	90.00	<5.00	<5.00	<10.00	6.00			90.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0			0
Zn, Maximum	0.30	0.10	0.04	<0.02	2.60	0.20	0.03	<0.01	0.03	0.01			0.20
Zn, Violations (>0.5)	0	0	0	0	1	0	0	0	0	0			0
Bioassay, Pass		2				2		2					6
Bioassay, Fail													

Table 3: Continued (All values in mg/L, unless otherwise specified)

FDP - MT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	5	4	5	4	4	5	4	1	3	4	4	6	49
TPH, Maximum						0.20		<0.10	0.10		0.30		0.30
TPH, Violations						0			0		0		0
TSS, Maximum	31200	22900	39500	76200	63600	91200	22500	13800	33400	102000	48700	36500	102000
TSS, Violations (>30)	5	4	5	4	4	5	4	1	3	4	4	5	48
TDS, Maximum						240.00		107.00	153.00	180.00	210.00		240.00
TDS, Violations (>1000)						0		0	0	0	0		0
Fe, Maximum						4020.00		559.00	14200.00	9870.00	1460.00		14200.00
Fe, Violations (> 10)						1		1	1	1	1		5
pH, Maximum (pH units)	8.73	9.00	8.81	9.02	8.95	8.85	8.65	8.74	9.28	8.39	9.03	8.82	9.28
pH, Minimum (pH units)	8.43	8.45	8.15	8.16	8.47	6.74	8.10		8.14	8.07	7.02	7.69	6.74
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	2	0	1	0	3
Ammonia, Maximum						5.30		4.20	6.30	4.40	8.00		8.00
Ammonia, Violations (>2)						1		1	1	1	1		5
Nitrate, Maximum						6.80		4.60	8.90	0.43	8.50		8.90
Nitrate, Violations (>10)						0		0	0	0	0		0
As, Maximum	0.50	0.30	1.10	0.40	1.00	0.50	0.30	0.04	0.65	0.50	0.60	0.50	1.10
As, Violations (> 0.5)	0	0	1	0	3	0	0	0	1	0	1	0	6
Cd, Maximum (mcg/L)						<10.00		<2.00	<2.50	2.00	<5.00		2.00
Cd, Violations						0		0	0	0	0		0
Cu, Maximum	0.10	<0.20	0.20	0.20	0.60	0.30	0.20	<0.02	<0.25	0.30	0.30	<0.20	0.60
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hg, Maximum						0.14		<0.03	0.14	0.19	0.03		0.19
Hg, Violations						0		0	0	0	0		0
Pb, Maximum (mcg/L)	20.00	<40.00	30.00	<50.00	20.00	60.00	40.00	<0.40	50.00	40.00	30.00	<40.00	60.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum	0.30	<0.20	0.20	<0.25	0.40	0.20	0.30	<0.02	0.40	0.30	0.40	<0.20	0.40
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum	0.40	0.40	1.60	0.50	1.20	1.00	0.50	<0.04	0.60	0.60	0.60	0.40	1.60
Zn, Violations (>0.5)	0	0	1	0	2	1	0	0	2	1	1	0	8
Bioassay, Pass		2				2		2					6
Bioassay, Fail													

Table 3: Continued (All values in mg/L, unless otherwise specified)

FDP - OTPH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	5	4	5	4	4	5	4	1	3	4	2	3	44
TPH, Maximum						<0.10		<0.10			<0.10		0
TPH, Violations						0		0			0		0
TSS, Maximum	3140	2220	684	1140	8040	5540	<5.00	<5.00	17	629	5080	932	8040
TSS, Violations (>30)	4	2	4	4	1	2	0	0	0	3	1	2	23
TDS, Maximum						48.00		40.00		46.00	85.00		85.00
TDS, Violations (>1000)						0		0		0	0		0
Fe, Maximum						0.25		0.19		0.20	2630.00		2630.00
Fe, Violations (> 10)						0		0		0	0		0
pH, Maxiumum (pH units)	8.44	8.31	8.87	8.18	8.08	7.89	7.82	8.01	8.12	7.83	7.40	8.38	8.87
pH, Minimum (pH units)	7.62	7.85	7.47	7.41	7.25	7.09	6.70		8.11	6.37	5.94	7.09	5.94
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0		0	0	0	0	0
Ammonia, Maximum						<0.05		<0.05		0.07	0.06		0.07
Ammonia, Violations (>2)						0		0		0	0		0
Nitrate, Maximum						0.18		0.31		0.43	0.61		0.61
Nitrate, Violations (>10)						0		0		0	0		0
As, Maximum (mcg/L)	60.00	30.00	7.00	13.00	80.00	40.00	<1.00	<1.00	<1.00	2.00	200.00	10.00	200.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cd, Maximum (mcg/L)						<0.10		<0.10		<0.01	<10.00		0
Cd, Violations						0		0		0	0		0
Cu, Maximum (mcg/L)	2.00	20.00	6.00	6.00	30.00	2.00	2.00	2.00	2.00	2.00	<100.00	2.00	30.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hg, Maximum (mcg/L)						25.00		<25		<25	<10.00		25.00
Hg, Violations						0		0		0	0		0
Pb, Maximum (mcg/L)	5.00	2.00	1.00	2.00	0.30	<5.00	<0.20	<0.20	<0.20	<0.40	<10.00	<1.00	5.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	40.00	10.00	<5.00	5.00	5.00	<25.00	1.00	<1.00	<1.00	<2.00	<100.00	<5.00	40.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	50.00	30.00	30.00	30.00	40.00	3.00	2.00	3.00	<2.00	10.00	<100.00	40.00	50.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass		2				2		2					6
Bioassay, Fail													

d) Rambler Metals and Mining Canada Ltd.

Rambler has one discharge point which empties into South Brook pond. The effluent monitoring program consists of 14 parameters and ALT for compliance. In 2008, there was no discharge during the months of July or December. For the remainder of the year, 30 samples were taken. Of the samples collected, exceedences included 1 for each of TSS, ammonia and copper, 6 for zinc and 30 for TDS. There was one ALT taken during the year and it passed. See Table 4: Rambler Metals and Mining 2008 Effluent Discharge Criteria Summary.

e) Teck Resources Ltd.

Teck Resources Ltd., Duck Pond Mine has one discharge point at the Polishing Pond outlet (DamC). The effluent monitoring program for discharge criteria compliance consists of 13 parameters and ALT. In 2008, there was no discharge during January and February. For the remainder of the year, 55 samples were taken. Of the samples collected, the exceedences included 1 for copper and 3 for ammonia. See Table 5: Teck Resources Ltd. 2008 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 2008, there were a total of 52 samples taken for the year. Of the samples taken, the exceedences included 46 for TDS and 1 for zinc. There were 59 ALT passes and 55 fails. The Voisey's Bay Mine Site has experienced intermittent toxicity issues at the waste water treatment plant. They are currently conducting an extensive toxicity identification evaluation (TIE) program to identify the source of the toxicity. As part of this TIE, a pilot plant has been designed and is currently in operation on site. See Table 6: Vale Inco (Mine Site) 2008 Effluent Discharge Criteria Summary.

g) Wabush Mines

Wabush Mines has 8 discharge points, Flora Lake, Sylvio Lake (East Pit #2), Deep Well, Knoll Lake, West Pit Settling Pond, the Tailings Discharge, East Pit Dewatering East and Shops East. The effluent monitoring program consists of 11 parameters and ALT for discharge criteria compliance. In 2008, 52 samples were taken at Flora Lake discharge with 2 exceedences of TSS. There was no discharge from Sylvio Lake (East Pit #2) during February to April. For the remainder of the year, 34 samples were taken with 4 exceedences of nitrate. There were 52 samples taken at Deep Well Discharge with 3 exceedences of TSS. There were 52 samples taken at Knoll Lake, exceedences included 31 in TSS and 4 in ammonia. There were 52 samples taken at West Pit Settling Pond with 16 exceedences of TSS. There were 50 samples taken at the Tailings Discharge. Exceedences included 49 in TSS, 5 in iron, 4 in ammonia, 1 in nitrate and 1 in zinc. There were 53 samples taken at East Pit Dewatering East. Exceedences included 4 for TSS and 7 for ammonia. There was one ALT failure, along with 13 passes. At Shops East, there were no samples collected between January and September. For the remainder of the year, there were 6 samples taken with 1 exceedence in TSS. It should be noted that during 2008, Wabush Mines was in the process of having Flora Lake designated as its TIA under MMER. As such, Wabush Mines operated under a compliance agreement with the province for the tailings discharge. The TSS and pH analyses collected at this site were for information purposes only. See Table 7: Wabush Mines 2008 Effluent Discharge Criteria Summary.

Table 4: Rambler Metals and Mining 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

Treated Mine Effluent	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	4	5	4	4	3	5		1	1	2	1		30
TPH, Maximum	0.10	<0.10	<0.10	<0.10	<0.10	<0.10			<0.10	<0.10	<0.10		0.10
TPH, Violations	0	0	0	0	0	0			0	0	0		0
TSS, Maximum	8.00	11.00	12.00	11.00	34.00	4.00		23.00	4.00	4.00	3.00		34.00
TSS, Violations (>30)	0	0	0	0	1	0		0	0	0	0		1
TDS, Maximum	1900.00	1800.00	2000.00	2100.00	2100.00	1900.00		1400.00	1600.00	1600.00	2000.00		2100.00
TDS, Violations (>1000)	4	5	4	4	3	5		1	1	2	1		30
Fe, Maximum	0.56	1.50	<0.50	0.98	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50		1.50
Fe, Violations (> 10)	0	0	0	0	0	0		0	0	0	0		0
pH, Maximum (pH units)	7.94	7.94	8.08	8.32	7.98	8.32		7.87	8.17	8.34	8.21		8.34
pH, Minimum (pH units)	7.88	7.84	7.92	7.80	7.78	7.90				7.71			7.71
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0		0	0	0	0		0
Ammonia, Maximum	1.30	1.30	0.23	1.90	1.80	1.90		1.00	1.20	2.10	1.40		2.10
Ammonia, Violations (>2)	0	0	0	0	0	0		0	0	1	0		1
Nitrate, Maximum	0.21	0.22	0.23	0.25	0.18	0.25		0.32	0.62	1.70	1.30		1.70
Nitrate, Violations (>10)	0	0	0	0	0	0		0	0	0	0		0
As, Maximum				<0.020				<0.020					0
As, Violations (> 0.5)				0				0					0
Cd, Maximum (mcg/L)				<3.00				4.00					4.00
Cd, Violations				0				0					0
Cu, Maximum (mcg/L)	33.00	43.00	29.00	29.00	350.00	53.00		37.00	41.00	32.00	99.00		350.00
Cu, Violations (> 0.3)	0	0	0	0	1	0		0	0	0	0		1
Pb, Maximum (mcg/L)				<5.00				<5.00					0
Pb, Violations (>0.2)				0				0					0
Hg, Maximum (mcg/L)				<0.01				<0.01					0
Hg, Violations				0				0					0
Ni, Maximum				<0.02				0.03					0.03
Ni, Violations (>0.5)				0				0					0
Zn, Maximum	0.06	0.27	0.13	2.70	1.70	0.52		0.44	0.44	0.80	1.20		2.70
Zn, Violations (>0.5)	0	0	0	2	1	1		0	0	1	1		6
Bioassay, Pass					1								1
Bioassay, Fail													

Table 5: Teck Resources Ltd. 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

DPM - DAMC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples			2	3	4	8	7	10	8	4	4	5	55
TSS, Maximum			4.00	5.00	3.00	5.00	8.00	12.00	5.00	1.00	3.00	5.00	12.00
TSS, Violations (>30)			0	0	0	0	0	0	0	0	0	0	0
TDS, Maximum			74.00	146.00	137.00	303.00	468.00	543.00	549.00	600.00	551.00	560.00	600.00
TDS, Violations (>1000)			0	0	0	0	0	0	0	0	0	0	0
Fe, Maximum			0.53	0.47	0.54	0.42	0.17	0.22	0.11	0.11	0.17	0.24	0.54
Fe, Violations (> 10)			0	0	0	0	0	0	0	0	0	0	0
pH, Maximum (pH units)			7.21	7.31	7.80	7.33	7.56	7.54	7.57	7.70	7.67	7.60	7.80
pH, Minimum (pH units)				6.89	6.86	7.02	6.94	7.15	7.11	7.22	6.48	6.74	6.48
pH, Violations (<5.5, >9.0)			0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum			0.56	1.35	0.68	2.81	0.87	1.80	1.91	0.99	0.20	0.77	2.81
Ammonia, Violations (>2)			0	0	0	3	0	0	0	0	0	0	3
Nitrate, Maximum			0.26	0.61	0.22	1.43	2.13	2.65	4.47	3.54	3.38	3.59	4.47
Nitrate, Violations (>10)			0	0	0	0	0	0	0	0	0	0	0
As, Maximum (mcg/L)			9.00	<8.00	<8.00	9.00	4.00	4.00	4.00	8.00	8.00	<8.00	9.00
As, Violations (> 0.5)			0	0	0	0	0	0	0	0	0	0	0
Cd, Maximum (mcg/L)			<2.00	<2.00	<2.00	0.50	8.00	1.00	1.00	<2.00	<2.00	<2.00	8.00
Cd, Violations			0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)			6.00	7.00	24.00	97.00	<1.00	18.00	16.00	14.00	13.00	800.00	800.00
Cu, Violations (> 0.3)			0	0	0	0	0	0	0	0	0	1	1
Pb, Maximum (mcg/L)			9.00	<5.00	7.00	17.00	88.00	21.00	24.00	14.00	32.00	20.00	88.00
Pb, Violations (>0.2)			0	0	0	0	0	0	0	0	0	0	0
Hg, Maximum (mcg/L)			<0.10	<0.10	<0.10	0.01	0.02	0.03	0.03	<0.10	<0.10	<0.10	0.03
Hg, Violations			0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum			<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Ni, Violations (>0.5)			0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum			0.05	0.01	0.12	0.08	0.14	0.11	0.35	0.14	0.13	0.25	0.35
Zn, Violations (>0.5)			0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass					2	1		4	2	1	1	1	12
Bioassay, Fail													

Table 6: Vale Inco (Mine Site) 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

Treated Effluent Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	4	4	6	4	5	4	6	4	5	2	3	5	52
TPH, Maximum	0.30	0.50	0.40	0.40	0.30	0.60	0.60	0.70			0.20		0.70
TPH, Violations	0	0	0	0	0	0	0	0			0		0
TSS, Maximum	4.00	3.00	3.00	2.00	4.00	2.00	2.00	2.00	3.00	1.00	1.00	2.00	4.00
TSS, Violations (>30)	0	0	0	0	0	0	0	0	0	0	0	0	0
TDS, Maximum	1190.00	1270.00	1310.00	1310.00	1030.00	1160.00	1250.00	1330.00	1400.00	1440.00	1520.00	1470.00	1520.00
TDS, Violations (>1000)	4	4	6	4	2	4	6	4	5	2	3	2	46
Fe, Maximum	1.10	0.84	0.86	<0.50	0.65	0.60	0.63	0.51	0.69	0.56	<0.50	<0.50	1.10
Fe, Violations (> 10)	0	0	0	0	0	0	0	0	0	0	0	0	0
pH, Maximum (pH units)	6.75	6.80	6.77	6.77	6.96	6.93	6.82	6.39	6.35	6.79	6.78	6.90	6.96
pH, Minimum (pH units)	6.62	6.59	6.59	6.35	6.63	6.76	6.53	6.13	6.06	6.27	6.65	6.65	6.06
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum	0.25	0.28	0.33	0.28	0.29	0.31	0.45	0.34	0.33	0.31	0.32	0.34	0.45
Ammonia, Violations (>2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate, Maximum	0.38	0.35	0.42	0.34	0.35	0.42	0.36	0.35	0.32	0.28	0.29	0.36	0.42
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
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cd, Maximum (mcg/L)	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	0
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	0.56	<0.02	<0.02	0.56
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<5.00	<5.00	<5.00	<5.00	<50.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	19.00	19.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hg, Maximum (mcg/L)	<0.02	0.04	<0.03	0.03	0.02	<0.01	0.07	0.02	<0.01	<0.01	<0.01	<0.01	0.07
Hg, Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	24.00	29.00	27.00	<20.00	<20.00	38.00	88.00	390.00	390.00	300.00	210.00	190.00	390.00
Ni, Violations (>0.5)	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	0.55	0.10	0.05	<0.05	<0.05	0.55
Zn, Violations (>0.5)	0	0	0	0	0	0	0	1	0	0	0	0	1
Bioassay, Pass	3	3	2	2	3	14	9	2	9	1	2	9	59
Bioassay, Fail	3	1	5	2	5	5	13	12	1	3	4	1	55

Table 7: Wabush Mines 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

FLORA LAKE DISCHARGE	**Jan.**	**Feb.**	**Mar.**	**Apr.**	**May**	**Jun.**	**Jul.**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Year To Date**
Samples	5	4	4	5	4	4	5	4	5	4	4	4	52
TSS, Maximum	7.00	2.00	9.00	5.00	15.00	23.00	3.00	2.00	21.00	4.00	52.00	132.00	132.00
TSS, Violations (>30)	0	0	0	0	0	0	0	0	0	0	1	1	2
TDS, Maximum						61.00	54.00		44.00	42.00			61.00
TDS, Violations (>1000)						0	0		0	0			0
Fe, Maximum						0.24	0.05		0.07	0.09			0.24
Fe, Violations (> 10)						0	0		0	0			0
pH, Maximum (pH units)	7.37	7.42	7.95	7.36	6.56	7.53	7.55	7.12	7.68	7.49	7.38	7.18	7.95
pH, Minimum (pH units)	6.42	6.98	7.21	6.75	6.40	7.06	7.11	6.58	6.96	7.01	7.01	7.02	6.40
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.05	0.05		0.09	0.05			0.09
Ammonia, Violations (>2)						0	0		0	0			0
Nitrate, Maximum						1.4	1.4		1.2	1.4			1.4
Nitrate, Violations (>10)						0	0		0	0			0
As, Maximum (mcg/L)	<1.00	2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	2.00	2.00	2.00	2.00	3.00	1.00	2.00	2.00	1.00	<1.00	<1.00	2.00	3.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	3.00	32.00	10.00	<2.00	<2.00	<2.00	32.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	<1.00	2.00	1.00	<1.00	1.00	3.00	5.00	<1.00	3.00	<1.00	<1.00	<1.00	5.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	21.00	6.00	13.00	35.00	11.00	24.00	41.00	35.00	54.00	12.00	54.00	89.00	89.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass	1			1			1			1			4
Bioassay, Fail													0

Table 7: Continued (All values in mg/L, unless otherwise specified)

SILVO LAKE DISCHARGE (EP#2)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	To Date
Samples	5				2	4	5	4	5	4	4	1	34
TSS, Maximum	2.00				14.00	13.00	4.00	6.00	5.00	9.00	4.00	4.00	14.00
TSS, Violations (>30)	0				0	0	0	0	0	0	0	0	0
TDS, Maximum						140.00	194.00		176.00	130.00			194.00
TDS, Violations (>1000)						0	0		0	0			0
Fe, Maximum	0.08					1.13	0.12		0.39	0.43			1.13
Fe, Violations (> 10)	0					0	0		0	0			0
pH, Maximum (pH units)	6.95				6.30	7.19	7.49	7.11	7.52	7.34	7.25	6.98	7.52
pH, Minimum (pH units)	6.10				6.30	7.03	7.02	6.89	6.89	7.01	6.76	6.98	6.10
pH, Violations (<5.5, >9.0)	0				0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.03	0.05		0.06	0.03			0.06
Ammonia, Violations (>2)						0	0		0	0			0
Nitrate, Maximum						10.60	11.80		0.00	12.00			12.00
Nitrate, Violations (>10)						1	2		0	1			4
As, Maximum (mcg/L)	<1.00				<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0
As, Violations (> 0.5)	0				0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	2.00				2.00	2.00	1.00	2.00	1.00	3.00	<1.00	<1.00	3.00
Cu, Violations (> 0.3)	0				0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<2.00				<2.00	<2.00	3.00	35.00	<2.00	17.00	<2.00	<2.00	35.00
Pb, Violations (>0.2)	0				0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	1.00				2.00	6.00	7.00	1.00	1.00	1.00	2.00	<1.00	7.00
Ni, Violations (>0.5)	0				0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	13.00				13.00	15.00	22.00	<5.00	17.00	12.00	5.00	<5.00	22.00
Zn, Violations (>0.5)	0				0	0	0	0	0	0	0	0	0
Bioassay, Pass	1				1		1			1			4
Bioassay, Fail													0

Table 7: Continued (All values in mg/L, unless otherwise specified)

DEEP WELL DISCHARGE	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	To Date
Samples	5	4	4	5	4	4	5	4	5	4	4	4	52
TSS, Maximum	2.00	<2.00	2.00	3.00	<2.00	3.00	<2.00	<2.00	<2.00	<2.00	<2.00	145.00	145.00
TSS, Violations (>30)	0	0	0	0	0	0	0	0	0	0	0	3	3
TDS, Maximum						40.00	59.00		38.00	33.00			59.00
TDS, Violations (>1000)						0	0		0	0			0
Fe, Maximum						0.04	0.03		0.09	0.03			0.09
Fe, Violations (> 10)						0	0		0	0			0
pH, Maximum (pH units)	7.31	7.00	7.72	7.33	6.31	6.99	6.89	6.86	7.01	6.97	7.18	7.27	7.72
pH, Minimum (pH units)	6.30	6.75	6.93	6.48	6.60	6.76	6.58	6.56	6.75	6.64	6.91	6.64	6.30
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.12	0.11		0.05	0.02			0.12
Ammonia, Violations (>2)						0	0		0	0			0
Nitrate, Maximum						0.40	0.40		0.00	0.20			0.40
Nitrate, Violations (>10)						0	0		0	0			0
As, Maximum (mcg/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	8.00	5.00	2.00	1.00	2.00	1.00	1.00	2.00	<1.00	<1.00	2.00	<1.00	8.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<2.00	11.00	<2.00	2.00	<2.00	<2.00	1.00	13.00	<2.00	<2.00	<2.00	<2.00	13.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	<1.00	1.00	1.00	<1.00	<1.00	<1.00	5.00	<1.00	1.00	<1.00	1.00	<1.00	5.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	22.00	19.00	6.00	<5.00	<5.00	14.00	22.00	<5.00	<5.00	<5.00	<5.00	13.00	22.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass										1			1
Bioassay, Fail													0

Table 7: Continued (All values in mg/L, unless otherwise specified)

KNOLL LAKE	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	To Date
Samples	5	4	4	5	4	4	5	4	5	4	4	4	52
TSS, Maximum	9.00	17.00	42.00	40.00	181.00	170.00	67.00	132.00	632.00	304.00	235.00	145.00	632.00
TSS, Violations (>30)	0	0	1	2	3	2	4	4	4	4	4	3	31
TDS, Maximum						94.00	96.00		87.00	63.00			96.00
TDS, Violations (>1000)						0	0		0	0			0
Fe, Maximum						2.80	3.48		1.96	3.47			3.48
Fe, Violations (> 10)						0	0		0	0			0
pH, Maximum (pH units)	7.24	7.01	7.54	7.11	6.70	7.31	7.39	7.05	7.21	7.13	7.12	7.13	7.54
pH, Minimum (pH units)	6.64	6.55	6.83	6.75	6.20	7.04	6.98	6.54	6.88	6.99	7.02	6.53	6.20
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.37	3.75		2.55	5.16			5.16
Ammonia, Violations (>2)						0	2		1	1			4
Nitrate, Maximum						4.70	6.40		0.01	7.80			7.80
Nitrate, Violations (>10)						0	0		0	0			0
As, Maximum (mcg/L)	<1.00	2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	2.00	3.00	2.00	1.00	9.00	2.00	2.00	2.00	4.00	4.00	7.00	5.00	9.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<2.00	<2.00	<2.00	2.00	<2.00	<2.00	3.00	23.00	4.00	6.00	2.00	<2.00	23.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	<1.00	<1.00	1.00	1.00	2.00	2.00	7.00	2.00	5.00	10.00	7.00	2.00	10.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	13.00	17.00	9.00	17.00	21.00	32.00	37.00	81.00	54.00	105.00	133.00	96.00	133.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass	1			1			1			1			4
Bioassay, Fail													0

Table 7: Continued (All values in mg/L, unless otherwise specified)

WEST PIT SETTLING POND	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	To Date
Samples	5	4	4	5	4	4	5	4	5	4	4	4	52
TSS, Maximum	42.00	17.00	44.00	214.00	44.00	34.00	276.00	55.00	43.00	44.00	39.00	12.00	276.00
TSS, Violations (>30)	2	0	1	2	1	1	2	1	2	3	1	0	16
TDS, Maximum						65.00	57.00		45.00	31.00			65.00
TDS, Violations (>1000)						0	0		0	0			0
Fe, Maximum						0.22	2.67		0.15	1.18			2.67
Fe, Violations (> 10)						0	0		0	0			0
pH, Maximum (pH units)	6.76	6.85	7.34	7.33	6.60	7.56	7.11	6.92	7.02	6.92	6.95	7.18	7.56
pH, Minimum (pH units)	6.35	6.35	6.55	6.64	6.60	6.74	6.65	6.58	6.75	6.03	6.36	6.84	6.03
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						0.89	2.00		0.82	1.08			2.00
Ammonia, Violations (>2)						0	0		0	0			0
Nitrate, Maximum						4.30	3.30		1.20	1.60			4.30
Nitrate, Violations (>10)						0	0		0	0			0
As, Maximum (mcg/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	64.00	7.00	2.00	1.00	1.00	2.00	9.00	2.00	1.00	1.00	11.00	1.00	64.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<2.00	<2.00	<2.00	2.00	<2.00	<2.00	<2.00	28.00	<2.00	<2.00	<2.00	<2.00	28.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	2.00	<1.00	<1.00	2.00	1.00	1.00	3.00	3.00	1.00	1.00	<1.00	<1.00	3.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	16.00	17.00	8.00	54.00	12.00	28.00	27.00	8.00	17.00	5.00	6.00	<5.00	54.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass	1			1			1			1			4
Bioassay, Fail													0

Table 7: Continued (All values in mg/L, unless otherwise specified)

Tailings Discharge	**Jan.**	**Feb.**	**Mar.**	**Apr.**	**May**	**Jun.**	**Jul.**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**To Date**
Samples	5	4	4	5	3	4	5	4	5	4	4	3	50
TSS, Maximum	595700	656500	883000	866000	308000	79900	147000	167000	38900	815000	202000	150000	883000
TSS, Violations (>30)	5	4	4	5	3	4	5	4	5	4	3	3	49
TDS, Maximum						69.00	88.00		84.00	58.00			88.00
TDS, Violations (>1000)						0	0		0	0			0
Fe, Maximum						26.10	73.50		1400.00	904.00			1400.00
Fe, Violations (> 10)						1	2		1	1			5
pH, Maximum	7.02	7.02	8.11	7.23	6.39	7.29	6.98	7.03	6.98	6.97	7.23	6.78	8.11
pH, Minimum	6.63	6.71	7.23	6.51	6.30	6.77	6.85	6.84	6.71	6.63	6.97	6.65	6.30
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum						1.21	9.88		3.69	4.36			9.88
Ammonia, Violations (>2)						0	2		1	1			4
Nitrate, Maximum						1.90	10.80		0.15	6.30			10.80
Nitrate, Violations (>10)						0	1		0	0			1
As, Maximum (mcg/L)	14.00	34.00	10.00	3.00	2.00	<1.00	3.00	1.00	2.00	1.00	2.00	5.00	34.00
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	17.00	52.00	131.00	193.00	3.00	105.00	119.00	174.00	116.00	110.00	126.00	108.00	193.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	76.00	83.00	109.00	185.00	11.00	142.00	131.00	126.00	174.00	183.00	212.00	176.00	212.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	32.00	90.00	141.00	139.00	5.00	170.00	162.00	94.00	151.00	179.00	213.00	72.00	213.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	121.00	266.00	320.00	481.00	18.00	331.00	301.00	818.00	366.00	344.00	514.00	360.00	818.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	1	0	1
Bioassay, Pass	1			1			1			1			4
Bioassay, Fail													0

Table 7: Continued (All values in mg/L, unless otherwise specified)

East Pit Dewatering East	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	To Date
Samples	6	4	4	5	4	4	5	4	5	4	4	4	53
TSS, Maximum	16.00	3.00	3.00	12.00	3.00	55.00	49.00	5.00	8.00	6.00	6.00	8.00	55.00
TSS, Violations (>30)	0	0	0	0	0	2	2	0	0	0	0	0	4
TDS, Maximum	74.00		82.00	100.00	71.00	85.00	108.00	89.00	84.00	153.00	72.00		153.00
TDS, Violations (>1000)	0		0	0	0	0	0	0	0	0	0		0
Fe, Maximum	0.08					1.09	0.30		0.53	0.18			1.09
Fe, Violations (> 10)	0					0	0		0	0			0
pH, Maximum	7.48	7.41	6.71	6.72	6.70	7.32	7.54	7.42	7.36	7.50	7.20	7.26	7.54
pH, Minimum	6.23	6.68	6.52	6.43	6.10	7.13	7.06	7.13	7.13	7.18	6.92	6.98	6.10
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia, Maximum	12.10		1.25	1.37	0.48	0.61	0.63	2.00	3.01	13.60	2.76		13.60
Ammonia, Violations (>2)	1		0	0	0	0	0	0	2	3	1		7
Nitrate, Maximum	8.90		2.30	3.40	2.30	2.10	1.80	3.20	4.70	8.80	5.10		8.90
Nitrate, Violations (>10)	0		0	0	0	0	0	0	0	0	0		0
As, Maximum (mcg/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0
As, Violations (> 0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cu, Maximum (mcg/L)	7.00	2.00	2.00	1.00	2.00	<1.00	1.00	2.00	5.00	<1.00	<1.00	1.00	7.00
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pb, Maximum (mcg/L)	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	3.00	19.00	<2.00	<2.00	<2.00	<2.00	19.00
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni, Maximum (mcg/L)	1.00	<1.00	1.00	1.00	1.00	1.00	6.00	1.00	<1.00	3.00	1.00	1.00	6.00
Ni, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn, Maximum (mcg/L)	14.00	37.00	24.00	93.00	39.00	31.00	24.00	10.00	74.00	13.00	20.00	107.00	107.00
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassay, Pass	1	2	1	1	1	1	1	1	1	1	1	1	13
Bioassay, Fail	1												1

Table 7: Continued (All values in mg/L, unless otherwise specified)

Shops East	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	To Date
Samples										3	3		6
TSS, Maximum										101.00	8.00		101.00
TSS, Violations (>30)										1	0		1
TDS, Maximum										54.00			54.00
TDS, Violations (>1000)										0			0
Fe, Maximum										2.58			2.58
Fe, Violations (> 10)										0			0
pH, Maximum										7.35	7.17		7.35
pH, Minimum										6.78	6.35		6.35
pH, Violations (<5.5, >9.0)										0	0		0
Ammonia, Maximum										<0.01			0
Ammonia, Violations (>2)										0			0
Nitrate, Maximum										0.20			0.20
Nitrate, Violations (>10)										0			0
As, Maximum (mcg/L)										<1.00	<1.00		0
As, Violations (> 0.5)										0	0		0
Cu, Maximum (mcg/L)										14.00	60.00		60.00
Cu, Violations (> 0.3)										0	0		0
Pb, Maximum (mcg/L)										<2.00	<2.00		0
Pb, Violations (>0.2)										0	0		0
Ni, Maximum (mcg/L)										2.00	<2.00		2.00
Ni, Violations (>0.5)										0	0		0
Zn, Maximum (mcg/L)										190.00	1.00		190.00
Zn, Violations (>0.5)										0	0		0
Bioassay, Pass										1	1		2
Bioassay, Fail													0

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 2008, a total of 157 samples were collected from the discharge area. Of the samples collected, the exceedences included 4 in oil and grease, 1 in sulfide, 18 in ammonia, 12 in TSS and 1 in pH at the outfall. No exceedences were noted in phenol.

Table 8: North Atlantic Refining Limited 2008 Effluent Discharge Criteria Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year to Date
pH													
Average (pH units)	7.31	7.41	7.20	7.46	7.70	7.87	7.77	7.75	7.79	7.70	7.60	7.52	7.59
Maximum (pH units)	7.80	7.70	8.00	8.00	8.80	8.20	8.30	8.60	8.20	7.90	7.80	8.20	8.80
Minimum (pH units)	6.80	7.20	6.60	7.20	6.80	7.70	7.40	7.60	7.60	7.50	7.30	7.20	6.60
Prov. Violations (< 5.5, > 9.0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Oil & Grease													
Average (mg/l)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Maximum (mg/l)	3.50	7.50	11.70	6.40	1.80	2.10	14.60	2.50	4.30	4.00	10.90	23.70	23.70
Prov. Violations (> 15 mg/l)	0	0	0	0	0	0	0	2	0	0	0	2	4
Phenol													
Average (mg/l)	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02
Maximum (mg/l)	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.07	0.04	0.03	0.03	0.06	0.07
Prov. Violations (> .10 mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulphide													
Average (mg/l)	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.01	0.03	0.03
Maximum (mg/l)	0.03	0.03	0.55	0.10	0.03	0.03	0.07	0.19	0.10	0.07	0.06	0.50	0.55
Prov. Violations (> .50 mg/l)	0	0	1	0	0	0	0	0	0	0	0	0	1
Ammonia Nitrogen													
Average (mg/l)	0.40	0.20	0.20	0.20	0.10	0.20	0.10	0.20	0.50	0.30	0.20	0.40	0.25
Maximum (mg/l)	1.10	1.60	3.60	1.20	2.30	0.60	1.20	1.30	5.00	6.20	10.90	4.70	10.90
Prov. Violations (> 2 mg/l)	0	0	1	0	1	0	0	0	6	4	1	5	18
TSS													
Average (mg/l)	6.00	5.00	8.00	6.00	6.00	10.00	4.00	10.00	7.00	9.00	10.00	11.00	7.67
Maximum (mg/l)	24.00	21.00	204.00	35.00	16.00	101.00	34.00	33.00	22.00	34.00	40.00	45.00	204.00
Prov. Violations (> 30 mg/l)	0	0	2	1	0	1	1	1	0	1	1	4	12

4) Pulp and Paper

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

Abitibi-Consolidated Company of Canada has one discharge point at the North Sewer. The effluent monitoring program for discharge criteria compliance consists of 2 parameters, TSS and BOD and ALT. In 2008, there were 366 TSS samples taken and 159 BOD samples taken. All the parameters were of acceptable quality and all ALTs passed.

Table 9: Abitibi Bowater Grand Falls 2008 Effluent Discharge Criteria Summary

Date	Average	TSS Concentration	BOD Concentration	ALT	ALT
	Production	North Sewer	North Sewer	North Sewer	North Sewer
	Tonne/Day	mg/L	mg/L	48 Hr LC50 (DM)	96 Hr LC50 (RT)
08-Jan	522.0	18.0	3.4	Pass	Pass
08-Feb	518.3	9.0	1.9	Pass	Pass
08-Mar	520.9	9.0	1.8	Pass	Pass
08-Apr	604.5	10.0	4.7	Pass	Pass
08-May	515.4	6.0	5.0	Pass	Pass
08-Jun	544.1	6.0	1.4	Pass	Pass
08-Jul	548.2	3.0	2.3	Pass	Pass
08-Aug	488.6	4.0	1.2	Pass	Pass
08-Sep	505.2	6.0	1.0	Pass	Pass
08-Oct	549.5	8.0	1.8	Pass	Pass
08-Nov	574.6	9.0	1.6	Pass	Pass
08-Dec	365.9	10.0	1.5	Pass	Pass

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 criteria compliance consists of 2 parameters, TSS and BOD and ALT. In 2008, there were 366 TSS samples taken and 157 BOD samples taken. All parameters were of acceptable quality and all ALTs passed.

Table 10: Corner Brook Pulp and Paper 2008 Effluent Discharge Criteria Summary

		TSS Concentration		BOD Concentration		Toxicity			
	Avg. Prod.	East Sewer	Effluent Treatment	East Sewer	Effluent Treatment	East Sewer		Effluent Treatment	
Month	t/day	mg/L	mg/L	mg/L	mg/L	48hr	96hr	48hr	96hr
08-Jan	853.6	10.5	27.4	5.1	7.6	Pass	Pass	Pass	Pass
08-Feb	926.6	15.0	17.7	4.8	6.0	Pass	Pass	Pass	Pass
08-Mar	900.9	4.1	37.2	0.4	10.3	Pass	Pass	Pass	Pass
08-Apr	844.5	5.2	30.0	0.3	10.3	Pass	Pass	Pass	Pass
08-May	920.0	5.8	25.3	0.7	4.4	Pass	Pass	Pass	Pass
08-Jun	799.3	10.3	16.0	3.2	5.1	Pass	Pass	Pass	Pass
08-Jul	847.0	8.8	20.7	3.0	7.1	Pass	Pass	Pass	Pass
08-Aug	885.8	71.7	26.3	0.7	13.5	Pass	Pass	Pass	Pass
08-Sep	898.9	4.2	24.6	1.0	13.0	Pass	Pass	Pass	Pass
08-Oct	760.0	6.1	39.9	2.2	7.9	Pass	Pass	Pass	Pass
08-Nov	811.2	5.4	13.6	1.5	4.0	Pass	Pass	Pass	Pass
08-Dec	769.0	6.7	26.3	1.7	4.6	Pass	Pass	Pass	Pass

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 2008, the continuous basin did not have any discharge during the months of July, August and September. During the remainder of the year, there were 43 samples taken in the continuous basin and there were no violations on any of the parameters listed in the HTGS effluent discharge criteria. The periodic basin had a total of 45 samples taken during the year. There were no exceedences of any parameters listed in the effluent discharge criteria for the periodic basin.

Table 11: Holyrood Thermal Generating Station 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

CONTINUOUS BASIN	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
# of Samples	5	6	4	5	4	6				3	5	5	43
pH Maximum (pH units)	7.20	7.70	6.90	6.70	6.80	6.70				7.20	7.10	7.00	7.70
pH Minimum (pH units)	6.80	6.60	6.60	6.40	6.50	6.70				6.60	6.80	6.40	6.40
pH Violations	0	0	0	0	0	0				0	0	0	0
Fe Maximum	0.08	0.08	0.07	0.46	0.10	0.42				0.31	0.15	0.22	0.46
Fe Violations	0	0	0	0	0	0				0	0	0	0
Ni Maximum	0.01	0.01	0.01	0.03	0.01	0.03				0.03	0.20	0.01	0.20
Ni Violations	0	0	0	0	0	0				0	0	0	0
V Maximum	0.04	0.02	0.03	0.03	0.04	0.07				0.05	0.07	0.05	0.07
V Violations	0	0	0	0	0	0				0	0	0	0
TSS Maximum	1.10	0.50	0.50	0.50	0.80	0.50				0.20	1.10	2.60	2.60
TSS Violations	0	0	0	0	0	0				0	0	0	0
Bioassays Passed	1	1	2	0	0	1				1	2	0	8
Bioassays Failed	0	0	0	0	0	0				0	0	0	0

Table 11: Continued (All values in mg/L, unless otherwise specified)

PERIODIC BASIN	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
# of Samples	4	5	4	5	4	7	3	3	2	2	2	4	45
pH Maximum (pH units)	8.60	8.70	8.70	8.90	8.10	8.20	8.10	8.40	8.40	8.40	7.90	8.40	8.90
pH Minimum (pH units)	8.40	8.50	8.40	8.80	7.90	8.00	7.80	8.40	8.40	8.00	7.90	7.90	7.80
pH Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
Fe Maximum	<0.50	<0.50	<0.50	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50
Fe Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
Ni Maximum	<0.02	<0.10	0.22	0.09	0.09	0.04	0.12	0.09	0.10	0.16	0.15	0.08	0.22
Ni Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
V Maximum	0.05	0.03	<0.02	0.07	<0.02	0.39	0.21	0.20	0.14	0.12	0.09	0.14	0.39
V Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
TSS Maximum	3.90	0.90	1.30	3.10	5.30	4.10	6.00	3.20	3.10	2.50	3.90	3.50	6.00
TSS Violations	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioassays Passed	2	2	3	4	4	4	2	3	2	1	2	1	30
Bioassays Failed	0	0	0	0	0	0	0	0	0	0	0	0	0

6) Other

a) Vale Inco Newfoundland and Labrador Ltd. (Argentia Hydrometallurgical Demonstration Plant)

Vale Inco, Argentia Hydrometallurgical Site has one discharge point at the polishing pond. The effluent monitoring program for discharge criteria compliance consists of 15 parameters and ALT. In 2008, there was no discharge during the months of September, October and November. For the remainder of the year, there were 16 samples taken. Of the samples collected, the exceedences included 15 in TDS. There were 16 ALT analysis conducted and all passed.

Table 12: Vale Inco (Hydromet) 2008 Effluent Discharge Criteria Summary
All values in mg/L, unless otherwise specified

Polishin Pond Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
Samples	1	3	2	2	2	2	1	1				2	16
TPH, Maximum	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.30				<0.10	0.30
TPH, Violations	0	0	0	0	0	0	0	0				0	0
TSS, Maximum	1.00	3.00	6.00	1.00	2.00	2.00	9.00	7.00				2.00	9.00
TSS, Violations (>30)	0	0	0	0	0	0	0	0				0	0
TDS, Maximum	5440.00	5160.00	4400.00	4400.00	4690.00	6060.00	5620.00	5290.00				2950.00	6060.00
TDS, Violations (>1000)	1	3	2	1	2	2	1	1				2	15
Fe, Maximum	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50	0
Fe, Violations (> 10)	0	0	0	0	0	0	0	0				0	0
pH, Maximum	6.78	6.73	6.88	6.52	7.20	7.66	8.03	7.38				7.46	8.03
pH, Minimum		6.19	6.64		6.98	7.45						7.40	6.19
pH, Violations (<5.5, >9.0)	0	0	0	0	0	0	0	0				0	0
Ammonia, Maximum	0.10	0.38	0.26	0.26	0.16	0.05	<0.05	0.05				<0.05	0.38
Ammonia, Violations (>2)	0	0	0	0	0	0	0	0				0	0
Nitrate, Maximum	0.61	0.75	0.00	2.64	0.66	0.72	<0.05	0.85				0.29	2.64
Nitrate, Violations (>10)	0	0	0	0	0	0	0	0				0	0

Table 12: Continued (All values in mg/L, unless otherwise specified)

Polishin Pond Discharge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year To Date
As, Maximum	<0.02	<0.02				<0.02	<0.02	<0.02				<0.02	0
As, Violations (> 0.5)	0	0				0	0	0				0	0
Cd, Maximum (mcg/L)	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00				<3.00	0
Cd, Violations	0	0	0	0	0	0	0	0				0	0
Cu, Maximum	<0.02	<0.02	0.02	<0.02	0.06	<0.02	<0.02	<0.02				<0.02	0.06
Cu, Violations (> 0.3)	0	0	0	0	0	0	0	0				0	0
Pb, Maximum (mcg/L)	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00				<5.00	0
Pb, Violations (>0.2)	0	0	0	0	0	0	0	0				0	0
Hg, Maximum (mcg/L)			<0.01				<0.01					<0.01	0
Hg, Violations			0				0					0	0
Ni, Maximum	0.13	0.16	0.09	0.09	0.21	0.08	0.11	0.24				0.18	0.24
Ni, Violations (>0.5)	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
Zn, Violations (>0.5)	0	0	0	0	0	0	0	0				0	0
Bioassay, Pass	1	3	2	2	2	2	1	1				2	16
Bioassay, Fail													

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 as exactly the same. Differences within the industrial facilities and the receiving environment make this a dynamic field that has to be consistently 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
angelaburridge@gov.nl.ca

Appendix A
Environmental Control Water and Sewer Regulations

NEWFOUNDLAND AND LABRADOR
REGULATION 65/03

Environmental Control Water and Sewage Regulations, 2003
under the
Water Resources Act
(O.C. 2003-231)

Amended by:

23/09

NEWFOUNDLAND AND LABRADOR
REGULATION 65/03

Environmental Control Water and Sewage Regulations, 2003
under the
Water Resources Act
(O.C. 2003-231)

(Filed May 23, 2003)

Under the authority of section 64 of the *Water Resources Act* , the Lieutenant-Governor in Council makes the following regulations.

Dated at St. John's , May 21, 2003 .

Deborah E. Fry
Clerk of the Executive Council

REGULATIONS

Analysis

Short title

1. These regulations may be cited as the *Environmental Control Water and Sewage Regulations, 2003* .

65/03 s1

Back to Top

Definitions

2. In these regulations

(a) "Act" means the *Water Resources Act* ;

(b) "composite sample" means a quantity of undiluted effluent collected continually at an equal rate or at a rate proportionate to flow over a designated sampling period;

(c) "grab sample" means a quantity of undiluted effluent collected at any given time; and

(d) "industry" means

(i) the Metal Mining Industry,

(ii) the Pulp and Paper Industry, and

(iii) the Petroleum Refining Industry.

65/03 s2; 23/09 s1

Back to Top

Sewage discharge compliance

3. A person discharging sewage and other materials into a body of water, public sewer or sewer leading to a public sewer shall comply with the standards, conditions and provisions prescribed in these regulations for the constituents, contents or description of the sewage or other discharged materials.

65/03 s3

Back to Top

Discharge of materials

4. (1) A person shall not discharge sewage or other effluent into a public sewer or a sewer leading to a public sewer containing materials which would obstruct or impede the flow of sewage within the public sewer or impair or interfere with the public sewer or sewage works of that public sewer.

(2) The materials referred to in subsection (1) include oil or by-products of oil, flammable, explosive, toxic, poisonous or corrosive liquids, solids or gases, fats, congealing materials and other substances in quantity which interfere with the free flow within the public sewer.

65/03 s4

Back to Top

Specified discharge prohibition

5. A person shall not discharge into a public sewer or sewer leading to a public sewer, sewage or effluent

(a) containing a constituent specified in Column 1 of Schedule B having a content in milligrams per litre, parts per million, in excess of the maximum specified in Column 2 of that Schedule;

(b) having a temperature in excess of 65° Celsius; or

(c) having a pH value less than 5.5 or greater than 9.0.

65/03 s5

Back to Top

Specified discharge prohibition

6. A person shall not discharge into a body of water sewage or effluent

(a) containing a constituent specified in Column 1 of Schedule A having a content in milligrams per litre in excess of the maximum specified in Column 2 of that Schedule;

(b) having a temperature in excess of 32° Celsius;

(c) having a pH value less than 5.5 or greater than 9.0; or

(d) a radio-active substance having a gross beta activity before discharge of more than 37 Bq per litre with the exception of

(i) radium 226 which shall not exceed 0.37 Bq per litre, and

(ii) strontium 90 which shall not exceed 0.37 Bq per litre.

65/03 s6; 23/09 s2

Back to Top

Discharge not construed by regulations

7. Nothing in these regulations shall be construed to permit the discharge of a pollutant into a body of water.

65/03 s7

Back to Top

Analysis procedures

8. Notwithstanding sections 5, 6, 7 and 10.1, all analytical work in relation to effluent samples and receiving water samples is to be carried out using analytical procedures acceptable to the Assistant Deputy Minister of Environment of the Department of Environment of the Government of Newfoundland and Labrador .

65/03 s8; 23/09 s3

Back to Top

Sampling

9. (1) A person taking effluent samples or receiving water samples shall take them as composite samples or as grab samples.

(2) In the case of composite sampling, all levels are required to be within the appropriate values as established in sections 5, 6 and 10.1 and Schedules A to E as appropriate.

(3) In the case of grab sampling, 90% of all levels taken in one month shall be within the appropriate values as established in sections 5, 6 and 10.1 and Schedules A to E as appropriate.

65/03 s9; 23/09 s4

Back to Top

Monitoring

10. The minister may, for specific purposes and time periods as he or she may determine, require that a water user or discharger of sewage monitor its effluent for the constituents in sections 5 and 6 and Schedules A to E as appropriate and report the effluent quality.

23/09 s5

Back to Top

Discharge standard varied by industry

10.1 (1) Notwithstanding paragraphs 5(a) and 6(a),

(a) a person primarily in the Metal Mining Industry shall not discharge sewage or effluent which does not comply with standards prescribed in Schedule C;

(b) a person primarily in the Pulp and Paper Industry shall not discharge sewage or effluent which does not comply with standards prescribed in Schedule D; and

(c) a person primarily in the Petroleum Refining Industry shall not discharge sewage or effluent which does not comply with standards prescribed in Schedule E.

(2) For the purpose of subsection (1), whether a person falls primarily within a particular industry shall be determined by the minister.

23/09 s6

Back to Top

Repeal

11. The *Environmental Control Water and Sewage Regulations* , Consolidated Newfoundland and Labrador Regulation 1078/96, are repealed.

65/03 s11

Back to Top

Schedule A

Column 1 *Constituents*	*Column 2* *Maximum Content (in milligrams per litre unless noted)*
B.O.D.	20
Coliform - faecal	1000/100 ml
Coliform - total	5000/100 ml
Solids (dissolved)	1000 (see note)
Solids (suspended)	30 (see note)
Oils (Ether extract)	15
Floating debris, oils and grease	None to be visible
Arsenic	0.5
Barium	5.0
Boron	5.0
Cadmium	0.05
Chlorine	1.0
Chromium (hexavalent)	0.05
Chromium (trivalent)	1.0
Copper	0.3

Cyanide	0.025
Iron (total)	10
Lead	0.2
Mercury	.005
Nickel	0.5
Nitrates	10
Nitrogen (ammoniacal)	2.0
Phenol	0.1
Phosphates (total as $P_2 O_5$)	1.0
Phosphorus (elemental)	0.0005
Selenium	0.01
Sulfides	0.5
Silver	0.05
Zinc	0.5 Back to Top

156/80 Sch A; 65/03 Sch A

Schedule B

Column 1 *Constituents*	*Column 2* *Maximum Content (in milligrams per litre)*
5-day B.O.D.	300
Chlorine Demand	30
Fats, Oils and Grease (Ether extract)	100
Suspended Solids	350
Boron	5.0
Cadmium	0.05
Chromium (hexavalent)	0.05
Chromium (trivalent)	1.0
Copper	0.3
Cyanide	2.0
Iron	15.0

Lead	0.2
Mercury	0.005
Nickel	0.5
Phenols	0.5
Phosphates (total as $P_2 O_5$)	10.0
Phosphorus (elemental)	0.0005
Zinc	0.5

NOTES:

(1) If water is being abstracted from a water course, used, treated and subsequently returned to the same water course, these solids data mean that the effluent should not contain more than 1000 or 30 milligrams per litre more than was in the water originally abstracted.

(2) 1 bequerel (bq) - 27.03 pico-curies. Bequerel is the SI unit for the measure of radioactivity.

(3) All metal results should be the total of the particulate and the dissolved fractions of that metal and the maximum content is the amount in excess of the background level as determined upstream of the discharge.

65/03 Sch B

Back to Top

Schedule C

A person primarily in the Metal Mining Industry shall comply with sections 3 and 19.1 and 20 and Schedule 4 of the *Metal Mining Effluent Regulations* (Canada) SOR/2002-222, including any changes or amendments to those sections of and that schedule to those regulations over time.

23/09 s7

Back to Top

Schedule D

A person primarily in the Pulp and Paper Industry shall comply with sections 3 and 14 of the *Pulp and Paper Effluent Regulations* , (Canada) SOR/92-269, including any changes or amendments to those sections of those regulations over time.

23/09 s7

Back to Top

Schedule E

A person primarily in the Petroleum Refinery Industry shall comply with sections 4, 7, 8 and 9 and Schedules 1 and 2 of the *Petroleum Refinery Liquid Effluent Regulations* , (Canada) CRC -c.828, including any changes or amendments to those sections and those schedules of those regulations over time.

23/09 s7

Appendix B
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 Solid