

**CANADA-NEWFOUNDLAND
WATER QUALITY MONITORING
AGREEMENT**

**ANNUAL WORK SCHEDULE
1999-2000**



**Water Resources Management Division
Department of Environment & Labour
St. John's, Newfoundland**

**Ecosystem Science Division
Environmental Conservation Branch
Environment Canada
Moncton, New Brunswick**

**Canada-Newfoundland
Water Quality Monitoring Agreement
Annual Work Schedule 1999-2000**

The attached Schedules A, B, C, D and E outline work activities to be carried out during the current fiscal year under the Canada-Newfoundland Water Quality Monitoring Agreement. All four Schedules have been reviewed and approved by the Administrators of the Agreement.



Tom Pollock, Ph.D.
Administrator, on behalf of
Environment Canada



Martin Goebel, P.Eng.
Administrator, on behalf of
Newfoundland Environment

SCHEDULE A
AGREEMENT COMMITTEES

SCHEDULE A

The following officials are named to administer this Agreement according to Article x:

Dr. Tom Pollock	Environment Canada Atlantic Region, on behalf of Canada
Mr. Martin Goebel	Newfoundland Environment, on behalf of Newfoundland.

The Administrator will be assisted by a Coordinating Committee consisting of the following:

Dr. Tom Pollock	Environment Canada Atlantic Region
Mr. Haseen Khan	Water Resources Management Division, Newfoundland Environment

SCHEDULE B

**STATION LOCATION, DESIGNATION
AND SAMPLING FREQUENCY**

Schedule B

Index Station Location Designation and Sampling Frequency 1999-2000

Station #	Description	Latitude	Longitude	SAMPLED BY # PER YEAR	Remarks
<u>ISLAND</u>					
NF02YA0001	Ste. Genevieve	51 08 17	56 47 30	P 4	
NF02YC0001	Torrent River	50 36 44	57 10 05	F 6	
NF02YE0005	Western Brook	49 49 49	57 51 23	P 12	
NF02YG0001	Main River	49 46 10	56 54 15	P 6	
NF02YH0018	Lomond River	49 24 07	57 43 49	P 12	
NF02YJ0004	Pinchgut Brook	48 47 51	58 03 43	P 6	
NF02YJ0006	Harrys River	48 34 32	58 21 48	F 12	
NF02YL0011	Humber River	49 20 54	57 14 07	P 6	
NF02YL0012	Humber River	48 59 01	57 45 40	P 6	
NF02YL0013	Corner Brook	48 56 40	57 56 12	P 12	
NF02YL0029	Wild Cove Brook	48 58 28	57 53 02	P 12	
NF02YM0004	South West Brook	49 55 15	56 13 45	P 4	
NF02YN0001	Lloyds River	48 18 16	57 43 07	P 4	
NF02YN0036	Star Brook	48 33 43	57 12 22	P 4	
NF02YN0038	Exploits River	49 01 15	55 27 15	P 6	
NF02YN0039	Corduroy Brook	48 56 21	55 39 47	P 12	
NF02YO0001	Exploits River	48 55 27	55 39 21	P 6	
NF02YO0020	Exploits River	48 56 55	55 54 56	P 6	
NF02YO0021	Exploits River	49 00 40	55 28 55	P 6	
NF02YO0107	Exploits River	48 45 34	56 35 32	P 6	
NF02YO0128	Exploits River	48 56 12	55 37 05	P 6	
NF02YQ0006	NorthW. Gander R.	48 34 54	55 30 20	P 6	
NF02YQ0030	Gander River	48 59 41	54 52 04	P 6	
NF02YR0001	Pound Cove Brook	49 10 40	53 33 36	P 4	
NF02YR0021	Middle Brook	48 48 08	54 13 34	P 4	
NF02YS0001	Terra Nova River	48 30 27	54 12 43	P 6	
NF02YS0005	Southwest Brook	48 36 36	53 48 36	P 6	
NF02YS0011	Terra Nova River	48 38 27	54 02 11	P 6	
NF02YS0083	Northwest River	48 23 44	54 11 53	P 6	
NF02ZA0006	Grand Codroy R.	47 52 08	59 07 05	P 4	
NF02ZA0007	Crabbe's River	48 10 30	58 46 23	P 4	
NF02ZB0001	Isle Aux Morts R.	47 36 50	59 00 33	F 6	
NF02ZB0005	Cing Cerf Brook	47 42 40	58 08 47	P 4	HS
NF02ZC0001	Grandy Brook	47 51 25	57 44 00	F 6	HS
NF02ZC0011	White Bear River	47 48 29	57 16 40	F 4	HS
NF02ZD0003	Grey River	47 44 35	56 56 03	F 6	HS
NF02ZF0020	Bay du Nord River	47 44 45	55 26 23	F 6	HS
NF02ZG0016	Garnish River	47 13 00	55 19 48	F 6	
NF02ZG0024	Tides Brook	47 07 39	55 15 55	P 4	
NF02ZH0001	Pipers Hole R.	47 55 51	54 16 25	F 12	
NF02ZJ0024	Southern Bay River	48 22 24	53 40 19	P 4	
NF02ZK0001	Rocky River	47 13 38	53 34 09	F 12	
NF02ZK0005	Northeast River	47 16 23	53 50 25	P 12	

NF02ZL0029	Goulds Brook	47 30 18	53 17 28	P 4
NF02ZM0004	Waterford River	47 31 19	52 48 29	P 6
NF02ZM0009	Waterford River	47 31 46	52 44 34	P 6
NF02ZM0014	Virginia River	47 35 02	52 41 29	P 12
NF02ZM0015	Quidi Vidi Outlet	47 35 02	52 40 51	P 6
NF02ZM0016	Rennies River	47 34 40	52 42 03	P 12
NF02ZM0017	Raymond Brook	47 26 31	52 46 20	P 2
NF02ZM0098	Virginia River	47 35 56	52 45 17	P 6
NF02ZM0109	Mundy Pond	47 33 40	52 44 38	P 6
NF02ZM0144	Kelly's Brook	47 34 28	52 42 45	P 6
NF02ZM0175	Waterford River	47 31 34	52 45 48	P 6
NF02ZM0176	South Brook	47 31 41	52 44 48	P 6
NF02ZM0177	Rennies River	47 34 28	52 42 36	P 6
NF02ZM0178	Learys Brook	47 34 21	52 44 21	P 6
NF02ZM0179	Virginia River	47 35 47	52 42 06	P 6
NF02ZM0180	Virginia River	47 35 59	52 42 02	P 6
NF02ZM0181	Waterford River	47 32 53	52 43 09	P 12
NF02ZM0182	Waterford River	47 31 07	52 51 21	P 6
NF02ZM0183	Kelligrews River	47 29 45	53 01 03	P 4
NF02ZM0184	Learys Brook	47 34 16	52 47 29	P 6
NF02ZM0185	South Brook	47 29 37	52 51 02	P 6
NF02ZM0186	Nut Brook	47 26 24	52 58 22	P 2
NF02ZN0002	Northwest Brook	46 45 33	53 23 25	P 4
NF02ZN0004	Salmonier River	47 10 54	53 23 56	P 6

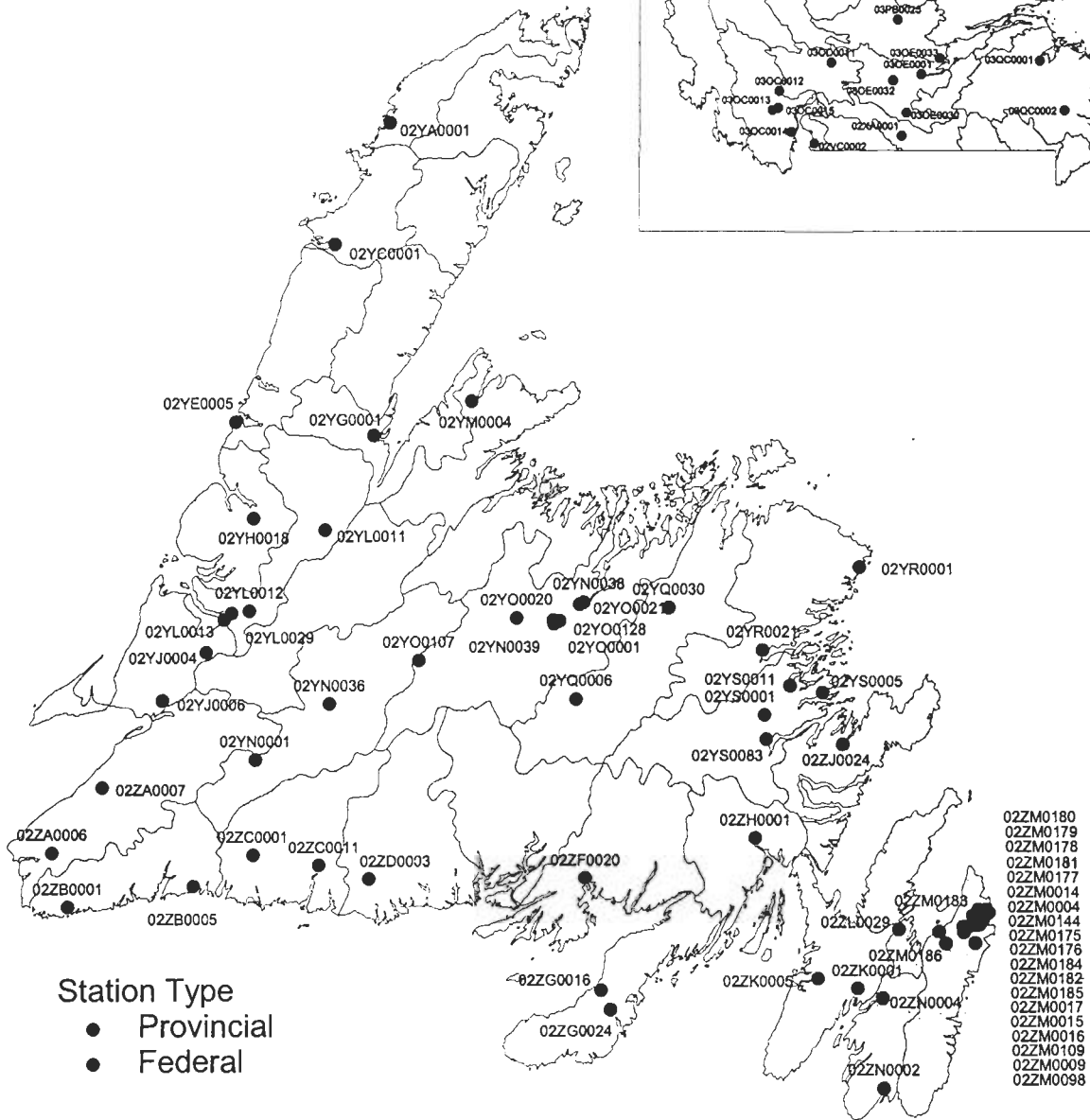
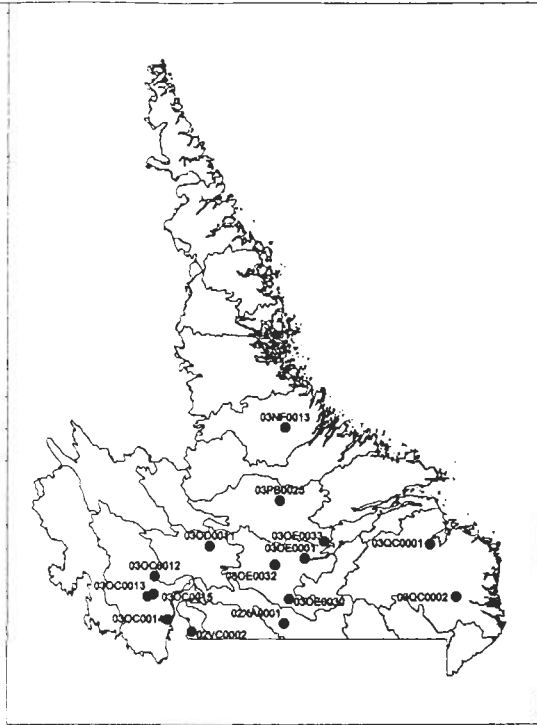
LABRADOR

NF02XA0001	Little Mecatina River	52 13 42	61 19 32	F 4	HS
NF02VC0002	Romaine River	52 05 46	63 42 22	F 4	HS
NF03NF0013	Ugjoktok River	55 13 60	61 17 57	F 4	HS
NF03OC0015	Atikonak Lake	52 41 16	64 41 22	F 4	HS
NF03OC0012	Atikonak River	52 58 03	64 39 40	F 4	HS
NF03OC0013	Kipimits River	52 39 12	64 50 45	F 4	HS
NF03OC0014	Atikonak River	52 17 14	64 19 40	F 4	HS
NF03OD0011	East Metchin River	53 26 07	63 14 03	F 4	HS
NF03OE0001	Churchill River	53 14 52	60 47 21	F 4	HS
NF03OE0033	Big Pond Brook	53 30 43	60 17 31	F 4	HS
NF03OE0032	Pinus River	53 08 52	61 33 31	F 4	HS
NF03OE0030	Minipi River	52 36 53	61 11 11	F 4	HS
NF03PB0025	Naskaupi River	54 07 54	61 25 45	F 4	HS
NF03QC0001	Eagle River	53 27 54	57 33 29	F 4	HS
NF03QC0002	Alexis River	52 38 57	56 52 17	F 4	HS

HS - Helicopter site

- Note:
1. A total of 80 stations will be sampled during 1999-2000.
 2. Monthly stations will be sampled in the first week of every month; bi-monthly samples in the first week of April, June, August, October, December, and February and quarterly samples in the first week of April, July, October, and January.
 3. Lake sampling program in Gros Morne National Park may also continue subject to the availability of funds from Environment Canada.

Water Quality Stations 1999-2000



SCHEDULE C

SAMPLING MEDIA AND ANALYTICAL PARAMETERS

Schedule C

Sampling Media and Analytical
Parameters 1999 - 2000

Station #	Description	Sampling Media	Analytical Group	Analyzed by:
ISLAND				
NF02YA0001	Ste. Genevieve	W	W1, W2, W3	F
NF02YC0001	Torrent River	W	W1, W2, W3	F
NF02YE0005	Western Brook	W + M	W1, W2, W3, W5	F
NF02YG0001	Main River	W	W1, W2, W3	F
NF02YH0018	Lomond River	W + M	W1, W2, W3, W5	F
NF02YJ0004	Pinchgut Brook	W	W1, W2, W3	F
NF02YJ0006	Harrys River	W	W1, W2, W3	F
NF02YL0011	Humber River	W + M	W1, W2, W3, W5	F
NF02YL0012	Humber River	W + M	W1, W2, W3, W5	F
NF02YL0013	Corner Brook	W + M	W1, W2, W3, W5	F
NF02YL0029	Wild Cove Brook	W + M	W1, W2, W3, W5	F
NF02YM0004	South West Brook	W	W1, W2, W3	F
NF02YN0001	Lloyds River	W	W1, W2, W3	F
NF02YN0036	Star Brook	W	W1, W2, W3	F
NF02YN0038	Exploits River	W + M	W1, W2, W3, W5	F
NF02YN0039	Cordroy Brook	W + M	W1, W2, W3, W5	F
NF02YO0001	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0020	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0021	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0107	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0128	Exploits River	W + M	W1, W2, W3, W5	F
NF02YQ0006	NorthW. Gander R.	W	W1, W2, W3	F
NF02YQ0030	Gander River	W + M	W1, W2, W3, W5	F
NF02YR0001	Pound Cove Brook	W	W1, W2, W3	F
NF02YR0021	Middle Brook	W	W1, W2, W3	F
NF02YS0001	Terra Nova R	W + M	W1, W2, W3, W5	F
NF02YS0005	Southwest Brook	W + M	W1, W2, W3, W5	F
NF02YS0011	Terra Nova River	W + M	W1, W2, W3, W5	F
NF02YS0083	Northwest River	W	W1, W2, W3	F
NF02ZA0006	Grand Codroy R.	W	W1, W2, W3	F
NF02ZA0007	Crabbe's River	W	W1, W2, W3	F
NF02ZB0001	Isle Aux Morts R.	W	W1, W2, W3	F
NF02ZB0005	Cing Cerf Brook	W	W1, W2, W3	F
NF02ZC0001	Grandy Brook	W	W1, W2, W3	F
NF02ZC0011	White Bear River	W	W1, W2, W3	F
NF02ZD0003	Grey River	W	W1, W2, W3	F
NF02ZF0020	Bay du Nord River	W	W1, W2, W3	F
NF02ZG0016	Garnish River	W	W1, W2, W3	F
NF02ZG0024	Tides Brook	W	W1, W2, W3	F
NF02ZH0001	Pipers Hole R.	W	W1, W2, W3	F
NF02ZJ0024	Southern Bay River	W	W1, W2, W3	F
NF02ZK0001	Rocky River	W	W1, W2, W3	F
NF02ZK0005	Northeast River	W	W1, W2, W3	F

NF02ZL0029	Goulds Brook	W + M	W1, W2, W3, W5	F
NF02ZM0004	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0009	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0014	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0015	Quidi Vidi Outlet	W + M	W1, W2, W3, W5	F
NF02ZM0016	Rennies River	W + M	W1, W2, W3, W5	F
NF02ZM0017	Raymond Brook	W + M	W1, W2, W3, W5	F
NF02ZM0098	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0109	Mundy Pond	W + M	W1, W2, W3, W5	F
NF02ZM0144	Kelly's Brook	W + M	W1, W2, W3, W5	F
NF02ZM0175	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0176	South Brook	W + M	W1, W2, W3, W5	F
NF02ZM0177	Rennies River	W + M	W1, W2, W3, W5	F
NF02ZM0178	Learys Brook	W + M	W1, W2, W3, W5	F
NF02ZM0179	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0180	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0181	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0182	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0183	Kelligrews River	W + M	W1, W2, W3, W5	F
NF02ZM0184	Learys Brook	W + M	W1, W2, W3, W5	F
NF02ZM0185	South Brook	W + M	W1, W2, W3, W5	F
NF02ZM0186	Nut Brook	W + M	W1, W2, W3, W5	F
NF02ZN0002	Northwest Brook	W	W1, W2, W3	F
NF02ZN0004	Salmonier River	W + M	W1, W2, W3, W5	F

LABRADOR

NF02XA0001	Little Mecatina River	W	W1, W2, W3	F
NF02VC0002	Romaine River	W	W1, W2, W3	F
NF03NF0013	Ugjoctok River	W	W1, W2, W3	F
NF03OC0015	Atikonak Lake	W	W1, W2, W3	F
NF03OC0012	Atikonak R Panchia L	W	W1, W2, W3	F
NF03OC0013	Kipimits R	W	W1, W2, W3	F
NF03OC0014	Atikonak R@ Atikonak L	W	W1, W2, W3	F
NF03OD0011	East Metchin River	W	W1, W2, W3	F
NF03OE0001	Churchill River	W	W1, W2, W3	F
NF03OE0033	Big Pond Brook	W	W1, W2, W3	F
NF03OE0032	Pinus River	W	W1, W2, W3	F
NF03OE0030	Minipi River	W	W1, W2, W3	F
NF03PB0025	Naskaupi River	W	W1, W2, W3	F
NF03QC0001	Eagle River	W	W1, W2, W3	F
NF03QC0002	Alexis River	W	W1, W2, W3	F

W	-	Water
S	-	Sediment
B	-	Biota
F	-	Federal lab
M	-	Microbiology

* Refer to Table C.1 for analytical group codes

Notes: 1. Microbiological (total and fecal coliform) analysis is carried out by the Provincial Public Health Lab.

2. All other analytical work is carried out by federal labs in Burlington and Moncton

3. A total of 500 (400 Burlington and 100 Moncton) water samples will be analyzed by federal labs in Burlington and Moncton.

4. Water quality parameters (temperature, pH, dissolved oxygen, and conductivity) are analyzed by Water Quality Officers in the provincial environment lab, as well as by Burlington and Moncton labs.

Table C.1

Analytical Parameters

Parameter Set	Analysis Type	Parameter Group
1) Water - Physical Parameters, Major Ions and Nutrients		
Temperature	Field	W1
pH	Field & Lab	W1
Specific Conductance	Field & Lab	W1
Dissolved Oxygen	Field	W1
Turbidity	Lab	W1
Colour	Lab	W1
Calcium (Diss.)	Lab	W1
Magnesium (Diss.)	Lab	W1
Potassium (Diss.)	Lab	W1
Sodium (Diss.)	Lab	W1
Alkalinity Total or Gran	Lab	W1
Chloride (Diss.) IC	Lab	W1
Sulphate (Diss.) IC	Lab	W1
Dissolved Organic Carbon	Lab	W1
Total Nitrogen	Lab	W1
Nitrate and Nitrite (Diss.)	Lab	W1
Total Phosphorus	Lab	W1
Silica Reactive	Lab	W1
2) Water - Total Extractable Metals		
Aluminum Barium	ICAP	W2
Iron Beryllium	ICAP	W2

Parameter Set		Analysis Type	Parameter Group
Copper	Chromium	ICAP	W2
Zinc	Manganese	ICAP	W2
Cadmium	Molybdenum	ICAP	W2
Lead	Lithium	ICAP	W2
Cobalt	Strontium	ICAP	W2
Nickel	Vanadium	ICAP	W2
Mercury		Lab	W2
3) Water - Total Dissolved Metals			
Aluminum		Lab	W3
Iron		Lab	W3
Copper		Lab	W3
Zinc		Lab	W3
Cadmium		Lab	W3
Lead		Lab	W3
Cobalt		Lab	W3
Nickel		Lab	W3
Mercury		Lab	W3
4) Water - Selected Organics			
OC/PCB		Lab	W4
5) Water - Bacterias			
Total coliform		Lab	W5
Fecal Coliform		Lab	W5
6) Sediments - Metals and Organics			
Lead		Lab	S1
Copper		Lab	S1
Zinc		Lab	S1

Parameter Set	Analysis Type	Parameter Group
Mercury	Lab	S1
Iron	Lab	S1
Aluminum	Lab	S1
Cadmium	Lab	S1
Chromium	Lab	S1
OC/PCB	Lab	S1
Organic Carbon	Lab	S1
Particle Size Analysis	Lab	S1
7) Fish - Metals, Organics and Physiology		
Lead	Lab	B1
Copper	Lab	B1
Zinc	Lab	B1
Mercury	Lab	B1
Cadmium	Lab	B1
OC/PCB	Lab	B1
Lipid Content	Lab	B1
Physiology	Lab	B1
8) Fish - Organics		
Scan	Lab	B2

SCHEDULE D
DATA MANAGEMENT AND
TECHNICAL REPORTS

**SCHEDULE D - Data Management and
Technical Reports**

Activity	Responsible Agency
1. Quality Assurance in the National Water Quality Laboratory and Moncton Laboratory	Environment Canada
1.1 Quality Control Procedures	
1.2 Guidelines for Good Laboratory Practices	
1.3 Guidelines for Instrument Performance	
2. Management Water Quality Data	Environment Canada
2.1 Data Recording, Documentation and Validation	
2.2 Data Screening and Verification	
2.3 Data Audits, Custody and Transfer	
2.4 Management of National Water Quality Database (ENVIRODAT)	
2.5 Downloading and Processing of Water Quality Data	Newfoundland Environment Water Resources Management Division
2.6 Management of Provincial Water Quality Database	Newfoundland Environment Water Resources Management Division
3. Technical Documents	Newfoundland Environment Water Resources Management Division
3.1 Agreement Annual Reports 1998-99 & 1999-00	
3.2 Fact Sheets on Some Urban Rivers	
3.3 Water Quality of St. John's Rivers	
3.4 Water Quality Trends in Wild Cove Brook	
3.5 State of Water Quality of Newfoundland	

Activity	Responsible Agency
3.6 Water Quality of Exploits River Basin	Newfoundland Environment Water Resources Management Division
3.7 Special Studies to Assess Impacts of Aquaculture Operations, Mining and Logging Activities on Water Quality	
3.8 Contaminants in Fish in Quidi Vidi-Waterford River Watersheds	

SCHEDULE E - SPECIAL STUDIES

- Special studies for water, biota and sediment survey will be planned for selected basins.

