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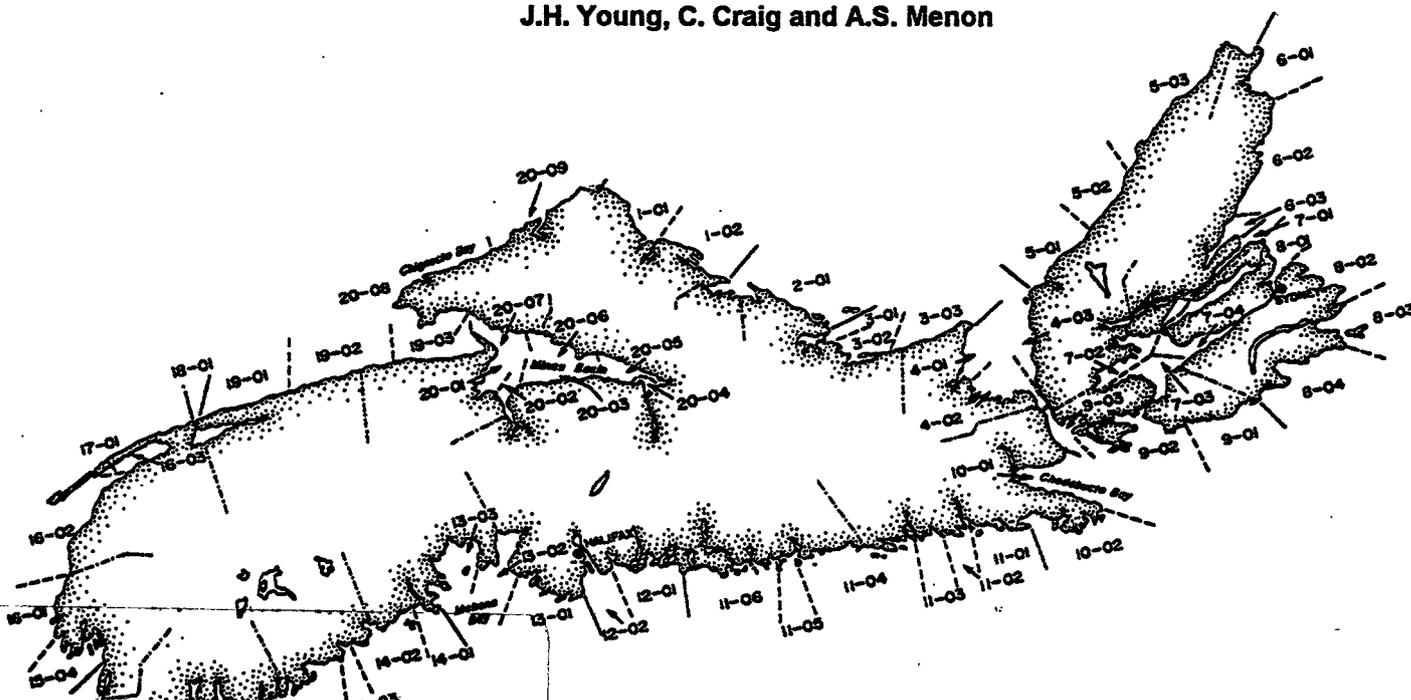
RE-EVALUATION REPORT

NOVA SCOTIA SHELLFISH GROWING AREA 7

(Cape Breton Island - Bras D'or Lakes)

by

J.H. Young, C. Craig and A.S. Menon



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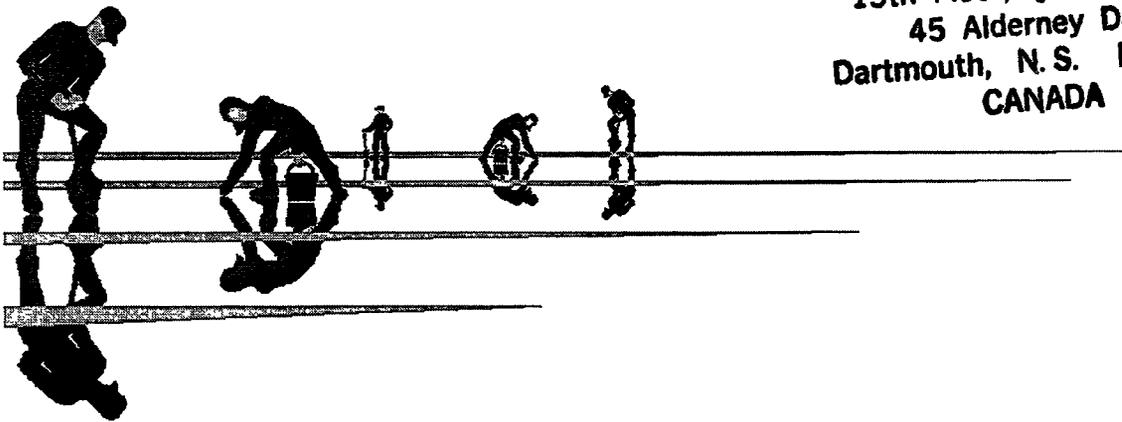
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FOREWORD

This report presents results of routine bacteriological water quality surveys of shellfish growing areas in the Maritimes as carried out by Environment Canada (Environmental Protection). The objective of these surveys is to determine if the water quality is acceptable for the harvesting of shellfish. From a public health standpoint, the principal purpose is to detect the occurrence of disease-causing organisms that may be accumulated by shellfish if domestic sewage or animal wastes reach their environment.

The public health safety of shellfish and shellfish harvesting waters in Canada is judged presently by bacteriological standards. The standards require that the "most probable number (MPN) of fecal coliforms in water not exceed a median or geometric mean of 14 per 100 ml and that no more than 10% of the samples exceed 43 fecal coliforms per 100 ml in areas approved for shellfish harvesting".

It should be emphasized that bacteriological examination of shellfish growing waters is used only as an adjunct to the sanitary survey to show the extent of fecal pollution affecting an area. Fecal contamination is often intermittent and may not be revealed by the bacteriological examination of a single water sample. The most a bacteriological report can prove is that, at the time of examination, bacteria indicating fecal pollution did or did not grow under laboratory conditions from a sample of water. Therefore, if a sanitary survey shows that the waters in a shellfish growing area are obviously subject to contamination from direct fecal wastes, radionuclides or harmful industrial wastes, the shellfish area should be closed irrespective of the results of bacteriological analyses.

ABSTRACT

The objective of this report is to re-evaluate the bacteriological water quality and classification of shellfish growing areas on the Bras D'Or Lakes in Cape Breton, Nova Scotia. Studies are carried out by Environment Canada, to ensure that the water quality of approved shellfish growing areas remains acceptable for the harvesting of molluscan shellfish for direct marketing.

RESUME

Une étude de la qualité bactériologique des eaux a été menée par Environnement Canada dans des aires de croissance de mollusques de la Nouvelle-Ecosse. Cette révision annuelle avait pour but de déterminer si la qualité de ces eaux coquillères est toujours acceptable aux fins de la cueillette de mollusques bivalves pour la mise en marché directe.

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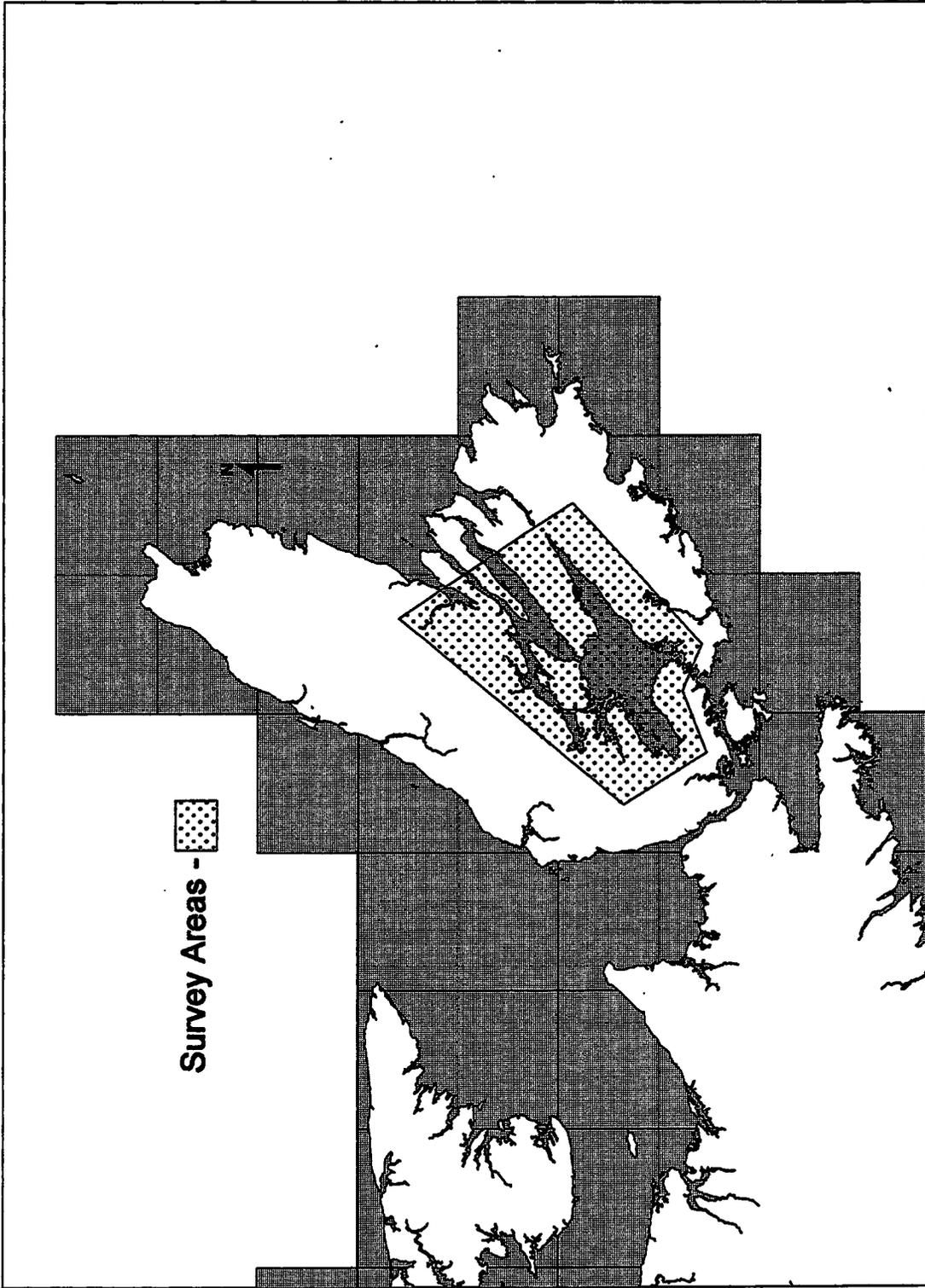


FIGURE 1 - LOCATION OF SURVEY AREA

METHODS AND MATERIALS

Bacteriological Sampling

All water samples for bacteriological analyses were collected from a boat in sterile wide-mouthed polyethylene bottles at a depth approximately 20cm below the water surface. In 1996 all water samples collected were held in an insulated cooler and transported to Fisheries & Oceans laboratory in Sydney. Bacteriological analyses were carried out within six hours of sample collection.

Bacteriological Procedures

Fecal coliform levels in water samples were determined by the multiple tube fermentation technique as described in the APHA Laboratory Procedures for the Examination of Seawater and Shellfish (APHA, 1985). The culture medium used was the A-1 medium, as described by Andrews and Presnell (1972). This medium and the method described below were accepted by the U.S. National Shellfish Sanitation Program (NSSP) as the method of choice for the enumeration of fecal coliforms in shellfish growing areas in 1978. The A-1 medium contained 5.0g lactose, 20.0g tryptone, 5.0g sodium chloride, 0.5g salicin, and 1mL triton X-100 in 1 litre of distilled and deionized water. The pH of the medium was adjusted to 6.9 ± 0.1 before autoclaving for 10 minutes at 121°C (Centigrade).

The 'modified A-1' technique involves the inoculation of a series of dilutions of the water sample into A-1 medium. Ten millilitre volumes of water samples were inoculated into five fermentation tubes containing 10mL of double strength A-1 medium, and sample volumes of 1mL and 0.1mL were inoculated into five tubes each of single strength medium. The tubes were incubated at $35 \pm 0.5^\circ \text{C}$ in an air incubator or water bath for 3 hours and transferred to a water bath at $44.5 \pm 0.2^\circ \text{C}$ and incubated for a further 21 ± 2 hours. All gassing tubes with growth were considered to be positive. The most probable number (MPN) of fecal coliforms for each water sample was computed using the MPN Table in Standard Methods (APHA, 1985).

Physical Parameters

Salinity measurements were made on representative water samples using an American Optical refractometer which has a resolution to the nearest 0.5 part per thousand. Air and water temperatures were recorded using a mercury field thermometer specified by the National Bureau of Standards (NBS). Rainfall data recorded at Port Hawkesbury, Baddeck and Sydney, Nova Scotia were obtained from the Atmospheric Environment Service.

DISCUSSION BY SUB-SECTOR

Sub-sector Name (Number):

Great Bras D'Or (Centre) (NS-7-010-003)

Date surveyed:	1990-96
No. of sampling runs:	16
Shellfish Classification:	Figure 1A
Sampling station locations:	Figure 1B
Fecal coliform results:	Tables 1A & 1B
Salinity data:	Table 1C
Water temperature data:	Table 1D

Area Description

Great Bras D'Or provides the Bras D'Or lakes with one of two access channels with the Atlantic Ocean. It is the only one capable of providing access to large gypsum vessels which navigate the lakes. The fact the area is important for navigation makes it less suitable for aquaculture. There is however, a large finfish culture operation near the Seal Island bridge. One shellfish lease has been issued in the area. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). There are anecdotal reports of recreational oyster harvesting. The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991a). The current classification (Figure 1A) includes two shellfish closures as follows:

Closed

That portion of Big Harbour, Great Bras d'Or, inside of a line drawn from grid reference 8240 1235 to grid reference 8245 1235. Refer to map Baddeck 11K/2.

The foreshore and the tidal waters within 120 m of grid reference 8749 1495 at Great Bras d'Or. Refer to map Baddeck 11K/2.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

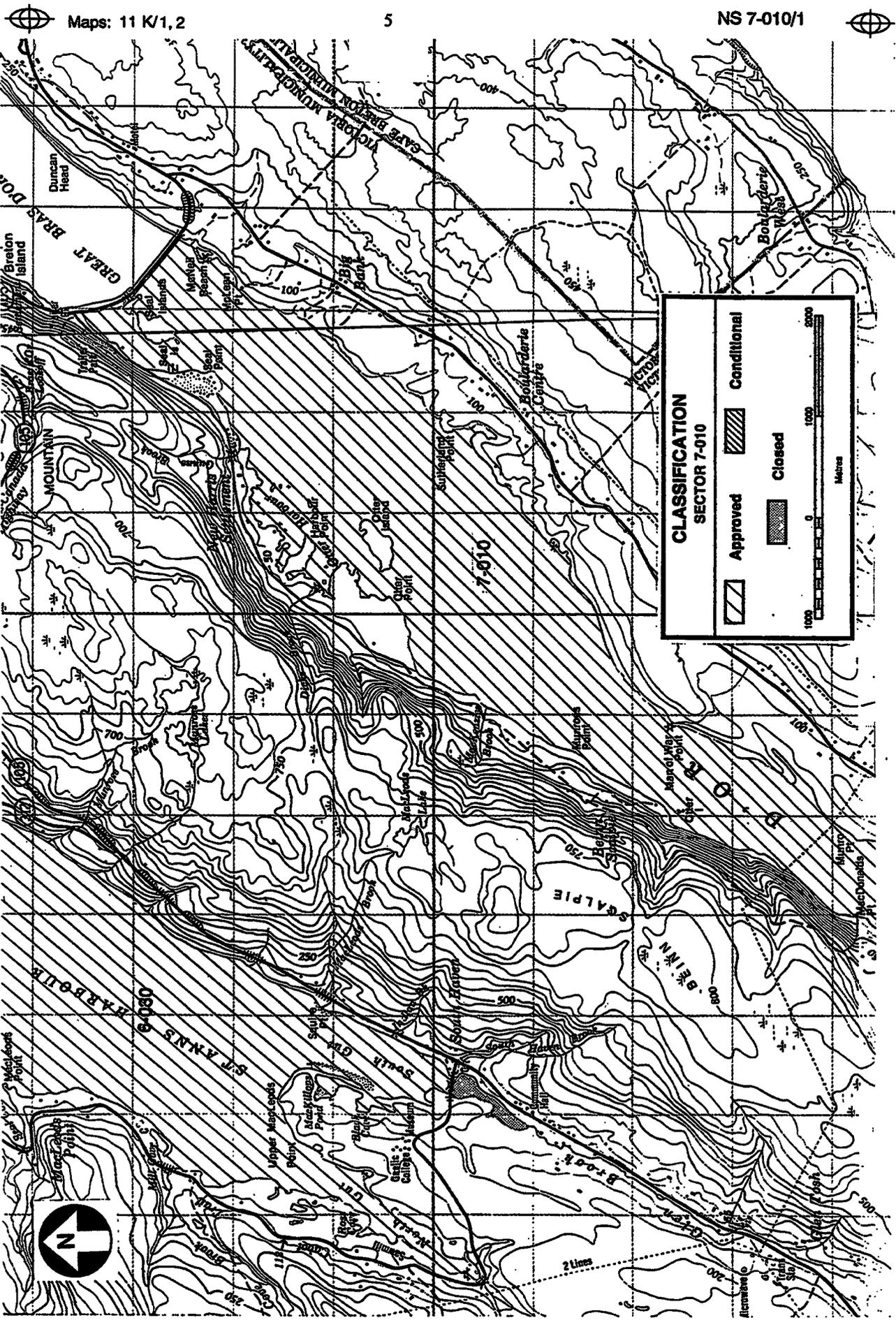


FIGURE 1A. PRESENT SHELLFISH CLASSIFICATION FOR GREAT BRAS D'OR (CENTRE)

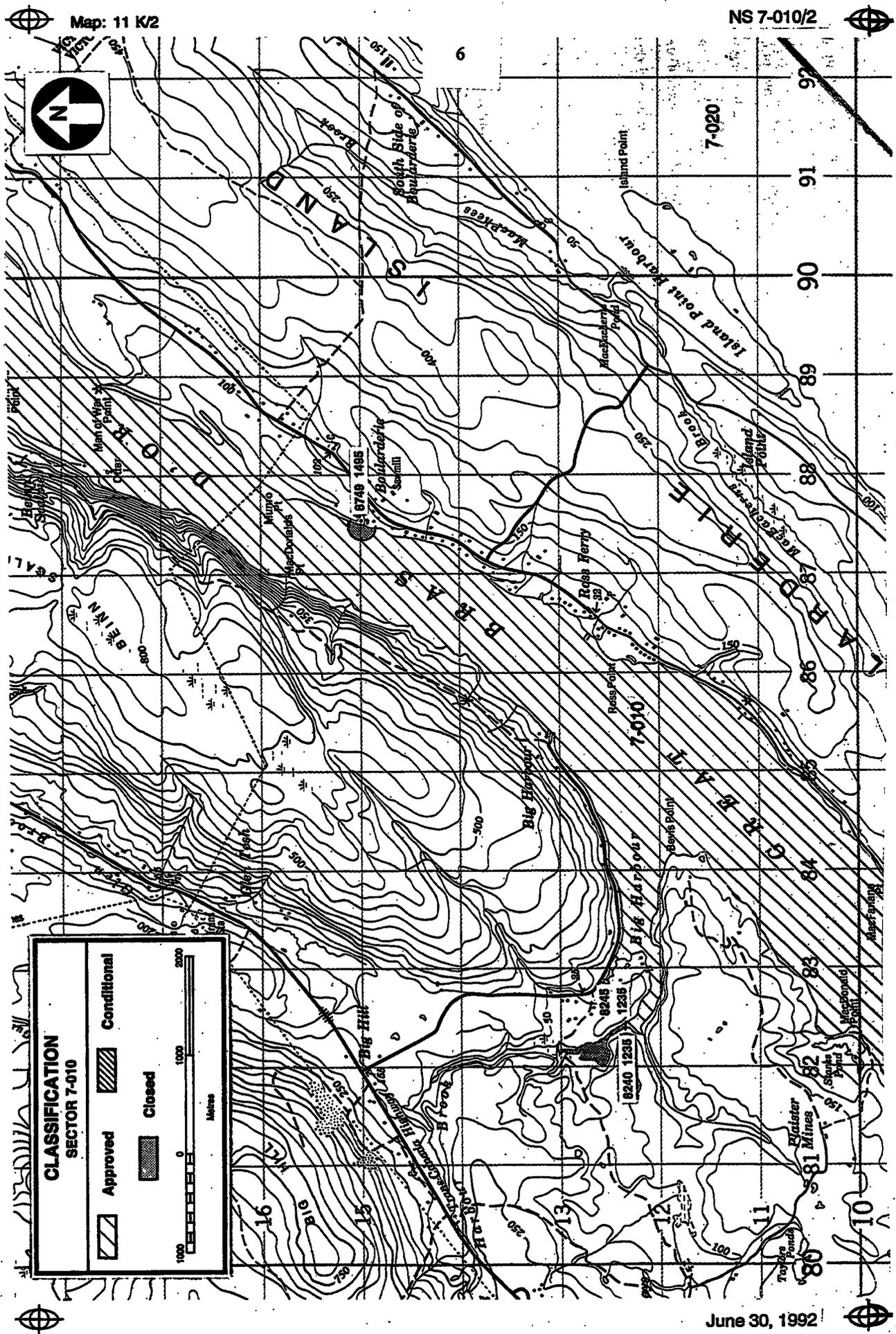


FIGURE 1A (cont.). PRESENT SHELLFISH CLASSIFICATION FOR GREAT BRAS D'OR (CENTRE)

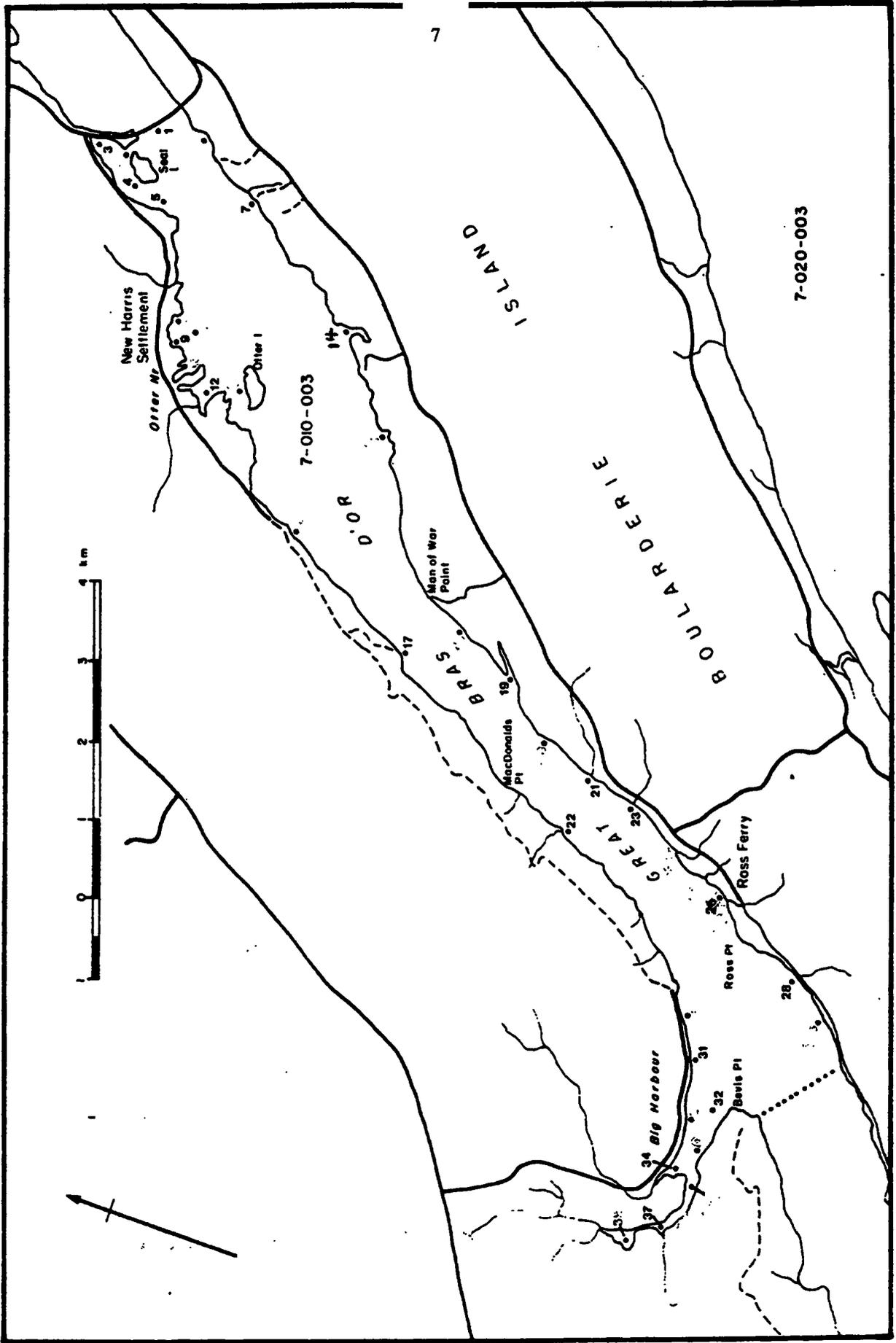


FIGURE 1B. KEY STATION SAMPLING LOCATIONS IN GREAT BRAS D'OR (CENTRE)

Sanitary Conditions

No shoreline sanitary survey has been conducted for this subsector.

Bacteriological Water Quality

Eighteen of the nineteen key sampling stations (Figure 1B) surveyed on more than sixteen occasions since 1990 (Tables 1A & 1B) continue to meet the water quality criteria for an approved classification. At station 19 elevated fecal coliform levels are observed, but not such that a change in the classification is warranted. Station 21 which does not meet the approved criteria, is located within a shellfish closure.

TABLE 1A GREAT BRAS D'OR (CENTRE)- (NS-7-010-003) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	16	1990-1996	1.9	23	2	1.9	5	0
3	16	1990-1996	1.9	5	2	1.9	3	0
4	16	1990-1996	1.9	8	2	1.9	4	0
5	16	1990-1996	1.9	2	1.9	1.9	1.9	0
7	15	1990-1996	1.9	130	3	1.9	13	7
9	16	1990-1996	1.9	2	1.9	1.9	2	0
12	16	1990-1996	1.9	2	1.9	1.9	2	0
14	16	1990-1996	1.9	1700	3	1.9	31	6
17	16	1990-1996	1.9	8	2	1.9	3	0
19	16	1990-1996	1.9	70	3	1.9	17	13
21	16	1990-1996	1.9	920	8	2	120	19
22	16	1990-1996	1.9	5	2	1.9	3	0
23	16	1990-1996	1.9	79	2	1.9	8	6
26	16	1990-1996	1.9	920	3	1.9	27	6
28	16	1990-1996	1.9	79	3	1.9	9	6
31	16	1990-1996	1.9	23	3	1.9	7	0
32	16	1990-1996	1.9	1.9	1.9	1.9	1.9	0
34	16	1990-1996	1.9	49	3	1.9	13	6
37	16	1990-1996	1.9	33	4	2	14	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 1A) should remain unchanged.

TABLE 1B. GREAT BRAS D'OR (CENTRE)- (NS-7-010-003) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	06 Jun 90	14 Jun 90	20 Jun 90	26 Jun 90	03 Jul 90	14 Jul 90	28 Jul 90	07 Aug 90	12 Aug 90	22 Aug 90	07 Sep 90	23 Sep 90	12 Jun 96	09 Jul 96	24 Jul 96	14 Aug 96	
1	1.9	1.9	1.9	23	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9
3	1.9	1.9	1.9	1.9	1.9	1.9	5	2	2	1.9	2	2	1.9	1.9	1.9	2	5
4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	8	2	1.9	1.9	1.9	1.9	5
5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9
7	1.9	1.9	1.9	13	1.9	1.9	1.9	1.9	2	2	1.9	1.9	1.9	1.9	130	1.9	1.9
9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
12	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2
14	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	11	1.9	1.9	1700	2	1.9
17	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9
19	23	1.9	49	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	70	1.9	1.9
21	5	2	13	1.9	1.9	1.9	920	2	2	1.9	1.9	49	13	1.9	920	1.9	17
22	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9
23	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	1.9	1.9	79	2	2
26	8	1.9	13	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	920	1.9	1.9
28	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	79	1.9	2
31	1.9	1.9	2	1.9	1.9	1.9	1.9	17	1.9	1.9	1.9	1.9	23	1.9	1.9	1.9	1.9
32	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
34	2	8	33	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	49	1.9	1.9
37	2	1.9	13	13	1.9	1.9	1.9	2	1.9	1.9	2	8	2	2	17	4	33
Tide					LR-MR	MR-HR	LR-MR	HR-HR	MR-HR	MR-HR	MR-HR	MR-HR	MR-HR	HR-HF	MR-LR	LR-LR	HT-HT
Rain (mm)																	
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	8.2	0	1.4	2.2	9.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	9.8	0	1.4	2.2	9.2

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;

MR - Mid Rising

HF = High Falling;

LT= Low Tide;

HR - High Rising;

LF = Low Falling;

MT= Mid Tide;

LR - Low Rising

MF = Mid Falling;

TABLE 1C. GREAT BRAS D'OR (CENTRE)-(NS-7-010-003) - SALINITIES (‰)

Station	06 Jun 90	14 Jun 90	20 Jun 90	26 Jun 90	03 Jul 90	14 Jul 90	28 Jul 90	07 Aug 90	12 Aug 90	22 Aug 90	07 Sep 90	23 May 96	12 Jun 96	09 Jul 96	24 Jul 96	14 Aug 96
1	22	22	25	24	24	23	24	24	24	24	24	24	24	21	22	24
3	20	24	24	16	25	23	25	23	25	24	24	24	22	23	23	22
4	20	22	24	24	24	23	24	23	25	24	24	24	22	22	22	22
5	22	22	24	24	24	23	24	23	25	24	24	24	24	22	22	24
7		22	23	23	22	22	24	22	24	24	23	24	24	20	21	23
9	21	22	23	23	24	22	24	23	24	24	24	24	22	22	22	22
12	20	23	23	23	24	23	24	23	24	24	23	22	22	22	22	22
14	20	22	22	24	24	23	24	22	24	24	23	22	22	18	20	22
17	20	22	22	22	22	23	24	22	24	24	22	22	22	20	20	22
19	20	22	22	22	20	23	23	22	20	22	22	20	22	20	19	21
21	15	20	22	22	20	22	22	22	20	22	20	20	22	16	21	22
22	20	22	22	22	21	22	22	22	20	22	22	22	22	21	21	22
23	20	22	22	22	20	22	22	22	20	22	22	22	22	21	19	22
26	20	21	20	21	20	22	22	20	20	22	22	21	21	19	21	22
28	22	21	20	20	22	22	22	22	20	22	22	21	20	21	21	22
31	22	20	21	21	21	22	21	21	21	22	22	21	21	22	21	22
32	21	21	20	21	21	22	21	21	21	22	22	21	21	22	20	22
34	20	20	20	20	21	22	21	21	21	22	22	22	20	18	21	21
37	20	18	12	12	18	20	23	20	20	20	22	20	12	17	16	16
Tide	MIR-HI	MF-LF	LR-MR	MR-HR	LR-MR	MR-HR	LR-MR	HR-HI	MIR-HR	MIR-HR	MIR-HR	MR-HR	HR-HF	MF-LR	LR-LR	HI-HI
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	2.2	9.2
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	2.2	9.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	2.2	9.2

TABLE 1D. GREAT BRAS D'OR (CENTRE)-(NS-7-010-003) - WATER TEMPERATURE (°C)

Station	06 Jun 90	14 Jun 90	20 Jun 90	26 Jun 90	03 Jul 90	14 Jul 90	28 Jul 90	07 Aug 90	12 Aug 90	22 Aug 90	07 Sep 90	23 May 96	12 Jun 96	09 Jul 96	24 Jul 96	14 Aug 96
1			11	11								7	13	13	16	20
3	11			14	14							8	8	13	15	17
4		11	14		14	21						8	8	12	15	20
5					14							8	8	14	15	20
7			14									8	8	12	15	20
9			14									8	8	16	17	21
12				15		21		20	20			8	8	13	15	18
14	9		11	14	21			20	20			8	8	13	15	20
17			11	15	21							8	8	12	15	20
19			11									10	10	13	15	20
21												9	9	13	15	20
22			12	14	21			20	20			9	9	12	16	17
23			11	16	21							9	9	13	15	20
26			11	15	21							9	9	13	16	20
28												9	9	12	14	20
31												8	8	13	16	20
32	9		10	14	20			20	20			8	8	14	17	20
34				15	21			20	20			10	10	14	17	21
37				17	21			22	20			10	10	15	17	20
1009																
Rain (mm)																
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-48h	0	0	0	0	0	0	0	0	0	0	0	8.2	0	0	1.4	2.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	9.8	0	0	1.4	2.2

Sub-sector Name (Number):

Great Bras D'Or (West) (NS-7-010-004)

Date surveyed:	1990-96
No. of sampling runs:	15
Shellfish classification:	Figure 2A
Sampling station locations:	Figure 2B
Fecal coliform results:	Tables 2A & 2B
Salinity data:	Table 2C
Water temperature data:	Table 2D
Shoreline sanitary observations:	Table 2E & Figure 2C

Area Description

Great Bras D'Or provides the Bras D'Or lakes with one of two access channels with the Atlantic Ocean. It is the only one capable of providing access to large gypsum vessels which navigate the lakes. The fact the area is important for navigation makes it less suitable for aquaculture. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991b). The current classification (Figure 1A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

Refer to Shoreline Sanitary Survey (Table 2E) below.

Bacteriological Water Quality

The eight key stations (Figure 2B) surveyed on approximately fifteen occasions since 1990 (Tables 2A & 2B) continue to meet the criteria for an approved classification. At station 4 elevated fecal coliform levels are observed, but not such that a change in the classification is warranted.

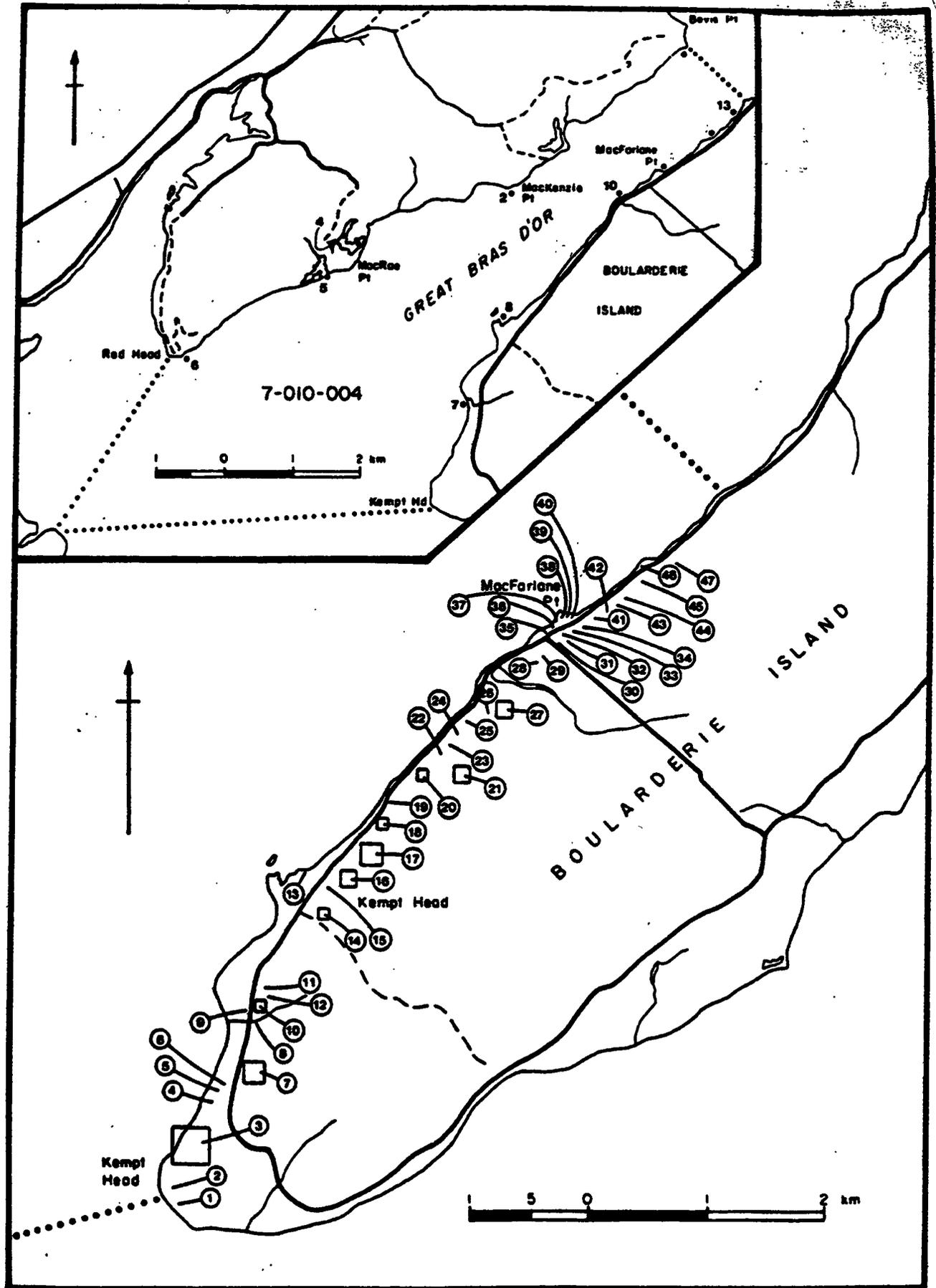


FIGURE 2B. KEY STATION SAMPLING LOCATIONS IN GREAT BRAS D'OR (WEST)

TABLE 2A. GREAT BRAS D'OR (WEST) (NS-7-010-004) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
2	12	1990-1996	1.9	1.9	1.9	1.9	1.9	0
4	14	1990-1996	1.9	240	4	2	36	14
5	15	1990-1996	1.9	8	2	1.9	3	0
6	15	1990-1996	1.9	33	2	1.9	6	0
7	13	1990-1996	1.9	350	3	1.9	18	8
8	15	1990-1996	1.9	70	3	1.9	9	7
10	15	1990-1996	1.9	130	3	1.9	13	7
13	15	1990-1996	1.9	2	1.9	1.9	2	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 2A) should remain unchanged.

TABLE 2B. GREAT BRAS D'OR (WEST) (NS-7-010-004)- FECAL COLIFORM DENSITIES (MPN/100ML)

Station	20 Jun 90	26 Jun 90	03 Jul 90	14 Jul 90	28 Jul 90	07 Aug 90	12 Aug 90	22 Aug 90	07 Sep 90	19 Sep 90	23 May 96	12 Jun 96	09 Jul 96	24 Jul 96	14 Aug 96	
2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
4		1.9	1.9	1.9	1.9	2	2	1.9	2	2	1.9	1.9	240	170	2	8
5	1.9	1.9	8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	33	1.9	1.9	1.9	1.9
7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	350	1.9	1.9
8	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	2	70	1.9	1.9
10	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	13	130	1.9	1.9	1.9
13	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	1.9	1.9

Tide	MF-LF	MR-HR	MR-MR	LR-LR	HR-HR	MR-HR	LR-LR	MR-MR	HF-MF	MR-HT	HR-HF	MF-LR	LR-LR	HT-HT
Rain (mm)														
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2
0-48h	0	0	0	0	0	0	0	0	0	8.2	0	1.4	2.2	9.2
0-72h	0	0	0	0	0	0	0	0	0	9.8	0	1.4	2.2	9.2

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
LT= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MF = Mid Falling;

TABLE 2C. GREAT BRAS D'OR (WEST) (NS-7-010-004)- SALINITIES (‰)

Station	20 Jun 90	26 Jun 90	03 Jul 90	14 Jul 90	28 Jul 90	07 Aug 90	12 Aug 90	22 Aug 90	07 Sep 90	19 Sep 90	23 Sep 90	12 Jun 96	09 Jul 96	24 Jul 96	14 Aug 96	
2			20		22	22	22	22	22	22	22	18	21	22	21	
4		20	20	20	22	22	22	22	21	22	22	18	18	20	20	
5	21	20	19	20	22	22	22	22	22	22	22	20	20	22	21	
6	21	20	20	21	22	22	22	22	22	22	22	20	21	22	21	
7		20	20	21	22	21	22	22	22	22	22	21	21	22	21	
8	21	21	20	22	22	21	22	22	20	22	22	20	20	22	21	
10	20	20	20	21	22	22	22	22	22	22	22	20	19	22	22	
13	21	20	20	21	23	22	22	22	22	22	22	21	21	22	22	
Tide	MF-LF	MR-HR	MR-HR	MR-MR	LR-LR	HR-HR	MR-HR	LR-LR	MR-MR	MR-MR	HF-MF	MR-HT	HR-HF	MF-LR	LR-LR	HT-HT
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2
0-24h	0	0	0	0	0	0	0	0	0	0	0	8.2	0	1.4	2.2	9.2
0-48h	0	0	0	0	0	0	0	0	0	0	0	9.8	0	1.4	2.2	9.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	9.8	0	1.4	2.2	9.2

TABLE 2D. GREAT BRAS D'OR (WEST) (NS-7-010-004)- WATER TEMPERATURE (°C)

Station	20 Jun 90	26 Jun 90	03 Jul 90	14 Jul 90	28 Jul 90	07 Aug 90	12 Aug 90	22 Aug 90	07 Sep 90	19 Sep 90	23 Sep 90	12 Jun 96	09 Jul 96	24 Jul 96	14 Aug 96	
2			0		0	20	21	21	20	21	0	9	16	17	21	
4		18	0	0	0	23	24	21	21	0	0	11	16	20	22	
5	0	15	0	16	0	0	0	0	0	0	0	9	16	17	20	
6	0	0	0	0	0	20	22	21	20	20	17	13	16	17	20	
7		0	0	17	0	0	0	0	0	0	0	9	16	17	20	
8	15	15	0	0	0	20	22	20	21	21	18	9	15	18	20	
10	16	0	0	0	0	20	21	20	0	0	0	9	15	17	20	
13	15	0	0	0	0	0	0	0	0	0	0	9	16	17	20	
Tide	MF-LF	MR-HR	MR-HR	MR-MR	LR-LR	HR-HR	MR-HR	LR-LR	MR-MR	MR-MR	HF-MF	MR-HT	HR-HF	MF-LR	LR-LR	HT-HT
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2
0-24h	0	0	0	0	0	0	0	0	0	0	0	8.2	0	1.4	2.2	9.2
0-48h	0	0	0	0	0	0	0	0	0	0	0	9.8	0	1.4	2.2	9.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	9.8	0	1.4	2.2	9.2

TABLE 2E. SHORELINE SANITARY SURVEY:

NS-07-010-004: GREAT BRAS DOR LAKES (EAST)
FROM BEVIS POINT TO RED HEAD

INSPECTOR: ROBERT KENNEY

COMPREHENSIVE: JULY 10, 1990

REVIEWED: AUGUST, 1996

Refer to: Figure 2C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with seasonal cottages and a few residences. The area is underlain with fireclay with a few gypsum seams running throughout the area
1	ST	P	1 str wht house on raised foundation, blue shutters and wht shed, app. 20mfs. No outflow PI visible.
2	ST	P	1 str wht/red trim seasonal cottage and trailer, app. 10-60mfs. OH app. 60mfs.
3	NS	P	Recently cleared area under forest management app. 10 acres. Treated with herbicide.
4	ST	P	New one str blu shingled seasonal cottage, approx. 60mfs. No outflow PI visible.
5	ST	P	New 2 str blue/wht trim house, appears seasonal, on raised foundation, app. 60mfs, <10mfwc. No outflow PI visible.
6	ST	P	1 str beige house on raised foundation, app. 60mfs, app. 30mfwc. No outflow PI visible.
7	NS	P	Recently cleared area. Hard to estimate acreage because it extends over hill.
8	NS	N	2 str wht abandoned house app. 100mfs.
9	OH	P	1 str black cottage, >100mfs.
10	NS	N	Land in process of being selectively cut.
11	ST	P	2 str new wooden house on hill with 3 sheds, >200mfs. No outflow PI visible.
12	NS	N	Abandoned 1 str wht house behind #11
13	PI	P	1 str red cottage, app. 40mfs. 2, 3in dia PVC PIs to wooded area <10mfs. No eff. visible.
14	ST	P	2 str bew wooden house, >100mfs on hill. No outflow PI visible. (MacLeod).
15	ST	P	New 2 str blue house on raised foundation, >100mfs. No outflow PI visible.
16	NP	P	1 1/2 str wht/grm trim house on raised foundation on hill with barn, >200mfs. 4in dia PI to DR app. 10mf well, app. 10mf house. 2 or 3 horses and app. 10 sheep. No manure pile visible.
17	NS	P	Recently clear cut area.
18	NS	N	Abandoned 2 str grn house, app. 40mfs.
19	DR	P	1 1/2 str wht/blk trim house, app. 20mfs. Looks like an abandoned 45gal drum ST but with new DR to roadside DR. Small spring to roadside DR with yel clay like LE.
20	NS	N	Abandoned 1 1/2 str yel house, app. 30mfs.
21	ST	P	1 1/2 str yel house on raised foundation with large barn on hill, >300mfs. 2 horses with manure spread on field. No outflow PI visible. House app. 30mfwc
22	PI	P	One str yel seasonal cottage, app 30mfs, <10mfwc. 4in dia metal PI to WC.
23	ST	P	Wht/blk trim mobile home with addition, app. 35mfs. No outflow PI visible. Large red barn
24	ST	P	One str red house on raised foundation, app. 30mfs. No outflow PI visible.
25	PI	P	1 str wht seasonal house, <20mfs. 4in dia PI to WC. No eff. visible. (Danyluk).
26	ST	P	1 1/2 str pink house, >100mfs. No outflow PI visible. Appears seasonal.
27	NS	P	Abandoned 1 1/2 str wht old farm house.

28	ST	P	1 1/2 str wooden shingled house on hill, >100mfs. No outflow PI visible.
29	ST	P	1 1/2 str new wooden shingled house, >100mfs. No outflow PI visible.
30	ST	P	1 str gray seasonal cottage with red veranda, app. 80mfs. No outflow PI visible.
31	ST	P	1 str blu seasonal cottage, app. 80mfs. No outflow PI visible.
32	ST	P	1 str wooden seasonal cottage, app. 100mfs. No outflow PI visible.
33	ST	P	1 str blue/whit trim seasonal cottage, app. 80mfs. No outflow PI visible.
34	ST	P	One str yel seasonal cottage, app. 50mfs. <30mfwc. Unused OH uphill. No outflow PI visible.
35	ST	P	1 str wht seasonal house on raised foundation app. 20mfs. No outflow PI visible.
36	PI	P	One str wht/blue trim seasonal cottage, app. 20mfs. 4in ABS PI to swamp <10mf cottage. No eff. visible.
37	PI	P	1 str wht seasonal cottage, app. 20mfs, <10mf swamp, 4in dia ABS PI to swamp. No eff. visible.
38	PI	P	1 str wht seasonal cottage, <10mfs, 4in dia perforated PI to swamp. No eff. visible.
39	OH	P	2, 20ft trailers and shed with OH app. 15mfs.
40	ST	P	1 str wht seasonal cottage <10mfs, <5mfwc. No outflow PI visible.
41	ST	P	1 str wht/grn trim house on raised foundation on hill, app. 50mfs. No outflow PI visible.
42	ST	P	One str wht house on raised foundation on small hill, app. 50mfs, <20mfwc. No outflow PI visible.
43	ST	P	1 str new red seasonal cottage on hill, app. 50mfs, <20mfwc. No outflow PI visible.
44	ST	P	New 1 str red seasonal cottage, app. 50mfs. No outflow PI visible.
45	ST	P	1 str brw wooden seasonal house app. 50mfs, app. 20mf wet area. No outflow PI visible.
46	OH	P	1 str red seasonal cottage, <10mfs. OH app. 20mfs. Green shed on site.
47	ST	P	Road up hill to seasonal cottage. Road chained. Information according to locals.

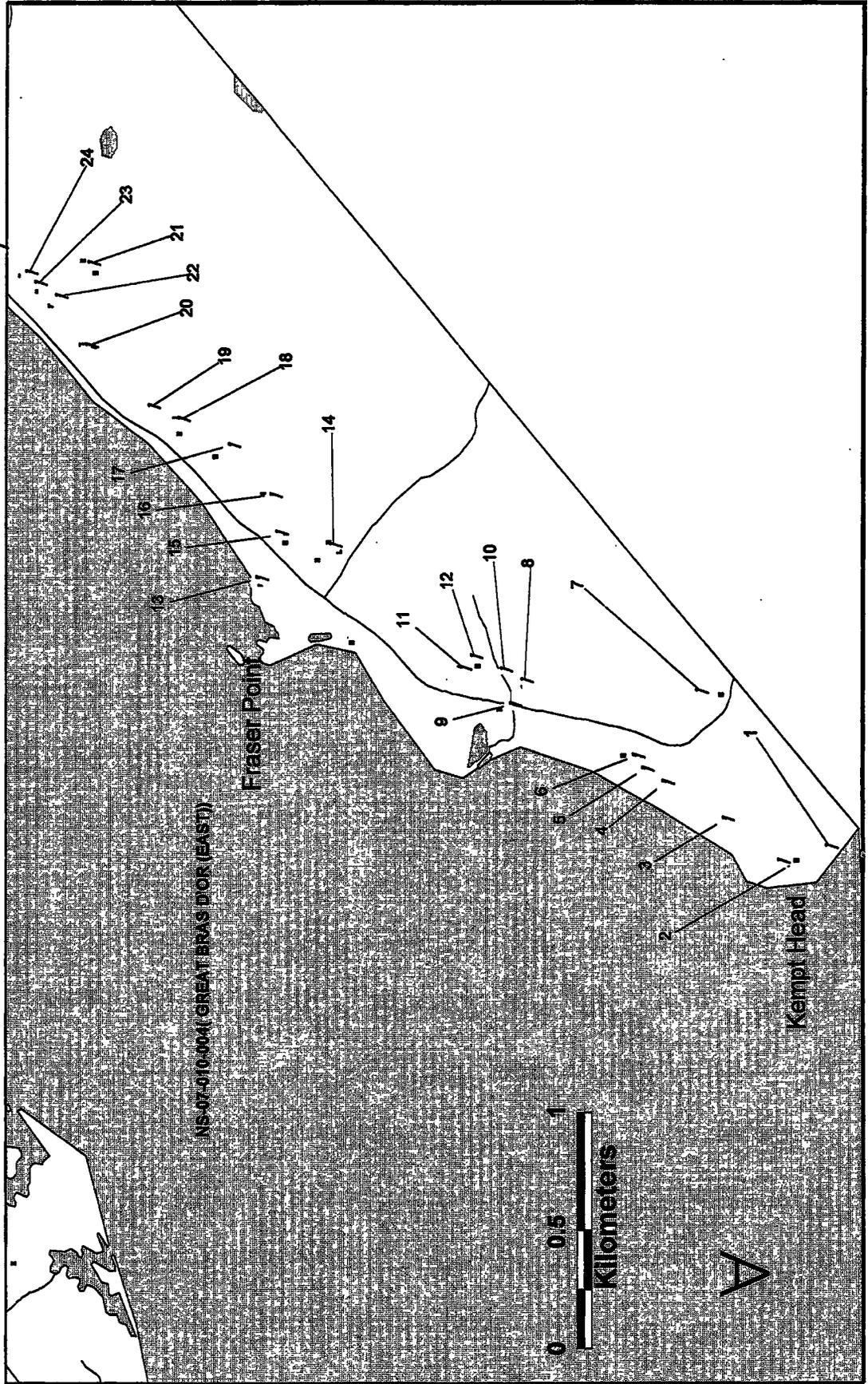


FIGURE 2C SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (WEST) (NS-7-010-004)

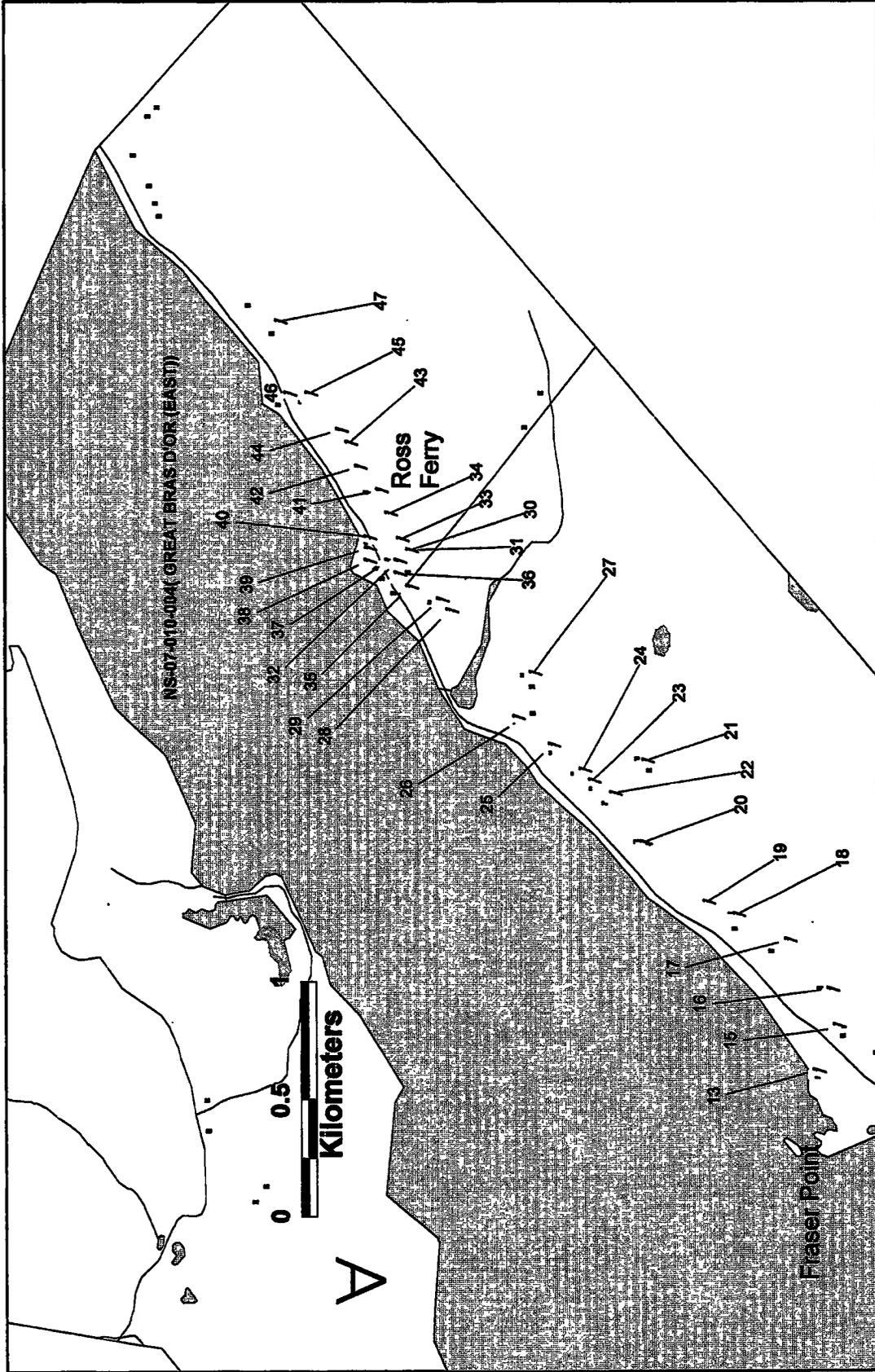


FIGURE 2C(CONT.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (WEST) (NS-7-010-004)

Sub-sector Name (Number):

Baddeck Bay / St. Patrick's Channel (NS-7-010-005)

Date surveyed:	1990-96
No. of sampling runs:	17
Shellfish classification:	Figure 3A & 4A
Sampling station locations:	Figure 3B
Fecal coliform results:	Tables 3A & 3B
Salinity data:	Table 3C
Water temperature data:	Table 3D
Shoreline sanitary observations:	Table 3E & Figure 3C

Area Description

Baddeck is the most populated community on the Bras D'Or lakes. The water quality in the area adjacent to the town is unsuitable for shellfish harvesting. However, recreational shellfish harvest is active between Birch & Plaster Points at Washabuck. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991c). The current classification (Figure 3A) includes a large shellfish closure near the community of Baddeck. The current classification is described as follows:

Closed

That portion of Baddeck Bay and St. Patricks Channel inside a line drawn from grid reference 7635 0822 to the navigation light on Kidston Island at grid reference 7448 0720, thence along the inside shore of Kidston Island to grid reference 7388 0659 on Kidston Island, thence running parallel and 300 m seaward of the shoreline to grid reference 6815 0420, and thence to the shore at grid reference 6815 0457. Refer to map Baddeck 11K/2.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

Refer to Shoreline Sanitary Survey (Table 3E) below.

Bacteriological Water Quality

Fourteen of the seventeen key stations (Figure 3B) surveyed on seventeen occasions since 1990 (Tables 3A & 3B) continue to meet the criteria for an approved classification. The stations which fail to meet the criteria are within the shellfish closure described above.

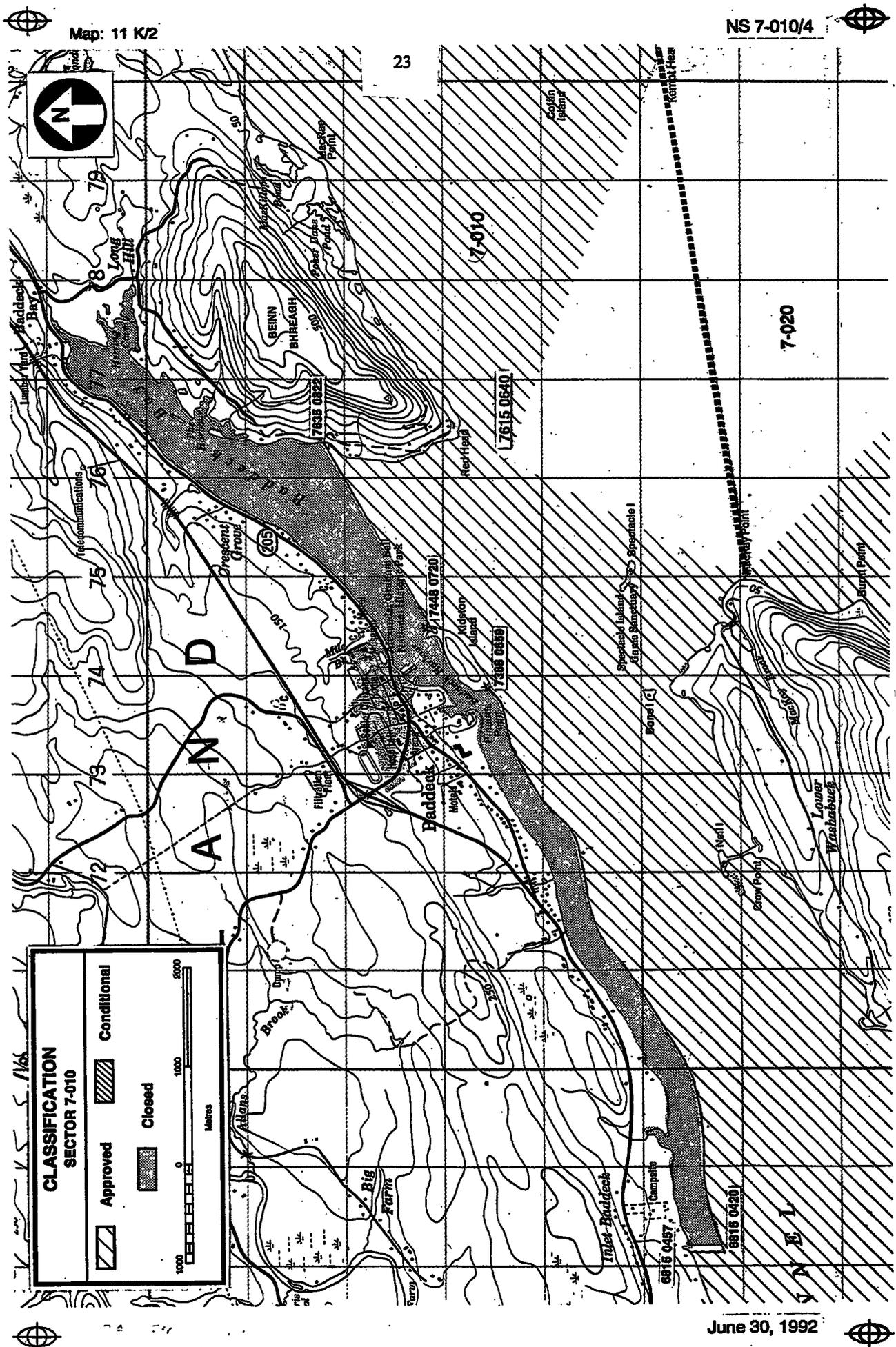


FIGURE 3A. PRESENT SHELLFISH CLASSIFICATION FOR BADDECK BAY / ST. PATRICK'S CHANNEL

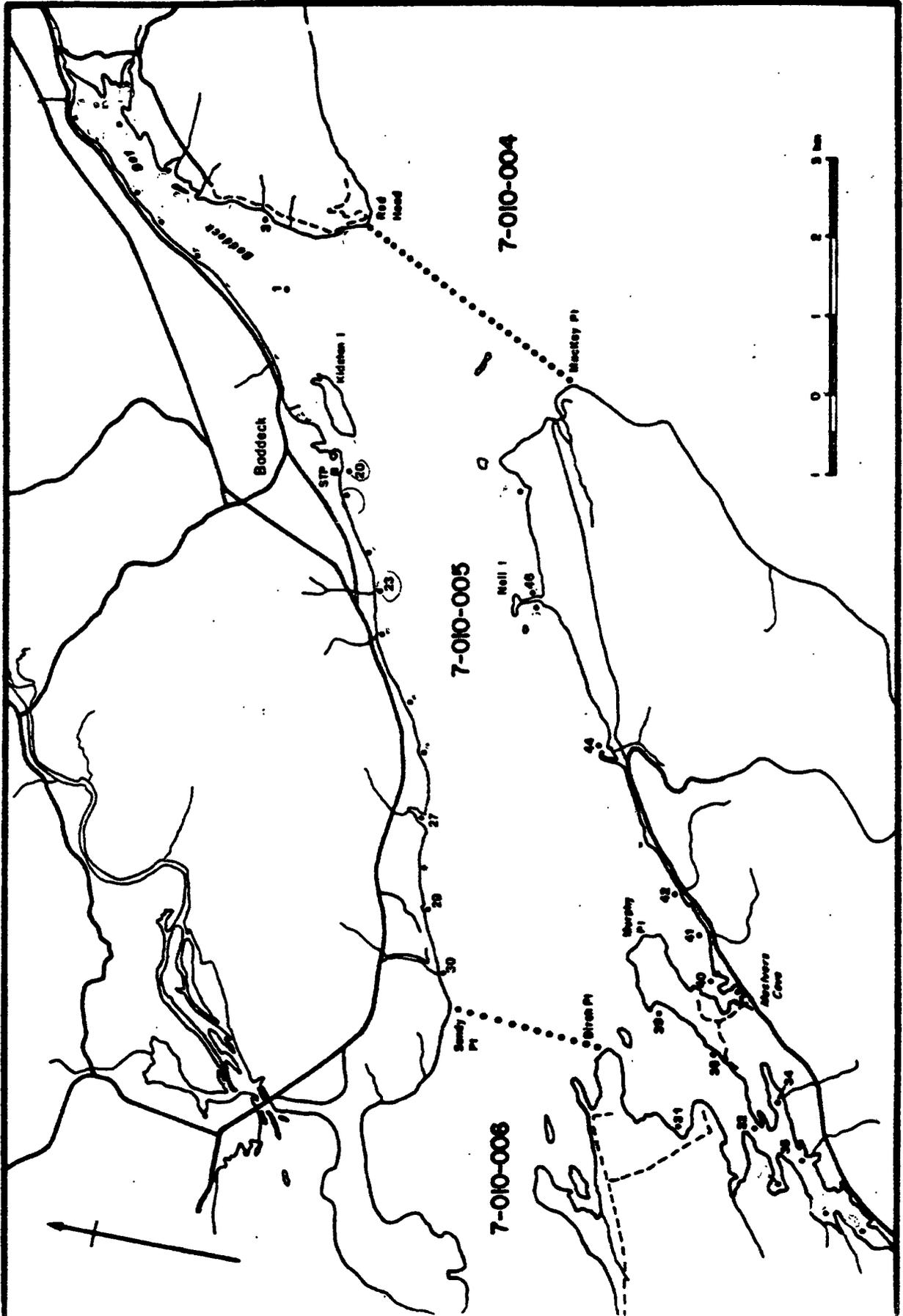


FIGURE 3B. KEY STATION SAMPLING LOCATIONS IN BADDECK BAY / ST. PATRICK'S CHANNEL

TABLE 3A. BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	17	1990-1996	1.9	4	2	1.9	3	0
3	17	1990-1996	1.9	49	2	1.9	7	6
20	17	1990-1996	1.9	2500	902	1700	12016	88
23	17	1990-1996	1.9	2500	12	8	144	18
27	17	1990-1996	1.9	49	4	2	14	6
29	17	1990-1996	1.9	240	6	1.9	45	12
30	17	1990-1996	1.9	110	3	1.9	14	6
31	17	1990-1996	1.9	7	2	1.9	4	0
32	17	1990-1996	1.9	22	2	1.9	5	0
34	16	1990-1996	1.9	23	3	1.9	8	0
36	17	1990-1996	1.9	49	3	1.9	11	6
39	16	1990-1996	1.9	5	2	1.9	3	0
40	17	1990-1996	1.9	33	3	1.9	7	0
41	16	1990-1996	1.9	22	3	1.9	9	0
42	16	1990-1996	1.9	7	2	1.9	3	0
44	17	1990-1996	1.9	130	3	1.9	15	6
46	17	1990-1996	1.9	13	2	1.9	4	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 3A) should remain unchanged.

TABLE 3B. BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	26 May 90	04 Jun 90	11 Jun 90	27 Jun 90	01 Jul 90	13 Jul 90	18 Jul 90	29 Jul 90	15 Aug 90	21 Aug 90	27 Aug 90	11 Sep 90	21 May 96	13 Jun 96	09 Jul 96	23 Jul 96	20 Aug 96
1	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
3	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
20	1.9	79	2500	2500	33	2500	2500	1600	2500	2500	2500	2500	1700	1700	1700	1700	1700
23	2	13	5	5	1.9	8	130	5	2500	1.9	1.9	13	11	4	170	2	17
27	1.9	5	1.9	1.9	5	1.9	1.9	2	49	1.9	1.9	1.9	2	13	8	2	23
29	1.9	1.9	1.9	1.9	70	1.9	1.9	13	33	1.9	1.9	1.9	2	1.9	240	14	7
30	1.9	1.9	1.9	1.9	2	1.9	1.9	5	2	1.9	1.9	1.9	1.9	1.9	110	1.9	33
31	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	7	1.9	1.9
32	1.9	1.9	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	2	1.9	22	4	2
34	1.9	1.9	1.9	1.9	5	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	23	13	2
36	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	23	1.9	1.9	1.9	1.9	1.9	49	8	5
39	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2
40	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	5	33
41	1.9	1.9	1.9	1.9	2	1.9	1.9	2	4	1.9	1.9	1.9	2	1.9	5	5	11
42	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	2	7	2	1.9
44	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	13	1.9	1.9	1.9	2	1.9	130	2	21
46	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	5	1.9	13

Tide	HF-MT	MF-LO	HF-MF	HR-MR	LR-MR	HR-HI	LR-MR	MF-LF	HR-HF	HF-MT	MT-MF	MF-LT	LT-LR
0-24h	0	0	0	0	4	0	0	0	1.6	1.4	0	2.2	1
0-48h	0	0	0	0	0	0	0	0	1.9	1.4	1.4	2.2	5.2
0-72h	0	0	0	0	7	0	0	0	6.7	1.4	1.4	30	6.4

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LR = Low Tide; LF = Low Falling; LR - Low Rising

TABLE 3C. BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005) - SALINITIES (‰)

Station	26 May 90	04 Jun 90	11 Jun 90	27 Jun 90	01 Jul 90	13 Jul 90	18 Jul 90	29 Jul 90	16 Aug 90	21 Aug 90	27 Aug 90	11 Sep 90	21 May 98	13 Jun 98	08 Jul 98	23 Jul 98	20 Aug 98	
1	17	20	20	21	21	22	23	22	21	21	22	23	21	22	22	2	20	22
3	15	20	20	22	22	22	23	22	22	22	23	24	21	20	22	22	21	22
20	18	17	18	16	18	20	20	22	22	22	20	22	22	20	21	21	16	20
23	16	17	18	20	20	21	23	22	22	22	22	22	21	20	21	21	20	20
27	20	16	18	19	19	21	22	22	20	20	22	22	20	20	22	22	20	20
29	22	17	18	19	29	20	21	21	21	21	22	23	20	20	17	19	20	20
30	22	17	18	18	18	20	21	21	22	22	22	20	20	20	21	21	20	20
31	14	18	16	19	18	20	21	22	21	21	22	22	17	20	22	20	20	20
32	5	18	18	18	18	20	21	21	21	21	22	22	12	20	20	14	20	20
34		15	16	18	18	20	20	20	21	21	22	22	11	20	20	14	20	20
36	6	18	16	19	18	20	20	20	20	21	22	22	13	20	20	17	20	20
39		18	16	20	18	20	21	21	21	21	22	22	16	20	22	18	20	20
40	12	16	16	20	18	21	21	21	21	22	22	22	18	20	21	18	20	20
41	12	16	16	18	18	20	22	20	21	21	22	22	17	19	21	18	20	20
42		19	17	18	18	20	20	20	21	22	22	20	17	19	21	18	20	20
44	12	18	18	18	18	20	21	21	20	22	22	20	18	20	20	19	20	20
46	14	18	18	19	18	20	22	20	20	20	20	22	20	20	21	18	20	20
TGG																		
Rain (mm)																		
0-24h	0	0	0	0	0	0	0	4	0	0	0	0	1.6	1.4	0	2.2	1	
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	1.9	1.4	1.4	2.2	5.2	
0-72h	0	0	0	0	0	0	7	0	0	0	0	0	6.7	1.4	1.4	30	6.4	

TABLE 3D. BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005) - WATER TEMPERATURE (OC)

Station	26 May 90	04 Jun 90	11 Jun 90	27 Jun 90	01 Jul 90	13 Jul 90	18 Jul 90	29 Jul 90	15 Aug 90	21 Aug 90	27 Aug 90	11 Sep 90	21 May 96	13 Jun 96	09 Jul 96	23 Jul 96	
1				18									8	8	9	16	19
3		11											8	9	9	16	19
20			12										9	14	14	16	19
23						22							8	13	13	16	19
27		11	12		22	22							9	15	15	17	20
29					21								9	14	14	16	19
30								22		21			8	14	14	17	19
31		11		17		18				22			10	16	16	17	19
32				18		19				21			10	17	17	17	20
34					19	18				22			10	17	17	17	20
36					19	19				21			10	17	17	17	19
39								22					10	17	17	17	18
40			14		17								9	16	16	16	19
41		8		17		19							9	16	16	16	19
42								22					9	16	16	16	19
44		10			16	19							9	16	16	16	19
46		8			16	17							8	17	17	16	20
Tide	HF-MT	MF-LO	HF-MF	HF-MF	HF-MF	LR-MR	LR-MR	LR-MR	LR-MR	HR-HI	LR-MR	MF-LF	HR-HF	HF-MT	MT-MF	MF-LT	
Rain (min)																	
0-24h	0	0	0	0	0	0	0	0	4	0	0	0	1.6	1.4	0	0	2.2
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	1.9	1.4	1.4	1.4	2.2
0-72h	0	0	0	0	0	0	7	0	7	0	0	0	6.7	1.4	1.4	1.4	30

SHORELINE SANITARY SURVEY:

BADDECK BAY/ST. PATRICKS CHANNEL
FROM RED HEAD TO SANDY POINT

ROBERT KENNEY

JULY 10, 1990

REVIEWED:

AUGUST, 1996

INSPECTOR:
COMPREHENSIVE:

Refer to: Figure 3C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area moderately populated but during tourist season the population increases greatly. The town of Baddeck has an Oxidation Ditch TP. The area outside the town limits is populated with many residences, cottages, one trailer court and a few service related businesses.
1	PI	P	Belinn Bhreagh, Bell Mansion. 2 str brw mansion on raised foundation, app. 120mfs. 2 str brw seasonal house on raised foundation app. 160mfs, 4in dia PI to shore. Direct discharge.
2	ST	P	2 str gray/grm trim cottage on raised foundation, app. 30mfs. No outflow PI visible.
3	ST	P	2 str brw seasonal house on frost wall. Garage with apt. of same color. ST and disposal bed now being installed. App. 40mfs old 4in dia PI to shore.
4	PI	P	One str wooden shingled seasonal house near a pond. <10mfs. 4in dia PI to lake. 2 str brw storage shed <10mfs.
5	ST	P	2 str brw/wht trim house on raised foundation. Barn and stable in yard with 2 horses. Manure hauled away by locals for fertiliser. The only permanent dwelling on Bell property. <40mfs. Disposal bed "not working properly".
6	ST	P	2 str brw wooden cottage on raised foundation app. 30mfs. No outflow PI visible.
7	ST	P	1 1/2 str red seasonal house on raised foundation, >250mfs. Old disposal field with 4in dia overflow PI to wet area.
8	PI	P	1 1/2 str natural wood shingled seasonal cottage on posts, app. 40mfs on slope, 4in dia ABS PI to shore, (Fairchild)
9	ST	P	1 1/2 str brw wooden/yel trim house on raised foundation, app. 400mfs, 10mfwc. Old disposal bed. No outflow PI visible.
10	ST	P	2 str red house on raised foundation, app. 30mfs. No outflow PI visible. Boat rental business, 3 sailboats, rowboats etc. None with toilet facilities. Large metal shed for storage.
11	ST	P	One str grn house on raised foundation, app. 10mfs. Grm and red garage. No outflow PI visible.
12	ST	P	New A-frame house on raised foundation, app. 10mfs. No outflow PI visible. Pleasure WV.
13	ST	P	One str gray shingled/blue trim seasonal cottage, app. 15mfs. 4in dia metal PI to ground. No outflow PI visible. Small WV and boat house on shore with small pleasure boats
14	PI	D	1 1/2 str brw/yel house on raised foundation, app. 10mfwc. 4in dia PI to WC from ST. Garage of same color on site. (MacKillop) Sample taken at culvert under road while tide was rising. Sample yielded <30mpn/100ml.
15	ST	P	2 str wht house on stone foundation with 3 or 4 sheds on site on hill, app. 15mfwc. 2in dia PI to field for sink and washer machine. No other outflow PI visible.
16	NP	D	1 1/2 str brw house on small farm. 4 horses, 6 to 10 cattle. Manure piles <40mfwc. No outflow PI visible. DOT sprays CaCl on road to keep dust down. Gets into local wells.
17	PI	D	1 1/2 str wht house on raised foundation, app 20mfwc, 250mfs. 4in dia PI to WC. Gray eff. visible. (Morrison) Sample taken at bridge beside house. Sample yielded 430mpn/100ml.
18	PI	P	1 1/2 str wht house on raised foundation <10mfwc, 4in dia metal PI to WC. No flow visible. (MacRae).
19	NP	D	2 str brw wooden shingled house on raised foundation <150mfwc. 5cattle, one horse and a field of hay fertilised with manure, 2 sheds, large barn and garage. (MacRitchie)
20	DR	P	One str wht house on posts, app. 30mfwc. A number of DR around house with some sort of dried eff. visible.
21	PI	P	1 1/2 str wht/grm trim house on stone foundation >150mfwc. A 4in dia clay PI to DR in open field. Eff. visible.
22	ST	P	2 str stone house on raised foundation on hill app. 60mfwc. 4in dia perforated PVC PI to roadside DR. No evidence of any

23	XX	D	flow. 1 1/2 str whit house on raised foundation with red barn and shed, 2-5 horses. 20 acres of hay, manure used as fertilizer. A 4" dia PI to DR, app. 30mfwc. (MacKillop)
24	PI	P	One str whit house on raised foundation, app. 30mfwc. 4in dai PI to wooded area. No flow visible. (MacKillop).
25	XX	D	2 str brw/whit trim house on raised foundation >400mfs. 2 str red barn with horses <10mfwc manure pile beside barn. No outflow PI visible
26	PI	D	1 1/2 str blue/whit trim house on raised foundation app. 40mfwc and 130mfs. 4in dia PI with sewage eff. visible. in front yard. Large barn on site. Sample taken at mouth of river in Baddeck Bay yielded a count <30mpn/100ml.
27	ST	N	One str whit AA Hall app. 40mfs. Located on wet ground. No outflow PI visible.
28	PI	D	1 1/2 str whit house on raised foundation, app 100mfs and <20mfwc. Direct discharge from 4in dia PI over ravine.
29	PI	P	2 str wht/blk trim house on raised foundation. App. 40mfs. 4in dia ABS PI with eff. visible to front yard near DR.
30	PI	P	2 str wht/red trim house on raised foundation on hill with red/whit shed. 4in dia PI to DR on front lawn. No eff. visible. App. 100mfs
31	PI	D	One str whit house on raised foundation app. 50mfs. 4in dia PI with direct discharge to WC. Sewage slurry visible. (MacLeod)
32	PI	P	2 str wht/blk trim house on raised foundation with large old barn. 4in dia clay PI to front lawn. No flow visible. (MacLeod)
33	PI	P	One str grn/whit house on raised foundation, app. 40mfs <10mfWC. 4in dia PI to WC. No flow visible but smell apparent.
34	PI	D	2 str brw house on raised foundation, app. 80mfs, 30mfwc. 4in dia ABS PI to WC. Eff. visible.
35	PI	P	1 1/2 str whit house on raised foundation on hill with 2 large barns and shed, app. 120mfs 4in dia PI to DR. No evidence of flow.
36	PI	P	2 str beige house on raised foundation on hill, app. 100mfs, <20mfwc. 4in dia PI to WC but eff. does not look like sewage.
37	PI	P	One str off whit house on raised foundation, app. 100mfs. 4in dia PI for washer eff to DR. No evidence of sewage.
38	PI	P	1 1/2 str whit house in stone foundation, app. 50mfs or 20mfwc. 4in dia metal PI to front lawn. Will be rented for the summer. No flow visible.
39	ST	P	1 1/2 str natural wooden shingled house with blue trim, seasonal, app. 20mfs and 10mfswamp. No outflow PI visible but it would be easy to hide.
40	PI	P	One storey brw wooden shingled house on raised foundation <10mfs. 2 blue one str seasonal cottages on posts <10mfs. 4in dia PI to shore. No flow visible. (Dunlop)
41	PI	D	1 1/2 str whit house on raised foundation, app. 100mfs. Outflow PI with eff. present on front lawn. Seasonal.
42	PI	P	One str natural wood/whit trim seasonal cottage <10mfwc, <10mfs. 4in dia ABS PI to rusted tank. 4in dia ABS PI to ground. No outflow PI visible.
43	ST	P	Large wht/grn trim estate, app. 80mfs. WC runs through front yard. 2 PI outflows at DR by road. (seasonal)
44	ST	P	Barn converted to seasonal cottage >200mfs. 4in ABS PI to DR. No flow visible.
45	NP	P	Pond cut off from bay by highway. Culvert connects it to bay. Signs indicate goose population. None visible.
46	PI	D	2 str wht/grn trim house on raised foundation app. 80mfs. 4in dia PI direct to shore. Owner says it is a sewer PI.
47	PI	D	4in dia PI discharging eff. under highway CU.
48	LE	D	2 1/2 str wooden shingled house on raised foundation, app. 150mfs. 1ft corrugated tube standing upright with what looks like a grn/blk sludge. LE down inclined wet area. (Johnston)
49	ST	P	1 1/2 str new wooden shingled house on raised foundation on hill >300mfs. 2in dia PI outflow for washer and sink to woods.
50	PI	P	1 1/2 str red shingled house on raised foundation, app. 50mfs. Suspect PI mentioned in #23 is outflow PI for this dwelling.
51	ST	P	One str wooden sided/yel trim house on hill, app. 80mfs. 4in dia PI to roadside DR. No flow visible.
52	PI	P	One str grn house on raised foundation. PI at end of #31's disposal bed. No flow visible.
53	PI	D	2 str whit house and gift shop on raised foundation with brw barn, app. 70mfs. 4in dia metal PI behind barn. Eff. visible. 4in dia perforated ABS PI discharging eff. in same general wet area.

54	PI	D	One str yel/brw trim house on raised foundation <5mfs. 4in dia ABS PI discharging eff. near shore.
55	PI	P	2 str wooden shingled/pink trim house with brw garage on raised foundation <5mfs. 4in dia PVC PI to shore. No flow visible.
56	PI	P	2 str brw house on raised foundation <5mfs, <5mfwc. 4in metal PI to ground beside WC.
57	ST	P	1 1/2 str brw/yel trim seasonal cottage, app. 10mfs. 4in ABS PI to ground. No outflow PI visible.
58	PI	P	1 1/2 str natural wood seasonal cottage with garage and 3 sheds. Old pool. 4in dia clay PI to shore. No flow visible. App. 30mfs.
59	PI	D	One str grn house on raised foundation, app. 20mfs. 4in dia ABS and PVC PI to shore. Eff. visible. Permanent WV on site.
60	PI	P	One str log seasonal cottage <10mfs, <10mfwc. Log shed on site. 4in dia metal PI to WC. No flow visible.
61	PI	D	2 str wooden shingled house, app. 150mfs. Old ST with 4in dia PI discharging sewage on front lawn. (Wong)
62	PI	D	2 str wht/grn trim house on raised foundation app. 40mfs. 4in dia PI to roadside DR. Slurry eff. visible.
63	ST	P	2 str wht seasonal house on raised foundation app. 40mfs, 20mfwc. No outflow PI visible but suspicious wet area on site.
64	PI	D	One str wht/brw trim house on hill on raised foundation, app. 60mfs. Grn sludge runoff from PI to front DR.
65	PI	P	One str wht/blu trim house on stone foundation >150mfs. 4in dia PI to wet area. No eff. visible
66	PI	D	2 str wht house with double garage on raised foundation, app. 70mfs. Discharge of eff. from PI to front lawn by roadside DR <30mfs.
67	PI	D	1 1/2 str wht house on raised foundation, app 120mfs. 4in dia PI under CU to shore with discharge of sewage eff. according to owner. (Matheson)
68	PI	D	1 1/2 str grn/wht trim house on raised foundation with a grn shed, red shed and 8 unit cottages. Main house has separate ST and disposal bed but owner says the 4in dia PI to DR then to shore under rocks carries eff. from cottages.
69	ST	P	One str beige/brw trim house on raised foundation with same shed, app. 100mfs. 4in dia PI to back swamp for sink eff. No other outflow PI visible.
70	ST	P	1 1/2 str wht/grn trim house on raised foundation, app. 90mfs. PI outflow for sink and washer machine to back swamp. No other outflow PI visible.
71	ST	P	1 1/2 str wht/blk trim house on raised foundation, app. 60mfs. 3, 4in dia PI's to back swamp. 2 with some type of eff. visible
72	PI	P	2 str wht house on raised foundation, app. 30mfs. 4in dia wht PI discharging some type of effluent to back swamp.
73	CU	N	18in dia concrete culvert to shore.
74	CU	P	18in dia concrete culvert to shore. Entire area residents and businesses are hooked onto town's sewer system.
75	CU	N	18in dia corrugated metal WC outflow PI
76	WV	P	WV with many pleasure boats docked. Many pleasure boats anchored in harbour. There is a dumping station for these boats but owner says it is not used frequently.
77	CU	N	18in concrete culvert. Next to LS.
78	CU	D	2, 18in concrete culverts connecting swamp to shore. Sample yielded <30mpn/100ml.
79	CU	N	One 18in concrete CU.
80	PI	P	4in dia Blk PVC PI. No flow visible.
81	WV	P	WV facilities with many pleasure boats docked and anchored off WV.
82	PI	P	1 1/2 str beige/red trim house on raised foundation <15mfs. 4in dia PI with org eff present.
83	NP	P	1 str wht/red trim house on raised foundation Old grn house and shed on site with fisherman equipment and small boats on shore. WC next to house often smells like sewer according to owner. He also sees oil in WC which could be from service station above WC. (Ryan).
84	CU	N	One 18in metal corrugated culvert.
85	WV	P	Cape Breton Boat Yard. Repair of pleasure craft and fishing boats. Inlet area dotted with anchored pleasure boats.
86	PI	N	One 18in dia Plastic PI. No flow visible.

87	PI	D	4in dia PVC PI under Fish House Restaurant. Grn sludge visible on water bottom. Sample taken in Baddeck Harbour diagonally across from the Fish House Restaurant next to yel house. Sample yielded 430mpn/100ml.
88	PI	D	6in dia org PVC PI next to tennis courts of the Inverary Inn on shore. Slight flow, may be runoff from Inn via the st/ff.
89	TP	D	Activated Sludge Sewage Treatment Plant outflow PI located about 20mfs. The facility is subjected to hydraulic overload from rain. A sample just off shore yielded a count of 4600mpn/100ml.
90	PI	D	A group of three brw/whit trim houses on raised foundation, one wht/grn trim seasonal cottage on posts and one wht/grm trim unused cottage. 2in dia ABS PI to shore. Effluent visible. Houses app. 40mfs. Sewer smell apparent on shore.
91	PI	P	One str wht/red trim seasonal cottages, app. 70mfs, <20mfwc. 4in dia ABS PI to WC. No flow present.
92	ST	P	Whit/red trim mobile home, app. 40mfs, <20mf wet area. No outflow PI visible.
93	LE	P	Whit/blk mobile home, app. 90mfs. A sewer smell at wet area near DR. (Roberts).
94	PI	D	1 1/2 str wht house on raised foundation, app 100mfs. 3,4in dia ABS PI's to DR. Two with what looks like sewage eff.
95	LE	N	Esso Bulk Station with ST and disposal bed in same area as #144.
96	LE	P	One str wht/blk trim house on raised foundation, app. 10mfs. Slight LE from ground near shore. No outflow PI visible. (Roberts)
97	ST	P	One str wht/blue trim house on raised foundation, app. 10mfs. No outflow PI visible. (MacGillivray).
98	PI	P	1 1/2 str new wooden shingled house on frost wall, app. 10mfs. Two grn sheds on site. 4in dia PI from disposal bed area. No flow visible.
99	PI	P	2 str wht house on raised foundation, app. 20mfs. 4in dia PI to shore from disposal bed <10mfs. No flow visible.
100	PI	D	1 str brw house on raised foundation, app. 40mfs. Light equipment business. Old ST with 4in dia PI with sewage eff. on shore. Owner says there has been a change in the growth rates and kinds of seaweed on shore since the town opened the TP.
101	PI	D	2 str wht house on raised foundation, app. 45mfs. 4in dia PI to shore with sewage effluent visible.
102	PI	P	One str yel/red trim house on raised foundation, app. 100mfs. 4in dia PI to wet DR. No flow visible. (MacDonald).
103	PI	P	IGA Grocery Store. According to manager there is a 4in dia PI discharging directly to roadside DR or under road CU. This inspector could not find PI.
104	ST	P	Esso Service Station. No PI visible but neighbor says PI to wet DR next to station.
105	ST	P	2 str brw wooden shingled seasonal cottage, app. 40mfs. No outflow PI visible. (Beaton).
106	PI	P	One str beige house on raised foundation, app. 150mfs. 4in dia PI towards swamp according to owner. I could not find it.
107	PI	D	1 1/2 str wht/blue trim house on raised foundation <20mfs. 4in dia PI on shore with sewage discharge visible.
108	ST	P	2 str blue house on raised foundation, app. 70mfs. No outflow PI visible but neighbor says PI for sewage discharge used to be there
109	ST	N	2 str wht house on raised foundation, vacant. A double wht seasonal cottage, 2 blue houses on raised foundation on site. App. 50mfs. New ST and disposal bed. No outflow PI visible.
110	ST	N	1 1/2 str old wht/grn trim house on raised foundation, app. 90mfs, <10mfwc. Vacant. No outflow PI visible.
111	PI	P	One str wht seasonal cottage on posts, app. 90mfs. 4in dia PI to shore. NO flow visible (MacDonald).
112	PI	P	1 1/2 str wht house on raised foundation, app 30mfs. 2, 4in dia PVC PI's to shore. No eff. visible. Murky water in wet area near house.
113	ST	N	1 1/2 str cedar sided house, app. 50mfs. No outflow PI visible. (Gallop)
114	PI	D	2 str wht house on raised foundation, app. 20mfs. 4in dia ABS PI with direct sewage discharge on shore. (Anderson).
115	ST	N	2 yel cottages <10mfs. Very seasonal. No outflow PI visible.
116	ST	P	Irving Service Station. New ST and disposal bed. Oil tanks on site. Yel/org murky, swampy area on west side of station in DR. 4in dia PI but no eff. visible.
117	ST	P	Split level wht and wooden sided house on raised foundation on hill, app. 150mfs. Vacant. No outflow PI visible.
118	ST	P	Split level wht and wooden sided house on raised foundation, app. 70mfs. 4in dia PI to side field with grn slurry visible.

119	TP	P	Ultramar Service Station with large truck station on site, app. 40mfs. Some type of aerated and chlorinated system on side of station. 12-18in corrugated metal PI and 2 wooden culverts across from station. No eff. visible.
120	PI	P	4in dia ABS PI to shore. No eff. visible. No extension through culvert.
121	ST	P	Cabot Trail Motel. Large ST and disposal bed no evidence of outflow PI.
122	WV	P	2 trailers, 2 WV's and red shed, <10mfs. No sewage system apparent. <10mfwc.
123	LE	P	1 1/2 str wht house on raised foundation, app 100mfs. LE from stoned DR. No outflow PI visible. (MacDonald).
124	PI	P	One str wht seasonal cottage, <10mfs. 4in dia PI to shore. No eff. visible.
125	ST	P	1 1/2 str new brw wooden shingled house on raised foundation, app. 30mfs. 18in dia concrete culvert to right of house. No evidence of outflow PI.
126	ST	P	2 red seasonal cottages. One older with no washroom facilities. No outflow PI visible. <10mfs.
127	ST	P	1 1/2 str new wooden shingled house on hill, >120mfs. No outflow PI visible.
128	ST	P	2 wht, one yel seasonal cottages <20mfs. 2-2in dia ABS PI's from sinks to shore. No other outflow PI's visible.
129	ST	P	Seasonal trailer >100mfs. No outflow PI visible.
130	ST	N	One str brw wooden sided house on raised foundation, app. 50mfs. No outflow PI visible.
131	PI	P	1 1/2 str wht/blk trim house on raised foundation, >500mfs. 4in dia Wht PVC PI to field. Grn/grey eff. visible.
132	PI	P	New 2 str red/wht trim wooden shingled house on raised foundation with wht/blk trim mobile home in front of house >500mfs. 2, 4in dia. wht PVC PI's to ravine with WC. No eff. visible. New ST and disposal bed according to owner.
133	PI	P	One str blue house on raised foundation, >500mfs. 4in dia PI to DR by highway. Slurry eff. visible.
134	PI	P	Bras d'Or Lakes camp ground. 28 sewage sites and dumping station. Holding tank to aerator to settling section to clear water overflow. App. 30mfs. 4in dia ABS PI to shore. No eff. visible. Surface area is wet. Small WC to shore which appears cloudy. Pool on site.
135	PI	D	1 1/2 str wht/blk trim house on raised foundation, app. 30mfs. 2, 4in dia PI. One to shore and one to WC. Both show sludge gray eff.
136	ST	P	One str brw seasonal cottage and shed, app. 10mfs. No outflow PI visible. (Hutchinson).
137	ST	P	1 1/2 str brw wooden house on raised foundation, <10mfs. Eff. pumped 300ft to woods. (Johnson).
138	ST	P	New one str wht stone house on pad, app. 30mfs. No outflow PI visible. Seasonal. (Osswell).
139	ST	P	One str wht/red trim seasonal cottage, app. 70mfs, <15mfwc. No outflow PI visible. (Rockwell).
140	PI	P	One str brw wooden seasonal house, <10mfs. 4in ABS PI to shore. No eff. visible. (Holman).
141	OH	P	One str seasonal cottage on raised foundation app. 100mfs. OH in wet area behind house.
142	ST	N	One str brw seasonal cottage, app. 40mfs. No outflow PI visible. (Kennedy).
143	PI	P	One str wht/red trim house on raised foundation. 4in dia PI to DR by highway. Gray eff. visible. (MacLean).
144	OH	P	One str wht/blue trim seasonal cottage on posts, >500mfs. OH on hill behind cottage over DR. (Murphy).
145	ST	P	New 2 str brw wooden cedar sided house on raised foundation, app. 20mfs. No outflow pipe visible. (Jamieson).
146	OH	P	One str seasonal grn cottage on posts with OH app 25mfs.
147	ST	P	Golden Falcon seasonal tailor with exposed ST and overflow PI to DR. No eff. visible. App. 25mfs.
148	ST	P	2 str brw wooden sided house on raised foundation, <20mfs. Brw shed and garage. No outflow PI visible. (MacQuarrie).
149	ST	P	One str gray/org trim seasonal cottage on posts, <20mfs. No outflow PI visible.
150	PI	P	New 2 str cedar sided house on raised foundation, <20mfs, <10mfwc. 3, 4in dia PI's to shore. 2 are NP.
151	ST	P	One str wht/red trim house on raised foundation, app. 20mfs. Drainage outflow PI to left of house. No other outflow PI visible. (MacDonald).
152	ST	P	One str cedar sided house on flat bed, 2 str cedar boathouse on slab, app. 20mfs. No outflow PI visible.
153	PI	P	1 1/2 str re/wht trim house on raised foundation, >100mfs. 4in dia PI overflow to field. No eff. visible.

154	PI	P	1 1/2 str wht/red and grn trim house on stone foundation With 2 sheds, app. 80mfs. 4in dia PI to field on hill. No eff. visible.
155	ST	P	One str wht/red trim house on raised foundation, app. 40mfs. No outflow PI visible. (Campbell).
156	ST	P	2 1/2 str brw/wht trim house on raised foundation on hill, app. 40mfs. 4in dia ABS PI to DR beside house. Gray eff. visible.
157	OH	P	1 1/2 str wht/grn trim seasonal cottage with shed and garage. OH over ravine, <10mfwc, app. 60mfs.
158	PI	P	1 1/2 str wht/grn house on raised foundation with garage, 2 sheds and lg wooden shingled barn. 4in dia overflow PI to field. No effluent pipe was detected due to restricted access to view area. >300mfs.
159	ST	P	1 1/2 str gray wooden shingle house, app. 100mfs. No outflow PI visible. Old OH over small WC.
160	OH	P	One str brw wooden seasonal cabin, <20mfs, <20mfwc.
161	OH	P	One str blue wooden seasonal cottage, app. 35mfs. OH app. 45mfs.
162	ST	P	One str brw/beige trim seasonal cottage with 2 sheds, <30mfs. No outflow PI visible.
163	OH	P	One str yel seasonal cottage and wht shed, <20mfs. OH approx. 40mfs.
164	OH	P	One str wht seasonal cottage and trailer, approx. 10-40mfs. OH app. 90mfs in wet area.
165	ST	P	1 1/2 str wht/blue trim house, <10mfwc. No outflow PI visible.
166	PI	P	2 str yel house on raised foundation with red barn. 4in dia PI to wet area <30mfwc. No eff. visible. (MacDonald).
167	ST	P	Wht sided wood and brick 2 str house on raised foundation with large wht/red trim garage, app. 35mfs. No outflow PI visible.
168	PI	P	1 1/2 str wht/blk trim house on raised foundation, >100mfs. 4in dia outflow PI to field. (MacDonald).
169	ST	D	1 1/2 str red/wht trim seasonal cottage, approx. 80mfs. Part of TF exposed. No outflow PI visible.
170	OH	D	Group of 3 seasonal cottages; red, wht/grn trim and one wht. 2 OHs. One over iwc and one <10mfwc.
171	ST	P	One blue/wht trim, one red/wht trim seasonal cottages, app. 10mfs. No outflow PI's visible.
172	ST	P	Wht/brw mobile home, app. 70mfs. No outflow PI visible.
173	ST	P	One str wht house on raised foundation with red garage and shed, app 30mfs. No outflow outflow PI visible.
174	ST	P	Wht/brw trim mobile home, app. 10mfs, <5mfwc. 4in dia ABS PI to 45gal drum then to ground in field.
175	OH	P	2 trailers with OH <20mfs.
176	OH	P	Group of 4 trailers with 3 with sewage to ground, one OH, >100mfs.
177	PI	P	2 str wht house on raised foundation, >300mfs. Old ST with 4in dia overflow PI to DR according to owner. New one str wht house on raised foundation. No outflow PI visible.
178	PI	P	1 1/2 str wht/gray trim house on raised foundation, >200mfs. 4in dia PVC PI to DR in field. No eff. visible.
179	OH	P	One str wht seasonal cottage with OH, app. 30mfs.
180	OH	P	'Mastercoach' trailer with OH >200mfs.
181	ST	P	2 trailers <20mfs. No outflow PI's visible. Both seasonal with sewer to ground.
182	PI	P	2 permanent homes, 3 seasonal cottages, one trailer, one seasonal house. OH on hill, one cottage with 4in dia PI wooded area, one new cottage with no plumbing, old seasonal house with old ST and overflow PI to field, permanent house with old ST and overflow PI to field. Newer home with no PI visible. All >120-200mfs.
183	OH	P	One str grn/wht trim seasonal cottage, app. 70mfs. OH over small IWC.
184	ST	P	New one str brw/wht trim house on hill, app. 50mfpnd. A number of speedboats docked at mouth of pond.
185	ST	P	Split level wht house on point with WV, app. 30mfs. No outflow PI visible.
186	PI	P	1 1/2 str wht house on hill, app. 100mfs. 4in dia PI overflow to back gully.

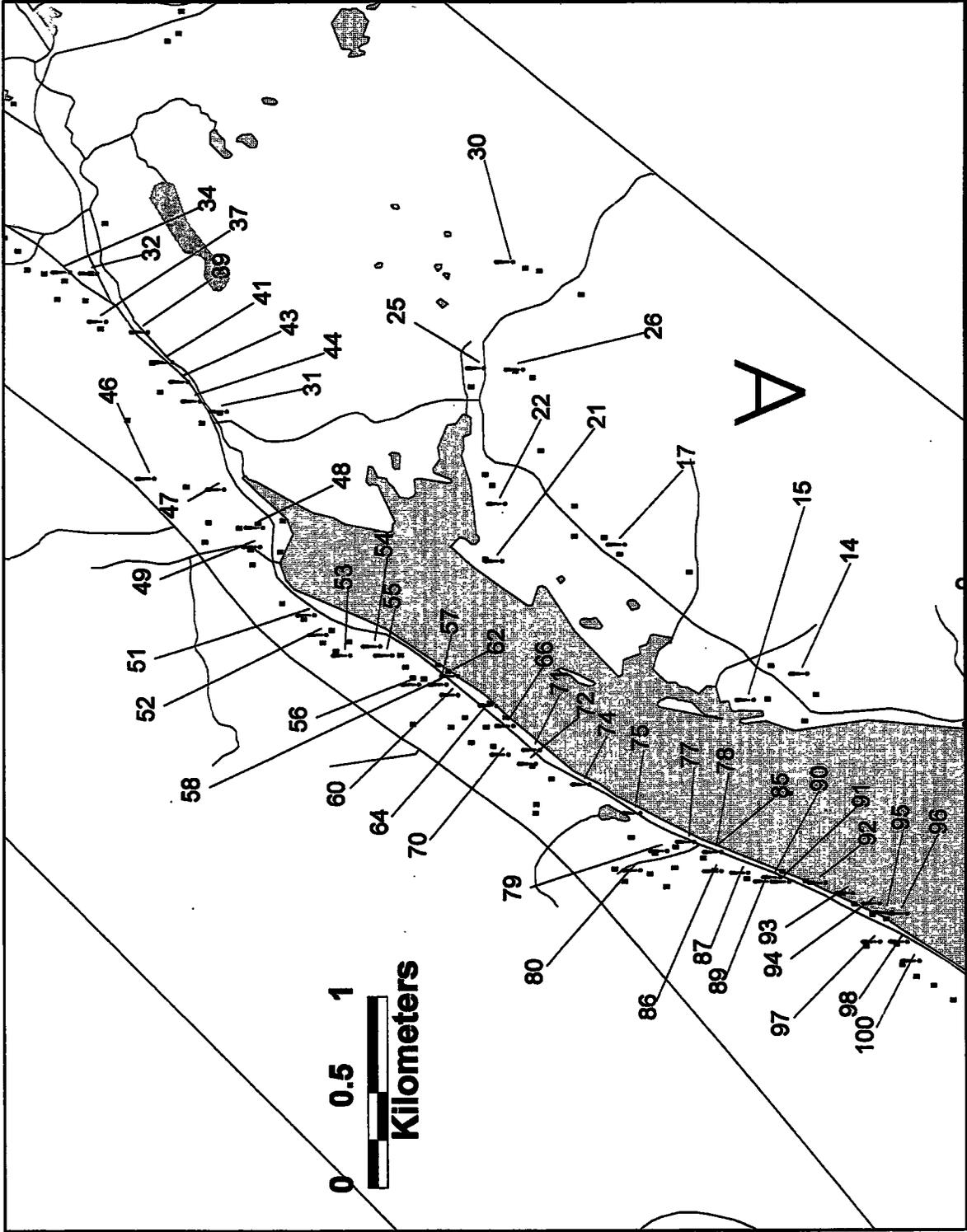


FIGURE 3C. SANITARY OBSERVATION SITE LOCATIONS, BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005)

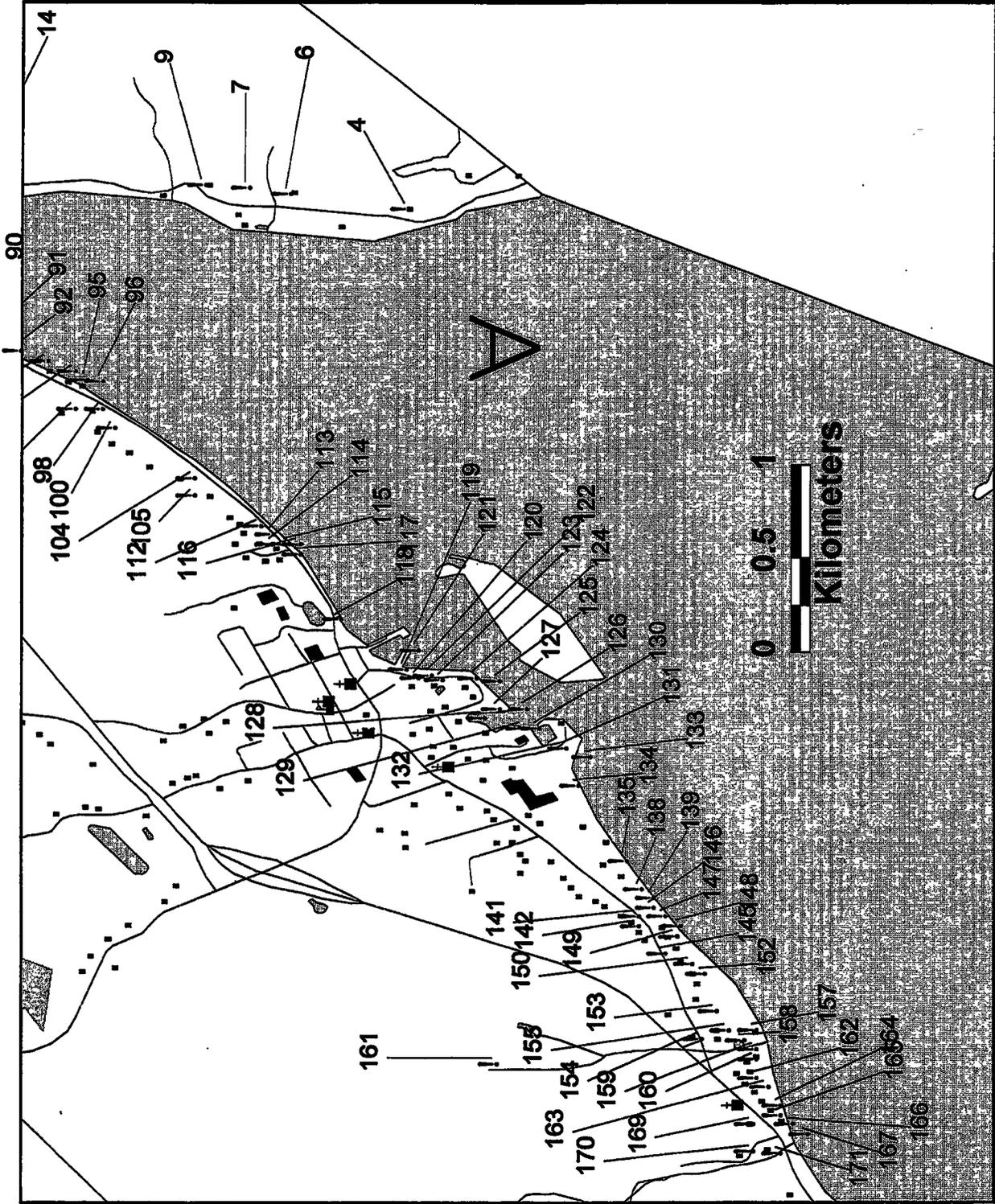


FIGURE 3C (cont.). SANITARY OBSERVATION SITE LOCATIONS, BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005)

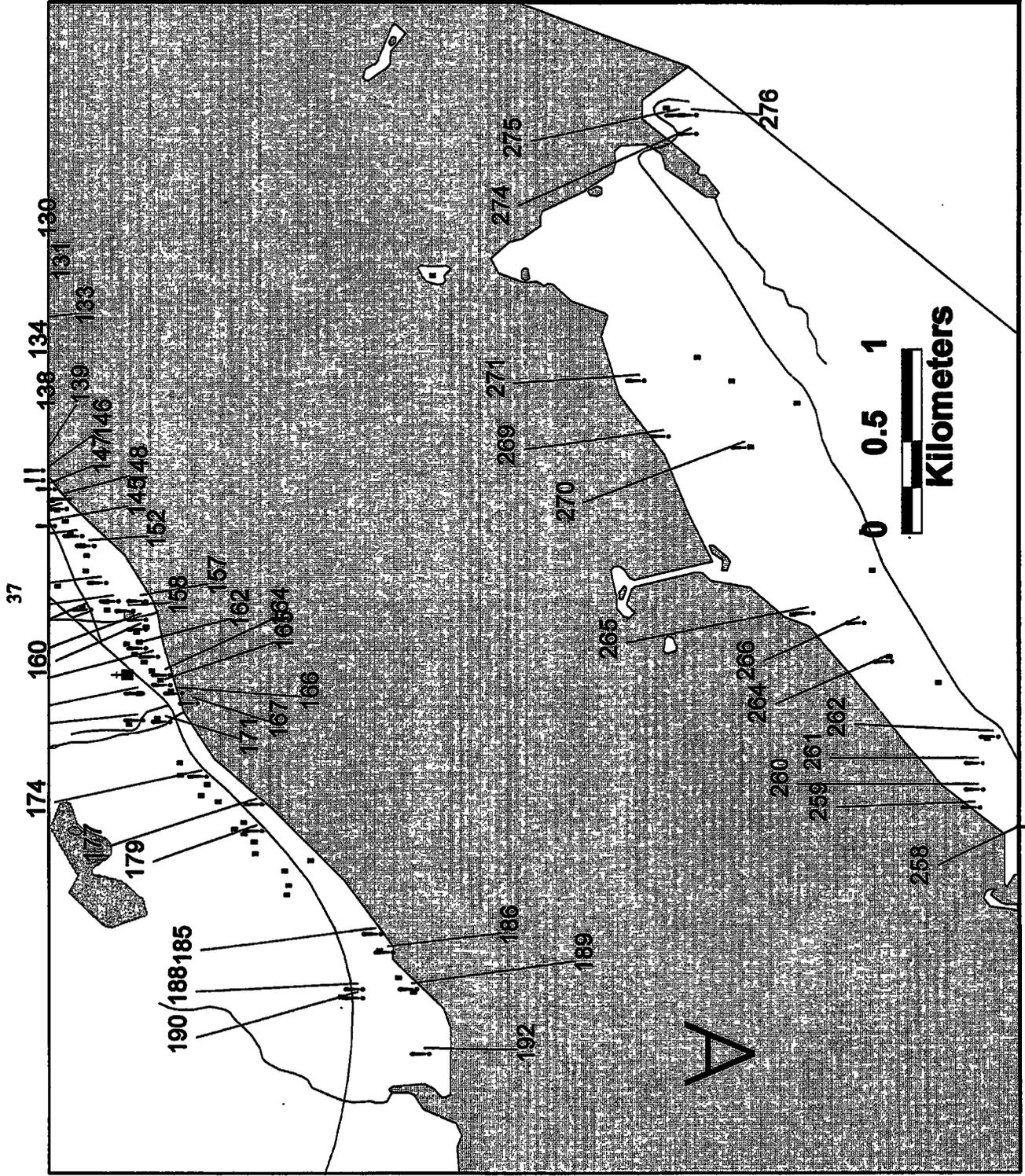


FIGURE 3C (Cont.). SANTARY OBSERVATION SITE LOCATIONS, BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005)

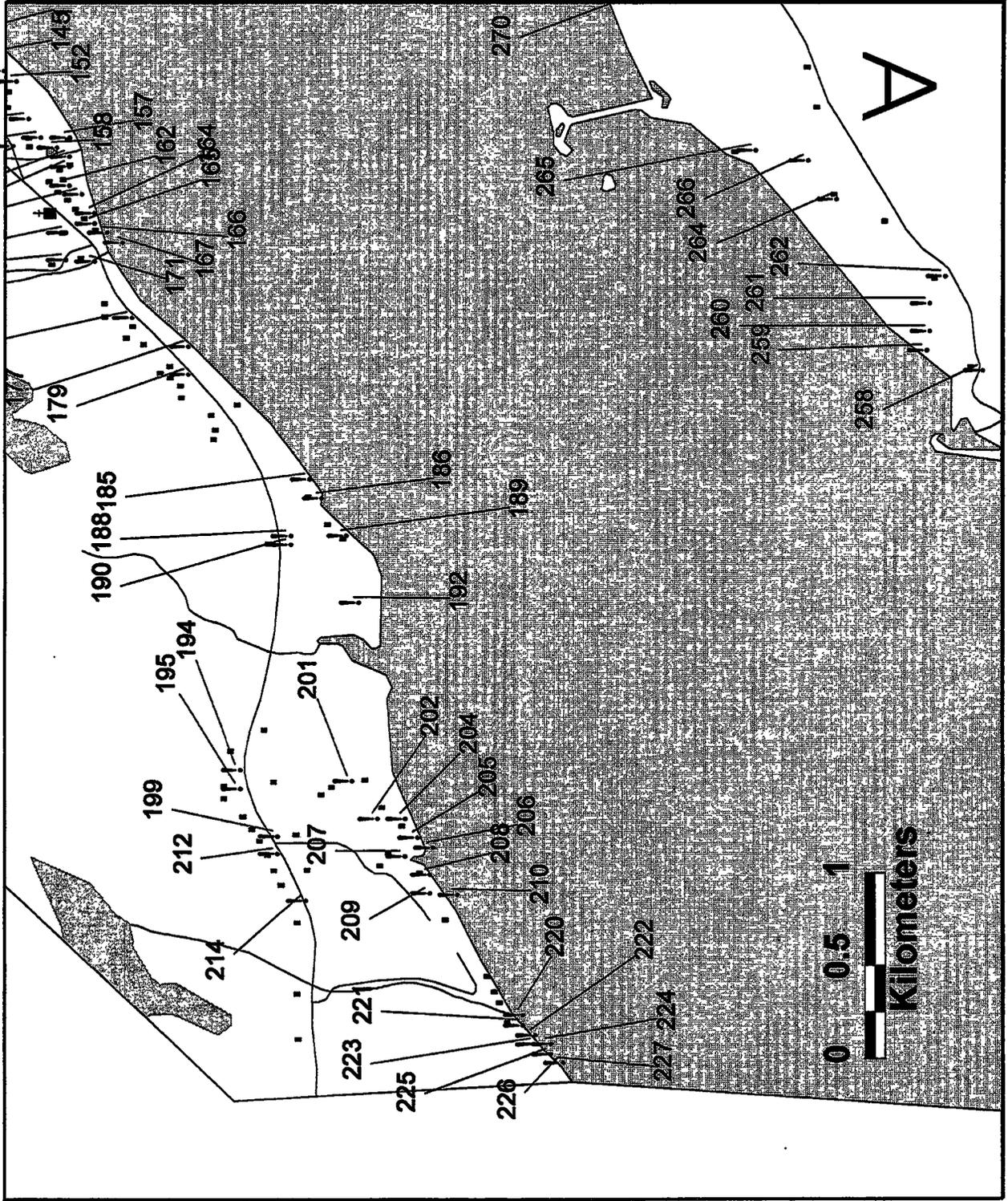


FIGURE 3C (cont.). SANITARY OBSERVATION SITE LOCATIONS, BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005)

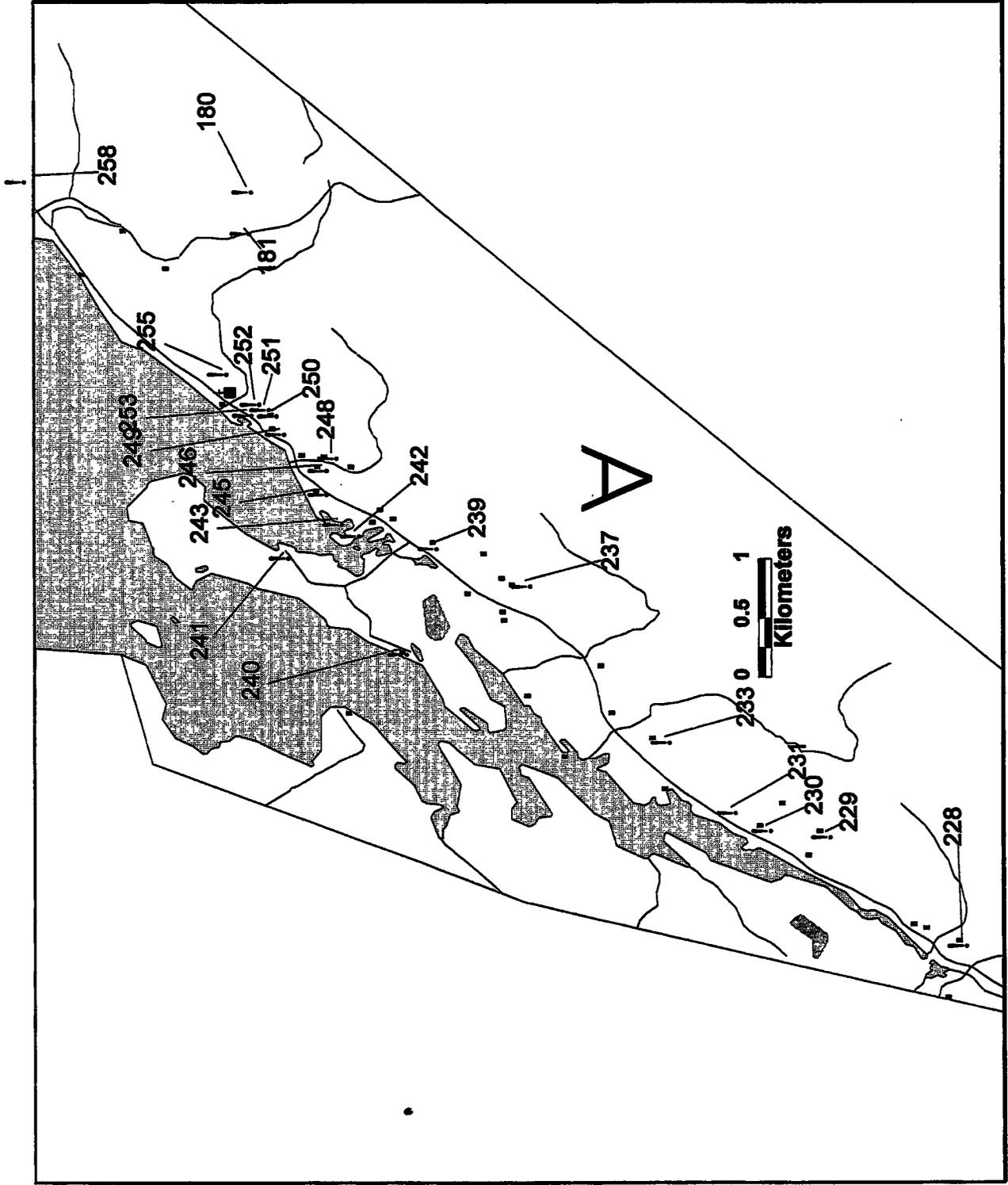


FIGURE 3C (Cont.). SANITARY OBSERVATION SITE LOCATIONS, BADDECK BAY / ST. PATRICK'S CHANNEL (NS-7-010-005)

Sub-sector Name (Number):

Nyanza Bay / St. Patrick's Channel (NS-7-010-006)

Date surveyed:	1990-96
No. of sampling runs:	18
Shellfish classification:	Figure 4A
Sampling station locations:	Figure 4B
Fecal coliform results:	Tables 4A & 4B
Salinity data:	Table 4C
Water temperature data:	Table 4D
Shoreline sanitary observations:	Table 4E & Figure 4C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The subsector includes the First Nations Wagmacook community. Shellfish culture is active in the area. A large finfish culture site is located in Nyanza Bay. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991d). The current classification (Figure 4A) includes two shellfish closures, at Nyanza Bay and MacRitchies Cove as follows:

Closed

That portion of Nyanza Bay inside a line drawn from grid reference 6170 0400 to the wharf at Nyanza at grid reference 6305 0598, and thence to grid reference 6460 0513. Refer to map Baddeck 11K/2.

That portion of St. Patricks Channel (Hume River) inside of a line drawn from grid reference 5960 0165 to grid reference 5970 0172. Refer to map Baddeck 11K/2.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

Refer to Shoreline Sanitary Survey (Table 4E) below.

Bacteriological Water Quality

The twenty key stations (Figure 4B) surveyed on approximately eighteen occasions since 1990 (Tables 4A & 4B) continue to meet the criteria for an approved classification. During the last three sampling runs in 1996 elevated fecal coliform counts were observed throughout much of the area from the closure at Nyanza to the western limit of the sub-sector. These events are

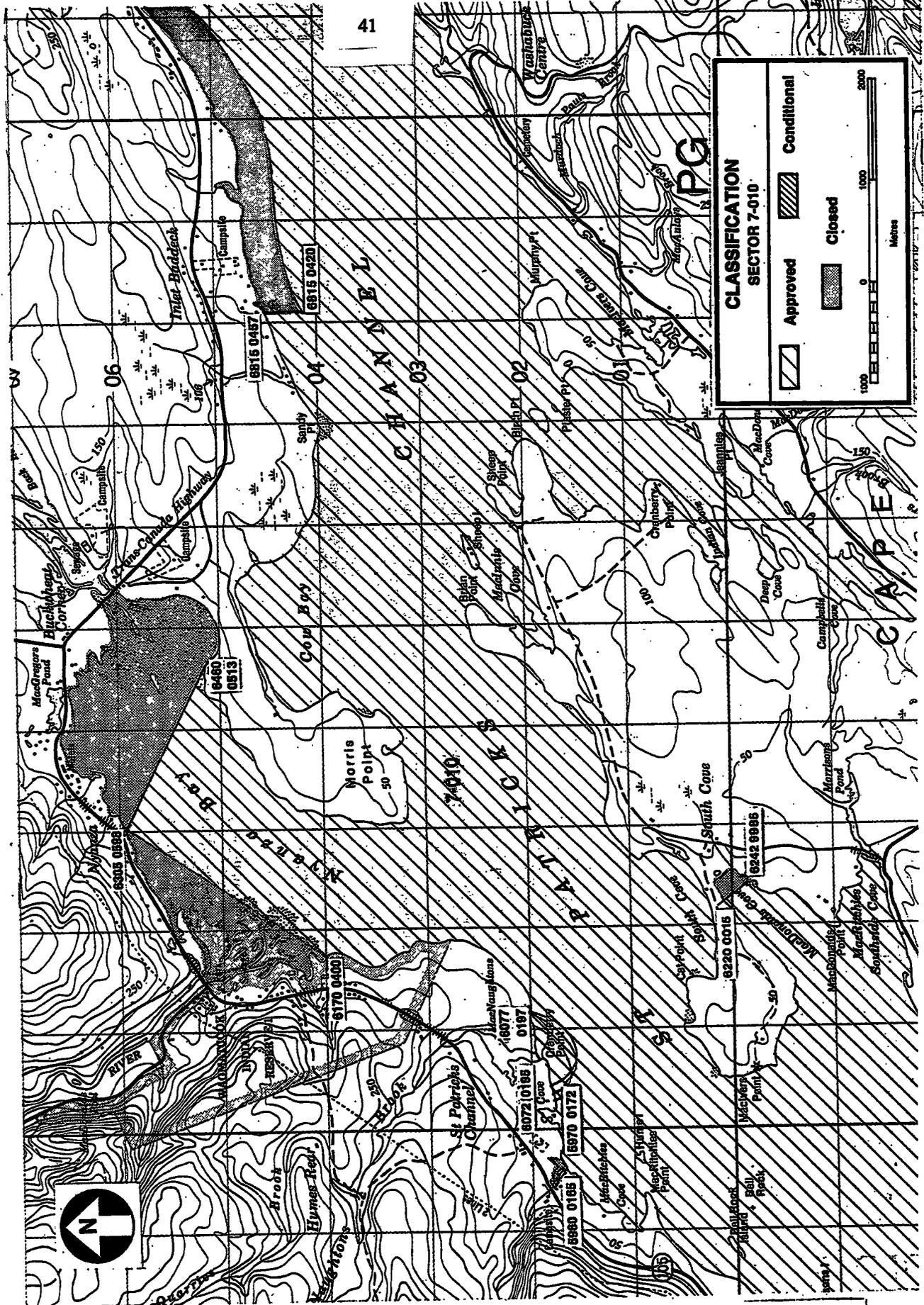


FIGURE 4A. PRESENT SHELLFISH CLASSIFICATION FOR NYANZA BAY / ST. PATRICK'S CHANNEL



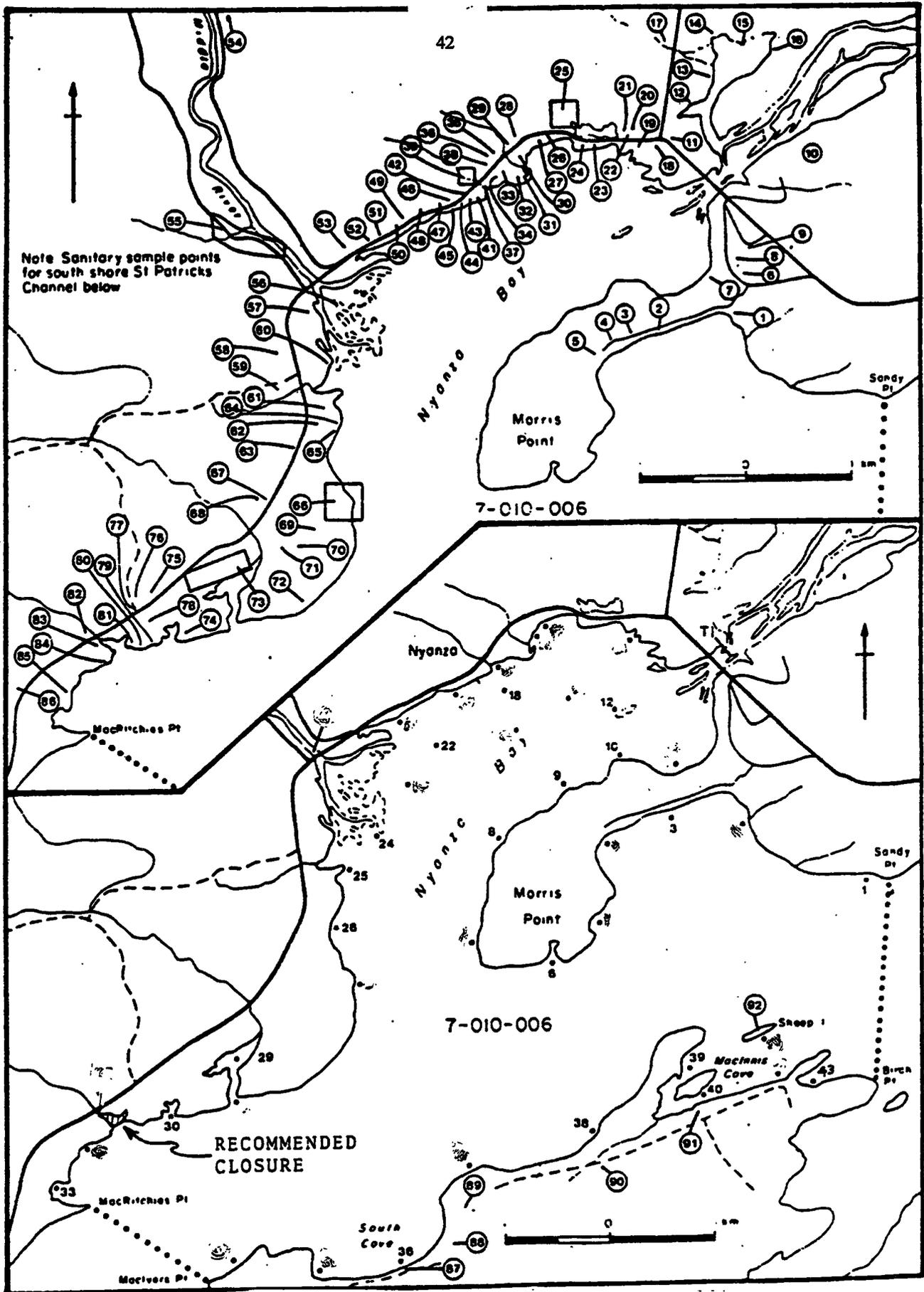


FIGURE 4B. KEY STATION SAMPLING LOCATIONS IN NYANZA BAY / ST. PATRICK'S CHANNEL

apparently unrelated to precipitation. It appears as if there may be a recent change in sanitary condition. The classification of the area should be re-evaluated.

TABLE 4A. NYANZA BAY / ST. PATRICK'S CHANNEL (NS-7-010-006) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	18	1990-1996	1.9	17	3	1.9	6	0
3	17	1990-1996	1.9	8	2	1.9	4	0
6	17	1990-1996	1.9	40	3	1.9	8	0
8	18	1990-1996	1.9	33	4	1.9	15	0
9	18	1990-1996	1.9	70	4	2	21	6
10	18	1990-1996	1.9	49	5	2	27	6
12	18	1990-1996	1.9	350	7	5	45	11
18	18	1990-1996	1.9	130	5	2	26	6
22	18	1990-1996	1.9	130	6	7	26	6
24	18	1990-1996	1.9	49	5	5	20	6
25	18	1990-1996	1.9	170	6	3	34	6
26	18	1990-1996	1.9	130	4	1.9	19	6
29	18	1990-1996	1.9	170	6	4	47	17
30	18	1990-1996	1.9	70	6	3	33	11
33	18	1990-1996	1.9	540	4	2	23	6
36	18	1990-1996	1.9	49	4	1.9	15	6
38	18	1990-1996	1.9	33	3	1.9	10	0
39	18	1990-1996	1.9	49	3	1.9	8	6
40	18	1990-1996	1.9	13	3	1.9	7	0
43	18	1990-1996	1.9	23	3	1.9	6	0

Recommendations

The present evaluation indicates there may be a change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 4A) should be re-evaluated.

TABLE 4B. NYANZA BAY / ST. PATRICK'S CHANNEL (NS-7-010-006) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	25 May 90	31 May 90	08 Jun 90	16 Jun 90	30 Jun 90	09 Jul 90	15 Jul 90	26 Jul 90	06 Aug 90	13 Aug 90	25 Aug 90	06 Sep 90	20 Sep 90	21 May 96	13 Jun 96	09 Jul 96	23 Jul 96	20 Aug 96	
1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
8	1.9	5	7	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
9	1.9	70	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
10	1.9	49	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
12	1.9	33	4	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
18	1.9	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
22	1.9	8	1.9	7	8	1.9	2	2	2	2	2	2	2	2	2	2	2	2	
24	1.9	23	1.9	33	49	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
25	1.9	1.9	17	13	33	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
26	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
29	2	8	2	23	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
30	1.9	11	2	2	22	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
33	1.9	2	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
36	1.9	1.9	11	1.9	23	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
38	1.9	33	8	1.9	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
39	1.9	8	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
40	1.9	8	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
43	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
Tide	LR-MT	MR-HF	LR-MR	MR-FR	MR-FR	HF-MF	HT-HF	HT-HF	HF-MT	LT-LR	LR-MT								
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide; HF = High Falling; MR - Mid Rising; L:T= Low Tide;

HR - High Rising; LF = Low Falling;

MT= Mid Tide; LR - Low Rising;

MF = Mid Falling;

TABLE 4C. NYANZA BAY / ST. PATRICK'S CHANNEL (NS-7-010-006) - SALINITIES (‰)

Station	25 May 90	31 May 90	08 Jun 90	16 Jun 90	30 Jun 90	09 Jul 90	16 Jul 90	26 Jul 90	06 Aug 90	13 Aug 90	26 Aug 90	06 Sep 90	20 Sep 90	30 Sep 90	21 May 96	13 Jun 96	09 Jul 96	23 Jul 96	20 Aug 96
1	12	20	20	16	20	20	20	21	21	18	20	22	22	22	18	20	20	18	20
3		20	20	16	20	20	20	22	21	12	20	23	22	22	18	20	20	21	20
6		20	18	14	18	18	20	21	18	17	20	24	22	22	17	18	20	12	20
8	10	16	10	15	18	18	20	20	18	5	10	22	18	20	3	8	15	0	15
9	12	2	8	10	20	19	20	20	14	4	6	21	18	20	4	8	15	0	12
10	12	0	6	8	14	18	11	14	14	2	5	20	20	20	2	6	15	0	5
12	10	3	14	5	16	15	14	10	0	0	4	7	20	18	2	5	19	0	18
18	12	18	16	8	14	16	20	14	4	4	8	18	20	14	2	5	12	0	20
22	2	16	6	6	12	12	19	16	5	8	8	15	16	18	6	1	4	0	20
24	5	15	12	4	4	4	20	18	13	8	8	20	16	20	10	8	8	0	20
25	6	18	8	6	8	8	21	20	16	12	20	18	20	20	12	6	8	0	17
26	6	18	14	12	16	18	22	20	16	16	18	19	20	20	12	10	13	0	19
29	6	15	6	12	12	18	21	16	2	2	15	20	20	20	7	2	7	1	20
30	12	17	10	15	14	16	22	17	2	2	16	20	20	18	15	10	17	3	20
33	6	18	10	18	12	20	22	21	14	14	22	22	20	22	16	18	14	12	20
36	11	15	6	18	16	20	21	21	12	12	22	20	20	21	16	20	19	4	20
38	12	15	8	17	18	20	22	20	10	10	20	21	20	21	17	20	20	1	20
39	12	16	16	19	20	20	22	22	13	13	22	22	20	20	18	20	19	15	20
40	11	14	16	19	20	20	21	22	15	15	22	22	20	20	18	20	19	11	20
43	12	16	17	20	20	20	20	22	18	18	22	22	20	20	18	20	19	12	20
Tide	LR-MT	MIR-HF	LR-MR	LR-MR	HF-MF	LR-MR	MIR-HR	HF-MF	HF-MT	HF-MT	HF-MT	HF-MT	LR-MT						
Rain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	1.4	1.4	0	2.2
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	1.4	1.4	1.4	2.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.7	1.4	1.4	1.4	30

TABLE 4D. NYANZA BAY / ST. PATRICK'S CHANNEL (NS-7-010-006) - WATER TEMPERATURE (°C)

Station	25 May 90	31 May 90	08 Jun 90	16 Jun 90	30 Jun 90	09 Jul 90	15 Jul 90	26 Jul 90	06 Aug 90	13 Aug 90	25 Aug 90	06 Sep 90	20 Sep 90	21 May 96	13 Jun 96	09 Jul 96
1				17										9	15	17
3			14			16	18		23	24	21			9	15	16
6					18				21	25	21	20	16	9	15	16
8	10				18				21	21	21			9	16	16
9														9	16	16
10			15	20	18	18	21	21	21	26	22	17		9	16	16
12				21	18				20	25	22	22		9	16	17
18					15				22	19	20	19		8	16	17
22														8	16	15
24	9		14			16	18		22	24	21		16	9	16	15
25				19										9	16	16
26														9	16	16
28				13	19	15	18		20	23	21	20	16	9	17	14
29				13										9	17	15
30				13										9	17	15
33				13		16	17		21	22	21	17		9	17	15
36														9	16	16
38	8		15	18		16			21	22	21			9	15	16
39			13		17	16	17		21	22	21	20		9	16	16
40			13	17					22	23	22	20	17	10	16	16
43				18	18	17	19		22	23	22	20	17	9	16	16
Tide																
Rain (mm)																
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	1.4
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	1.4
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	0	6.7	1.4	1.4

TABLE 4E. SHORELINE SANITARY SURVEY:

NS-07-010-006: NYANZA BAY/ST PATRICKS CHANNEL
 FROM SANDY POINT TO MACRITCHIES POINT
 INSPECTOR: ROBERT KENNEY
 COMPREHENSIVE: JULY 10, 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 4C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with residences, seasonal cottages, three trailer courts, Wagmatcook Indian Reserve, one motel, and Middle River with the many residences, cottages and farms along its banks. Most of the shoreline along the Bras d'Or is under laid with fire clay.
1	NS	N	One str red boat house. 2 row boats.
2	ST	P	1 1/2 str yel/whit trim seasonal house on posts with smaller yel cottage and shed on site, 4in dia ABS PI to ground. No outflow PI visible. App. 40mfs.
3	OH	P	Beige/brw trim mobile home with OH app. 50mfs.
4	OH	P	New A-frame seasonal cottage with OH app. 50mfs
5	OH	P	3 seasonal cottages. One brw wooden, one brw wooden with red trim, and one grn with whit trim. All on posts with OH's app. 50mfs.
6	PI	P	2 str whit house on raised foundation with red barn. 2 old 45gal drums with 4in dia overflow PI to wooded area, >250mfs.
7	ST	P	One str yel seasonal cottage on raised foundation, app. 70mfs. No outflow PI visible
8	ST	P	2 str brw/whit trim house on raised foundation >250mfs. No outflow PI visible.
9	ST	P	Silver Spruce Campground. 90 non-sewage sites washroom facilities, dumping station and pool. 9000gal ST with 2 compartments with alternating siphoning System to 3 disposal beds of 4200ft ² total.
10	PI	D	KOA Campground with 2 lagoons and a chlorinator. App. 160 campsites, 40 with sewer, a dumping station, 2 washroom facilities and a pool. Lagoons covered with algae. A 6in dia ABS PI runs to river. A sample yielded 40mpn/100ml. Sample at Baddeck River Bridge Yielded a count of 4600mpn/100ml.
11	ST	P	'Cabotland' - Novelty shop, restaurant, and take out diner. ST and disposal bed. No outflow PI visible.>300mfs.
12	ST	P	New one str blue house on raised foundation, app. 40mfs. No outflow PI visible.
13	ST	P	2 str brw wooden seasonal cottage, app. 100mfs. Presently installing ST and disposal bed.
14	OH	P	Small whit trailer and OH app. 15mfs.
15	XX	P	Large goose population in marsh river area.
16	ST	P	Wood sided mobile home app. 40mfs. No outflow PI visible.
17	LE	P	1 1/2 str red house on raised foundation, <15mfwc. 4in dia outflow PI from ST to wet area <5mfwc. Grn sludge flow.
18	PI	P	2 1/2 yel/red trim house on raised foundation, >200mfs. PI to DR in back yard. Gray slurry visible.
19	PI	P	Body shop. 4in dia PI to ground. Effluent PI to ravine, to WC. Presently not utilizing washrooms. >150mfs.
20	ST	P	1 1/2 str wht/brw trim house on raised foundation, app. 150mfs. No outflow PI visible. (Burke)
21	ST	P	1 1/2 str wht/red trim seasonal house. No outflow PI visible. App. 60mf swamp. (Kennedy).
22	ST	P	BI's Restaurant. ST and disposal bed. No evidence of outflow PI. App. 50mf swamp.
23	NS	N	C.B. Tourist Ass. Booth. Holding tank pumped out regularly.

24	ST	P	One str red seasonal cottage, app. 20mfs. No outflow PI visible.
25	ST	P	Group of 3 residences, one seasonal, one two-seasonal and one unused cottage, app. 50-100mfswamp. No outflow PI's visible. Area underlain with gravel.
26	ST	P	One str brw house on raised foundation, app. 35mfs. No outflow PI visible.
27	ST	P	Trailsman Motel - 3 ST's and disposal beds. Pool on site, 45 units. App. 30mfs.(MacCrae)
28	ST	P	One str wht/grn trim house on raised foundation, >100mfs. No outflow PI visible.
29	ST	P	One str rust brick house on hill, >100mfs. No outflow PI visible.
30	PI	P	2 str yel/brw trim house on raised foundation app.50mfs and <30mfwc. Direct discharge of sewage to wet area in woods behind house.
31	ST	P	Beige/brw trim mobile home. App. 40mfwc. No evidence of outflow PI.
32	ST	P	One str wht/grn trim seasonal house on raised foundation, app. 30mfs. No outflow PI visible
33	ST	P	One str wht.red trim seasonal house, app. 15mfwc and 100mfs. No outflow PI visible.
34	ST	P	One str brw wooden seasonal cottage, app. 90mfs and <10mfswamp. No outflow PI visible.
35	ST	P	New 2 str yel house, app. >200mfs. No outflow PI visible.
36	OH	P	1 1/2 str old gray wooden house with OH >200mfs.
37	ST	P	One str red house on raised foundation, app. 30mfs. No outflow PI visible. (Young)
38	ST	P	One str wht/red trim house on raised foundation, >100mfs. No outflow PI visible.
39	OH	P	Group of 4 trailers, 1 permanent! One with OH app. 100mfs, The other three trailers have sewer to ground. No outflow PI visible. Two trailers <20mfwc.
40	PI	P	2 str wht/grn trim house on raised foundation and wht mobile home on site. Both on same ST. 4in dia PVC PI to DR. Gray slurry visible. App. 50mfswamp.
41	ST	P	1 1/2 str red house on raised foundation, app 10mfs. No outflow PI visible.
42	ST	P	Herring Choker Restaurant, app. 40mfs. No outflow PI visible. Raised ST and disposal bed.
43	WV	P	Red barn and WV with 1 or 2 sailboats or speedboats tied up during the summer.
44	ST	P	2 str seasonal wht house with wht shed and large wooden barn. No outflow PI visible. App. 35mfs.
45	ST	P	2 str brw wooden shingled house on raised foundation, <5mfs. No outflow PI visible.
46	NS	N	Abandoned gas station.
47	PI	P	1 1/2 str wht house on raised foundation, app 40mfs. Old ST with 4in dia ABS PI to stream ravine full of domestic garbage. (MacIver)
48	ST	P	2 str brw wooden shingled house on raised foundation on hill with large wooden shingled garage. App. 60mfs. No outflow PI visible.
49	ST	P	1 1/2 str red/wht trim house on raised foundation, app. 150mfs. No outflow PI visible. (MacDonald)
50	ST	P	1 1/2 str wht/blue trim seasonal cottage on stone foundation, app. 150mfs. Potential LE from ST area. No outflow PI visible. (Dowe)
51	ST	P	1 1/2 str wht/blk trim house on raised foundation, app. 100mfs. No outflow PI visible.
52	ST	P	New 1 1/2 str brw wooden shingled house on raised foundation, app. 100mfs and 30mfswamp. No outflow PI visible.
53	NP	P	2 str yel/wht trim house on raised foundation >200mfs and <10mfwc. No evidence of outflow PI. 5 cattle in field. Manure is spread on field near water course. Large wooden barn.
54	NP	P	Along the banks of the Middle River, up to 12 Km from the Bras d'Or Lakes, there are app. 3 to 4 small farms, some seasonal cottages but mostly residences. Fishermen often park trailers along the banks. OH's were common with the cottages.
55	ST	P	One str red house with raised foundation, >100mfwc. LE from disposal bed to roadside DR. Group of 6 houses along road with

			no outflow PI's visible. All with ST and disposal bed.
56	NP	P	App. 10 cattle graze in delta at mouth of Middle River.
57	TP	D	Sewage lagoon used to serve 55% or about 225 people. Lagoon pumped out twice a year at which time it is chlorinated. 6in dia concrete, <10mfwc, PI used to empty Lagoon directly into mouth of river. LE from lagoon into a wet area <20mfwc. Swamp area almost entirely surrounding lagoon. Small stream to west of lagoon. Effluent chlorinated upon release.
58	TP	P	One of six sand beds serving 5 or 6 homes. 4in dia PI discharging a gray slurry >150mfwc
59	TP	P	Sewage sand filter bed with 4in dia PI to ravine area of WC. <10mfwc.
60	TP	P	Sewage sand bed, app. 40mfs. No discharge visible.
61	TP	P	Sewage sand bed with gray slurry discharge from 4in dia PI. >200mfs.
62	TP	P	Sewage sand bed with gray slurry discharge from 4in dia PI to field. >200mfs.
63	TP	P	Sewage sand bed with LE from bed to roadside DR. >200mfwc.
64	LE	P	One str yel house on raised foundation, app. 35mfs. Black liquid sewage discharge near roadside DR.
65	LE	P	One str red house on raised foundation, app., 60mfs. Apparent LE from gravelled area behind house.
66	OH	P	4 cabins used bi-weekly during the weekend. 2 OH's. One in use, app. 40mfs. People use the woods around cabins as washroom.
67	ST	P	1 1/2 str wht/blk trim house on raised foundation by highway. 4in dia PI to woods. No flow visible. 2in dia PI to same area. No flow visible.
68	ST	P	One str brw wooden shingled house on raised foundation. No outflow PI visible. >500mfs.
69	ST	P	New one str red seasonal cottage on posts, >200mfs. No outflow PI visible.
70	ST	P	New 2 str off wht house on raised foundation. No outflow PI visible.
71	NS	P	New one str red seasonal cottage on posts. No plumbing or OH visible.
72	ST	P	1 1/2 str grn/wht trim seasonal cottage with two guest quarters, 2 sheds and a boat house on shore of same color. <40mfs uphill. A wood covered ST, down incline near shore in wet area. No outflow PI visible.
73	PI	P	1 1/2 str brw/wht trim house on raised foundation with shed, app. 150mfs. 4in dia PVC PI to DR. Grn sludge visible. The entire cove area is presently being developed as a tourist Inn with boating, swimming etc. Drainage and sewer system appear to be in place. WV with large sail boat docked.
74	ST	P	1 1/2 str gray wooden seasonal cottage, <30mfs. No evidence of outflow PI. (Harper)
75	ST	P	1 1/2 str wht/red trim house on raised foundation, <10mfwc. House abandoned. Old OH in back yard. No outflow PI visible.
76	NP	P	2 str wht/red trim house on raised foundation with shed and large wht/red trim barn, app. 60mfwc. 2 cows which graze close to WC, 15 hens. 4in dia PI to roadside DR. No flow visible. (MacLellan)
77	ST	P	1 1/2 str wht house on raised foundation, app 60mfwc. No outflow PI visible.
78	NS	N	Cemetery.
79	OH	P	Small seasonal blue/wht with org trim trailer with OH <10mfs.
80	ST	P	New one str brw wooden seasonal cottage, <15mfs. No outflow PI visible.
81	ST	P	One str wht/red trim seasonal cottage, <15mfs. No outflow PI visible.
82	ST	P	Humes River Trailer Court, <10mfwc. 5 cottages and 13 trailers. 3 cottages have 4in dia ABS PI's joining to what looks like an old ST app. 70mfwc or 5mfwc. All trailers have sewer PI's to ground. No outflow PI visible. No one allowed to swim in or drink the river water.
83	PI	P	2, one str wht/blue trim seasonal cottages with shed and OH of same color, >100mfs, <30mfwc. 4in dia Iron PI to ground towards two rusted 45gal drums in dried WC bed. OH over same dried bed.
84	WV	P	Small private WV with small pleasure boats and picnic area. Speedboat on shore.

85	ST	P	New 1 1/2 str new brw wooden shingled house, app. 30mfs. No outflow PI visible.
86	ST	P	1 1/2 str wht house on raised foundation with wht garage, >300mfs. No outflow PI visible.
87	NP	P	One str red/blk house on posts, app. 40mfs. No plumbing. Sewage used as fertilizer on garden.
88	ST	P	2 new seasonal cottages, one red and one wht, <100mfswamp. No outflow PI's visible.
89	ST	P	30ft Sunline seasonal trailer >100mfs. No sewer to ground and no outflow PI visible. New road to shore which has flooded wooded area. Water in area is black.
90	ST	P	2 str yel/whit trim seasonal house on raised foundation >300mfs, <150mfwc. Old ST. Could not find overflow PI.
91	ST	P	One str beige/whit trim seasonal house on raised foundation, app. 100mfs. Old gray wooden shingled house on posts <50mfs. No outflow PI visible. <20mfDR.
92	ST	P	One str seasonal cottage on island with boathouse and sheds. Unknown means of sewage disposal.

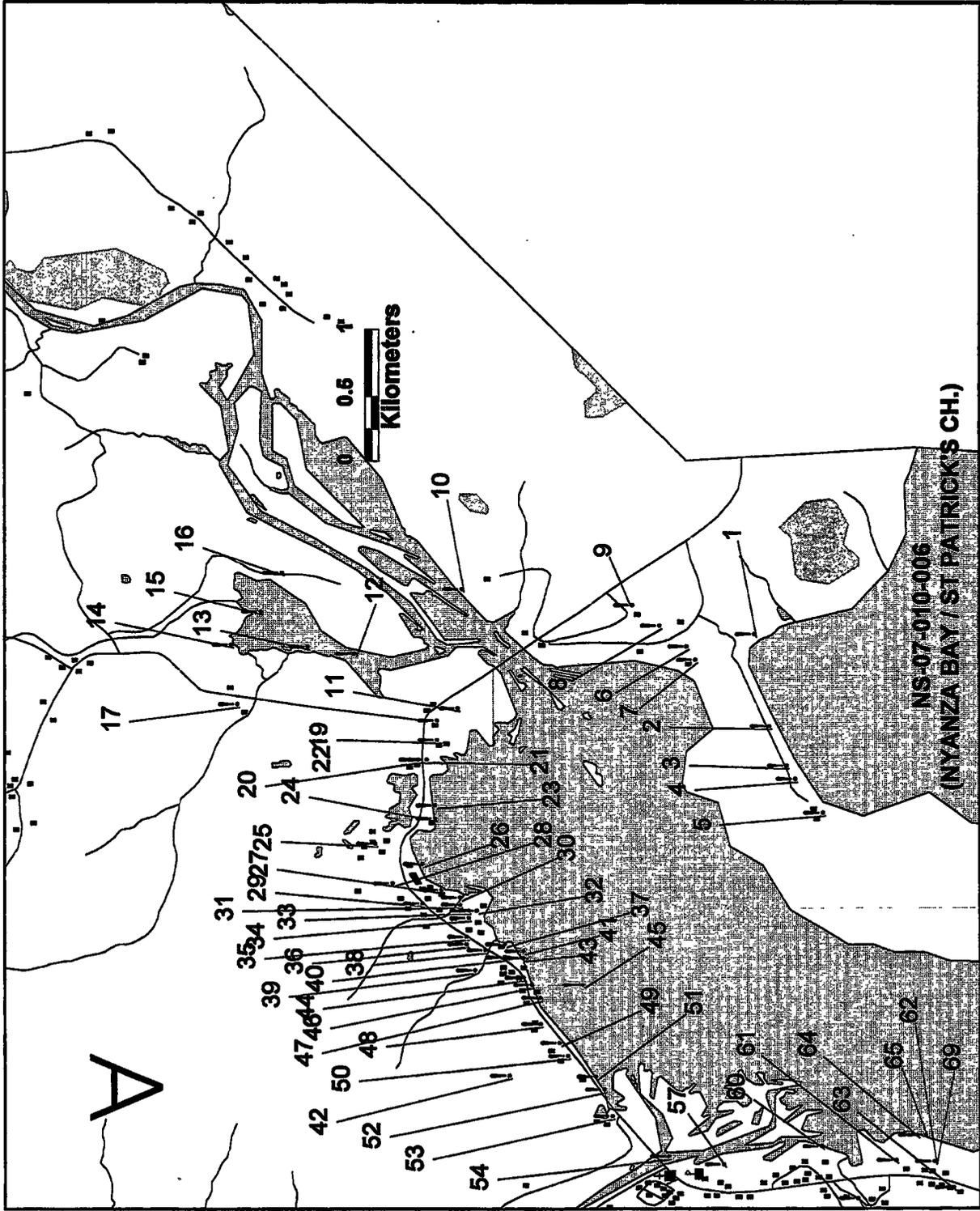


FIGURE 4C. SANTARY OBSERVATION SITE LOCATIONS, NYANZA BAY / ST. PATRICK'S CHANNEL(NS-7-010-006)

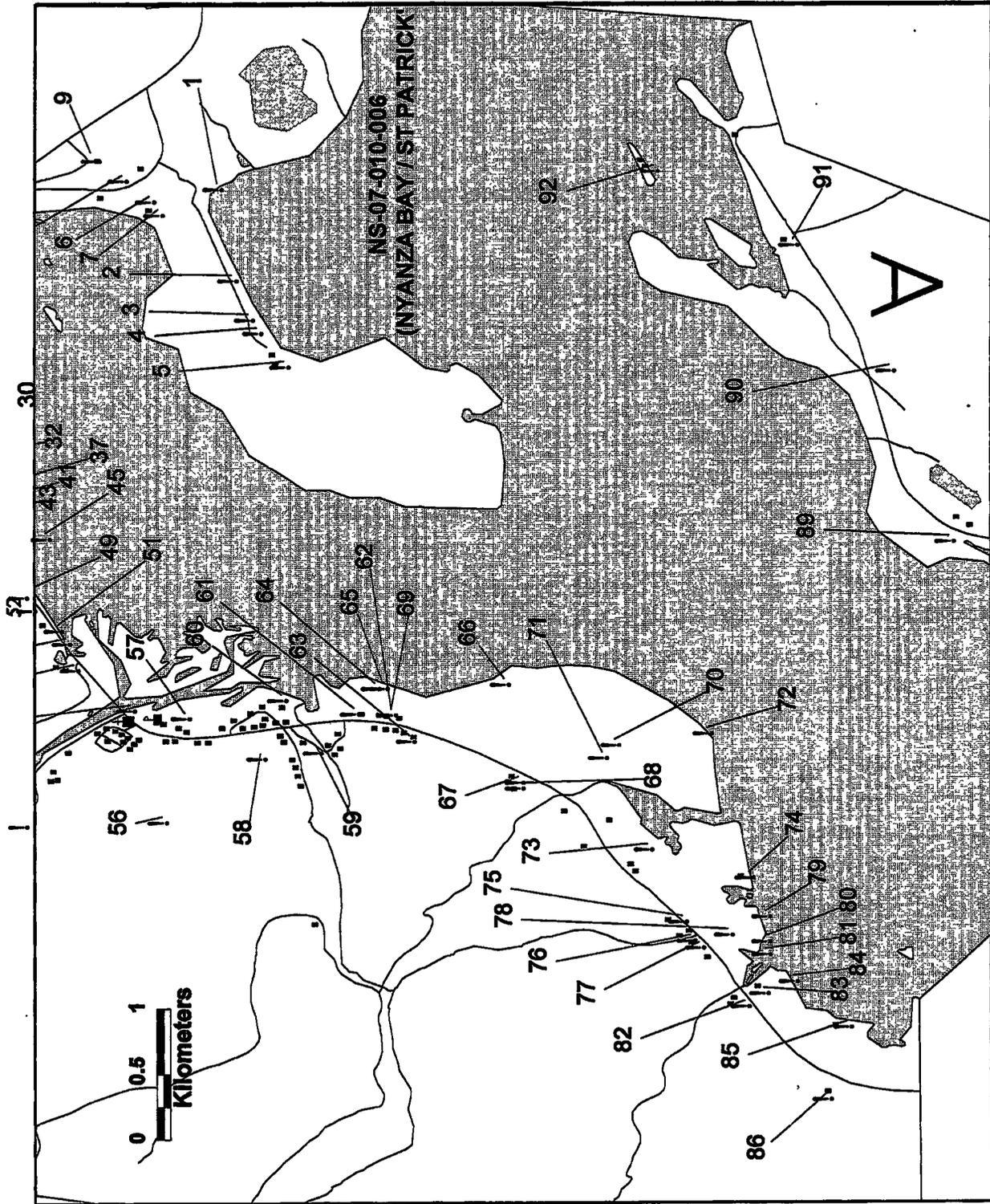


FIGURE 4C(cont.). SANITARY OBSERVATION SITE LOCATIONS, NYANZA BAY / ST. PATRICK'S CHANNEL(NS-7-010-006)

Sub-sector Name (Number):

Little Narrows (NS-7-010-007)

Date surveyed:	1990-96
No. of sampling runs:	21
Shellfish classification:	Figure 4A & 5A
Sampling station locations:	Figure 5B
Fecal coliform results:	Tables 5A & 5B
Salinity data:	Table 5C
Water temperature data:	Table 5D
Shoreline sanitary observations:	Table 5E & Figure 5C

Area Description

A large gypsum mine and associated wharf development and vessel traffic are a major feature in the area. Other development is comprised mainly of residential or agricultural. Shellfish culture is active in the area. A large finfish culture site is located in Denas Pond. In the western end of the subsector, eleven shellfish leases have been issued and four more are pending. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991e). The current classification (Figure 5A) includes five closures as follows:

Closed

That portion of MacDonalds Cove inside of a line drawn from grid reference 6242 9985 to grid reference 6220 0015. Refer to map Baddeck 11K/2.

That portion of Little Narrows in Victoria County between a line drawn from grid reference 5582 9510 to grid reference 5625 9540 and a line drawn from grid reference 5578 9470 to a church at grid reference 5578 9502. Refer to map Grand Narrows 11F/15.

That portion of St. Patricks Channel (Little Narrows Gypsum Plant) inside of a line drawn from grid reference 5765 9583 to grid reference 5735 9615 thence to grid reference 5792 9665 and thence to grid reference 5830 9627. Refer to map Baddeck 11K/2.

That portion of Denas Pond within 120m of a small brook at grid reference 5466 9577. . Refer to map Grand Narrows 11F/15.

That portion of Whycocomagh Bay inside of a line drawn from grid reference 5585 9102 to grid reference 5585 9092. Refer to map Grand Narrows 11F/15.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

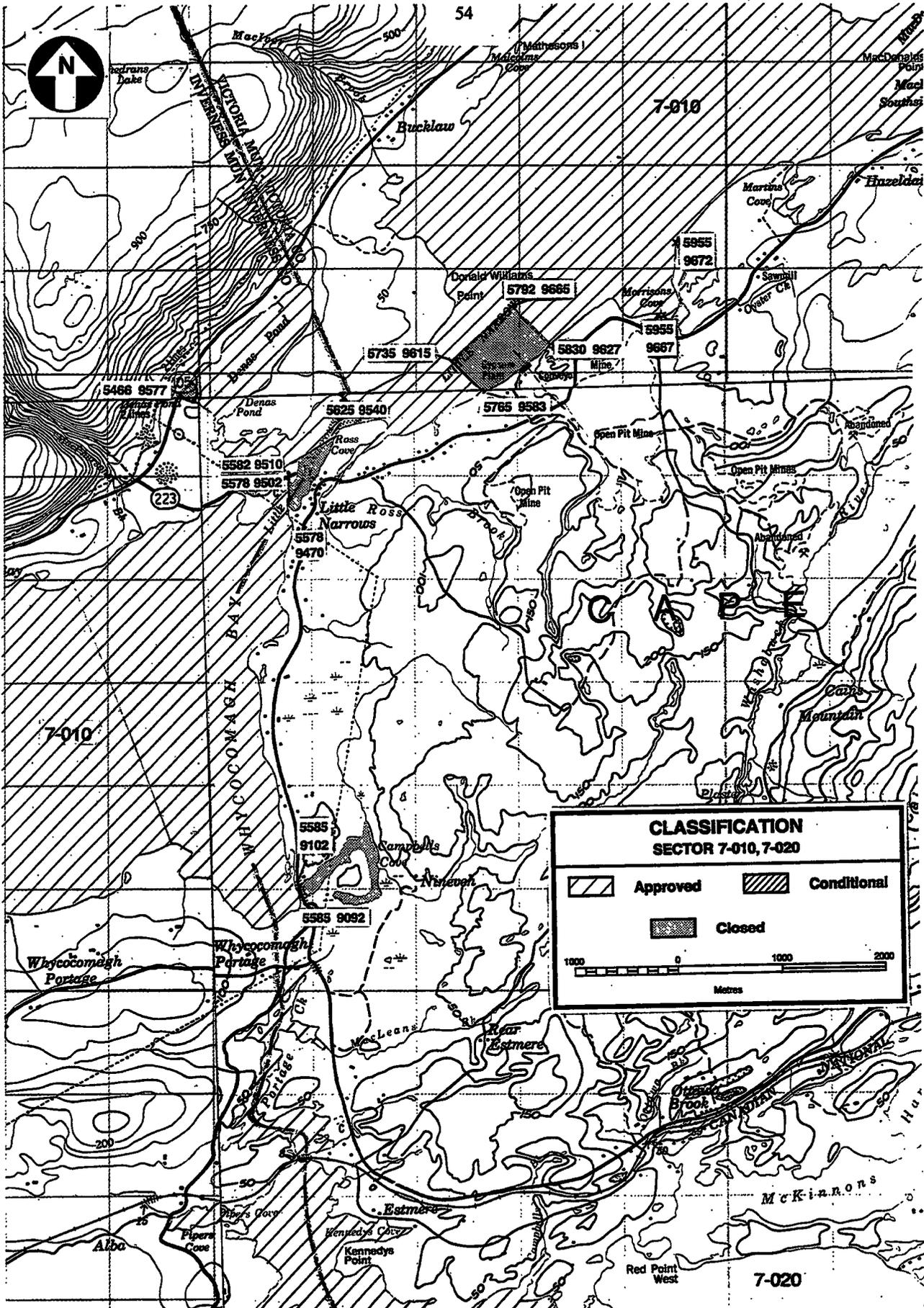


FIGURE 5A. PRESENT SHELLFISH CLASSIFICATION FOR LITTLE NARROWS



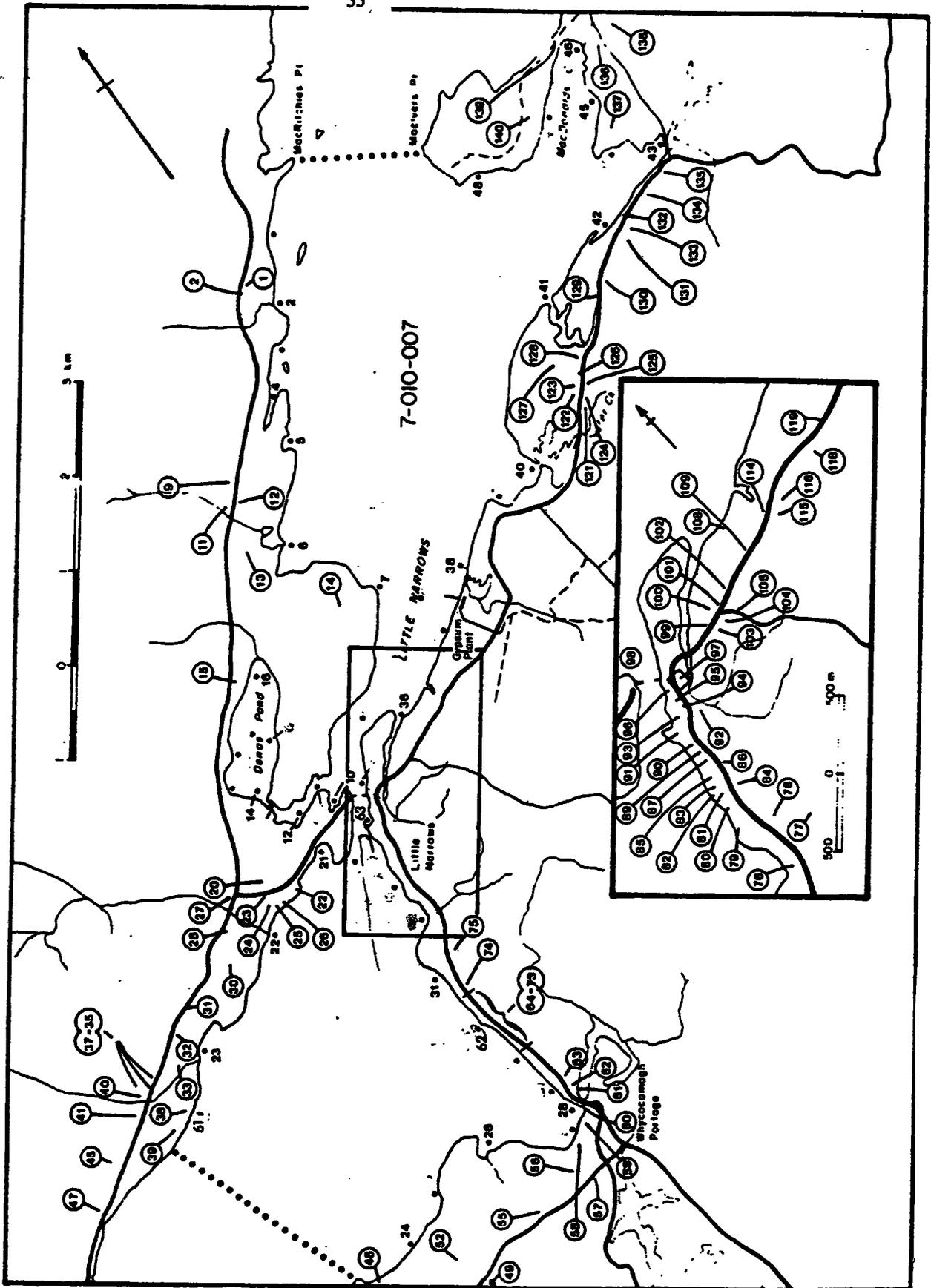


FIGURE 5B. KEY STATION SAMPLING LOCATIONS IN LITTLE NARROWS

Sanitary Conditions

Refer to Shoreline Sanitary Survey (Table 5E) below.

Bacteriological Water Quality

The twenty-eight key stations (Figure 5B) surveyed on approximately twenty occasions since 1990 (Tables 5A & 5B) continue to meet the criteria for an approved classification.

TABLE 5A. LITTLE NARROWS (NS-7-010-007) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
2	21	1990-1996	1.9	33	3	1.9	11	0
4	21	1990-1996	1.9	49	2	1.9	7	5
5	21	1990-1996	1.9	130	3	1.9	9	5
6	21	1990-1996	1.9	23	2	1.9	4	0
7	21	1990-1996	1.9	7	2	1.9	3	0
10	21	1990-1996	1.9	5	2	1.9	3	0
12	21	1990-1996	1.9	8	2	1.9	4	0
14	20	1990-1996	1.9	2	1.9	1.9	1.9	0
16	21	1990-1996	1.9	5	2	1.9	3	0
21	19	1990-1996	1.9	11	2	2	4	0
22	19	1990-1996	1.9	49	3	1.9	7	5
23	19	1990-1996	1.9	11	3	1.9	6	0
24	20	1990-1996	1.9	7	2	1.9	3	0
26	20	1990-1996	1.9	27	2	1.9	5	0
28	19	1990-1996	1.9	33	3	2	8	0
31	20	1990-1996	1.9	2	1.9	1.9	2	0
36	20	1990-1996	1.9	14	2	1.9	4	0
38	10	1990-1996	1.9	2	1.9	1.9	1.9	0
40	19	1990-1996	1.9	5	2	1.9	3	0
41	20	1990-1996	1.9	5	2	1.9	3	0
42	19	1990-1996	1.9	2	1.9	1.9	2	0
43	20	1990-1996	1.9	27	2	1.9	5	0
45	19	1990-1996	1.9	8	2	1.9	3	0
46	20	1990-1996	1.9	17	2	1.9	5	0
48	20	1990-1996	1.9	7	2	1.9	3	0
61	10	1996-1996	1.9	1.9	1.9	1.9	1.9	0
62	10	1996-1996	1.9	2	1.9	1.9	1.9	0
63	10	1996-1996	1.9	2	1.9	1.9	1.9	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 5A) should remain unchanged.

TABLE 5B. LITTLE NARROWS (NS-7-010-007) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	27 May 90	05 Jun 90	13 Jun 90	28 Jun 90	02 Jul 90	17 Jul 90	12 Jul 90	23 Jul 90	11 Aug 90	23 Aug 90	28 Aug 90	09 Sep 90	22 May 96	10 Jun 96	20 Jun 96	24 Jun 96	
2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5
4	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
5	1.9	1.9	2	4	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
6	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
7	1.9	1.9	5	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
10	1.9	1.9	2	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	2
12	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	2
14	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
16	1.9	1.9	1.9	5	2	1.9	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
21	1.9	1.9	11	2	1.9	1.9	5	1.9	2	1.9	1.9	1.9	2	2	2	2	1.9
22	1.9	1.9	5	1.9	49	1.9	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9	2	1.9	1.9
23	1.9	1.9	8	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	7	1.9	1.9	1.9	1.9	1.9
24	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2
26	1.9	1.9	27	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
28	1.9	1.9	17	2	1.9	2	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2	2	1.9
31	1.9	1.9	1.9	2	2	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
36	1.9	1.9	5	1.9	14	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
38	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
40	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	1.9
41	1.9	1.9	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
42	1.9	1.9	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
43	1.9	1.9	1.9	1.9	7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
45	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
46	1.9	1.9	7	1.9	1.9	17	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	1.9
48	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
61																	
62																	
63																	
Tide																	
Rain (mm)																	
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	8.2	0	0	1.6	0
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	9.8	0	0	2.8	0
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	10.1	4.8	4	4	0

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 5B(CONT). LITTLE NARROWS (NS-7-010-007) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	02 Jul 96	15 Jul 96	25 Jul 96	06 Aug 96	13 Aug 96	15 Aug 96
2	1.9	23	33	2	2	1.9
4	1.9	17	1.9	2	1.9	1.9
5	1.9	130	1.9	1.9	1.9	1.9
6	1.9	23	2	1.9	1.9	1.9
7	1.9	7	1.9	1.9	1.9	1.9
10	1.9	1.9	1.9	2	1.9	2
12	1.9	8	1.9	2	1.9	2
14	1.9	2	1.9	1.9	1.9	1.9
16	1.9	5	2	2	2	1.9
21	1.9	2	2	2	1.9	1.9
22	1.9	1.9	1.9	1.9	1.9	1.9
23	1.9	2	11	5	2	1.9
24	1.9	2	1.9	1.9	1.9	1.9
26	1.9	2	1.9	1.9	1.9	1.9
28	1.9	33	2	4	5	5
31	2	1.9	1.9	1.9	1.9	1.9
36	1.9	2	1.9	1.9	2	2
38						
40	1.9	4	2	2	1.9	1.9
41	1.9	5	1.9	1.9	1.9	1.9
42	1.9	2	1.9	1.9	1.9	1.9
43	1.9	27	1.9	1.9	1.9	1.9
45	1.9	2	1.9	1.9	1.9	1.9
46	1.9	5	1.9	1.9	1.9	2
48	1.9	1.9	1.9	1.9	1.9	7
61	1.9	1.9	1.9	1.9	1.9	1.9
62	1.9	2	1.9	1.9	1.9	1.9
63	1.9	2	1.9	1.9	1.9	1.9
Tide	MR-HT	MR-HT	LT-LT	LT-LT	HT-HT	MT-MR
Rain (mm)						
0-24h	0	28.6	0	0	0	0
0-48h	0.8	28.6	0	0	0	9.2
0-72h	0.8	28.6	2.2	0	2.6	9.2

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;

HF = High Falling;

HR - High Rising;

MT= Mid Tide;

MF = Mid Falling;

MR - Mid Rising

LT= Low Tide;

LF = Low Falling;

LR - Low Rising

TABLE 5C(CONT.) LITTLE NARROWS (NS-7-010-007) - SALINITIES (‰)

Station	02 Jul 96	15 Jul 96	25 Jul 96	06 Aug 96	13 Aug 96	15 Aug 96
2	20	12	21	18	18	21
4	20	18	20	20	18	20
5	20	18	20	20	21	21
6	20	18	20	20	18	21
7	20	20	21	21	21	21
10	20	21	20	18	20	20
12	20	19	18	17	20	19
14	16	17	16	16	18	18
16	15	17	16	16	17	18
21	17	21	11	19	20	20
22	18	20	18	18	20	19
23	18	18	15	17	19	20
24	19	21	20	19	20	20
26	18	19	20	18	20	20
28	18	16	17	15	18	20
31	18	20	20	19	20	20
36	20	20	21	19	21	20
38						
40	20	21	19	19	21	20
41	20	21	20	19	21	20
42	20	20	21	20	21	20
43	20	19	14	15	21	21
45	20	21	20	20	21	21
46	20	21	20	20	21	22
48	20	21	20	20	21	21
61	19	20	20	19	20	20
62	19	20	20	19	20	20
63	19	20	18	19	20	20
Tide	MR-HT	MR-HT	LT-LT	LT-LT	HT-HT	MT-MR
Rain (mm)						
0-24h	0	28.6	0	0	0	0
0-48h	0.8	28.6	0	0	0	9.2
0-72h	0.8	28.6	2.2	0	2.6	9.2

TABLE 5D. LITTLE NARROWS (NS-7-010-007) - WATER TEMPERATURE (°C)

Station	27 May 90	05 Jun 90	13 Jun 90	28 Jun 90	02 Jul 90	12 Jul 90	23 Jul 90	11 Aug 90	23 Aug 90	28 Aug 90	09 Sep 90	22 May 96	10 Jun 96	20 Jun 96	24 Jun 96	
2		10			18	18	20	20	22	20		12	14	15	17	
4			15		18	19	20	20	22	20	23	12	15	15	18	
5		10			18	18	20	20	22	20		11	14	14	17	
6	9	10	14		16	16	20	20	21	20		11	14	15	16	
7					18	18	21	20	22	20	18	11	14	15	17	
10		12	15		18	19	21	21	22	20	20	11	17	15	16	
12	10	12	15	20	19	19	21	21	24	21	23	12	18	16	16	
14			16	20	19	19	21	21	23	21		12	18	17	18	
16		13	16		19	19	22	22	25	21	23	13	18	17	18	
21					19	19	22	25	25	21		11	16	16	17	
22	7		16		19	19	21	21	25	21		10	16	16	17	
23	7				19	19	21	21	24	21		11	16	15	17	
24	8	12			19	19	21	21	24	21	22	12	17	16	17	
26	8	13			19	19	22	22	25	21	18	11	17	16	18	
28		14			20	20	24	24	24	21	19	12	20	16	20	
31		12			19	19	24	24	24	21	19	11	17	15	17	
36			14		18	18	21	20	23	20	19	12	16	14	17	
38		11			18	18	21	21	23	21	19	12	19	15	19	
40		10			18	19	20	20	22	21		13	16	15	17	
41					20	20	21	21	22	21	19	12	17	16	17	
42					18	18	21	21	22	21		12	21	16	19	
43		13	14		17	17	20	20	23	21	19	12	16	16	17	
45					19	19	21	21	23	21		12	16	16	17	
46	10	15	14		17	18	20	20	23	20	19	11	15	15	17	
48		13	14		17	18	21	21	23	20		10	18	15	17	
61					0	0	0	0	0	0	0	10	18	15	17	
62					0	0	0	0	0	0	0	12	18	15	17	
63					0	0	0	0	0	0	0	11	17	15	17	
Tide																
Rain (mm)																
0-24h	0	0	0	0	0	0	0	0	0	0	0	8.2	0	1.6	0	0
0-48h	0	0	0	0	0	0	0	0	0	0	0	9.8	0	2.8	0	0
0-72h	0	0	0	0	0	0	0	0	0	0	0	10.1	4.8	4	0	0

TABLE 5E. SHORELINE SANITARY SURVEY.

NS-07-010-007: LITTLE NARROWS
 FROM MACRITCHIES POINT TO ABERDEEN
 INSPECTOR: ROBERT KENNEY
 COMPREHENSIVE: JULY 10, 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 5C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with residences, cottages, and a Gypsum Quarry. The north side of St. Patricks Channel is underlain with clay while most of the south side is a combination of fireclay and gypsum.
1	PI	P	1 1/2 str wht house on stone foundation, >200mfs. Small quantity of eff. from metal tubing behind house. Wht garage on site.
2	PI	P	2 1/2 str wht/blue trim house on raised foundation >200mfs. Old ST with overflow PI in brushy field according to owner.
3	LE	P	Beaver Petroleum Service Station and apt >500mfs. Slight LE to DR by highway.
4	ST	P	1 1/2 str brw/wht trim house on raised foundation, >500mfs, <10mfwc. 4in dia perforated drainage PI to woods. No other outflow PI visible.
5	ST	P	1 1/2 str wht/blk trim house on rock foundation >400mfs. No outflow PI visible but area very brushy. Owner usually has up to 60-70 cars in scrap yard behind house.
6	ST	P	2 str wooden shingled house and shed, >300mfs No outflow PI visible. <20mfwc.
7	OH	P	One str wht seasonal cottage with OH <10mfs.
8	NP	P	2 str aquaculture facility. ST and disposal bed. No outflow PI visible. (Drimman). Lock Bras d'Or Salmon Farms Ltd. They farm Atlantic salmon, rainbow trout, brook trout, and Atlantic char. Up to 40 tons/yr.
9	PI	P	1 1/2 str wht/grn trim house on blocks, >500 mfs. One str brw wooden house on blocks. Both have, according to owner, 4in dia ABS PI to back woods with direct outflow. (Sealy).
10	ST	P	2 str seasonal wht house on raised foundation with wht garage, app. 50mfs. No outflow PI visible.
11	NP	P	United church, cemetery and Little Narrows Ferry dock facilities. OH for ferry terminal on opposite shore.
12	ST	P	Wht/blk mobile home, app. 70mfs. No outflow PI visible. (Paradoc).
13	ST	P	One str wht/blk trim house on posts, app. 70mfs. No outflow PI visible. (Pardoe).
14	ST	P	One str pink/wht seasonal cottage, app. 45mfs. No outflow PI visible. (Powers).
15	ST	P	One str wht/red trim seasonal cottage on post app. 25mfs. No outflow PI visible.
16	PI	P	2 str wht/blk trim house on raised foundation app. 25mfwc. Direct discharge of sewage from PI in ground to wet area <20mfwc.
17	PI	P	2 str wht house on raised foundation, app. 70mfwc. 4in dia clay PI with direct discharge according to tenant. (MacRae).
18	ST	P	2 str beige/brw trim house on raised foundation, >300mfwc. No outflow PI visible. One horse which grazes in field. Small manure pile in field.
19	PI	P	One str wht house on raised foundation, >300mfs. 4in dia PI to DR by highway. Small quantity of smelly liquid eff. visible.
20	PI	P	1 1/2 str wht/blk trim house on raised foundation, >200mfs. 4in dia PI with slurry eff. visible.
21	ST	P	1 1/2 str yel house on raised foundation, <30mfwc. No outflow PI visible. Abandoned 1 1/2 str yel house on site.
22	ST	P	2 str wht house on raised foundation, >100mfwc. No outflow PI visible. (MacLean).
23	ST	P	2 str wht house on raised foundation, >200mfwc. 2 old shingled barns on site. What looks like a sink eff. in front field.
24	ST	P	2 str wht house on raised foundation. No evidence of outflow PI visible. Grn DR.

25	ST	P	2 str wht house on raised foundation, app. 80mfs. No outflow PI visible. One horse with manure used as fertiliser on gardens and in field. (MacFadyen).
26	ST	P	2 str wht/brw trim house on raised foundation app. 80mfs. No outflow PI visible.
27	ST	P	One str red seasonal cottage app. 40mfwc. No outflow PI visible.
28	ST	P	1 1/2 str wht house on raised foundation, app. 100mfwc. No outflow PI visible. (Gillis).
29	OH	P	One str red wooden shingled cottage and barn. OH on hill behind, >300mfs. Seasonal.
30	ST	P	2 str blue house on raised foundation, app. 150mfs. No outflow PI visible.
31	ST	P	One str seasonal cottage with ST. Could not get to assess.
32	OH	P	One str wht/blk trim seasonal cottage, >1kmfs. No outflow PI's visible.
33	NP	P	2 str blue/wht trim house on raised foundation with two large barns and 2 sheds. Farm with 150 sheep extends from a narrow strip on shore to open fields above road. 125 acres. Manure used as fertiliser in field (Saunders).
34	NP	P	One str wht/grn trim old farm house with large barn and shed. No outflow PI visible. Leased by #51 for hay and sheep grazing. >200mfs.
35	OH	P	One wht/red, one blue/wht seasonal cottages, >600mfs. No streams in area.
36	PI	P	2 str wht house on raised foundation >150mfs. Old ST with 4in dia PI overflow to field, according to owner.
37	PI	P	One str wht/grn trim house on raised foundation, >100mfs. 4in dia overflow PI to woods according to neighbours. Drains to Portage Creek-River Deny's Basin.
38	ST	P	Yel/brw mobile home and wht shed, app. 50mfs. No outflow PI visible.
39	OH	P	Trailer with small cottage built over, app. 50mfs. OH app. 40mfs. 4in dia PI to ground. No outflow PI visible.
40	OH	P	Wht/blue mobile home <15mfs. No outflow PI visible. Old seasonal bus with OH <15mfs.
41	PI	P	1 1/2 str wht/blk trim house on raised foundation, <30mfs. 4in dia PI to pond with grey eff. visible. Pond connects to lake.
42	OH	P	1 1/2 str wooden shingled seasonal cottage, app. 40mfs. OH in back.
43	NS	P	One str wht seasonal cottage on posts. No plumbing. No OH visible.
44	OH	P	One str wht/blue trim seasonal cottage with OH <10mfs.
45	OH	P	One str wht/yel trim seasonal cottage with OH app. 10mfs.
46	ST	P	New one str wht/blk trim house on raised foundation, app. 60mfs. No outflow PI visible
47	ST	P	New Cape Cod grey house on raised foundation, app. 100mfs. No outflow PI visible.
48	ST	P	Unfinished brw seasonal cottage, app. 50mfs. No outflow PI visible.
49	ST	P	One str wht/blue trim seasonal cottage, app. 10mfs. 2in ABS PI to shore. No eff. visible looks like an old OH over small stream ravine
50	ST	P	New one str wht house on raised foundation, app. 80mfs. No outflow PI visible.
51	ST	P	One trailer with added glass structure, 2 seasonal cottage sheds. No outflow PI visible.
52	ST	P	One seasonal trailer, <40mfs. No outflow PI visible.
53	OH	P	One str red/wht trim seasonal cottage and trailer with OH <5mfs above shore.
54	PI	P	2 str wht/blk trim house on raised foundation with large red barn and shed across road, 4in dia PI to DR to shore. No eff visible. App. 80mfs.
55	PI	P	1 1/2 str wht/red trim house on raised foundation, >200mfpond. Old ST with 4in dia overflow PI to DR with slurry eff. visible. Red work garage across road.
56	NP	P	Public beach with no washroom facilities.
57	PI	P	2 str yel house on raised foundation, <150mfs. Old ST with 4in dia overflow PI towards swamp according to owner.
58	ST	P	1 1/2 str wht house on raised foundation, >150mfs. No outflow PI visible. Could drain to same general back swamp area as #77.
59	NS	P	DOT storage facility.
60	ST	P	1 1/2 str blue/wht trim house on raised foundation, app. 25mfs. No outflow PI visible

61	PI	D	One str wht/blk trim house on raised foundation, app. 2.5mfs. 6in dia metal PI to shore with slurry eff. visible.
62	OH	P	One str brw seasonal cottage on posts with trailer and OH <30mfs.
63	ST	P	Wht/grn trim mobile home. No outflow PI visible. App.50mfs.
64	OH	P	Beige aluminium sided seasonal cottage with wht shed and OH app. 40mfs.
65	PI	P	Little Narrows Community Centre with 4in dia PI over ravine,>80mfs,old school bldg.
66	ST	P	Yel/brw mobile home with garage, app. 100mfs. No outflow PI visible.seasonal.
67	PI	P	2 str wht/grn trim house on raised foundation app 100mfs. Old ST with runoff down ravine to wooded area according to owner. (Maclver)
68	PI	P	1 1/2 str wht house on raised foundation, app. 100mfs. Old ST with overflow PI down ravine to wooded area according to son of owner.
69	PI	P	2 str wht/grn trim house on raised foundation app. 50mfs. ST with overflow PI down ravine with slurry eff. visible.
70	PI	P	1 1/2 str wht/blk trim house on raised foundation, >100mfs. Old ST with 4in dia PI to DR towards pond, according to owner.
71	ST	P	Wht/blue mobile home, app 30mfs. <10mfwc. No outflow PI visible.
72	ST	P	One str wht/red trim house, app 20mfs. No outflow PI visible.
73	PI	P	2 str wht/blk trim house on raised, app. 45mfs. Old ST with 4in dia PI to WC. No eff. visible.
74	PI	P	1 1/2 str wht/brw trim seasonal cottage, app. 10mfs. 4in dia ABS PI to swamp <10mfs. No eff. visible.
75	OH	P	Three houses, service station and store, post office, abandoned cottage and ferry terminal with OH directly on shore. The 3 homes have ST's but there is LE on shore. 2 of the 3 houses have 4in dia PI's to back ponds according to owners.
76	PI	D	2 str wht house on raised foundation, app. 30mfs. 4in dia PI exposed on shore. No eff. visible.
77	ST	P	2 str wht house on raised foundation, app. 25mfs. 2in dia PI to back bushy area. Most likely sink eff. No other outflow PI visible,wht garage on site.
78	ST	P	One str wht house on raised foundation, app. 100mfs. No outflow PI visible.
79	ST	P	One str wht house with org trim on raised foundation, >100mfs. No outflow PI visible.
80	ST	P	2 str blue and wooden new house on raised foundation, >100mfs. No outflow PI visible.
81	PI	P	Wht/grn mobile home. 4in dia PI to back ravine with eff. visible. >100mfwc.
82	LE	P	One str wht/grn trim house on raised foundation, >100mfwc. Small amount of LE to DR in back yard.
83	PI	P	1 1/2 str wht/blue trim house on raised foundation, >200mfwc. Old ST with overflow to field according to owner.
84	ST	P	1 1/2 str brw wooden seasonal cottage on posts, one str brw wooden seasonal cottage on posts. No outflow PI visible.
85	PI	P	Yel/blue/blk mobile home >150mfs. 4in dia PI to DR with eff. visible.
86	ST	P	1 1/2 str blue/wht trim house, app. 100mfs. No outflow PI visible. (Matheson).
87	ST	P	Yel and wood one str house on raised foundation, app. 30mfswamp, >200mfs. No outflow PI visible.
88	ST	P	2 str brw wooden shingled and pine board house on raised foundation, >200mfs, <40mfswamp. No outflow PI visible.
89	PI	P	1 1/2 str wht/blue trim house on raised foundation, >300mfs. 4in dia metal PI to front gully. No eff. visible.
90	PI	P	2 str yel house on raised foundation, app. 60mpond. 4in dia ABS PI for water drainage. 4in dia PI for washer eff. No other outflow PI's visible.
91	NP	P	Little Narrows Gypsum Company. 2 one str wht houses and office with ST and disposal bed, app. 30mfs. I had the impression the system did not work too well or there is runoff because of the clay and gypsum. Maintenance service building has a peat moss septic system. There is a change house which services about 70 workers over a 24hour period with ST and 4in dia overflow PI to gypsum hole which runs to WC. Gypsum is stored on shore before shipping. There is lots of gypsum dust which gets into pond beside conveyer belts. There are two presently quarried areas with siltation ponds which drain to Martins Cove. Blasting occurs once or twice a day and can be felt for kilometers around site.
92	NS	P	Sawmill Operation, app. 80mfwc. to Morrisons Cove. The same cove in near proximity to the gypsum plant.
93	PI	P	1 1/2 str grn house with shed, >200mfs. 4in dia PI to DR with slurry eff. visible.

94	ST	P	Yel/brw trim mobile home, >300mfs. No outflow PI visible.
95	PI	P	1 1/2 str wht/blue trim house on raised foundation, >200mftwc. 4in dia PI to back field. Eff. visible. One wht/grn, one blue/wht mobile home which look abandoned. DR to back fields. No eff. visible.
96	PI	P	Off wht aluminium sided one str house, >200mfs. 4in dia PVC PI to back woods. Grn sludge visible.
97	ST	P	Wht/blue mobile home. 4in dia PI to ground. Big dog! >150mfs.
98	PI	P	Wht/gold/blk mobile home <10mftwc. 4in dia PI to WC. No eff. visible.
99	ST	P	1 1/2 str grey wooden shingled house on raised foundation with shed. Large field. No outflow PI visible. App. 70mftpond.
100	PI	P	30ft citation trailer, app. 30mfs. 4in dia PI to ground. 4in dia wht PVC PI to DR, app. 10mfs.
101	PI	P	1 1/2 str wht house on hill, >100mfs. 4in ABS PI with direct discharge to field towards DR., app. 70mfs. WV and boathouse on shore.
102	ST	P	One str blue/wht trim new house on raised foundation, app. 50mfs. No outflow PI visible
103	ST	P	Golden Falcon seasonal trailer, app. 40mfs. No outflow PI visible. <20mftwc.
104	PI	P	Yel/brw mobile home, >150mfs. 4in dia grn PVC PI to woods. Liquid eff. visible.
105	NP	P	1 1/2 str wht/brw trim house on raised foundation, >200mfs. 5 cattle which graze in fields. Owner thinks sewage drainage from ST is to field. DR through property to WC.
106	LE	P	Red/blk house on posts, app. 40mfs. No plumbing. Sewage used as fertiliser on garden, app. 20mfs.
107	PI	P	1 1/2 str wht house on raised foundation, app 80mfs. 4in dia PI to field. No eff. visible Red shed on site.

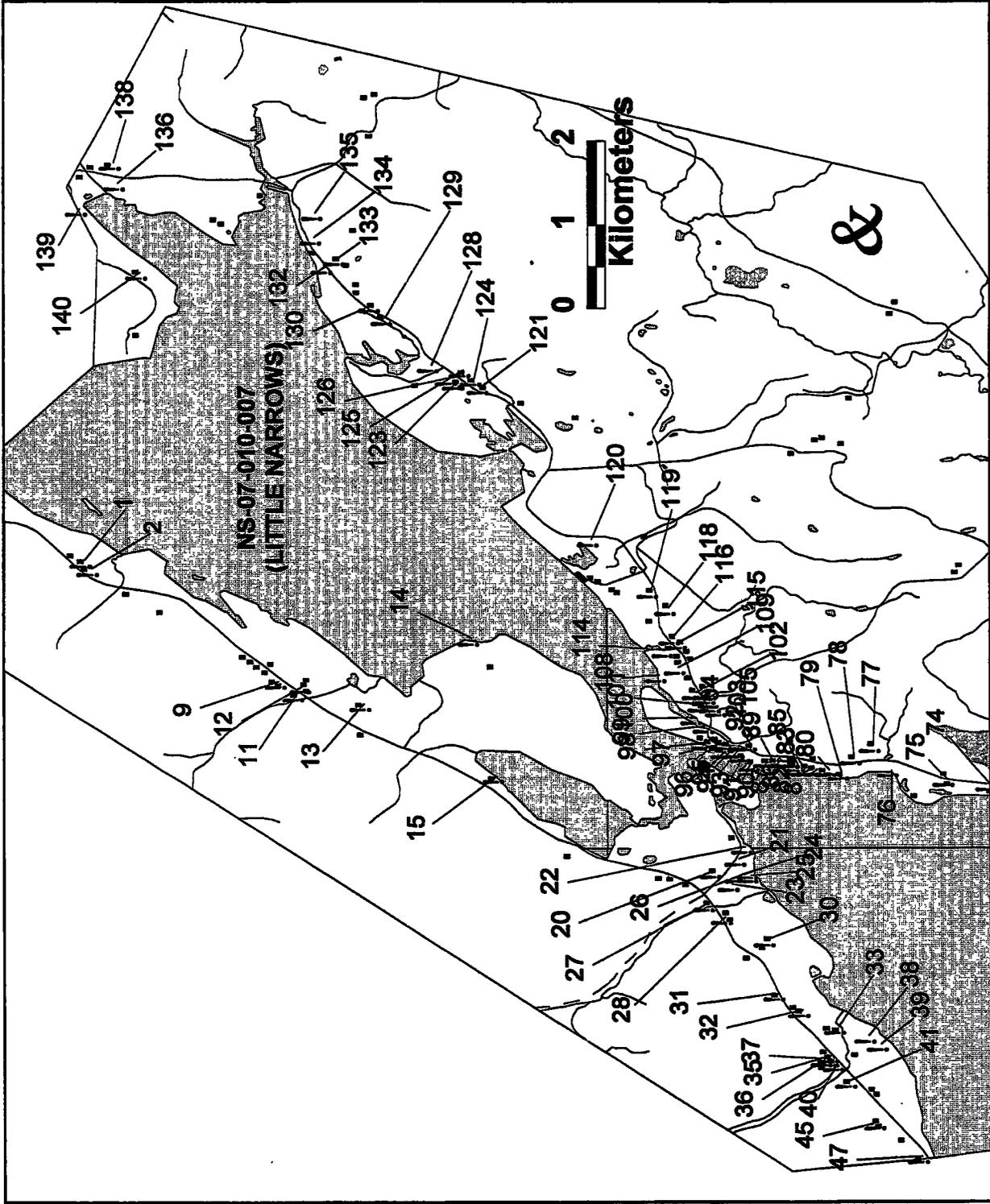


FIGURE 5C. SANTARY OBSERVATION SITE LOCATIONS, LITTLE NARROWS (NS-7-010-007)

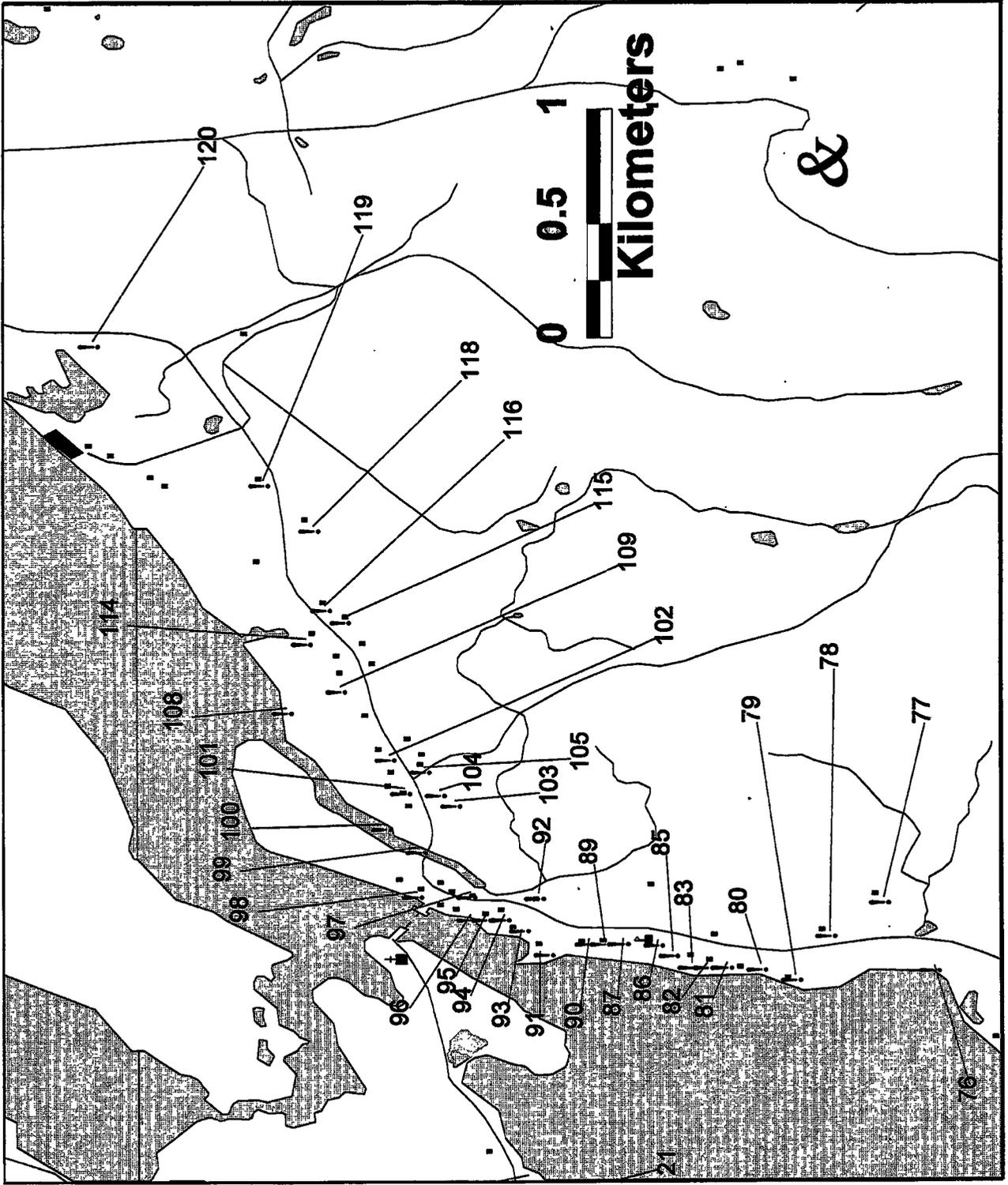


FIGURE 5C(cont.). SANITARY OBSERVATION SITE LOCATIONS, LITTLE NARROWS (NS-7-010-007)

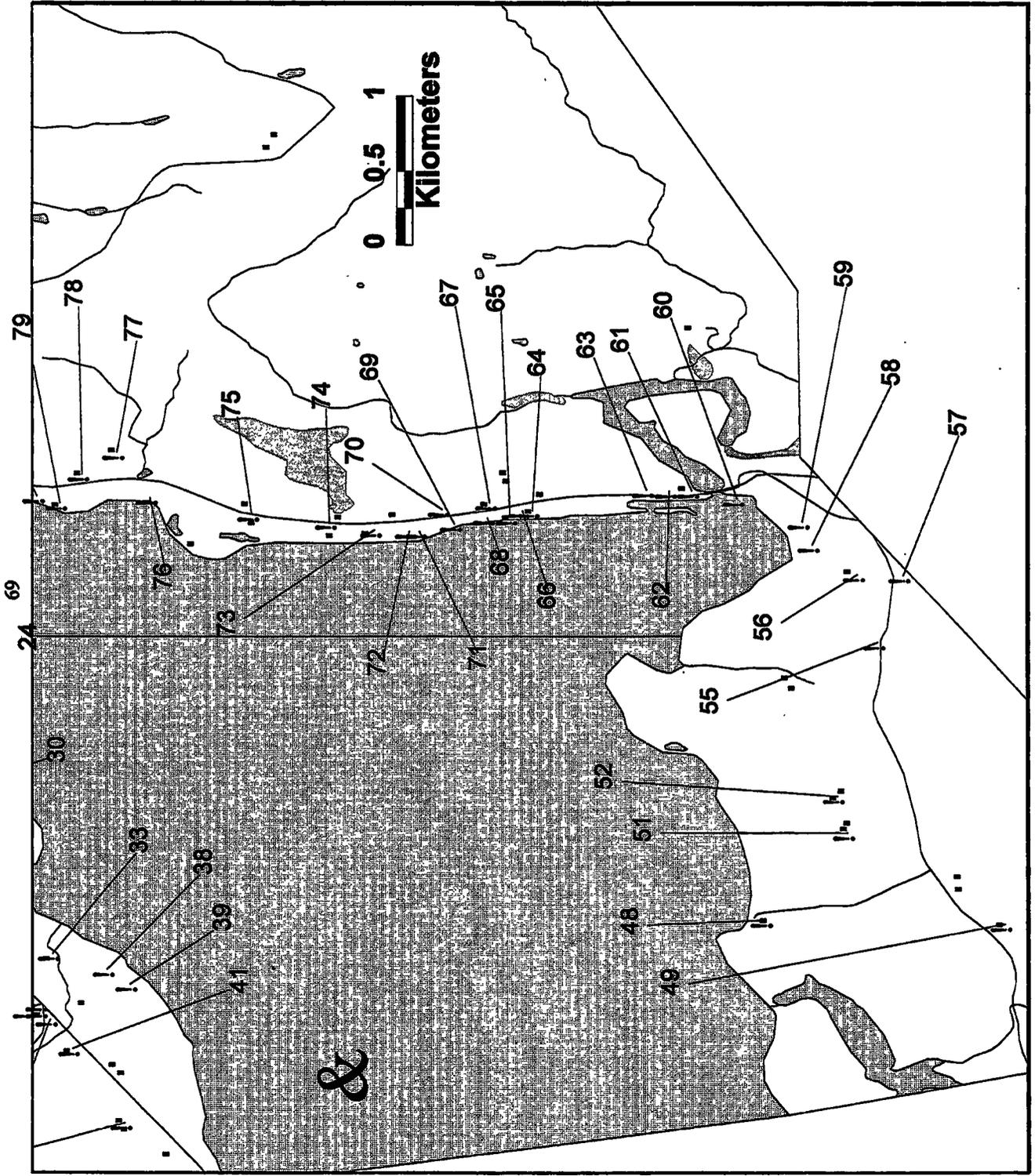


FIGURE 5C(cont.). SANTARY OBSERVATION SITE LOCATIONS, LITTLE NARROWS (NS-7-010-007)

Sub-sector Name (Number):

Wycocomagh Bay (NS-7-010-008)

Date surveyed:	1990-96
No. of sampling runs:	25
Shellfish classification:	Figure 6A
Sampling station locations:	Figure 6B
Fecal coliform results:	Tables 6A & 6B
Salinity data:	Table 6C
Water temperature data:	Table 6D
Shoreline sanitary observations:	Table 6E & Figure 6C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The subsector includes the First Nations Wycocomagh community. Shellfish culture is active in the area with eleven leases issued and two more pending.. A large finfish culture site is located near Indian Island. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991f). The current classification (Figure 6A) includes two closures as follows:

Closed

That portion inside or west of a series of straight lines drawn from: grid reference 4620 9218 to grid reference 4562 9129, on the northern tip of Indian Island; and thence from grid reference 4554 9039, on Indian Island, to grid reference 4420 8935, and thence to grid reference 4435 8885, and thence to grid reference 4490 8885 and thence to grid reference 4510 8865 on the shore. Refer to map Wycocomagh 11F/14.

That portion , at MacInnis Island, inside or northward of two straight lines drawn from grid reference 4980 8985 to grid reference 4982 8980, and thence to grid reference 5047 9000. Refer to map Wycocomagh 11F/14.

Approved

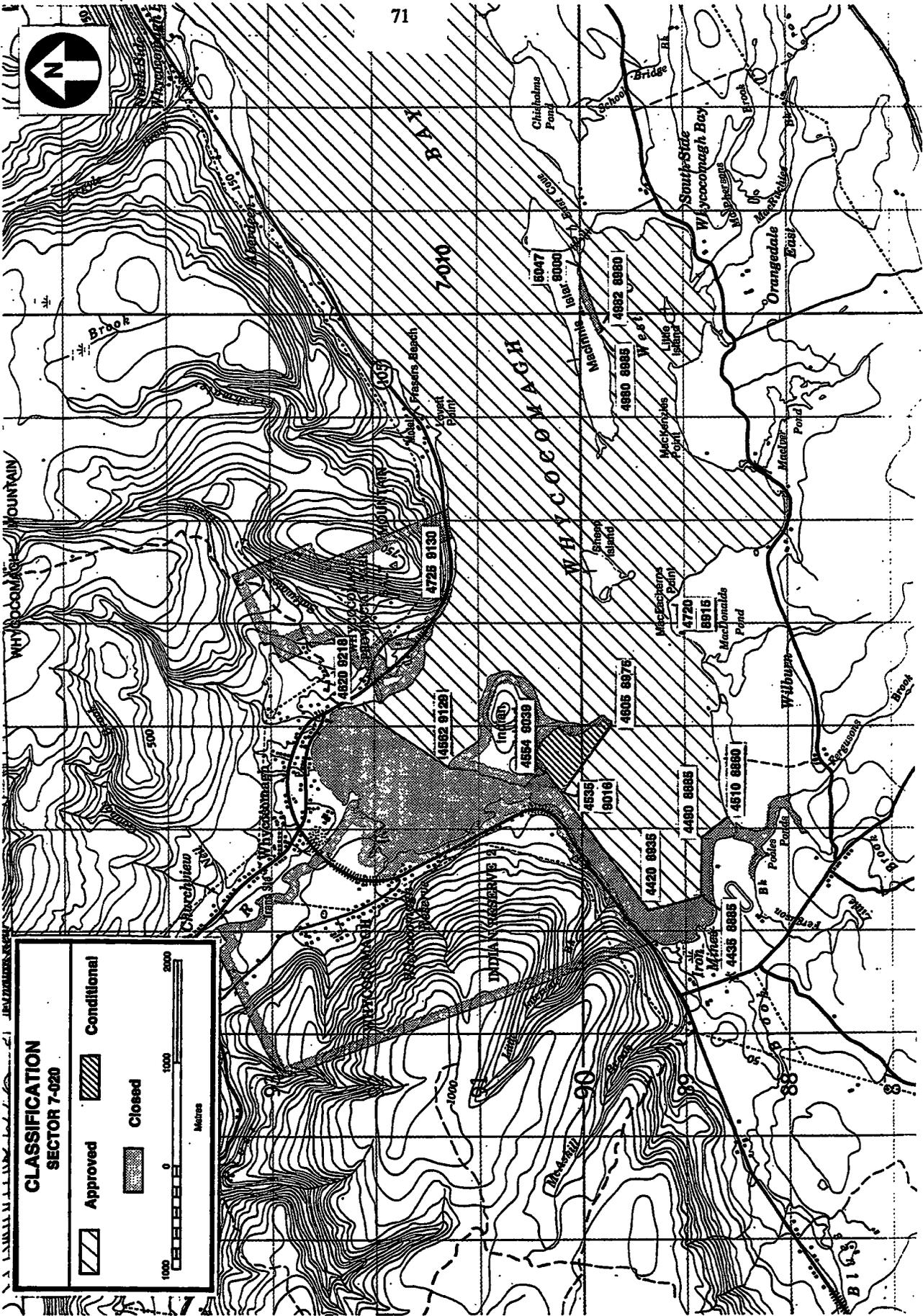
The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

Refer to Shoreline Sanitary Survey (Table 6E) below.

Bacteriological Water Quality

The twenty-five key stations (Figure 6B) surveyed on approximately twenty-five occasions since 1990 (Tables 6A & 6B) continue to meet the criteria for an approved classification. Marginally



CLASSIFICATION
SECTOR 7-020

	Approved
	Conditional
	Closed

0 1000 2000
Metres

FIGURE 6A. PRESENT SHELLFISH CLASSIFICATION FOR WYCOMAGH BAY



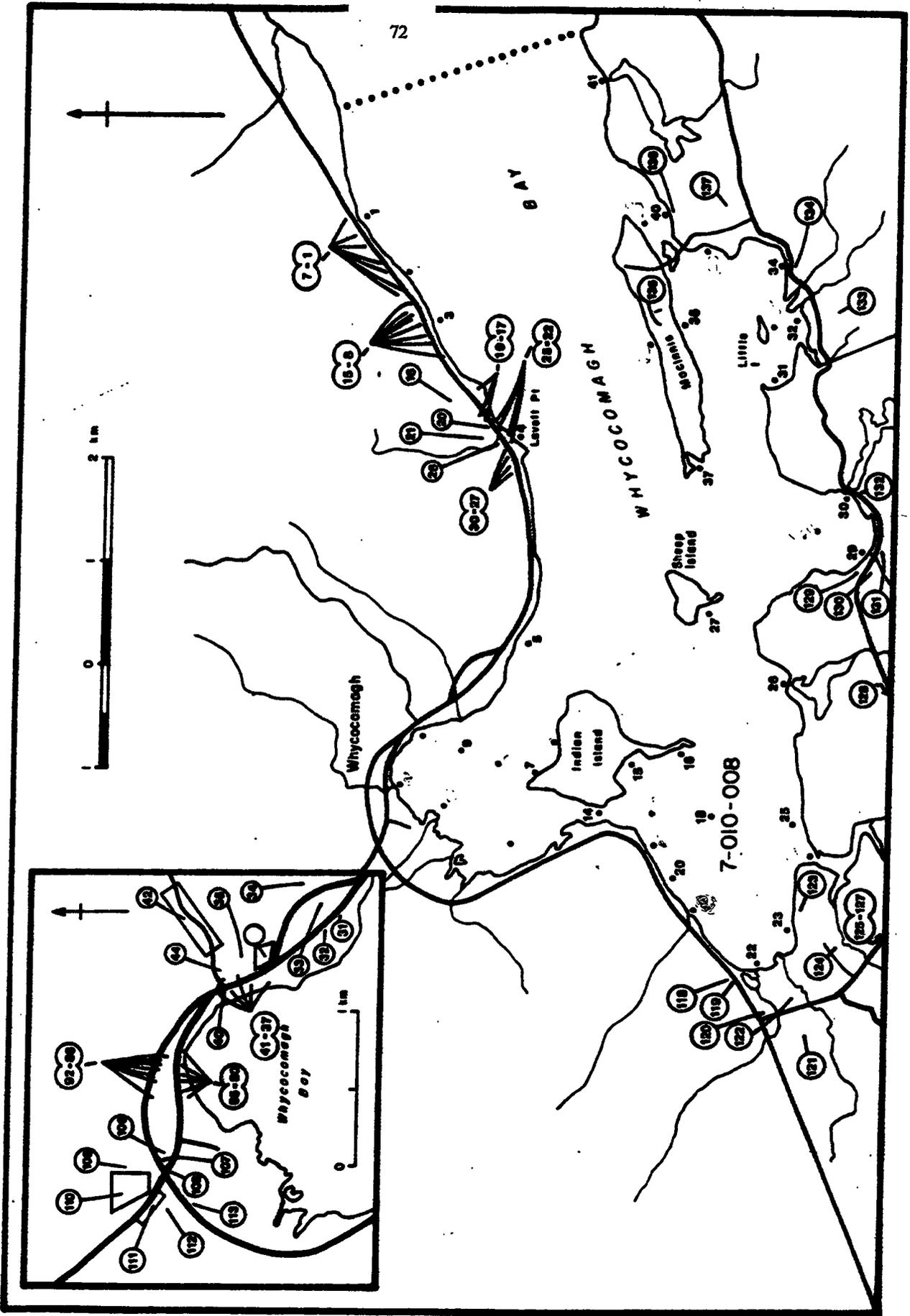


FIGURE 6B. KEY STATION SAMPLING LOCATIONS IN WYCOCOMAGH BAY

elevated fecal coliform levels have been observed periodically at station three, but no change in classification is warranted.

TABLE 6A. WYCOCOMAGH BAY(NS-7-010-008) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	24	1990-1996	1.9	8	2	1.9	3	0
3	23	1990-1996	1.9	220	4	1.9	24	13
4	24	1990-1996	1.9	33	2	1.9	5	0
5	23	1990-1996	1.9	1600	4	1.9	31	9
7	24	1990-1996	1.9	33	3	1.9	12	0
9	23	1990-1996	1.9	920	4	1.9	29	9
14	24	1990-1996	1.9	920	4	1.9	32	4
15	24	1990-1996	1.9	920	4	1.9	24	4
16	24	1990-1996	1.9	220	3	1.9	14	8
18	25	1990-1996	1.9	33	3	1.9	7	0
20	24	1990-1996	1.9	540	5	2	34	8
22	25	1990-1996	1.9	170	5	2	30	8
23	25	1990-1996	1.9	33	3	1.9	10	0
25	24	1990-1996	1.9	79	4	1.9	16	4
26	25	1990-1996	1.9	23	3	1.9	10	0
27	25	1990-1996	1.9	23	2	1.9	4	0
29	25	1990-1996	1.9	13	2	1.9	4	0
30	25	1990-1996	1.9	19	2	1.9	6	0
31	25	1990-1996	1.9	170	3	1.9	10	4
32	25	1990-1996	1.9	240	6	4	33	8
34	25	1990-1996	1.9	130	3	1.9	8	4
36	25	1990-1996	1.9	79	3	1.9	11	8
37	24	1990-1996	1.9	13	2	1.9	3	0
40	25	1990-1996	1.9	17	2	1.9	5	0
41	22	1990-1996	1.9	130	3	1.9	9	5

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 6A) should remain unchanged.

TABLE 6B (CONT.). WYCOMAGH BAY (NS-7-010-008) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	22 May 96	10 Jun 96	20 Jun 96	24 Jun 96	02 Jul 96	15 Jul 96	25 Jul 96	06 Aug 96	13 Aug 96	15 Aug 96	
1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	
3	49	1.9	79	1.9	1.9	1.9	2	1.9	1.9	1.9	
4	1.9	1.9	2	2	1.9	2	1.9	1.9	1.9	1.9	
5	1.9	1.9	1.9	1.9	49	2	17	1.9	1.9	1.9	
7	2	1.9	1.9	1.9	1.9	13	2	4	1.9	1.9	
9	1.9	1.9	2	1.9	1.9	2	1.9	1.9	2	1.9	
14	1.9	1.9	2	1.9	1.9	33	1.9	2	1.9	2	
15	1.9	1.9	1.9	1.9	17	1.9	1.9	1.9	1.9	1.9	
16	16	1.9	1.9	1.9	1.9	5	1.9	1.9	2	1.9	
18	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	
20	1.9	1.9	1.9	1.9	1.9	22	1.9	1.9	2	1.9	
22	1.9	2	1.9	2	1.9	170	110	33	2	1.9	
23	1.9	1.9	2	1.9	1.9	23	1.9	1.9	1.9	2	
25	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	
26	1.9	1.9	1.9	1.9	1.9	17	1.9	7	1.9	1.9	
27	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
29	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	
30	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	17	
31	1.9	1.9	1.9	1.9	1.9	170	1.9	1.9	2	1.9	
32	1.9	2	1.9	2	1.9	13	1.9	240	23	9	
34	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	4	1.9	
36	1.9	1.9	1.9	1.9	2	8	1.9	2	5	1.9	
37	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	
40	2	1.9	1.9	1.9	1.9	8	5	1.9	1.9	1.9	
41	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	1.9	
Tide	HT-HF	LT-LR	MR-MR	MR-HT	MR-HT	MR-HT	MT-HT	LT-LT	LT-LT	HT-HT	MT-MR
Rain (mm)											
0-24h	8.2	0	1.6	0	0	0	28.6	0	0	0	0
0-48h	9.8	0	2.8	0	0.8	0.8	28.6	0	0	0	9.2
0-72h	10.1	4.8	4	0	0.8	0.8	28.6	2.2	0	2.6	9.2

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 6C(CONT.) WYCOMAGH BAY (NS-7-010-008) - SALINITIES (‰)

Station	22 May 96	10 Jun 96	20 Jun 96	24 Jun 96	02 Jul 96	15 Jul 96	25 Jul 96	06 Aug 96	13 Aug 96	29 Aug 96	15 Aug 96
1	16	16	18	18	18	20	20	20	18	29	20
3	17	17	18	19	19	20	20	20	18	20	20
4	16	17	18	18	19	18	18	20	18	20	20
5	16	18	18	18	19	20	20	15	19	20	20
7	17	18	17	18	18	20	20	15	19	20	19
9	16	18	18	19	18	20	20	15	20	20	20
14	16	15	14	18	18	18	18	20	16	20	17
15	16	18	18	19	18	20	20	20	17	20	20
16	11	18	18	19	18	20	20	20	17	20	20
18	15	18	18	18	18	20	20	20	18	20	19
20	15	17	18	18	18	18	19	20	18	20	20
22	12	11	17	18	19	9	17	17	13	19	20
23	16	17	14	18	19	20	19	20	17	20	20
25	16	18	18	18	19	20	20	20	17	20	20
26	16	16	18	18	19	18	18	18	17	20	20
27	16	18	18	18	18	20	20	20	18	20	20
29	15	17	18	17	18	20	20	20	18	20	20
30	15	18	17	17	18	20	20	19	16	20	17
31	16	17	18	18	18	18	18	20	18	20	20
32	15	17	18	19	19	19	20	20	16	19	19
34	16	18	18	18	18	20	20	20	18	20	20
36	17	17	18	19	18	20	20	20	18	20	20
37	16	18	18	19	18	20	20	20	18	20	20
40	16	18	18	19	19	21	21	20	19	20	20
41	16	18	18	18	0	21	21	18	18	20	20
Tide	HT-HF	LT-LR	MR-MR	MR-HT	MR-HT	MR-HT	MT-HT	LT-LT	LT-LT	HT-HT	MT-MR
Rain (mm)	8.2	0	1.6	0	0	0	28.6	0	0	0	0
0-24h	9.8	0	2.8	0	0.8	0.8	28.6	0	0	0	9.2
0-48h											
0-72h	10.1	4.8	4	0	0.8	0.8	28.6	2.2	0	2.6	9.2

TABLE 6E. SHORELINE SANITARY SURVEY :

NS-07-010-008: WHYCOCOMAGH BAY
 FROM ABERDEEN TO CHISHOLME POND
 INSPECTOR: ROBERT KENNEY
 COMPREHENSIVE: JULY 10, 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 6C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: The Aberdeen, iron mines, Wilburn, south side Whycomagh Bay and Whycomagh Portage areas are populated with residences and seasonal cottages. The village of Whycomagh and the Whycomagh Indian Reserve have a combined population of approximately 900. The reserve, with a population of about 450, has its own sewage treatment facility which can handle up to 50,000 gal/day. The sewage is aerated and discharged at outflow pi near the mouth of the Skye River. Approximately 20-30 homes on the reserve are not connected to the sewage system. These homes have individual systems, up to standard (st's and tile fields) according to Charles Mullendore, special projects manager. Sewage treatment in the village of Whycomagh appears inadequate. The town has repeatedly requested a sewer system for more than 20 years. There has been a number of studies and systems designed but no construction. Most of the homes in the core of the town were built more than 15 years ago have st's with overflow pipes to a near by swamp, field, dr, wc or the bay area itself.
1	NS	P	1 sty brick house with orange trim on a raised foundation app. 80mfs. No evidence of any outflow PI.
2	ST	P	1 1/2 story white house on raised foundation app. 80mfs. No outflow PI visible.
3	ST	P	One story red/whit trim house on raised foundation >100mfs. No evidence of outflow PI
4	ST	P	Two story brw/yel trim house on raised foundation with two story garage. No outflow PI visible. Two inch diameter ABS PI for sink and washer effluent to DR.
5	ST	P	One story blue/whit trim house on raised foundation app. 70mfs. Two large garages in back yard. No evidence of outflow PI.
6	ST	P	One story wht/rust trim house on raised foundation app. 60mfs. No evidence of outflow PI.
7	ST	P	New wht/blk trim mobile home >100mfs. No evidence of outflow PI.
8	ST	P	Wht mobile home app. 40mfs. ST near DR. Two inch ABS PI for sink and washer to DR. (MacPherson)
9	PI	P	One story brw/whit seasonal cottage app. 60mfs 4in ABS PI to ground. 2, 2in ABS PI's to wooded area. No flow present.
10	PI	P	One story wht house on raised foundation app. 50mfs. 4in dia. PI with slurry discharge to DR to woods.
11	ST	P	One story wht house on raised foundation app. 60mfs. No evidence of outflow PI.
12	ST	P	One story wht house on raised foundation app. 70mfs. 2in dia. ABS PI of sink and washer effluent to DR. No other outflow PI visible.
13	ST	P	One story wht house on raised foundation app. 50mfs. 2, 4in dia. ABS PI's to DR for water drainage due to high water table. (Morrison)
14	ST	P	One story grn house on raised foundation with grn garage, app. 50mfs. The drainage PI's mentioned above are between houses.
15	ST	P	Four trailers on hill app. 50mfs. All have sewers running to ground. No outflow PI visible.
16	PI	P	Abandoned farm house and mobile home and one seasonal cottage with 4in dia. PI to drum and then to open hole. No flow present. >200mfs.
17	OH	P	Two, one story red and one wood logged seasonal cottages app. 20-40mfs. All with OH's.
18	OH	P	One story yel/brw trim seasonal cottage with OH app. 60mfs.
19	PI	P	Yel and org trailer app. 60mfs. 4in dia. ABS PI to ground towards dug out DR. No other PI visible.
20	ST	P	Red/whit mobile home app. 60mfs 2in dia ABS PI to DR. no other outflow PI visible but swamp area close to mobile home is covered with brush as if to hide something.
21	ST	P	Beige/org trailer with 4in dia. PI to ground. App. 80mfpwc.
22	NS	N	Boat house and WV. One speedboat inside.
23	ST	P	Wht/gold trailer. Sewer to ground. No outflow PI visible.

24	ST	P	One str. blue/wht trim seasonal cottage, app. 30mfs and app. 20mfwc. No evidence of outflow PI.
25	ST	P	Blue and wht mobile home app. 25mfs. No outflow PI visible
26	ST	P	Aberdeen Motel app. 80mfs and <20mfwc, 14 units. Disposal bed in front of motel.
27	ST	P	2 str off wht house with red shed. App. 80mfs. No evidence of outflow PI.
28	ST	P	One str wht/red trim house on raised foundation app. 60mfs. No outflow PI visible
29	ST	P	2 str wht house on raised foundation app. 50mfs. No outflow PI visible. (Stewart)
30	ST	P	1 1/2 str wht/blk trim house on raised foundation. No outflow PI visible. (Fraser)
31	ST	P	Norma's Diner. New ST and disposal bed. >100mfs.
32	NS	N	Texaco bulk station - heating oil. >100mfs.
33	ST	P	Mountain View Trailer Court. About 20 sewage sites, one washroom facility, two cottages and one 2 str wht house on raised foundation. No outflow PI's visible. Was not open at time of inspection.
34	NS	N	N.S. Provincial Park. All OH's are lined and sewage is hauled away throughout the season.
35	ST	P	Group of 5 houses on raised foundation. One seasonal. No outflow PI's visible but there was a smell of sewage in the vicinity. App. 100mfs.
36	ST	P	1 1/2 str wht house on raised foundation on hill, > 150mfs. LE from ST area.
37	WV	P	WV for pleasure boats. Usually 4 pleasure sailboats anchored within 100m of WV.
38	NS	P	One str brw seasonal cottage < 30mfs. No indoor plumbing or OH visible.
39	LE	P	1 1/2 str wht/red trim house on raised foundation app. 100mfs. New ST and disposal bed. 4in dia PVC Perforated PI to DR. A great deal of groundwater LE through disposal bed.
40	ST	P	Royal Canadian Legion <20mfs. Wooden culvert at waters edge; no flow visible.
41	PI	P	Very seasonal beige and org mushroom factory warehouse. 2in dia ABS PI to DR. No flow visible. No other outflow PI visible.
42	PI	P	Group of 10 houses. 2 mobile homes, one seasonal house and 7 houses on raised foundation. One with direct flow through 4in dia PI to field, 2 with ST and overflow through 4in dia PI to field, one with 4in dia PVC perforated PI from ST to field. No overflow PI visible for the remaining houses. Drainage from this area is to swamp and then to shore through wooden culvert.
43	PI	D	1 1/2 str. red/wht trim house on raised foundation <5mfs. 4in dia ABS PI to shore. Direct discharge. (seasonal).
44	ST	P	New one str blue/wht trim house on raised foundation on land with a great deal of groundwater LE. App. 100mfs.
45	ST	P	New 2 str wht house on raised foundation app. 100mfs. No outflow PI visible.
46	ST	P	One str wht/red trim house on raised foundation <20mfswamp. 2in dia PI for sink and washer effluent to side of house.
47	PI	P	1 1/2 str wht house on raised foundation with 4in dia PI for sewage to ravine above swamp. One str wht/red trim house. 4in dia PI for overflow from ST to ravine above swamp.
48	XX	P	1 1/2 str wht house on raised foundation with red/wht barn app. 20mfwc. Slight sink discharge in front lawn. Manure pile with hay above WC.
49	ST	P	One str brw. wht trim house on raised foundation app. 80mfwc. No outflow PI visible.
50	PI	P	Grn/wht mobile home with 4in dia PI, slurry outflow back ravine area. >100mfwc
51	ST	P	Yel/brw trim mobile home with 4in dia overflow PI to back ravine app. 30mfswamp.
52	PI	P	1 1/2 str wht house app. 60mfswamp. No overflow PI visible. 2 str wht/beige trim apartment house on raised foundation with 4in dia PI to swamp, one str wht/grey trim house with 4in dia PI to swamp, and wht mobile home with 4in dia PI to same swamp.
53	ST	P	One str. grn/wht trim apt. house <20mfswamp. No outflow PI visible.
54	ST	P	One storage garage with sailboat rarely used. Group of 8 new homes in subdivision. All with ST and disposal beds. One older 1 1/2 str wht house on raised foundation on top of hill with overflow PI form ST to boggy area. Old diesel pump station with diesel visible on surface. All >300mfs
55	ST	P	One str. brw. wooden sided house on raised foundation >200mfs. No outflow PI visible (MacDonald)
56	ST	P	One str wht house on raised foundation, >200mfs. No outflow PI visible. (Gillis)

57	ST	P	Fair Isle Motel. 23 units. ST with disposal bed. No outflow PI visible. >200mfs.
58	ST	P	One str. wht/brw trim house on raised foundation >200mfs. No outflow PI visible. (MacDonald)
59	PI	P	Split level wht/brick house on raised foundation. 4in dia PI to ravine beside house with a slurry outflow. >200mfs
60	ST	P	Group of 4 houses on raise foundations and 3 mobile homes all with ST and disposal beds. No outflow PI's visible. App. 110mfpsc
61	ST	P	Ralph's convience store. Packaging burned in swamp beside store. No outflow PI visible.
62	PI	P	One str blue/wht trim house on raised foundation <10mfpsc. 4in dia PI to pond emptying to WC. Pond covered with algae.
63	ST	P	2 str wooden shingled/wht trim house on raised foundation. One str wht/grn trim house on raised foundation <60mfpsc. No outflow PI's visible.
64	PI	P	1 1/2 str wht house on raised foundation. 4in dia PI with slurry outflow from ST to ravine app. 30mfpsc. (MacRae)
65	ST	P	Shell Service Station and convenience store. No outflow PI visible.
66	PI	P	One str wht house on raised foundation with 4in dia PI from ST to swamp. Slurry outflow visible.
67	NS	N	Abandoned 2 str wht house.
68	PI	P	2 str wht house on raised foundation. 4in dia PI to woods <50mfswamp.
69	PI	P	2 str wht house and barn. 4in dia PI with slurry discharge to front wooded area <60mf swamp.
70	ST	D	One str wht/brw trim house on raised foundation app. 10mfs. 4in dia PI to Dr to shore. Next to wooden culvert which drains swamp above. 230mpn/100ml from culvert.
71	PI	N	One str rarely used wht seasonal cottage <5mfs. 4in dia metal PI to deeper water in bay.
72	PI	P	One str wht house <10mfs with ST and 4in dia PVC PI to shore. No flow visible.
73	ST	P	One str yel/wht trim house on raised foundation app. 50mfs. No outflow PI visible
74	ST	P	1 1/2 str yel house on raised foundation, app 50mfs. 4in dia PI with slurry effluent to back field.
75	ST	P	New one str blue/wht trim house on raised foundation app. 40mfs. No outflow PI visible
76	LE	P	2 1/2 str apt. house on raised foundation app. 60mfs. LE from gravelled area in back yard. Lots of green growth.
77	PI	P	One str grn house on raised foundation, app. 5mfs. Appears seasonal. 4in dia PVC PI on shore. No flow visible.
78	ST	P	One str wht house on raised foundation, app. 50mfs. No outflow PI visible but grn line down back hill.
79	PI	P	One str. wht house on raised foundation, app. 60mfs. 4in dia PI from ST to ravened area.
80	NS	N	St. Andrews Presbyterian Church. <3mpn/100ml. Sample taken just off shoreline.
81	PI	D	One str grn house on raised foundation <10mfs <5mfwc and wooden culvert carrying stream which drains swamps from above. 2, 4in dia PI's to WC. One has effluent resembling sewage while the other looks like a water drainage PI. Sample taken at mouth of brook yielded 11,000mpn/100ml.
82	PI	P	1 1/2 str wht house on raised foundation with 2, 4in dia PI's to swamp area by shore. <10mfs. Water below PI appears cloudy. PI located behind abandoned 1 1/2 str. house
83	WC	D	New 2 str wht/blk shuttered house on raised foundation, app. 15mfs. Sample taken at mouth of brook beside house was 90mpn/100ml
84	PI	P	Some type of legton or lodge. App. 40mfs and 10mfpsc. No overflow PI visible but difficult to investigate brushy area by WC.
85	ST	P	2 small wht houses on raised foundation, app. 5mfpsc. Both have old ST and 2, 4in dia PI's to WC. One with slight grn sludge
86	PI	P	2 str. wht house on raised foundation, app. 10mfswamp. 4in dia PI to back swamp.
87	PI	P	Co-op Grocery Store. What looks like direct discharge from 4in dia PI to swamp area behind store. Burnt and non-burnt domestic garbage in swamp.
88	ST	P	Post office. No outflow PI visible.
89	PI	P	Petro-Canada service station and one str red/wht trim house. 2, 4in dia PI to swamp from ST. Swamp is a cesspool.
90	PI	P	1 1/2 str grn house on raised foundation. 4in dia PI to DR to swamp. Grey slurry eff.
91	ST	P	Red/wht trim volunteer fire dept. <20mfpsc. No outflow PI visible.
92	ST	P	One str. wht house on raised foundation, <5mfpsc. 2 str wht apt. house, one str wht house on raised foundation containing apt's and insurance agency, one str wht flower shop and animal hospital. All have ST and disposal beds. No outflow PI visible but a very brushy

			area.
93	ST	P	New one str wht house on raised foundation, app. 30mfs. No outflow PI visible.
94	PI	P	2 str wht house on raised foundation, app. 40mfs. 4in dia PI to DR to shore. Gray slurry visible.
95	ST	P	Royal Bank and Old 1 1/2 str house being renovated. No outflow PI visible. App. 100mfs.
96	ST	P	2, one str. wht houses on raised foundation app. 70-120mfs. Moist area around ST.
97	PI	P	2 mobile homes with LE to swamp area. One furniture store with slight LE from gravelled area to swamp. One str wht house with lots of gravel in back yard. No PI visible. 1 1/2 str. wht/blk trim house on raised foundation. 4in dia PI to DR.
98	ST	P	1 1/2 str wht house on raised foundation, App 10mfwc. 4in dia PI to WC from ST. According to owner.
99	ST	P	United Church and Hall with ST but no outflow PI visible.
100	ST	P	2 str wht/brw trim house on raised foundation app. 70mfs. Manure used in compost in yard. No overflow PI visible
101	ST	P	2 str wht/grm trim house on raised foundation >100mfs. No outflow PI visible.
102	TP	P	Whycocomagh Consolidated School. Small, aerated type treatment facility, app. 100mfs. Outflow PI could not be found and staff had no idea where it was located.
103	ST	P	One str yel house on raised foundation, >200mfs. No outflow PI visible.
104	ST	P	Funeral Home. 2 str wht house on raised foundation. No outflow PI visible.
105	ST	P	1 1/2 str wht/grm trim house on raised foundation, >200mfs. No outflow PI visible.
106	PI	P	MacKeigan Convenience Store and Grocery. 4in dia PI to back swamp. Swamp strewn with debris and an orange sludge. Garbage burnt behind store close to swamp.
107	PI	P	1 1/2 str wht house on raised foundation 4in dia PI to swamp behind house. No flow visible.
108	PI	P	V's Restaurant. 4in dia PI to back swamp. The swamp is literally black sludge which often gives off a rank odour during the summer.
109	LE	P	2, one str houses and mobile home. All with ST and disposal bed which often show LE; according to one of the residents, MacCauley.
110	PI	P	A subdivision of about 13 houses. 2, 4in dia ABS PI's in field which slopes towards swamp located behind restaurant. One PI had a definite sewage eff. According to residents there is LE from many of the septic systems to the swamp.
111	ST	P	Group of 6 houses surrounding trailer court. All have ST and disposal beds. Lots of gravel in the area. No outflow PI visible.
112	ST	P	Glenview Trailer Court. Inspected ST and disposal beds. Pool on sight. App 130mfwc.
113	ST	P	Irving Service Station. ST and disposal bed. No outflow PI visible
114	ST	P	Group of 4 houses all on raised foundation, app. 120mfwc. No outflow PI's visible.
115	TP	D	Oxidation Ditch Sewage Treatment Plant which can handle up to 50,000imp/day. Outflow in mouth of Skye River. Sample - 70mpn/100ml
116	LS	P	Lift Station.
117	LS	P	Lift Station.
118	OH	P	Red/wht seasonal trailer on hill, app. 50mfs. OH on hill.
119	ST	P	New wht/blk trim mobile home on hill, app. 50mfs. No outflow PI visible.
120	ST	P	2 str seasonal red barn converted to cottage <20mfwc. No outflow PI visible.
121	PI	P	L'Arches. 30 residents. 5 houses on raised foundation, 1 barn, 1 abandoned house. All have ST and disposal beds. One house has overflow 4in dia PI to field which drains to where the cows graze. 2 pigs and 15 chickens on site. >200mfs. One wc runs through property. Drainage to roadside DR then to shore.
122	ST	P	1 1/2 str wht house on raised foundation. Periodically rented. <10mf boggy area. No PI visible.
123	ST	P	One str brick house on raised foundation, app. 20mfs, one str brw wooden shingled house on raised foundation, app. 20mfs. One red/wht seasonal cottage, app. 40mfs. All with ST and disposal beds. No outflow PI's visible.
124	ST	P	1 1/2 str wht house on raised foundation, app. 30mfwc. No outflow PI visible. (Matheson)
125	ST	P	One str yel house on raised foundation, >100mfwc. 1 1/2 str wht house on raised foundation, next to abandoned store. >60mfwc No outflow PI visible.

126	PI	P	1 1/2 str wht house on raised foundation, app. 100mfwc. 4in dia PI to ravine towards WC. Also 5-10 cattle which graze in fields.
127	PI	P	Group of 6 one str wht houses and one mobile home with common ST. Surface overflow to DR between houses and highway. 4in dia PI with drainage to roadside DR. 18 people in houses. Flow makes its way to Pooles Pond.
128	ST	P	Old red/blue seasonal bus, one str yel house one str wht house, app. 30-100mfwc. No outflow PI's visible but area very brushy.
129	OH	P	Group of 6 seasonal cottages, <30mfs. One with ST, disposal bed and 4in dia drainage PI for basement to pond. No other outflow PI's visible. 4 OH's <25mfs.
130	PI	P	1 1/2 str wht/grm trim house on raised foundation on hill, app. 60mfs. 4in dia PI to field towards WC. PI app. 20mfwc.
131	ST	P	One str wht house on raised foundation, app.60mfwc. No outflow PI visible.
132	LE	P	Seasonal tent trailer. Unknown means of sewage disposal.
133	NP	P	Small sheep and cattle farm, app. 100acres. 60sheep, 24cattle which all graze in fields around house. Farm is app. 100-400mfs or 10 - 400mfwc. Located on rolling landscape. Uses manure on fields for fertiliser. 2 str wht house with large red barn.
134	NP	P	1 1/2 str wht/blk trim house on raised foundation with shed and large red barn, app. 40mfs. Open fields, one cow in barn, manure pile on hill app. 80mfs. Farm located on hill sloped towards shore.
135	ST	P	New beige mobile home with old wooden shingled barn, app. 50mfs. 3 horses with manure pile beside barn. Usually spread on field. No outflow PI visible. The bridge to this island residence collapsed 10-12yrs ago. At that time the DOT filled in the area between the mainland and the island. There is now a great deal of seaweed and algae growth on either side of the road.
136	OH	P	One str blue/wht trim seasonal cottage on raised foundation, app. 20mfs. No outflow PI visible. OH app. 30mfs.
137	NP	P	1 1/2 str wht/grm trim house on raised foundation >300mfs. 10 cattle which graze in fields around house. Hay fields around house fertilised with manure and commercial fertiliser. Grm/wht trim mobile home on site with large red barn. No outflow PI visible.

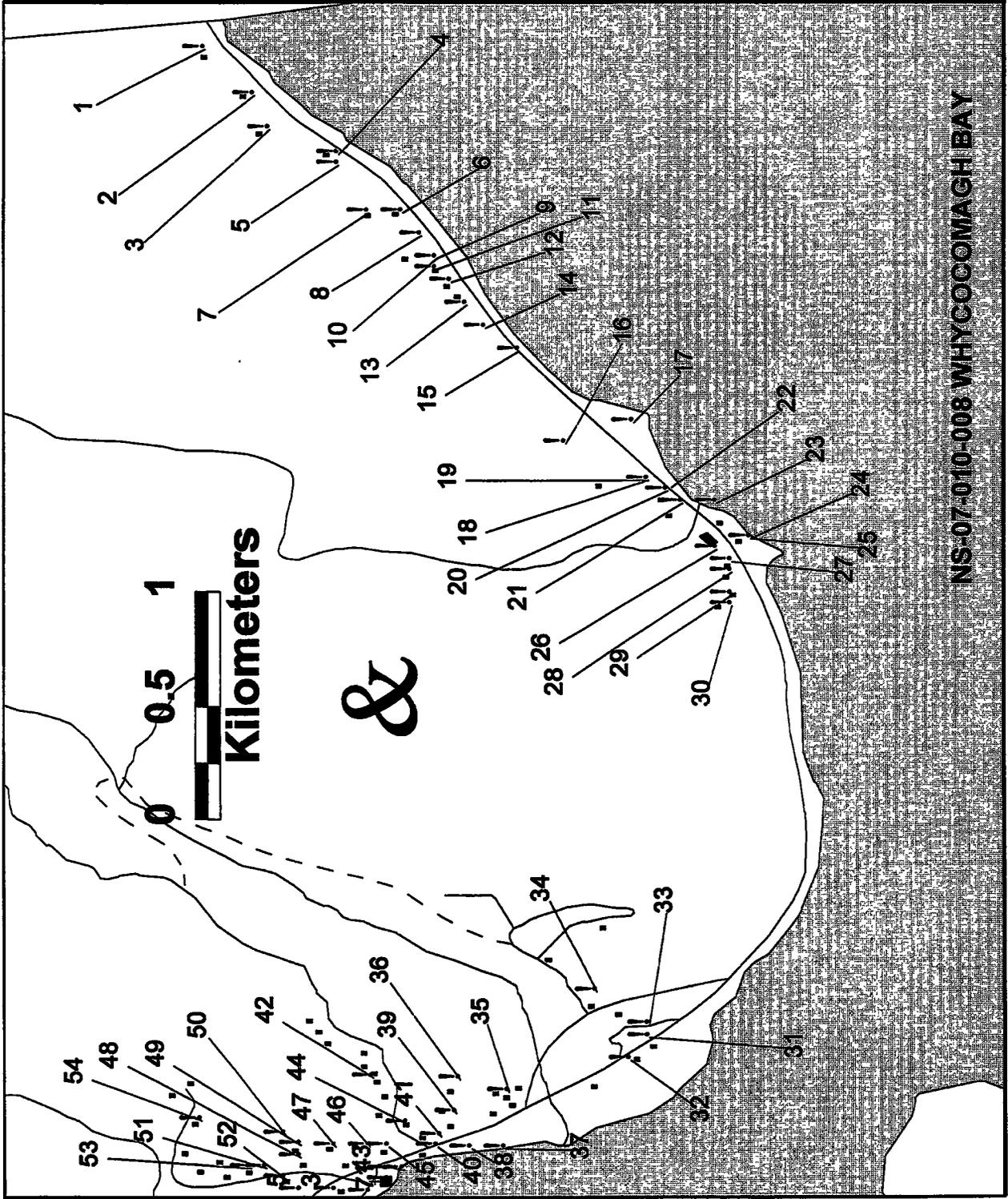


FIGURE 6C. SANITARY OBSERVATION SITE LOCATIONS, WHYCOCOMAGH BAY(NS-7-010-008)

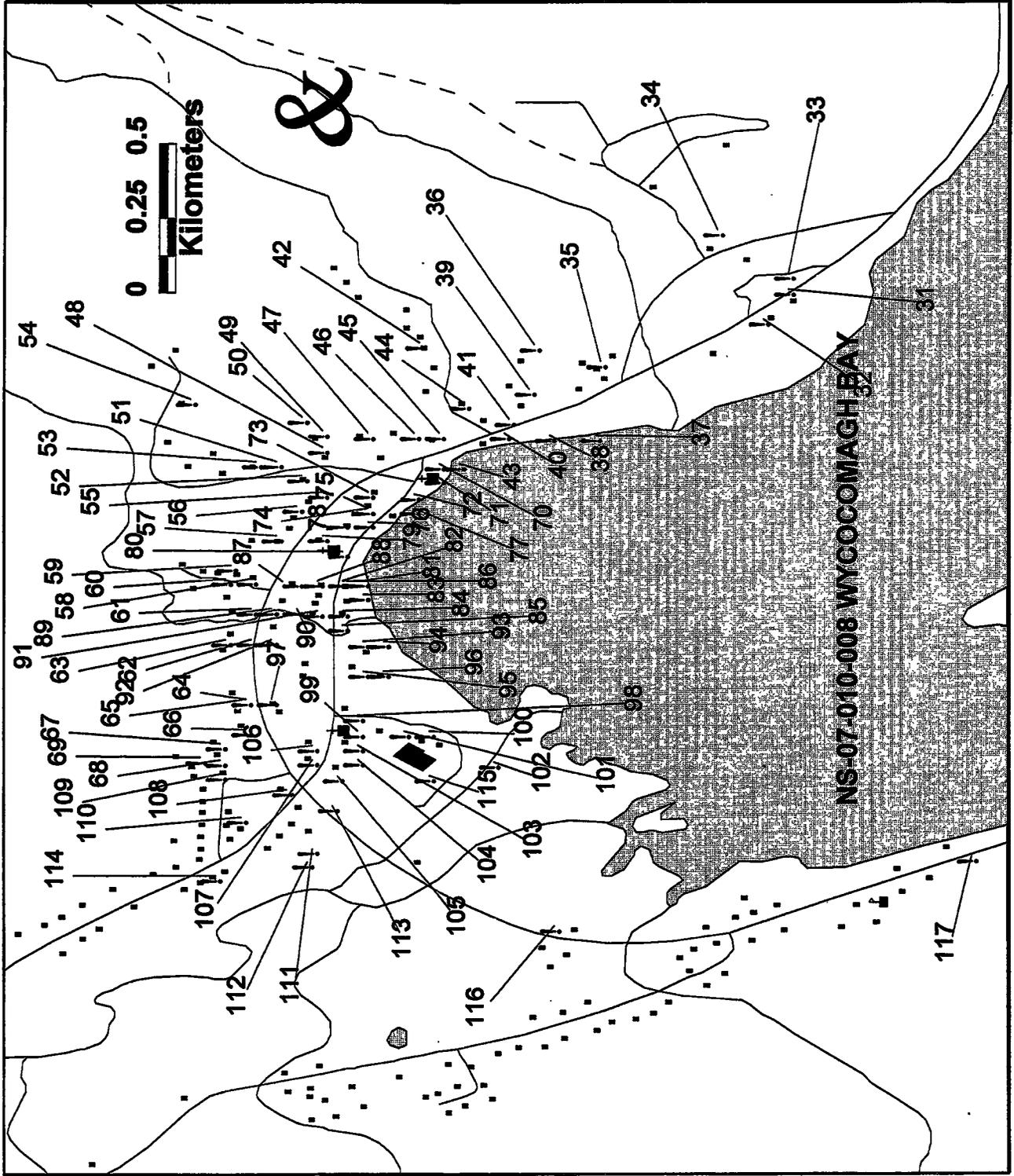


FIGURE 6C(cont.). SANITARY OBSERVATION SITE LOCATIONS, WYCOMAGH BAY(NS-7-010-008)

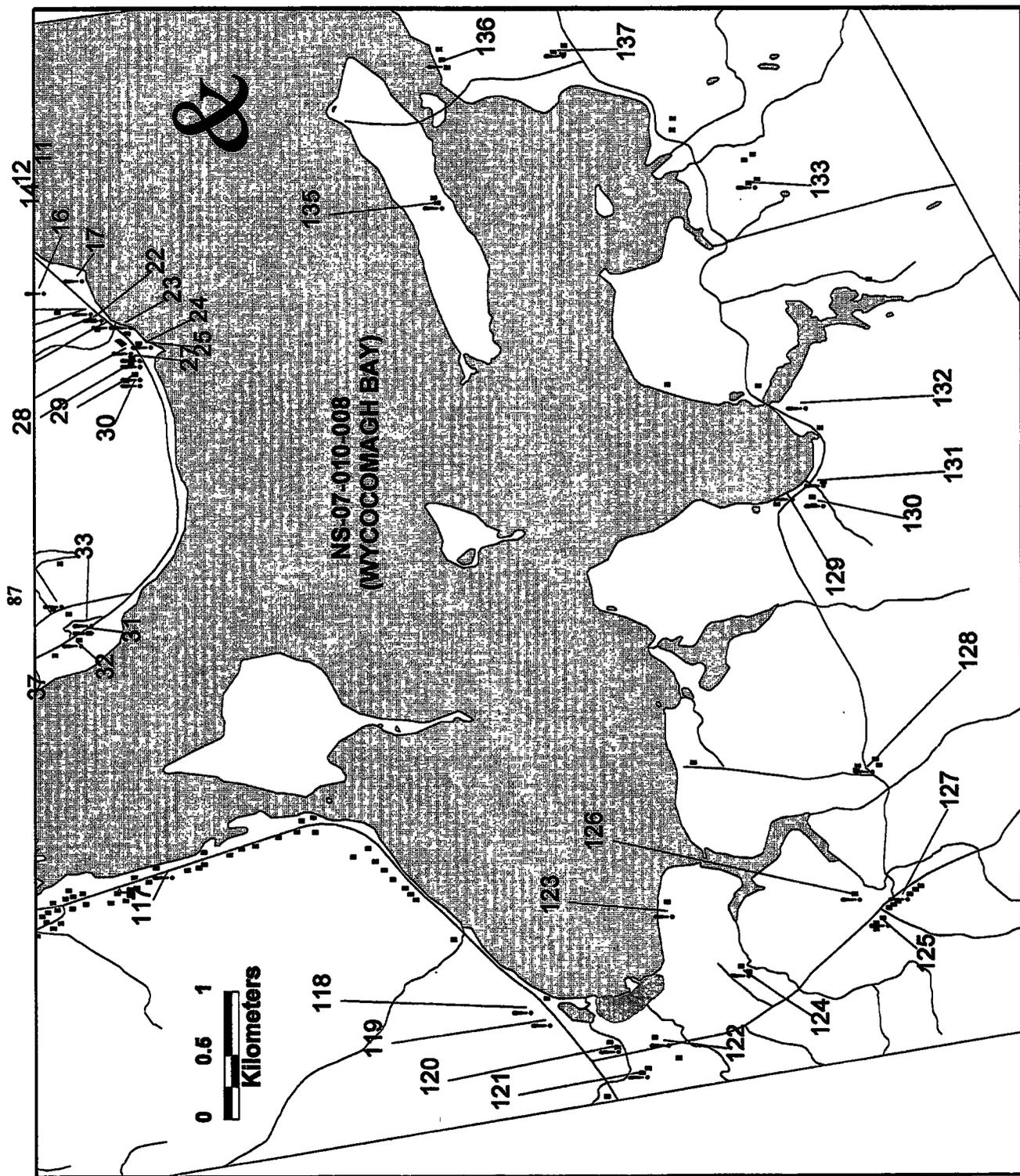


FIGURE 6C(cont.). SANITARY OBSERVATION SITE LOCATIONS, WYCOMAGH BAY(NS-7-010-008)

Sub-sector Name (Number):

Great Bras D'Or (Grand Narrows) (NS-7-020-005)

Date surveyed:	1993-96
No. of sampling runs:	17
Shellfish classification:	Figure 7A
Sampling station locations:	Figure 7B
Fecal coliform results:	Tables 7A & 7B
Salinity data:	Table 7C
Water temperature data:	Table 7D
Shoreline sanitary observations:	Table 7E & Figure 7C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The village of Iona, with bridge across Great Bras D'Or, is the largest community in the subsector. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay et al., 1994a). The current classification (Figure 7A) includes a shellfish closure at Iona as follows:

Closed

That portion of Barra Strait in Victoria County, between a line drawn from grid reference 6948 9290 at Plaster Cove to grid reference 7118 9173 and a line drawn from grid reference 6950 9095 to grid reference 7073 9095. Refer to map Grand Narrows 11F/15.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 7E) below.

Bacteriological Water Quality

The nine key stations (Figure 7B) surveyed on about seventeen occasions since 1993 (Tables 7A & 7B) continue to meet the criteria for an approved classification. Marginally elevated fecal coliform levels have been observed periodically at station four, but no change in classification is warranted.

FIGURE 7B. KEY STATION SAMPLING LOCATIONS IN GREAT BRAS D'OR (GRAND NARROWS/CHRISTMAS ISLAND)

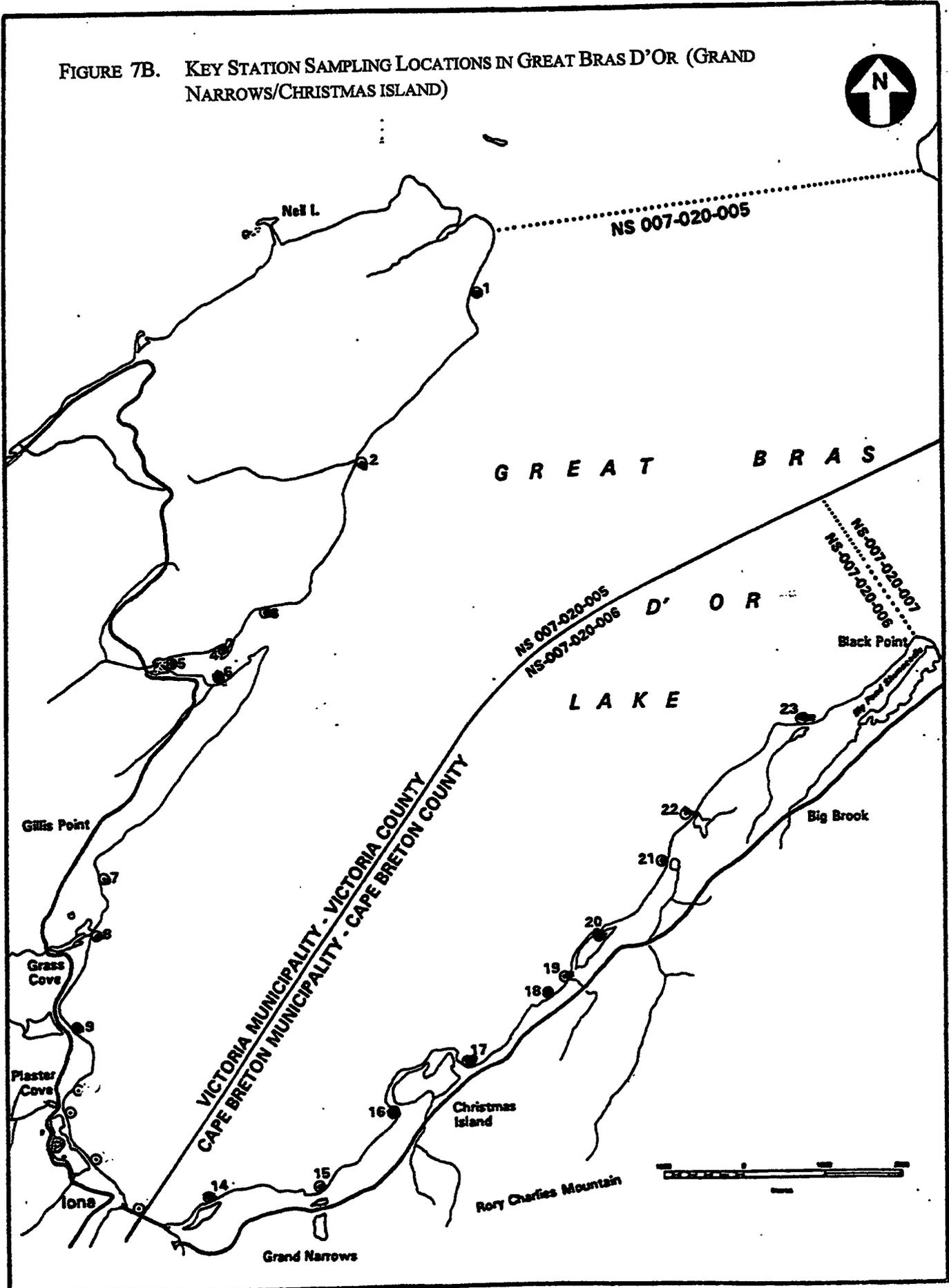


TABLE 7A. GREAT BRAS D'OR (GRAND NARROWS) (NS-7-020-005) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	17	1993-1996	1.9	2	1.9	1.9	2	0
2	17	1993-1996	1.9	17	2	1.9	5	0
3	17	1993-1996	1.9	33	2	1.9	5	0
4	17	1993-1996	1.9	540	4	1.9	27	12
5	17	1993-1996	1.9	23	3	1.9	9	0
6	17	1993-1996	1.9	49	3	1.9	10	6
7	17	1993-1996	1.9	13	2	1.9	5	0
8	17	1993-1996	1.9	140	4	1.9	18	6
9	17	1993-1996	1.9	33	3	1.9	9	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 7A) should remain unchanged.

TABLE 7B. GREAT BRAS D'OR (GRAND NARROWS) (NS-7-020-005) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	18 May 93	28 May 93	04 Jun 93	16 Jun 93	21 Jun 93	26 Jun 93	08 Jul 93	15 Jul 93	19 Jul 93	23 Jul 93	06 Aug 93	09 Aug 93	04 Jun 96	11 Jun 96	10 Jul 96	22 Aug 96	27 Aug 96
1	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
2	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	1.9	17	2	1.9	1.9	5	1.9
3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	33	2	1.9	1.9	1.9	2	1.9
4	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	5	2	540	2	1.9	1.9	79	1.9	1.9
5	1.9	2	1.9	7	1.9	1.9	5	1.9	1.9	2	23	4	1.9	1.9	17	1.9	5
6	1.9	1.9	1.9	1.9	1.9	2	1.9	5	23	1.9	49	1.9	1.9	1.9	1.9	2	1.9
7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	11	1.9	1.9	1.9	13	1.9	1.9
8	1.9	1.9	1.9	1.9	1.9	1.9	5	2	4	1.9	33	13	1.9	1.9	140	4	1.9
9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2	1.9	13	17	1.9	1.9	33	2	1.9
Tide	NI-NI																
Rain (mm)	0	0	0	0	0	0	0	0	0	0	4	34.6	0	0	0	43	1
0-24h	0	2.6	0	0	1.7	0	0	0.3	5.4	9.4	34.6	0.8	0	0	0	43	1
0-48h	12.2	2.9	14.4	0	2	0	0	1.3	6.4	10.4	35.4	1.2	0	0	44.4	2	2.7

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
LT= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MF = Mid Falling;

TABLE 7E. SHORELINE SANITARY SURVEY:

NS-07-020-005: GREAT BRAS DOR/GRAND NARROWS
FROM KEMPT HEAD TO IONA

INSPECTOR: R KENNEY

COMPREHENSIVE: JULY 15, 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 7C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with residences and a few seasonal cottages. The geology is of clay and gypsum.
1	ST	N	1 1/2 str brw wooden shingled seasonal cottage, >200mfs. no outflow PI visible.
2	OH	N	1 1/2 str brw wooden shingled seasonal red barn cottage, >200mfs. No outflow PI visible
3	WV	N	Looks like a boat fixing facility with a barge tied up on shore not far away.
4	NS	N	Boat house <10mfs.
5	NS	N	Lighthouse.
6	ST	P	2 str red/blk trim seasonal barn cottage, >90mfs. No outflow PI visible.
7	NS	N	Boat house on shore. Apparently there are lots of pleasure boats docked in area during the summer.
8	PI	P	26ft seasonal trailer with 4in dia PI to woods, >80mfwc, >300mfs. No eff visible.
9	ST	N	1 str wht/red trim house on raised foundation >400mfs, >100mfwc. No outflow PI visible.
10	ST	N	1 1/2 str brw wooden shingled house, >500mfs, >100mfwc. No outflow PI visible.
11	OH	N	1 str yel seasonal cottage, >200mfs.
12	NS	N	Small seasonal trailer in field with no plumbing or OH visible, >200mfs.
13	PI	P	1 str wth/blue trim house on raised foundation, >300mfs. 4in dia PI to back woods, from ST, according to owner.
14	ST	N	1 1/2 str wht/blk shuttered house on raised foundation, >200mfs. No outflow PI visible.
15	ST	N	New 2 str beige sided with wood house on raised foundation, >200mfs, >100mfwc. Yel garage on site. No outflow PI visible.
16	PI	P	2 str wht/blk shuttered house on raised foundation, >200mfs, <100mfwc. PI overflow from ST in WC ravine according to owner.
17	NS	N	Abandoned school house.
18	PI	P	Group of 3 homes and 2 barns. All with old ST's and overflow PI's to fields, to one of the residents. >400mfs.
19	ST	N	2 str grn/wht trim house on raised foundation and 3 sheds, >200mfpond. No outflow PI visible.
20	ST	N	Golden Falcon seasonal trailer, >300mfpond. No outflow PI visible.
21	PI	P	1 1/2 str wht house on raised foundation with wht garage, large barn and seasonal trailer. Both house and trailer have overflow PI from ST according to owner. <20mfwc, 400mfs.
22	PI	P	1 1/2 str yel house on raised foundation with 4in dia PI to nearby small WC. No eff visible >400mfs.
23	ST	P	1 str wht/grn trim house on raised foundation with 2 sheds, app. 50mfs. Large dog!
24	PI	P	2 str wht house on raised foundation with garage and shed, app. 30mfs. 4in dia PI over bank to shore. No eff visible.
25	ST	N	1 str yel, 1 str wht seasonal cottages, app. 100mfs. No outflow PI visible.
26	ST	P	2 trailers and one str seasonal blue mobile home, >90mfs. No outflow PI visible.
27	PI	P	2 str wht house on raised foundation, app. 40mfs. 2, 4in dia PI's to field. No eff visible. Wht barn on site. (MacNeil).
28	ST	P	Wht/gel trim seasonal mobile home with wht and blue shed, app. 60mfs. No outflow PI visible.
29	ST	P	str wht seasonal cottage, app. 70mfs. No outflow PI visible but area very brushy.
30	OH	N	1 1/2 str grey wooden shingled seasonal house with small trailer, >150mfs.
31	ST	P	Grn/wht trim mobile home, 1 str wht house on raised foundation, and 1 str brw wooden shingled house on raised foundation, app. 80mfs. No outflow PI's visible but area very brushy. All appear seasonal.
32	PI	P	1 str wht house on raised foundation with garage, <30mfwc 4in dia PI to DR by WC.
33	ST	P	Wht/red/gold mobile home and garage on hill with old wooden shingled abandoned house. No outflow PI visible.

34	PI	P	Small wht/red seasonal trailer, app. 10mf pond 4in dia PVC PI to small DR <10mfpond. No eff visible.
35	NS	P	New structure under construction, <20mfs.
36	ST	P	1 1/2 str wht house on raised foundation with org trim, 1 str wht house on raised foundation, 2 red sheds, large garage and lots of heavy equipment for servicing, app. 40mfpond. No outflow PI visible. (MacNeil).
37	ST	N	2 str seasonal wht house on raised foundation app. 100mfs. No outflow PI visible.
38	NS	N	Gypsum quarry in pond.
39	PI	P	1 str wht house on raised foundation, app. 90mfpond. 4in dia overflow PI to bushes according to owner.
40	PI	P	2 str wht house on raised foundation, >200mfs 4in dia PI to field. No eff visible.
41	PI	P	1 str pink/blue house on raised foundation with garage, shed and 3 trailers, app. 50mf pond. 4in dia PI to bushes according to owner. PI from ST.
42	ST	P	1 str wht/blue trim seasonal cottage, <30mfs. No outflow PI visible.
43	NS	N	N.S. Provincial Park. OH's pumped out seasonally.
44	ST	P	New beige/bw shuddered one str house on raised foundation, >200mfs. No outflow PI visible.
45	ST	P	2 str wht convent with no outflow PI visible. Cemetery across road.
46	PI	P	Rankin Memorial School. ST's with chlorination and overflow PI direct to shore.
47	PI	P	Church, Church hall and Rectory, app.40-80mfs 2, 4in dia PI's to DR to shore. No eff visible.
48	WV	P	Iona Government Wharf. One barge and tug boat
49	NS	N	New bridge under construction.
50	ST	P	Mickey's General store, <30mfpond. Pond now cut off from shore and partially filled in. No outflow PI visible.

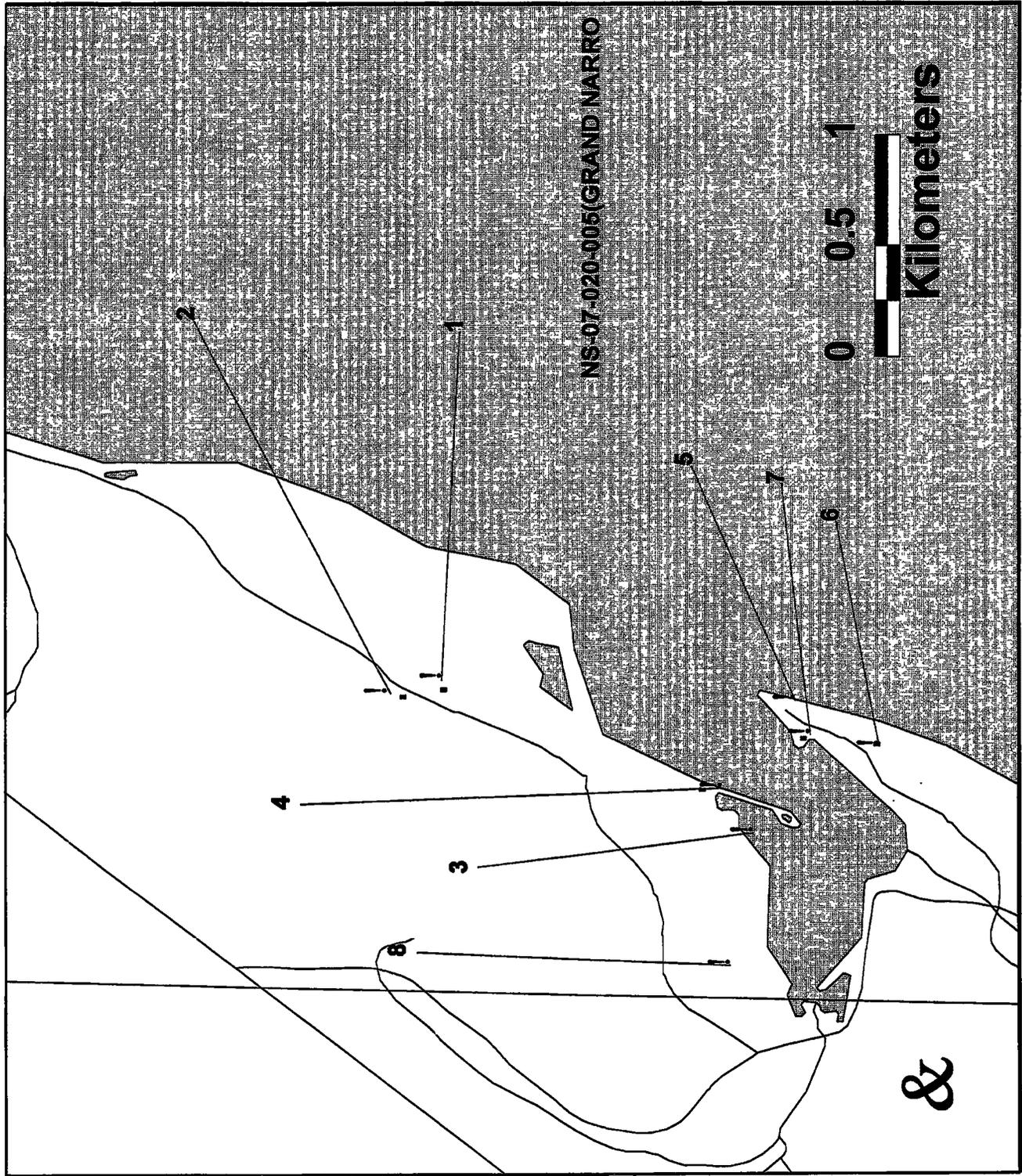


FIGURE 7C. SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (GRAND NARROWS) (NS-7-020-005)

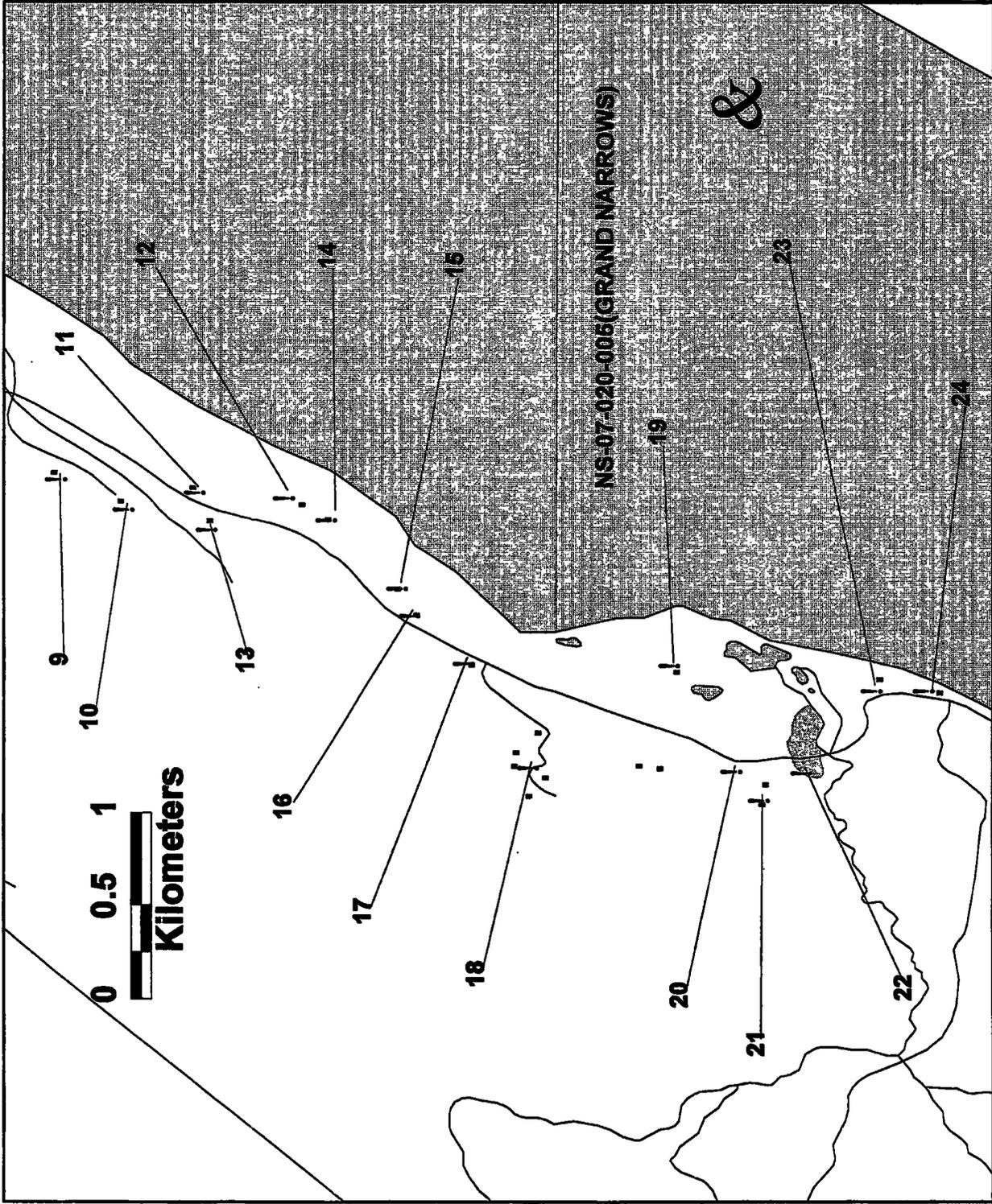


FIGURE 7C(cont.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (GRAND NARROWS) (NS-7-020-005)

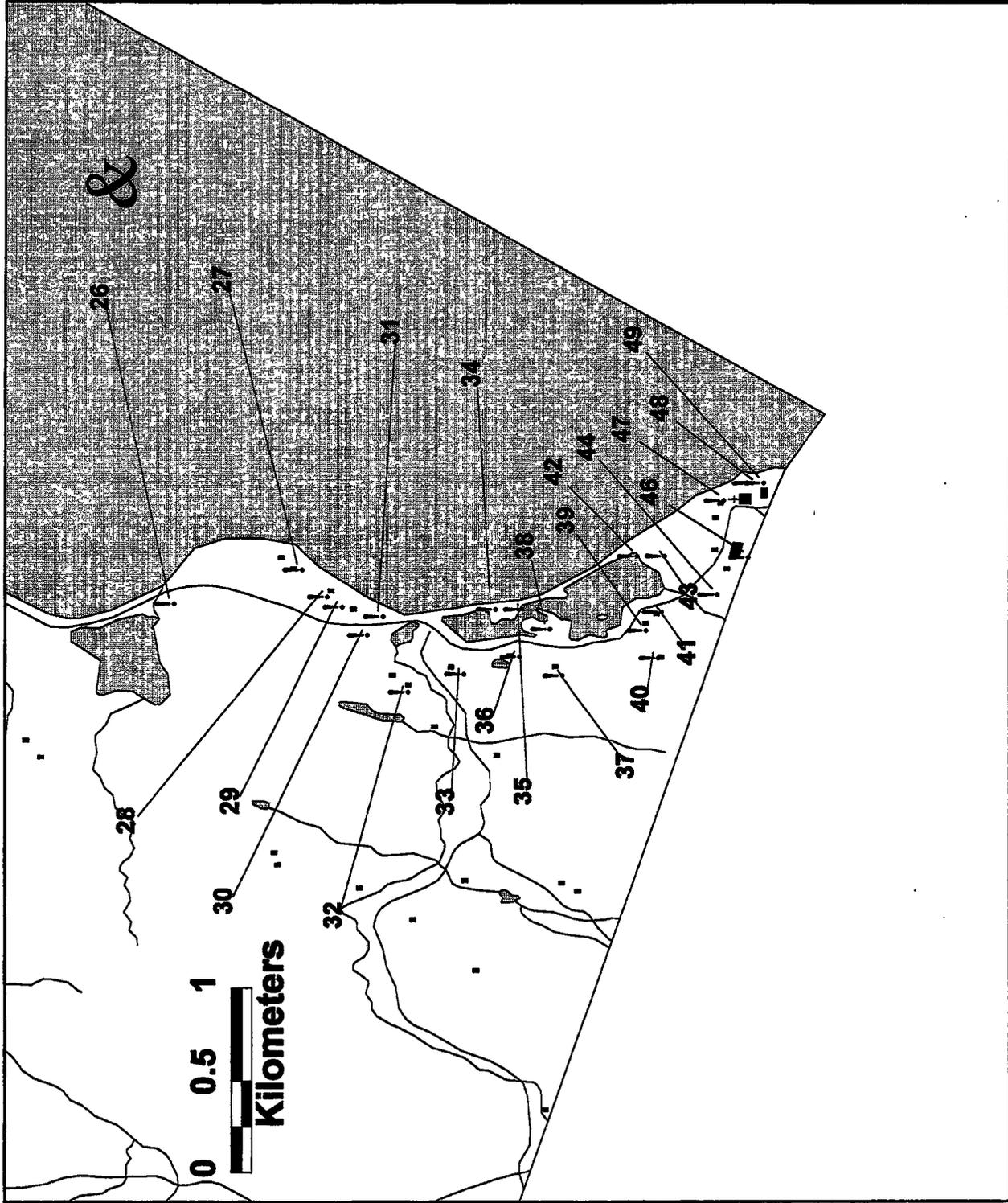


FIGURE 7C(cont.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (GRAND NARROWS) (NS-7-020-005)

Sub-sector Name (Number):

Great Bras D'Or (Christmas Island) (NS-7-020-006)

Date surveyed:	1993-96
No. of sampling runs:	17
Shellfish classification:	Figure 7A
Sampling station locations:	Figure 7B
Fecal coliform results:	Tables 8A & 8B
Salinity data:	Table 8C
Water temperature data:	Table 8D
Shoreline sanitary observations:	Table 8E & Figure 8A

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes of the Bras D'Or provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay *et al.*, 1994a). The current classification (Figure 7A) includes a shellfish closure at Iona as follows:

Closed

That portion of Barra Strait in Victoria County, between a line drawn from grid reference 6948 9290 at Plaster Cove to grid reference 7118 9173 and a line drawn from grid reference 6950 9095 to grid reference 7073 9095. Refer to map Grand Narrows 11F/15.

Approved

The remaining classified areas of the sub-sector beyond the closure described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 8E) below.

Bacteriological Water Quality

The ten key stations (Figure 7B) surveyed on about sixteen occasions since 1993 (Tables 8A & 8B) continue to meet the criteria for an approved classification. . Marginally elevated fecal coliform levels have been observed periodically at station twenty, but no change in classification is warranted.

TABLE 8A. GREAT BRAS D'OR (CHRISTMAS ISLAND)(NS-7-020-006) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
14	16	1993-1996	1.9	5	2	1.9	3	0
15	16	1993-1996	1.9	920	4	2	34	6
16	16	1993-1996	1.9	8	2	1.9	3	0
17	16	1993-1996	1.9	23	2	1.9	5	0
18	16	1993-1996	1.9	17	2	1.9	6	0
19	17	1993-1996	1.9	33	3	1.9	8	0
20	17	1993-1996	1.9	49	4	2	18	12
21	17	1993-1996	1.9	49	3	1.9	8	6
22	16	1993-1996	1.9	11	2	1.9	4	0
23	17	1993-1996	1.9	8	2	1.9	4	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 7A) should remain unchanged.

TABLE 8B. GREAT BRAS D'OR (CHRISTMAS ISLAND)(NS-7-020-006) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	18 May 93	28 May 93	04 Jun 93	16 Jun 93	21 Jun 93	26 Jun 93	08 Jul 93	15 Jul 93	19 Jul 93	23 Jul 93	06 Aug 93	09 Aug 93	04 Jun 96	11 Jun 96	10 Jul 96	22 Aug 96	27 Aug 96
14	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	5	2	1.9	1.9	1.9	1.9
15	1.9	2	1.9	1.9	1.9	1.9	2	1.9	7	2	2	920	9	21	8	1.9	1.9
16	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9	1.9	1.9	1.9
17	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	4	1.9	23	2	1.9	1.9	2	2
18	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	4	17	1.9	1.9	2	1.9	7
19	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	33	1.9	1.9	1.9	23	1.9
20	1.9	1.9	1.9	1.9	2	1.9	2	1.9	49	8	8	49	5	1.9	1.9	17	1.9
21	1.9	1.9	1.9	1.9	1.9	4	1.9	1.9	4	1.9	49	2	1.9	1.9	5	2	1.9
22	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	11	1.9	1.9	1.9	1.9	1.9
23	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9	8	1.9	1.9	1.9	1.9	1.9
Tide	NT	MR	MR														
Rain (mm)	0	0	0	0	0	0	0	0	0	0	4	34.6	0	0	0	43	1
0-24h	0	2.6	0	0	1.7	0	0	0.3	5.4	9.4	34.6	0.8	0	0	0	43	1
0-72h	12.2	2.9	14.4	0	2	0	0	1.3	6.4	10.4	35.4	1.2	0	0	44.4	2	2.7

N.B. 1.9 represents <2 MPN/100ml

HT= High Tide;

HF = High Falling;

HR - High Rising;

MT= Mid Tide;

MF = Mid Falling;

MR - Mid Rising

LT= Low Tide;

LF = Low Falling;

LR - Low Rising

TABLE 8C. GREAT BRAS D'OR (CHRISTMAS ISLAND) (NS-7-020-006) - SALINITIES (‰)

Station	18 May 93	28 May 93	04 Jun 93	16 Jun 93	21 Jun 93	26 Jun 93	08 Jul 93	15 Jul 93	19 Jul 93	23 Jul 93	06 Aug 93	09 Aug 93	04 Jun 96	11 Jun 96	10 Jul 96	22 Aug 96	27 Aug 96
14	21	20	21	22	22	23	20	22	21	22	24	22	21	22	22	21	22
15	20	15	21	22	22	23	20	22	21	22	22	22	9	19		21	22
16	20	20	21	22	22	22	20	22	20	21	22	22	21	21		22	22
17	20	20	20	22	22	22	20	22	20	22	22	20	21	21		22	22
18	20	20	20	22	22	22	20	22	22	22	21	21	21	22		22	22
19	20	20	20	20	22	22	20	22	20	22	20	21	21	21	20	21	22
20	20	18	20	20	20	22	20	22	20	22	20	21	21	21	22	21	22
21	20	20	20	20	20	22	20	22	20	21	20	21	21	22	22	22	22
22	20	19	20	20	22	22	20	22	20	21	21	21	21	22	22	21	22
23	20	20	20	20	22	22	20	22	22	21	21	21	21	22	22	21	22
Tide	NT-NT	MT-MR	MF-MR	LR-LR	MR-MR	HF-HT											
Rain (mm)	0	0	0	0	0	0	0	0	0	4	34.6	0	0	0	43	1	1
0-24h	0	2.6	0	0	1.7	0	0	0.3	5.4	9.4	34.6	0.8	0	0	43	1	1
0-48h	12.2	2.9	14.4	0	2	0	0	1.3	6.4	10.4	35.4	1.2	0	0	44.4	2	2.7

TABLE 8D. GREAT BRAS D'OR (CHRISTMAS ISLAND) (NS-7-020-006) - WATER TEMPERATURE (°C)

Station	18 May 93	28 May 93	04 Jun 93	16 Jun 93	21 Jun 93	26 Jun 93	08 Jul 93	15 Jul 93	19 Jul 93	23 Jul 93	06 Aug 93	09 Aug 93	04 Jun 96	11 Jun 96	10 Jul 96	22 Aug 96
14	8	9	9	11	13	13	15	15	18	16	16	19	19	9	12	20
15	9	10	8	11	13	13	15	16	18	15	16	19	18	16	15	21
16	9	9	9	12	14	14	16	16	19	15	16	19	18	10	13	21
17	9	10	9	12	14	13	16	16	19	16	16	19	19	9	12	21
18	10	10	9	13	15	15	16	16	19	16	16	19	19	10	14	21
19	10	10	9	13	15	15	16	16	19	16	17	19	19	10	14	21
20	12	11	11	14	16	16	17	17	19	15	17	20	20	11	15	21
21	10	10	10	13	14	14	16	16	19	16	16	20	19	10	15	22
22	10	10	10	13	14	14	15	15	19	16	16	19	19	10	14	21
23	10	10	11	14	15	15	16	16	19	16	16	19	19	11	14	17
Tide	NT-NT	MT-MR	LR-LR	MR-MR												
Rain (mm)	0	0	0	0	0	0	0	0	0	0	4	34.6	0	0	0	43
0-24h	0	2.6	0	0	1.7	0	0	0	0.3	5.4	9.4	34.6	0.8	0	0	43
0-48h	12.2	2.9	14.4	0	2	0	0	1.3	6.4	10.4	35.4	1.2	0	0	44.4	2

TABLE 8E. SHORELINE SANITARY SURVEY:

NS-07-020-006: GREAT BRAS DOR LAKES/CHRISTMAS ISLAND
FROM IONA TO BLACK POINT

INSPECTOR: R KENNEY
COMPREHENSIVE: JULY 16 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 8A for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Sparsely populated coastline, there is some shellfish resource in areas of Christmas Pond though not as productive as it used to be when the pond was fully open. The residence consist of cottages and full season homes.
1	PI	N	A 1 1/2 sty wht house with old ST and overflow pipe to field. Gentle grade towards a pond near strait(400mf house).
2	ST	N	2 sty wht house,400mfs ST/TF
3	ST	N	400mfs a ST/TF at 1 sty wht cottage.
4	PI	P	A seasonal trailer home,400mfs with sewage to ground.
5	ST	N	100mfs a 1 sty yel cottage, ST/TF
6	ST	N	A-frame cottage,ST/TF 80mfs.
7	ST	N	Approx. 70mfs,1 sty yel cottage. A old rail line is in between cottage and shoreline.
8	ST	P	A 4"outflow pipe 100mf swamp from old ST at 1 sty grn house.
9	ST	N	1 sty yel cottage on a side road,100mf swamp
10	ST	N	1 1/2 sty wht/yel house,st/f,100mf swamp
11	ST	P	1 1/2 sty wht/yel cottage,120mf swamp, over-flow pipe from ST to Coppers Cove.
12	ST	P	100mfs a 1 1/2 sty wht house st/f near Neilbar Cove along side road to cemetery.
13	NP	P	2 sty wht house st/f with 4" PI to field. 13 cows grazing in field, manure pile near the barn,200mfs.
14	ST	N	A 2 sty wht house, old ST with overflow pipe to a wet portion of ground,200mf Neilbar Cove
15	ST	N	200mfs a ST at a 1 1/2 sty home.
16	ST	N	300mfs a new home with ST/TF.
17	NS	N	A M.T.T and D.O.T. bldgs. near road junction.
18	NP	P	A large farm property with 5 homes on ST/TF's and 60 sheep,30 cows. Manure is spread to field. Approx 500mfs.
19	NS	N	1 sty wht cottage near Christmas Pond.
20	ST	N	Located south side of old railway track a 1st wht/red cottage with ST overflow to woods.
21	ST	P	Christmas Island consolidated school,17 students, ST overflow to woods,300mfs.
22	ST	N	Glebe property; a church & hall with ST and overflow over a hill to woods.(200mfs)
23	ST	N	2 homes with ST and overflow pipes to a local field,400mfs.
24	ST	N	Community centre and fire hall ST/TF
25	ST	P	3 buildings with ST/TF along side road;100 to 150mf Christmas Pond.
26	ST	P	1 1/2 sty seasonal home with ST overflow pipe to ditch, located south side of road,150mf pond.
27	ST	N	Local post office, ST/TF.
28	ST	N	Yel/red mobile home with ST,120mf pond.
29	ST	P	1 1/2 sty wht/grn home with ST overflow pipe to ditch,100mfs.
30	ST	N	1 1/2 sty brwn. wood shingled house with ST and overflow pipe to local field,100mfs.

31	ST	N	1 1/2 sty wht/org. house ST and overflow pipe to ditch, 300mfs. Near the Rear Christmas Is. side road.
32	OH	P	A OH 60mfs at a mobile trailer, occupied.
33	PI	P	A seasonal trailer home with sewer to ground no effluent visible, approx. 20mf north end of Christmas Is. Pond.
34	OH	P	2 trailers with OH's 50mfs, outside of pond.
35	ST	N	A ST at a wht house, 150mfs opposite side of road near turnoff to Rear Christmas Is.
36	NS	N	Public swimming beach, no OH's on beach.
37	ST	P	MacKinnons Groceries; ST at 1 1/2 sty wht/grn house, 80mfs. Unable to get access to shore to inspect for pipes.
38	NS	N	1 1/2 sty wht house, 250mfs. Area is very overgrown with alders no pipes detected.
39	ST	P	4 cottages near shoreline with ST's, no pipes seen. Distance to shore is 80-150mfs.
40	OH	P	One yel cottage with OH, 80mfs.
41	ST	N	One sty gray cottage, 100mfs
42	PI	P	A metal pipe to local brook from cottage that has a ST. No effluent visible.
43	ST	P	A 1 1/2 sty yel/wht cottage, old ST with overflow pipe to ravine.
44	NP	P	1 1/2 sty house with barn, 2 cows and 1 horse manure pile beside barn approx. 300mfs.
45	PI	P	A pipe to ground from wht/red cottage, 200mfs a pool of water is located under cottage.
46	ST	N	200mfs two homes with ST/TF, no pipes seen.
47	ST	N	300mfs a 1 1/2 sty brwn house with overflow pipe to front yard.
48	LE	P	Leaching from ST to ditch at 1 sty wht/blk home.
49	OH	P	Old OH over a small stream to shore. At a 2 sty wht/red home with barn.
50	ST	N	2 homes, ST/TF 200mfs.
51	NS	N	2 sty wht/grn cottage, 170mf pond, small brook flows just south of house to shore.
52	ST	N	ST with overflow pipe to front yard at a 1 sty wht house (300mf pond).
53	ST	N	1 1/2 sty house with ST and overflow pipe to front yard.
54	ST	N	A 1 1/2 sty blu/wht house and a mobile home both on a ST, 100 to 200mf MacDougalls Brook.
55	ST	P	A 1 sty wht/blu house, ST, approx 30mfwc that flows to MacDougalls Brook.
56	NS	N	Abandoned house.
57	NS	N	1 1/2 sty wht/red home 500mfs, no pipes seen.
58	ST	N	500mfs a ST at wht/red mobile home. No pipes seen.
59	ST	N	Three homes, 2 occupied with ST's and 1 home abandoned.
60	NS	N	Abandoned old farm with small brook draining through property to small pond near shore.
61	PI	P	A small wht/red cottage with 4" PI to ground approx. 50mfs. Located on side road in Big Brook that leads to shoreline.
62	LE	N	Overflow pipe from a ST at a 1 sty wht/red house goes to ditch. Approx 1 km to shore.
63	NS	N	1km from shore a 2 sty home with ST
64	PI	P	Overflow pipe from ST to swamp at 1 1/2 sty wht/blk home. Also 50mf Big Brook.
65	ST	N	300mf nearest brook a 2 sty yel home with ST. In the community of Big Brook.
66	DR	N	A 1 sty wht/blk trim cottage and a mobile home with ST. Close to roadside drainage, no leaching seen.
67	DR	N	A new beige/brwn house with ST. Close to ditch
68	ST	N	A 2 sty wht house with ST on a hill, 300mf Big Brook.
69	ST	N	A 1 1/2 sty wht house with ST and 4" overflow pipe to front field. Approx. 500mf brook.
70	LE	P	A 4" PI to ground 50mf roadside ditch near a 1 sty blu cottage.
71	PI	P	A 4" PI to ditch that is 500mf pond at a 1 sty grn cottage that also has a OH.

72	DR	N	A 2 sty yel/brw trim house, stone foundation. 20mf roadside ditch and 500mf pond.
73	PI	P	Three cottages; a OH and two ST's with one 4" PI to nearby swamp. Close to roadside ditch.
74	ST	P	A 1 sty red cottage, 60mf Big Brook that flows to Big Pond Shunacadie.
75	ST	P	A 1 1/2 sty wht/grn house with ST and field. 30mf pond.
76	ST	N	Two cottages with ST's, 500mf pond.
77	ST	N	A 2 sty brw/wht house, ST and field, 100mf road side ditch, 200mf pond.
78	ST	N	A 1 sty wht house with ST and field, 200mf pond. A large barn also on property.
79	ST	N	In the community of Big Beach a wht/blu cottage with ST and field, 200mf pond.
80	NS	N	Abandoned 1 1/2 sty home.
81	PI	N	A 1 sty blu cottage with 4" PI to ground, 200mf pond.
82	NS	N	Abandoned 1 1/2 sty wht house.
83	ST	N	A 1 1/2 sty Cape Cod gry house with ST/TF, 200mf pond. In Big Beach.
84	OH	N	Two OH's at 2 one sty cottages, 200mf pond.
85	OH	N	A OH at a grn mobile home and tent trailer, 200mf pond.
86	ST	N	A 1 1/2 sty wht/red house, with large barn. ST/TF 200mf pond.
87	NP	N	A wht mobile home, 200mf pond. No pipes visible

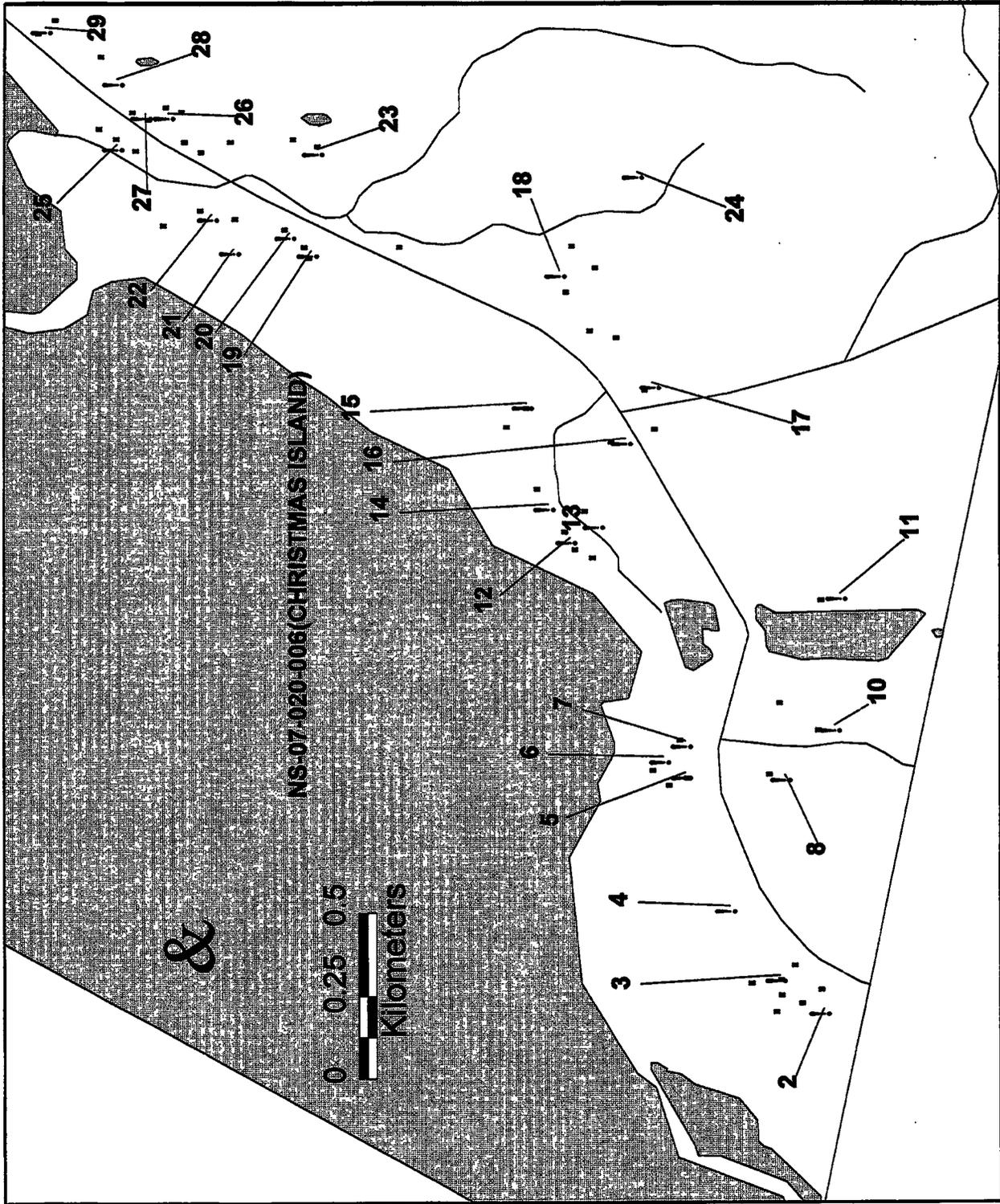


FIGURE 8A. SANTARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (CHRISTMAS ISLAND)

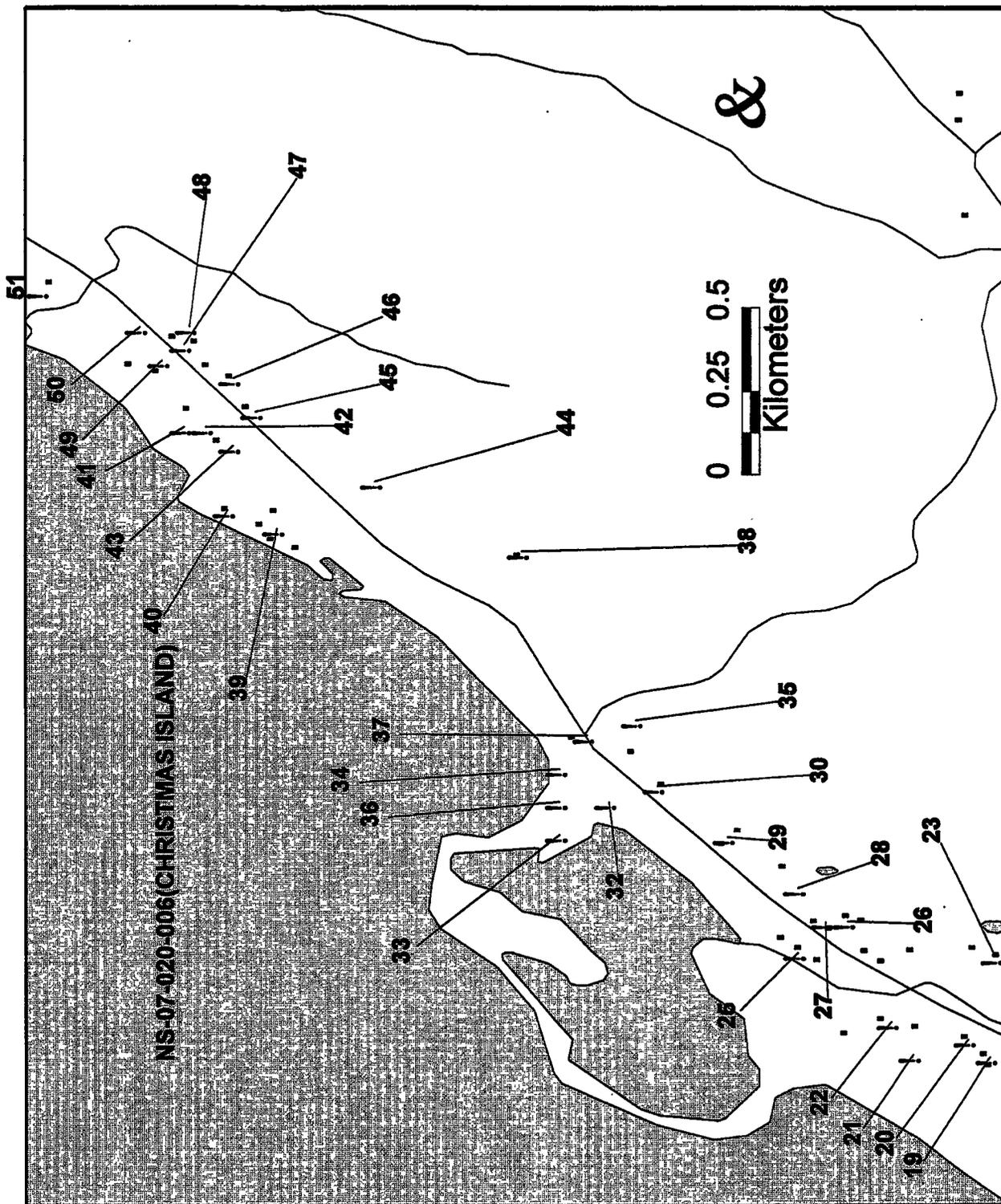


FIGURE 8A (cont.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (CHRISTMAS ISLAND)

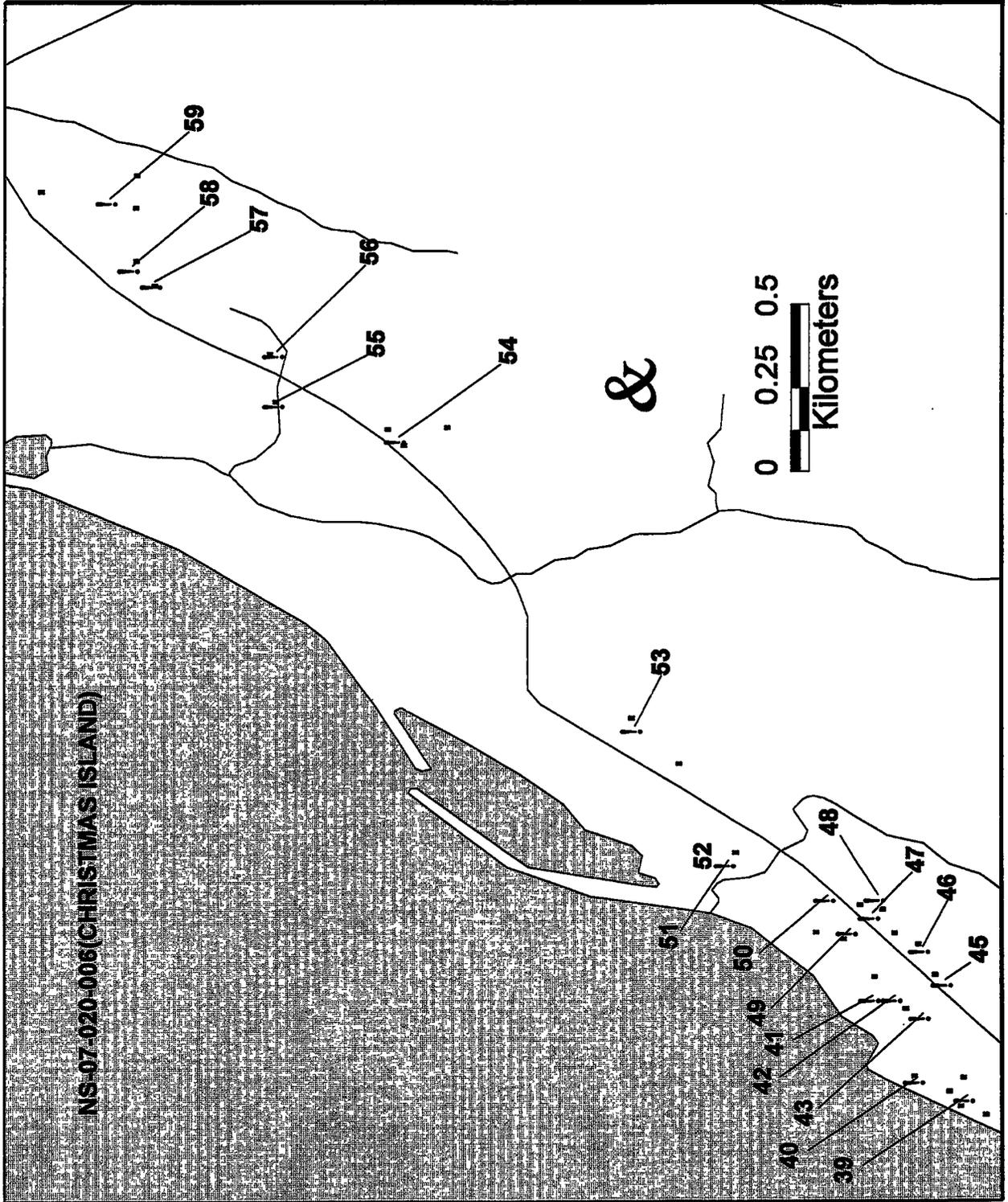


FIGURE 8A (cont.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (CHRISTMAS ISLAND)

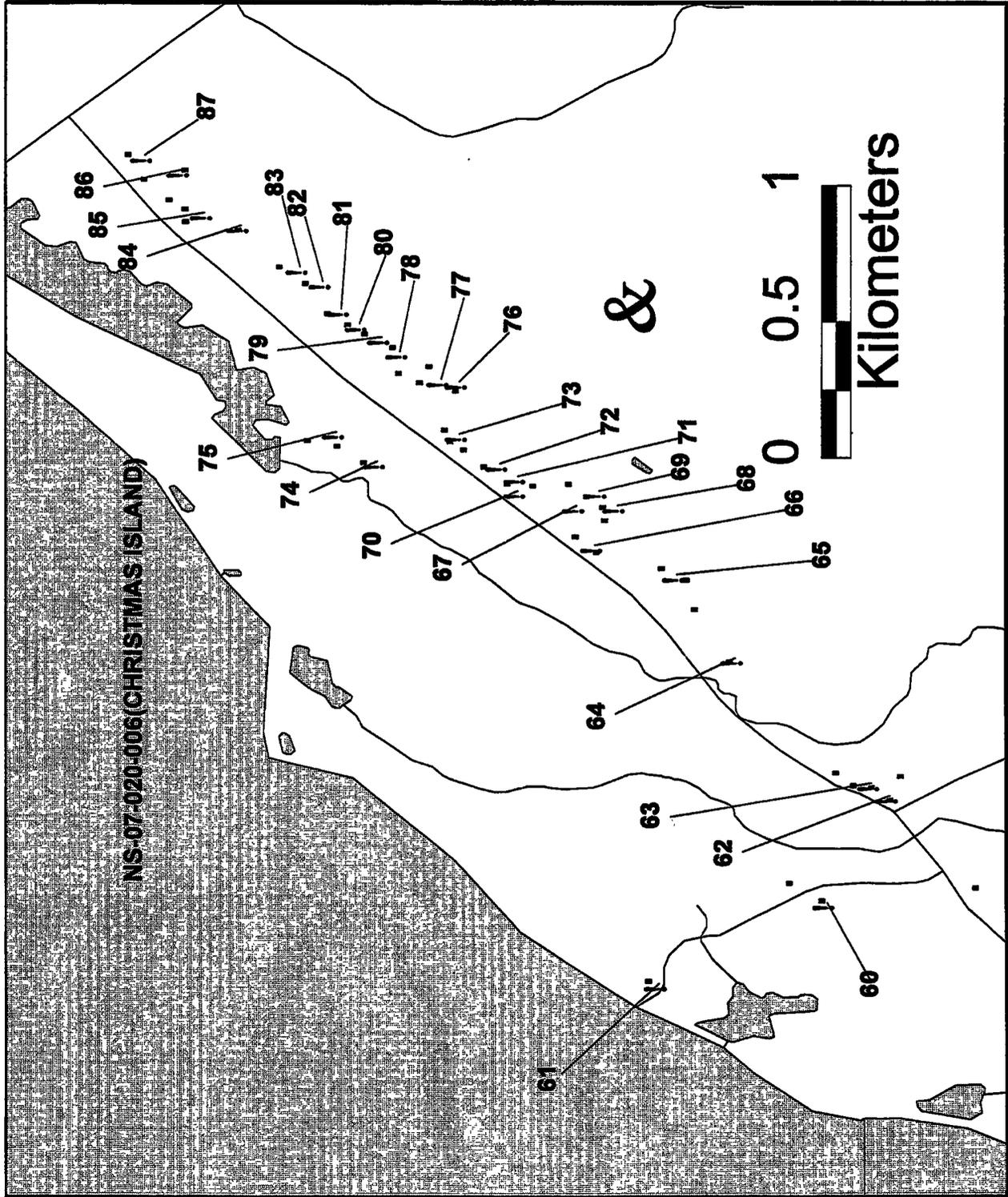


FIGURE 8A (cont.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (CHRISTMAS ISLAND)

Sub-sector Name (Number):

Great Bras D'Or (Shunacadie) (NS-7-020-007)

Date surveyed:	1993-96
No. of sampling runs:	17
Shellfish classification:	Figure 9A
Sampling station locations:	Figure 9B
Fecal coliform results:	Tables 9A & 9B
Salinity data:	Table 9C
Water temperature data:	Table 9D
Shoreline sanitary observations:	Table 9E & Figure 9C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay et al., 1994a). The current classification (Figure 9A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 9E) below.

Bacteriological Water Quality

The twelve key stations (Figure 9A) surveyed on seventeen occasions since 1993 (Tables 9A & 9B) continue to meet the criteria for an approved classification.

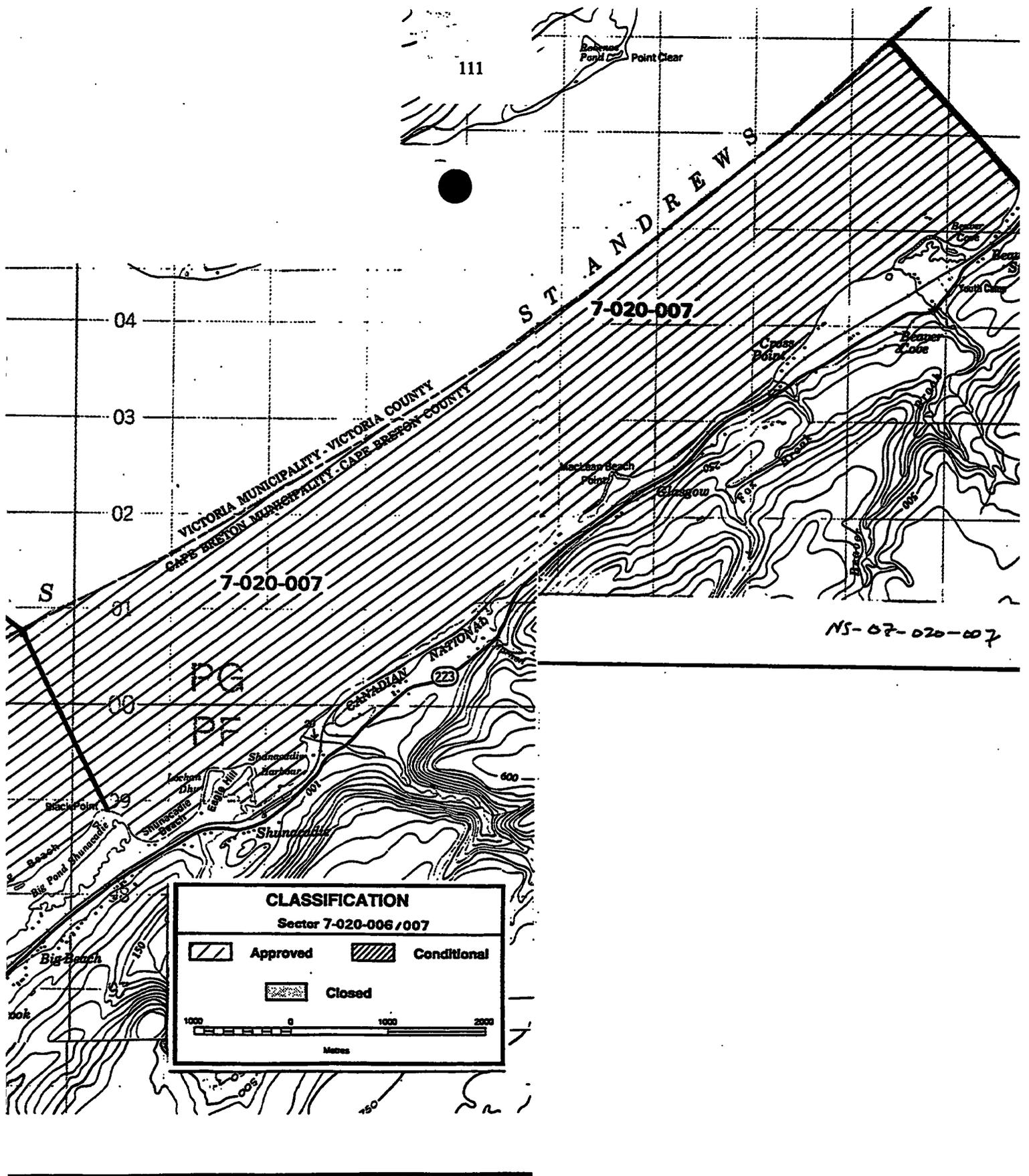


FIGURE 9A. PRESENT SHELLFISH CLASSIFICATION FOR GREAT BRAS D'OR (SHUNACADIE) (NS-7-050-007)

FIGURE 9B. KEY STATION SAMPLING LOCATIONS IN GREAT BRAS D'OR (SHUNACADIE) (NS-7-050-007)

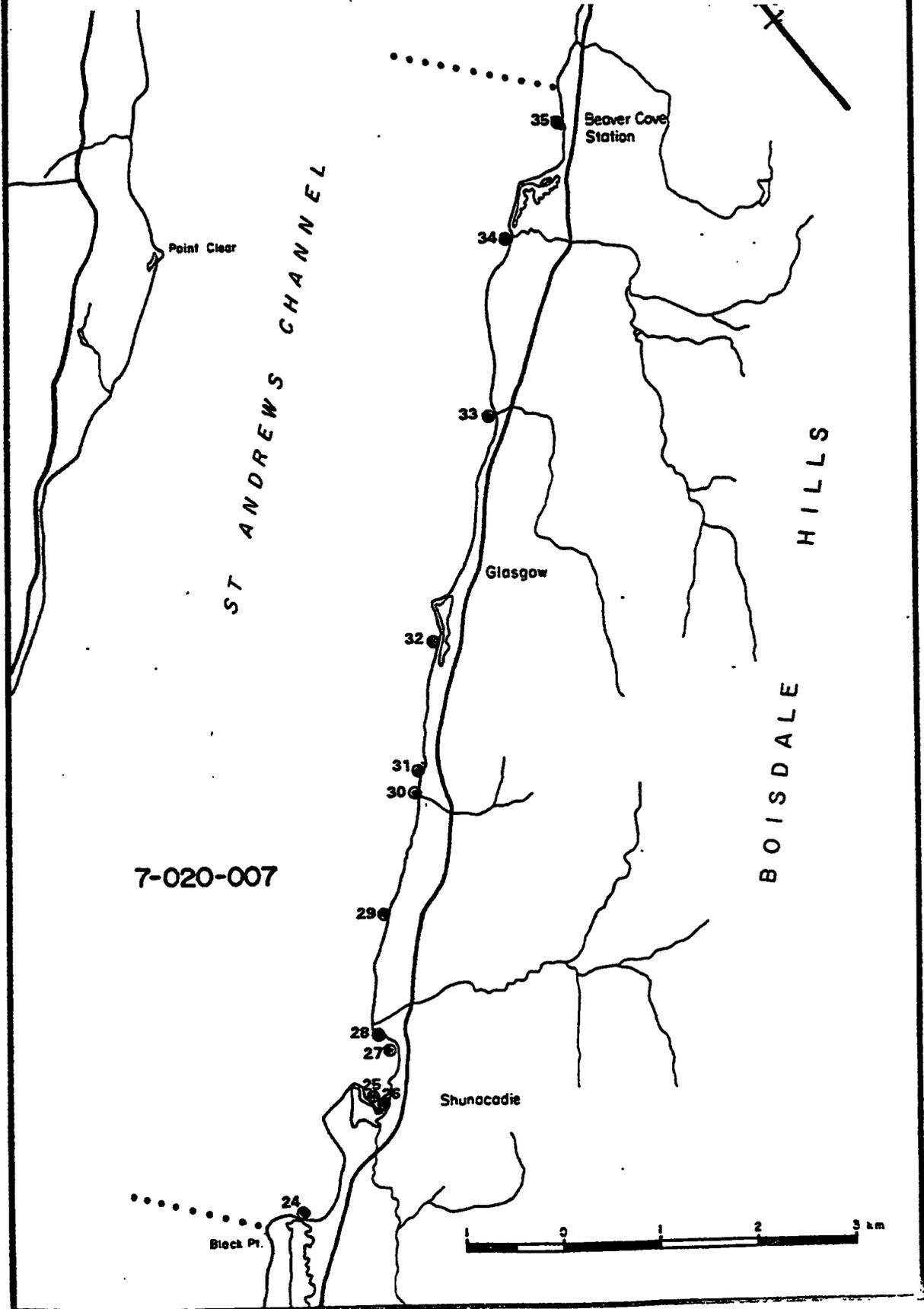


TABLE 9A GREAT BRAS D'OR (SHUNACADIE) (NS-7-020-007) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
24	17	1993-1996	1.9	17	2	1.9	6	0
25	17	1993-1996	1.9	33	3	1.9	9	0
26	17	1993-1996	1.9	31	3	1.9	7	0
27	17	1993-1996	1.9	17	2	1.9	5	0
28	17	1993-1996	1.9	17	3	2	10	0
29	17	1993-1996	1.9	8	2	1.9	4	0
30	17	1993-1996	1.9	8	2	1.9	4	0
31	17	1993-1996	1.9	8	2	1.9	4	0
32	17	1993-1996	1.9	17	2	1.9	5	0
33	17	1993-1996	1.9	8	2	1.9	4	0
34	17	1993-1996	1.9	23	3	1.9	6	0
35	17	1993-1996	1.9	7	2	1.9	4	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 9A) should remain unchanged.

TABLE 9B. GREAT BRAS D'OR (SHUNACADIE) (NS-7-020-007) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	18 May 93	28 May 93	04 Jun 93	16 Jun 93	21 Jun 93	26 Jun 93	08 Jul 93	15 Jul 93	19 Jul 93	23 Jul 93	06 Aug 93	09 Aug 93	04 Jun 96	11 Jun 96	10 Jul 96	22 Aug 96	27 Aug 96
24	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
25	2	1.9	2	1.9	1.9	2	1.9	1.9	2	33	1.9	33	1.9	1.9	1.9	2	1.9
26	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4	1.9	13	1.9	31	2	1.9	1.9	1.9	1.9
27	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	17	5	5	2	1.9	1.9	1.9	1.9
28	1.9	2	1.9	1.9	1.9	1.9	1.9	2	2	8	4	2	1.9	2	1.9	14	13
29	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9	1.9	5	1.9
30	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	5	5	1.9	1.9	8	1.9
31	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	2	1.9	8	2	1.9	1.9	2	1.9
32	1.9	1.9	1.9	1.9	5	1.9	2	1.9	1.9	1.9	2	1.9	2	1.9	17	1.9	1.9
33	1.9	1.9	1.9	1.9	1.9	1.9	2	7	8	1.9	5	5	1.9	1.9	1.9	1.9	1.9
34	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	2	2	1.9	5	1.9	1.9	23	2	2
35	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	7	1.9	1.9
Tide	NT-NT	NT-NT	NT-NT	NT-NT	MT-MT	NT-NT	MI-MR	LR-LR	MR-MR	HT-HT							
Rain (mm)	0	0	0	0	0	0	0	0	0	0	4	34.6	0	0	0	43	1
0-24h	0	2.6	0	0	1.7	0	0	0.3	5.4	9.4	34.6	0.8	0	0	43	1	1
0-48h	12.2	2.9	14.4	0	2	0	0	1.3	6.4	10.4	35.4	1.2	0	0	44.4	2	2.7

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 9E. SHORELINE SANITARY SURVEY:

NS-07-020-007: GREAT BRAS DOR LAKES/SHUNCADIE
 FROM BLACK POINT TO BEAVER COVE
 INSPECTOR: R KENNEY
 COMPREHENSIVE: JULY 16 1990 REVIEWED: AUGUST, 1996

Refer to Figure 9C for location of sites; & Appendix A for abbreviations used in following

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Commences at Shunacadie Beach Area. This portion of shore has numerous cottages and a few resort complexes, also a few small livestock farms. This shoreline extends from Black Point to Beaver Cove Station a distance of approximately of 10 kilometers. It consists of 4 small communities, a couple of farms (sites 26, 36) and numerous cottages and homes. From observations in a 1990 survey sanitary sources noted were for most part of a domestic variety (outhouses, septic drains) that drain either indirectly to the shoreline from drainage ditches or directly via pipes to shore (refer to appendix B-1).
1	OH	P	Shunacadie public beach with restaurant, a 1 sty white house. There is a ST/TF for restaurant and a OH for house 40mfs.
2	ST	N	A 1 sty new blue home with ST and field, 120mfs
3	OH	P	Three bldgs: a 1 sty wht cottage(ST/field), a 1 sty red cottage (OH), and 1 sty wht/gr. with ST and overflow pipe approx. 150mfs.
4	PI	P	A 1sty wht /red cottage with 4" pipe to ground.
5	PI	N	A wht/blue seasonal cottage with 4"PI to the ground, >200mfs.
6	OH	P	A wht cottage with OH, 20mfs.
7	OH	P	3 cottages; 2 wht and 1 yellow with OHs, 30mfs.
8	ST	N	2 sty wht house with ST and field, 70mfs
9	OH	N	A 1 sty wht seasonal cottage, 100mf pond
10	ST	N	A 1 sty green cottage with ST & field, >100mf pond.
11	DR	P	Two drainage ditches with black slurry in behind 1 sty wht/red house, 300mfs.
12	ST	N	A 1 sty wht/yellow seasonal cottage with ST, 100mfs
13	XX	N	A recently logged out area of land.
14	ST	N	A 1 sty wht cottage with no visible on site sewage treatment, may have a ST through unsure.
15	OH	N	A 1&1/2 sty wht/blue cottage, OH . 150mfs.
16	ST	N	A 1 1/2 sty blue/wht house, ST, 100mfwc
17	ST	N	A 1 sty beige house and a wht/black mobile home with ST, >300mfs
18	NS	N	A quarry.
19	OH	N	Trailer home with OH, >100mfs
20	OH	N	A 1sty brown/wht cottage, OH 100mfs.
21	ST	N	5 homes, two are abandoned the others have ST 200mfs.
22	ST	N	A 1sty wht/brick house with ST, >100mfs.
23	ST	N	A 2sty wht house with ST, >100mfs.
24	ST	N	Two wht mobile homes, ST's, 80mfwc
25	ST	N	1 sty red/wht cottage with ST, >150mfs
26	NP	P	A 2sty wht/gr. home with ST, 80mfs. Also 5 cows cattle grazing in field, large barn on property.
27	ST	N	A 1 sty wht/gr. cottage with ST, >150mfs
28	ST	N	1 1/2 sty beige/brown house, ST 70mfs.

29	ST	N	1 sty blue cottage with ST,>150mf pond.
30	OH	N	A 1 sty wht abandoned cottage with OH,>150mf pond.
31	ST	N	Two structures;1 1/2 sty log home and a 1 sty brown seasonal cottage, ST's,>200mfs
32	ST	N	1 sty yellow seasonal cottage, ST/TF,>100mfs
33	ST	N	1 sty red cottage with ST,>100mfs
34	ST	P	Three structures;1 sty brown cottage,1 yellow mobile home and 1 1/2 sty seasonal home all with ST's.No overflow pipes seen.
35	NS	N	A recently cleared cut area.
36	NP	P	13 cows grazing in field, a 2sty wht house >200mfs with ST
37	ST	N	1 sty wht house,>100mfs has ST
38	ST	N	1 sty wht house, raised foundation, ST >100mfs
39	ST	N	2 sty blue/red house on hill next to abandoned house,>300mfs
40	ST	P	3 structures;1 sty cottages,50 to 80 mfs all equipped with ST & probable TF, the slope of land is toward nearby stream.
41	ST	N	1 sty wht/red house, raised foundation,100mfs
42	ST	N	A 2 tone brown mobile home,70mfwc,ST
43	ST	P	3 seasonal cottages with ST,approx 50mfs
44	ST	N	A 1 1/2 sty wht/black house,raised foundation ST with overflow PI to field,>200mfwc
45	ST	N	1 sty wht house,>400mfs with ST
46	ST	N	3 structures;1 1/2 sty wht house and a yellow/gr. mobile home,and a red/wht cottage approx. 400mfs.All with ST's
47	ST	P	1 sty yellow cottage,ST approx. 30 to 40mfs
48	ST	N	A-frame cottage,& wht , 100mfs
49	ST	N	1 1/2 sty wht house with ST,400mfs
50	ST	P	Three structures;1 1/2 sty house with 1 barn and 1 sty beige house and 1 convience store all with ST and >400mfs
51	ST	N	1 1/2 sty yellow house on a hill,500mfs ? ST
52	PI	P	1 sty wht house,1 1/2 sty wht house both with ST's with one overflow pipe to ravine 500mfs
53	ST	N	1 1/2 sty wht/gr. house >400mfs,?ST
54	ST	N	1 sty yellow cottage with ST >100mfs
55	ST	P	2 sty wht house,ST & ? TF,40mfwc
56	ST	P	Youth camp with ST/TF,< 20mfwc
57	PI	P	A stone & wood house with two 4" ABS pipes to ravine, . 50mfwc.
58	NS	N	A recently cleared cut forest.
59	ST	P	1 sty wht house with 1 large barn,also 1 wht/blue mobile home.Both with ST,>200mfs
60	OH	P	2 mobile homes & 1 seasonal cottage.Mobile homes have ST's and the cottage has OH, approx. 300mfs.
61	ST	N	2 sty wht house,>120mfs
62	ST	N	1 sty yellow house,>150mfs
63	ST	N	Two 1 1/2 sty wood homes with ST's,>300mfs
64	ST	N	1 1/2 sty wht/gr. house with od ST,>200ms
65	PI	P	1 1/2 sty yellow house,30mfs with 4" ABS pipe to on shore.
66	OH	P	A gold/wht mobile home and bunk house with OH 40mfs,a swimming raft in area also a wharf.
67	ST	P	1 1/2 sty brown wood shingled cottage with ST approx. 40mfs
68	OH	P	1 sty yellow cottage with OH 20mfs (McAllen), wharf also here.
69	OH	P	1 sty gr. cottage with OH, 50mfs.
70	OH	P	1 sty wht cottage with OH 50mfs
71	ST	N	A group of 4 homes & 1 mobile home,100-250mfs

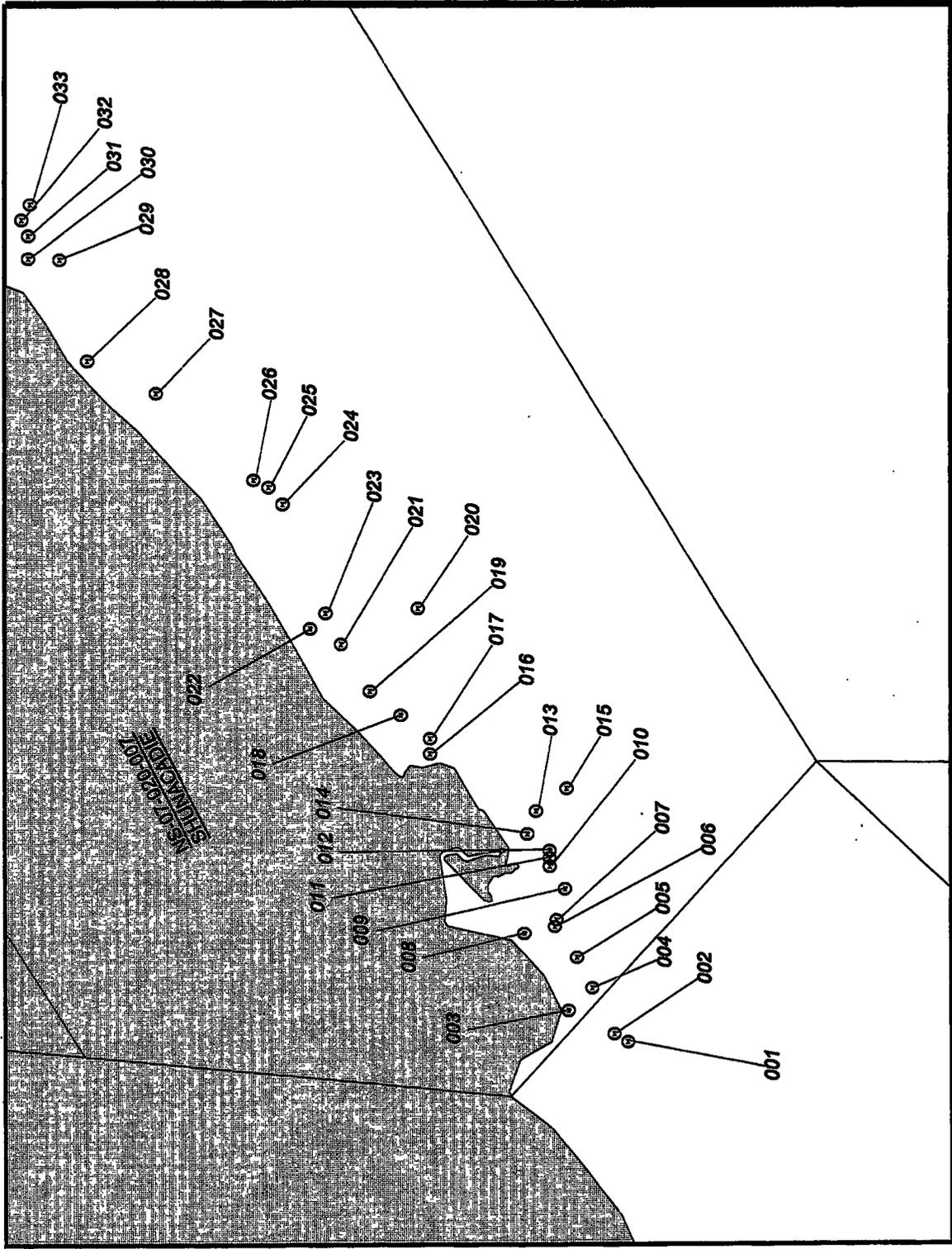


FIGURE 9C. SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (SHUNACADIE)

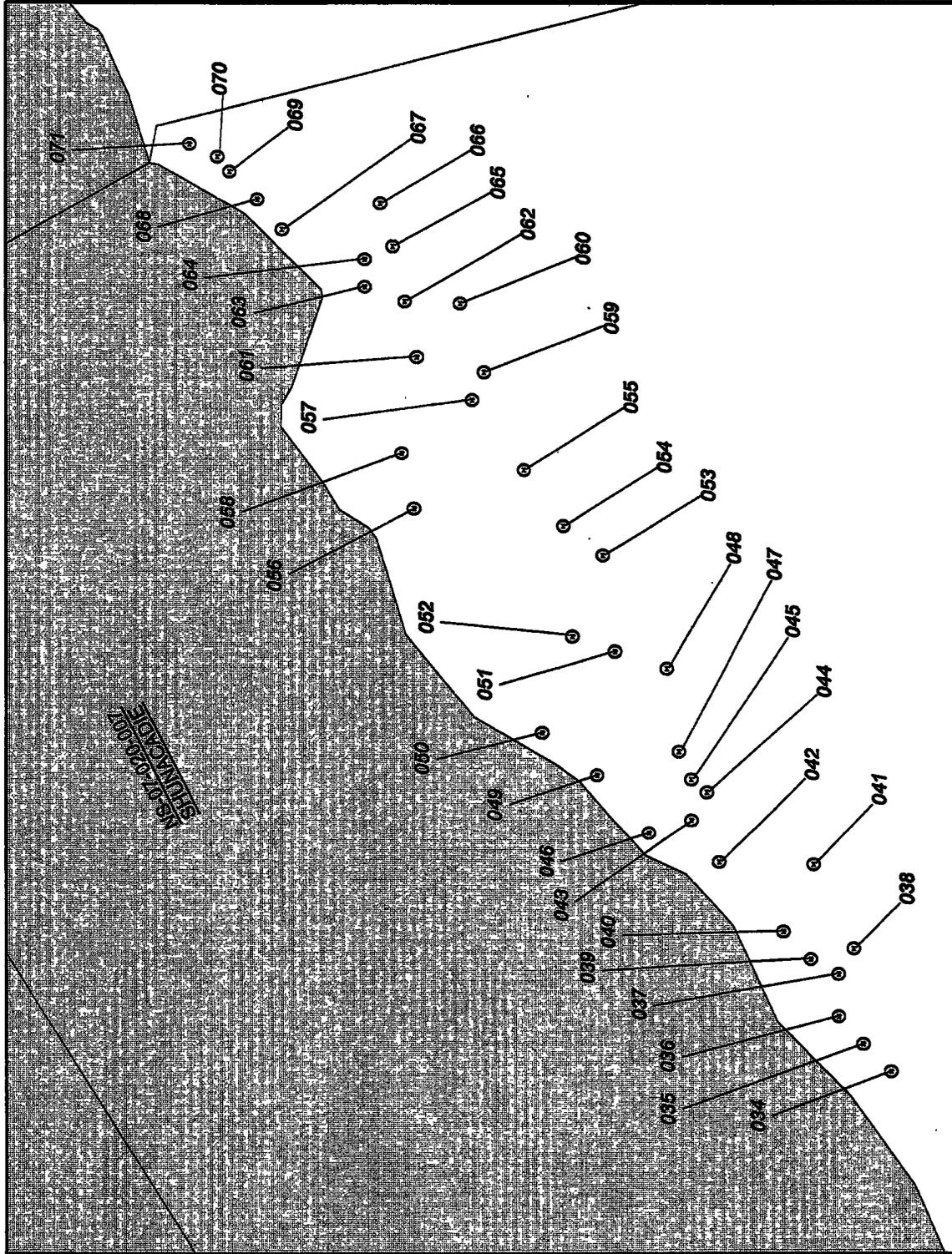


FIGURE 9C (cont.). SANITARY OBSERVATION SITE LOCATIONS, GREAT BRAS D'OR (SHUNACADIE)

Sub-sector Name (Number):

North Basin (NS-7-020-011)

Date surveyed:	1993-96
No. of sampling runs:	30
Shellfish classification:	Figure 10A & 12A
Sampling station locations:	Figure 10B
Fecal coliform results:	Tables 10A & 10B
Salinity data:	Table 10C
Water temperature data:	Table 10D
Shoreline sanitary observations:	Table 10E & Figure 10C

Area Description

The community of Orangedale is the largest community in the subsector. The First Nations Malagawatch community is located on Boom and Big Harbour Islands. Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. Thirteen shellfish leases have been issued and one more is pending in North Basin. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1997 (Craig & Young, 1997a). The current classification (Figure 10A) includes shellfish closures at Blues and Morrison Coves as follows:

Closed

That portion of Blues Cove inside or west of a straight line drawn from grid reference 4876 8456 to grid reference 4872 8475. Refer to map Wycocomagh 11F/14.

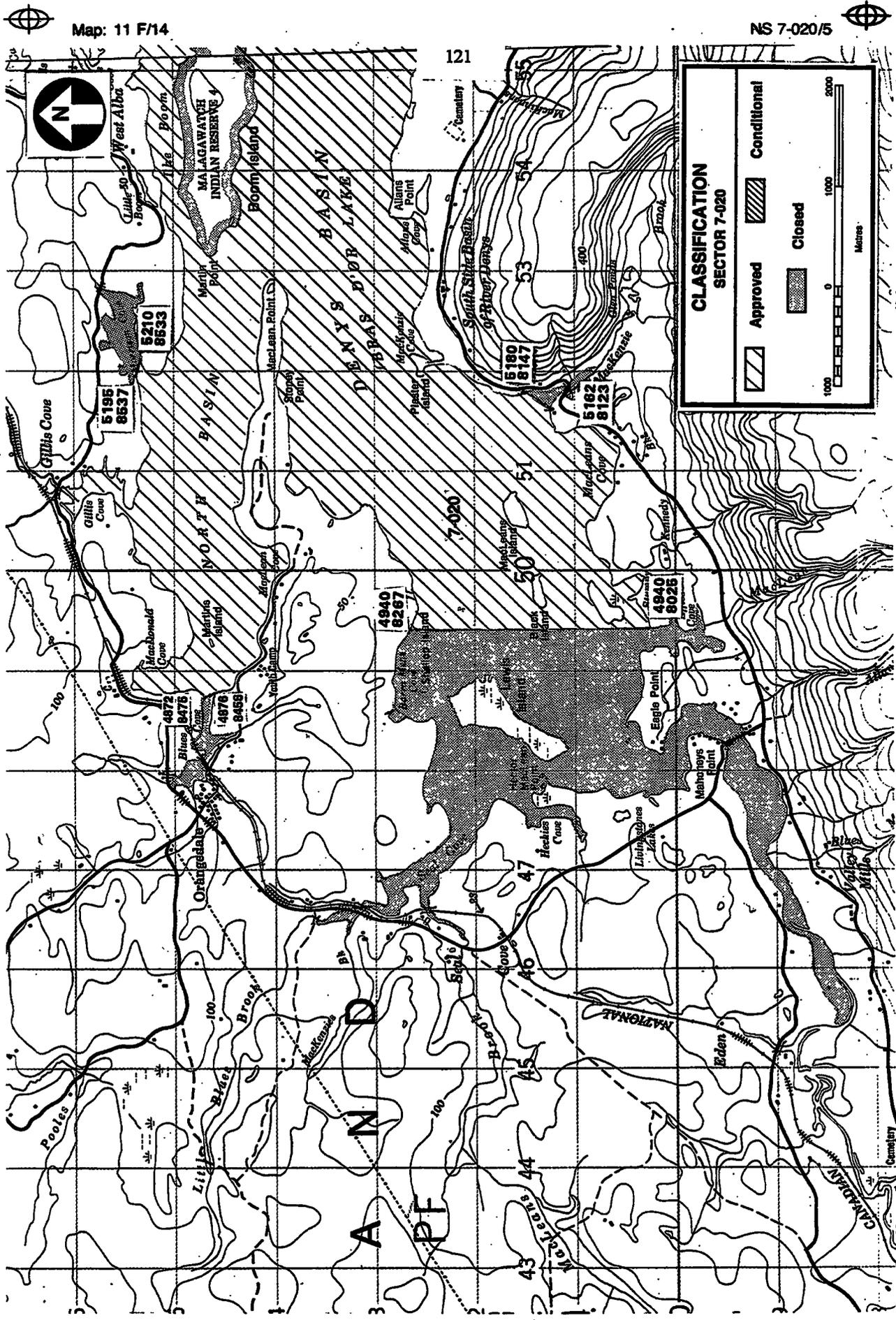
That portion of Morrison Cove inside or north of a straight line drawn from grid reference 5195 8537 to grid reference 5210 8533. Refer to map Wycocomagh 11F/14.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 10E) below.



November 15, 1993

FIGURE 10A. PRESENT SHELLFISH CLASSIFICATION FOR NORTH & DENYS BASINS (NS-7-020-011 & -012)

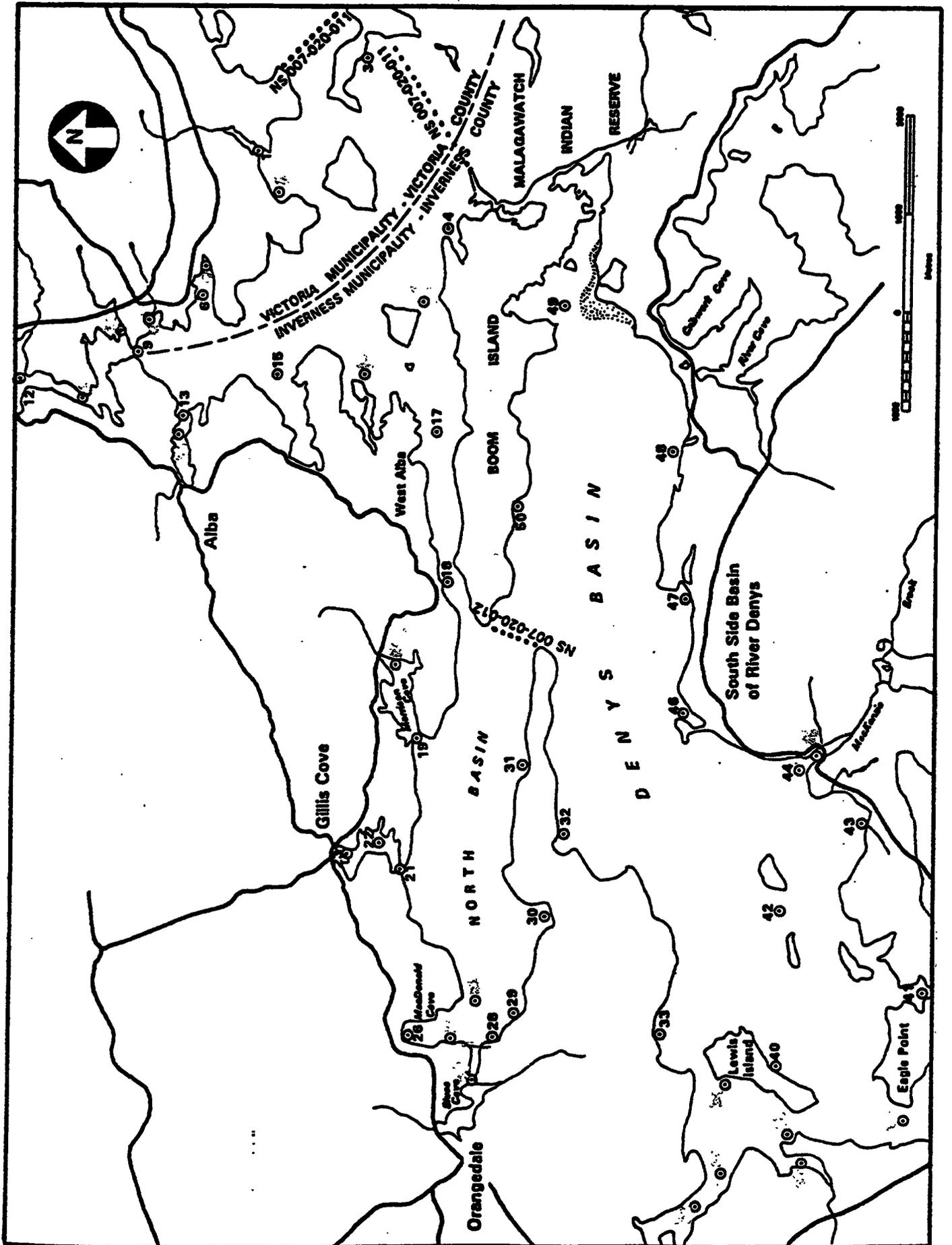


FIGURE 10B. KEY STATION SAMPLING LOCATIONS IN NORTH & DENYS BASINS (NS-7-020-011 & -012)

Bacteriological Water Quality

The eighteen key stations (Figure 10B) surveyed on thirty occasions since 1993 (Tables 10A & 10B) continue to meet the criteria for an approved classification. During the 1996 survey, station 12 experienced some very high fecal coliform levels, especially after very heavy rainfall in July. However, the combined '93 & '96 data give a more complete picture of fecal coliform levels at the station.

TABLE 10A. NORTH BASIN (NS-7-020-011) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	28	1993-1996	1.9	49	3	1.9	13	7
3	28	1993-1996	1.9	6	2	1.9	3	0
4	28	1993-1996	1.9	33	2	1.9	5	0
6	28	1993-1996	1.9	17	2	1.9	4	0
9	29	1993-1996	1.9	23	2	1.9	5	0
12	29	1993-1996	1.9	920	6	2	47	10
13	29	1993-1996	1.9	14	2	1.9	4	0
15	29	1993-1996	1.9	13	2	1.9	3	0
17	30	1993-1996	1.9	2	1.9	1.9	2	0
18	30	1993-1996	1.9	8	2	1.9	3	0
19	30	1993-1996	1.9	13	2	2	5	0
21	30	1993-1996	1.9	79	3	2	10	3
23	30	1993-1996	1.9	79	5	5	20	3
26	30	1993-1996	1.9	70	3	1.9	9	3
28	30	1993-1996	1.9	70	2	1.9	6	3
29	30	1993-1996	1.9	13	2	1.9	5	0
30	30	1993-1996	1.9	49	3	1.9	8	7
31	30	1993-1996	1.9	14	2	1.9	3	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 10A) should remain unchanged.

TABLE 10B. NORTH BASIN (NS-7-020-011) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	20 May 93	25 May 93	01 Jun 93	08 Jun 93	17 Jun 93	25 Jun 93	09 Jul 93	13 Jul 93	20 Jul 93	24 Jul 93	26 Jul 93	10 Aug 93	12 Aug 93	16 Aug 93	18 Aug 93
1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
4	5	2	1.9	2	1.9	33	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9
6	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	1.9	1.9	4	2	1.9	1.9
12	8	4	1.9	4	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9
13	2	2	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
15	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9
17	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
18	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
19	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
21	1.9	1.9	1.9	1.9	1.9	33	2	1.9	2	2	2	1.9	1.9	2	5
23	1.9	1.9	1.9	1.9	1.9	79	2	1.9	2	1.9	1.9	1.9	1.9	1.9	2
26	1.9	1.9	1.9	1.9	1.9	33	2	1.9	4	1.9	1.9	2	7	8	2
28	1.9	1.9	1.9	1.9	1.9	7	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9
29	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2	2	1.9	1.9
30	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9
31	1.9	1.9	1.9	1.9	1.9	49	1.9	1.9	4	1.9	2	1.9	1.9	1.9	1.9
	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	1.9	2	1.9	1.9	2	2
Tide	NT-NT														
Rain (mm)	7.8	1.6	0.2	31.6	0	0	0	0	1	0	4.8	0	0	1.4	0
0-24h	7.8	7.8	5.4	31.8	0	0	0	0	4	0	8.8	0.8	0	1.4	5
0-48h	7.8	20.4	13.4	31.8	0	3.4	0	5	5.4	14.2	5.6	5.6	0.8	1.4	5
0-72h															

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 10B(CONT.) NORTH BASIN (NS-7-020-011) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	24 May 96	18 Jun 96	27 Jun 96	03 Jul 96	08 Jul 96	11 Jul 96	17 Jul 96	22 Jul 96	29 Jul 96	07 Aug 96	12 Aug 96	19 Aug 96	21 Aug 96	25 Aug 96	28 Aug 96	
1	1.9	1.9	1.9	2	1.9	2	1.9	49	49	49	1.9	5	1.9	2	1.9	
3	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	6	1.9	1.9	
4	1.9	1.9	2	1.9	1.9	1.9	2	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	
6	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	5	2	2	2	1.9	1.9	1.9	
9	1.9	4	1.9	1.9	1.9	7	1.9	23	1.9	2	2	2	5	1.9	1.9	
12	2	1.9	2	5	2	220	13	130	920	1.9	5	5	22	11	33	
13	2	1.9	1.9	5	1.9	1.9	1.9	2	14	2	2	2	2	1.9	1.9	
15	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	13	1.9	1.9	1.9	2	1.9	1.9	
17	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	1.9	
18	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	
19	1.9	2	1.9	2	1.9	1.9	2	1.9	2	2	1.9	5	8	2	2	
21	2	1.9	8	8	1.9	1.9	2	4	4	5	1.9	2	2	1.9	13	
23	1.9	9	13	8	1.9	11	11	13	11	4	9	23	11	14	5	
26	1.9	13	5	70	1.9	1.9	2	2	7	1.9	1.9	1.9	11	2	1.9	
28	2	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2	2	1.9	1.9	1.9	1.9	
29	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4	13	1.9	1.9	1.9	1.9	
30	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
31	1.9	1.9	1.9	14	1.9	1.9	1.9	1.9	4	4	1.9	1.9	1.9	1.9	1.9	
Tide	LT-LR	MR-HF	HT-RT	MIR-HT	MF-LT	FT-HT	MT-MT	HT-HF	MR-HT	LT-LT	HR-HT	HT-RT	HT-HF	MF-MF	HT-RT	HT-HT
Rain (mm)																
0-24h	0.6	1.2	0.6	0	1.4	6.8	15.2	0	0.4	0	0	0	4.2	0	0	4.8
0-48h	0.6	1.2	15.6	0	1.4	49.8	15.2	27.8	49.6	0	2.6	2.6	5.4	1	1.7	5.8
0-72h	8.8	9.2	15.6	0.8	11.4	49.8	43.8	27.8	49.6	0	2.6	2.6	7.6	5.2	3.1	5.8

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; MR = Mid Rising; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising; MT= Mid Tide;

TABLE 10E. SHORELINE SANITARY SURVEY:

INSPECTOR: NORTH BASIN/THE BOOM
 COMPREHENSIVE: FROM LIGHTHOUSE PT. TO BOOM ISLAND
 R KENNEY

JULY 29, 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 10C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with residences and cottages. Geology is again fire clay. Blues Cove is presently under a shellfish ban. The small village of Orangedale is located on this cove. Most of the population is concentrated near the communities of Organdale and Alba along the shores of North Basin. An Indian Reserve is located on Boom Island that fluctuates in population over the summer. Sanitary sources are variable from; non-point sources such as livestock (site 6, 9, 21), outhouses (sites 4, 12, 16, 33, 34, 51, 54, 57, & 58), pipes on shore (sites 7, 10, 15, 18, 30, 32, 38, 39, 42 & 61). These are only a few of the more obvious sources and there is a possibility that several other sources are yet to be detected.
1	ST	N	1 str wht house, >300mfs. No outflow PI visible.
2	ST	N	Blue/wht mobile home, >300mfs. No outflow PI visible.
3	OH	N	1 1/2 str brw wooden shingled house, >300mfs.
4	OH	P	2 str wht/blue trim seasonal house on stone foundation with OH on shore in swamp.
5	ST	P	New 1 str wht/red trim house on raised foundation, app. 30mfs. No outflow PI visible
6	NP	P	2 str wht house on raised foundation with red barn, >300mfs, <100mftwc. 6 cows with cows manure over fields. Owner says overflow PI from old ST to front field.
7	PI	P	2 str wht house on raised foundation, app. 200mfs. 4in dia PI to swamp. Some type of eff visible.
8	NS	N	Abandoned 1 str wooden shingled house.
9	NP	P	1 1/2 str wht house on raised foundation with red barn and horse, >400mfs, <150mftwc. No outflow PI visible. Horse grazing in field.
10	ST	P	1 1/2 str wht house on stone foundation with 2 barns, app. 90mfs. Old ST with overflow PI to ravine according to owner. (Matheson).
11	OH	N	1 1/2 str wooden shingled shack and shed, app 100mfs.
12	OH	P	1 str brw log cabin with OH close to shore.
13	PI	P	1 1/2 str wht house on raised foundation with barn, >500mfs. Overflow PI from ST according to owner to field.
14	ST	N	1 1/2 str yel wooden shingled house on raised foundation, >300mfs. No outflow PI visible.
15	ST	N	1 1/2 str wht house and sheds, >200mfs. No outflow PI visible.
16	OH	P	Red seasonal A-frame cottage with OH app. 30mfs.
17	ST	P	Wht/brw trim mobile home, app. 50mfs. No outflow PI visible. Presently installing ST.
18	PI	P	Basement house and sawmill with 4in dia PI with direct discharge to plaster hole, app. 40mfswamp, app. 120mfs.
19	NS	N	Abandoned house with storage shed across road.
20	WV	P	2 WV's with old fishing boat and row boat.
21	NP	P	1 1/2 str wht house with numerous sheds and barns. 6 cows which graze in fields, >200mfs. Small WC runs through property. Owner

			thinks old ST with overflow somewhere in field.
22	ST	N	1 1/2 str wht house on raised foundation on hill, app. 100mfswamp. No overflow PI visible
23	OH	P	1 str blue seasonal cottage and shed with OH app. 60mfs.
24	NS	P	1 str brw/wht abandoned office and shed, <10mfs. Old oyster operation. Old beds remain in inlet.
25	ST	N	1 1/2 str wht house on raised foundation, >100mfs. No overflow PI visible.
26	PI	P	1 1/2 str wht house on raised foundation and wht mobile home, >250mfs. Owner says old ST with overflow PI to field.
27	ST	N	2 str wht house on raised foundation, >200mfs. Garage and red barn on site. No overflow PI visible.
28	ST	N	1 1/2 str wht house on raised foundation with sheds and barn, >300mfs. No overflow PI visible.
29	PI	P	Yel/brw mobile home, >300mfs. 4in dia overflow PI to woods according to father of owner.
30	PI	P	1 str wht/blk trim house, >150mfs. 4in dia PI to back DR. Grn/blk eff visible.
31	ST	N	2 str wht/brn trim and stone house, app. 100mfwc. No overflow PI visible.
32	PI	P	2 str wht house on raised foundation with shed, 1 str wht seasonal cottage, app.50mfwc 4in dia PIs to roadside DR for both houses. No eff visible.
33	OH	P	1 str wht/grn trim seasonal cottage, red shed and OH, <10mfswamp.
34	OH	P	1 str blue log seasonal cottage with OH, app. 25mfswamp.
35	ST	N	2 str wht/red trim house on raised foundation >100mfs. No overflow PI visible.
36	PI	P	Group of 8 houses and museum. According to resident, half with ST and disposal bed and the other half with overflow PIs to fields and woods. App. 100-200mfs.
37	ST	N	Church and 1 1/2 str wht/blk trim house on raised foundation, app 80mfswamp. No overflow PI visible.
38	PI	P	2 str wht house on raised foundation with 4in dia PI with direct discharge to back woods according to owner, senior citizens home with overflow PI to back swamp according to local residents, pizza shop with no overflow PI visible, 1 1/2 str wht house on raised foundation with 4in dia PI to back swamp from ST according to owner, hardware store and apt.'s above with old ST and overflow PI to back swamp, 2, 1 1/2 str houses on raised foundation with no overflow PI visible but residents suspect overflow PI, church and Orangedale School with no PI visible but surrounded by swamp. The swamp is known to smell of sewage in the summer.
39	PI	D	Group of 7 homes and old railway station. Most with old ST and overflow PIs to WC and fields. Some were viewed others according to residents. Sample of stream yielded a count >24,000mpn/100ml.
40	PI	P	Convenience store, community centre and group of 4 wht houses. All but community centre have ST with overflow PI to fields and woods. Community centre has ST and disposal bed. App. 50-150mfs. A notice of shellfish closure is posted at wharf.
41	PI	P	Group of 3 homes. 2 newer with no PIs visible, 1 older with old ST and overflow PI to woody incline. Sample off WV yielded a no fecal coliform counts, suspect problems.
42	PI	P	2 str wht house on stone foundation, app. 100mfwc. 4in dia PI to woods. No eff visible
43	ST	P	Youth Camp. During the summer there are up to 45 kids and 8-10 workers. OH's which are pumped out seasonally, 3 ST's for various buildings with at least one disposal bed and overflow PI to field, according to counsellor.
44	ST	P	2 str blue house on raised foundation and shed, app. 80mfs. No overflow PI visible. (MacDonald).
45	OH	P	1 str wht/purple trim seasonal cottage with OH app. 45mfs.
46	ST	P	1 str brw seasonal cottage, app. 50mfs. No overflow PI visible.
47	OH	P	1 str red/wht trim seasonal cottage and trailer with OH app. 50mfs.

48	WV	N	WV with speedboat docked.
49	ST	N	House on raised foundation presently under construction, app. 120mfs.
50	ST	N	Seasonal trailer, app. 120mfs. No outflow PI visible.
51	OH	P	Yel/brw mobile home, small trailer, yel/wht trim seasonal cottage with OH app. 40mfs.
52	OH	P	1 str red seasonal cottage with shed and OH, app. 80mfs. (MacLeod).
53	ST	P	1 str wooden seasonal cottage, app. 20mfs. No outflow PI visible. (Mueller).
54	OH	P	1 str brw log cabin and OH app. 30mfs.
55	NS	N	1 str brw seasonal cottage, app. 30mfs. Electric toilet which burns sludge.
56	OH	P	1 str red seasonal cottage with OH app. 30mfs (Campbell).
57	OH	P	1 str brw seasonal cottage with OH app. 40mfs
58	OH	P	1 str red seasonal cottage with OH app. 45mfs
59	OH	P	1 str wht/blue trim seasonal cottage with OH app. 40mfs. (Ryan).
60	NS	N	Cleared area perhaps for seasonal trailers.
61	PI	P	Wht/red mobile home, <30mfs. 3in dia PI to wooded area near shore. No eff visible.

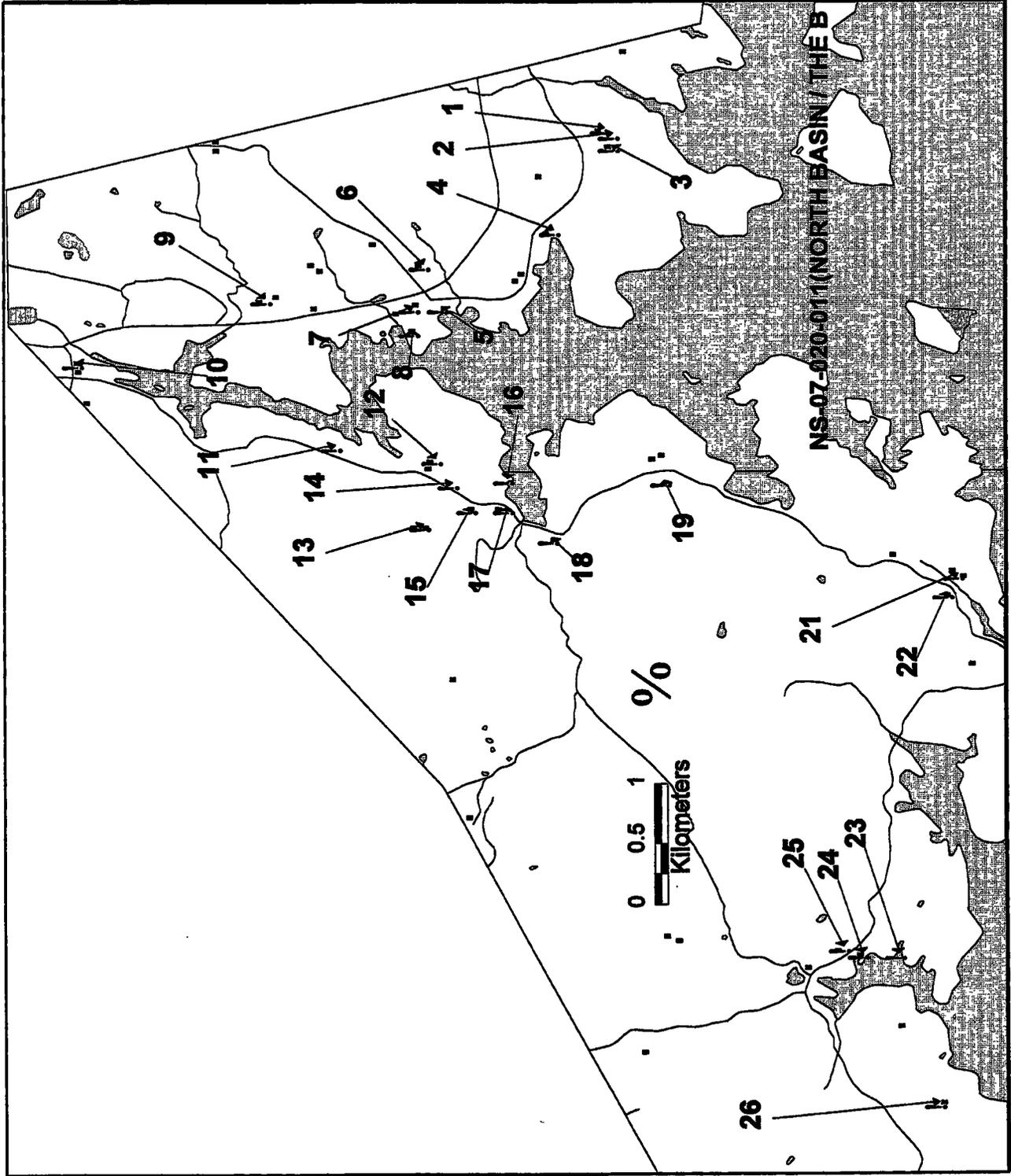


FIGURE 10C. SANITARY OBSERVATION SITE LOCATIONS, NORTH BASIN (NS-7-020-011)

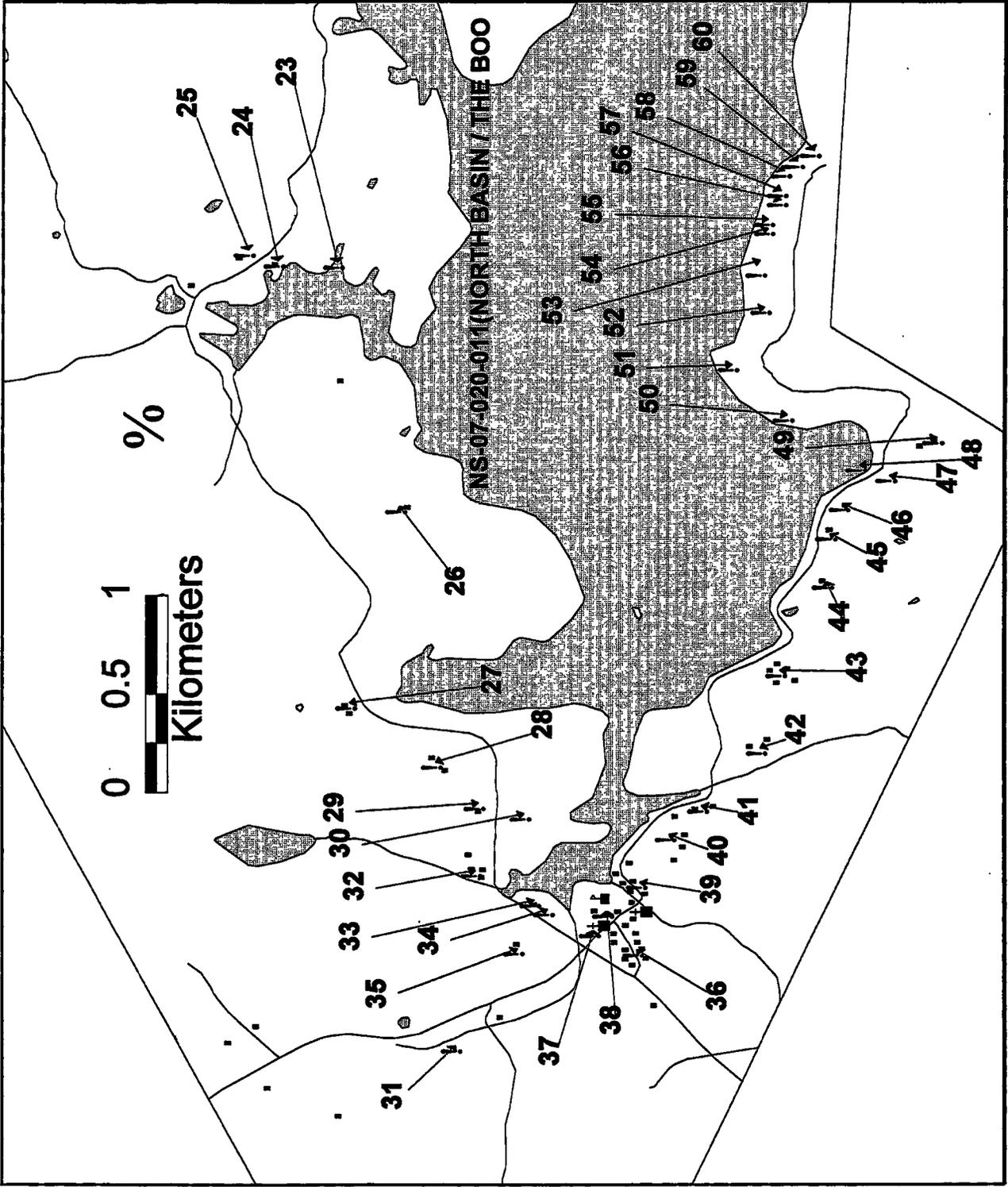


FIGURE 10C (cont.). SANITARY OBSERVATION SITE LOCATIONS, NORTH BASIN (NS-7-020-011)

Sub-sector Name (Number):

Denys Basin (NS-7-020-012)

Date surveyed:	1996
No. of sampling runs:	15
Shellfish classification:	Figure 10A & 12A
Sampling station locations:	Figure 10B
Fecal coliform results:	Tables 11A & 11B
Salinity data:	Table 11C
Water temperature data:	Table 11D
Shoreline sanitary observations:	Table 11E & Figure 11A

Area Description

The First Nations Malagawatch community is located on Boom and Big Harbour Islands. Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. There is molluscan aquacultural activity in Denys Basin. Fourteen shellfish leases have been issued and one more is pending in Denys Basin. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1997 (Craig & Young, 1997b). The current classification (Figure 10A) includes two shellfish closures as follows:

Closed

That portion of Denys Basin, inside or west of, a straight line drawn from grid reference 4940 8025 to grid reference 4940 8267. Refer to map Wycocomagh-11F/14).

That portion of Denys Basin, inside or east of, a straight line drawn from grid reference 5180 8147 to grid reference 5162 8123. Refer to map Wycocomagh-11F/14).

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 11E) below.

Bacteriological Water Quality

The twelve key stations (Figure 10B) surveyed on approximately fifteen occasions in 1996 (Tables 11A & 11B) continue to meet the criteria for an approved classification.

TABLE 11A. DENYS BASIN(NS-7-020-012) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
32	15	1996-1996	1.9	2	1.9	1.9	2	0
33	15	1996-1996	1.9	8	2	1.9	4	0
40	15	1996-1996	1.9	70	2	1.9	8	7
41	15	1996-1996	1.9	240	4	2	20	7
42	15	1996-1996	1.9	49	2	1.9	7	7
43	15	1996-1996	1.9	240	3	1.9	15	7
44	15	1996-1996	1.9	170	3	1.9	12	7
46	15	1996-1996	1.9	46	2	1.9	7	7
47	13	1996-1996	1.9	110	3	1.9	11	8
48	15	1996-1996	1.9	2	1.9	1.9	2	0
49	15	1996-1996	1.9	2	1.9	1.9	2	0
50	15	1996-1996	1.9	5	2	1.9	3	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 10A) should remain unchanged.

TABLE 11B. DENYS BASIN(NS-7-020-012) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	24 May 96	18 Jun 96	27 Jun 96	03 Jul 96	08 Jul 96	11 Jul 96	17 Jul 96	22 Jul 96	29 Jul 96	07 Aug 96	12 Aug 96	19 Aug 96	21 Aug 96	26 Aug 96	28 Aug 96
32	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	1.9
33	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	2	1.9	2	1.9	8	1.9	1.9
40	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	70	1.9	1.9	1.9	1.9	1.9
41	1.9	1.9	2	1.9	2	13	2	2	8	240	1.9	7	1.9	1.9	2
42	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	49	1.9	1.9	1.9	2	1.9
43	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	240	1.9	2	2	1.9	1.9
44	2	1.9	1.9	2	1.9	1.9	1.9	2	1.9	170	1.9	1.9	4	1.9	1.9
46	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	46	1.9	1.9	1.9	1.9	2
47	2	1.9	1.9	1.9	1.9	1.9	2	2	1.9	110	1.9	1.9	2	1.9	1.9
48	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
49	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9
50	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9	2

Tide	LT-LR	MR-HF	HT-HT	MR-HT	MF-LT	HT-HT	MT-MT	HT-HF	MR-HT	LT-LT	HR-HT	HT-HF	MF-MF	HT-HT	HT-HT
Rain (mm)															
0-24h	0.6	1.2	0.6	0	1.4	6.8	15.2	0	0.4	0	0	4.2	0	0	4.8
0-48h	0.6	1.2	15.6	0	1.4	49.8	15.2	27.8	49.6	0	2.6	5.4	1	1.7	5.8
0-72h	8.8	9.2	15.6	0.8	11.4	49.8	43.8	27.8	49.6	0	2.6	7.6	5.2	3.1	5.8

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 11C. DENYS BASIN(NS-7-020-012) - SALINITIES (‰)

Station	24 May 96	18 Jun 96	27 Jun 96	03 Jul 96	08 Jul 96	11 Jul 96	17 Jul 96	22 Jul 96	29 Jul 96	07 Aug 96	12 Aug 96	19 Aug 96	26 Aug 96	28 Aug 96
32	18	17	19	18	19	19	20	18	19	19	17	18	20	19
33	18	17	19	19	19	19	20	18	18	19	18	18	18	19
40	18	16	19	19	19	20	19	19	16	16	17	18	18	20
41	10	17	18	18	18	16	16	16	15	7	16	18	18	19
42	15	17	19	19	18	18	19	18	18	15	16	18	18	20
43	12	17	18	18	18	18	19	18	18	9	14	18	18	19
44	11	17	18	18	18	18	18	18	10	10	16	18	18	19
46	14	18	18	18	18	18	19	18	15	15	16	18	18	20
47	13	18	18	18	18	18	19	18	15	15	16	18	18	19
48	15	17	18	18	18	19	18	18	18	18	17	18	18	19
49	15	18	19	18	18	19	19	18	18	19	17	17	19	20
50	16	17	19	18	18	19	19	18	18	19	16	18	19	18

Tide	LT-LR	MR-HF	HT-HT	MR-HT	MF-LT	HT-HT	MT-MT	HT-HF	MR-HT	LT-LT	HR-HT	HT-HF	MF-MF	HT-HT	HT-HT
Rain (mm)															
0-24h	0.6	1.2	0.6	0	1.4	6.8	15.2	0	0.4	0	0	4.2	0	0	4.8
0-48h	0.6	1.2	15.6	0	1.4	49.8	15.2	27.8	49.6	0	2.6	5.4	1	1.7	5.8
0-72h	8.8	9.2	15.6	0.8	11.4	49.8	43.8	27.8	49.6	0	2.6	7.6	5.2	3.1	5.8

TABLE 11D. DENYS BASIN(NS-7-020-012) - WATER TEMPERATURE (°C)

Station	24 May 96	18 Jun 96	27 Jun 96	03 Jul 96	08 Jul 96	11 Jul 96	17 Jul 96	22 Jul 96	29 Jul 96	07 Aug 96	12 Aug 96	19 Aug 96	26 Aug 96	28 Aug 96
32	10	16	16	15	19	20	19	21	19	21	26	24	22	21
33	11	16	16	15	19	20	19	21	19	21	26	24	22	21
40	10	16	16	15	19	19	18	20	19	21	25	24	22	21
41	13	16	16	16	18	20	20	21	18	21	26	24	22	22
42	12	17	17	15	19	19	19	20	19	21	26	24	22	21
43	12	17	17	16	19	20	21	21	19	22	27	24	21	22
44	12	16	16	16	19	20	20	21	19	22	27	24	22	21
46	12	17	17	16	19	20	20	21	19	21	26	24	21	21
47	12	17	17	16	19	20	21	21	19	21	26	24	21	22
48	12	16	16	15	19	20	20	21	19	21	26	25	21	22
49	12	17	17	16	19	21	20	21	19	19	26	24	21	22
50	12	17	17	15	20	21	19	21	19	21	26	24	21	22

Tide	LT-LR	MR-HF	HT-HT	MR-HT	MF-LT	HT-HT	MT-MT	HT-HF	MR-HT	LT-LT	HR-HT	HT-HF	MF-MF	HT-HT	HT-HT
Rain (mm)															
0-24h	0.6	1.2	0.6	0	1.4	6.8	15.2	0	0.4	0	0	4.2	0	0	4.8
0-48h	0.6	1.2	15.6	0	1.4	49.8	15.2	27.8	49.6	0	2.6	5.4	1	1.7	5.8
0-72h	8.8	9.2	15.6	0.8	11.4	49.8	43.8	27.8	49.6	0	2.6	7.6	5.2	3.1	5.8

TABLE 11E. SHORELINE SANITARY SURVEY :

NS-07-020-012: DENYS BASIN
 FROM MACLEAN POINT TO MARTIN POINT
 INSPECTOR: S.WILKIE
 COMPREHENSIVE: AUGUST 23, 1993 REVIEWED: AUGUST, 1996

Refer to: Figure 11A for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: This area is populated with residences and cottages. Area underlain with clay. Complaints by oyster fisherman about siltation from River Denys. Suspicion that the Gypsum company up stream contributes to the problem, especially in the spring. The area of Denys Basin was originally surveyed in 1990 and resurveyed in August 1993 to ascertain if there any possible sources for high bacterial counts in the overlay waters. For most part the sanitary conditions have not altered much since the original survey but there are certain sites that have been highlighted as potential sources; (1)Mackenzie Brook (sites 56, 55) have OH's located at or near cottages, shoreline or streams that could drain to the brook.(2) Effies Cove; (sites 41, 42, 43,)OH's in the local area and a large trailer home near the shore. (3) Eagle Point; (sites 17-21, 32-35, 39, 40) sources are varied and of a significant nature to suggest retention of the current closure. (4) Hector MacLean Point; (site 12, 13) A single horse grazing and a local septic drain to field. (5) Seal Cove; (site 2) A small farm of approximately 20 cattle that may effect MacKenzies Brook
1	PI	P	1 1/2 str wht house on raised foundation, app 100mfs. Old ST and overflow PI to back field according to owner. (MacLean).
2	NP	P	1 1/2 str wht/yel trim house on raised foundation with shed, garage and barn, app 200mfs. PI overflow to field. 20 cows which graze in fields around house.
3	PI	P	2 str wht/blk trim house with shed and 2 large barns, app. 200mfs. 4in dia PI to front field/wooded area with direct discharge to field according to owner.
4	ST	P	1 str red seasonal cottage, app. 20mfs. No outflow PI visible.
5	PI	P	Wht/brw trim mobile home, >100mfs. 4in dia PI to DR. No eff visible.
6	ST	N	1 str brw wooden shingled house on raised foundation, app.100mfs.No outflow PI visible.
7	PI	P	1 1/2 str blue/wht trim house on raised foundation, app. 100mfwc. 4in dia PI overflow to field, according to owner.
8	NS	P	2 str off wht house on raised foundation, app 10mfwc. Holding tank pumped out regularly.
9	ST	N	2 str brw wooden shingled house on raised foundation just before railway crossing, >300mfwc. Too brushy to see any overflow.
10	PI	N	1 1/2 str blue/wht trim house, >300mfs. New owners think overflow PI in back field.
11	ST	N	Wht mobile home, >500mfs. No outflow PI visible.
12	PI	N	1 1/2 str yel/wht trim house on raised foundation, >200mfs. Old ST and overflow PI to field according to owner.
13	NP	P	1 1/2 str brw wooden shingled house on raised foundation, >300mfs. No outflow PI visible. 1 horse. No manure pile is visible.
14	ST	N	1 str brw wooden shingled house with lots of additions, >500mfs. No outflow PI visible.
15	NS	N	Gravel pit, >300mfs.
16	NS	N	Gravel pit, <100mfs.
17	ST	P	1 str blu/wht trim seasonal cottage on raised foundation, app. 35mfs. No outflow PI visible. WV.
18	ST	P	1 str beige/brw trim seasonal cottage, app. 35mfs. No outflow PI visible.
19	ST	P	1 str brw wooden shingled/red trim seasonal cottage with shed, <20mfs. No outflow PI visible.

20	ST	P	1 str wht/blue trim seasonal cottage, app. 40mfs. No outflow PI visible. WV and red shed
21	ST	P	1 str wht/blue trim seasonal cottage, app. 10mfs. No outflow PI visible. Sample taken at mouth of river yielded a count of 0mpn/100ml.
22	NS	N	Wht/brw trim mobile home, app. 20mfs. Driveway has a gate across it and a no trespassing sign.
23	ST	P	New 2 str brw wooden shingled house on raised foundation, app. 30mfs. No outflow PI visible. (Fuller).
24	OH	N	1 str wht/rust trim house, >200mfs.
25	ST	P	1 str pink seasonal cottage, app. 25mfs. No outflow PI visible.
26	ST	N	1 1/2 str wht house on hill, app 100mfs. No outflow PI visible.
27	OH	P	1 str rust seasonal cottage with OH <5mfs. (Billard).
28	OH	P	Small seasonal trailer with OH app. 40mfs.
29	ST	P	New log cabin and shed, app. 10mfs. No outflow PI visible.
30	ST	P	1 str wht/blk trim house and shed, <10mfwc. No outflow PI visible.
31	ST	P	Brw sided mobile home, app. 50mfs. No outflow PI visible.
32	PI	P	1 1/2 str wht/blk trim house with wht garage, app. 15mfs. 6in dia metal PI to shore. A dark slurry eff visible.
33	PI	P	1 str wht/red trim seasonal cottage, app. 35mfs. Old ST with overflow PI to DR then to wooded area according to friend of owner.
34	PI	P	1 str wht/red trim house on raised foundation app. 20mfs. Old ST with PI overflow to shore. Grey slurry visible. WV with pleasure boat.
35	PI	P	1 str wht/red trim cottage, app. 70mfs. Old ST with overflow PI to swamp according to neighbour.
36	ST	P	New 1 str blue/wht trim house on raised foundation, app. 100mfs. No outflow PI visible.
37	ST	N	Valley Inn Volunteer Fire Dept and Community Centre, >200mfs. No outflow PI visible.
38	ST	N	Yel mobile home, app. 250mfs. No outflow PI visible.
39	ST	P	1 str brick house on raised foundation, app. 30mfs. No outflow PI visible.
40	OH	P	1 str grn seasonal cottage, shed and OH, app. 45mfs.
41	ST	N	New brw wooden seasonal cottage on hill, >100mfwc. No outflow PI visible.
42	ST	P	1 str brw wooden shingled seasonal cottage app. 50mfs. No outflow PI visible.
43	ST	N	Coachman seasonal trailer app. 100mfs. No outflow PI visible.
44	ST	N	1 str wht house on raised foundation, app. 100mfwc. No outflow PI visible.
45	NS	N	New brw A-frame seasonal cottage left unfinished with no plumbing.
46	OH	P	1/2 str brw wooden sided cottage on raised foundation with OH, app. 60mfs.
47	OH	P	1 str brw seasonal cottage with OH app. 80mfs
48	OH	P	1 str yel seasonal cottage with OH app. 60mfs
49	ST	N	New 2 str brw house on raised foundation, >200mfs. No outflow PI visible. (Welch).
50	PI	N	2 str wht/blk trim house on raised foundation >150mfs. 4in dia PI to woods. No eff visible
51	NS	N	Abandoned old farm house with shed and barn.
52	NS	N	1 str wht cottage app. 30mfs. No outflow pipe visible.
53	ST	P	1 str wht house on raised foundation, >100mfs No outflow PI visible. (MacLean).
54	PI	P	1 str wht seasonal cottage, app. 150mfs. PI overflow to woods according to owner.
55	OH	P	1 str grn seasonal cottage with garage and shed, <10mfs. OH app. 20mfs.
56	OH	N	New 1 str brw seasonal cottage, app. 80mfs.
57	ST	P	2 str wht/blk trim house on raised foundation app. 30mfs. No outflow PI visible.
58	OH	P	1 str red, 1 str yel, seasonal cottages, 20-30mfs. OH app. 50mfs. Also one ST with no outflow PI visible.

59	ST	N	1 str grn house, >300mfs. No outflow PI visible.
60	ST	N	1 str blue sided house on raised foundation, >200mfs. No outflow PI visible.
61	NS	N	Malagwatch United Church.
62	NS	N	Presbyterian Church.
63	NS	N	Land presently being cleared for development.
64	ST	N	Wht/grm trim seasonal mobile, >150mfs. No outflow PI visible.
65	ST	P	Red A-frame seasonal cottage and trailer, app. 20mfs. No outflow PI visible.
66	PI	P	2 str wht/grm trim house on raised foundation >150mfs. 4in dia PI to iwc. No eff visible.
67	OH	N	1 str wht/grm trim seasonal house, >200mfs. Chemical toilet with eff dumped in OH. (Tubbert).
68	ST	N	1 str wht/blue trim seasonal house, >200mfs. No outflow PI visible.
69	PI	N	1 1/2 str wht/grm trim house on stone foundation, >200mfs. Old ST with overflow PI to woods according to owner. (Campbell).
70	ST	N	1 str wht/blk trim house on raised foundation >400mfs. No outflow PI visible. (MacLean).
71	ST	N	Grn/wht mobile home, >300mfwc. No outflow PI visible.
72	OH	N	1 str red seasonal cottage with OH app. 200mfwc.
73	NS	N	Abandoned red/wht trim long shed.
74	OH	P	1 str yel/red trim seasonal cottage with OH, app. 40mfs.
75	ST	P	1 str red/wht trim seasonal cottage, app. 20mfs. No outflow PI visible.
76	ST	P	Wht/red trim mobile home and shed, app. 50mfs. No outflow PI visible.
77	ST	P	2 str wht house on raised foundation with 2 old barns, app. 130mfs. No outflow PI visible
78	ST	P	Wht/yel trim mobile home with blue addition and blue barn, >200mfs. No outflow PI visible. (MacDonald).
79	OH	N	Yel/brw trim seasonal A-frame cottage on frost wall, >100mfs.
80	PI	P	1 1/2 str grey/yel trim house, app. 40mfs. 4in dia overflow PI to swamp according to owner. (MacMillan).
81	OH	P	1 str blue/wht trim seasonal cottage on raised foundation with OH <3mfswamp, <10mfs.

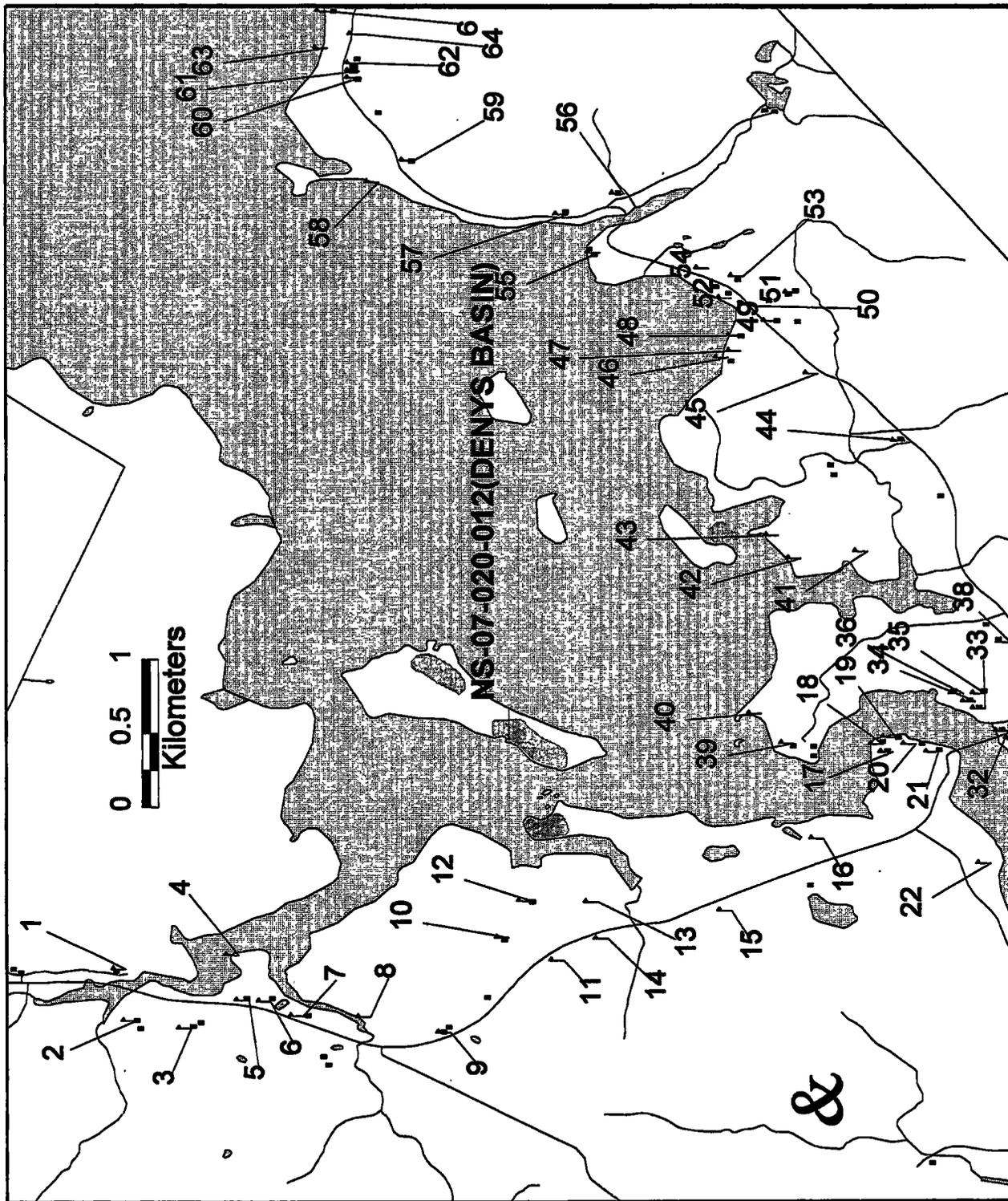


FIGURE 11A. SANITARY OBSERVATION SITE LOCATIONS, DENYS BASIN(NS-7-020-012)

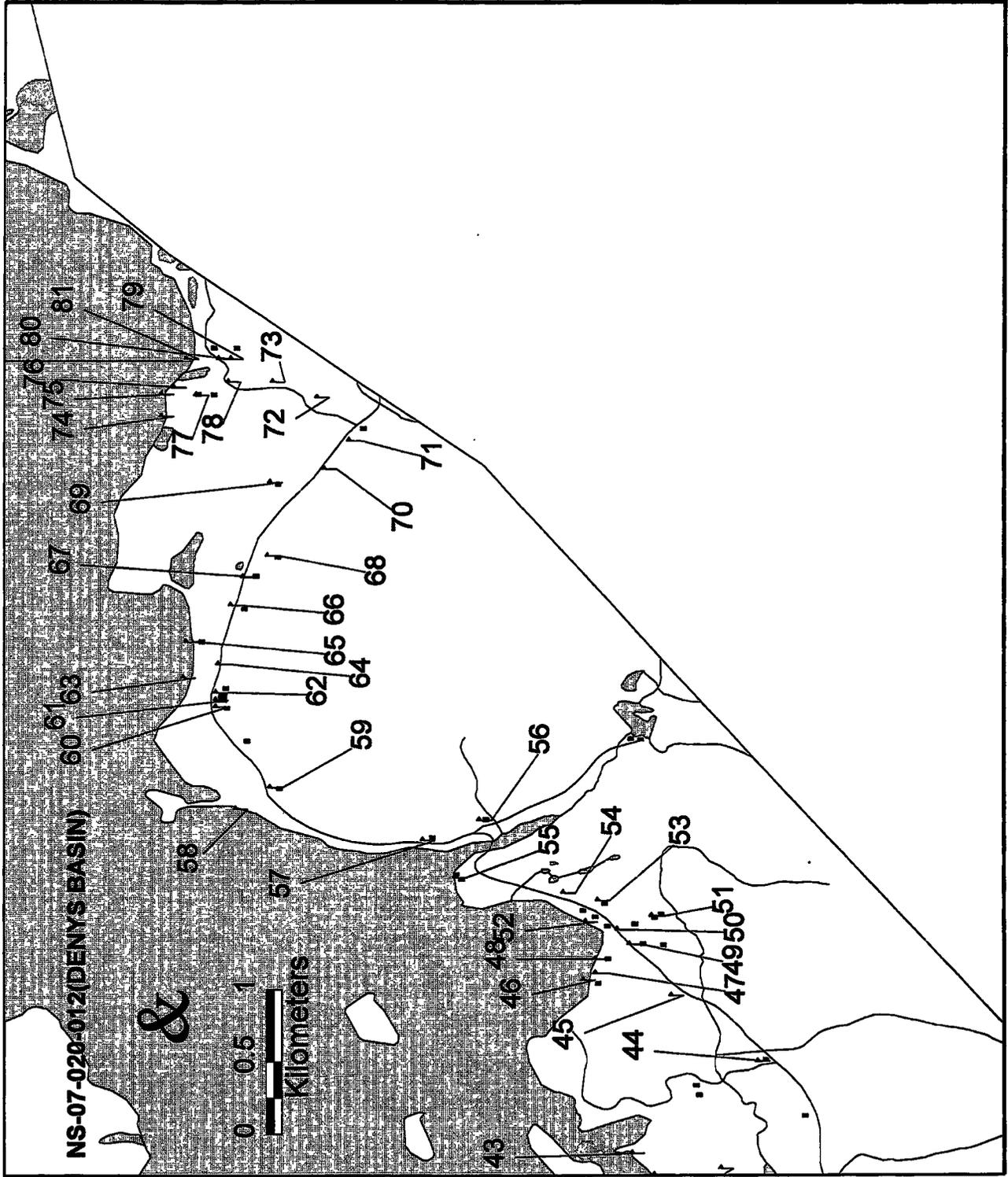


FIGURE 11A(cont.). SANITARY OBSERVATION SITE LOCATIONS, DENYS BASIN(NS-7-020-012)

Sub-sector Name (Number):

Malagawatch Harbour (NS-7-020-013)

Date surveyed:	1990-96
No. of sampling runs:	15
Shellfish classification:	Figure 12A
Sampling station locations:	Figure 12B
Fecal coliform results:	Tables 12A & 12B
Salinity data:	Table 12C
Water temperature data:	Table 12D
Shoreline sanitary observations:	Table 12E & Figure 12C

Area Description

The First Nations Malagawatch community is located on Boom and Big Harbour Islands. Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. Seven shellfish leases have been issued and two more are pending in Malagawatch Harbour. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*). There is shellfish aquacultural activity in Malagawatch Harbour.

The sub-sector was last evaluated in 1991 (Richard & Walter, 1991g). The current classification (Figure 12A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 12E) below.

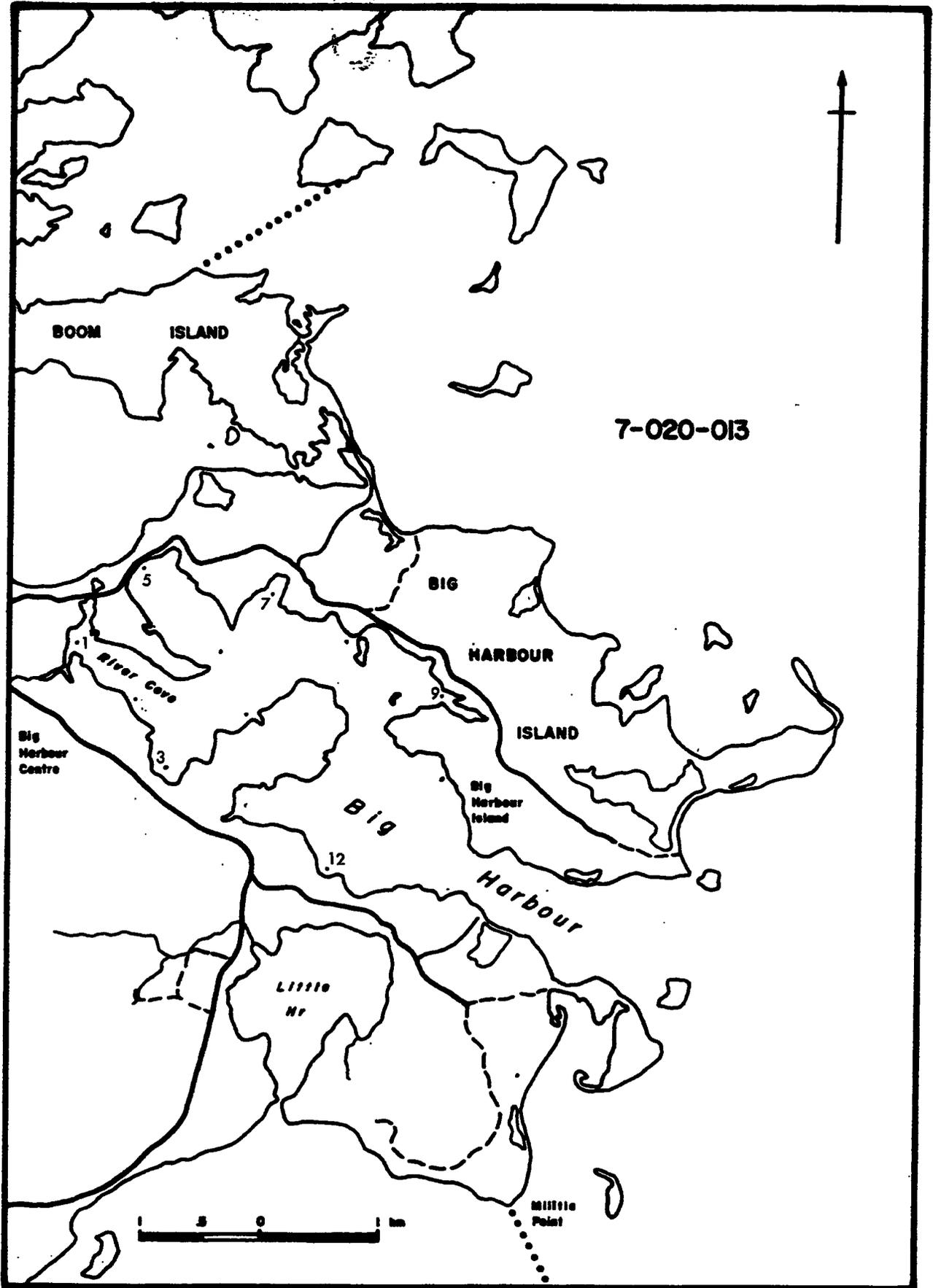


FIGURE 12B. KEY STATION SAMPLING LOCATIONS MALAGAWATCH HARBOUR (NS-7-020-013)

Bacteriological Water Quality

The six key stations (Figure 12A) surveyed on approximately fifteen occasions since 1990 (Tables 12A & 12B) continue to meet the criteria for an approved classification.

TABLE 12A. MALAGAWATCH HARBOUR (NS-7-020-013) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	16	1990-1996	1.9	49	3	1.9	8	6
3	15	1990-1996	1.9	13	2	1.9	5	0
5	16	1990-1996	1.9	8	2	1.9	3	0
7	15	1990-1996	1.9	5	2	1.9	3	0
9	15	1990-1996	1.9	4	2	1.9	3	0
12	15	1990-1996	1.9	5	2	1.9	3	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 12A) should remain unchanged.

TABLE 12B. MALAGAWATCH HARBOUR(NS-7-020-013) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	14 Aug 90	15 Aug 90	21 Aug 90	22 Aug 90	24 Aug 90	25 Aug 90	26 Aug 90	27 Aug 90	28 Aug 90	29 Aug 90	26 Sep 90	24 May 96	06 Jun 96	17 Jun 96	17 Jul 96	21 Aug 96	
1	1.9	49	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	7
3	1.9	13	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8
5	8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9
7	1.9	5	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
9	1.9	2	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4
12	2	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Tide	MR-MR	LR-MR	HF-HF	MR-MR													
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-48h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.2

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
L.T= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MF = Mid Falling;

TABLE 12C. MALAGAWATCH HARBOUR(NS-7-020-013) - SALINITIES (‰)

Station	14 Aug 90	15 Aug 90	21 Aug 90	22 Aug 90	24 Aug 90	25 Aug 90	26 Aug 90	27 Aug 90	28 Aug 90	29 Aug 90	26 Sep 90	24 May 96	06 Jun 96	17 Jun 96	17 Jul 96	21 Aug 96
1	18	21	21	21	21	22	23	23	22	21	20	20	18	20	20	20
3	20	21	21	21	21	22	24	24	23	21	20	19	18	20	20	20
6	20	22	21	21	21	22	24	24	23	21	20	20	19	19	21	20
7	20	21	20	20	21	22	22	22	21	21	20	20	20	20	21	20
9	20	22	20	20	22	22	23	23	22	21	20	20	20	20	21	19
12	20	21	20	20	23	22	22	22	23	21	20	20	19	20	21	20
Tide	MR-MR	LR-MR	HF-HF	HI-HI	MF-LF	HR-HR	HR-HI	HR-HI	HF-HI	HF-HF	HI-HF	LT-LR	MF-MR	HT-HF	MT-HT	MR-MR
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0.6	0.8	0	15.2	0
0-24h	0	0	0	0	0	0	0	0	0	0	0	0.6	16.8	8	15.2	1
0-48h	0	0	0	0	0	0	0	0	0	0	0	8.8	16.8	8	43.8	5.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	8.8	16.8	8	43.8	5.2

TABLE 12D. MALAGAWATCH HARBOUR(NS-7-020-013) - WATER TEMPERATURE (°C)

Station	14 Aug 90	15 Aug 90	21 Aug 90	22 Aug 90	24 Aug 90	25 Aug 90	26 Aug 90	27 Aug 90	28 Aug 90	29 Aug 90	26 Sep 90	24 May 96	06 Jun 96	17 Jun 96	17 Jul 96	21 Aug 96
1												11	17	15	21	23
3												14	19	17	21	23
5												11	17	15	20	22
7												12	17	15	20	22
9												12	17	16	21	22
12								16				11	14	15	20	22
Tide	MR-MR	LR-MR	HF-HF	HI-HI	MF-LF	HR-HR	HR-HI	HR-HI	HF-HI	HF-HF	HI-HF	LT-LR	MF-MR	HT-HF	MT-HT	MR-MR
Rain (mm)	0	0	0	0	0	0	0	0	0	0	0	0.6	0.8	0	15.2	0
0-24h	0	0	0	0	0	0	0	0	0	0	0	0.6	16.8	8	15.2	1
0-48h	0	0	0	0	0	0	0	0	0	0	0	8.8	16.8	8	43.8	5.2
0-72h	0	0	0	0	0	0	0	0	0	0	0	8.8	16.8	8	43.8	5.2

TABLE 12E. SHORELINE SANITARY SURVEY:
 NS-07-020-013: MALGAWATCH HARBOUR
 FROM BOOM ISLAND TO MILITIA PT.
 S. WILKIE
 INSPECTOR: AUGUST 26, 1993 REVIEWED: AUGUST, 1996
 COMPREHENSIVE:
 Refer to: Figure 12C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	<u>GENERAL DESCRIPTION</u> : The majority of the area is populated with seasonal cottages. The area is underlain with clay.
1	OH	P	1 str wht/grn trim seasonal cottage with OH app. 30mfs.
2	OH	P	1 str wht/blk mobile home, app. 30mfs.
3	OH	P	1 str grn cottage with OH app. 60mfs.
4	OH	P	1 str brw shed with OH app. 80mfs.
5	OH	P	1 str grn seasonal cottage with OH <10mfs. Multi-coloured cottage with OH and a travel trailer across rd.
6	OH	P	1 str yel seasonal cottage with OH app. 10mfs
7	OH	P	1 str blue, 1 str red, seasonal cottages with OH's <5mfs.
8	OH	P	1 str grn/red trim, 1 str yel/brw trim seasonal cottages with OH app. 20mfs.
9	OH	P	1 str wht/blue trim seasonal cottage, >15mfs. (Johnson).
10	OH	P	1 str red/whit trim seasonal cottage, shed and OH app. 100mfs.
11	OH	P	1 str red/whit seasonal cottage with OH, building and a shed >300mfs.
12	OH	P	Group of 4 seasonal cottages with OH app. 70mfs.
13	OH	P	Red OH app. 10mfs.
14	OH	P	Group of 4 seasonal cottages with OH in gully app. 15mfs.
15	OH	P	Group of 13 seasonal cottages with 9 OH's app 10-30mfs.
16	OH	P	1 str brw seasonal cottage, app 50mfs.
17	OH	P	Group of 3 seasonal cottages with OH's app. 50-150mfs.
18	OH	P	1 str yel seasonal cottage with OH app. 10mfs
19	OH	P	1 str red seasonal cottage with OH app. 15mfs
20	ST	P	New 1 str brw seasonal log cabin with WV and fishing boat. No outflow PI visible. <20mfs
21	OH	P	New 1 str brw seasonal cottage with OH <40mfs
22	XX	P	Small domestic garbage dump.
23	ST	P	1 1/2 str wht seasonal house on raised foundation with metal garage, app. 70mfs. No outflow PI visible.
24	ST	P	New 1 1/2 str brw seasonal cottage on raised foundation, app. 70mfs. No outflow PI visible
25	PI	P	1 1/2 str wht house on stone foundation with large old barn, >150mfs. Old ST with over flow PI to field according to owner.
26	NP	P	1 1/2 str wht/grn trim house on stone foundation with red barn, >150mfs. Old ST with overflow PI to field according to owner, 3 cows which graze in field.
27	ST	P	New 1 str brw cottage, app. 80mfs. No outflow PI visible.
28	PI	P	1 1/2 str wht house on stone foundation with 2 sheds, >200mfs. Overflow PI to field. No eff visible.
29	ST	P	New 1 str log cabin on raised foundation with a 1 car garage, >100mfs. No outflow PI visible.

30	ST	P	New 1 str yel/brw trim house on raised foundation, >200mfwc. No outflow PI visible.
31	PI	P	2 str grey wooden shingled seasonal house on raised foundation, >200mfwc. Outflow PI to field according to owner.
32	PI	P	1 1/2 str wht house with red barn, >200mfs. Overflow PI to field according to owner. (MacKenzie).
33	ST	P	1 str stone house on raised foundation, app. 30mfs. No outflow PI visible.
34	ST	P	2 str wht/blk trim house on raised foundation app. 200mfs. No outflow PI visible. (MacFayden).
35	PI	P	2 str brw house on raised foundation, >200mfs overflow PI to woods. No eff visible.
36	ST	P	1 str seasonal cottage with ST and disposal bed according to neighbour.
37	PI	P	1 1/2 str wht/grn trim seasonal cottage with metal ST and overflow PI to field according to owner. >150mfs.
38	ST	P	New 1 str yel/brw trim house on raised foundation, >100mfs. No outflow PI visible.
39	PI	P	1 1/2 str wht seasonal cottage with old ST and overflow PI to field according to owner, >150mfs.
40	PI	P	1 str red cedar seasonal cottage on raised foundation, >100mfs. Overflow PI to field according to owner.
41	ST	P	1 1/2 str wht/blue trim seasonal cottage, >100mfs. No outflow PI visible. (Beaver).

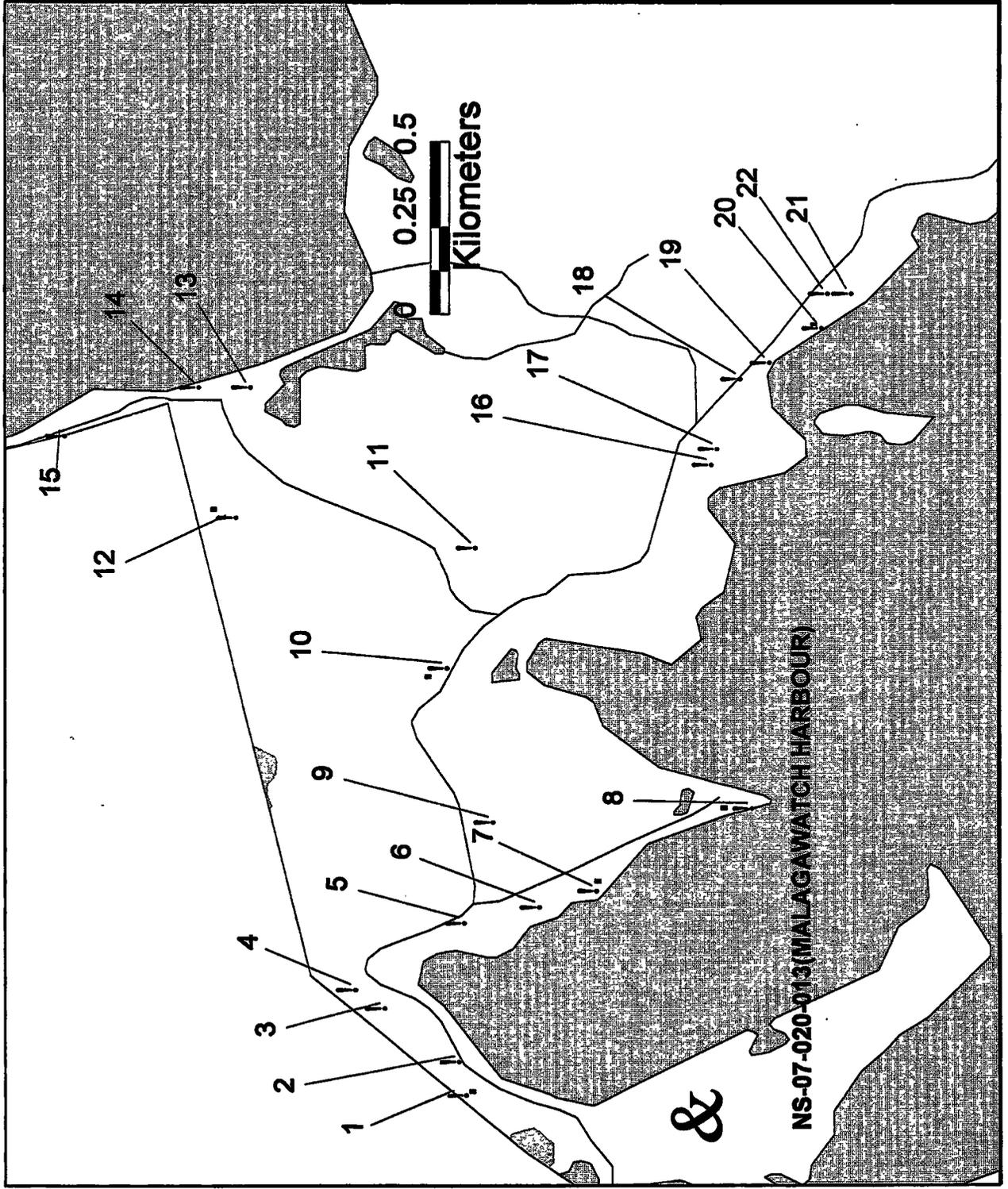


FIGURE 12C. SANITARY OBSERVATION SITE LOCATIONS, MALAGAWATCH HARBOUR(NS-7-020-013)

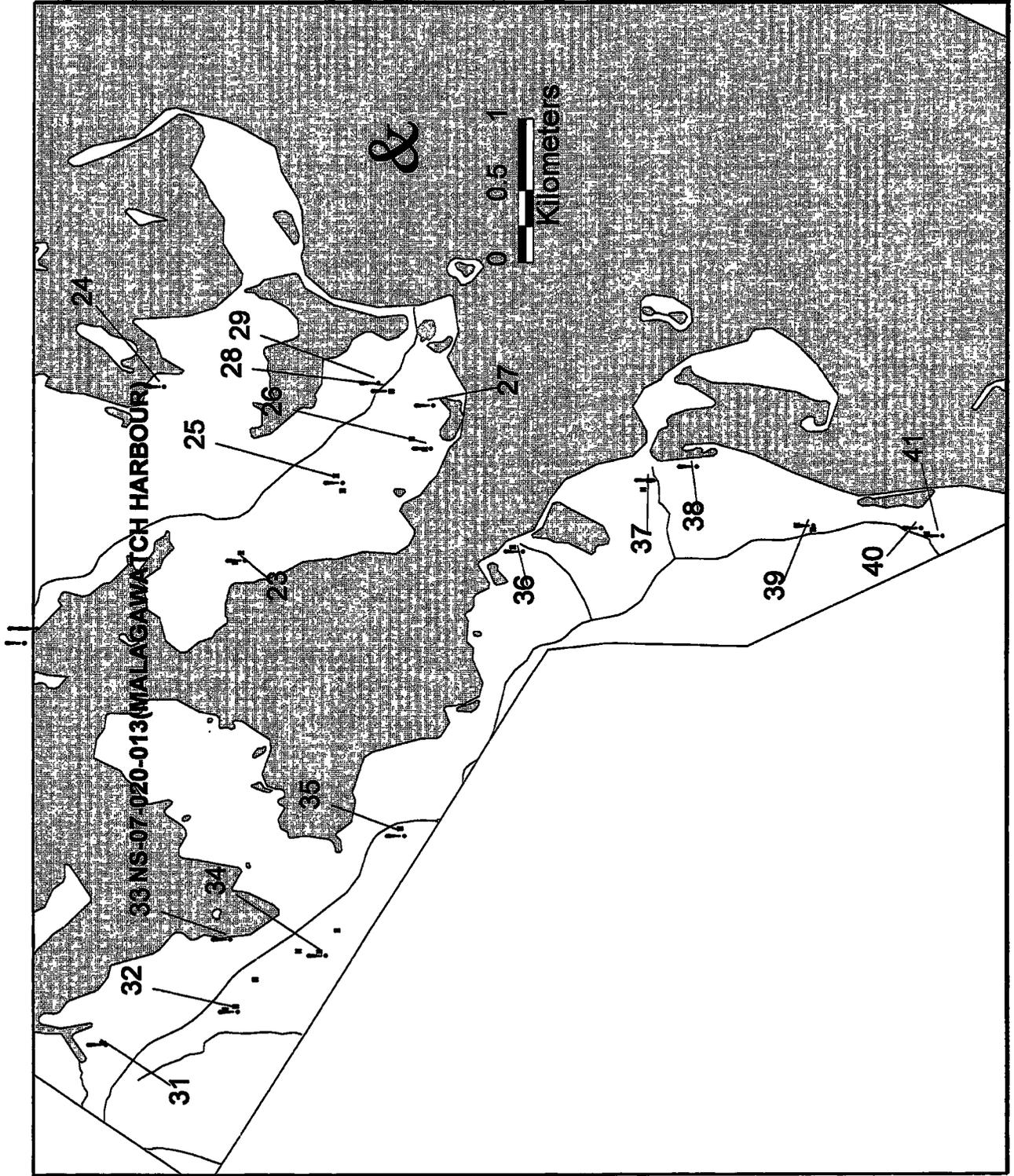


FIGURE 12C(cont.). SANITARY OBSERVATION SITE LOCATIONS, MALAGA WATCH HARBOUR(NS-7-020-013)

Sub-sector Name (Number):

MacKinnons Cove / Marble Mountain (NS-7-020-014)

Date surveyed:	1992-96
No. of sampling runs:	15
Shellfish classification:	Figure 13A
Sampling station locations:	Figure 13B
Fecal coliform results:	Tables 13A & 13B
Salinity data:	Table 13C
Water temperature data:	Table 13D
Shoreline sanitary observations:	Table 13E & Figure 13C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. There is an abandoned marble mine site at Marble Mountain. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Richard, 1993a). The current classification (Figure 13A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 13E) below.

Bacteriological Water Quality

The nine key stations (Figure 13B) surveyed on fifteen occasions since 1992 (Tables 13A & 13B) continue to meet the criteria for an approved classification.

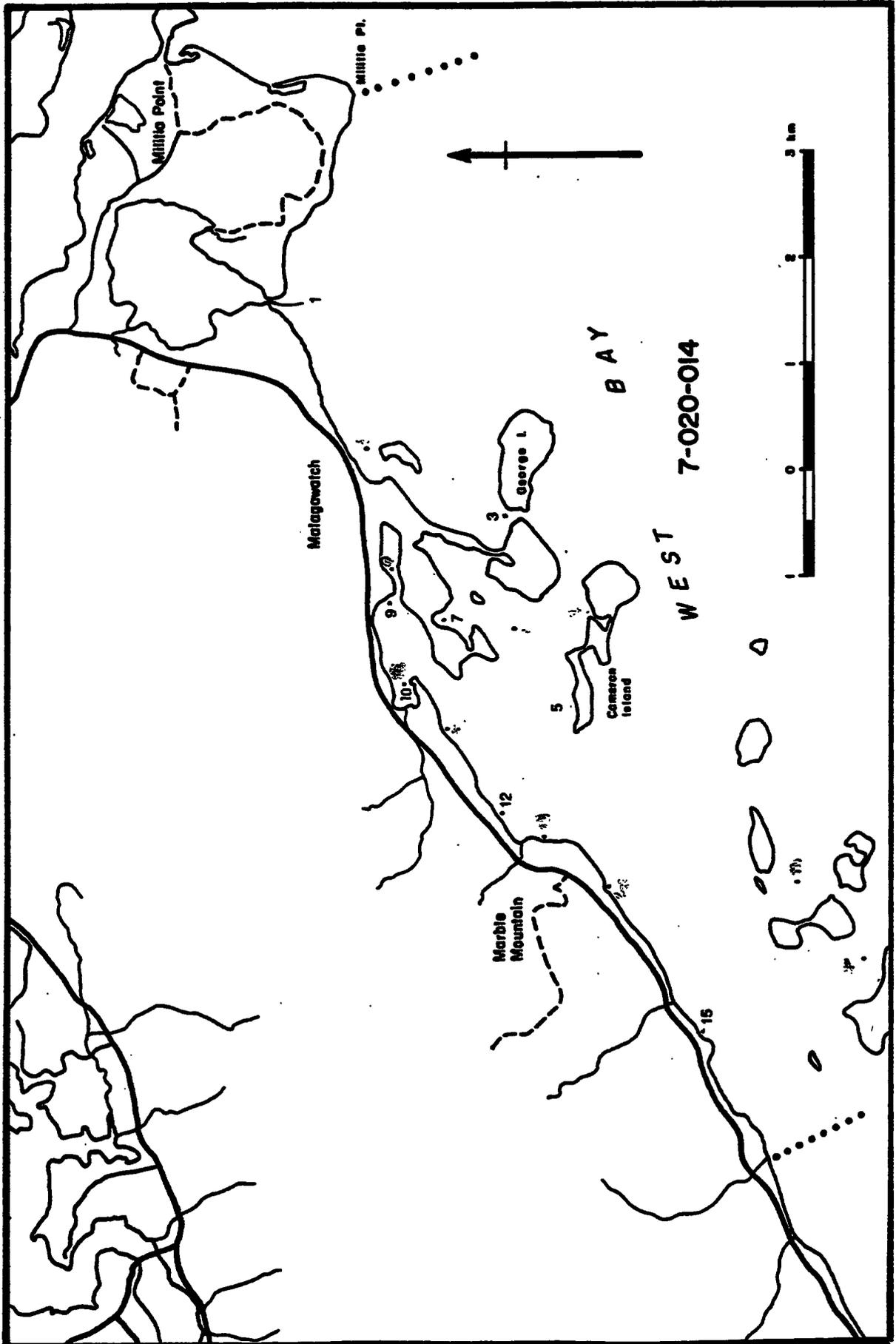


FIGURE 13B. KEY STATION SAMPLING LOCATIONS IN MACKINNON'S COVE / MARBLE MOUNTAIN

TABLE 13A. MACKINNONS COVE / MARBLE MOUNTAIN (NS-7-020-014) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	15	1992-1996	1.9	6	2	1.9	4	0
3	15	1992-1996	1.9	8	2	1.9	3	0
4	15	1992-1996	1.9	70	2	1.9	8	7
7	15	1992-1996	1.9	2	1.9	1.9	2	0
8	15	1992-1996	1.9	23	3	2	6	0
9	15	1992-1996	1.9	23	3	2	8	0
10	15	1992-1996	1.9	14	3	1.9	6	0
12	15	1992-1996	1.9	2	1.9	1.9	1.9	0
15	15	1992-1996	1.9	5	2	1.9	3	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 13A) should remain unchanged.

TABLE 13B. MACKINNON'S COVE / MARBLE MOUNTAIN (NS-7-020-014) - FECAL COLIFORM DENSITIES (MPN/100mL)

Station	09 Jun 92	17 Jun 92	14 Jul 92	22 Jul 92	29 Jul 92	06 Aug 92	21 Aug 92	25 Aug 92	28 Aug 92	28 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4	4	1.9	1.9	1.9	1.9	1.9
3	8	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	70	2	2	1.9	1.9	1.9	1.9	1.9
7	1.9	2	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
8	1.9	2	2	1.9	1.9	1.9	1.9	1.9	4	2	2	4	1.9	1.9	2
9	2	1.9	6	4	1.9	1.9	8	1.9	2	1.9	1.9	23	2	1.9	7
10	8	1.9	1.9	2	1.9	1.9	1.9	4	1.9	1.9	1.9	1.9	4	1.9	14
12	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9
15	5	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9
Tide	HF-HF	MI-MT	MI-MT	MI-MT	MF-MR	HF-HF	MI-HF	MR-HT	MI-MT						
Rain (mm)	0	0	0	0	15.4	9.6	0	0	0	0	0	0	8.7	0	0
0-24h	0	0	0	21	0	0	0	0	0	0	22	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide; HF = High Falling;
MR - Mid Rising LT= Low Tide;

HR - High Rising; MT= Mid Tide;
LF = Low Falling; LR - Low Rising

MF=Mid Falling;

TABLE 13C. MACKINNONNS COVE / MARBLE MOUNTAIN (NS-7-020-014) - SALINITIES (‰)

Station	09 Jun 92	17 Jun 92	14 Jul 92	22 Jul 92	29 Jul 92	06 Aug 92	21 Aug 92	25 Aug 92	26 Aug 92	29 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
1	20	22	22	22	23	23	20	20	24	20	20	20	20	20	21
3	20	22	22	24	24	24	21	21	24	21	20	20	20	21	20
4	21	22	22	24	24	24	21	21	24	21	20	20	20	21	20
7	20	21	21	22	23	22	20	20	22	20	19	20	22	20	21
8	20	21	21	20	22	21	20	20	22	20	15	18	18	18	20
9	20	20	20	20	22	22	20	21	22	21	17	16	19	18	20
10	20	21	20	20	22	21	0	22	22	21	17	19	20	18	21
12	21	20	20	20	22	21	20	22	22	21	16	18	20	18	20
15	22	20	20	21	20	22	20	22	22	22	20	18	22	19	22
Tide	HF-HF	MT-MT	MT-MT	MF-MR	HF-HF	MT-HT	MR-HT	MT-MT							
Rain (mm)	0	0	0	0	15.4	9.6	0	0	0	0	0	0	0	8.7	0
0-24h	0	0	0	21	0	0	0	0	0	0	22	0	0	32.4	0
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	0	32.4	0

TABLE 13D. MACKINNONNS COVE / MARBLE MOUNTAIN (NS-7-020-014) - WATER TEMPERATURE (°C)

Station	09 Jun 92	17 Jun 92	14 Jul 92	22 Jul 92	29 Jul 92	06 Aug 92	21 Aug 92	25 Aug 92	26 Aug 92	29 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
1	13	15	0	0	0	0	0	0	0	17	15	15	15	19	22
3	0	0	0	0	0	0	19	0	20	0	15	14	19	19	21
4	0	0	0	0	0	0	17	0	0	21	15	15	20	19	22
7	0	0	0	0	0	0	0	0	21	0	15	17	21	20	22
8	0	0	0	0	0	0	0	0	0	0	19	19	22	21	22
9	0	0	0	0	0	0	20	0	0	21	16	17	19	20	22
10	17	0	0	0	0	0	19	0	0	0	17	16	20	19	22
12	0	0	0	0	0	0	0	0	0	0	16	14	18	19	20
15	0	0	0	0	0	0	16	0	0	18	10	14	18	18	21
Tide	HF-HF	MT-MT	MT-MT	MF-MR	HF-HF	MT-HT	MR-HT	MT-MT							
Rain (mm)	0	0	0	0	15.4	9.6	0	0	0	0	0	0	0	8.7	0
0-24h	0	0	0	0	0	0	21	0	0	0	22	0	0	32.4	0
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	0	32.4	0

TABLE 13E. SHORELINE SANITARY SURVEY:

NS-07-020-014: MACKINNON'S COVE/MARBLE MOUNTAIN
 FROM MILITIA POINT TO MACINNIS BROOK
 INSPECTOR: S. WILKIE
 COMPREHENSIVE: AUGUST 26, 1993 REVIEWED: AUGUST, 1996

Refer to: Figure 13C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with cottages and residences. Most of the area is underlain with clay except the village of Marble Mountain which contains both limestone, gravel and clay.
1	OH	P	1 1/2 str brw/whit trim seasonal cottage with OH app. 20mfs.
2	ST	P	1 str large wooden cedar house on stone foundation, app. 50mfs. No outflow PI visible
3	ST	P	1 str red seasonal cottage and trailer, approx. 30mfs. No outflow PI visible. (Joseph).
4	PI	N	1 1/2 str wht house and 3 sheds, >150mfs. Overflow PI to field according to owner.
5	PI	P	3 mobile homes. One outflow PI according to owner. One abandoned. >150mfs.
6	PI	N	Group of 3 old farm houses, >500mfs. Probable old ST's with overflow PI's to field or woods
7	ST	P	2 str wht seasonal house on raised foundation >100mfs. No outflow PI visible but suspect overflow PI.
8	ST	N	1 str brw wooden shingled house on raised foundation, >200mfs. No outflow PI visible.
9	ST	P	New 1 1/2 str brw log cabin, app. 50mfs, app. 30mfwc. No outflow PI visible. Seasonal.
10	ST	P	2 str brw, 1 str brw seasonal cottages, app. 30mfs. No outflow PI's visible.
11	ST	P	1 str wht seasonal cottage, app. 30mfs. No outflow PI visible.
12	ST	P	1 str red/whit trim seasonal cottage, 1 str brw seasonal cottage, app. 20mfs. No outflow PI visible. WV. (Legge).
13	ST	P	1 str red seasonal cottage with shed, app. 20mfs. No outflow PI visible.
14	ST	N	1 1/2 str wht house, app. 100mfs. No outflow PI visible. (MacDonald).
15	ST	P	Brw/whit mobile home and garage, app. 50mfs. No outflow PI visible.
16	ST	N	2 cedar homes on raised foundation, 1 str red seasonal cottage and three seasonal trailers app. 60mfs. No outflow PI's visible.
17	ST	N	New 1 1/2 str brw wooden shingle house on raised foundation, >200mfs. No outflow PI visible.
18	ST	N	Wht/red trim mobile home, >100mfs. No outflow PI visible.
19	ST	P	New 1 str brw seasonal cottage on posts on hill, app. 80mfs. No outflow PI visible.
20	NS	P	Marble and limestone quarry.
21	OH	P	Public Beach with concrete OH's that are pumped seasonally.
22	WV	P	Pleasure boats and fishing boat docked throughout summer.
23	OH	P	Seasonal trailers with OH <5mfs.
24	PI	N	App. 14 residences and summer homes. A couple of OH's and 3 homes with overflow PI's to field according to residents. Good percolation in area. No PI's to WC. App. 100-300mfs.

25	OH	P	1 str red/wht trim seasonal cottage, 1 str brw ship-wood seasonal cottage and trailer with OH app. 40mfs.
26	OH	P	2 str red/wht trim seasonal cottage on raised foundation with grn shed and 2 small trailers with OH app. 40mfs.
27	PI	N	1 1/2 str wht house on stone foundation with large barn. Overflow PI to field according to owners. 1 str red seasonal cottage with no PI visible. >200mfs.
28	OH	P	1 str red seasonal cottage with OH <5mfs.
29	NS	N	Abandoned farm.
30	ST	P	2 brw seasonal cottages, app. 20mfs. No outflow PI visible. WV.
31	ST	P	1 str red seasonal cottage, app. 20mfs. No outflow PI visible. (Siddall).

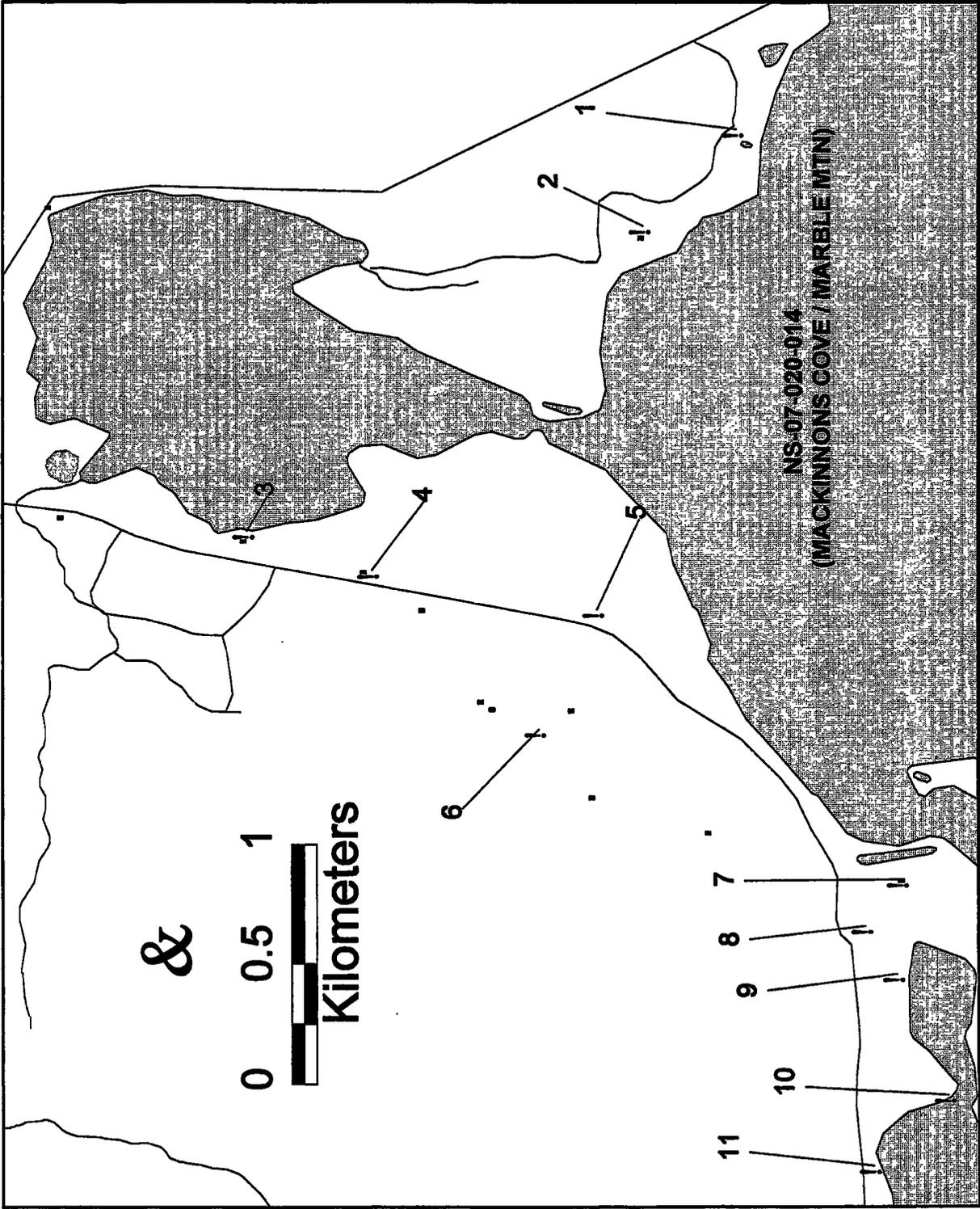


FIGURE 13C. SANITARY OBSERVATION SITE LOCATIONS, MACKINNON'S COVE / MARBLE MOUNTAIN (NS-7-020-014)

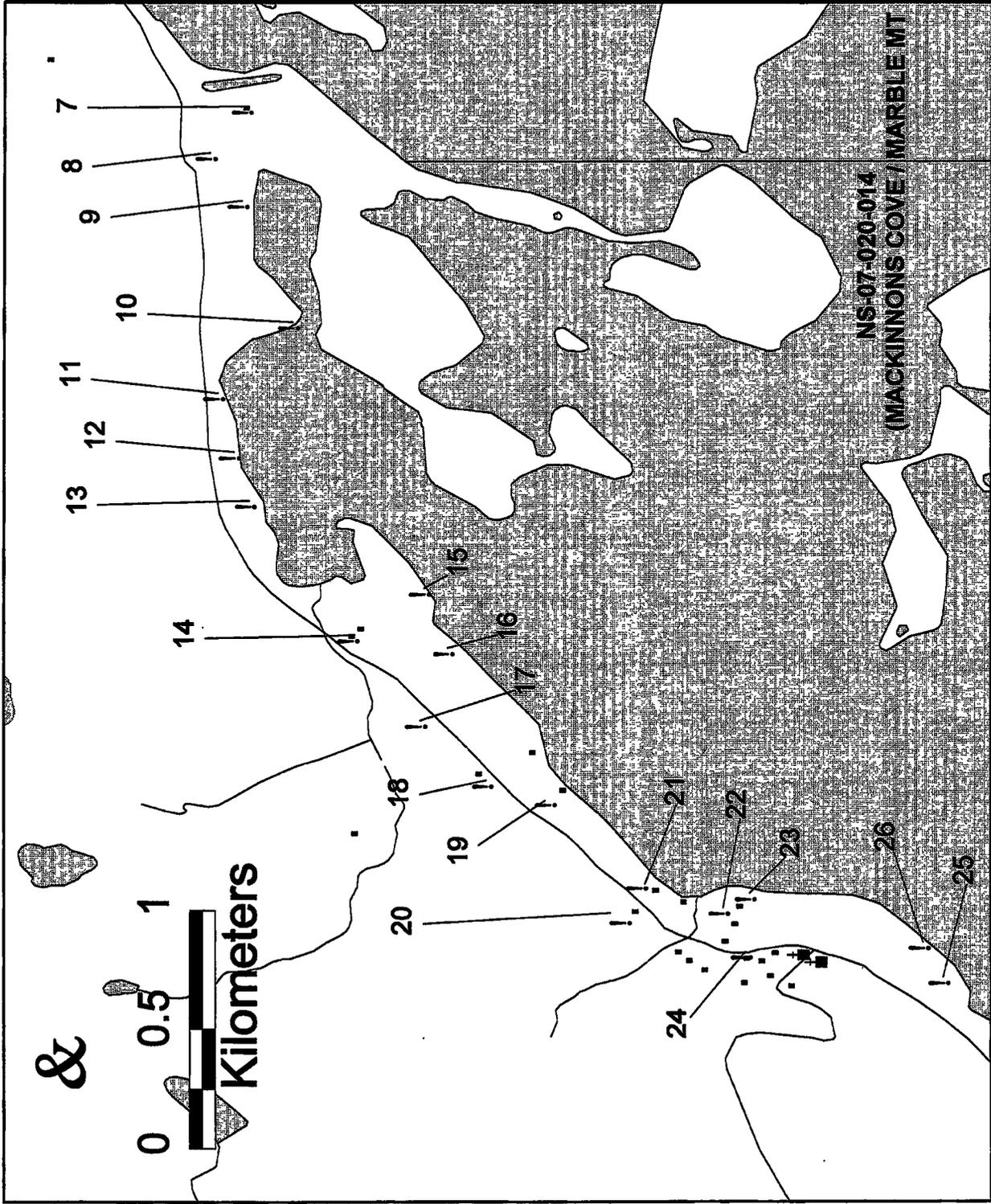


FIGURE 13C(cont.). SANITARY OBSERVATION SITE LOCATIONS, MACKINNON'S COVE / MARBLE MOUNTAIN (NS-7-020-014)

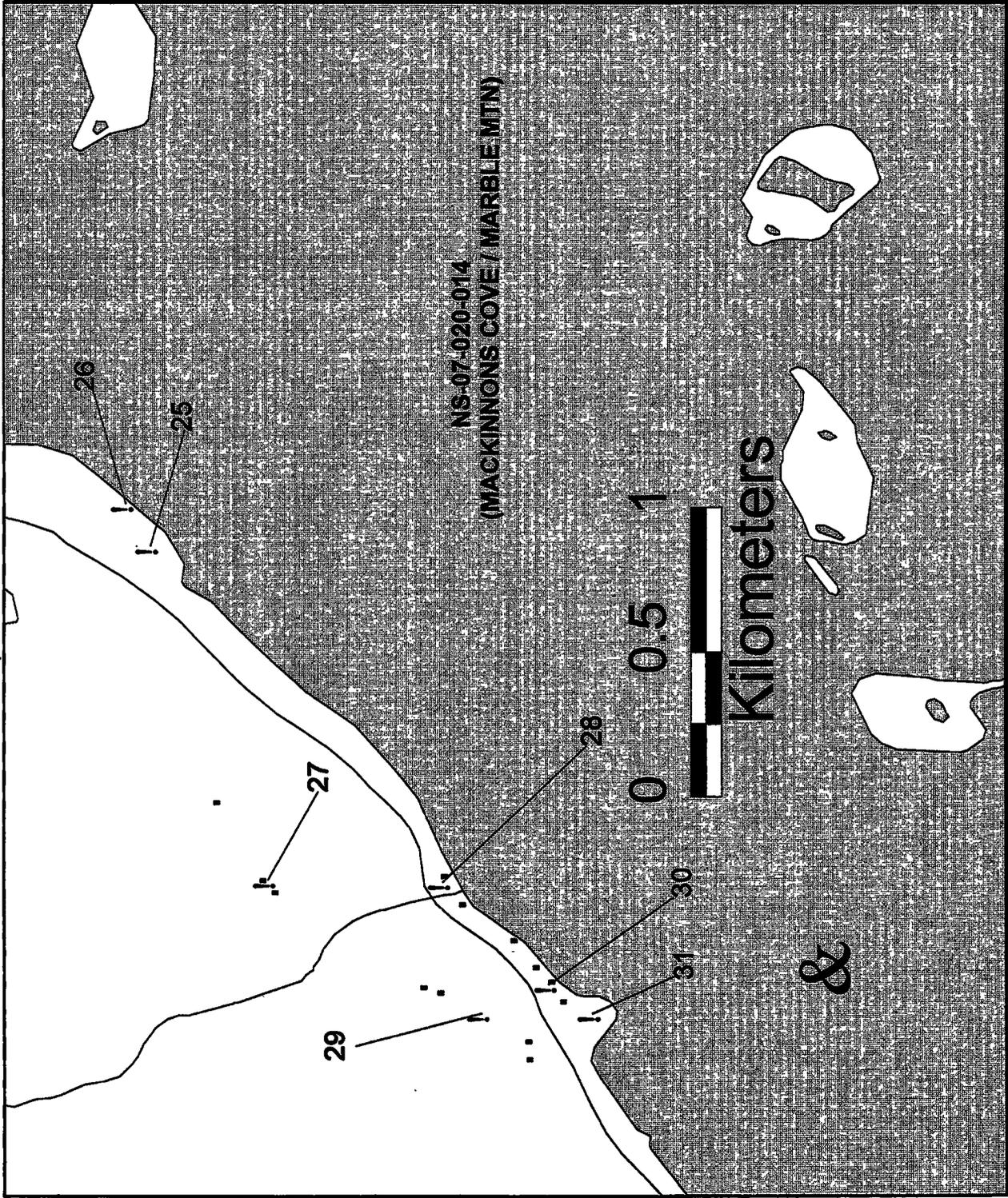


FIGURE 13C(cont.). SANITARY OBSERVATION SITE LOCATIONS, MACKINNON'S COVE / MARBLE MOUNTAIN (NS-7-020-014)

Sub-sector Name (Number):

West Bay (NS-7-020-015)

Date surveyed:	1992-96
No. of sampling runs:	15
Shellfish classification:	Figure 14A
Sampling station locations:	Figure 14B
Fecal coliform results:	Tables 14A & 14B
Salinity data:	Table 14C
Shoreline sanitary observations:	Table 14E & Figure 14C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. Six shellfish leases have been issued in the subsector. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Richard, 1993a). The current classification (Figure 14A) includes a shellfish closure as follows:

Closed

That portion of Head Bay Cove in Richmond County, inside a straight line drawn from grid reference 4289 6338 to grid reference 4290 6348. Refer to map Port Hawkesbury 11F/11.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 14E) below.

Bacteriological Water Quality

The twelve stations (Figure 14B) surveyed on fifteen occasions since 1992 (Tables 14A & 14B) continue to meet the criteria for an approved classification.

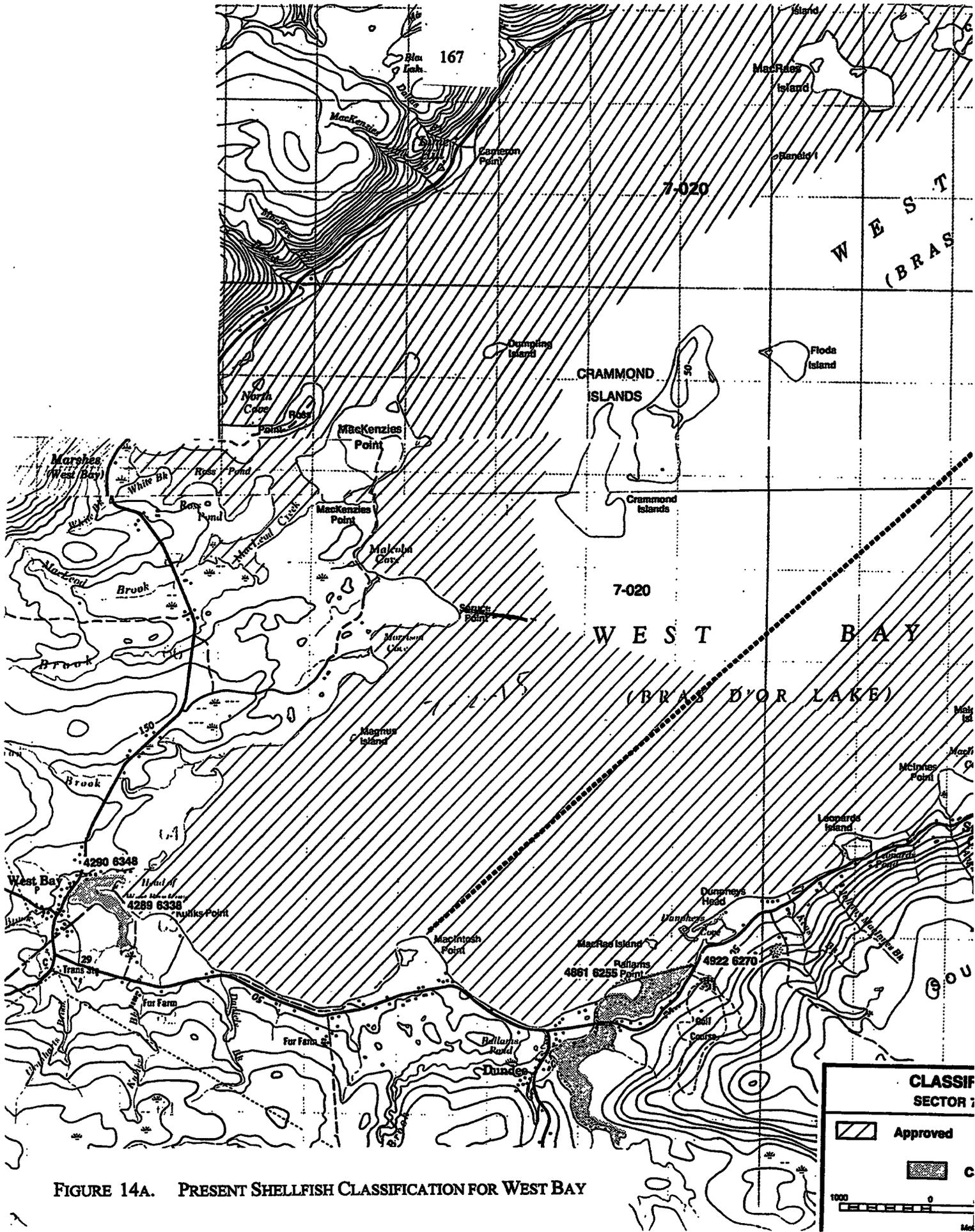


FIGURE 14A. PRESENT SHELLFISH CLASSIFICATION FOR WEST BAY

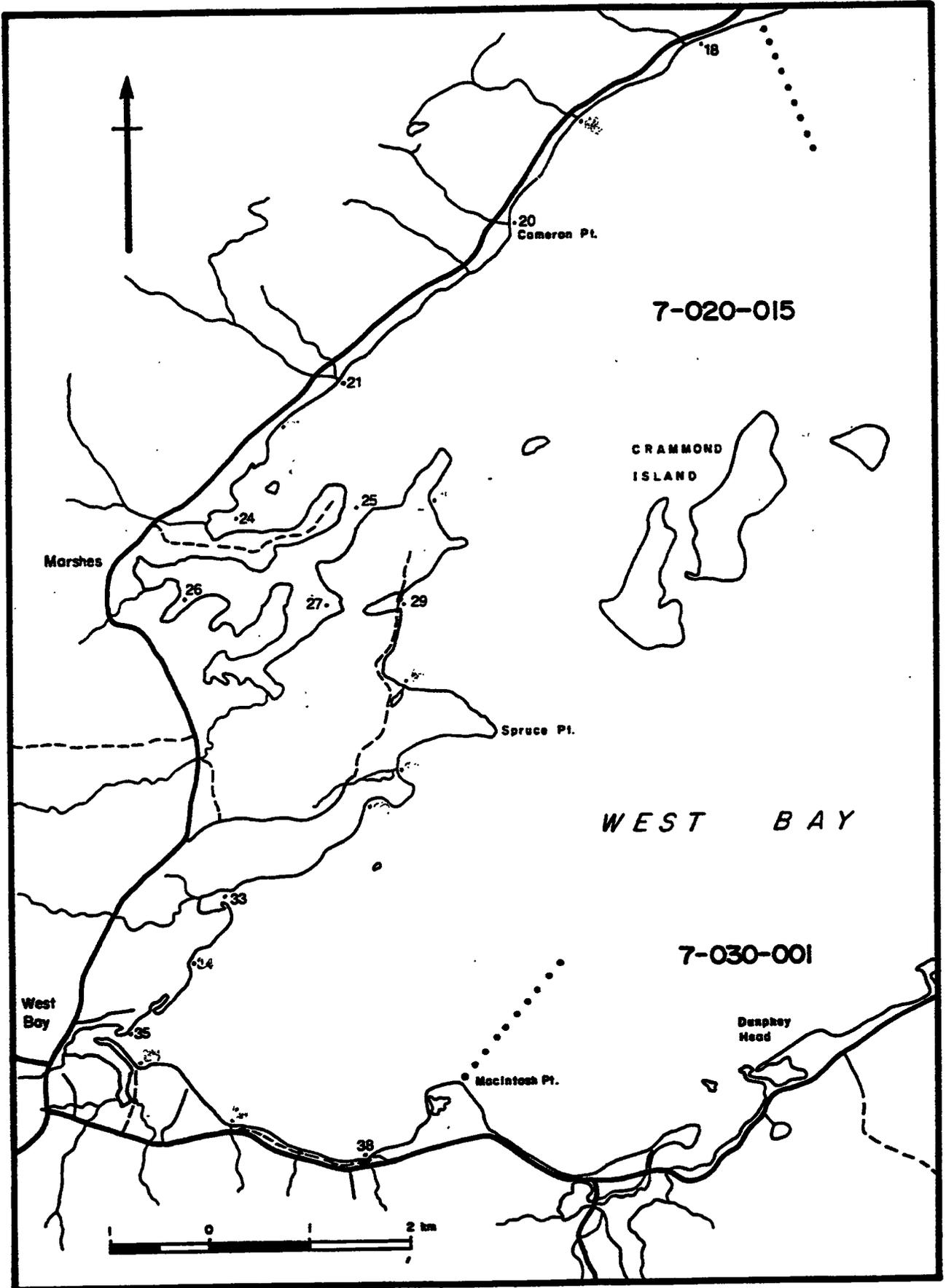


FIGURE 14B. KEY STATION SAMPLING LOCATIONS IN WEST BAY

TABLE 14A. WEST BAY(NS-7-020-015) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
18	15	1992-1996	1.9	4	2	1.9	3	0
20	15	1992-1996	1.9	2	1.9	1.9	2	0
21	15	1992-1996	1.9	11	3	1.9	6	0
24	15	1992-1996	1.9	5	2	1.9	3	0
25	15	1992-1996	1.9	7	2	1.9	4	0
26	15	1992-1996	1.9	4	2	1.9	3	0
27	15	1992-1996	1.9	49	3	1.9	8	7
29	15	1992-1996	1.9	1.9	1.9	1.9	1.9	0
33	15	1992-1996	1.9	5	2	1.9	3	0
35	15	1992-1996	1.9	8	2	1.9	4	0
37	15	1992-1996	1.9	8	2	1.9	4	0
38	15	1992-1996	1.9	8	2	1.9	3	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 14A) should remain unchanged.

TABLE 14B. WEST BAY(NS-7-020-015) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	09 Jun 92	17 Jun 92	14 Jul 92	22 Jul 92	29 Jul 92	06 Aug 92	21 Aug 92	25 Aug 92	26 Aug 92	28 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
18	4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
20	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9
21	8	1.9	2	1.9	1.9	1.9	1.9	8	1.9	1.9	1.9	1.9	2	1.9	1.9
24	1.9	1.9	5	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
25	1.9	1.9	7	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	5	1.9	2
26	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9
27	1.9	1.9	49	7	4	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9
29	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
33	1.9	1.9	5	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	2	5	2	1.9
35	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	7	2
37	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9
38	1.9	1.9	1.9	8	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	1.9
Tide	HF-HF	MT-MT	MT-MT	MF-MR	HI-HF	MI-HT	MR-HT	MI-MT							
Rain (mm)															
0-24h	0	0	0	0	15.4	0	0	0	0	0	0	0	0	8.7	0
0-48h	0	0	0	21	0	9.6	0	0	0	0	22	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 14C. WEST BAY(NS-7-020-015)- SALINITIES (‰)

Station	09 Jun 92	17 Jun 92	22 Jul 92	29 Jul 92	06 Aug 92	21 Aug 92	26 Aug 92	29 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
18	22	20	22	20	20	22	22	21	20	20	19	20	22
20	22	20	20	21	20	20	20	21	21	20	19	20	21
21	20	21	20	21	20	20	22	21	21	19	19	20	21
24	20	20	20	20	21	20	20	20	20	20	20	20	20
25	20	20	20	20	20	20	21	22	21	19	20	19	20
26	20	20	17	20	20	20	20	21	22	17	20	20	20
27	20	18	17	20	20	20	21	22	22	16	18	18	20
29	21	20	20	20	22	20	21	22	20	20	20	20	21
33	20	20	18	20	20	21	20	22	21	16	20	18	21
35	21	20	20	20	21	20	21	22	20	20	20	20	22
37	20	20	18	20	20	20	21	22	21	20	20	20	21
38	20	20	20	20	20	20	21	24	21	20	20	20	21
Tide	HF-HF	HF-HF	HF-HF	HF-HF	HF-HF	HF-HF	MT-MT	MT-MT	MT-MT	MF-MR	HT-HF	MT-HT	MT-MT
Rain (mm)	0	0	0	0	15.4	0	0	0	0	0	0	8.7	0
0-24h	0	0	0	21	0	9.6	0	0	0	22	0	32.4	0
0-48h	0	0	0	0	0	0	0	0	0	22.8	0	32.4	0
0-72h	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4

TABLE 14C. WEST BAY(NS-7-020-015) - TEMPERATURE (°C)

Station	09 Jun 92	17 Jun 92	22 Jul 92	29 Jul 92	06 Aug 92	21 Aug 92	26 Aug 92	29 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
18	0	0	0	0	0	0	19	0	11	14	17	19	21
20	0	0	0	0	0	16	0	0	13	14	18	18	21
21	0	0	0	18	0	0	0	0	11	14	18	18	17
24	0	0	0	0	0	0	19	19	10	13	18	19	21
25	15	0	0	0	0	0	17	0	12	14	18	19	21
26	0	0	0	0	16	0	0	0	17	14	18	20	21
27	0	0	0	20	0	0	0	0	16	15	18	20	22
29	0	0	0	0	0	17	18	19	10	14	17	18	21
33	0	0	0	19	0	0	19	0	17	14	18	18	21
35	0	0	0	0	0	14	0	0	9	13	15	18	21
37	0	0	0	0	0	0	0	0	10	13	15	18	21
38	13	13	0	17	0	0	19	18	10	14	14	18	21
Tide	HF-HF	HF-HF	HF-HF	HF-HF	HF-HF	HF-HF	MT-MT	MT-MT	MT-MT	MF-MR	HT-HF	MT-HT	MT-MT
Rain (mm)	0	0	0	0	15.4	0	0	0	0	0	0	8.7	0
0-24h	0	0	0	21	0	9.6	0	0	22	0	32.4	0	6.4
0-48h	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4

TABLE 14E. SHORELINE SANITARY SURVEY:

NS-07-020-015: HEAD OF WEST BAY
MACINNIS BROOK TO MACINTOSH PT.

INSPECTOR: S.WILKIE

DATE: AUGUST 26, 1993

REVIEWED:

AUGUST, 1996

Refer to: Figure 14C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	<u>GENERAL DESCRIPTION:</u> Area populated with residences and seasonal cottages. Many homes and cottages have recently been built. Area underlain with clay. The shoreline has various cottages and homes mostly situated along the shoreline road of West Bay. There are some residences equipped with outhouses that are built within 10 meters of the shoreline (sites 10, 32 & 35) while the other main sanitary sources noted are non-point type (sites 24, 32, 35, 49, 56, 66, 67 & 75). The 1993 review of this area showed a few additional sites; (sites 19A-E, 20A, 30A). Based on noted sources there could be high bacterial counts in the vicinity of MacIntosh Point, Head Bay Cove, Malcolm Cove, and near Ross Brook.
1	NS	N	1 1/2 str red/wht summer cottage on raised foundation. No outflow PI visible.
2	ST	N	New 1 str beige house on raised foundation, app. 60mfs. No outflow PI visible.
3	ST	N	1 str wht/grn mobile home, app. 100mfs. (Cooper).
4	ST	N	New 1 1/2 str brw house on raised foundation, app. 60mfs. No outflow PI visible.
5	ST	N	New 1 1/2 str brw shingled house on raised foundation, app. 60mfs. No outflow PI visible
6	ST	P	New brw wooden shingled house on raised foundation, app. 50mfs. No outflow PI visible
7	NP	N	1 1/2 str beige/wht house. Yard is fenced off for animals but none seen.
8	ST	P	New brw log cabin, app. 50mfs. No outflow PI visible.
9	ST	P	New 1 str red, 1 str brw, seasonal cottages, approx. 60mfs. No outflow PI visible.
10	ST	P	1 1/2 str brw seasonal cottage, <10mfs. No outflow PI visible but area wet with springs.
11	ST	N	1 1/2 str wht house on stone foundation with barn, app. 100mfs. No outflow PI visible but probable overflow PI.
12	ST	N	1 str red seasonal cottage, >150mfs. No outflow PI visible
13	ST	N	1 1/2 str cedar house on raised foundation, >100mfs. No outflow PI visible.
14	ST	N	1 str brw/red trim seasonal cottage, >200mfs. No outflow PI visible.
15	ST	N	1 1/2 str wht seasonal house on raised foundation, >200mfs. No outflow PI visible but suspect overflow PI.
16	ST	P	1 1/2 str brw seasonal cottage, app. 40mfs. No outflow PI visible. (Atkinson).
17	ST	P	New 1 str cedar house on raised foundation, app. 30mfs. No outflow PI visible.
18	ST	P	New 1 1/2 str brw wooden shingled house with red shutters on raised foundation, app. 30mfs. No outflow PI visible.
19	ST	P	New 1 str brn stain house on raised foundation, app. 50mfs.
21	ST	N	1 1/2 str gray/wht trim house, red/wht trim house, gray/grn trim house and red/wht trim house, all on raised foundation, app. 250mfs. No outflow PI's visible.
22	WV	P	Red/wht trim seasonal cottage, 2 seasonal trailers. No outflow PI's visible. WV with many sail boats and speedboats docked and anchored.
23	ST	P	2 new brn stain houses, app. 70mfs. No outflow PI visible. Entire point up for development. (Eagle Creek Estates)

24	NP	P	1 1/2 str wht house on raised foundation with large barn, app. 150mfs. No outflow PI visible. 10 cows which graze in fields.
25	ST	N	1 str wht/red trim house on raised foundation >200mfs. No outflow PI visible.
26	PI	P	Beige/brw trim mobile home with PI to back woods. No eff visible. App. 100mfwc.
27	ST	P	Wht/red trim mobile home, app. 50mfwc. No outflow PI visible. New 1 1/2 str brn stain cape cod house built beside the mobile home.
28	ST	N	1 1/2 str wht/red trim house on raised foundation, >200mfs. No outflow PI visible.
29	ST	N	1 str wht/red trim seasonal cottage, >150mfs. No outflow PI visible. (Skinners)
30	ST	N	1 1/2 str wht old farm house and barn, >150mfs. No outflow PI visible.
31	ST	N	1 1/2 str gray/wht house on raised foundation, >150mfs. No outflow PI visible.
32	OH	P	Group of 5 seasonal cottages, 10-80mfs. One OH, 3 ST and one on shore with no outflow PI visible.
33	ST	P	New 1 str brw seasonal cottage on raised foundation, app. 20mfs. No outflow PI visible
34	ST	N	1 str brw sales office, app. 30mfs. No outflow PI visible.
35	OH	P	1 str brw seasonal cottage with OH <10mfs.
36	ST	P	Brw A-frame seasonal cottage, app. 40mfs. 2 story brw seasonal house on raised foundation, app. 30mfs. No outflow PI visible.
37	ST	P	New 1 1/2 str cedar house on raised foundation, app. 40mfs. No outflow PI visible
38	ST	P	1 1/2 str brw seasonal cottage, <20mfs. No outflow PI visible.
39	ST	P	New brw seasonal cottage, app. 30mfs. No outflow PI visible.
40	ST	P	New 1 str cedar seasonal cottage on raised foundation, app. 30mfs. No outflow PI visible
41	ST	P	New 1 str cedar seasonal cottage on raised foundation, app. 40mfs. No outflow PI visible
42	ST	P	1 str cedar seasonal cottage, app. 40mfs. No outflow PI visible.
43	ST	N	1 str yel/brw trim house on raised foundation >200mfs. No outflow PI visible.
44	PI	N	1 1/2 str wht/grn trim house on raised foundation, app. 100mfs. Overflow PI to field according to owner.
45	ST	N	Wht/blk trim mobile home, 1 str wht/red trim house on raised foundation, 1 str yel/red trim house on raised foundation, >300mfs. No outflow PIs visible.
46	ST	N	1 str wht/blk trim house on raised foundation 1 str yel/brw trim house on raised foundation >400mfwc. No outflow PI visible.
47	ST	N	1 1/2 str wht/blk trim house on raised foundation, app. 100mfwc. No outflow PI visible.
48	OH	N	1 str wht house with OH, >100mfwc.
49	PI	D	The community of West Bay. The newer homes in the community have ST with disposal beds which work with varying effectiveness according to residents. Most of the older homes have overflow PIs to the Bay itself, to fields and to WC's. There is one fox farm in the community, <50mfwc. Owner says she puts waste in woods out back and on garden. Residents say a sewer smell is quite evident during the summer. Sample in brook yielded 11,000mpn/100ml. Sample in West Bay just off small WV yielded a count of 90mpn/100ml.
50	ST	P	1 1/2 str wht house and barn, >400mfs, <20mf wc. No outflow PI visible but suspect one.
51	ST	P	1 str grey/wht sided house with 2 sheds, >400mfs, app. 10mfwc. Gravel piled in WC as if to hide PI or LE.
52	ST	P	2 New 1 1/2 str brw log house on raised foundation, 160mfwc. No outflow PI visible.
53	ST	N	1 str wht/brw trim house, >400mfs. No outflow PI visible.
54	NS	N	Seasonal trailer with sewage hauled away.
55	ST	N	1 str wht/blk trim house on raised foundation >300mfs. No outflow PI visible.

56	NP	D	2 str wht/blk trim house on raised foundation with red barn and long fox and mink sheds. 85 foxes and 300 mink. Faeces is spread on fields. WC runs through property. Old ST and overflow PI to field according to owner. (Urqhart).
57	WC	N	One of the WC's with brw siltation according to locals.
58	OH	P	1 str red seasonal cottage with OH app. 60mfs. Fence across the driveway.
59	ST	P	Yel/brw trim A-frame seasonal cottage, app. 60mfs. No outflow PI visible. Gate across the driveway.
60	ST	N	New 1 str stone/red house on raised foundation, app. 100mfs. No outflow PI visible.
61	ST	P	1 str blue seasonal cottage, app. 25mfs. No outflow PI visible.
62	NS	N	2 str blue/wht house on raised foundation. No outflow PI visible.
63	ST	P	1 str org house on posts, app. 40mfwc. No outflow PI visible but sewer smell evident.
64	PI	N	1 1/2 str wht house on stone foundation, app. 200mfs. Overflow PI to field according to owner.
65	NS	N	Cleared area by water as if for tent or trailer.
66	NP	P	Mink ranch. 1 str wht house on raised foundation, app. 300mfs. 4000 mink. Faeces piled in field and spread during the summer. House has overflow PI to field according to owner.
67	NP	P	1 str blue/wht trim house on raised foundation, >250mfs. No outflow PI visible. 3 horses with manure pile beside barn. Given to locals for fertiliser.
68	PI	P	Group of 3 wht houses. One with overflow PI to field according to owner. No other outflow PI's visible. App. 50-180mfs.
69	PI	P	Seasonal trailer, approx. 25mfs. 4in dia PI laying beside trailer, not yet hooked up.
70	ST	P	1 str wht/grn trim seasonal cottage with partially exposed ST. No outflow PI visible. App. 50mfs.
71	PI	P	Wht/brn trim mobile home with overflow PI to DR according to owner, app. 100mfs. Metal and red shed on site.
72	ST	N	New A-frame brw wooden shingled seasonal cottage, app. 110mfs. No outflow PI visible.
73	ST	P	1 str wht/brw trim house on raised foundation <20mfwc, app. 80mfs. NO outflow PI visible.
74	ST	N	Blue/wht trim A-frame seasonal cottage, >100mfs. No outflow PI visible.
75	NP	P	1 1/2 str wht/brw trim old farm house with sheds and large barn, >200mfs, <30mfwc. Old ST with overflow PI to field according to owner. (MacIntosh). 2 cows which graze in field app. 100mfs.
76	ST	N	1 str wht/blue trim house on raised foundation, >200mfs. No outflow PI visible.
77	ST	N	1 str wht/blk trim house on raised foundation, >300mfs. No outflow PI visible.
78	ST	P	yel/red house, old ST drain to DR, 300mfs
79	OH	P	1 sty wht/grn house with OH >300mfs. Also red/grn 1 str house with a shed.
80	ST	P	New 1 str brn stain cottage, app. 50mfs. Blue metal gate across the driveway. No outflow PI visible.
81	ST	P	New 1 str brn stain log cabin, app. 30mfs. A contour septic field bed 20m from cabin but no outflow PI visible.
82	ST	P	New 1 1/2 str grey/wht cape cod house, app. 50mfs. No outflow PI visible.
83	NS	N	5 new building lots on the rhs of the road. No construction has begun at this time.
84	ST	P	New 1 str wht sided cottage, app. 50mfs. No outflow PI visible.
85	OH	N	1 str wht seasonal cottage with OH >100mfs.
86	ST	P	New 1 str brn stain cottage, app. 50m from the brook. No outflow PI visible.
87	ST	P	New 1 str brn log cabin and 2 others under construction. Entire point up for development.

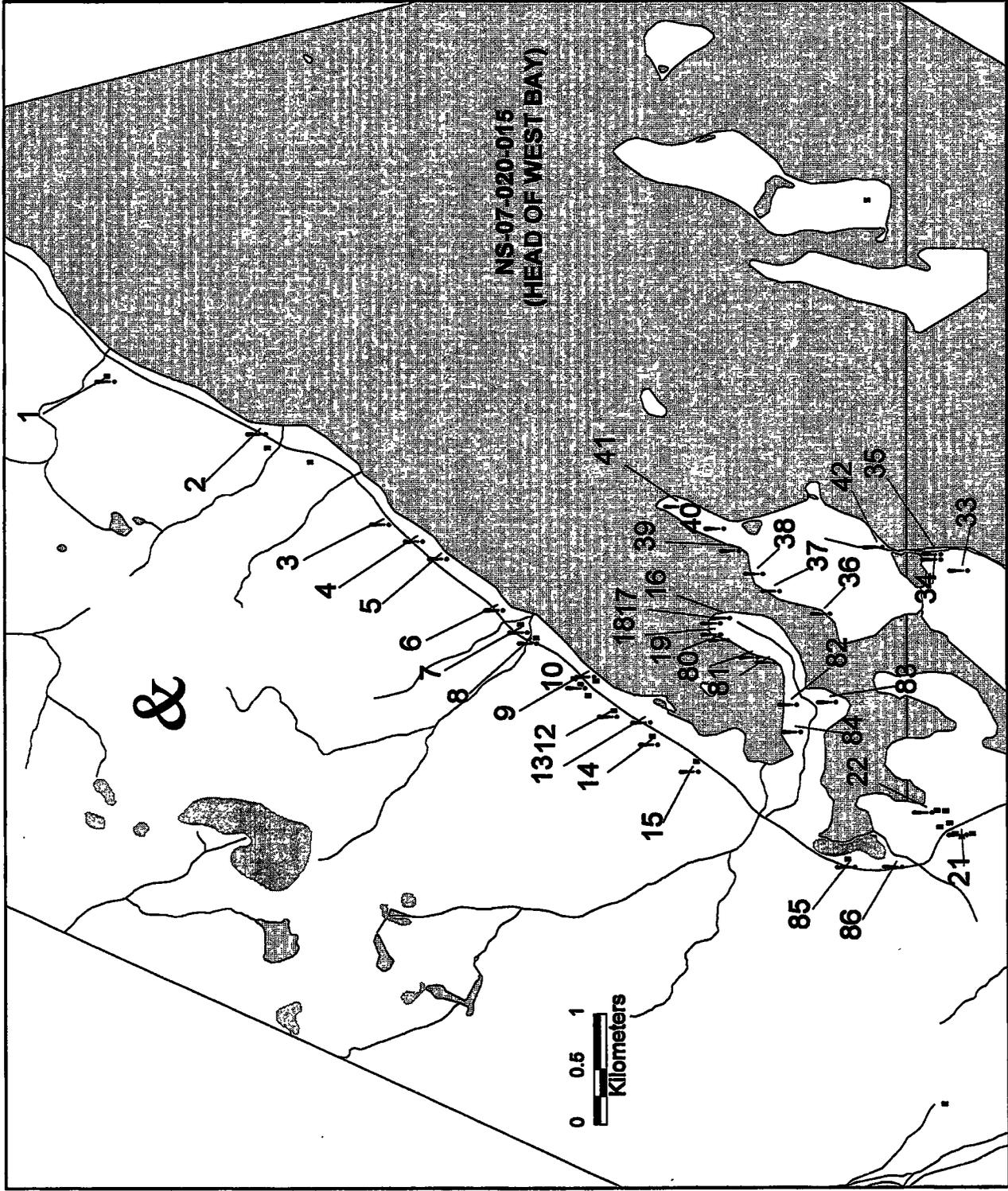


FIGURE 14C. SANTARY OBSERVATION SITE LOCATIONS, WEST BAY(NS-7-020-015)

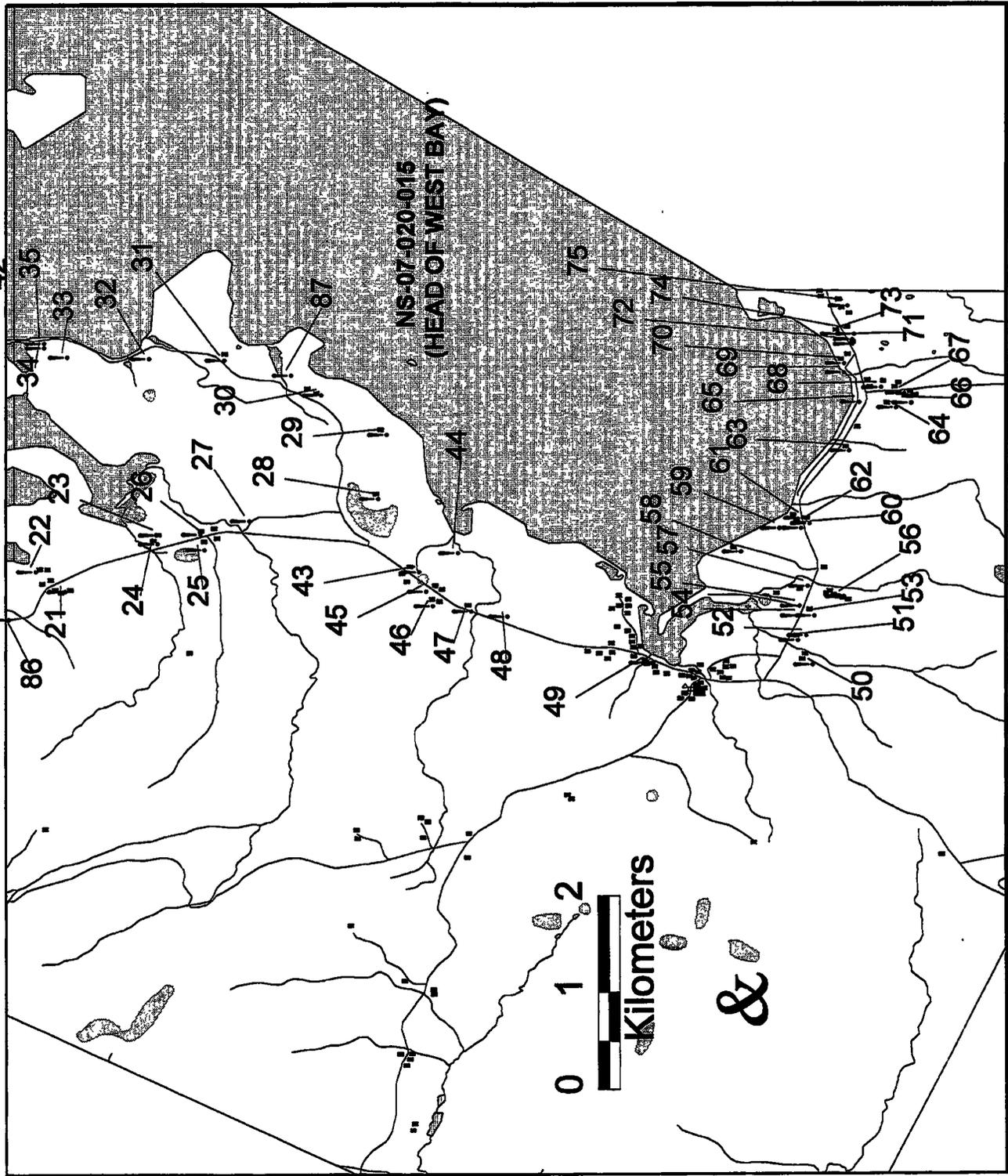


FIGURE 14C(cont.). SANITARY OBSERVATION SITE LOCATIONS, WEST BAY(NS-7-020-015)

Sub-sector Name (Number):

West Bay / Dundee (NS-7-030-001)

Date surveyed:	1992-96
No. of sampling runs:	15
Shellfish classification:	Figure 15A
Sampling station locations:	Figure 15B
Fecal coliform results:	Tables 15A & 15B
Salinity data:	Table 15C
Water temperature data:	Table 15D
Shoreline sanitary observations:	Table 15E & Figure 15C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. A large tourist development, the Dundee Resort and Marina, is located in the subsector. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Richard, 1993b). The current classification (Figure 15A) includes a shellfish closure at Dundee as follows:

Closed

That portion of Black River inside a line drawn from grid reference 4861 6255 on Ballams Point (Ballam Head) to grid reference 4922 6270. Refer to map Port Hawkesbury 11F/11.

Approved

The remaining classified areas of the sub-sector beyond the closure described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 15E) below.

Bacteriological Water Quality

The five key stations (Figure 15B) surveyed on fifteen occasions since 1992 (Tables 15A & 15B) continue to meet the criteria for an approved classification.

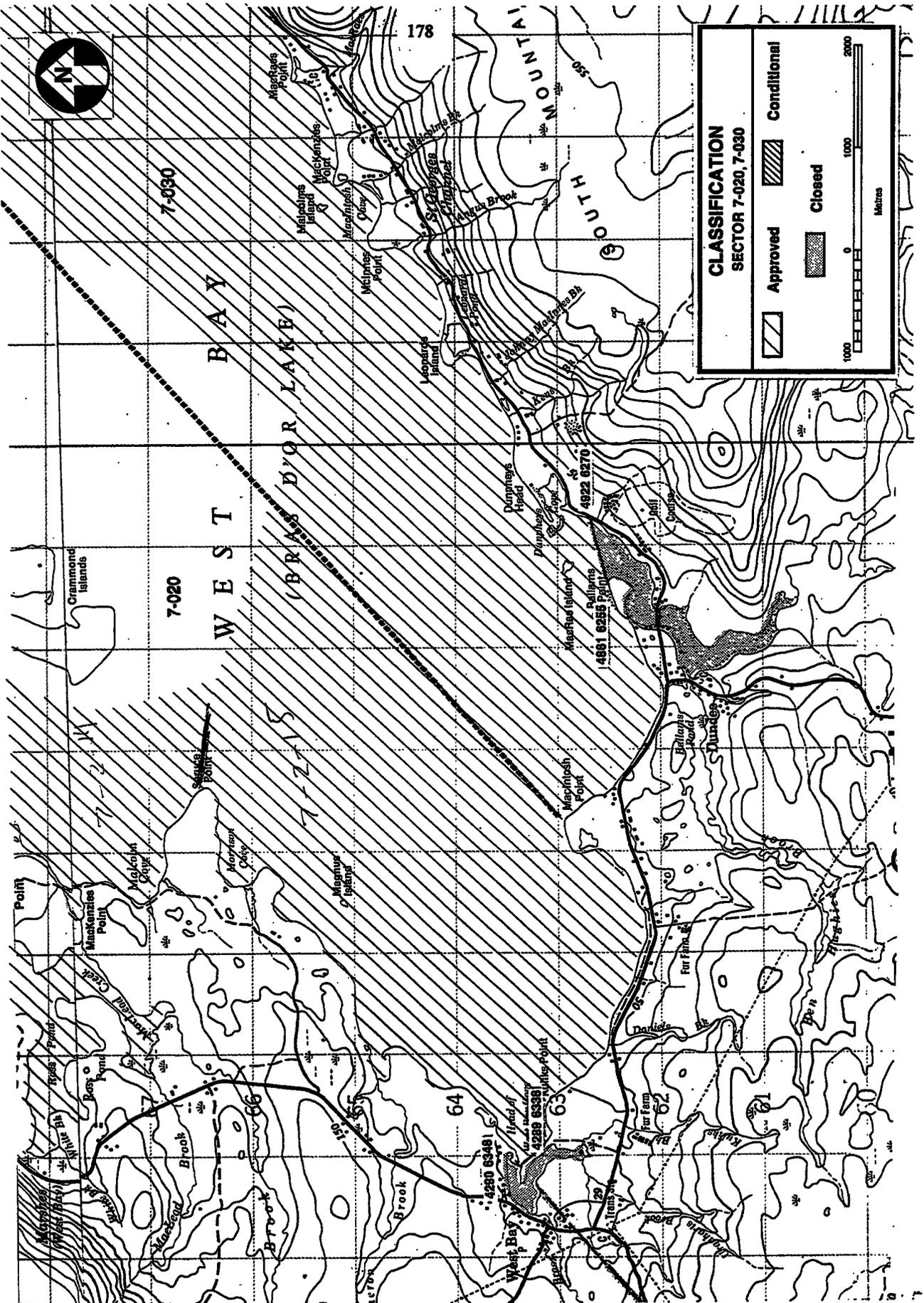


FIGURE 15A. PRESENT SHELLFISH CLASSIFICATION FOR WEST BAY / DUNDEE



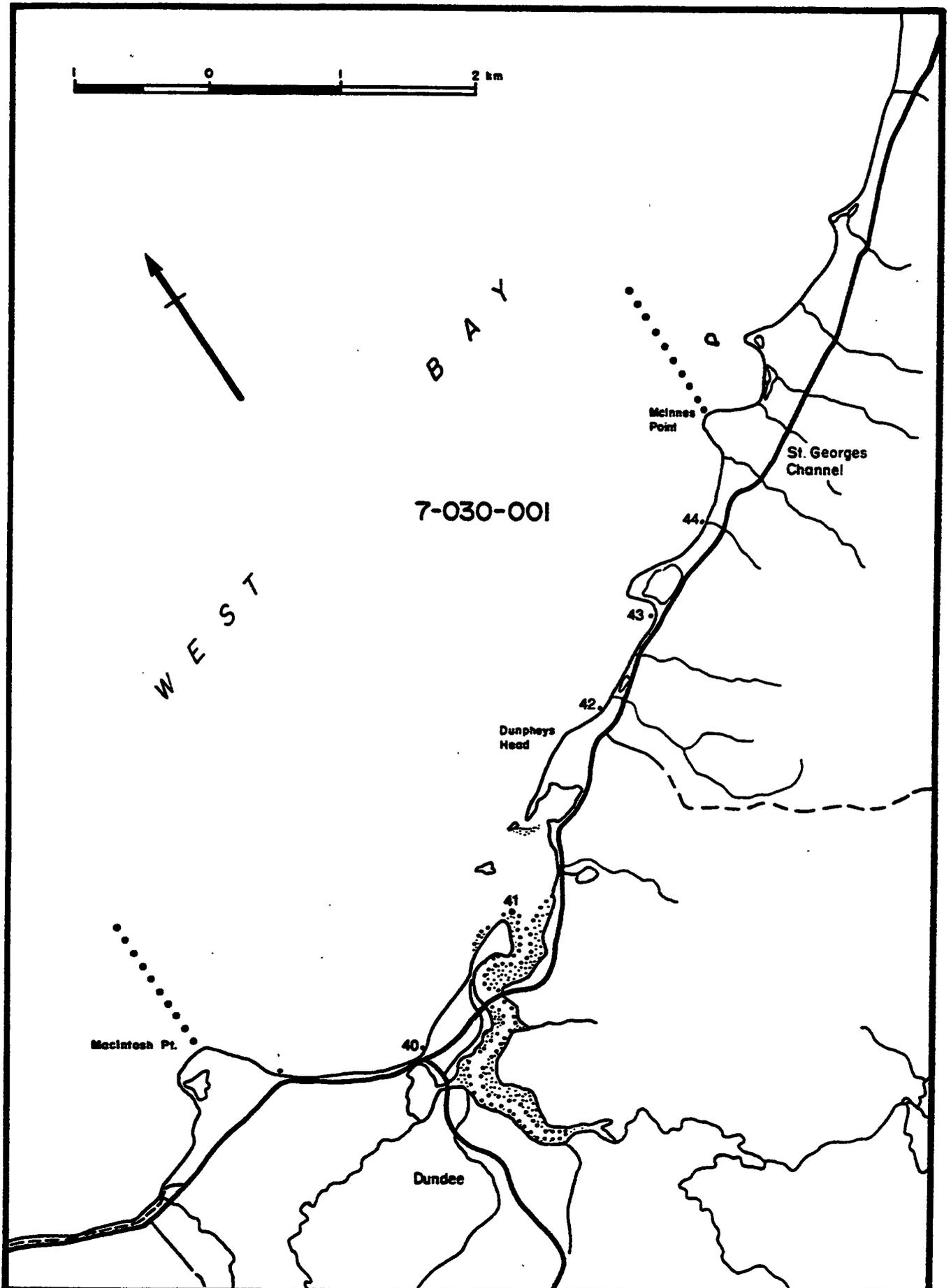


FIGURE 15B. KEY STATION SAMPLING LOCATIONS IN WEST BAY / DUNDEE

TABLE 15A. WEST BAY / DUNDEE(NS-7-030-001) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
40	15	1992-1996	1.9	5	2	1.9	3	0
41	15	1992-1996	1.9	33	2	1.9	7	0
42	15	1992-1996	1.9	1.9	1.9	1.9	1.9	0
43	15	1992-1996	1.9	2	1.9	1.9	2	0
44	15	1992-1996	1.9	2	1.9	1.9	1.9	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 15A) should remain unchanged.

TABLE 15B. WEST BAY / DUNDEE(NS-7-030-001) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	02 Jun 92	05 Jun 92	08 Jun 92	19 Jun 92	09 Jul 92	15 Jul 92	24 Jul 92	29 Jul 92	05 Aug 92	19 Aug 92	06 Jun 96	17 Jun 96	31 Jul 96	21 Aug 96		
40	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	1.9		
41	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	33	1.9		
42	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9		
43	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9		
44	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9		
Tide	HF-HF	MF-MR	HT-HF	MI-HI	MR-HT	MT-MT										
Rain (mm)																
0-24h	0	0	0	0	0	0	0	0	15.4	0	0	0	0	8.7	0	0
0-48h	0	0	0	0	0	0	0	0	0	9.6	0	0	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	0	32.4	0	6.4

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
LT= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MF = Mid Falling;

TABLE 15C. WEST BAY / DUNDEE(NS-7-030-001) - SALINITIES (‰)

Station	02 Jun 92	05 Jun 92	08 Jun 92	19 Jun 92	09 Jul 92	15 Jul 92	24 Jul 92	29 Jul 92	06 Aug 92	19 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
40	21	20	21	20	20	22	20	19	21	20	20	20	20	20	21
41	23	20	20	20	20	22	20	19	20	20	19	20	14	20	20
42	22	20	21	20	20	22	20	20	20	20	22	20	20	20	21
43	22	20	21	20	20	22	20	18	20	20	22	20	20	20	21
44	20	20	20	20	20	19	20	19	20	20	22	20	20	20	20
Tide	HF-HF	MF-MR	HF-HF	MI-HT	MIR-HT	MT-MT									
Rain (mm)															
0-24h	0	0	0	0	0	0	0	0	15.4	0	0	0	0	8.7	0
0-48h	0	0	0	0	0	0	0	0	9.6	0	22	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4

TABLE 15D. WEST BAY / DUNDEE(NS-7-030-001) - WATER TEMPERATURE (°C)

Station	02 Jun 92	05 Jun 92	08 Jun 92	19 Jun 92	09 Jul 92	15 Jul 92	24 Jul 92	29 Jul 92	06 Aug 92	19 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
40	0	10	12	13	0	0	0	0	0	14	18	9	14	15	18
41	0	11	13	13	0	0	17	0	0	14	0	12	15	17	18
42	0	11	13	13	0	0	17	0	0	18	11	11	14	16	19
43	12	11	13	13	0	0	0	18	0	0	11	11	14	17	19
44	0	12	13	13	0	16	0	0	0	0	11	11	14	17	19
Tide	HF-HF	MF-MR	HF-HF	MI-HT	MIR-HT	MT-MT									
Rain (mm)															
0-24h	0	0	0	0	0	0	0	0	15.4	0	0	0	0	8.7	0
0-48h	0	0	0	0	0	0	0	0	9.6	0	22	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	32.4	0	6.4

TABLE 15E. SHORELINE SANITARY SURVEY:

NS-07-030-001:

WEST BAY/DUNDEE
FROM MACINTOSH POINT TO MCINNES POINT

INSPECTOR: S. WILKIE

DATE: AUGUST 26, 1993 REVIEWED: AUGUST, 1996

Refer to: Figure 15D for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with residences and seasonal cottages. Area underlain with clay. A few residents noted that the streams are turning brown and believe logging operations are the cause. There are a variety of sanitary sources that have a definite or potential for impacting on water quality along this shore; outhouses (sites 2, 4, 24, 36 & 41), non-point sources (sites 14, 33), and various pipes from some residences (sites 28, 32, 37 & 56). A large resort complex, Dundee Resort (site 27) may also have some degree of impact from the numerous pleasure craft and cottages found near here. As a result of reviewing this area in 1993, three new structures have been added; (sites 11a, 43a, 48a).
1	NS	N	Abandoned cottage.
2	OH	P	Blue seasonal bus with OH app. 40mfs which is no longer present in 1993.
3	ST	N	1 str wht house on raised foundation, >200mfs. No outflow PI visible.
4	OH	N	Seasonal trailer with OH, >200mfs.
5	ST	N	1 str grey/wht trim seasonal cottage, app. 100mfs. No outflow PI visible.
6	ST	P	1 str brw wooden shingled house on raised foundation, app. 30mfs. No outflow PI visible.
7	NS	N	Public beach.
8	NS	N	Abandoned org seasonal cottage, <15mfs.
9	ST	N	Seasonal red cottage, windows boarded up, app. 100mfs. No outflow PI visible.
10	ST	N	1 str wht/blue trim house on raised foundation, app. 80mfpnd. No outflow PI visible.
11	ST	N	1 str wht house on raised foundation, 1 str brw house on raised foundation, app. 10-40mfs (Pond). No outflow PI visible.
12	NS	N	Church and abandoned seasonal cottage
13	ST	N	1 1/2 str wht house on stone foundation, app. 100mfpnd. No outflow PI visible.
14	NP	P	Beige mobile home with many sheds, barn and abandoned house, app. 150mfs. 6 cows and 1 horse which graze in fields. No outflow PI visible. (Smith and MacDonald).
15	ST	N	1 1/2 str wht/blk trim house on stone foundation, app. 100mfpnd. No outflow PI visible.
16	ST	N	1 str brw shingled house with old sheds, app. 70mfs. No outflow PI visible.
17	ST	P	1 str blue seasonal cottage, <10mfs. No outflow PI visible.
18	ST	P	2 seasonal trailers, app. 50mfpnd. No outflow PI visible.
19	ST	N	1 str wht house on raised foundation, >100mfs. No outflow PI visible.
20	ST	N	2 str brw wooden shingled house on raised foundation, >100mfs. No outflow PI visible.
21	ST	N	2 str brw wooden shingled house on raised foundation, >80mfs. No outflow PI visible.
22	ST	P	1 str wht house on raised foundation with red shed <5mfs. No outflow PI visible.
23	ST	P	1 1/2 str cedar seasonal cottage, app. 20mfs. No outflow PI visible. (Rankin).

24	OH	P	1 str turquoise/wht trim seasonal cottage with OH app.45mfs.
25	ST	N	1 str grey/yel trim seasonal cottage, app. 50mfs. No outflow PI visible.
26	ST	P	1 str wht seasonal cottage, app. 30mfs. No outflow PI visible.
27	WV	P	Dundee Resort Marina. 2 seasonal cottages, office, and dumping station for boats all on large ST and disposal bed. No outflow PI visible. A number of sheds and many pleasure craft docked at numerous WV's. It was mentioned by the people in the area that most boats dump their sewage here and throughout the lake. Sample at pier 230mpn/100ml.
28	PI	P	2 str wht/blue trim house on raised foundation, app. 90mfs. 4 in dia overflow PI to ravine according to owner.
29	ST	N	Grey/wht seasonal cottage, app. 15mfs.
30	ST	P	1 str brw/yel trim seasonal cottage, app.20mfs. No outflow PI visible.
31	ST	P	1 str brw seasonal cottage on raised foundation, app. 25mfs. No outflow PI visible
32	PI	P	2 str wht/blk trim seasonal house on raised foundation with garage. 12in metal PI on shore with sewage smell. No effluent visible.
33	NP	P	2 str wht/blk trim house on raised foundation with large barn. Overflow PI to ravine according to owner. Usually 60 cows which graze in fields. app. 150mfs.
34	LE	P	1 str wht house on raised foundation, app. 60mfs. No outflow PI visible but wet area and smell near ST.
35	ST	N	1 str wht/brw trim house, app. 120mfs. No outflow PI visible. (Urquart).
36	OH	P	2, 1 str yel/wht trim seasonal cottage, app. 10mfs. 2 OH's app. 25mfs. 2 WV's. 2 ST's. No outflow PI's visible.
37	PI	P	Dundee Resort and Golf Course. Entire resort on large ST and disposal bed, <40mfs, <10mfwc. 6in dia grn PI to WC with liquid drainage. Sample at PI yielded 0mpn/100ml.
38	ST	N	1 1/2 str blue seasonal cottage, >100mfs. No outflow PI visible.
39	ST	N	2 str red/wht trim seasonal cottage on raised foundation, >100mfs. No outflow PI visible. (Gunn).
40	NS	N	Red barn used for storage.
41	OH	P	1 str blk log seasonal cottage, 3, 1 str wht seasonal cottages, app. 40-60mfs. All with OH's.
42	ST	N	2 mobile homes on hill, >250mfs. No outflow PI visible.
43	NS	N	Abandoned school house and 1 1/2 str house.
44	ST	N	New 1 1/2 str brw wooden shingled house on raised foundation, >100mfs. No outflow PI visible.
45	ST	N	1 str wht/blk trim house on raised foundation app. 120mfs. No outflow PI visible.
46	ST	P	1 str wht seasonal cottage on raised foundation, <5mfwc. No outflow PI visible.
47	ST	P	1 1/2 str wht/red trim house on raised foundation with sheds and barns, app. 60mfwc. No outflow PI visible. Lots of gravel here.
48	PI	P	1 str beige/wht trim, 1 str wht, seasonal cottages with 3in dia PI to WC. No eff visible. App. 40mfs.
49	ST	P	1 str wht/grn cottage, app. 50mfs. No outflow PI visible.
50	ST	P	1 str red seasonal cottage, app. 80mfs. No outflow PI visible.
51	ST	P	1 str wht/blue seasonal cottage, app. 30mfpond, <10mfwc. No outflow PI visible.
52	ST	N	1 str wht/blk shuddered house on raised foundation with large garage, >100mfpond. No outflow PI visible.
53	ST	N	1 1/2 str wht/blue shuddered house with shed on raised foundation, >100mfpond. No outflow PI visible but ST area wet with springs.
54	ST	N	1 1/2 str wht/blue with 2 barns and shed, app 100mfs. No outflow PI visible.
55	ST	P	Wht/red trim mobile home, app. 25mfwc. No outflow PI visible.
56	ST	P	1 str wht/blue trim seasonal cottage, app. 60mfs. No outflow PI visible. <10mfwc.
57	PI	P	1 1/2 str wht house on stone foundation with barn. Old ST with overflow to field according to owner. Manure used on garden and in fields, >200mfs. (MacIntosh).

58	ST	N	2 new brw wooden 1 1/2 str houses on raised foundation, >100mfs. No outflow PI visible.
59	ST	N	1 str wht hall, >100mfs. No outflow PI visible.
60	ST	N	New 1 1/2 str brw wooden shingled house on raised foundation, >100mfs, <50mfwc. No outflow PI visible.
61	ST	P	1 1/2 str wht house on raised foundation, >100mfs, <10mfwc. No outflow PI visible.
62	ST	P	1 str brn/wht house with rock chimney on raised foundation, app. 30mfs. Property is for sale.
63	ST	P	Bras D'or Shores Resort. New 3 str beige/wht complex on a raised foundation.

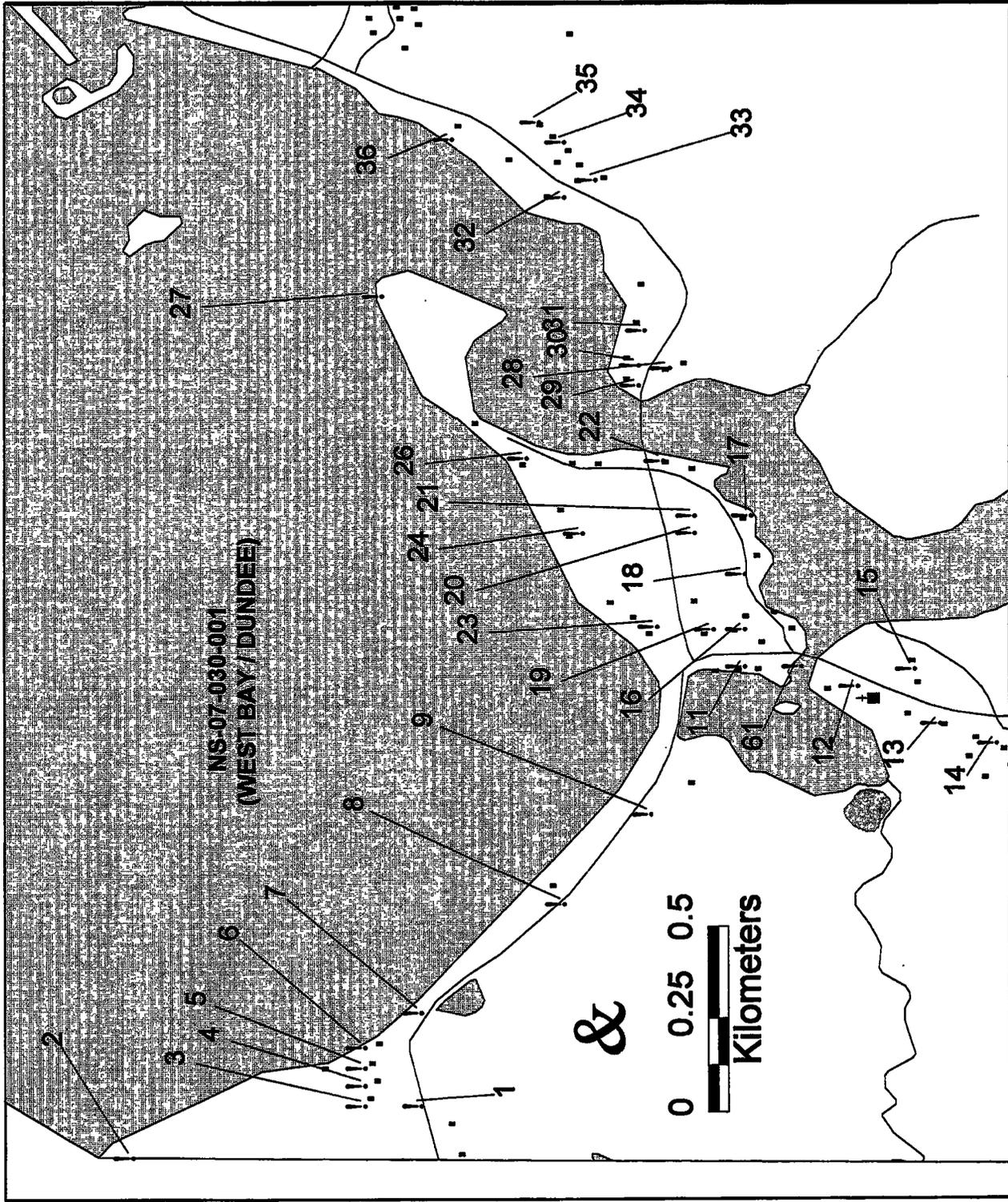


FIGURE 15C. SANTARY OBSERVATION SITE LOCATIONS, WEST BAY / DUNDEE (NS-7-030-001)

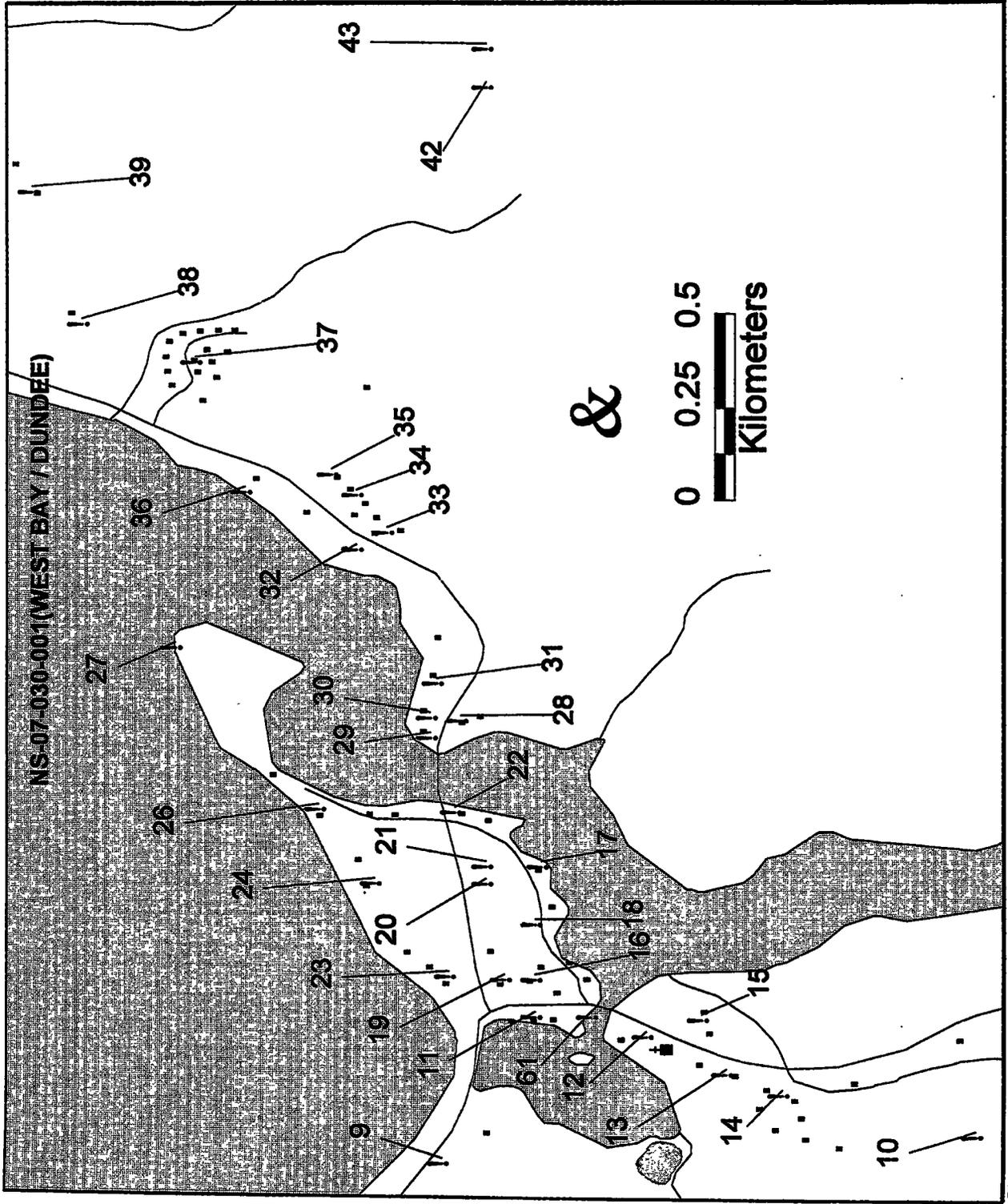


FIGURE 15C (cont.). SANITARY OBSERVATION SITE LOCATIONS, WEST BAY / DUNDEE (NS-7-030-001)

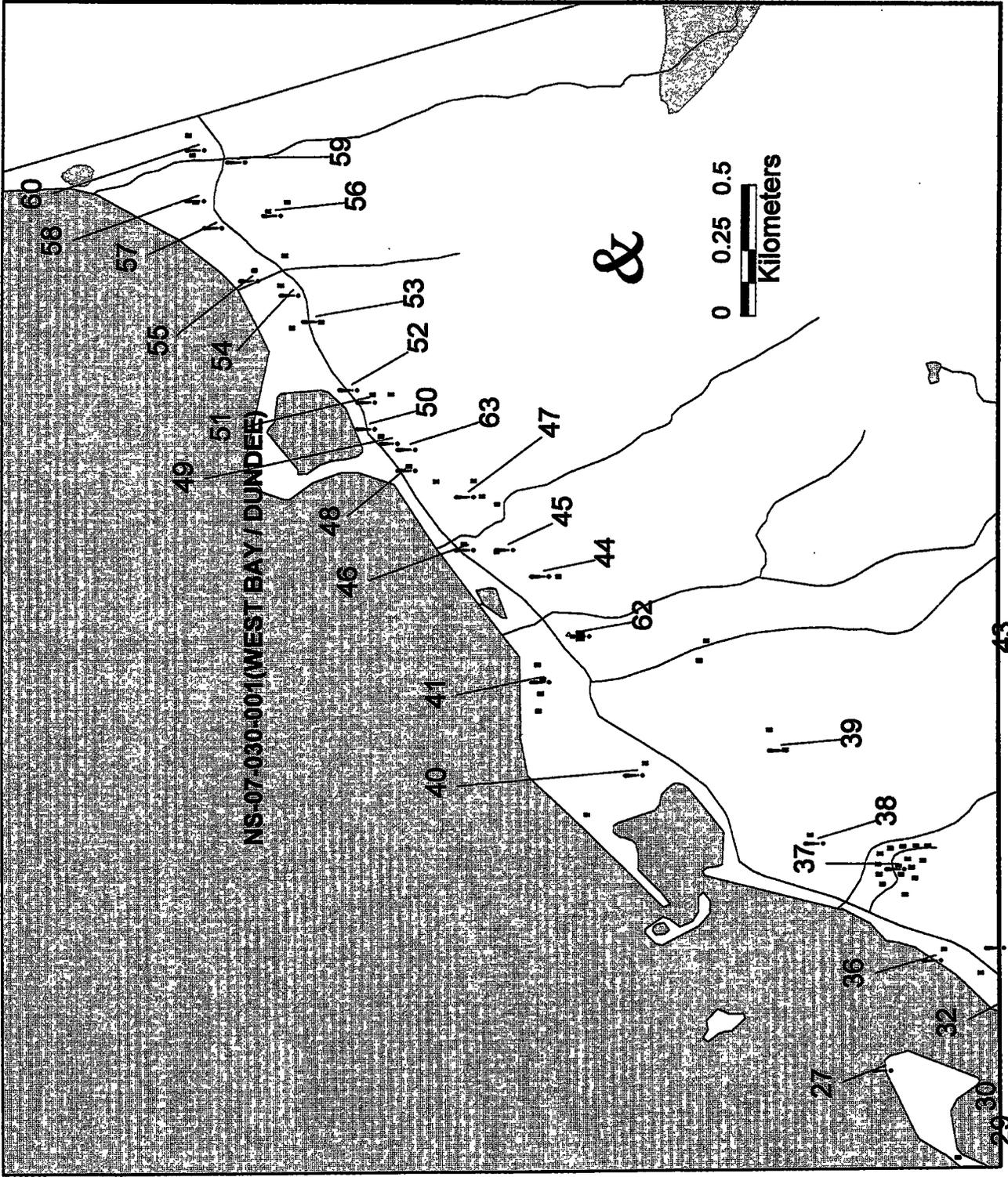


FIGURE 15C (cont.), SANITARY OBSERVATION SITE LOCATIONS, WEST BAY / DUNDEE (NS-7-030-001)

Sub-sector Name (Number):

West Bay / Pringle Harbour (NS-7-030-002)

Date surveyed:	1992-96
No. of sampling runs:	15
Shellfish classification:	Figure 16A
Sampling station locations:	Figure 16B
Fecal coliform results:	Tables 16A & 16B
Salinity data:	Table 16C
Water temperature data:	Table 16D
Shoreline sanitary observations:	Table 16E & Figure 16C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Richard, 1993b). The current classification (Figure 16A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 16E) below.

Bacteriological Water Quality

The seven key stations (Figure 16B) surveyed on fifteen occasions since 1992 (Tables 16A & 16B) continue to meet the criteria for an approved classification.

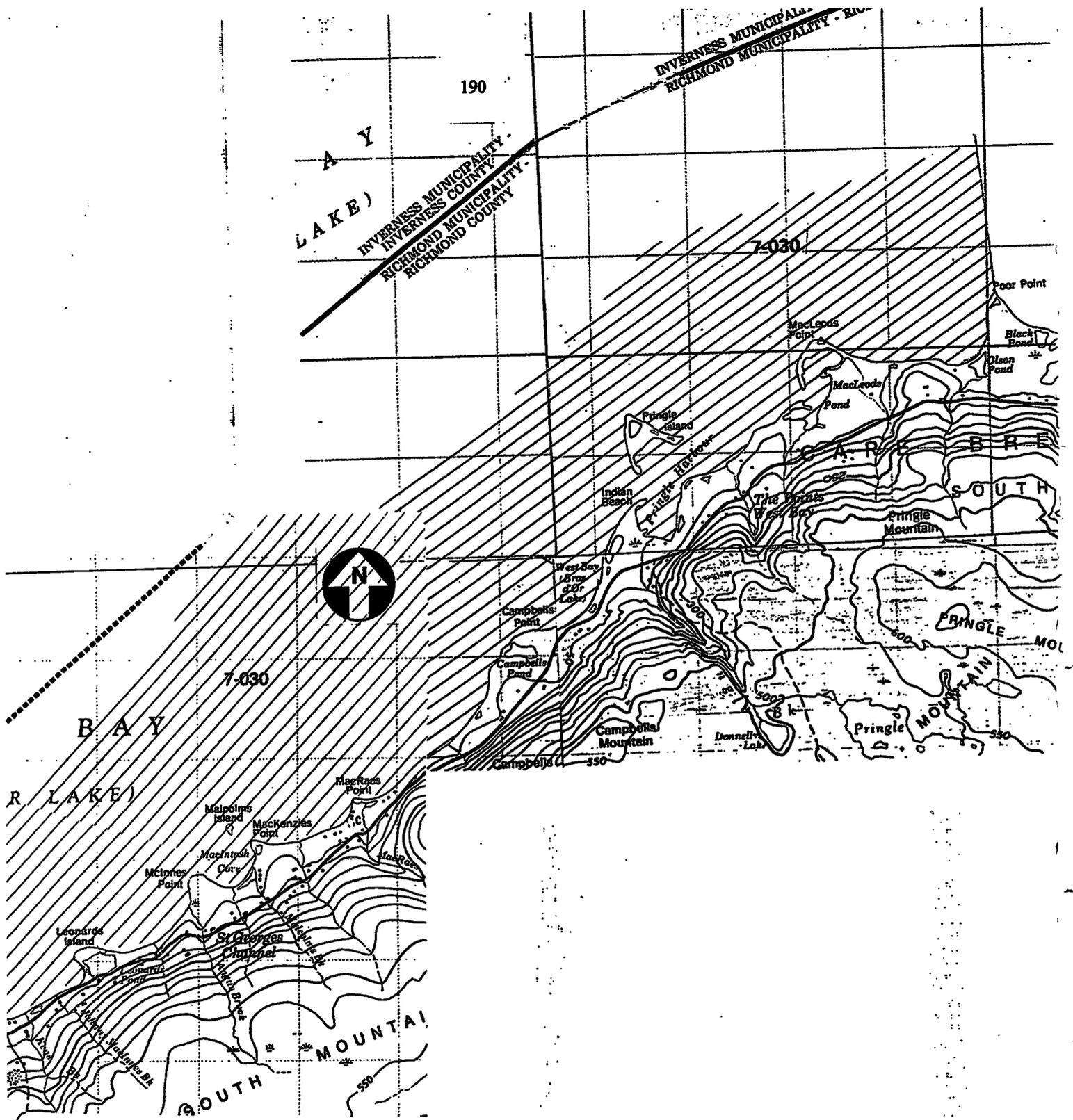
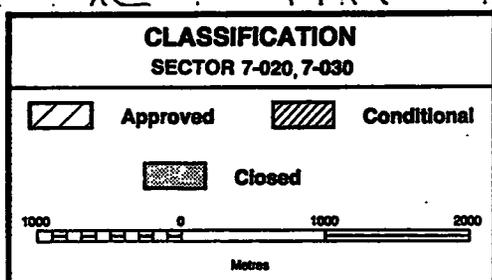


FIGURE 16A. PRESENT SHELLFISH CLASSIFICATION FOR WEST BAY / PRINGLE HARBOUR



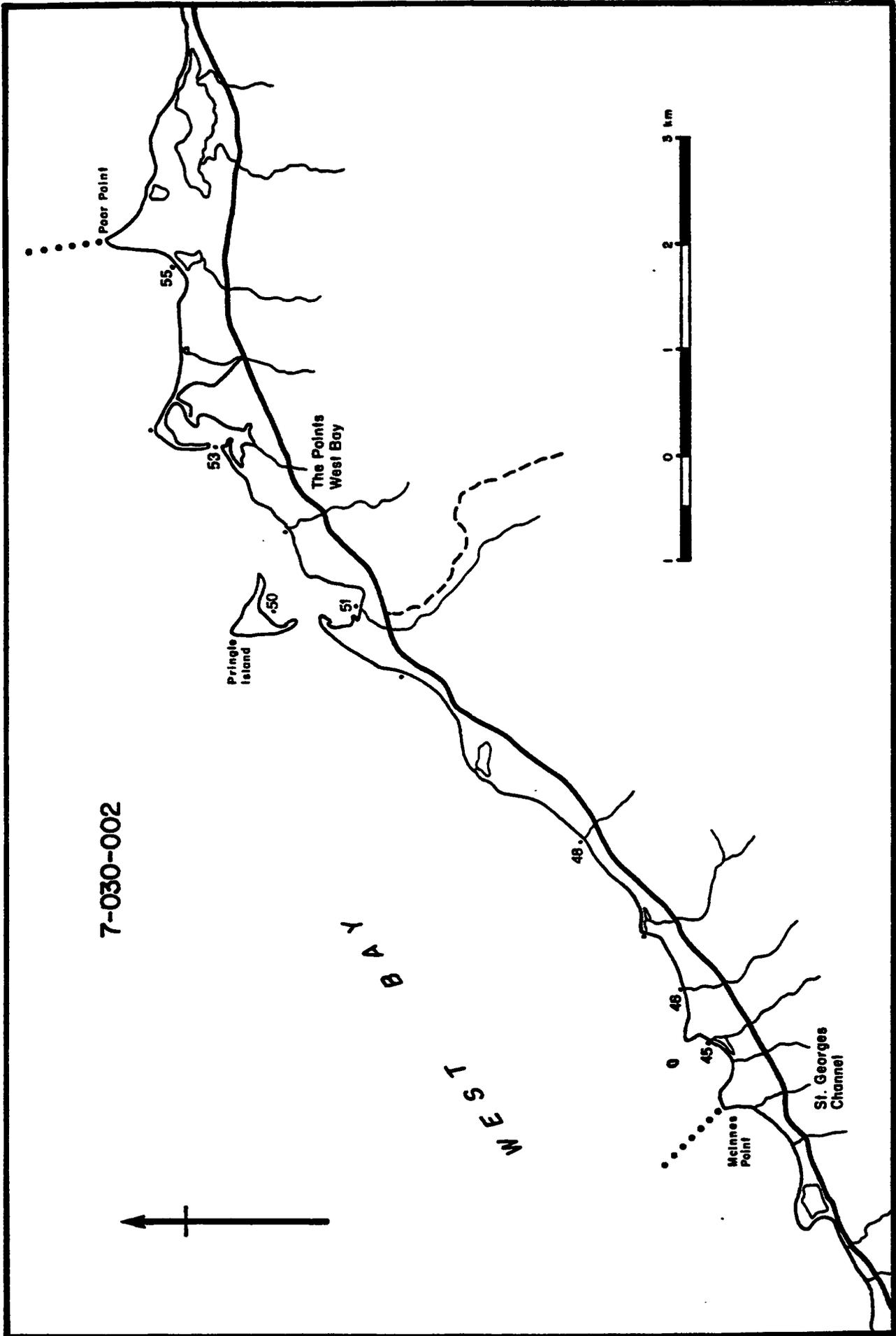


FIGURE 16B. KEY STATION SAMPLING LOCATIONS IN WEST BAY / PRINGLE HARBOUR

TABLE 16A. WEST BAY / PRINGLE HARBOUR (NS-7-030-002) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
45	15	1992-1996	1.9	17	2	1.9	5	0
46	15	1992-1996	1.9	2	1.9	1.9	2	0
48	15	1992-1996	1.9	31	2	1.9	6	0
50	15	1992-1996	1.9	4	2	1.9	3	0
51	15	1992-1996	1.9	11	2	1.9	5	0
53	15	1992-1996	1.9	13	3	1.9	5	0
55	15	1992-1996	1.9	2	1.9	1.9	2	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 16A) should remain unchanged.

TABLE 16B. WEST BAY / PRINGLE HARBOUR (NS-7-030-002) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	02 Jun 92	05 Jun 92	08 Jun 92	19 Jun 92	09 Jul 92	15 Jul 92	24 Jul 92	29 Jul 92	06 Aug 92	19 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96	
45	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9
46	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	1.9	2	1.9	2	1.9	2	1.9
48	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	1.9	2	1.9	2	1.9	1.9	1.9
50	4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2
51	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9
53	1.9	1.9	1.9	1.9	13	1.9	2	1.9	1.9	1.9	2	1.9	5	6	1.9	1.9
55	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	1.9	1.9	1.9	2	2	1.9	1.9
Tide	HF-HF	MF-MR	HF-HF	HT-HF	MT-HT	MR-HT	MT-MT									
Rain (mm)	0	0	0	0	0	0	0	15.4	0	0	0	0	0	8.7	0	0
0-24h	0	0	0	0	0	0	0	0	0	0	22	0	0	32.4	0	6.4
0-48h	0	0	0	0	0	0	0	0	0	0	22.8	0	0	32.4	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	0	32.4	0	6.4

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
LT= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MF = Mid Falling;

TABLE 16C. WEST BAY / PRINGLE HARBOUR (NS-7-030-002) - SALINITIES (‰)

Station	02 Jun 92	05 Jun 92	08 Jun 92	19 Jun 92	09 Jul 92	15 Jul 92	24 Jul 92	29 Jul 92	06 Aug 92	19 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
45	20	21	21	20	20	20	20	20	20	22	20	20	20	20	20
46	20	21	21	20	20	20	20	20	20	22	20	20	20	20	20
48	20	21	21	20	20	20	20	21	20	22	20	20	20	20	20
50	20	21	21	21	20	20	20	22	20	22	20	20	20	20	20
51	20	21	21	21	20	20	20	22	20	21	20	20	20	20	20
53	20	20	20	21	20	20	20	22	20	20	20	20	18	20	20
55	20	21	21	21	20	20	20	24	20	20	20	20	20	20	20

Tide	HF-HF	MF-MR	HT-HF	MT-HT	MIR-HT	MT-MT									
Rain (mm)															
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-48h	0	0	0	0	0	0	0	0	0	0	22	0	0	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	0	0	6.4

TABLE 16D. WEST BAY / PRINGLE HARBOUR (NS-7-030-002) - WATER TEMPERATURE (°C)

Station	02 Jun 92	05 Jun 92	08 Jun 92	19 Jun 92	09 Jul 92	15 Jul 92	24 Jul 92	29 Jul 92	06 Aug 92	19 Aug 92	06 Jun 96	17 Jun 96	17 Jul 96	31 Jul 96	21 Aug 96
45	0	12	14	14	0	0	0	0	0	0	14	14	17	19	21
46	0	12	13	13	0	0	0	0	0	0	14	14	18	20	21
48	0	12	14	14	0	0	18	0	0	0	12	12	17	20	22
50	0	12	14	14	0	0	16	0	0	0	11	11	18	20	22
51	0	12	13	13	0	0	0	0	15	0	14	14	16	19	22
53	0	14	17	17	15	0	17	0	0	0	14	14	18	19	22
55	0	11	15	15	0	0	0	0	0	0	13	13	18	19	22

Tide	HF-HF	MF-MR	HT-HF	MT-HT	MIR-HT	MT-MT									
Rain (mm)															
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-48h	0	0	0	0	0	0	0	0	0	0	22	0	0	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	22.8	0	0	0	6.4

TABLE 16E. SHORELINE SANITARY SURVEY:

NS-07-030-002: WEST BAY/PRINGLE HARBOUR
 FROM MCINNES POINT TO POOR POINT
 S.WILKIE
 INSPECTOR: AUGUST, 20, 1993 REVIEWED: AUGUST, 1996
 COMPREHENSIVE:

Refer to: Figure 16C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: This area has several springs throughout and a predominate clay soil. Mostly populated with seasonal cottages along shoreline that appear to have old ST no beds or OH's. A few hobby farms may be found here also. For the remaining shoreline within this subsector, there is very little current development for cottages and the few structures noted were 400 meters or greater from the main receiving waters. The sources that are believed to be of significant impact are situated near McInnis Point and are variable in nature; non-point sources (sites 1, 12 & 13), outhouses (site 4) or drainage/overflow pipes (site 4, 9 & 11). No other significant sources were noted along the shore with the exception of one additional mobile home (site 1a).
1	NP	D	A 1 1/2 sty wht house, 1 sty wht cottage and a wht shed also 1 large barn. Serviced by a old ST with overflow to ditch than to stream. There are 7 cattil grazing in field, approx. 50mfs and a manure pile 15mfwc. This would flow to MacIntosh Cove (St. Georges Channel).
2	ST	P	A 1 sty red/wht house, stone foundation, ST/DB 25mf Maicolms Brook.
3	ST	P	In community of St Georges Channel, 1sty wht/brn seasonal home, ST/DB, 40mf brook.
4	PI	P	A gm/wht mobile home with 4"PI to ground, no effluent seen though area is wet. Approx 80mf brook.
5	OH	P	A group of 6 cottages with 5 OH's, some have drainage pipes. Distance to a small pond near MacIntosh Cove is 5m to 80m. Local typography drains toward pond.
6	ST	N	A ST/DB at 2 sty wht house, 100mfs
7	ST	N	The Towers' residence, 1 sty red/wht seasonal home, 200mfs with ST/DB.
8	ST	N	A yel mobile home, ST/DB, 5mfwc, 200mfs.
9	ST	P	The overflow pipe from a old ST at 1 sty wht/grn cottage goes to a ditch, 200mfs.
10	ST	N	A 1sty wht cottage, 200mfs
11	PI	P	Small trailer with 4"PI to wc than to shore near MacKenzies Pt.
12	NP	P	A 1 1/2 sty wht/red house, sheds, 1 barn and 1 horse in field, 5mfs. Serviced by ST/DB
13	NP	P	A 2 sty wht house, large barn, with 3 cows in field, 30mfwc, 100mfs.
14	OH	P	A wht/red cottage with OH, 150mfs.
15	ST	N	A 2 sty gry/wht house, 150mfs, ST/DB.
16	ST	N	Two, 1 sty homes, ST/DB, 80-150mfs.
17	NS	N	Two, 1 sty cottages with no pipes or OH's
18	ST	N	A 1 sty wht/grn house, ST/DB, 200mfs
19	ST	N	A 1 1/2 sty gry/wht house, ST/DB, 100mfs
20	OH	N	A 1 sty yel house with OH, 100mfs.
21	ST	N	Seasonal cottage with ST and overflow to field, 200mfs.
22	ST	P	A wht/grn mobile home, 50mfs, ST/DB
23	ST	P	New beige/wht mobile home, app. 100mfs. Red shed on the lhs of the property. No outflow PI visible.

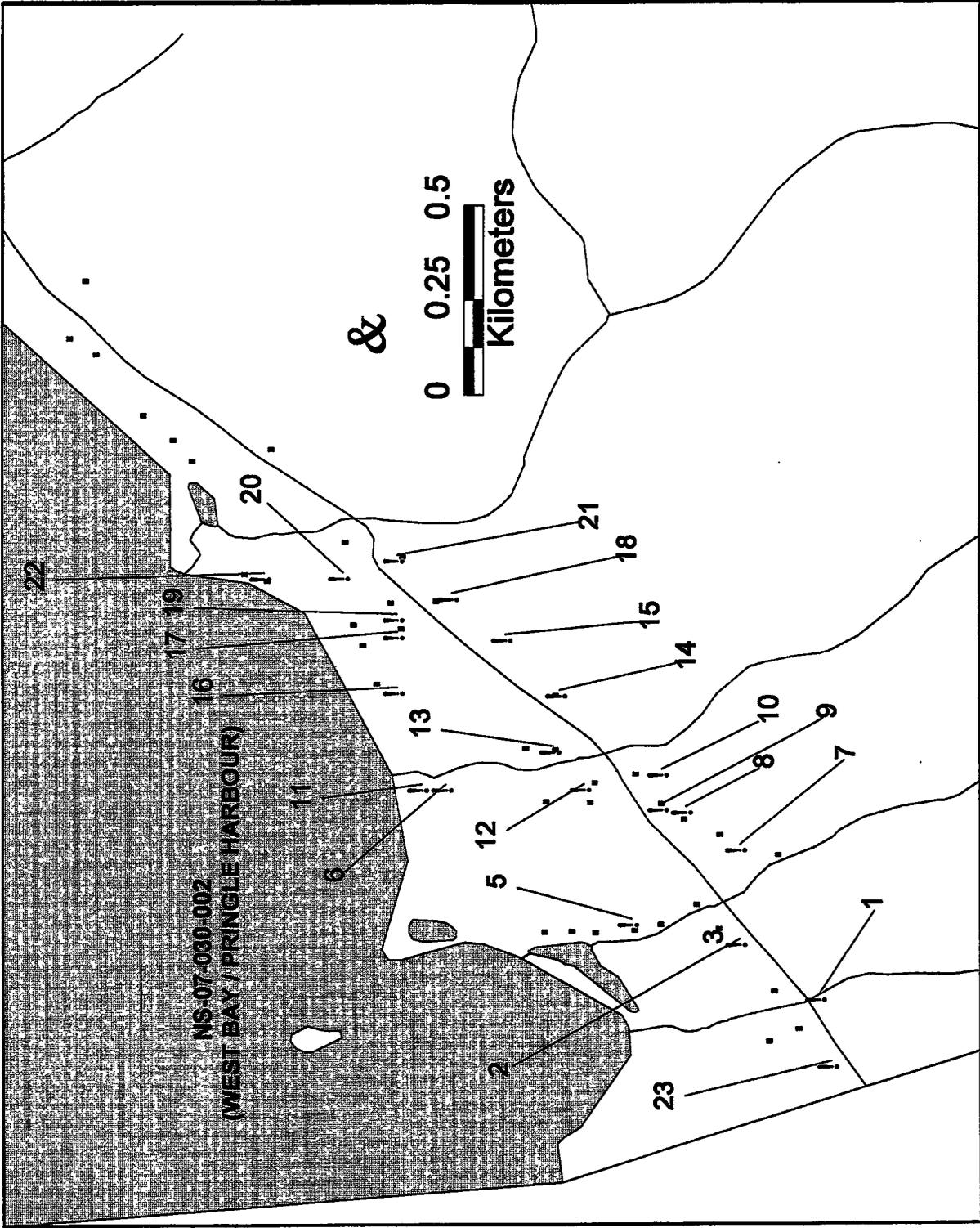


FIGURE 16C. SANITARY OBSERVATION SITE LOCATIONS, WEST BAY / PRINGLE HARBOUR (NS-7-030-002)

Sub-sector Name (Number):

St. Peters Inlet / Chapel Island (NS-7-030-004)

Date surveyed:	1992-95
No. of sampling runs:	15
Shellfish classification:	Figure 17A
Sampling station locations:	Figure 17B
Fecal coliform results:	Tables 17A & 17B
Salinity data:	Table 17C
Water temperature data:	Table 17D
Shoreline sanitary observations:	Table 17E & Figure 17C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The subsector includes the First Nations Chapel Island community. Shellfish culture is active in the area, several shellfish leases have been issued and more are pending. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Richard, 1993c). The current classification (Figure 17A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 17E) below.

Bacteriological Water Quality

The twelve key stations (Figure 17B) surveyed on approximately fifteen occasions since 1992 (Tables 17A & 17B) continue to meet the criteria for an approved classification. . Marginally elevated fecal coliform levels have been observed periodically at stations twenty-nine and thirty-one, but no change in classification is warranted.

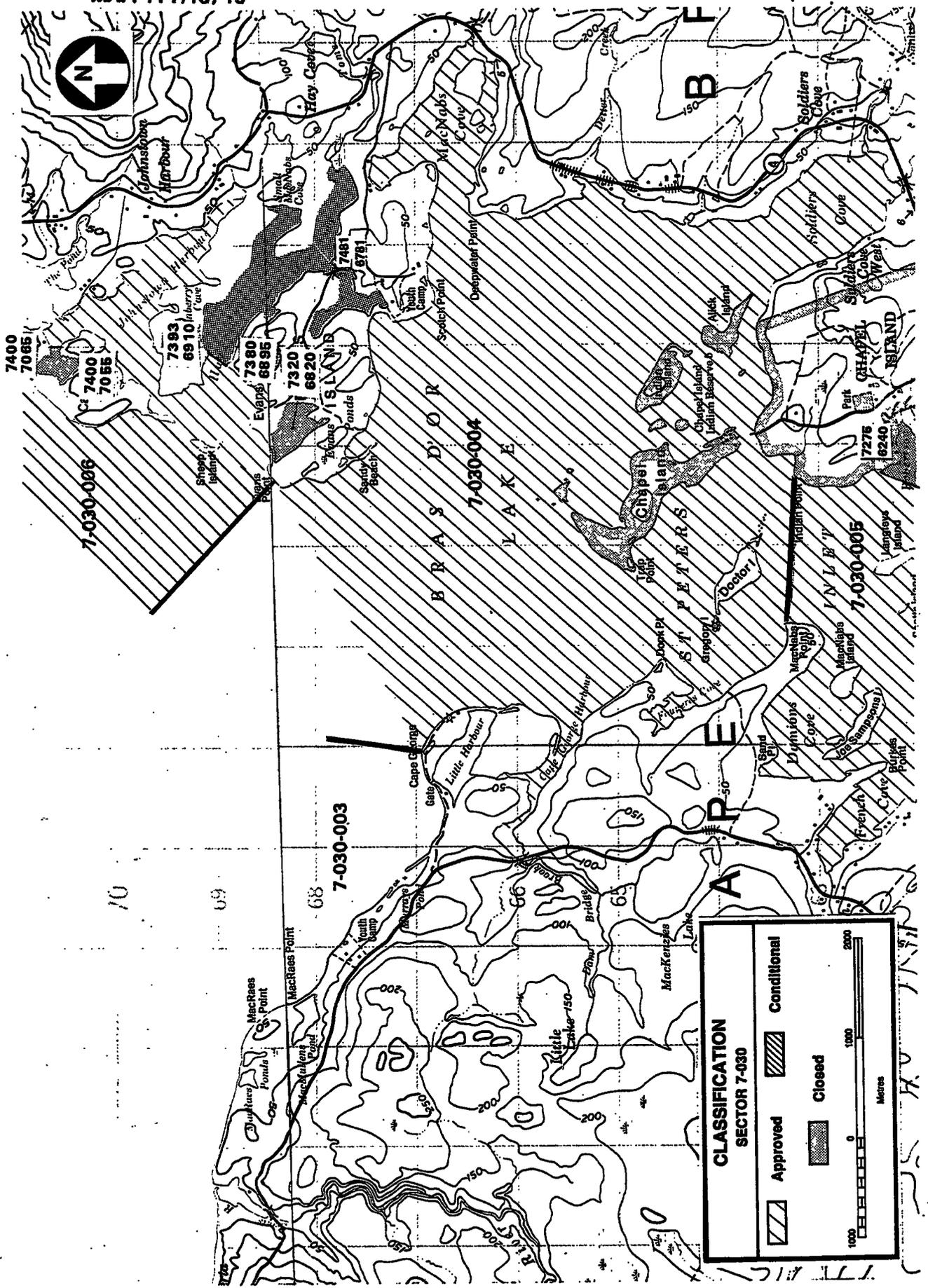


FIGURE 17A. PRESENT SHELLFISH CLASSIFICATION FOR ST. PETERS INLET / CHAPEL ISLAND



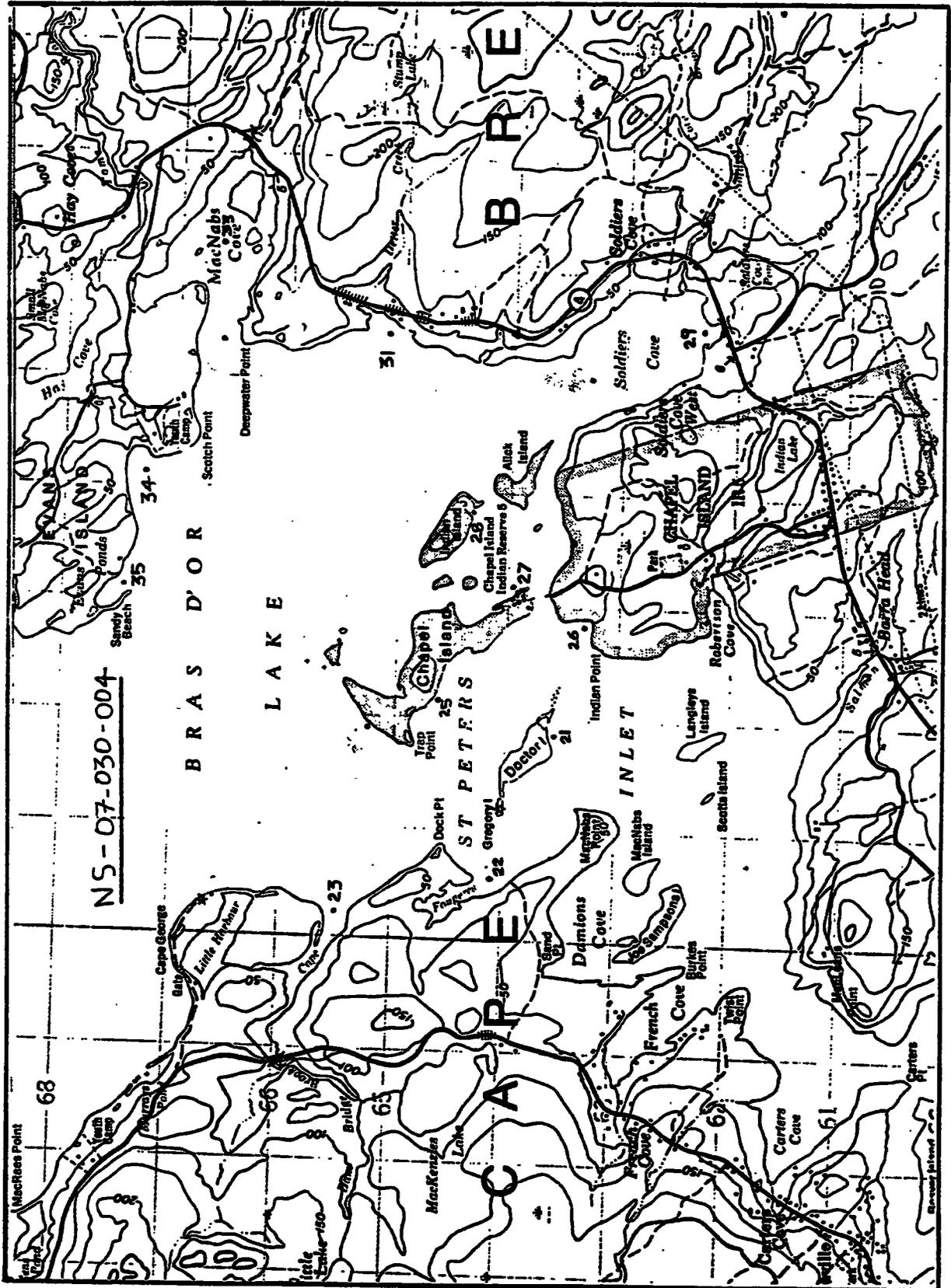


FIGURE 17B. KEY STATION SAMPLING LOCATIONS IN ST. PETERS INLET / CHAPEL ISLAND

TABLE 17A. ST. PETERS INLET / CHAPEL ISLAND (NS-7-030-004) - FECAL COLIFORM SUMMARY STATISTI

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
21	14	1992-1996	1.9	49	2	1.9	7	7
22	15	1992-1996	1.9	17	2	1.9	5	0
23	15	1992-1996	1.9	79	3	1.9	9	7
25	15	1992-1996	1.9	11	2	1.9	4	0
26	15	1992-1996	1.9	11	3	1.9	5	0
27	15	1992-1996	1.9	79	3	1.9	10	7
28	15	1992-1996	1.9	5	2	1.9	3	0
29	15	1992-1996	1.9	49	4	1.9	17	13
31	14	1992-1996	1.9	64	3	1.9	15	14
33	15	1992-1996	1.9	46	3	1.9	9	7
34	15	1992-1996	1.9	79	3	1.9	13	7
35	15	1992-1996	1.9	2	1.9	1.9	2	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 17A) should remain unchanged.

TABLE 17C. ST. PETERS INLET / CHAPEL ISLAND (NS-7-030-004) - SALINITIES (‰)

Station	20 May 92	04 Jun 92	10 Jun 92	15 Jun 92	19 Jun 92	26 Jun 92	11 Jul 92	15 Jul 92	24 Jul 92	28 Jul 92	28 May 96	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96	
21		21	20	22	20	20	18	20	20	18	20	20	20	20	21	20
22		20	21	22	20	20	18	20	20	20	20	20	20	19	21	20
23		21	20	20	20	20	19	21	22	20	20	20	20	20	21	20
25		20	20	22	20	20	17	20	20	19	20	20	20	20	21	20
26		20	20	22	20	20	17	20	20	19	20	20	20	19	21	20
27		20	20	20	20	20	19	20	22	18	20	20	20	20	21	20
28		21	20	20	20	20	20	20	18	18	20	20	20	20	21	20
29		21	20	20	20	20	20	15	20	19	20	20	20	20	20	20
31		21	20	20	21	20	17	15	20	20	20	20	20	21	20	20
33		19	20	20	20	20	18	16	20	20	20	20	20	20	20	20
34		19	20	20	20	20	18	20	20	20	20	20	20	20	20	20
35		19	20	20	21	20	20	20	18	20	20	20	20	20	21	20
Tide	HF-HF	MR-MR	HT-HT	HT-HT	LR-LR											
Rain (mm)	0	0	0	0	0	0	27	4.4	0	0	0	0	0	0	0	6.4
0-24h	0	5	0	0	0	0	0	0	0	0	0	11.8	23.7	0	0	6.4
0-48h	0	0	0	0	0	0	0	0	0	0	0	11.8	23.7	0	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	0	11.8	23.7	0	0	8.8

TABLE 17D. ST. PETERS INLET / CHAPEL ISLAND (NS-7-030-004) - WATER TEMPERATURE (°C)

Station	20 May 92	04 Jun 92	10 Jun 92	15 Jun 92	19 Jun 92	26 Jun 92	11 Jul 92	15 Jul 92	24 Jul 92	28 Jul 92	28 May 96	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96	
21		0	0	0	0	0	0	0	0	18	12	16	15	19	20	
22		0	13	0	0	16	0	0	0	0	11	16	16	20	20	
23		0	12	0	0	0	16	0	18	0	10	15	15	19	20	
25		0	0	0	0	0	0	0	0	0	11	15	15	19	21	
26		0	0	0	0	0	0	0	18	0	10	15	15	20	20	
27		7	13	0	0	0	0	0	0	0	9	15	15	19	20	
28		0	0	0	0	0	0	0	20	0	11	15	15	20	20	
29		0	0	0	0	0	0	0	0	0	12	17	16	20	20	
31		0	0	0	0	0	15	17	0	0	11	14	16	19	20	
33		10	14	0	0	0	0	0	0	0	11	17	16	19	21	
34		0	0	0	0	0	0	0	0	0	12	17	16	19	20	
35		0	12	12	15	16	15	0	0	20	10	17	17	19	20	
Tide	HF-HF	MR-MR	HT-HT	HT-HT	LR-LR											
Rain (mm)	0	0	0	0	0	0	27	4.4	0	0	0	0	0	0	0	6.4
0-24h	0	5	0	0	0	0	0	0	0	0	0	11.8	23.7	0	0	6.4
0-48h	0	0	0	0	0	0	0	0	0	0	0	11.8	23.7	0	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	0	11.8	23.7	0	0	8.8

TABLE 17E. SHORELINE SANITARY SURVEY:

NS-07-030-004:

ST PETER'S INLET/CHAPEL ISLAND
 FROM CAPE GEORGE LIGHTHOUSE TO MCNABS POINT
 S. WILKIE

DATE: AUGUST 12, 1993 REVIEWED: AUGUST, 1996

INSPECTOR:

Refer to: Figure 17C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: ST PETERS INLET / CHAPEL ISLAND is mainly a residential area. There are numerous summer homes, cottages, and travel trailers in this stretch. There are 2 farms with barns but no animals were noticed at the time that the inspection was conducted. In addition, there is the Chapel Island Indian Reserve in the subsector which was not surveyed because the proper authorisation was not granted before the survey was completed.
1	NP	P	3 travel trailers 10mfs with no OH or septic pipes visible.
2	ST	P	A group of 5 Greenhouses 30mfs with a 1-1/2 STY house up on the hill behind the Greenhouses.
3	NS	N	Cape George Estates subdivision with approx. 50 lots for sale. No houses built yet.
4	ST	P	1 STY YW/BN house 30mfs with a 1 car garage, junked bus, and a satellite dish on the roof of the house.
5	ST	P	1 STY BN stain house with a deck on the front and a GN front door.
6	ST	P	BE/BN mobile home with a GN travel trailer and swing set in the yard.
7	ST	P	1-1/2 STY BN/WT house with a 1 car garage on the LHS of the property.
8	ST	P	CHAPEL ISLAND INDIAN RESERVE. Need proper authorisation before the survey can be conducted in this area.
9	ST	P	Soldier's Cove Irving Bas Bar and Variety. 1 STY WT sided building with a greenhouse in the back yard and Myrtle's Craft Shop across the road.
10	ST	P	2 STY BL/WT sided house 150mfs with a WT deck on the front and a WT fence in the back yard.
11	NP	D	1-1/2 STY WT farm house with a WT/GN barn and a BN 1 car garage. There were no animals present at the time that the survey was being conducted.
12	NP	D	1-1/2 STY WT farm house with a large barn and a manure pile beside it. No animals present at the time of the inspection.
13	ST	P	1-1/2 STY stain BN/RED house with a 1 car garage on the RHS of the property.
14	ST	P	1 STY GY/WT house with a 1 car garage and 5 cars, with no licence plates, in the yard.
15	NP	P	1 STY BE/WY house 30mfs with a satellite dish and a dog in the yard.
16	ST	P	1 STY BE/GN (AB?) cottage with the windows boarded up.
17	ST	P	1-1/2 STY stain house with a WT shed on the LHS of the property.
18	ST	P	1 STY WT/BN sided house 50mfs with a BE 1 car garage and shed in the back yard.
19	ST	P	1 STY YW/WT house 30mfs with a RED deck in back. A metal shed and a satellite dish on the RHS of the property.
20	ST	P	2 STY WT house 30mfs with a WT shed in the back yard and a garbage box by the road.
21	ST	P	1 STY WT cottage with a RED barn in the back yard.
22	NS	N	Canso Realities has building lots for sale on a new subdivision road. No houses completed to date.
23	OH	P	WT/BN mobile home 50mfs with an OH? on the LHS of the property.

24	ST	P	1 STY WT/BK house with a travel trailer in the back yard.
25	ST	P	2 STY WT/BK house with a stained deck on front and a RED 1 car garage on the RHS of the property.
26	ST	P	1 STY BL/WT sided house with a CDN flag flying on a pole beside the house. Driveway has a gate across it.
27	ST	P	2 STY WT house 50mfs with a new well box on the RHS of the property.
28	ST	P	Cannot reach this particular property because the bridge is not safe to cross.
29	WV	P	1-1/2 STY WT/RED house with matching 1 car garage and building. 2 travel trailers, a tractor, and a wharf on the property.
30	WC	P	1 STY GY/WT sided house with a RED 1 car garage and a satellite dish on the RHS of the property which is 50m from Tom's Brook.
31	ST	P	1 STY WT house with a WT shed on the LHS of the property.
32	ST	P	1 STY WT cottage with a WT/BK building in the back yard.

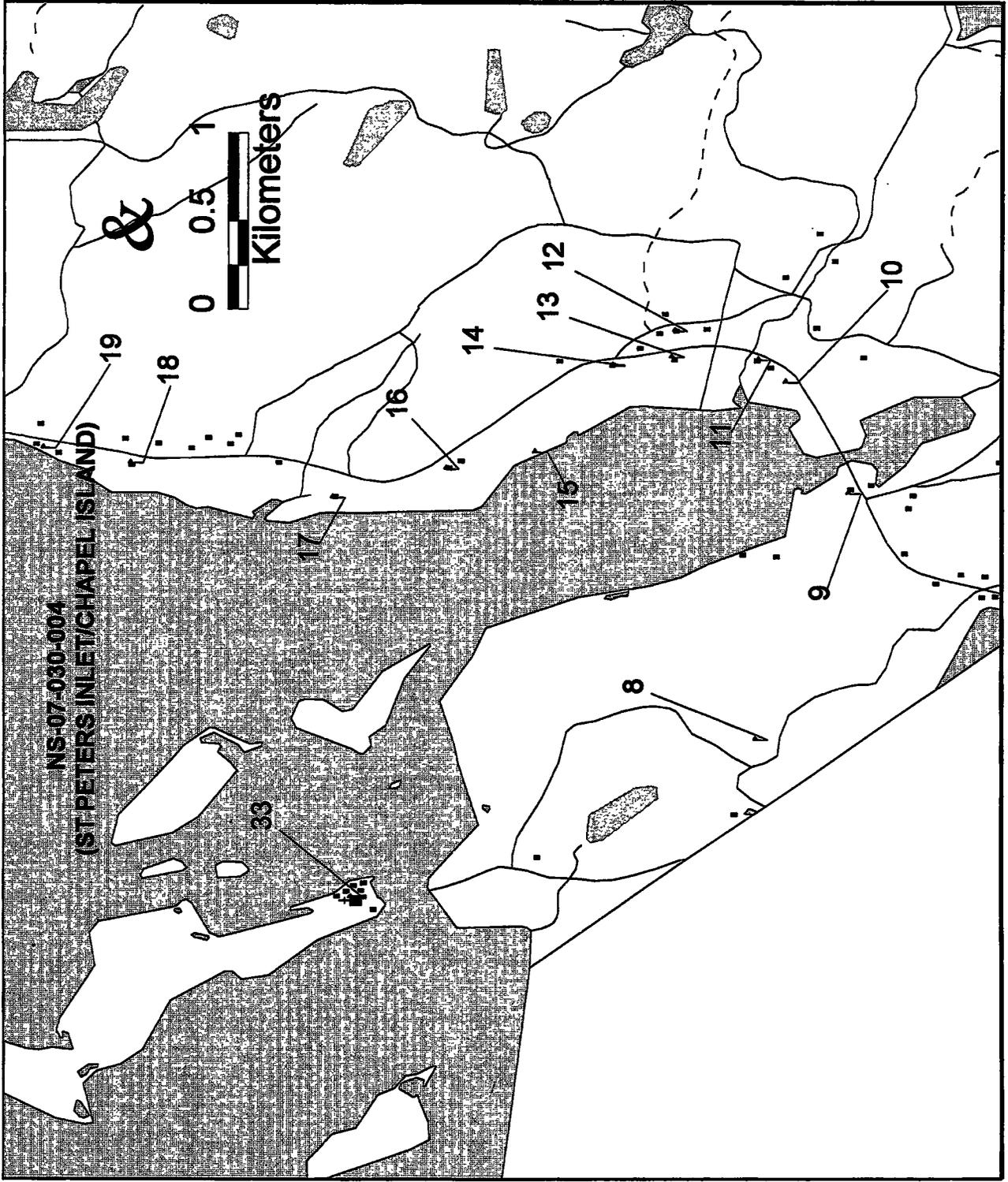


FIGURE 17C. SANITARY OBSERVATION SITE LOCATIONS, ST. PETERS INLET / CHAPEL ISLAND (NS-7-030-004)

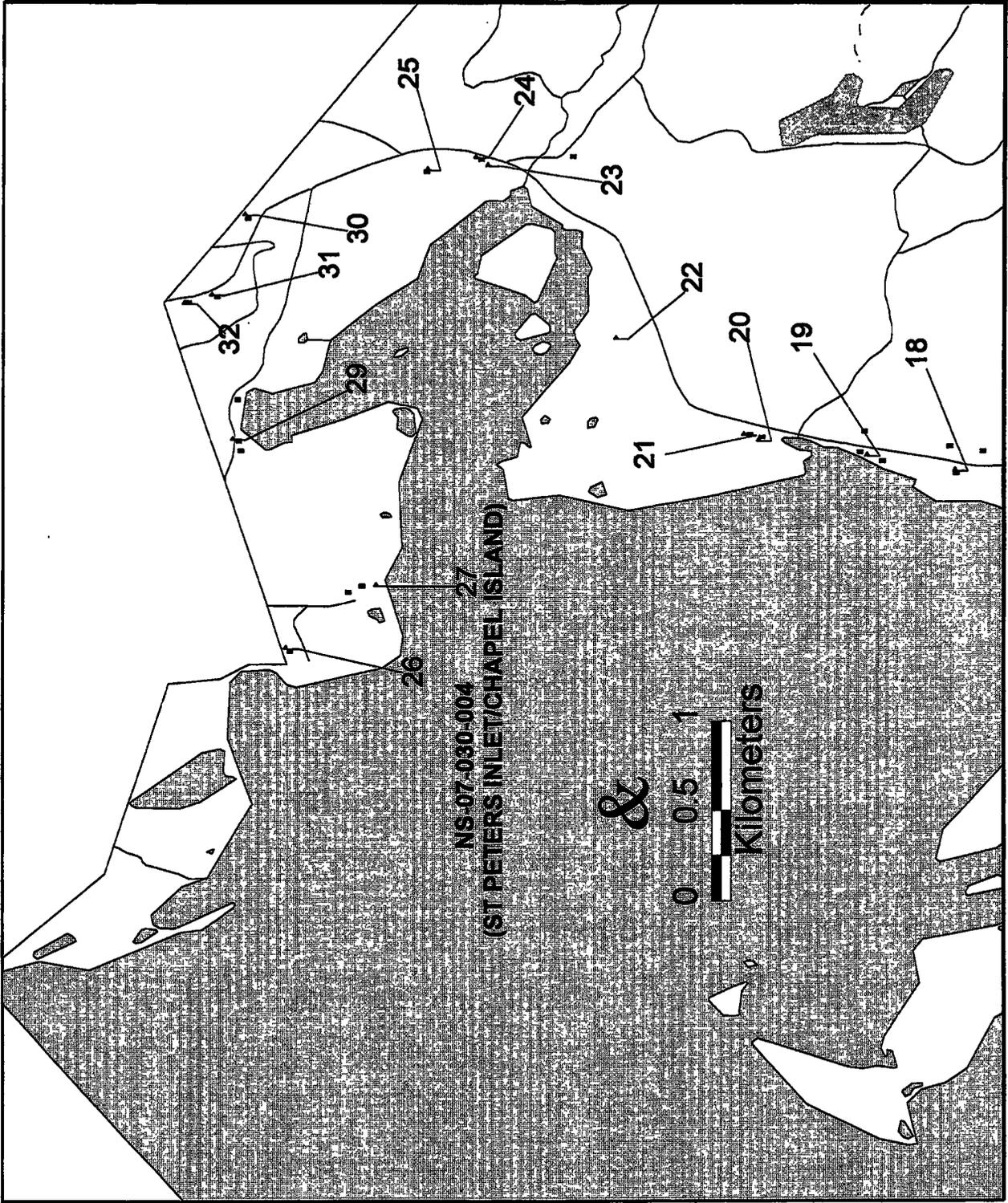


FIGURE 17C(cont.). SANITARY OBSERVATION SITE LOCATIONS, ST. PETERS INLET / CHAPEL ISLAND (NS-7-030-004)

Sub-sector Name (Number):

St Peters Inlet / St. Peters (NS-7-030-005)

Date surveyed:	1992-96
No. of sampling runs:	15
Shellfish classification:	Figure 18A
Sampling station locations:	Figure 18B
Fecal coliform results:	Tables 18A & 18B
Salinity data:	Table 18C
Water temperature data:	Table 18D
Shoreline sanitary observations:	Table 18E & Figure 18C

Area Description

St. Peters is the second largest community on the Bras D'Or lakes. The St. Peters canal, which provides one of only two access points to the Atlantic Ocean, is suitable for small pleasure and fishing vessels. Shellfish culture is active in the area, several shellfish leases have been issued and more are pending. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Richard, 1993c & ASACC, 1993). The current classification (Figure 18A) includes four shellfish closures and a conditionally approved area as follows:

Closed

That portion of St. Peters Inlet (Robertson Cove) inside of a line drawn from grid reference 7275 6240 to grid reference 7240 6175. Refer to map St. Peters 11F/10.

That portion of St. Peter's Inlet (near Salmon River at Barra Head) inside of a line drawn from grid reference 7206 6140 to grid reference 7180 6130. Refer to map St. Peters 11F/10.

That portion of St. Peter's Inlet (near the town of St. Peters) inside of a straight line drawn from grid reference 6617 5810 to grid reference 6600 5866 and thence to grid reference 6688 5933. Refer to map St. Peters 11F/10.

That portion of Carters Cove, inside or west of, a straight line drawn from grid reference 6855 6160 to grid reference 6830. Refer to map St. Peters 11 F/10.

Conditionally Approved

That portion of St. Peters Inlet inside of a line drawn from grid reference 6960 6175 to grid reference 6985 6144. Refer to map St. Peters 11F/10.

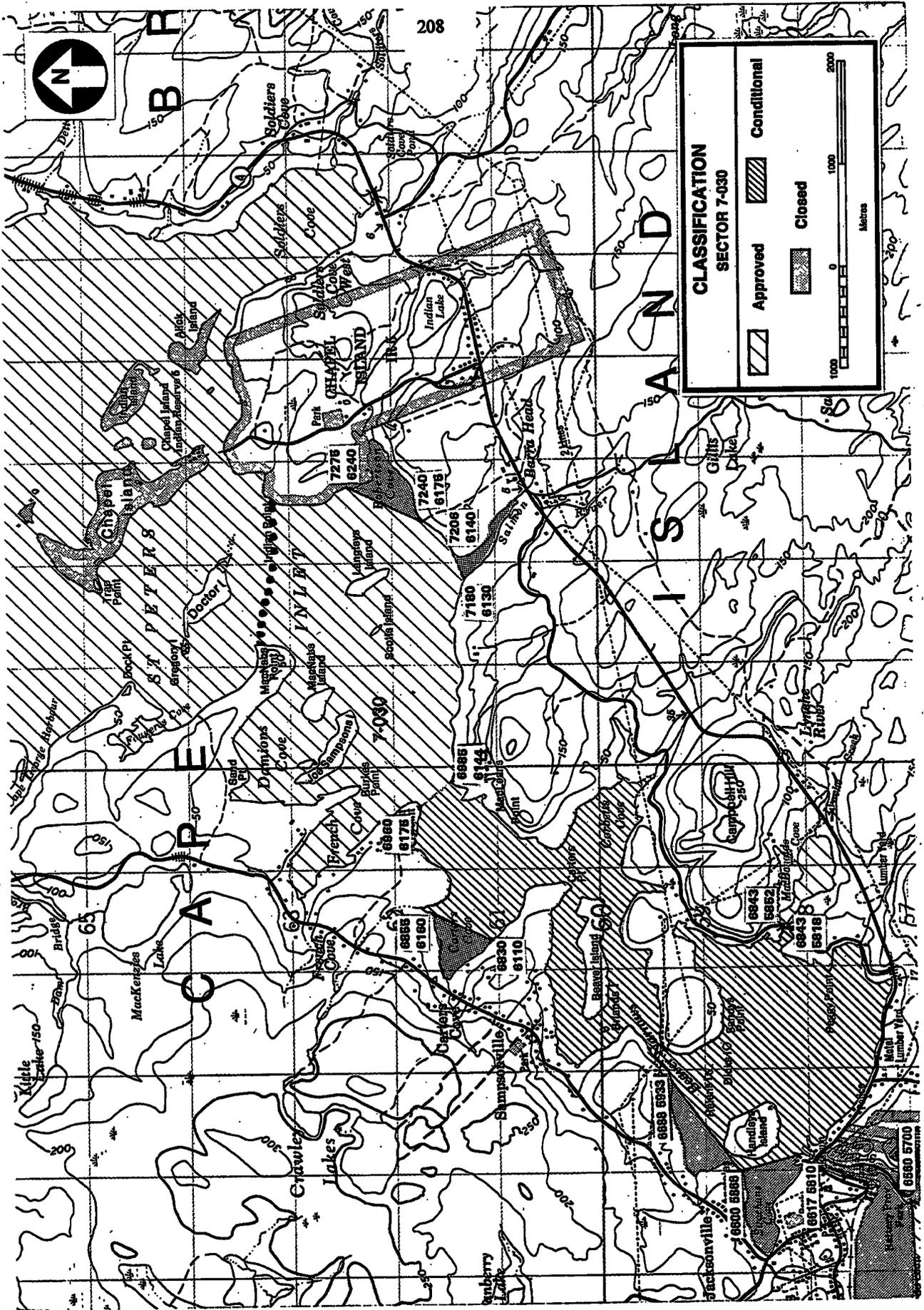


FIGURE 18A. PRESENT SHELLFISH CLASSIFICATION FOR ST. PETERS INLET / ST. PETERS.



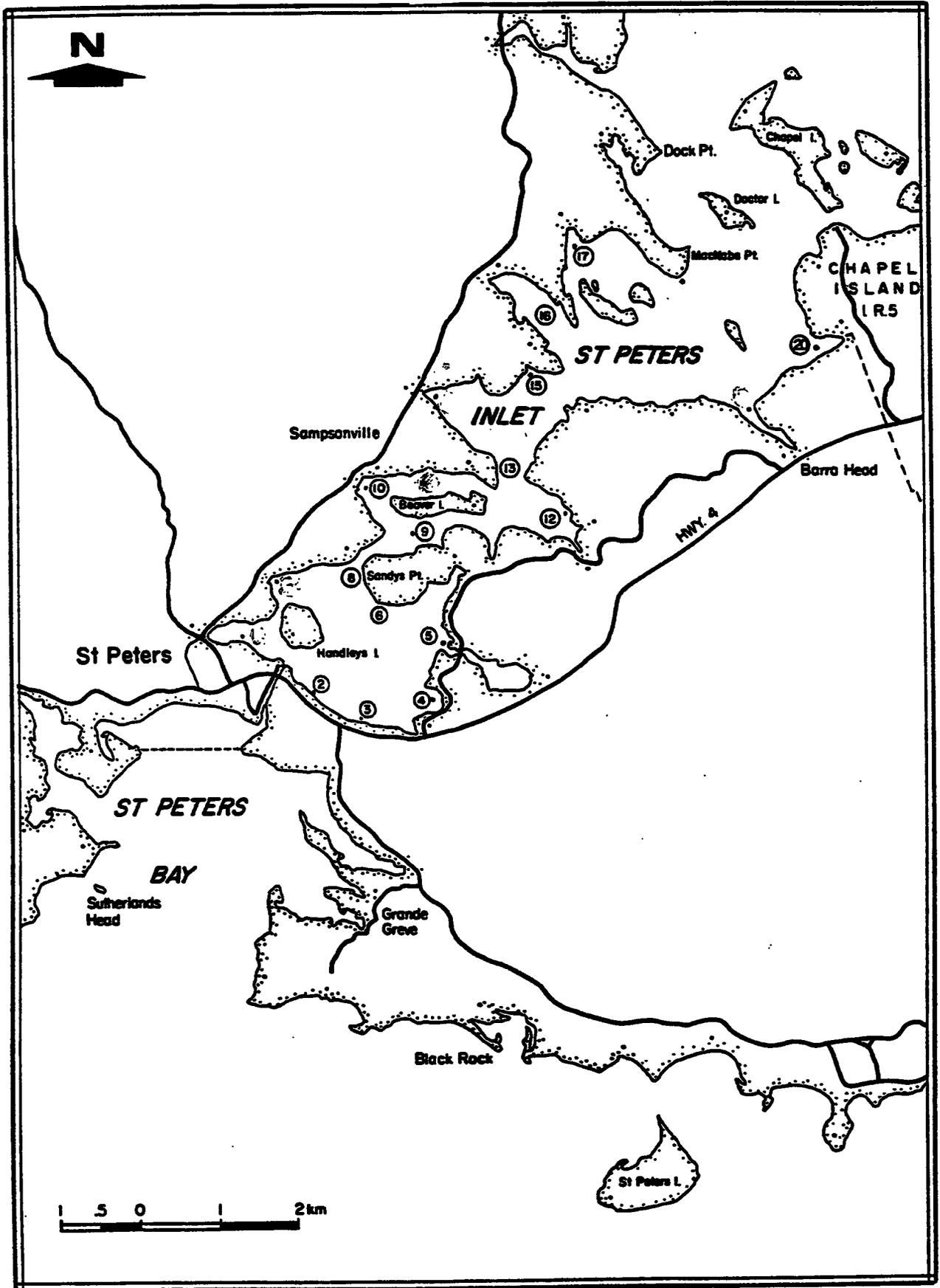


FIGURE 18B. KEY STATION SAMPLING LOCATIONS IN ST PETERS INLET / ST. PETERS

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 18E) below.

Bacteriological Water Quality

Fourteen of the sixteen key stations (Figure 18B) surveyed on fifteen occasions since 1992 (Tables 18A & 18B) meet the criteria for an approved classification. Stations 10 & 15 which fail to meet these criteria are located within the conditionally approved area which is subject to elevated fecal coliform levels after heavy rainfall. The classification of the area should remain unchanged.

TABLE 18A. ST PETERS INLET / ST. PETERS (NS-7-030-005) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
2	15	1992-1996	1.9	33	3	1.9	7	0
3	15	1992-1996	1.9	79	3	1.9	12	7
4	15	1992-1996	1.9	49	3	1.9	10	7
5	15	1992-1996	1.9	33	3	1.9	9	0
6	15	1992-1996	1.9	170	3	1.9	15	7
8	15	1992-1996	1.9	170	3	1.9	11	7
9	15	1992-1996	1.9	240	3	1.9	13	7
10	15	1992-1996	1.9	540	7	2	80	20
12	15	1992-1996	1.9	49	4	1.9	17	7
13	15	1992-1996	1.9	33	2	1.9	6	0
15	15	1992-1996	1.9	1600	4	1.9	58	13
16	14	1992-1996	1.9	13	3	1.9	6	0
17	14	1992-1996	1.9	31	2	1.9	6	0
20	15	1992-1996	1.9	79	3	1.9	13	7

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 18A) should remain unchanged.

TABLE 18B. ST PETERS INLET / ST. PETERS (NS-7-030-005) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	20 May 92	04 Jun 92	10 Jun 92	15 Jun 92	19 Jun 92	26 Jun 92	11 Jul 92	15 Jul 92	24 Jul 92	28 Jul 92	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96
2	1.9	1.9	1.9	1.9	1.9	33	2	1.9	1.9	1.9	1.9	2	1.9	8
3	2	1.9	2	1.9	1.9	79	1.9	1.9	1.9	1.9	1.9	5	1.9	13
4	1.9	1.9	5	1.9	1.9	48	4	1.9	1.9	1.9	1.9	6	4	5
5	2	1.9	1.9	1.9	1.9	33	1.9	1.9	1.9	1.9	1.9	1.9	11	1.9
6	1.9	1.9	1.9	1.9	1.9	170	1.9	1.9	1.9	1.9	1.9	1.9	13	1.9
8	1.9	1.9	1.9	1.9	1.9	170	2	1.9	1.9	1.9	1.9	1.9	2	1.9
9	1.9	1.9	2	1.9	1.9	240	2	1.9	1.9	1.9	1.9	1.9	2	1.9
10	1.9	1.9	46	2	1.9	130	7	1.9	2	1.9	1.9	23	540	1.9
12	1.9	1.9	2	1.9	1.9	13	23	1.9	1.9	1.9	1.9	4	49	1.9
13	1.9	1.9	1.9	1.9	1.9	33	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
15	1.9	1.9	1.9	1.9	1.9	1600	1.9	1.9	1.9	1.9	1.9	1.9	240	1.9
16	1.9	1.9	2	1.9	2	13	1.9	2	1.9	1.9	1.9	1.9	13	1.9
17	1.9	1.9	1.9	1.9	1.9	31	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
20	1.9	2	4	1.9	1.9	79	17	1.9	1.9	1.9	1.9	1.9	8	1.9
Tide	HR-HT	HF-HF	MR-MR	HT-HT	HT-HT	LR-LR								
Rain (mm)														
0-24h	0	0	0	0	0	27	0	0	0	0	0	11.8	23.7	0
0-48h	0	5	0	0	0	0	0	0	0	0	0	11.8	23.7	0
0-72h	0	0	0	0	0	0	0	0	0	0	0	11.8	23.7	8.8

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HF = High Rising; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LT= Low Falling; LF = Low Rising; LR - Low Rising

TABLE 18C. ST PETERS INLET / ST. PETERS (NS-7-030-005) - SALINITIES (‰)

Station	20 May 92	04 Jun 92	10 Jun 92	15 Jun 92	19 Jun 92	26 Jun 92	11 Jul 92	15 Jul 92	24 Jul 92	26 Jul 92	28 May 96	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96	
2	21	22	22	20	20	20	18	22	18	18	22	20	22	19	20	
3	20	22	20	20	22	20	17	21	22	17	22	20	22	19	20	
4	21	23	20	22	20	20	18	20	22	18	21	20	22	19	18	
5	20	22	20	21	20	20	17	20	22	18	22	18	21	19	20	
6	20	21	20	20	20	20	16	20	22	17	21	20	22	18	20	
8	20	22	20	22	20	20	17	21	22	18	21	20	22	20	20	
9	20	21	20	20	22	20	18	20	23	18	22	20	22	20	20	
10	20	20	20	20	20	21	17	20	23	17	20	20	22	15	20	
12	20	20	22	22	23	21	18	12	20	17	20	20	22	5	18	
13	20	21	22	20	20	21	16	20	21	17	20	20	22	20	20	
15	19	21	23	21	21	21	15	20	20	19	20	21	22	18	21	
16		21	21	20	20	20	18	21	20	19	20	21	21	20	20	
17		21	22	22	20	20	17	20	20	19	20	21	22	20	20	
20	20	20	22	20	20	20	18	20	21	18	20	20	21	20	20	
Tide	HR-HT	HF-HF	HT-HF	MR-MR	HT-HT	HT-HT	LR-LR									
Rain (mm)																
0-24h	0	0	0	0	0	0	27	0	0	0	0	0	11.8	23.7	0	6.4
0-48h	0	5	0	0	0	0	0	0	0	0	0	0	11.8	23.7	0	6.4
0-72h	0	0	0	0	0	0	0	0	0	0	0	0	11.8	23.7	0	8.8

TABLE 18E. SHORELINE SANITARY SURVEY :

NS-07-030-005: ST PETER'S INLET/TOWN OF ST. PETER'S
FROM MCNABS POINT TO INDIAN POINT
INSPECTOR: S. WILKIE

DATE: AUGUST 12, 1993 REVIEWED: AUGUST, 1996

Refer to: Figure 18C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: This subsector includes the small residential town of St. Peters, which is serviced by an activated sludge sewage treatment plant. The effluent from this plant is discharged into the St. Peter's Bay, which is not included in this particular subsector. The St. Peter's Canal and Wharf are located on the upper end of town where a number of large boats are tied up. Near the canal is a Provincial Campground and Picnic Area. The campground contains 8 pit toilets and the picnic area has The key sanitary sources for concern are two sewage lift stations servicing the community of St. Peter's on the west shore near Strachans Cove and Jacksonville (sites 94 & 95). These two stations have experienced pump failure at times and their overflow discharge points would effect St. Peter's Inlet. A activated sludge treatment system handles waste for approximately 700 homes in the area of St. Peter's, with a chlorinated effluent to St Peter's Bay (shellfish area NS 9-020-002). Other potential sources are varied from; outhouses (sites 34, 36, 76, 83), non-point sources (site 92) near MacDonald Cove and possible direct discharge sources from small cottages on shore (sites 8, 16, 18 29, 30, 57). A few tourist facilities are located in the area from cottages (site 19, 70) motels (site 96) and campgrounds (site 68). It was also noted at the period of this survey there was extensive road work in St Peter's community for the purpose of installing water mains for fire hydrants.
1	ST	P	2 STY WT house 150mfs with 2 run down buildings by the water. (Cook)
2	ST	P	1 STY RED/WT cottage 30mfs with a 4 wheeler and swing set in the yard. (Carter)
3	WV	P	1-1/2 STY BN stain house 30mfs with 2 buildings in the back yard and a wharf across the road.
4	ST	P	1-1/2 STY GY/WT house 20mfs with a metal shed in the back yard.
5	ST	P	1-1/2 STY WT/GN house 150mfs with a GN 1 car garage in the back yard.
6	ST	P	1-1/2 STY WT/GN sided house with a RED barn and a WT garage.
7	ST	P	1-1/2 STY GY/RED house with 2 sheds in the back yard and a picnic table in the front yard.
8	ST	P	The Addicott's Twist Village. A group of travel trailers and cottages.
9	ST	P	1-1/2 STY WT/RED cottage with 2 cars and a boat in the yard which has a gate across it.
10	ST	P	1-1/2 STY WT/PINK house 50mfs with a run down garage by the road.
11	ST	P	1 STY WT house 10mfs with a large garage and a dump truck in the yard.
12	ST	P	1-1/2 STY WT house 20mfs with 2 buildings and lots of junk in the yard.
13	ST	P	1 STY BN stain house with a deck on the front of the house.
14	ST	P	1-1/2 STY WT/BK house with a deck on front and a shed in the back yard.
15	ST	P	1-1/2 STY BL/WT sided house with a 1 car garage across the road.

16	PI	P	1 STY BE/BN house with a 1 car garage in the basement and a recently installed septic field in the front yard with a GN pipe in the ditch.
17	ST	P	1 STY WT/BN cottage 10mfs with a wharf by the water. (Laundry)
18	ST	P	1 STY BN log house 30mfs with a RED building and shed in the yard. (Carter)
19	ST	P	Carter's Cottages. A group of 4 cottages 50mfs that are rented out during the summer.
20	ST	P	1-1/2 STY WT house 20mfs with a garage in the back and an abandon boat on the shore.
21	ST	P	1 STY BL/WT house 50mfs with a deck on the LHS of the house.
22	ST	P	1-1/2 STY GY/WT house with a garage on the RHS of the property.
23	WV	P	2 large fishing gear storage buildings 3mfs with a wharf.
24	ST	P	WT/BN mobile home 20mfs with a building on the RHS of the property and a small wharf.
25	ST	P	1 STY RED/WT house 50mfs with a RED building on the RHS of the property.
26	ST	P	1 STY WT house 100mfs with a WT 1 car garage in the front yard.
27	ST	P	1 STY GY/RED house 50mfs with a large pile of fire wood in the yard.
28	ST	P	1-1/2 STY WT/GN house 50mfs with a matching building in the yard.
29	ST	P	1-1/2 STY BN stain/WT house 30mfs with a building by the water.
30	ST	P	A group of 6 houses 30mfs which are very close together.
31	ST	P	2 STY BN stain house 30mfs with a WT building, a 1 car garage, and a satellite dish.
32	ST	P	1 STY GY/WT house 20mfs with a RED deck and a 1 car garage.
33	ST	P	1 STY GN/WT house 30mfs with a GN deck and a WT building.
34	OH	P	1-1/2 STY BE/BN house 50mfs with a metal garage and shed. Possible OH.
35	ST	P	1-1/2 STY WT/GN house 300mfs with a shed on the RHS of the property and a small lighthouse lawn ornament in the front yard.
36	OH	P	1 STY WT/BK house 300mfs with a BK deck on the front and a possible OH in the back yard.
37	ST	P	1 STY GY/WT house 300mfs with a small deck on the front and a swing set in the back yard.
38	ST	P	1-1/2 STY WT/BK house 250mfs with a RED deck on the back of the house and 2 WT sheds.
39	ST	P	1-1/2 STY BE/BN house 250mfs with a new piece being added on the RHS of the house.
40	ST	P	A property of some sort but the driveway has a gate across it and a Private sign.
41	ST	P	1 STY WT/BK house 50mfs with a 2 car garage and brick on the front of the house.
42	ST	P	1-1/2 STY WT/BK house 100mfs with a travel trailer on the RHS of the property.
43	ST	P	BE/BN mobile home 130mfs with a BN shed in the back yard.
44	ST	P	1 STY BE/BN house 100mfs with a RED/WT shed in the back yard.
45	ST	P	1 STY WT/BL house 100mfs with a fire hydrant in the front yard and a matching shed in the back yard.
46	ST	P	1-1/2 STY YW/BK house 30mfs with a small slip by the shore.
47	ST	P	1 STY WT/BK house 100mfs with a deck on the back and 2 propane tanks on the RHS of house.
48	ST	P	1 STY WT/GN house 100mfs with a brick chimney on the RHS of the house. (Burke)
49	ST	P	1-1/2 STY WT/BK house 100mfs with a small RED cottage in the back yard.
50	ST	P	1-1/2 STY WT/BK house 50mfs with a RED deck on front, WT garage and mobile home on the LHS of the property.
51	ST	P	Three 1-1/2 STY WT houses 150mfs on the opposite side of the road from the water.

52	ST	P	1 STY WT/GN house 15mfs with a deck on the LHS of the house and a shed in the back yard.
53	ST	P	1-1/2 STY WT house 30mfs on the opposite side of the road from the water.
54	ST	P	1-1/2 STY WT/GN cottage (AB). The grass has not been cut for a while.
55	WV	P	1-1/2 STY BN stain/WT house with a wharf and 5 boats tied up.
56	ST	P	1-1/2 STY WT/GN house 30mfs with a large round metal garage on the LHS and a wood shed in the back yard.
57	WV	P	St.Peters Canal and wharf with 5 boats tied up at it.
58	ST	P	1-1/2 STY WT house 10mfs which is jacked up on iron rails.
59	ST	P	1-1/2 STY GY/WT house 30mfs with a RED barn by the road.
60	WV	P	1 STY WT house 30mfs with a RED deck and 2 boat houses with a wharf. House is located behind the tourist bureau and Campbell's Dairy Freeze.
61	ST	P	2 houses 30mfs with the Needles&Pins sewing and crafts building between them.
62	ST	P	1 STY WT/RED house 20mfs with a red deck on the right side of the property & satellite dish.
63	ST	P	1-1/2 STY BI/WT house 20mfs with a small slip by the shore.
64	ST	P	Ultramar garage 10mfs with a house on the RHS of the garage. Both are located across the road from the RCMP station.
65	ST	P	2 WT houses 30mfs on the opposite side of the road from the water between the RCMP and the Provincial buildings.
66	ST	P	2 STY WT/BL Province of NS building 30mfs beside the Dept of Highways shed.
67	ST	P	Dept of Highways buildings.
68	ST	P	1 STY BE/WT house 50mfs with a WT 1 car garage on the LHS of the property.
69	ST	P	1 STY GN/WT ice cream stand 50mfs with the St.Peter's Campground behind it.
70	ST	P	1-1/2 STY WT/GN house 30mfs with a matching shed in the back yard.
71	ST	P	Joyce's Motel and Cottages 50mfs with approx 25 units and a pool.
72	ST	P	1 STY BE/BN house 100mfs with a matching garage and a satellite dish in the yard.
73	NS	N	St.Peter's Water Treatment Plant.
74	ST	P	1 STY BE/BN house with 2 WT sheds, 2 travel trailers, a satellite dish and a building by the shore.
75	ST	P	3 WT houses 100mfs on the opposite side of the road from the water.
76	ST	P	1-1/2 STY BN stain/WT house 30mfs with a RED shed on the RHS of the property.
77	OH	P	1-1/2 STY WT/BK house 50mfs with a satellite dish, a 1 car garage, and a building in the yard. Possible OH.
78	WC	P	1 STY WT/BK cottage 3m from the small brook on the RHS of the cottage.
79	ST	P	1 STY stone house 50mfs with a RED 1 car garage and a RED shed in the yard.
80	ST	P	1-1/2 STY GY/WT house 75mfs with a fish hatchery on the shore.
81	ST	P	1-1/2 STY A-Frame cottage 150mfs with the windows boarded up.
82	OH	P	2 STY BE/RED house up on the hill with a possible OH in the yard.
83	ST	P	1-1/2 STY WT/GN house 15mfs with windows boarded up and 2 buildings in the yard.
84	OH	P	1 STY BE/WT sided house with a small OH in the very back of the property.
85	ST	P	1-1/2 STY RED house with a matching RED barn on the LHS of the property.
86	ST	P	1-1/2 STY AB house with the windows smashed out.

87	ST	P	2 cabins with windows boarded up which are possibly used for hunting cabins.
88	ST	P	2 STY BN stain/WT house with a matching building on the LHS of the property.
89	ST	P	Property of some sort but need a 4*4 to get back the road to it.
90	ST	P	Salmon River Church and Cemetery.
91	ST	P	Salmon River Community
92	ST	P	Properties of some description but a gate across the road and Private Property sign.
93	NP	P	1-1/2 STY WT farm house with a large barn. No animals present at the time of inspection.
94	TP	P	St. Peter's Sewage Treatment Plant (Activated Sludge). Effluent is discharged in St. Peter's Bay which is not included in this subsector.
95	LS	D	Lift station for town of St Peter's.
96	LS	D	Lift station for town of St Peter's.
97	ST	P	Motel, "Inn on the Canal" 20 rooms + 1 cottage, open all year. May be on town collection system but believe it is on own ST/DF.

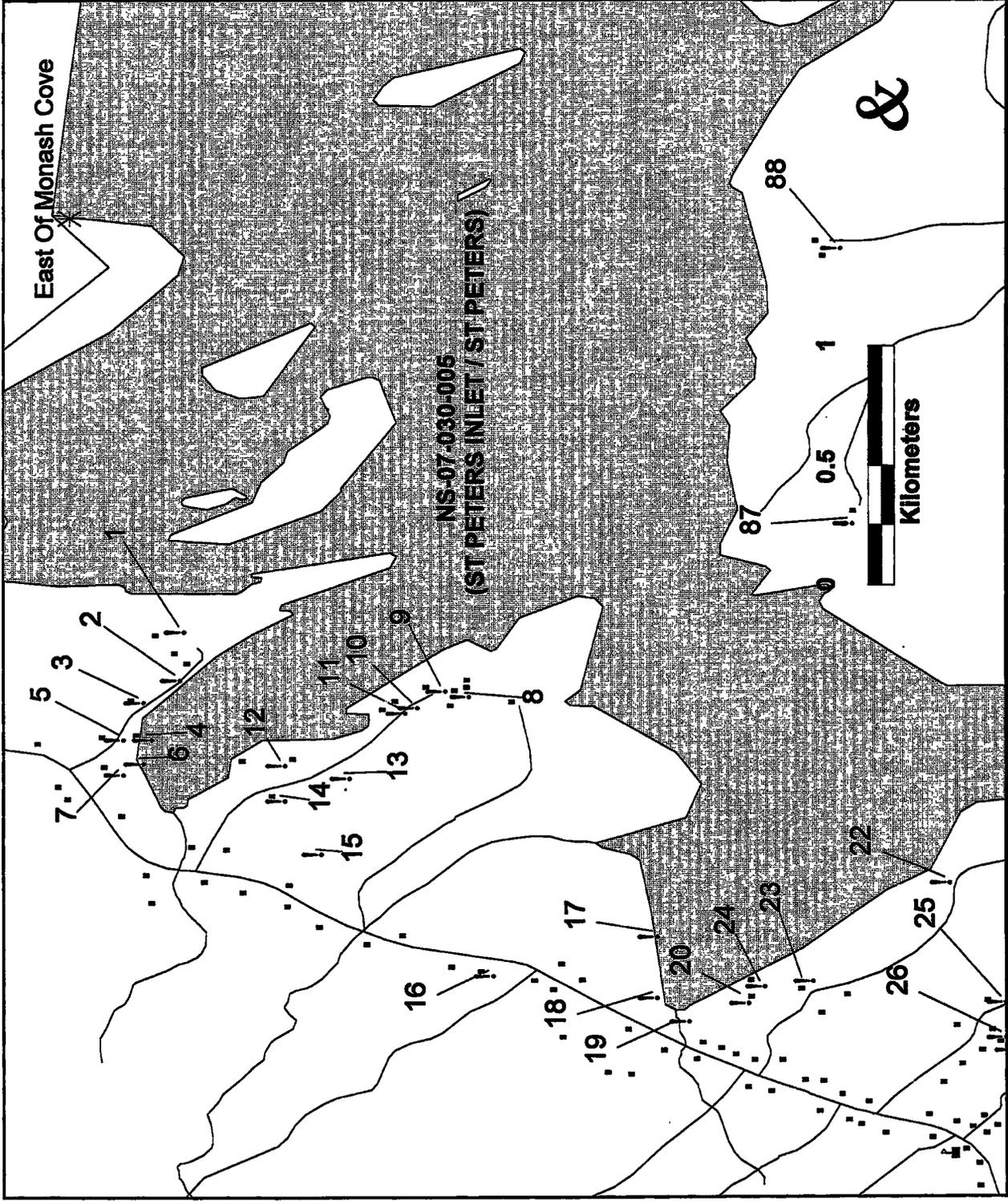


FIGURE 18C. SANITARY OBSERVATION SITE LOCATIONS IN, ST PETERS INLET / ST. PETERS (NS-7-030-005)

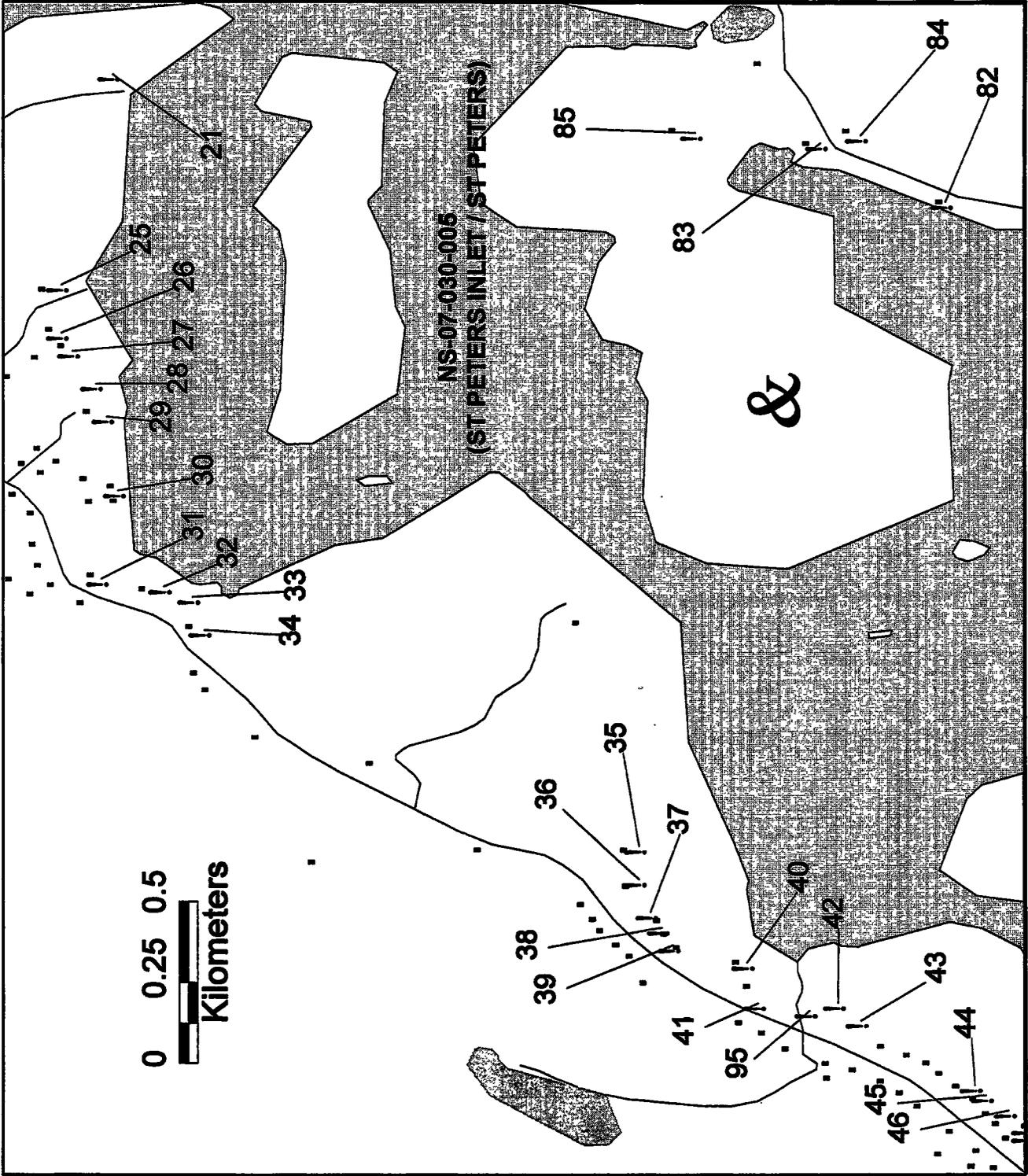


FIGURE 18C(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, ST PETERS INLET / ST. PETERS (NS-7-030-005)

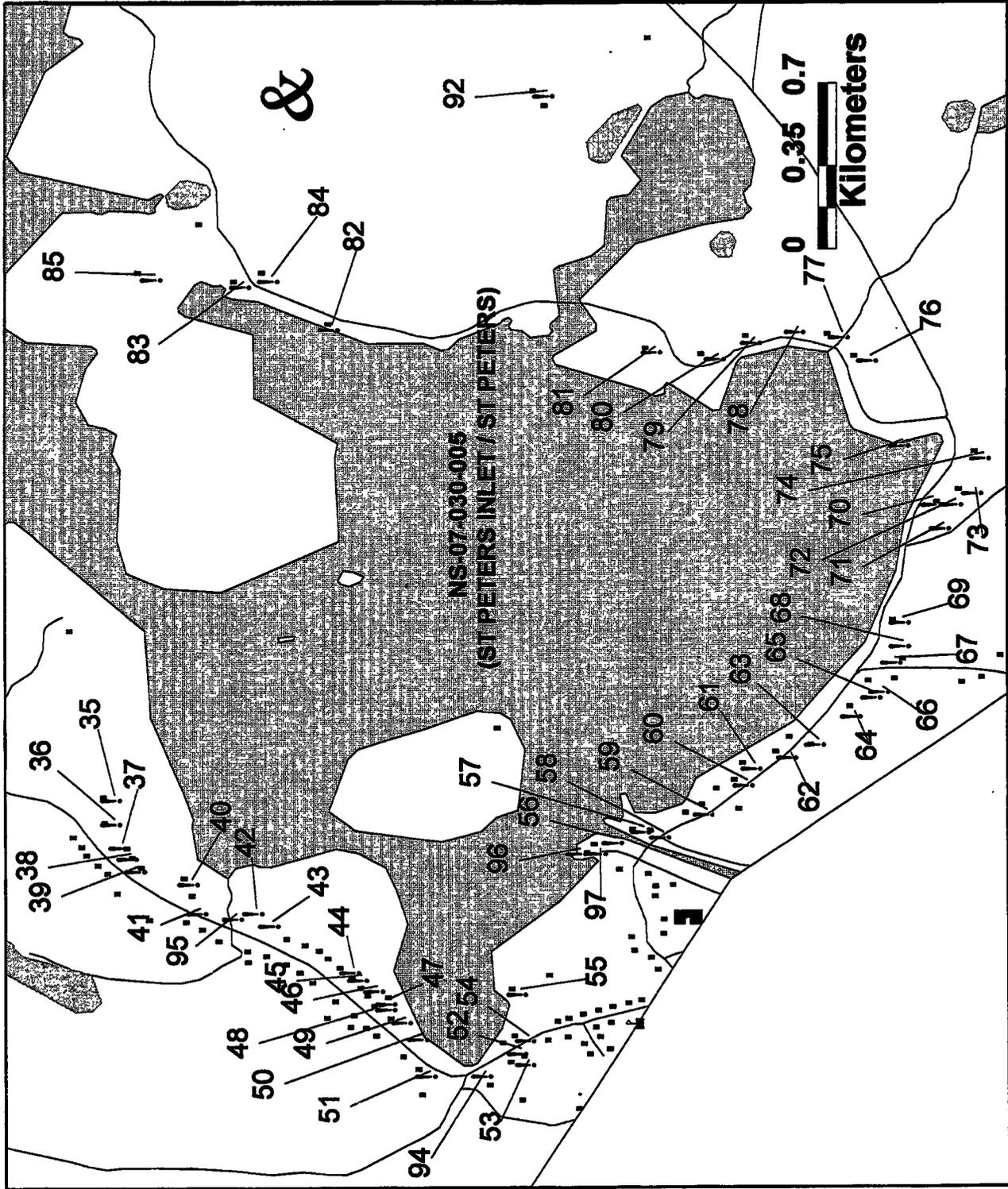


FIGURE 18C(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, ST PETERS INLET / ST. PETERS (NS-7-030-005)

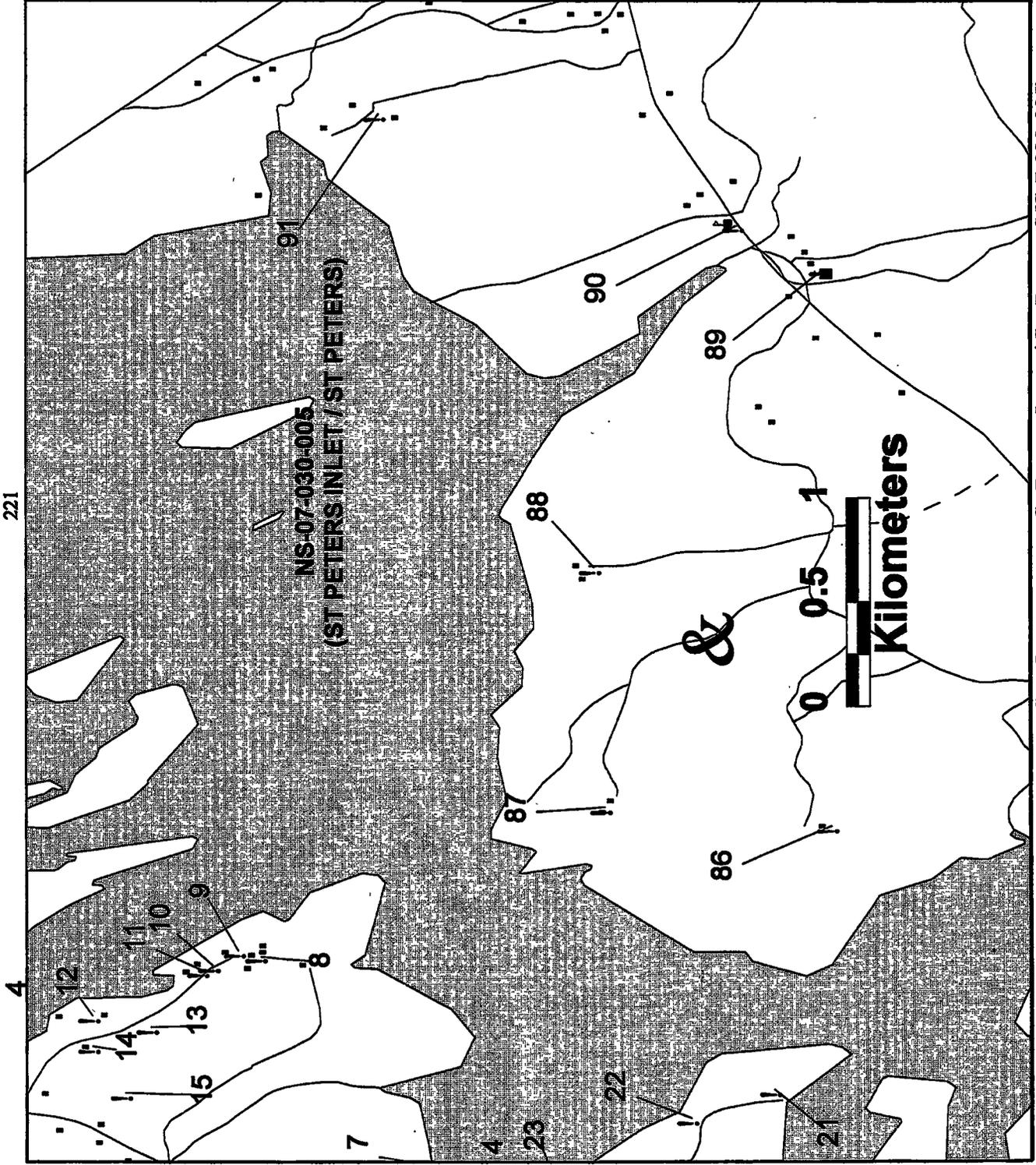


FIGURE 18C(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, ST PETERS INLET / St. PETERS (NS-7-030-005)

Sub-sector Name (Number):

Hay Cove / Red Islands (NS-7-030-006)

Date surveyed:	1993-96
No. of sampling runs:	20
Shellfish classification:	Figure 17A
Sampling station locations:	Figure 19A
Fecal coliform results:	Tables 19A & 19B
Salinity data:	Table 19C
Water temperature data:	Table 19D
Shoreline sanitary observations:	Table 19E & Figure 19B

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1993 (Tremblay et al., 1993b). The current classification (Figure 17A) includes four shellfish closures as follows:

Closed

That portion of Barachois Harbour (Hay Cove) inside a line drawn from grid reference 7380 6895 to grid reference 7393 6910. Refer to maps Grand Narrows 11F/15 and St. Peters 11F/10.

The waters and foreshore of the pond located at grid reference 7320 6820 (Evans Ponds) on Evans Island. Refer to maps Grand Narrows 11F/15 and St. Peters 11F/10.

That portion of the cove on Wilsons Island inside a line drawn from grid reference 7400 7065 to grid reference 7400 7055. Refer to map Grand Narrows 11F/15.

The waters of MacKenize's Pond inside a line drawn from grid reference 7300 7500 to grid reference 7310 7520. See map Grand Narrows 11F/15.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 19E) below.

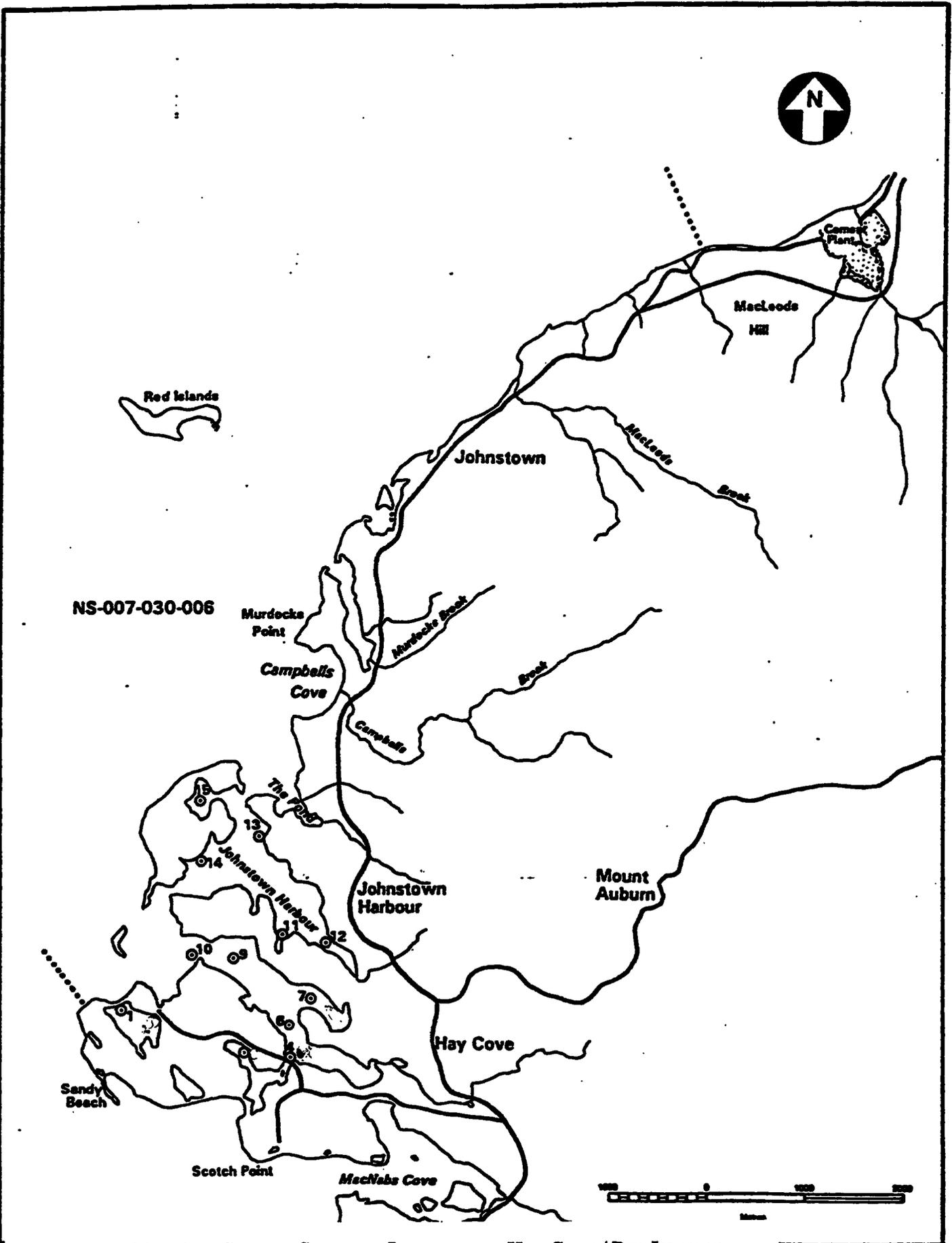


FIGURE 19A. KEY STATION SAMPLING LOCATIONS IN HAY COVE / RED ISLANDS.

Bacteriological Water Quality

Ten of the eleven key stations (Figure 19A) surveyed on twenty occasions since 1993 (Tables 19A & 19B) continue to meet the criteria for an approved classification. Station 7 is located within a shellfish closure.

TABLE 19A. HAY COVE / RED ISLANDS (NS-7-030-006) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
1	20	1993-1996	1.9	1600	3	1.9	25	5
4	20	1993-1996	1.9	170	4	1.9	27	10
6	20	1993-1996	1.9	130	4	1.9	17	5
7	20	1993-1996	1.9	170	4	1.9	26	15
9	20	1993-1996	1.9	79	3	1.9	15	10
10	20	1993-1996	1.9	49	3	1.9	10	5
11	20	1993-1996	1.9	8	2	1.9	3	0
12	20	1993-1996	1.9	79	3	1.9	9	5
13	20	1993-1996	1.9	79	3	1.9	8	5
14	20	1993-1996	1.9	14	2	1.9	5	0
15	20	1993-1996	1.9	79	3	1.9	14	10

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 17A) should remain unchanged.

TABLE 19B HAY COVE / RED ISLANDS (NS-7-030-006) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	09 Jun 93	14 Jun 93	24 Jun 93	27 Jun 93	07 Jul 93	12 Jul 93	14 Jul 93	21 Jul 93	25 Jul 93	03 Aug 93	11 Aug 93	17 Aug 93	19 Aug 93	23 Aug 93	25 Aug 93
1	1.9	1.9	1.9	8	1.9	2	1.9	1.9	1.9	5	1600	1.9	1.9	1.9	1.9
4	13	1.9	1.9	7	1.9	170	33	1.9	1.9	1.9	49	1.9	1.9	2	1.9
6	33	1.9	1.9	5	1.9	130	5	1.9	1.9	1.9	33	1.9	1.9	2	1.9
7	79	1.9	1.9	1.9	1.9	79	13	1.9	1.9	1.9	170	1.9	1.9	1.9	1.9
9	17	1.9	1.9	1.9	1.9	79	13	1.9	1.9	1.9	49	1.9	1.9	1.9	1.9
10	11	1.9	1.9	1.9	1.9	23	2	1.9	1.9	2	49	1.9	1.9	1.9	1.9
11	1.9	1.9	1.9	1.9	1.9	8	1.9	2	1.9	2	2	1.9	1.9	2	1.9
12	2	1.9	1.9	1.9	1.9	8	1.9	2	1.9	1.9	79	1.9	1.9	1.9	1.9
13	2	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	79	1.9	1.9	1.9	1.9
14	2	1.9	1.9	2	1.9	1.9	7	1.9	1.9	1.9	5	1.9	1.9	1.9	14
15	5	1.9	1.9	2	1.9	11	49	1.9	1.9	1.9	79	1.9	1.9	1.9	1.9
Tide	NT-NI														
Rain (mm)	5.2	0	0	0.8	0	0	4.6	0.2	1.6	4	34	0	0	1	0.4
0-24h	66.4	0	0	4.4	0	0	5.6	1.2	1.6	4.4	34	0	0.3	1	4
0-72h	75.4	0	0	21.6	0	1.8	5.6	5.8	1.6	6.8	34.4	0	1.7	1	4

Station	28 May 96	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96
1	1.9	8	2	1.9	7
4	1.9	2	33	1.9	2
6	1.9	5	2	1.9	2
7	1.9	2	2	1.9	1.9
9	1.9	1.9	2	1.9	2
10	1.9	1.9	8	1.9	2
11	1.9	1.9	1.9	1.9	2
12	1.9	1.9	13	1.9	2
13	1.9	1.9	7	1.9	5
14	1.9	1.9	1.9	1.9	1.9
15	1.9	1.9	1.9	1.9	5
Tide	HT-HF	MR-MR	HT-HT	HT-HT	MR-MR
Rain (mm)	0	11.8	23.7	0	6.4
0-24h	0	11.8	23.7	0	6.4
0-72h	0	11.8	23.7	0	8.8

N.B. 1.9 represents <2 MPN/100mL
 HT= High Tide; HF = High Falling; HR - High Rising; MT= Mid Tide; MF = Mid Falling;
 MR - Mid Rising; LT= Low Tide; LF = Low Falling; LR - Low Rising

TABLE 19C. HAY COVE / RED ISLANDS (NS-7-030-006) - SALINITIES (‰)

Station	09 Jun 93	14 Jun 93	24 Jun 93	27 Jun 93	07 Jul 93	12 Jul 93	14 Jul 93	21 Jul 93	25 Jul 93	03 Aug 93	11 Aug 93	17 Aug 93	19 Aug 93	23 Aug 93	25 Aug 93
1	18	18	20	22	20	20	18	18	20	21	14	15	22	22	20
4	11	17	21	24	8	8	18	18	18	20	18	12	22	22	22
6	11	16	22	24	5	5	18	18	20	22	18	15	22	22	22
7	15	17	22	24	10	10	18	18	20	22	14	15	22	23	22
9	17	16	20	24	14	14	18	18	20	22	16	15	20	22	22
10	16	17	20	24	17	17	18	18	20	22	18	15	21	23	22
11	21	22	21	22	20	20	20	20	20	22	22	17	22	23	22
12	21	21	21	23	18	18	20	20	20	22	22	17	22	23	22
13	21	22	20	22	20	20	21	20	20	21	22	18	20	22	22
14	21	21	19	22	20	20	21	20	20	22	22	15	21	22	22
15	22	22	22	24	20	20	21	20	20	22	22	16	22	22	22
Tide	NT-NT														
Rain (mm)															
0-24h	5.2	0	0.8	0	0	0	4.6	0.2	1.6	4	34	0	0	1	0.4
0-48h	66.4	0	4.4	0	0	0	5.6	1.2	1.6	4.4	34	0	0.3	1	4
0-72h	75.4	0	21.6	0	1.8	1.8	5.6	5.8	1.6	6.8	34.4	0	1.7	1	4

TABLE 19C(CONT.) HAY COVE / RED ISLANDS (NS-7-030-006) - SALINITIES (‰)

Station	28 May 96	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96
1	16	20	18	19	20
4	14	20	18	18	18
6	16	20	18	19	20
7	14	20	17	19	20
9	16	20	18	18	20
10	17	20	18	18	20
11	19	20	19	20	20
12	20	20	20	20	20
13	20	20	20	20	20
14	20	20	20	20	20
15	20	20	20	20	20
Tide	HT-HF	MR-MR	HT-HT	HT-HT	MR-MR
Rain (mm)					
0-24h	0	11.8	23.7	0	6.4
0-48h	0	11.8	23.7	0	6.4
0-72h	0	11.8	23.7	0	8.8

TABLE 19D. HAY COVE / RED ISLANDS (NS-7-030-006) - WATER TEMPERATURE (°C)

Station	09 Jun 93	14 Jun 93	24 Jun 93	27 Jun 93	07 Jul 93	12 Jul 93	14 Jul 93	21 Jul 93	25 Jul 93	03 Aug 93	11 Aug 93	17 Aug 93	19 Aug 93	23 Aug 93	25 Aug 93
1	14	16	17	19	15	21	20	18	20	21	21	21	21	21	21
4	13	13	16	18	15	21	20	18	20	21	21	22	21	22	21
6	13	15	16	17	15	19	20	17	19	21	21	21	20	21	21
7	13	15	16	17	15	20	20	17	19	20	20	20	20	20	20
9	13	15	16	17	15	20	20	17	18	20	20	21	21	21	20
10	12	15	16	17	16	20	18	17	19	20	21	21	21	21	20
11	13	13	15	18	15	19	20	17	18	19	19	19	20	20	20
12	13	14	16	16	15	19	20	17	18	19	19	19	20	20	19
13	11	13	14	16	15	19	19	18	18	20	19	19	19	20	20
14	11	14	15	17	15	19	19	17	18	20	20	20	20	20	20
15	13	13	16	18	15	20	21	18	18	21	21	21	21	21	21
Tide	NT-NT														
Rain (mm)	5.2	0	0.8	0	0	4.6	0.2	1.6	4	34	0	0	0	1	0.4
0-24h	66.4	0	4.4	0	0	5.6	1.2	1.6	4.4	34	0	0	0.3	1	4
0-72h	75.4	0	21.6	0	1.8	5.6	5.8	1.6	6.8	34.4	0	0	1.7	1	4

TABLE 19D(CONT.) HAY COVE / RED ISLANDS (NS-7-030-006) - WATER TEMPERATURE (°C)

Station	28 May 96	04 Jul 96	16 Jul 96	30 Jul 96	20 Aug 96
1	13	20	19	20	21
4	13	19	19	20	22
6	11	18	18	20	22
7	13	18	18	20	22
9	12	18	19	20	21
10	11	18	19	20	21
11	11	16	17	19	20
12	11	16	17	19	21
13	11	17	17	19	21
14	10	17	18	19	20
15	10	19	18	19	21
Tide	HT-HF	MR-MR	HT-HT	HT-HT	MR-MR
Rain (mm)					
0-24h	0	11.8	23.7	0	6.4
0-48h	0	11.8	23.7	0	6.4
0-72h	0	11.8	23.7	0	8.8

TABLE 19E. SHORELINE SANITARY SURVEY :

NS-07-030-006: HAY COVE/RED ISLANDS
 FROM EVANS PT TO MACLEODS HILL
 INSPECTOR: S.WILKIE
 DATE: AUGUST 19, 1993 REVIEWED: AUGUST, 1996

Refer to: Figure 19B for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: HAY COVE / RED ISLANDS is an area populated with a number of seasonal residences such as summer homes, cottages, and travel trailers. Most of these dwellings are built extremely close to the water and on site sewage disposal systems are questionable. There are also 2 large farms in this sub sector but no animals were noticed during the time of the inspection. The shores of Johnstown Harbour, Campbells Cove and MacKenzie's Pond have numerous cottages constructed near the water's edge (IE; approx. 10mfs) and their on site septic systems are of a probable questionable nature. In addition are two old farms (sites 2 & 19) that appeared to be used only for animal feed (hay) as no actual livestock were seen grazing and a school in Johnstown has been turned into a seasonal craft center / tea room at approximately 30mfs.
1	ST	P	Maady's Variety and ice cream with movie rentals. 1-1/2 STY WT/BK building with a dog in the back yard.
2	NP	P	1-1/2 STY WT/RED farm house with a large barn in the back of the house. There were no animals present at the time of the inspection.
3	ST	P	1-1/2 STY BK/WT house with a new piece being added on the LHS of the house. (Martell)
4	ST	P	1 STY WT/RED house with a BN deck on the front. House is located beside the Hay Cove Ball Field.
5	ST	P	Property with a WT stone driveway but a gate blocking access to grounds.
6	ST	P	1-1/2 STY WT/GN house. The grass has not been cut for quite some time.
7	ST	P	1-1/2 STY WT house with a GY deck and an AB house across the road from it.
8	ST	P	1 STY BN/WT house 30mfs with a GN shed. Property is located on Campbell's Island.
9	ST	P	1 STY WT cottage 30mfs with a BN deck and a boat tied up on shore.
10	ST	P	1 STY WT/BK cottage 20mfs with a RED decks on front and back. Shed on the RHS of the property and 2 boats by the shore.
11	ST	P	1 STY GN/RED house with a building, shed and satellite dish in the yard.
12	ST	P	1-1/2 STY WT house with a WT deck and sun porch on the front of the house.
13	ST	P	1 STY WT cottage with a WY/GN travel trailer in the back yard.
14	ST	P	1 STY WT/BK cottage with a deck on the front and house shoe pits across the road.
15	ST	P	1 STY GY/WT sided house 30mfs with a stained deck on the side of the house.
16	ST	P	1-1/2 STY WT house with a WT 1 car garage and a travel trailer in the yard.
17	ST	P	1-1/2 STY BN/WT house with a matching garage and a travel trailer in the yard.
18	NS	N	WT/BN 1 car garage with 2 sheds behind it.
19	NP	P	1-1/2 STY WT farm house with a building and barn full of hay. There were no animals noted at the time of the inspection.
20	ST	P	WT/BL mobile home 150mfs with a RED deck and a fenced of garden.
21	ST	P	1 STY BE/BN stain house with a 1 car garage on the RHS of the property.
22	ST	P	1 STY BN stain house 50mfs with a 1 car garage and a 1-1/2 STY WT/RED house across the road from it. (Sampson)
23	ST	P	1-1/2 STY BN/WT A-Frame house 30mfs with a rock chimney.
24	ST	P	1 STY WT house 30mfs with a RED shed and a BN building on the property.

25	ST	P	1 STY BN cottage 50mfs with a RED deck and a BN shed in the yard.
26	ST	P	1-1/2 STY stain/WT A-Frame cottage with ivy veins growing up the side of the cottage.
27	ST	P	1 STY BN/WT cottage 50mfs with 2 travel trailers in the back yard.
28	ST	P	1 STY WT/GN cottage 20mfs with a GN picnic table in the front yard by the road.
29	ST	P	2 WT cottages 20mfs with 2 travel trailers in the yard.
30	OH	P	A string of 8 cottages on Campbell's Cove with numerous buildings, sheds and OHs.
31	ST	P	2 YW cottages 10mfs located out on Murdocks Point. (Wadden)
32	ST	P	District 10 Volunteer Fire Department.
33	ST	P	2 travel trailers 20mfs with a boat tied up on the shore.
34	ST	P	A string of 4 WT houses with a building, a shed, a satellite dish and a 1 car garage.
35	ST	P	New 1 STY YW/WT sided house with a deck on the front of the house.
36	ST	P	2 STY WT/BK house with a RED shed and a 2 car garage in the yard.
37	ST	P	1 STY RED/WT cottage located down over the bank and is hard to spot from the road.
38	ST	P	3 cottages on a road the has a chain across it blocking access.
39	ST	P	1 STY BN stain cottage 30mfs with a deck on the front.
40	ST	P	1 STY WT cottage 20mfs with a gate blocking off the driveway.
41	ST	P	JCDC Craft Center & Tea Room. An old school house 30mfs.
42	NP	N	Johnstown Church, Cemetery and Parish Hall.
43	ST	P	2 STY WT/BE house 50mfs with a building in the back yard.
44	ST	P	1 STY WT/GN cottage 50mfs with a deck on the front facing the water.
45	ST	P	1 STY WT/BN house 30mfs with a car-port, satellite dish and a BN shed on the RHS of the property.
46	ST	P	1 STY BE/BN house 30mfs with a deck on the front facing the water.
47	ST	P	1 STY WT/GN cottage with a WT/BE travel trailer in the front yard.
48	OH	P	A string of 5 cottages 10mfs with an OH located at the middle cottage.

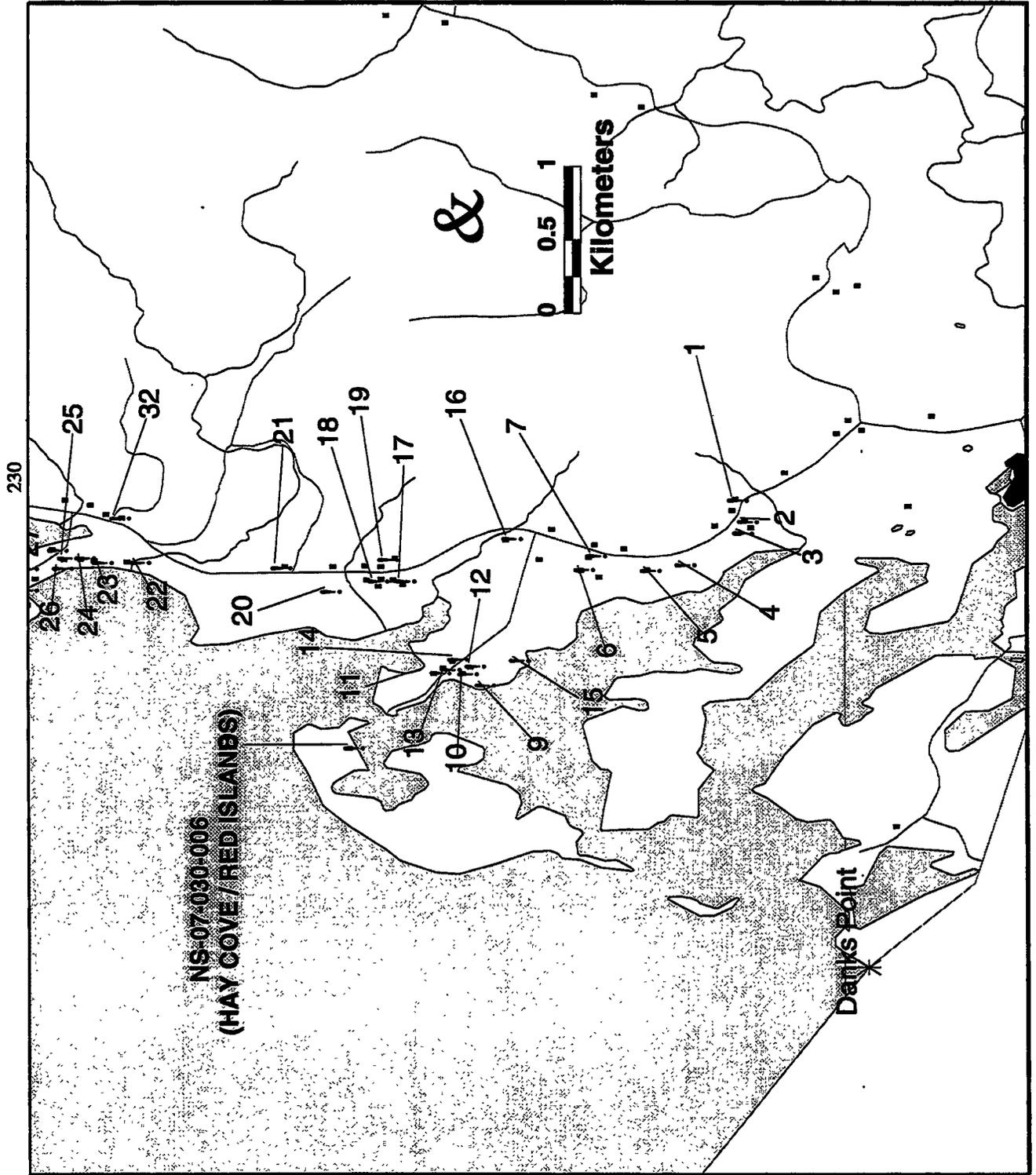


FIGURE 19B. SANTARY OBSERVATION SITE LOCATIONS, HAY COVE / RED ISLANDS (NS-7-030-006)

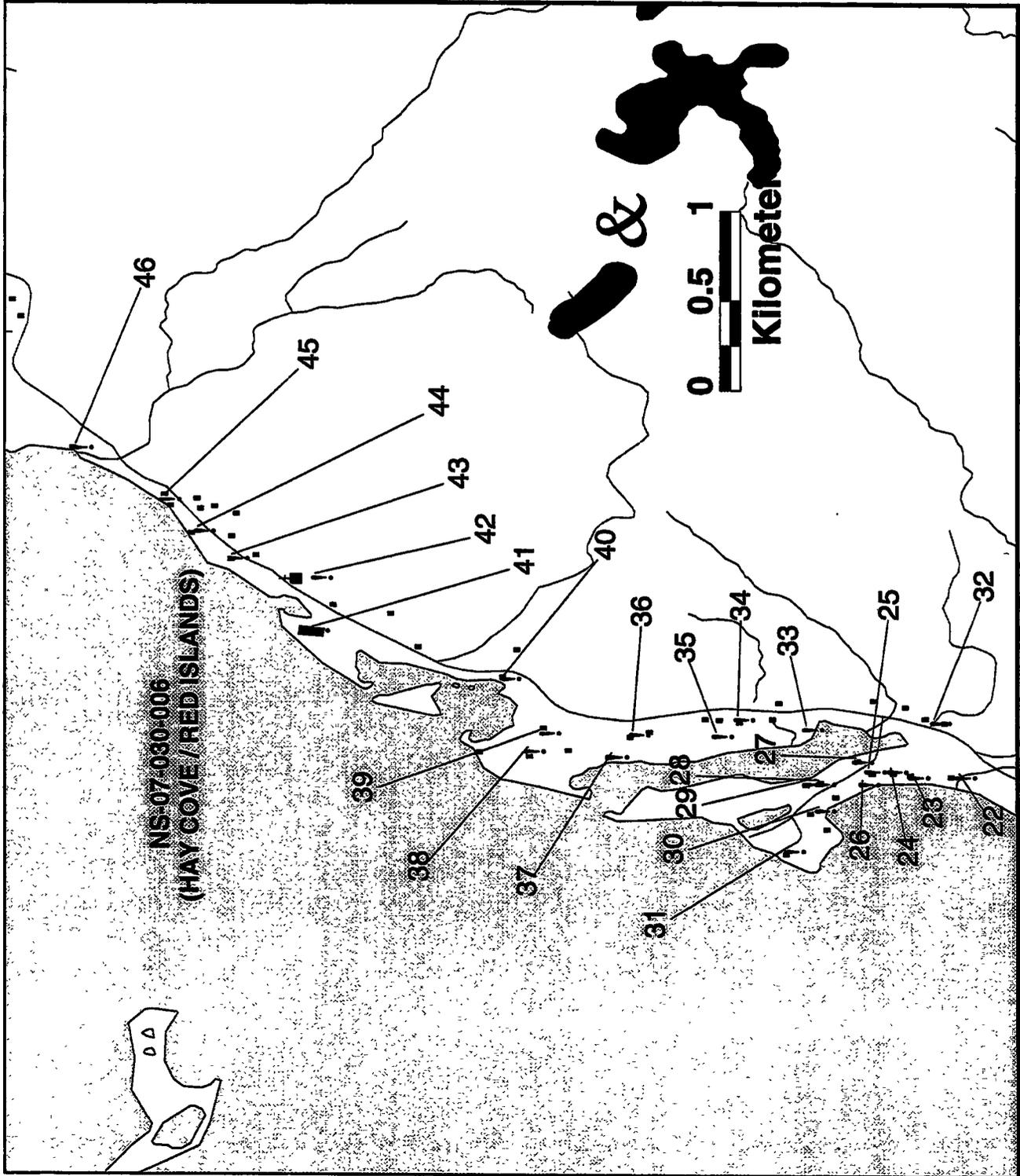


FIGURE 19B(cont.) SANITARY OBSERVATION SITE LOCATIONS, HAY COVE / RED ISLANDS (NS-7-030-006)

Sub-sector Name (Number):

Irish Cove / MacPherson Pond (NS-7-040-001)

Date surveyed:	1993-96
No. of sampling runs:	16
Shellfish classification:	Figure 20A
Sampling station locations:	Figure 20B
Fecal coliform results:	Tables 20A & 20B
Salinity data:	Table 20C
Water temperature data:	Table 20D
Shoreline sanitary observations:	Table 20E & Figure 20C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay *et al.* 1994b). The current classification (Figure 20A) is described as follows :

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 20E) below.

Bacteriological Water Quality

The five key stations (Figure 20B) surveyed on approximately fifteen occasions since 1993 (Tables 20A & 20B) meet the criteria for an approved classification.

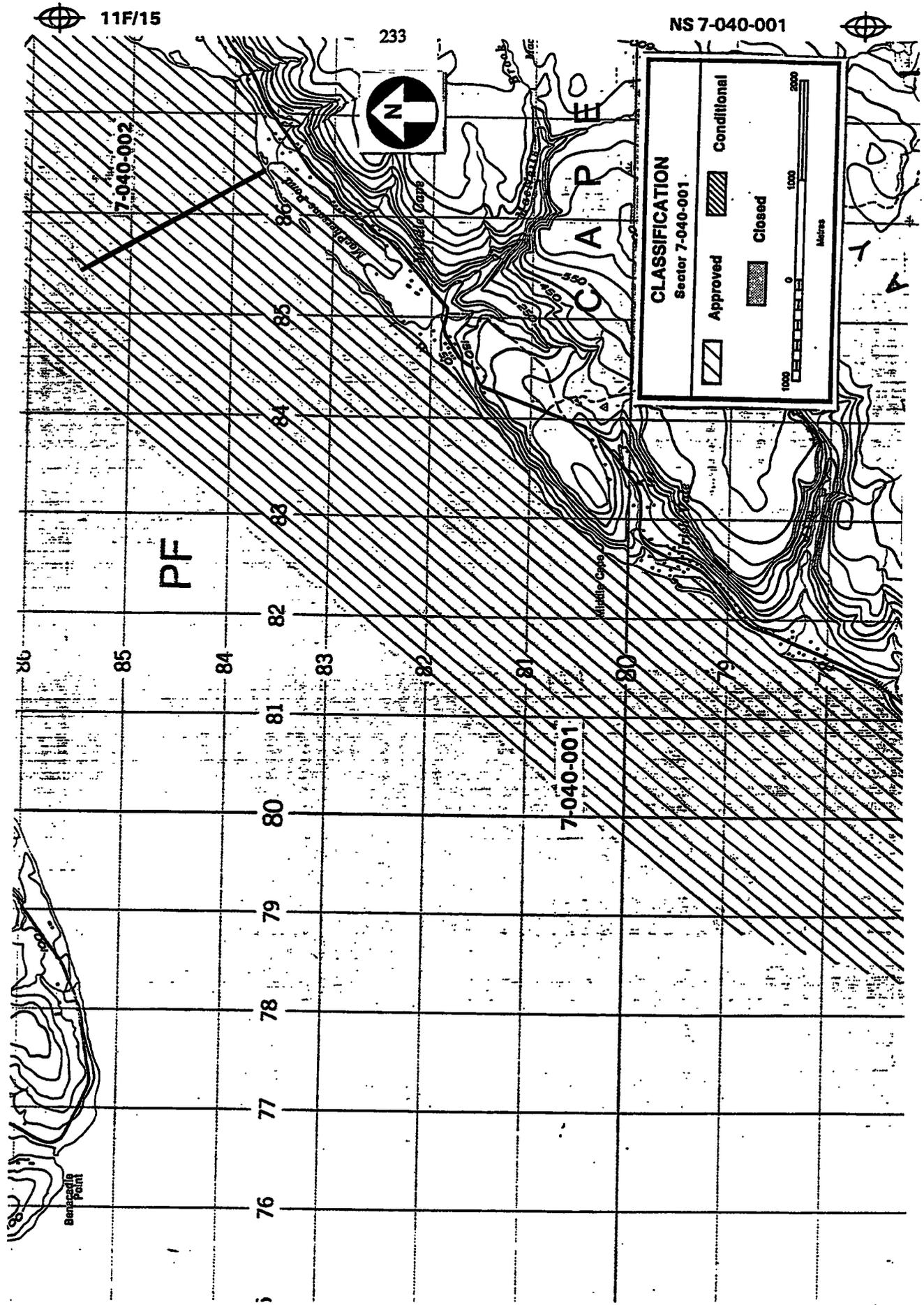


FIGURE 20A. PRESENT SHELLFISH CLASSIFICATION FOR IRISH COVE / MACPHERSON POND

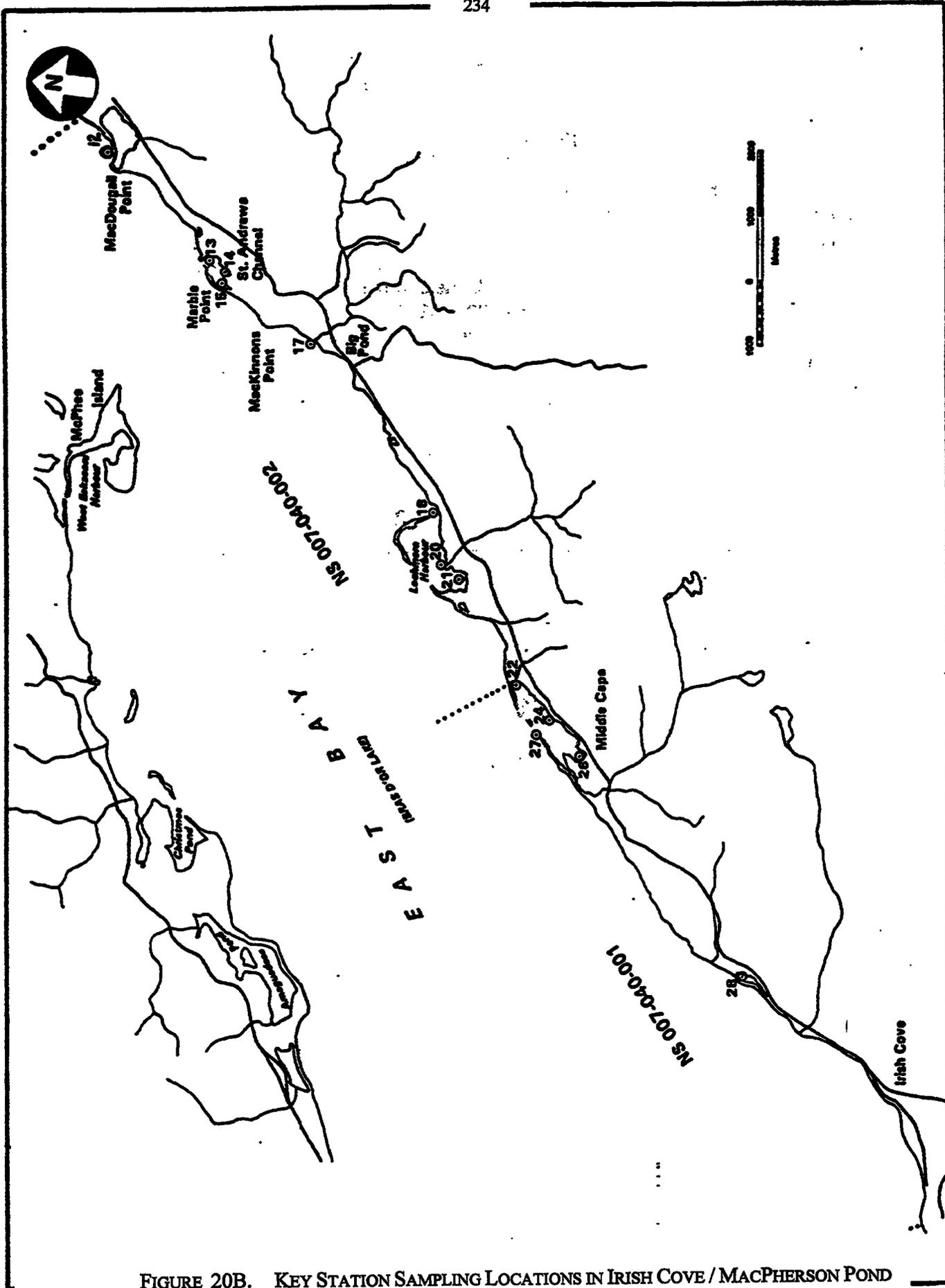


FIGURE 20B. KEY STATION SAMPLING LOCATIONS IN IRISH COVE / MACPHERSON POND & EAST BAY / BIG POND

TABLE 20A. IRISH COVE / MACPHERSON POND (NS-7-040-001) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
22	16	1993-1996	1.9	8	2	1.9	3	0
24	16	1993-1996	1.9	8	2	1.9	3	0
26	16	1993-1996	1.9	2	1.9	1.9	1.9	0
27	16	1993-1996	1.9	2	1.9	1.9	1.9	0
28	15	1993-1996	1.9	8	2	1.9	4	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 20A) should remain unchanged.

TABLE 20B. IRISH COVE / MACPHERSON POND (NS-7-040-001) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	21 May 93	28 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96	
22	1.9	1.9	1.9	2	1.9	1.9	8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
24	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	8	1.9	1.9	2	1.9	1.9	1.9	
26	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
27	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	
28	1.9	1.9	1.9	1.9	2	2	8	2	2	1.9	7	1.9	1.9	1.9	2	1.9	
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT											
Rain (mm)																	
0-24h	3.8	0.3	0	0	0	0	9	0	0.3	0.8	0	0	22	0	0	0	1.4
0-48h	11.6	1.9	14.4	1.6	0	0	9	0	1.3	5.6	0.8	0	22.8	3.2	8.7	0	1.4
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	22.8	3.2	32.4	0	0	6

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;

MR - Mid Rising

HF = High Falling;

LT= Low Tide;

HR - High Rising;

LF = Low Falling;

MT= Mid Tide;

LR - Low Rising

MF = Mid Falling;

TABLE 20C. IRISH COVE / MACPHERSON POND - SALINITIES (‰)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	18 Jul 96	01 Aug 96	27 Aug 96
22	20	17	16	16	16	20	20	20	20	20	18	17	18	20
24	19	16	18	17	20	20	18	20	20	19	17	19	18	21
26	18	18	20	16	19	20	18	20	20	19	19	20	20	20
27	18	18	20	16	19	20	18	20	20	19	19	20	19	21
28	18	18	18	12	16	16	18	21	20	20	19	20	20	21
Tide	NT-NT	MR-MR	MR-HT	MR-MR										
Flain (mm)														
0-24h	3.8	0.3	0	0	0	0	9	0	0.3	0.8	0	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	0	9	0	1.3	5.6	0.8	0	22.8	8.7
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	22.8	3.2	32.4

TABLE 20D. IRISH COVE / MACPHERSON POND - WATER TEMPERATURE (°C)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	18 Jul 96	01 Aug 96	27 Aug 96
22	13	12	12	13	12	15	18	17	21	19	22	21	15	20
24	13	12	11	12	15	16	17	16	21	18	22	21	15	20
26	13	12	10	13	15	15	17	16	21	18	21	21	15	20
27	13	12	11	12	16	16	17	17	21	18	21	21	14	19
28	14	14	15	15	15	15	18	17	20	20	22	22	14	19
Tide	NT-NT	MR-MR	MR-HT	MR-MR										
Flain (mm)														
0-24h	3.8	0.3	0	0	0	0	9	0	0.3	0.8	0	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	0	9	0	1.3	5.6	0.8	0	22.8	8.7
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	22.8	3.2	32.4

TABLE 20E. SHORELINE SANITARY SURVEY :

NS-07-040-001: IRISH COVE/MACPHERSONS POND
 FROM MACLEODS HILL TO MACPHERSONS POND
 C.MORAN
 INSPECTOR: JULY 10, 1993 REVIEWED: AUGUST, 1996
 COMPREHENSIVE:

Refer to: Figure 20C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with residences and cottages. Geology of the area is clay. This area exhibits a steep coastal shore interspersed with the small cottages that use a basic septic tank with overflow pipes or an outhouse. A few of the observed sites that are suspect sanitary sources have been highlighted in the attached appendix; near Irish Cove (sites 4, 8), the village of Irish Vale (sites 15, 20, 27, 32) and Middle Cape (sites 51, 55, 62, 64, 69, 71, 74). In particular the waters of Lochan Fad that are sheltered and may not flush out regularly could be influenced greatly by these shoreline residences
1	OH	P	1 str wooden shack with OH, app. 30mfs.
2	ST	P	1 str wht seasonal cottage, <15mfwc. No outflow PI visible.
3	PI	P	1 str old cottage and trailer. Sewer PI to open drum above IWC. No effluent visible.
4	OH	P	5, 1 str seasonal cottages with 2 OH's above shore. 20mfs.
5	ST	N	1 sty blu/wht cottage->100mfs,no pipes seen.
6	ST	P	1 str wht/red trim house, >300mfs. No outflow PI visible.
7	NS	N	N.S. Provincial Park with 2 OH's which are pumped out seasonally.
8	ST	P	Group of 15 houses and cottages, app. 10-300 mfs. No outflow PI's visible. One OH >200 mfs that appears rarely used. 1 camper trailer 20mfs
9	NS	N	Gravel pit with piles of gravel <30mfwc. Residents say that after a rain a great deal of silt and sand is carried along shore from WC.
10	OH	N	Group of 3 seasonal cottages and 1 mobile home. 1 OH >150mfs, 3 ST's with no overflow PI's visible.
11	ST	P	1 str wht, 1 str red, seasonal cottages, app. 30mfs. No outflow PI's visible.
12	NS	N	Abandoned house.
13	ST	N	1 1/2 str wht house on stone foundation, app. 100mfs. No outflow PI visible. (Aband).
14	PI	P	1 1/2 str wht house on stone foundation, app. 100mfs. 2 ST's with overflow PI to field, according to neighbour who helped put in system. Seasonal.
15	OH	P	Group of 6 seasonal cottages with 4 OH's app. 20-50mfs. 4 cottages have ST's also, 1 camper trailer 20mfs, NVP.
16	ST	N	1 str wht/grn trim seasonal cottage, app. 30mfwc. No outflow PI visible.
17	ST	N	2 str wht/blk trim house, app. 100mfpc. DR with rocks app. 20mf house. No eff visible
18	OH	N	Group of 3 seasonal cottages. 2 with OH's and 1 with ST app. 70mfs. No outflow PI visible.
19	OH	N	1 str wht seasonal cottage with OH app 100mfs
20	PI	P	Group of 3 seasonal cottages, app. 50mfs. 1 with ST and no outflow PI visible, 1 with ST and overflow PI to bushy ravine according to

			owner and one with ST and PI running towards bushy incline. BRN/YLW 1STY cottage 100mfs, "9807", NVP.
21	ST	P	1 1/2 str wht/blk trim seasonal house and barn, app. 80mfs. Old ST and disposal bed with a DR running along side. No eff visible
22	OH	N	1 str wht/blue trim seasonal cottage with OH app. 100mfs.
23	ST	N	1 str wht house on raised foundation, app. 80mfs. No outflow PI visible.
24	OH	N	1 str grn seasonal house, app. 60mfs with OH app. 90mfs.
25	ST	N	1 str wht seasonal house, app. 70mfs. No outflow PI visible but lots of springs in area. (Kublek).
26	ST	N	1 str wht/red trim seasonal cottage, app. 80mfs. No outflow PI visible.
27	OH	P	1 str wht/grn trim seasonal cottage with OH <5mfwc. Owners say they empty contents some where in the woods.
28	ST	P	1 str wht/blue trim seasonal cottage, app. 50mfs. No outflow PI visible.
29	ST	N	1 1/2 str wht/blk trim house on raised foundation, app. 100mfs. No outflow PI visible. (MacNeil).
30	ST		Camper trailer on side, NVP, 100 mfs.
31	ST	N	1 1/2 str wht/blk trim house, >200mfs. No outflow PI visible. Camper trailer on empty lot, tent screen and woodpile.
32	PI	P	2 str wht/blue trim house, >200mfs, <20mfwc. No outflow PI visible.
33	ST	P	2, 1 str wht seasonal cottages, app. 30-50mfs 2 outflow PI's from ST to nearby swamp according to owner. Camper trailer parked beside WH/BL house 30mfs, NVP.
34	ST	N	1 str brw wooden shingled house on raised foundation with satellite dish, app. 50mfs. 1 str wht seasonal cottage behind this house. No outflow PI's visible.
35	ST	N	1 str yel, 1 str wht seasonal cottages, app. 20mfs and 40mfpnd. No outflow PI's visible.
36	ST	N	1 str yel/brw trim seasonal cottage, 1 str wht house on raised foundation, app. 50mfs. No outflow PI visible.
37	OH	N	1 str yel, new 1 str brw, and 1 str grn seasonal cottages, app. 40mfs. No outflow PI's visible.
38	ST	P	2, 1 str wht seasonal cottages with OH's app. 60mfs and 40mfwc. (Dunn).
39	ST	N	1 str wht, 1 str grn, houses on raised foundations, app. 200mfs. No outflow PI visible. 2, 1 str wht cottages with no outflow PI's visible, app. 200mfs.
40	NS	N	1 str yel seasonal cottage, >300mfs. No outflow PI visible.
41	ST	N	2 str wht abandoned house.
42	ST	N	1 str wht house on raised foundation, app. 40mfwc. No outflow PI visible.
43	ST	P	1 str wht/red trim house on raised foundation app. 20mfwc. No outflow PI visible. 2 sheds
44	NS	N	1 str wht house on raised foundation, >300mfs No outflow PI visible. (MacLean).
45	OH	N	2 str abandoned house.
46	OH		Irish Vale
47	PI	N	1 1/2 str wht/blue trim seasonal house on stone foundation, >500mfs.
48	ST	P	1 str yel/brw trim house with OH, 1 str wht/brw trim house "9111", both on raised foundations with sheds. Wht house has overflow PI to front DR according to owner. >300mfs.
49	ST	N	1 1/2 str wht/grn trim house on raised foundation, >300mfs. ST with overflow PI to field according to owner. (MacInnis).
50	OH	N	2 str brw wooden shingled house on raised foundation, >300mfs. No outflow PI visible. "MacInnis 8955"
51	ST	N	Group of 4 houses, 2 seasonal. No outflow PI's visible. App. 120mfs.
52	ST	P	1 str red seasonal cottage with OH, app. 60mfs.

53	ST	P	1 str wht/grn trim seasonal cottage, app. 20mfs. No outflow PI visible.
54	ST	N	1 str wht/blk trim house on raised foundation app. 100mfs. No outflow PI visible. WH house BLK shutters.
55	ST	N	1 str wht/red trim seasonal cottage, >100mfs. No outflow PI visible. "8888 the Nearing Resort"
56	ST	P	1 str wht/pine front, 1 str beige/org trim, 1 str cedar/whit trim seasonal cottages, app. 50mfs. No outflow PI's visible. WV. "8876" "8882"
57	ST	P	1 str grey, 1 str yel, seasonal cottages on raised foundation, app. 30mfs. No outflow PI's visible. "8809"
58	ST	P	2 str wht/brw trim house on raised foundation app. 50mfwc. No outflow PI visible.
59	NS	P	1 str wht/red trim house on raised foundation app. 10mfwc, app. 50mfs. No outflow PI visible. (Myatt).
60	ST	N	Site of old farm house.
61	ST	N	Abandoned farm house.
62	ST	P	1 str brw shingled/whit trim seasonal cottage on raised foundation, app. 50mfs. No outflow PI visible. Inlet in front of cottage was cut off without culvert. Now slightly open.
63	ST	P	1 str brw wooden seasonal shingled house on raised foundation, app. 40mfs. No outflow PI visible. WV with sailboat in pond.
64	OH	P	30ft seasonal Carsair trailer, app. 25mfs. No outflow PI visible.
65	ST	N	1 1/2 str wht/grn trim house with garage on raised foundation, app. 100mfs. No outflow PI visible.
66	ST	P	Group of 4 seasonal cottages with sheds and 2 WV. One OH <5mfs. No outflow PI's visible
67	ST	N	1 str wht/red trim seasonal cottage, app. 60mfs. No outflow PI visible.
68	ST	P	1 str wht/red trim seasonal cottage, "8262", with lots of sheds, 1 str brw seasonal cottage <5mfs. No outflow PI's visible. WV.
69	ST	P	1 str wht seasonal cottage, app. 50mfs. No outflow PI visible but bushy DR beside house. Morrison
70	ST	P	1 str wht/red trim seasonal cottage, app. 50mfs. No outflow PI visible.
71	ST	P	1 str wht/red trim seasonal cottage, <5mfs. 3 ST's. No outflow PI visible, "8586".
72	ST	N	2 str wht/brw trim seasonal house on raised foundation, app. 50mfs. No outflow PI visible, "Big Pond Bed and Breakfast.
73	ST	P	1 str blue seasonal cottage, <10mfwc, <10mfs. No outflow PI visible. WV. "8576"
74	ST	P	4 seasonal cottages, <15mfs. No outflow PI's visible. 3 WV's. 3 sailboats anchored in pond. (Hefferman). "8526"
75	NS	P	1, 1 str wht seasonal cottages, app. 10mfs. No outflow PI's visible. WV. "MacLean", "Carrigan"
76	ST	P	Old cottage, <10mfs. No outflow PI visible. 2 sheds.
77	ST	N	Abandoned wht house and sheds.
78	ST	N	New 2 str brw cedar seasonal cottage, app. 80mfs. No Outflow PI visible. WV.
		N	New 1 str yel/brick house on raised foundation app. 50mfs. No outflow PI visible. WV. "8446"
		N	1 str beige/rust trim,runnery retreat, app. 25mfs. No outflow PI visible. WV. "Keranna"

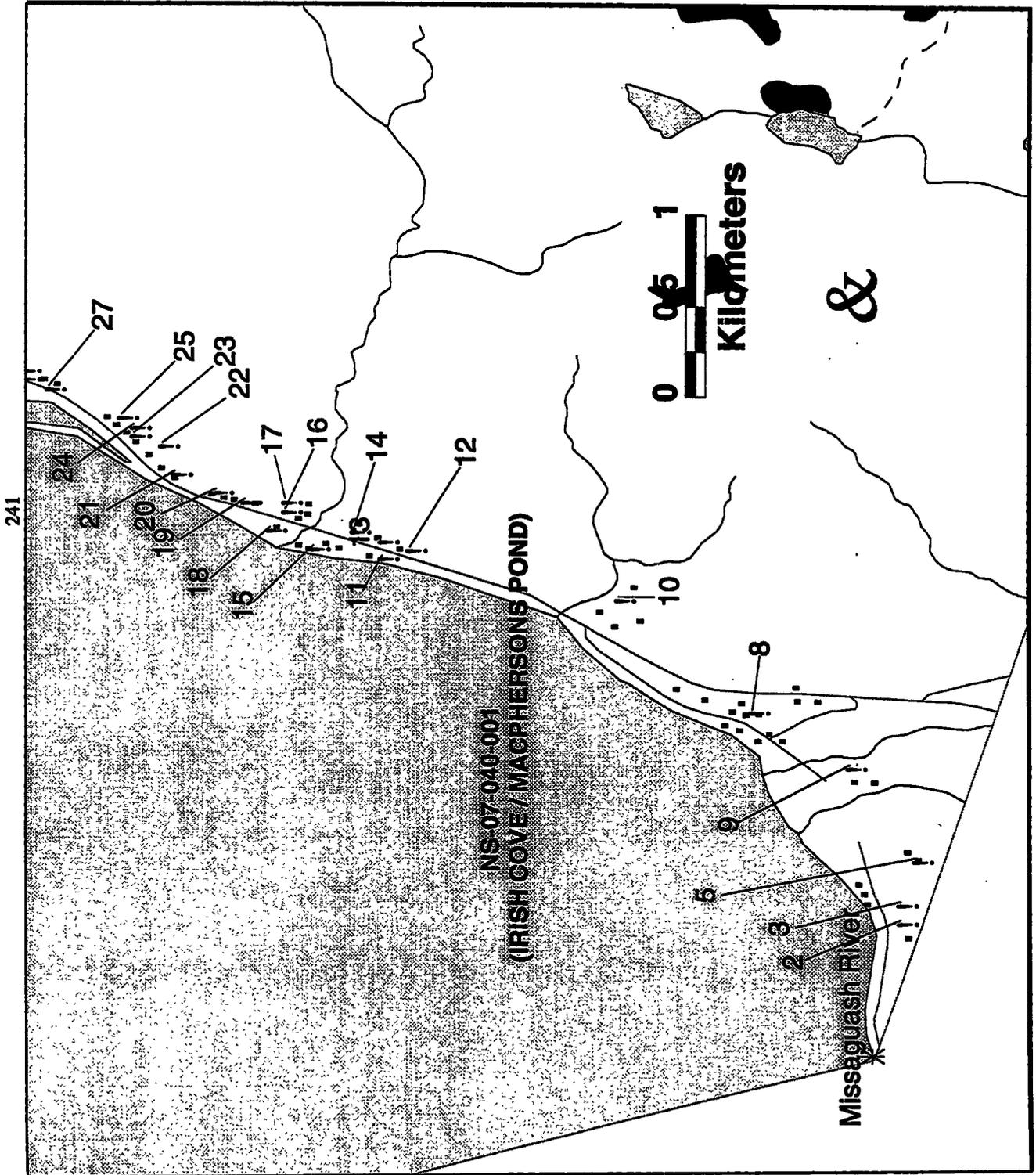


FIGURE 20C. SANITARY OBSERVATION SITE LOCATIONS IN, IRISH COVE / MACPHERSON POND

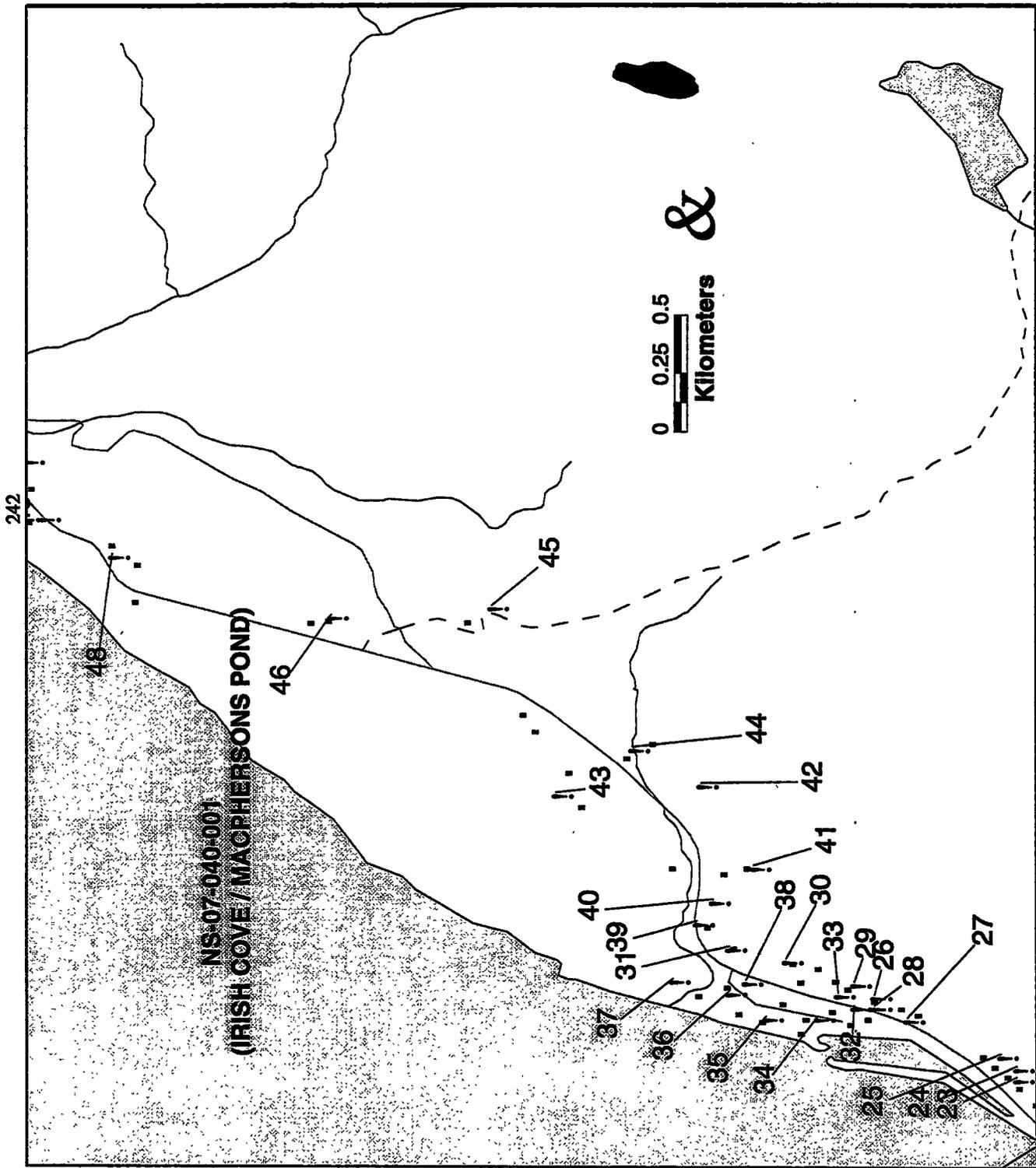


FIGURE 20C(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, IRISH COVE / MACPHERSON POND

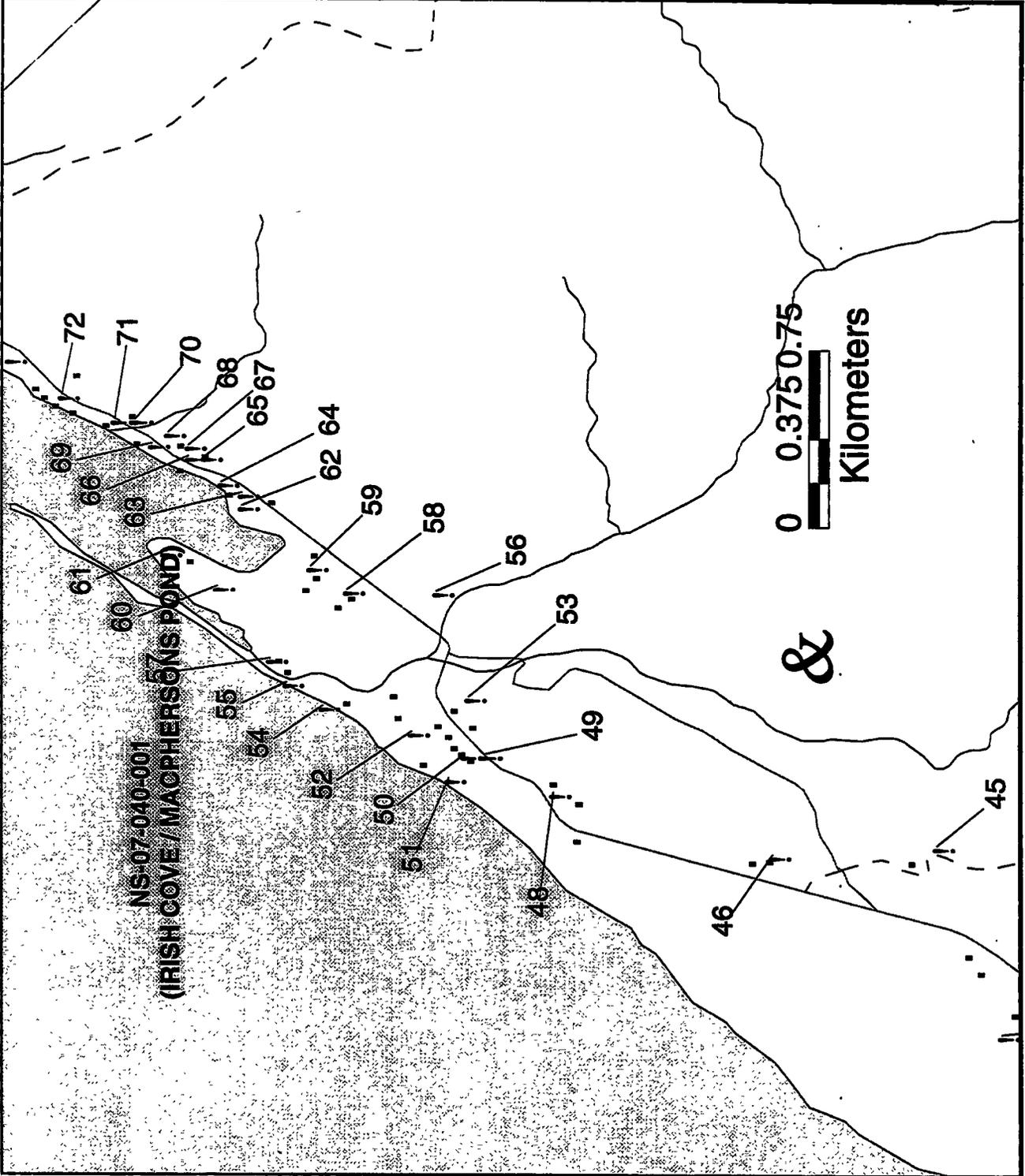


FIGURE 20C(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, IRISH COVE / MACPHERSON POND

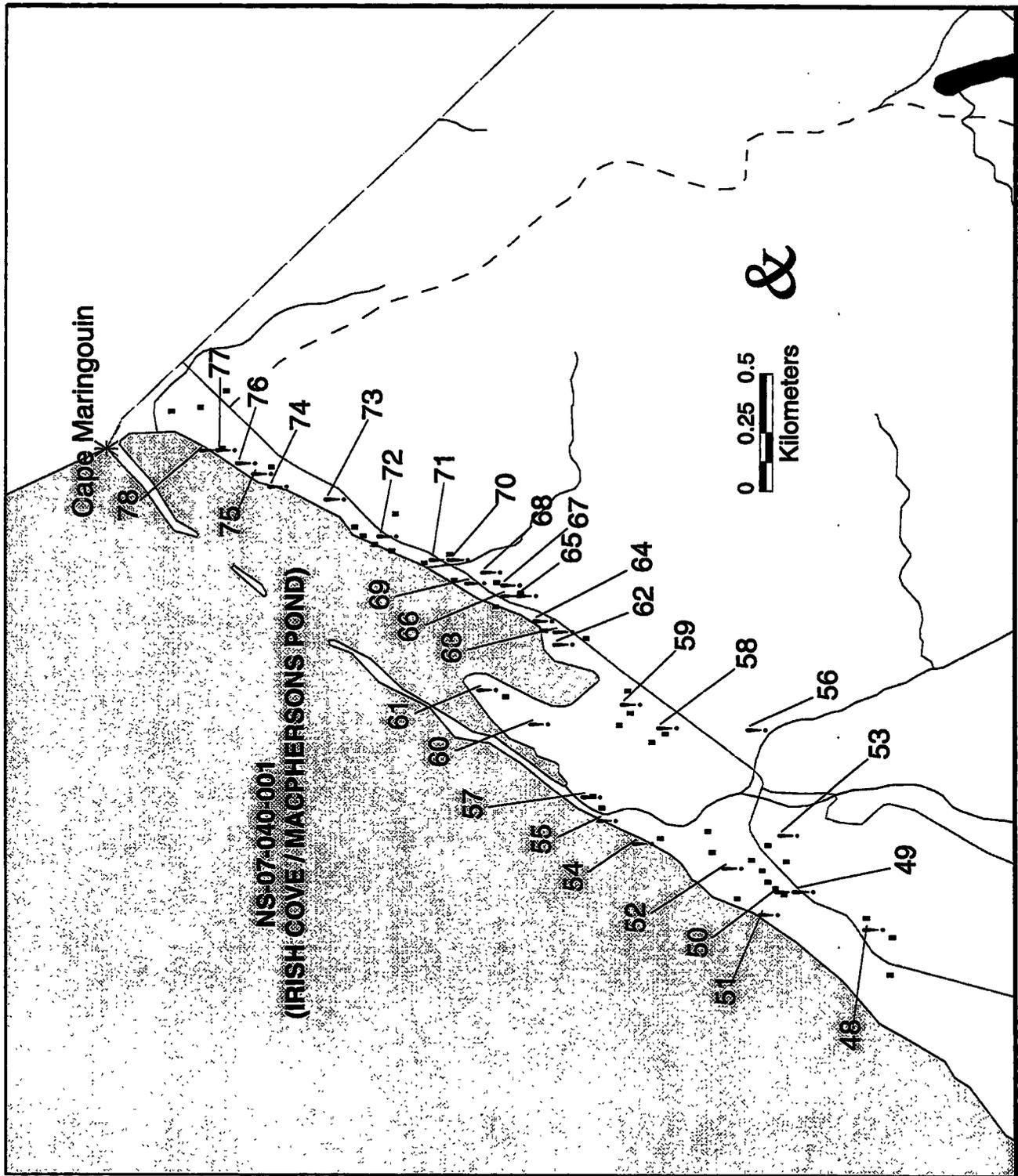


FIGURE 20C(cont.). SANTARY OBSERVATION SITE LOCATIONS IN . IRISH COVE / MACPHERSON POND

Sub-sector Name (Number):

East Bay / Big Pond (NS-7-040-002)

Date surveyed:	1993-96
No. of sampling runs:	16
Shellfish classification:	Figure 21A
Sampling station locations:	Figure 20B
Fecal coliform results:	Tables 21A & 21B
Salinity data:	Table 21C
Water temperature data:	Table 21D
Shoreline sanitary observations:	Table 21E & Figure 21B

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay *et al.*, 1994b). The current classification (Figure 21A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 21E) below.

Bacteriological Water Quality

The eight key stations (Figure 20B) surveyed on sixteen occasions since 1993 (Tables 21A & 21B) meet the criteria for an approved classification.

TABLE 21A. EAST BAY / BIG POND (NS-7-040-002) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
12	16	1993-1996	1.9	5	2	1.9	3	0
13	16	1993-1996	1.9	11	2	1.9	4	0
14	16	1993-1996	1.9	8	3	1.9	6	0
15	16	1993-1996	1.9	17	2	1.9	5	0
17	16	1993-1996	1.9	31	3	2	12	0
18	16	1993-1996	1.9	8	2	1.9	5	0
20	16	1993-1996	1.9	2	1.9	1.9	1.9	0
21	16	1993-1996	1.9	2	1.9	1.9	2	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 21A) should remain unchanged.

TABLE 21B. EAST BAY / BIG POND (NS-7-040-002) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
12	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	5	1.9	2	1.9	1.9
13	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	11	1.9	2	1.9	1.9
14	2	8	1.9	1.9	1.9	2	2	1.9	2	7	1.9	8	1.9	1.9	1.9	5
15	17	1.9	1.9	1.9	1.9	5	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
17	2	2	1.9	1.9	1.9	7	2	2	21	1.9	2	31	1.9	4	1.9	1.9
18	1.9	1.9	1.9	1.9	1.9	8	7	2	1.9	1.9	1.9	2	1.9	1.9	1.9	5
20	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9
21	2	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT										
Rein (mm)	3.8	0.3	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0	0
0-24h	11.6	1.9	14.4	1.6	0	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	8.2	6	8.2	0	1.8

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;

MR - Mid Rising

HF = High Falling;

LT= Low Tide;

HR - High Rising;

LF = Low Falling;

MT= Mid Tide;

LR - Low Rising

MF = Mid Falling;

TABLE 20C. EAST BAY / BIG POND (NS-7-040-002) - SALINITIES (‰)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
12	20	20	22	20	20	22	21	20	22	20	22	18	20	19	19	22
13	20	18	20	20	20	22	21	18	22	19	22	18	20	19	20	20
14	16	17	20	20	21	21	21	18	22	19	23	18	20	20	20	20
15	18	18	20	19	20	20	21	18	22	20	23	18	20	19	20	21
17	6	12	18	15	20	20	20	18	20	19	17	22	8	20	17	21
18	20	16	18	18	20	20	16	15	18	18	22	23	20	19	21	20
20	18	16	18	18	20	19	20	21	19	19	22	20	20	20	19	20
21	16	16	20	16	18	18	20	18	20	19	17	20	20	19	21	20
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR											
Flain (mm)																
0-24h	3.8	0.3	0	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0
0-48h	11.6	1.9	14.4	1.6	0	9	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	0	8.2	6	8.2	0

TABLE 21D. EAST BAY / BIG POND (NS-7-040-002) - WATER TEMPERATURE (°C)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
12	11	10	9	12	13	13	16	17	20	19	21	20	13	15	20	19
13	13	12	10	13	15	15	17	18	22	19	22	21	16	16	21	20
14	14	12	10	14	15	15	18	17	22	19	22	21	17	16	21	20
15	14	11	10	13	15	15	17	17	22	19	22	22	16	16	22	20
17	11	11	11	11	14	14	16	17	21	18	20	19	14	15	20	20
18	9	12	12	13	16	16	16	16	21	17	21	20	15	15	21	20
20	13	12	11	13	16	16	18	16	21	18	22	21	15	17	22	19
21	14	12	10	13	16	16	17	17	22	18	22	21	14	16	21	20
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR											
Flain (mm)																
0-24h	3.8	0.3	0	0	0	9	9	0	0.3	0.8	0	0	8.2	6	0	0
0-48h	11.6	1.9	14.4	1.6	0	9	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	0	8.2	6	8.2	0

TABLE 21E. SHORELINE SANITARY SURVEY :

NS-07-040-002: EAST BAY/BIG POND
 ? POINT AT LOCHAN FAD TO MACDOUGALL POINT
 INSPECTOR: C.MORAN
 DATE: AUGUST 15, 1993 REVIEWED: AUGUST, 1996

Refer to: Figure 21B for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area thinly populated with residences, seasonal cottages and a large trailer park. A series of shoreline communities backed by the East Bay Hill region. The homes and cottages located throughout here are mostly located approximately 100 meters and closer from shore and near highway No.4. In a few instances some sites were within 20 meters from a water course (sites 33,38,45,46) with either outhouses or old septic tanks for treatment of wastes. There was the large trailer park (site 120) located at MacDougall Point. It is equipped with septic tanks and disposal fields and holding tanks for pump out later. Grab water samples taken in the area (1990) indicated high faecal counts on three occasions
1	OH	P	1 str red seasonal cottage with OH app. 30mfs
2	ST	P	1 str wht/blk trim house on raised foundation >150mfs, <10mfwc. No outflow PI visible.
3	OH	N	1 str yel/brw trim seasonal cottage with OH, app. 120mfs, app. 40mfwc. Stream at side appeared dried up, across road is new BLK/WH 2 STY house 2 car garage 200mfs.
4	ST	N	1 str grn/wh trim seasonal cottage, app. 80mfs. No outflow PI visible.
5	ST	N	1 1/2 str wht/grn trim house with shed, >150 mfs. No outflow PI visible but area brushy.
6	PI	P	1 str blue seasonal cottage, <10mfwc. Area neighbour says outflow PI exists. None visible. "W" at driveway.
7	ST	N	Group of 3 seasonal cottages, app. 60-150mfs. No outflow PI's visible.
8	ST	N	1 stw wht/red trim house on raised foundation app. 70mfs. No outflow PI visible. (MacIntyre). "Carl and Gert"
9	ST	N	2 str cedar house on raised foundation, app. 70mfs. No outflow PI visible.
10	NS	N	N.S. Dept. of forests depot.
11	ST	N	1 1/2 str brw wooden seasonal cottage on raised foundation, >100mfs, app. 60mfwc. No outflow PI visible.
12	ST	P	2 str wht house, app. 100mfs, app. 30mfwc. Old barn and shed on site. No outflow PI visible.
13	ST	N	2 str wht house on stone foundation, >150mfs. No outflow PI visible.
14	ST	N	1 str wht/rust trim house on raised foundation, >200mfs. No outflow PI visible.
15	ST	N	1 1/2 str wht house, >100mfs. No outflow PI visible. Lots of undergrowth in area.
16	ST	P	1 1/2-str red/wht trim restaurant; Rita's Tea Room, >200mfs. App. 175 people per day. No outflow PI visible. Road across street leads to small camper 5mfs.
17	OH	P	1 str wht/red trim seasonal cottage with OH, app. 50mfs. OH in wet area.
18	NP	P	2 str wht/blk trim house on raised foundation with garage, barn and shed, app. 30mfwc. App 30 cattle which graze in fields. No outflow PI visible, 2 manure piles app. 50mfwc. GR shingled 2STY house, possibly abandoned.
19	ST	N	2 str wht house on raised foundation with 3 or 4 sheds, app. 100mfwc. No outflow PI visible.

20	ST	P	2 seasonal trailers, 3 seasonal cottages, app 60-150mfs. No outflow PI's visible.
21	ST	N	1 str wht/blue trim seasonal cottage, >200mfs. No outflow PI visible.
22	ST	N	1 str wht/red trim seasonal cottage, >150mfs. No outflow PI visible.
23	ST	P	Yel/bw trim mobile home, >100mfs. No outflow PI visible.
24	ST	P	1 str yel/bw trim seasonal cottage, shed and trailer, app. 50mfs. No outflow PI visible.
25	OH	P	1 str yel.bw trim house on raised foundation. Wht/red trim mobile home. OH app. 60mfs.
26	ST	P	Wht/blk trim mobile home and shed, 1 str wht seasonal cottage, 1 str brw seasonal cottage. No outflow PI's visible. 1 str pink seasonal cottage with old ST app. 25mfwc. All app. 60mfs. WV with 2 boats in pond.
27	ST	N	1 str wht seasonal cottage on raised foundation, app. 80mfs. No outflow PI visible, painted buoy at driveway.
28	ST	P	1 1/2 str wht/red trim house and large old barn, app. 10mfwc. No outflow PI visible. >300mfs.
29	ST	N	1 str wht/pink trim seasonal cottage, app. 40mfwc, >200mfs. No outflow PI visible.
30	ST	N	1 str wht/blue trim, 1 str wht/grn trim, houses on raised foundation, >150mfs. No outflow PI's visible.
31	NS	P	Mobile home, trailer, 3, 1 str cottages, app. 30mfs. One large holding tank pumped out seasonally. (Hollahan). Camper trailer.
32	ST	N	2 str wht house with 2 sheds, 2 str wht/wood front house, both on raised foundation, >200mfs. No outflow PI visible.
33	OH	P	Seasonal tent trailer with OH, app. 20mfs.
34	ST	N	1 str wht seasonal cottage, app. 50mfs. No outflow PI's visible.
35	OH	P	Group of 5 seasonal cottages, app. 20-50mfs. 2 with OH's and 3 with ST's with one outflow PI to woods according to owner.
36	PI	N	1 1/2 str wht house on stone foundation, >150mfs. ST with overflow PI to woods according to owner.
37	ST	N	New 1 str blue/wht trim house on raised foundation, >150mfs. No outflow PI visible.
38	ST	P	5, 1 str seasonal cottages, app. 20-30 mf pond. No outflow PI's visible.
39	ST	N	1 str brw/beige trim seasonal cottage on raised foundation, app. 60mfs. No outflow PI visible, "7498"
40	NS	N	1 str yel abandoned cottage.
41	ST	N	1 str wht seasonal cottage, app. 100mfs. No outflow PI visible.
42	OH	P	1 1/2 str yel/wht seasonal house on stone foundation, app. 100mfs, <20mfwc.
43	ST	N	1 str red/wht trim seasonal cottage, app. 100mfs. No outflow PI visible.
44	ST	P	1 str yel/wht trim seasonal cottage with chemical toilet, 1 str beige abandoned cottage, app. 80mfs.
45	NS	P	1 str wht seasonal cottage, <10mfs. Chemical electric toilet.
46	ST	D	1 str wht seasonal cottage, <10mfs. Septic system practically on shore.
47	LE	P	1 str beige seasonal cottage and trailer, 10mfs. LE from small disposal bed. "Gillis and McPhee 7396"
48	ST	P	1 1/2 str wht seasonal cottage on raised foundation, app. 30mfs. No outflow PI visible
49	PI	P	1 1/2 str wht house, app 80mfs. Old ST with overflow PI to brushy area according to relative.
50	ST	N	1 str wht/blk trim house on raised foundation app. 90mfs. No outflow PI visible.
51	ST	N	1 str wht/blk trim house on raised foundation app. 100mfs. No outflow PI visible.
52	ST	P	1 str wht/grn trim seasonal cottage, app. 30mfs. No outflow PI visible.
53	ST	P	1 str yel/wht and brw trim seasonal cottage, app. 20mfs. No outflow PI visible.
54	OH	P	1 str beige/wht trim seasonal cottage on raised foundation, app. 30mfs. OH <5mfwc.
55	OH	P	1 str yel.wht trim seasonal cottage, >100mfs. OH app. 30mf DR.

56	OH	P	Group of 5 seasonal cottages, sheds, WV and OH app. 30mfs. Camper trailer 10mfs, NVP.
57	ST	N	1 str wht/red trim seasonal cottage on raised foundation, app 70mfs. No outflow PI visible, "Scorry Breac 7334".
58	OH	N	1 str brw seasonal cottage with OH >150mfs.
59	ST	N	1 str yel seasonal cottage, 1 str wht seasonal cottage, >100mfs. No outflow PI visible.
60	ST	P	4 seasonal cottages, 2 WV's, app. 10-30mfs. No outflow PI's visible. (Oak, MacKay's).
61	ST	P	Group of 5 houses, 2 seasonal, app. 80-200mfs app. 60-100mfwc. Very brushy area. No outflow PI's visible.
62	ST	N	1 1/2 str wht house on raised foundation with garage, app. 40mfwc. No outflow PI visible.
63	ST	N	1 1/2 str grn/wht trim house on raised foundation, app. 30mfs. No outflow PI visible.
64	OH	P	MacIssac's Public Beach and Canteen with 2 lined OH's app. 60mfs. WV and raft.
65	ST	N	1 str yel seasonal cottage, >100mfs. No outflow PI visible.
66	ST	N	Church and recently burnt rectory, app.100mfs
67	PI	P	Big Pond School. 6in dia metal PI to shore coming out of concrete block. No eff visible but also no school this time of year.
68	PI	P	2 str wht house on raised foundation with old metal ST and overflow PI to field, app. 100mfwc. According to owner.
69	ST	P	1 str yel seasonal cottage on raised foundation, app. 50mfwc, trailer on site. No outflow PI visible.
70	OH	P	Group of 6 seasonal cottages, app. 100mfwc. 2 with ST's. 4 with 2 OH's. One OH app. 10mf ravine.
71	OH	N	2 seasonal 1 str cottages. 1 with OH app. 100mfwc. The other with ST with no outflow PI visible.
72	PI	P	1 1/2 str wht/red trim house on stone foundation, app. 120mfwc. Appears abandoned. Old ST and overflow PI to ravine according to local installer of ST's.
73	ST	N	Village of Big Pond. All houses and cottages have ST and disposal beds according to local ST installer. No PI's visible.
74	ST	N	1 str wht seasonal house on raised foundation with 4 sheds, >300mfs. No outflow PI visible
75	ST	N	1 1/2 str cedar house on raised foundation, 1 str yel/brw trim house on raised foundation, and 1 1/2 str wht/red trim house on stone foundation, >300mfs. No outflow PI's visible.
76	OH	N	Group of 4 seasonal cottages with 3 OH's and one ST, >300mfs.
77	ST	N	Group of 4 seasonal cottages, >250mfs. No outflow PI's visible. Very brushy area.
78	ST	P	Seasonal trailer app. 50mfs. No outflow visible.
79	ST	P	1 str beige, 1 str yel, seasonal cottages, app. 30mfs. No outflow PI's visible.
80	PI	P	1 str beige seasonal cottage, app. 30mfs. ST with overflow PI to woods according to neighbour.
81	OH	P	Group of 5 seasonal cottages, app. 20-40mfs. 3 OH's, 1 ST with no outflow PI visible and 1 holding tank pumped out seasonally.
82	ST	N	Group of 5 seasonal cottages. 4 with ST and no outflow PI visible. 1 with ST and over flow PI to woods, >200- >400mfs.
83	ST	N	Group of 3 seasonal cottages, >200mfs. No outflow PI's visible.
84	OH	P	Group of 13 seasonal cottages, app. 20-40mfs. 8 with ST and no outflow PI visible. 6 OH's in area. 4 WV's. 1990 Sample yielded 0mpn/100ml.
85	OH	N	1 str yel/wht trim seasonal cottage, >100mfs.
86	ST	N	1 1/2 str grn house on stone foundation with barn, >150mfs. No outflow PI visible.
87	ST	N	New 1 str wht house on raised foundation, >200mfs. No outflow PI visible.
88	ST	N	New 2 str blue house on raised foundation, new blue mobile home, >150mfs. No outflow PI visible.
89	OH	P	1 blue, 1 wht, 1 wht, 1 str seasonal cottages with OH app. 30-50mfs. Camper trailer, several sailboats moored.

90	ST	N	1 str wht house on raised foundation, >300mfs. No outflow PI visible.
91	ST	N	Seasonal trailer, >300mfs. No outflow PI visible. "The Hollohan's", possible OH at side.
92	OH	N	1 str wht, 1 str red, seasonal cottages, app. 300mfs. 1 OH and 1 ST with no outflow PI visible.
93	ST	N	1 str wht seasonal cottage, app. 300mfs. No outflow PI visible.
94	OH	N	2, 1 str wht seasonal cottages with ST's and no outflow PI's visible. 1 str grn seasonal cottage with OH app. 200mfs.
95	ST	P	Group of 6 seasonal cottages, app. 40mfs. No outflow PI's visible. 3 WV's.
96	PI	P	1 1/2 str wht/brw house on raised foundation >150mfs. Old ST and overflow PI to bushy area according to owner. (MacInnis).
97	ST	P	3 seasonal cottages, app. 40mfs. No outflow PI's visible. WV, 1 in id BLK pipe, clear water flowing, RD on shoreline.
98	ST	N	New 1 str beige house on raised foundation, app. 100mfs. No outflow PI visible.
99	ST	P	1 str seasonal wht house on raised foundation app. 60mfs. No outflow PI visible.
100	ST	P	2, 1 str wht seasonal cottages, app. 60mfs. No outflow PI's visible. WV.
101	ST	P	1 str wht house on raised foundation, app. 50mfifwc. No outflow PI visible. WV.
102	LE	P	1 str wht/blk trim house on raised foundation with LE from disposal bed according to owner. App. 50mfifwc. WV. "6452"
103	ST	N	1 str wht seasonal cottage, app. 70mfs. No outflow PI visible.
104	PI	P	1 str wht seasonal cottage, app. 40mfs. 3in dia PI to cliff. No eff visible.
105	ST	P	Wht/grn trim mobile home, app. 40mfs. No outflow PI visible.
106	ST	N	1 1/2 str wht house on raised foundation, app 200mfpond. No outflow PI visible.
107	ST	N	1 str beige seasonal cottage, app. 120mfs. No outflow PI visible.
108	ST	N	1 str wht/blk trim house on raised foundation >200mfs. No outflow PI visible.
109	PI	P	1 str wht/blk trim house on raised foundation with ST and overflow PI to woods according to owner. >200mfs.
110	ST	N	2 str wht house on raised foundation, >200mfs. No outflow PI visible.
111	ST	N	1 str wht abandoned cottage, >200mfpond. No outflow PI visible.
112	ST	N	1 str wht/yel trim house on raised foundation >100mfpond. No outflow PI visible.
113	ST	N	1 str wht seasonal cottage, 1 str wht house on raised foundation, app. 80mfpond. No outflow PI visible.
114	ST	P	5 seasonal cottages, <10mfpond. No outflow PI's visible. 3 WV's 1 2in id pipe leading across stream, goes underground again there.
115	ST		
116	ST	P	4 seasonal cottages, 3 on raised foundations, app. 50-100mfs. No outflow PI's visible.
117	ST	P	1 str blue house, app. 80mfpond. No outflow PI visible. New WH sided house, split level.
118	ST	N	2 str wht house, 2 str yel/wood front house, on raised foundations, >100mfpond. No out flow PI's visible.
119	ST	P	1 str convenience store "Me and the Mrs", and mini golf approx 100mfpond. No outflow PI visible.
120	ST	N	1 str wht/red trim seasonal cottages and 3 trailers, >100mfs. No outflow PI visible.
121	ST	D	Beach Trailer Park. 130 sewage sites, 84 non-sewage sites using 2 washroom facilities. Open from June 15 - Sept. 15. Individual ST and disposal fields also 1 large disposal bed for about 60 sites and two large ST's at washrooms which are pumped out regularly. Sites app. 20-100mfs. 4 samples were taken in the lagoon and 2 in the front beach. One sample in the lagoon closest to the park itself yielded a result of 230mpn/100ml. One other sample yielded 40mpn/100ml. One sample in the front beach gave a result of 40mpn/100mfs. No indications of sewage on the beach.
122	ST	P	1 str grn seasonal cottage app. 20mfifwc. No outflow PI visible.

123	ST	P	3 houses on raised foundations, app. 30-40mfs No outflow PT's visible. Permanent WV.
124	OH	P	5 seasonal cottages, app. 30-50mfs. No outflow PT's visible. WV.
125	ST	P	Group of 4 seasonal cottages 1 with OH and the 3 others with ST's with no outflow PT's visible although neighbour complains of smell. Trench along road appears dry.
126	ST	N	Craft Shop and house. 1 1/2 str wht/blue trim house on raised foundation, app. 100mfs. No outflow PT's visible. BLU 1STY home, sided, looks new.
127	ST	N	1 str wht seasonal cottage, >100mfiwc. No outflow PI visible.
128	ST	N	1 str brw house on raised foundation, >100mf iwc. No outflow PI visible. Pool.
129	ST	P	1 str seasonal cottage, <5mfs. No outflow PI visible. "6100"
		P	1 1/2 str wht/red trim cottage, <5mfs. Old septic system <5mfs. No outflow PI visible.

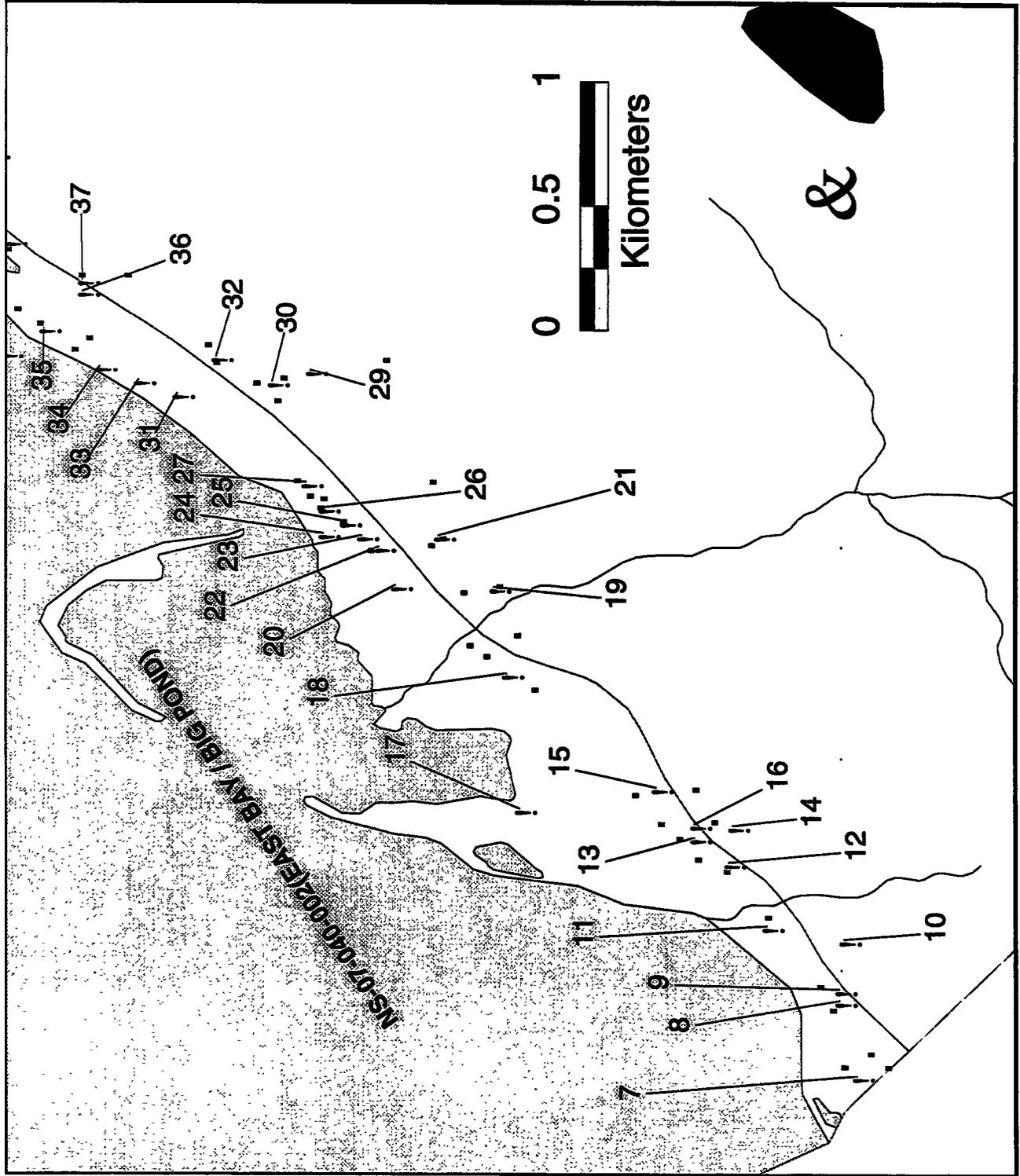


FIGURE 21B. SANITARY OBSERVATION SITE LOCATIONS IN, EAST BAY / BIG POND

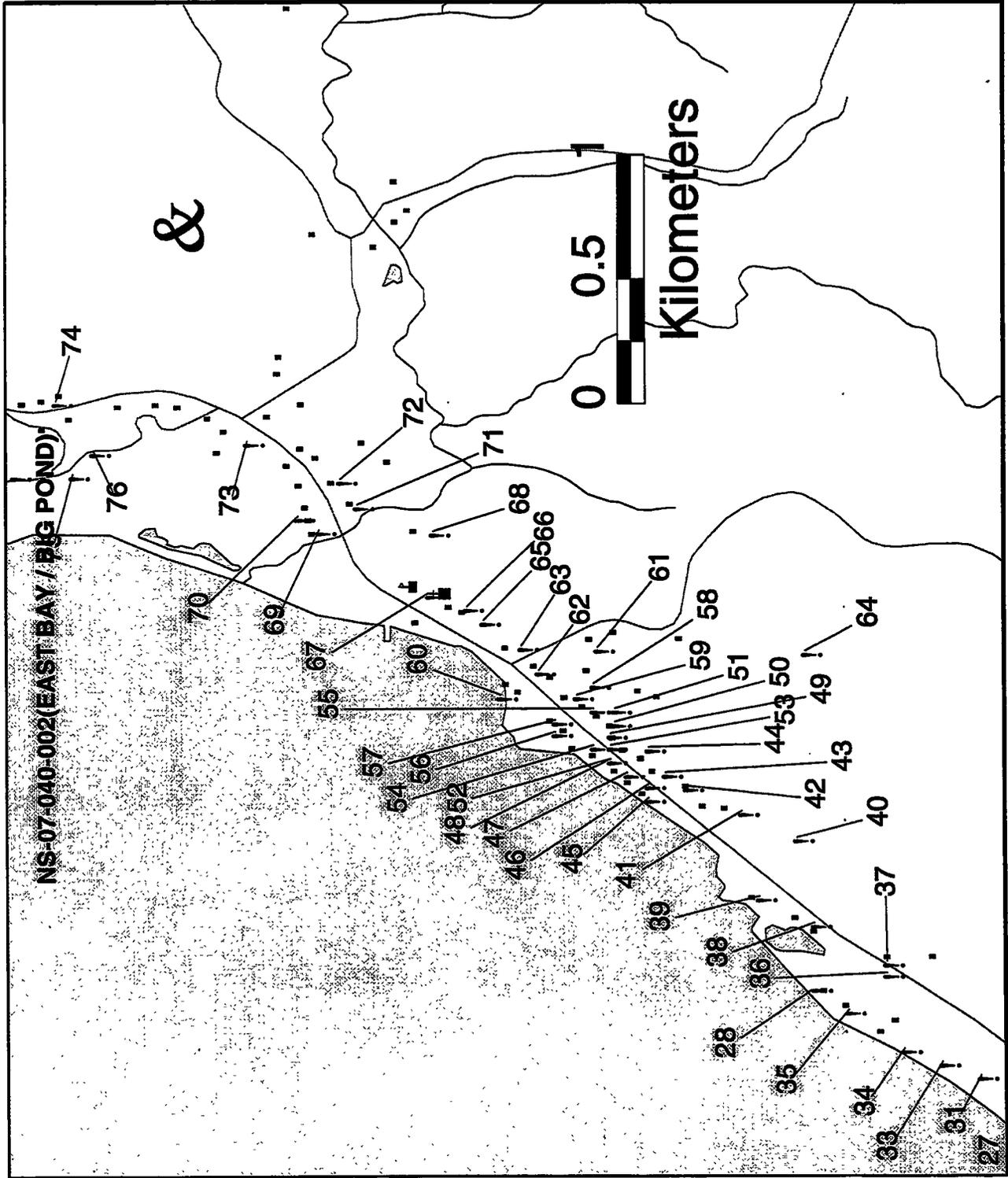


FIGURE 21B(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, EAST BAY / BIG POND

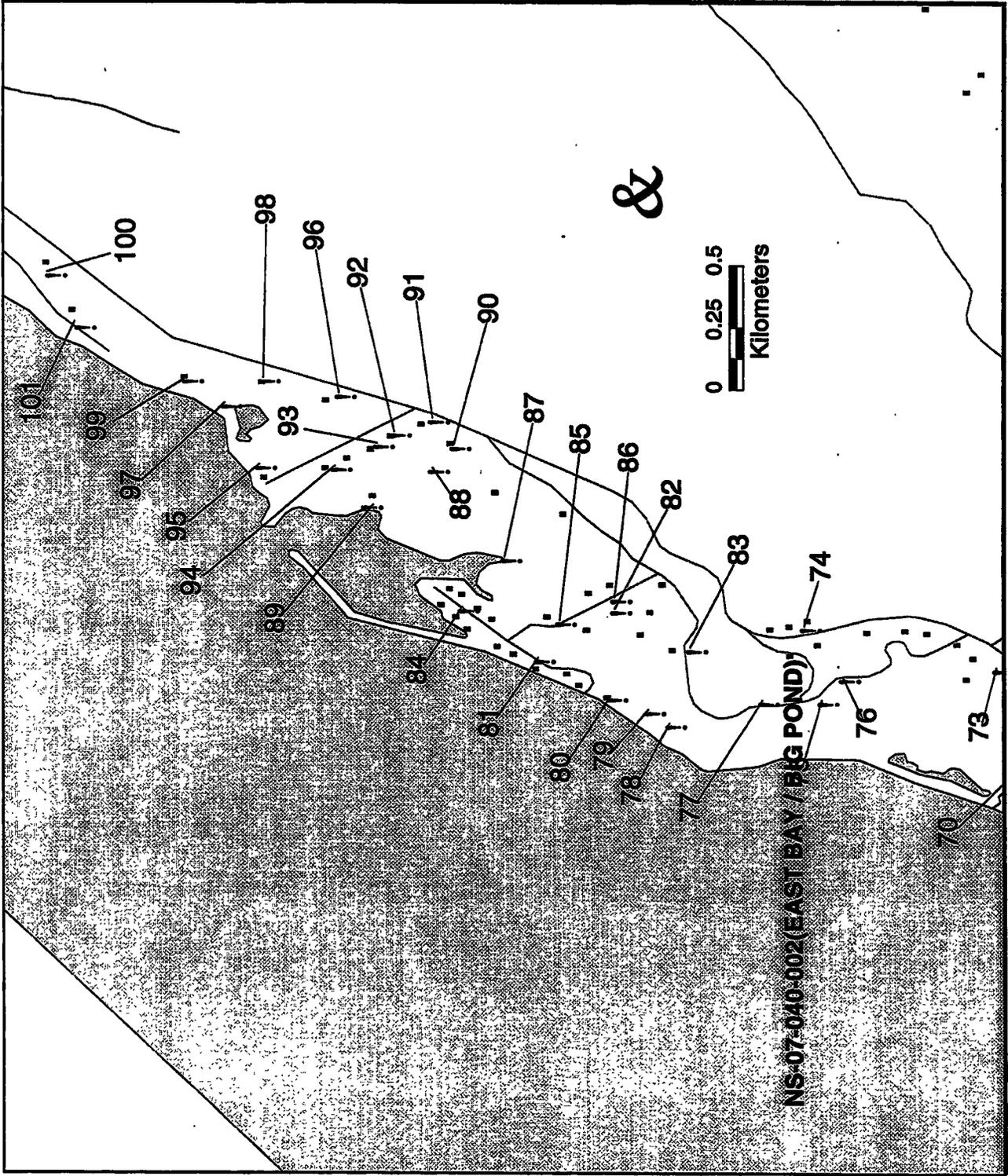


FIGURE 21B(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, EAST BAY / BIG POND

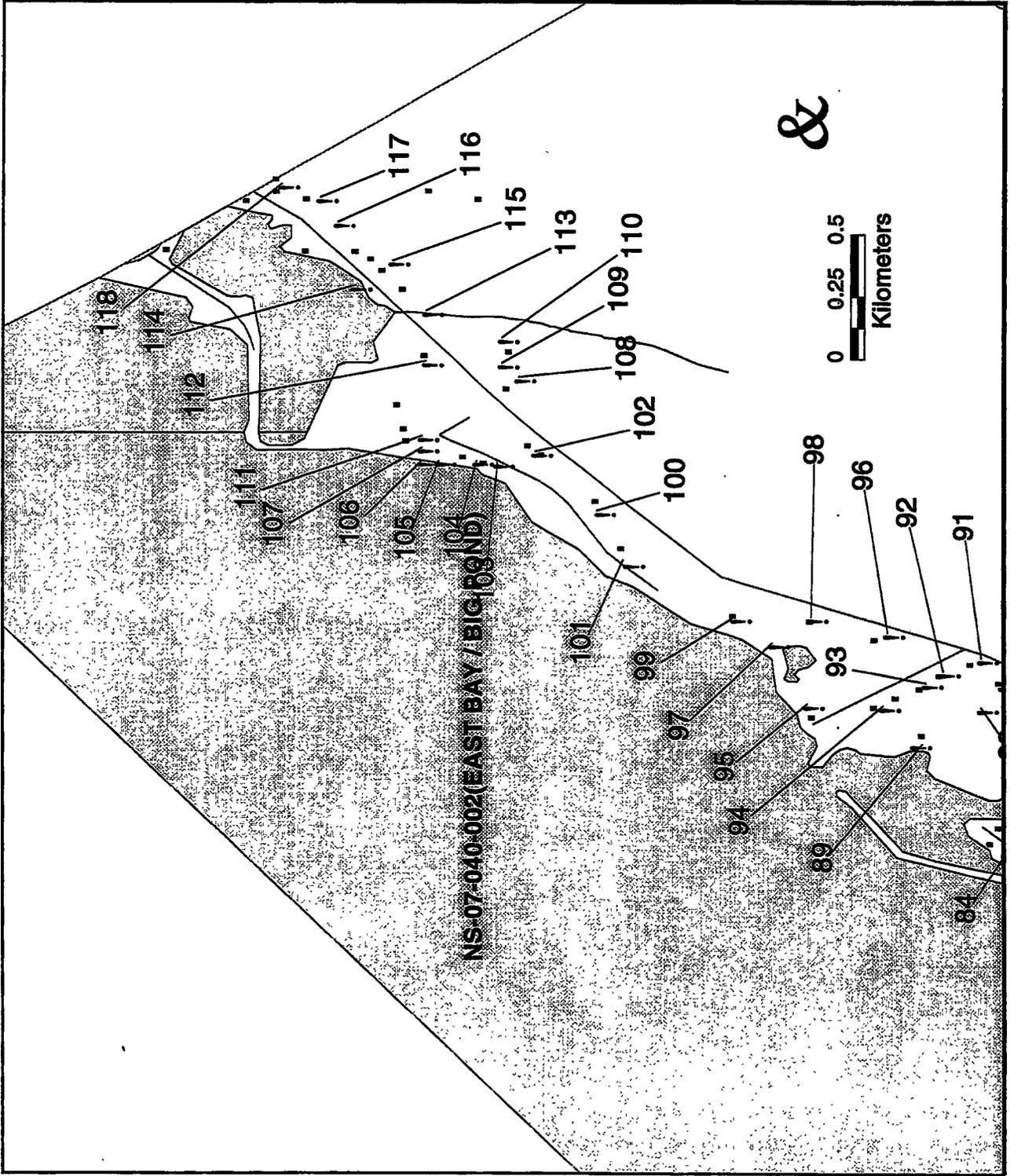


FIGURE 21B(cont.). SANITARY OBSERVATION SITE LOCATIONS IN, EAST BAY / BIG POND

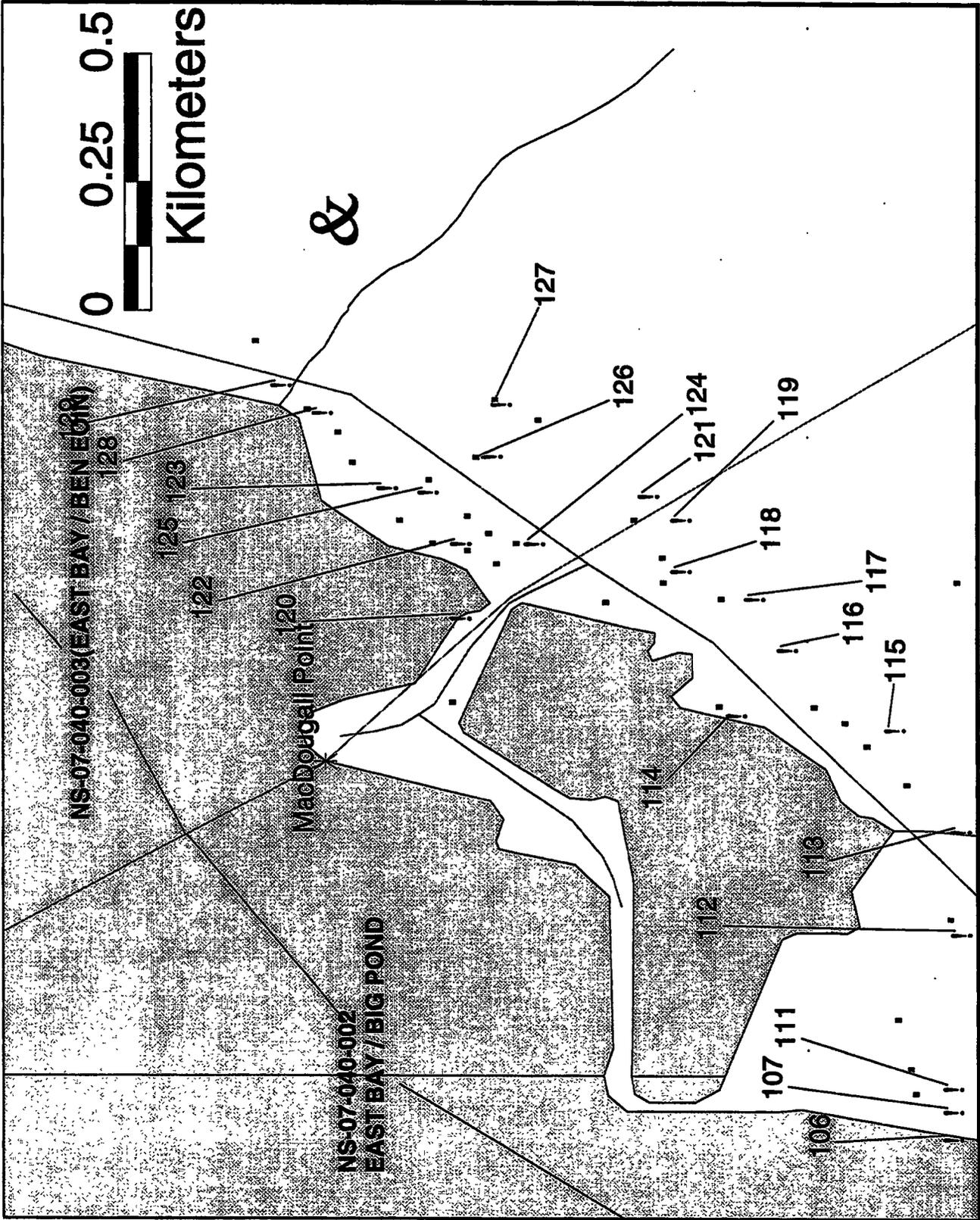


FIGURE 21B (cont.). SANITARY OBSERVATION SITE LOCATIONS IN, EAST BAY / BIG POND

Sub-sector Name (Number):

East Bay / Ben Eoin (NS-7-040-003)

Date surveyed:	1993-96
No. of sampling runs:	16
Shellfish classification:	Figure 22A
Sampling station locations:	Figure 22B
Fecal coliform results:	Tables 22A & 22B
Salinity data:	Table 22C
Water temperature data:	Table 22D
Shoreline sanitary observations:	Table 22E & Figure 22C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay *et al.*, 1994b). The current classification (Figure 22A) is described as follows:

Approved

The classified areas of the sub-sector.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 22E) below.

Bacteriological Water Quality

The four key stations (Figure 22B) surveyed on sixteen occasions since 1993 (Tables 22A & 22B) continue to meet the criteria for an approved classification.

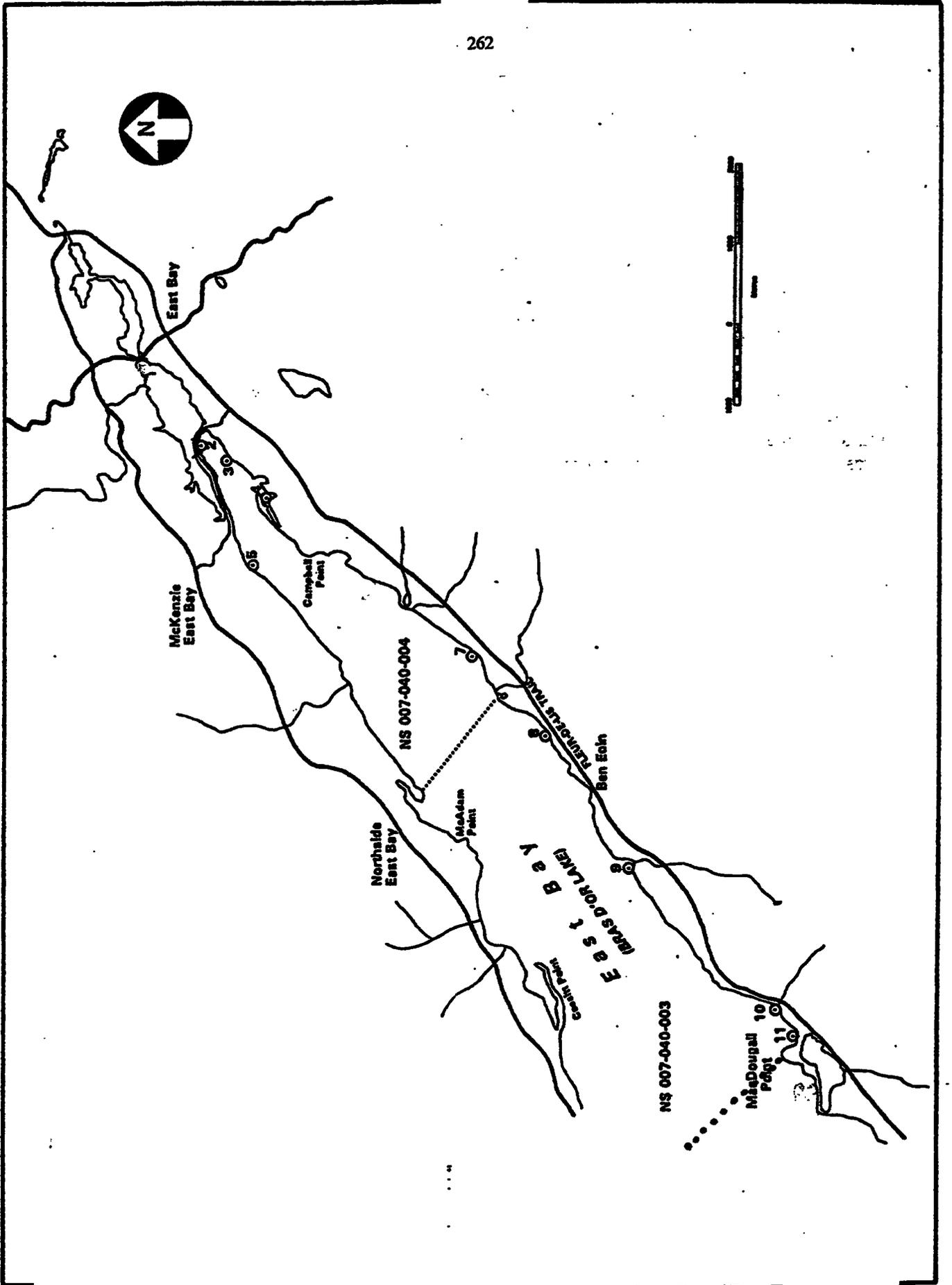


FIGURE 22B. KEY STATION SAMPLING LOCATIONS IN EAST BAY / BEN EOIN

TABLE 22A. EAST BAY / BEN EOIN (NS-7-040-003) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
8	16	1993-1996	1.9	2	1.9	1.9	2	0
9	16	1993-1996	1.9	19	2	1.9	5	0
10	16	1993-1996	1.9	5	2	1.9	3	0
11	16	1993-1996	1.9	79	3	1.9	12	6

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 22A) should remain unchanged.

TABLE 22B. EAST BAY / BEN EOIN (NS-7-040-003) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	19 Jul 96	01 Aug 96	27 Aug 96	
8	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
9	5	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	
10	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	5	2	
11	4	1.9	1.9	1.9	1.9	7	1.9	8	1.9	1.9	4	1.9	1.9	1.9	79	7	
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT											
Rain (mm)																	
0-24h	3.8	0.3	0	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	0	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0	0
0-72h	11.6	8.1	14.6	33.2	0	0	10.7	0.6	4.3	9.6	13.2	0	8.2	6	8.2	0	1.8

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
LT= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MF = Mid Falling;

TABLE 22C. EAST BAY / BEN EOIN (NS-7-040-003) - SALINITIES (‰)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
8	22	18	20	20	20	22	20	23	20	23	20	20	20	19	20	20
9	22	18	20	18	22	22	20	23	20	23	20	20	20	20	20	20
10	21	19	20	16	22	21	20	23	19	23	20	20	20	20	20	20
11	19	16	20	20	21	21	18	22	19	22	17	22	20	20	19	21
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT										
Rain (mm)																
0-24h	3.8	0.3	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	8.2	6	8.2	0	1.8

TABLE 22D. EAST BAY / BEN EOIN (NS-7-040-003) - WATER TEMPERATURE (°C)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
8	9	9	9	12	13	13	16	17	20	18	21	20	14	15	20	19
9	10	10	10	12	13	13	16	17	20	18	21	19	13	16	21	19
10	11	10	10	13	13	13	16	17	21	18	21	20	16	15	20	19
11	12	11	10	14	13	13	16	18	21	19	21	20	13	15	20	19
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT										
Rain (mm)																
0-24h	3.8	0.3	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	8.2	6	8.2	0	1.8

TABLE 22E. SHORELINE SANITARY SURVEY :

NS-07-040-003: EAST BAY/BEN EOIN
 FROM MACDOUGALL POINT TO EAST BAY (NORTH)
 C.MORAN
 INSPECTOR: AUGUST 15, 1993 REVIEWED: AUGUST, 1996
 COMPREHENSIVE:

Refer to: Figure 22C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: Area populated with many seasonal cottages, some residences and a provincial park. Like all other areas the soil type is clay. This eastern portion of the Bras Dor Lakes known as East Bay is populated with numerous cottages and mobile trailers, often within 15 meters of the shore (sites 11,14,21). In some instances the cottages are still used in the winter months as a ski resort (Ben Eoin) is nearby. There are other sites that were reviewed and found to be potential sanitary sources; (sites 3, 9, 13, 14, 21, 26, 31 & 32) for outhouses, (sites 1, 40, 41 & 57) for pipes located near certain residences, (sites 44, 47, 50 & 84) for non-point sources ie; cattle, horses
1	PI	P	1 str yet/wht trim seasonal cottage on raised foundation on rocky cliff over water. Resident said sewage is pumped up hill to a ST/TF, however several drainage pipes visible below cottage. GRN pipe along driveway, gravel at bottom.
2	ST	N	New 2 str cedar house on raised foundation, >100mfs. No outflow PI visible.
3	OH	P	1 str red seasonal cottage with OH app. 20mfs
4	ST	P	1 str wht/red trim seasonal cottage, app. 40mfs. No outflow PI visible. WV.
5	ST	P	1 str wht seasonal cottage on raised foundation, app. 40mfs. No outflow PI visible, WV.
6	ST	P	3 seasonal cottages; gray, wht, blue. App. 100mfs. No outflow PI's visible.
7	ST	N	1 str brick house on raised foundation, 1 str wht house on raised foundation, >200mfs. No outflow PI visible. (Abbass).
8	NS	N	Abandoned pink seasonal cottage, app. 80mfs. No outflow PI's visible.
9	OH	N	1 str wht seasonal cottage with OH >200mfs. Camper trailer.
10	ST	P	3 seasonal cottages; yet/blue/red. App. 50mfs No outflow PI's visible. 3 WV's and 2 speed- boats.
11	ST	P	Seasonal Prowler trailer, app. 20mfs. No outflow PI visible.
12	ST	P	1 str wht/blue trim seasonal cottage, app. 25mfs. No outflow PI's visible. WV.
13	OH	N	Wht mobile home, app. 100mfs. No outflow PI visible. OH at back.
14	OH	P	Wht mobile home and trailer with OH, app. 80mfs.
15	ST	P	1 str wht/brw trim house on raised foundation app. 100mfs. No outflow PI visible.
16	ST	N	2 str cedar house on raised foundation, >300 mfs, app. 60mfwc. No outflow PI visible. "5534 MacIssac" New gravelled road before park, at end is tent trailer and picnic table with OH in woods on incline 150mfs, stream runs by to shore, at top is GR huge 2 1/2 STY house, looks new, NVP.
17	NS	P	N.S. Provincial Park. OH pumped out seasonally.
18	ST	P	New 2 str cedar house on raised foundation, <20mfwc. No outflow PI visible.

19	NS	N	Abandoned wht seasonal cottage.
20	ST	N	1, 1 str brw wooden shingled houses on raised foundation, garage and pool, app. 70mfs. No outflow PI visible, 2 roads, clearing being done possible for new cottages.
21	OH	P	Seasonal Citation trailer with OH, app. 70mf WV with sailboat.
22	ST	N	1 1/2 str wht house on raised foundation, >100mfs, app. 40mfwc. No outflow PI visible
23	ST	P	1 str wht seasonal cottage with trailer, app. 60mfs. No outflow PI visible.
24	ST	P	1 1/2 str wht/grn trim house on stone foundation, app. 50mfwc. No outflow PI visible but area very brushy.
25	ST	P	1 str red seasonal cottage, app. 15mfs. ST in swampy area. No outflow PI visible.
26	OH	N	1 str blue/wht trim seasonal cottage, app. 80mfs.
27	ST	N	1 str wht/grn trim house on raised foundation app. 90mfs. No outflow PI visible.
28	ST	P	Group of 6 seasonal cottages, app. 5-20mfs. No outflow PI's visible. 4 WV's with 2 speed boats and 3 sailboats anchored.
29	ST	N	New 1 str wooden shingled house on raised foundation, app. 70mfs. No outflow PI visible. Stream at side between houses.
30	ST	N	1 1/2 str wht/grn trim house on raised foundation, app. 70mfs and 30mfwc. No outflow PI visible.
31	OH	N	1 str wht seasonal cottage with OH app. 80mfs WV.
32	OH	P	1 str wht seasonal house on raised foundation with OH app. 50mfs. WV.
33	ST	P	1 str brw seasonal cottage, app. 25mfs. No outflow PI visible.
34	ST	P	1 str wht seasonal cottage, app. 10mfs. No outflow PI visible.
35	ST	N	1 1/2 str wht/grn trim house on raised foundation, >150mfs. No outflow PI visible.
36	ST	P	Ben Eoin ski hill, >100mfs, app. 60mfwc. Algae and seaweed growth where WC meets lakes, ditch along drive, other side has stream flowing directly to shore.
37	ST	P	1 str wht seasonal cottage, 1 str seasonal cottage, app. 20-30mfs. No outflow PI visible. Gravel soil in this area.
38	ST	P	1 str brw wooden shingled house on raised foundation, <10mfs. No outflow PI visible.
39	ST	P	1 str wht/blue trim house on raised foundation, <15mfwc. No outflow PI visible. "5091"
40	PI	P	2, 1 str wht seasonal cottages, 1 with 4in dia PI to DR. App. 70mfs. 1 GRN trim 1 BRN trim, ditch appears to have 2 drains or 2 pipes.
41	PI	P	1 str wht/grn trim seasonal cottage, app. 20mfs. 4in dia clay PI to shore. No eff visible.
42	ST	P	Group of 12 seasonal cottages and 1 house. 1 with OH app. 20mfs. No outflow PI's visible. All app. 10-100mfs. 1 pool. Also in this area are a mobile trailer, "5030" next to 1 larger mobile home, approximately 150mfs. 1 YLW shingled cabin, OH and shed, RED log cabin 100mfs, Beige 1STY cabin 50mfs, WH/RD 1STY cabin 50mfs "The Cash's"
43	ST	P	Group of 9 houses, 2 permanent. App. 30mfs. No outflow PI's visible. 4 WV's and a few pleasure boats.
44	NP	P	New 1 str cedar house on raised foundation, >100mfs. No outflow PI visible. 1 horse with manure pile beside barn.
45	ST	N	2, new wht/blk trim houses on raised foundation, >200mfs. No outflow PI visible.
46	ST	N	1 str brw seasonal cottage, 1 1/2 str gray wood shingled abandoned cottage, 1 1/2 str grn/brw trim seasonal cottage, >200mfs. No outflow PI's visible.
47	NP	P	1 1/2 str wht/grn trim house on stone foundation, >100mfs. Grn, marshy DR beside house. No outflow PI visible. Large WH barn, fenced area, manure pile, at least 6 cows.
48	ST	N	2 str wht/brw shingled house on raised foundation, app. 50mfs. No outflow PI visible
49	ST	N	New 2 str yet sided house on raised foundation, app. 120mfs. No outflow PI visible.

50	NP	P	1 1/2 str wht/grn trim house on raised foundation, >80mfs. No outflow PI visible. 2 cows with manure pile beside barn.
51	ST	P	Group of 5 seasonal cottages, 2 permanent houses and 2 seasonal trailers, 20-100mfs No outflow PIs visible. 3 WVs with 3 boats docked. Barn shaped wood panelled cottage.
52	ST	N	1 str yet/brw and wht trim house on raised foundation, >200mfs. No outflow PI visible.
53	NS	P	Seasonal Terry trailer with Port-o-let.
54	NS	P	1 str wht seasonal cottage, app. 30mfs. Holding tank pumped out seasonally. 2 WV's with 3 sailboats anchored.
55	ST		Group of 4, 1 str permanent houses, >150mfs. No outflow PI visible
56	ST	N	Group of 4, 1 str permanent houses, >150mfs. No outflow PI visible.
57	OH	N	1 1/2 str old wht/grn trim house, 1 str beige house, both on raised foundation and 1 str red seasonal cottage, >200mfs. No outflow PI visible. but area very brushy.
58	ST	P	Group of 3 seasonal cottages, 1 seasonal mobile home and 1 str yet residence on raised foundation, >100mfs. 2 with holding tanks pumped out seasonally, 2 OH's and one with ST and no outflow PI visible. At end of road is empty lot with BLK 2 in id pipe sticking out of ground.
59	ST	P	2 seasonal mobile homes, 1 str wht permanent house on raised foundation, app. 40-80mfs. No outflow PIs visible. GR cottage at back.
60	NS	P	1 str seasonal wht cottage, <10mfs, <10mfwc. ST beside WC. No outflow PI visible. WV.
61	ST	P	ST. Rose of Lime. North Side East Bay.
62	ST	P	New 1 1/2 str blue house on raised foundation >150mfs. 2 old barns. No outflow PI visible
63	ST	P	1 str blue, 1 str wht, seasonal cottages and one seasonal trailer, app. 10- 40mfs. No outflow PIs visible. 2 WVs and 2 speedboats.
64	ST	P	1 str wht/red trim seasonal cottage, app. 40m mfs. Old ST <15mfwc. No outflow PI visible
65	ST	P	Group of 6 seasonal cottages, app. 40-80mfs. No outflow PIs visible. 3 WVs with 2 speed boats.
66	ST	P	Seasonal Taurua trailer, <15mfwc. No outflow PI visible.
67	ST	N	New 2 str beige house on raised brick foundation, app. 100mfs. No outflow PI visible.
68	ST	P	Group of 4 seasonal cottages, 2 permanent houses on raised foundation and 2 mobile homes. All app. 10-100mfwc. No outflow PIs visible.
69	ST	P	1 str wht seasonal cottage, app. 30mfs. No outflow PI visible. WV. "MacDougall"
70	ST	P	1 str wht seasonal cottage, garage and 2 hardtop campers. Cottage <10mfs. No outflow PI visible. Speedboat docked in brook. YLW/RD cottage also behind camper.
71	ST	N	New 2 str wht house on raised foundation with garage, app. 50mfs. No outflow PI visible. WV.
72	ST	P	1 str yet seasonal cottage, app. 50mfs. No outflow PI visible.
73	ST	N	1 1/2 str brw wooden shingled house, >100mfs. No outflow PI visible.
74	ST	P	3 seasonal cottages, app. 60mfs. No outflow PIs visible. 2 <20mfwc.
75	ST	N	New stone house on raised foundation, >100mfs No outflow PI visible.
76	ST	N	1 1/2 str org house on raised foundation, >200mfs. No outflow PI visible.
77	ST	N	New 1 1/2 str wht house on raised foundation, >200mfs. No outflow PI visible.
78	ST	P	1 str wht seasonal cottage, app. 40mfs. No outflow PI visible. WV with speedboat.
79	ST	P	New 1 str blue seasonal cottage, app. 90mfs. No flow PI visible. 2 sailboats docked in inlet.
80	ST	P	1 str red seasonal cottage, app. 60mfs. No outflow PI visible. GRN mobile home and BLU 1STY cottage.

81	ST	P	1 str wht/blue trim seasonal house on raised foundation, app. 40mfs. No outflow PI visible.
82	ST	P	Group of 4, 1 str seasonal cottages, app. 30 mfs. No outflow PI's visible. 4 speedboats docked in inlet.
83	PI	N	4, 1 str wht houses, 3 seasonal and 1 permanent, >300mfs. No outflow PI's visible.
84	NP	N	1 1/2 str wht/red trim house on raised foundation, >80mfs. ST with overflow PI to woods according to owner.
85	ST	P	1 str wht/red trim house on hill, >300mfs. Sewage used as fertilizer on garden? 1 str wht seasonal cottage, >300mfs. No outflow PI visible. On hill.

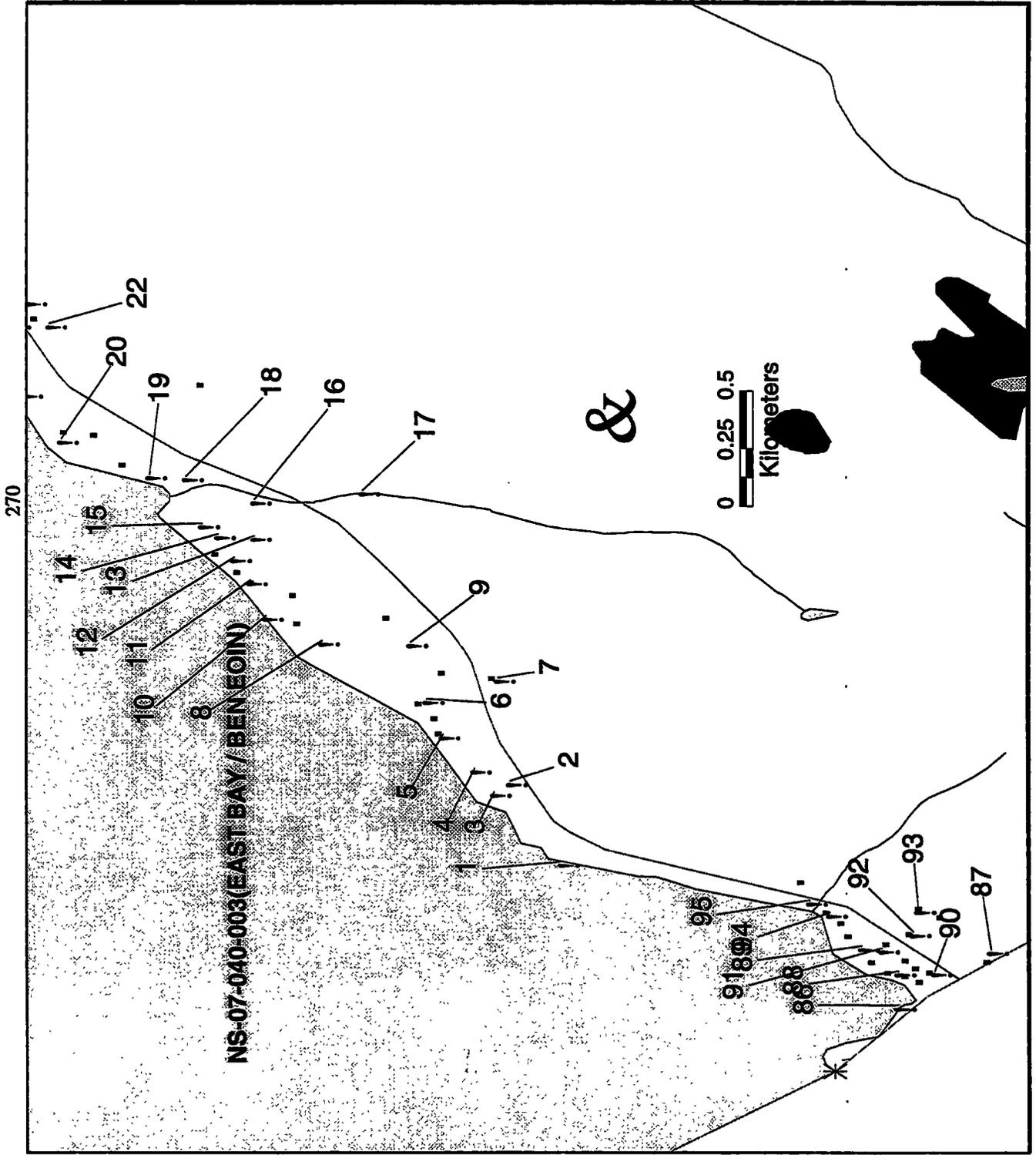


FIGURE 22C. SANITARY OBSERVATION SITE LOCATIONS, EAST BAY / BEN EJOIN (NS-7-040-003)

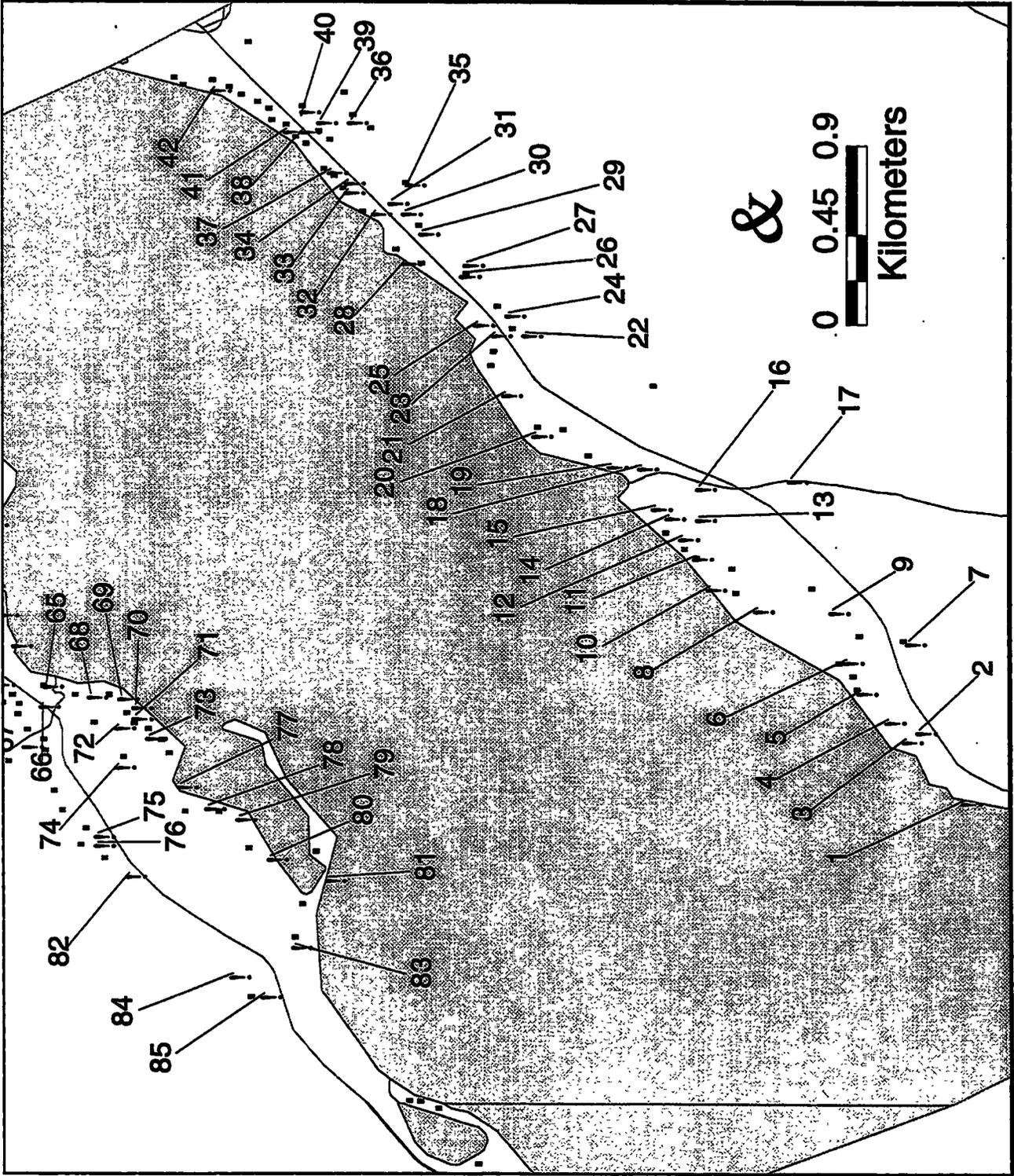


FIGURE 22C(cont.). SANITARY OBSERVATION SITE LOCATIONS, EAST BAY / BEN EOIN (NS-7-040-003)

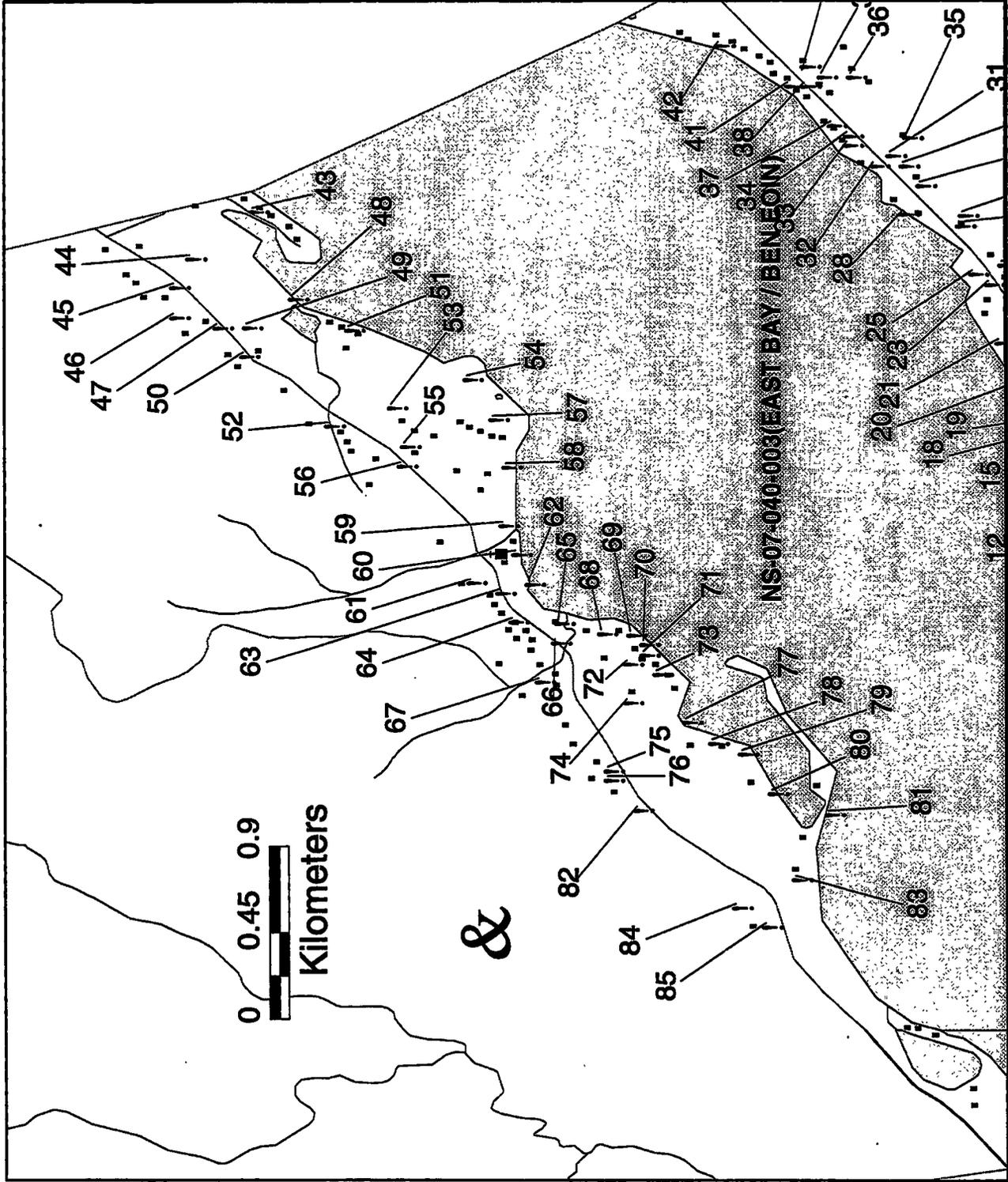


FIGURE 22C(cont.). SANITARY OBSERVATION SITE LOCATIONS, EAST BAY / BEN EOIN (NS-7-040-003)

Sub-sector Name (Number):

Head of East Bay (NS-7-040-004)

Date surveyed:	1993-96
No. of sampling runs:	16
Shellfish classification:	Figure 22A
Sampling station locations:	Figure 22B
Fecal coliform results:	Tables 23A & 23B
Salinity data:	Table 23C
Water temperature data:	Table 23D
Shoreline sanitary observations:	Table 23E & Figure 23A

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1994 (Tremblay et al, 1994b). The current classification (Figure 22A) includes two shellfish closures as follows:

Closed

That portion of East Bay, Bras d'Or Lake, north of the East Bay Sand Bar. Refer to map Sydney 11K/1.

That portion of East Bay, Bras d'Or Lake, inside a line drawn from grid reference 0135 9812 to grid reference 0150 9810. Refer to map Sydney 11K/1.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 23E) below.

Bacteriological Water Quality

Four of the five key stations (Figure 22B) surveyed on approximately sixteen occasions since 1993 (Tables 23A & 23B) continue to meet the criteria for an approved classification. Station four is located within a shellfish closure.

TABLE 23A. HEAD OF EAST BAY (NS-7-040-004)- FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
2	16	1993-1996	1.9	11	3	1.9	6	0
3	16	1993-1996	1.9	8	2	1.9	4	0
4	11	1993-1993	1.9	120	4	1.9	32	18
5	16	1993-1996	1.9	2	1.9	1.9	2	0
7	16	1993-1996	1.9	5	2	1.9	3	0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 22A) should remain unchanged.

TABLE 23B. HEAD OF EAST BAY (NS-7-040-004) - FECAL COLIFORM DENSITIES (MPN/100ML)

Station	21 May 93	28 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	18 Jul 96	01 Aug 96	27 Aug 96		
2	8	1.9	2	11	1.9	2	2	5	2	1.9	1.9	1.9	5	1.9		
3	2	1.9	2	1.9	1.9	1.9	1.9	8	1.9	2	2	1.9	1.9	2		
4	120	1.9	1.9	5	1.9	1.9	79	1.9	1.9	1.9	1.9	1.9	5	1.9		
5	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	2		
7	5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	1.9	1.9		
Tide	NT-NT	MT-MF	MR-MR	HT-HT												
Rain (mm)	3.8	0.3	0	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	
0-24h	11.6	1.9	14.4	1.6	0	9	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	0	8.2	6	8.2	1.8

N.B. 1.9 represents <2 MPN/100mL

HT= High Tide;
MR - Mid Rising

HF = High Falling;
LT= Low Tide;

HR - High Rising;
LF = Low Falling;

MT= Mid Tide;
LR - Low Rising

MP = Mid Falling;

TABLE 23C. HEAD OF EAST BAY (NS-7-040-004) - SALINITIES (‰)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
2	16	6	10	2	14	18	18	20	16	20	13	15	16	15	16	19
3	18	12	18	16	23	18	18	22	18	22	18	15	17	17	19	21
4	18	20	20	14	19	21	18	23	18	22	18	20	20	20	20	21
5	18	18	22	15	22	18	23	19	19	23	18	20	20	20	20	21
7	22	18	22	20	23	22	20	24	19	23	20	21	20	20	20	21
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT										
Flain (mm)																
0-24h	3.8	0.3	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	8.2	6	8.2	0	1.8

TABLE 23D. HEAD OF EAST BAY (NS-7-040-004) - WATER TEMPERATURE (°C)

Station	21 May 93	26 May 93	03 Jun 93	10 Jun 93	15 Jun 93	22 Jun 93	07 Jul 93	14 Jul 93	25 Jul 93	05 Aug 93	11 Aug 93	05 Jun 96	19 Jun 96	18 Jul 96	01 Aug 96	27 Aug 96
2	11	12	0	0	17	18	17	21	19	22	21	15	16	21	21	20
3	10	12	9	13	13	17	17	20	19	21	19	15	15	21	21	20
4	12	11	8	13	14	17	17	21	18	22	19	13	13	20	21	20
5	12	9	9	14	13	17	17	20	19	21	19	13	13	20	21	20
7	10	10	8	12	13	16	16	19	19	21	19	13	15	20	20	19
Tide	NT-NT	MT-MF	MR-MR	MR-HT	MR-MR	HT-HT										
Flain (mm)																
0-24h	3.8	0.3	0	0	0	9	0	0.3	0.8	0	0	8.2	6	0	0	0
0-48h	11.6	1.9	14.4	1.6	0	9	0	1.3	5.6	0.8	0	8.2	6	8.2	0	0
0-72h	11.6	8.1	14.6	33.2	0	10.7	0.6	4.3	9.6	13.2	0	8.2	6	8.2	0	1.8

TABLE 23E. SHORELINE SANITARY SURVEY :

NS-07-040-004: HEAD OF EAST BAY
 FROM BEN EOIN TO COSSIT POINT
 C.MORAN
 INSPECTOR: JULY 10, 1993 REVIEWED: AUGUST, 1996
 COMPREHENSIVE:

Refer to: Figure 23A for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: A densely populated cottage area, with full homes also. There are 2 schools, public beach and a mobile trailer park. The flushing of this area is reduced by the presence of two bridges and a sand bar across 3/4 of lake. There are definite sources to be found in this area of East Bay; the sewage treatment plants and their discharge points (sites 60, 70, 38, 65, 69, 89, 101, 117 122), surface run-off from non-point sources near the farms (sites 54, 99). These were just some of the more obvious sanitary sources seen in this area of coastline and with the proclivity to which many residents tend to build along the shoreline there are other probable sources as yet unseen.
1	NS	N	A private picnic area with change area on shore, un-serviced.
2	ST	N	Five homes with ST/DB, 100mfs, also 4 wharves.
3	ST	P	Two cottages; 1 sty wht and 1 sty yel. ST/DB on both and 1 sailboat(with head).
4	ST	P	A 1 sty wht home, ST/DB 20mfs.
5	ST	N	A new 2 sty wht/blu house, 20mfs, "PENNEY 4837".
6	ST	N	A 1 sty wht/red trim house has ST/DB 200mfs
7	ST	N	A 1 sty wht/blu house, 100mfs ST/DB, 1 swimming pool.
8	ST	N	A 1 sty wht house, 70mfs, ST/DB
9	WV	P	A 1 sty wht cottage with electric toilet, 20mfs.
10	WV	N	1 sty brwn cottage, ST/DB, 70mfs
11	ST	N	1 sty wht/blu cottage, ST/DB, 70mfs. ST New 1STY cedar house 200mfs.
12	ST	P	5 cottages. 3 with SV/DB, 1 has a holding tank that is regularly pumped out each season, 1 has a OH. There are 2 wharves and 1 speedboat.
13	ST	N	2 sty brwn house, 200mfs ST/DB
14	ST	N	1 sty beige house, 200mfs, ST/DB. New large 2STY brick house, "THE MAY'S"
15	ST	N	1 1/2 sty red house with boat house near shore. ST/DB 120mfs. New RED/cedar cottage, satellite dish.
16	ST	N	Approx. 2km north/east of Ben Eoin ski slope, a 1sty cedar seasonal cottage, ST/DB 100mfs.
17	PI	P	Approx. 50mfs a 1 sty wht cottage.
18	ST	N	1-1/2 sty wht house, 200mfs and 40mfwc.
19		P	A 1sty wht house, 20mfwc and 200mfs, along hwy No.#4.
20	ST	N	A new 2 sty blu/wht house, 40mfwc, ST/DB
21	PI	N	A 4" PI to ground near a 1 sty wht cottage, 40mfs
22	ST	P	A 1sty grn cottage near a small lagoon.
23	ST	N	A 1sty wht house, ST/DB 200mfs

24	WV	N	A 1 sty cedar house, wharf and sailboat, approx 90mfs, ST/DB.
25	ST	P	A 1sty wht cottage, 40mfs, ST/DB
26	ST	P	Group of 4 seasonal cottages near shore (30 to 70mfs), 2 appear abandoned the other two have ST/DB.
27	PI	P	Two cottages with 4" PI to ground in same area, approx 10mfs. No effluent or leaching seen.
28	ST	P	13 cottages, 20 to 200mfs with ST/DB, no pipes detected, 3 wharves, 1 boat.
29	ST	P	2 homes wht/blk trim with ST/DB, one is 10mfs, the second is 200mfs.
30	ST	N	1 sty grn/wood house, ST/DB 200mfs, also a pool
31		N	A 1sty blu house, 300mfs, no pipes seen, "4461"
32	ST	N	5 homes; 2 seasonal, 3 all season. ST/DB 300mfs WH/BLK 1STY cottage, "JUSTAMERE COTTAGE"
33	ST	N	'Holy Angels' summer cottage, ST/DB 150mfs, 1 wharf. 1GR mobile home
34	ST	N	2 homes along a side road to Campbell Pt., ST/DB 100mf pond.
35	ST	N	1 1/2 sty gry/red house, 100mf pond, ST/DB
36	ST	N	1sty wht house, ST/DB 200mf pond along road to Campbell Pt.
37	WV	N	Group of 7 homes, 4 appear to be new. ST/DB 400 mfs. There are sailboats, speedboats, cabin cruiser docked to and near wharves, 1 new home not yet completed.
38	PI	D	A 1 1/2 sty wht house + boathouse + wharf. At end of side road to shore has a 4" PI to ravine with black' effluent flowing. Approx 1/2km south/west of East Bay sand bar bridge.
39	ST	N	New 2 sty blu house, 200mfs ST/DB
40	ST	N	Two homes; new 2 sty gry/wood house and 1 1/2 sty wht/blk house with ST/DB 80mfs.
41	ST	N	A 2sty wht house, ST/DB, 400mfs.
42	ST	N	The East Bay Church Glebe House community centre on ST/DB. Along road to bridge and McKenzie East Bay.
43	ST	N	Near the turnoff to East Bay Sand Bar, 3 homes ST/DB 300mfs.
44	ST	N	1 sty wht/red trim house ST/DB 300mfs
45	LE	P	1 sty wht/blu house with old ST and overflow pipe to a bushy area that is 300mfs.
46	LE	P	1 sty red cottage, 30mfs WH/BLK 1STY cottage
47	ST	N	1 sty wht/blk trim cottage and garage, ST/DB 200mfs
48	ST	N	1 sty brwn house ST/DB 200mfs.
49	PI	P	a 4" pipe to ground at 1 sty red cottage, 200mfs.
50	ST	N	A 2 sty yel house barn, ST/DB 200mfs.
51	ST	N	1 sty wht/blk trim house, 200mfs, no pipes seen
52	ST	N	New 1 1/2 sty gry bldg., 100mfs, ST/DB
53	ST	N	A 1 1/2 sty wht, house, garage, barn (Gillis), ST/DB 300mfs.
54	NP	D	1 1/2 sty wht house, barn with 20 cows grazing in field, manure is used on field. In East Bay, may be more animals than appeared.
55	ST	N	2 sty yel/grn house, ST/DB 300mfs. Old barn, cows visible on top of hill but probably belong to above mentioned farm.
56	ST	N	1 sty yel house and garage ST/DB, 300mfs.
57	PI	P	A 4" overflow pipe from ST to woods at a 1 sty brwn house, no flow seen.
58	ST	P	2 1/2 sty apt. bldg., 100mfs near East Bay bridge. ST/IF

59	ST	N	1 sty house,ST/DB,300mfs.
60	TP	D	MacCormack elementary school,30 students plus staff with a package aeration treatment plant discharges from 4" pipe to shore.
61	ST	N	3 homes ST/DB 400mfs.
62	ST	N	3 homes with ST/DB,50 to 300mfwc.town of East Bay.
63	ST	N	1 sty yel house,200mfs,ST/DB
64	ST	N	ST/DB at 1 sty wht/red house,100mfs(MacDougal)
65	ST	P	A 36 year old ST system with overflow pipe to ditch from a 1sty wht house,60mfwc.
66	ST	P	A 4"PI to woods from a ST at a 1 sty wht house, 100mfwc. Community of East Bay.
67	ST	P	A.B.S overflow pipe from ST at 1 1/2 sty wht/grn house, drains to field that is 100mfs.
68	ST	N	A 1 1/2 sty grn house that neighbours say a new septic system was installed, no PIs.
69	PI	P	A 4"pvc PI drains to ditch,200mfs.The 1 sty wht house has a ST/DB.No effluent visible.
70	TP	D	A small package treatment plant at East Bay elementary school. The aerator and chlorinator are not working properly,50mf a small brook.
71	ST	N	Six small homes with ST/DB with no pipes visible.
72	ST	N	The local post office,ST/DB,100mfs & 20mf a small brook.
73	ST	N	5 homes & 1 large barn,100mfs.No livestock.
74	NS	N	1 1/2 sty wht/red with stone,200mfs,no pipes.
75	ST	N	ST/DB 100mfs at new blu/wht home, "3424".
76	ST	N	Two homes with ST/DB(Shelley)
77	ST	N	Three homes;1 abandoned two with ST/TF,100mfs
78	ST	P	A 2sty wood yel house, ST/TF, 60mfs, near the north end of East Bay.
79	NS	N	A outboard motor shop, no facilities.
80	ST	N	Ultramar service station, ST/TF 100mfs.
81	ST	P	Two 1 sty homes with ST/TF,20 to 80mfs, 3 WH shingled homes, 1 two STY WH house.
82	PI	N	A 1 1/2 sty wht/blk house garage,ST with the overflow pipe(3") to a swamp. New road going in to a proposed development
83	ST	N	New home with ST/TF
84	ST	N	A wht/red home that may have a new septic system(1 year old) but this is doubtful, "115".
85	ST	N	2 sty brwn wood house,200mfs.ST/TF
86	ST	N	Mobile home(Taylor)200mfs,abandoned house next door. A ST/TF at site.
87	ST	N	2 1/2 sty wht/blk house with ST/TF 150mfs.
88	ST	N	A group of 5 homes,100 to 300mfs,with ST/TF.
89	PI	P	A 4" overflow PI to ditch from a old ST at a cream/brwn house. This according to previous occupant, pipe was not visible on inspection.
90	ST	N	A 1 1/2 sty wht/blk house,100mfs with ST/TF.
91	ST	N	A ST/TF at 2 sty wht/blu house with garage, approx. 100mfs.
92	NS	N	Two structures;(1) 1 1/2 sty yel/gold house (2)brwn mobile home approx. 200mfs,no pipes.
93	ST	N	6 homes,1 mobile home,1 volunteer fire dept bldg. with ST/TF 200mfs.
94	ST	N	3 homes,1 mobile home with ST/TF,150mfs.
95	ST	P	A trailer park;71 lots/60 trailers served by 4 ST/TF(5500gal capacity),approx. 100 to 300mfs.There are problems of water quality in area.

96	ST	N	A large bird population is found in marsh area near park, "CHANNEL VIEW ESTATES". New wht/blk trim house, ST/TF 150mfs.
97	ST	N	2 sty cedar house, 1 sty house and 1 large barn. Both with ST/TF, 50 to 100mfs, "153".
98	PI	P	A 4" pipe from a possible overflow pipe at septic tank.
99	NP	P	Cattle grazing in field, a 1 sty house on property.
100	ST	N	A 1sty yel/red house, 200mfs ST/TF.
101	PI	P	A 4" overflow PI to ravine from ST at a 1 1/2 sty wht/blk house (MacInnis)
102	ST	N	A 1 sty wht house 200mfs, ST/TF.
103	ST	N	4 structures new 2 sty blu/wht house, ST/TF 200mfwc. AB GRN shingled AB cottage, penned area at side, NVA ST WH 1 1/2STY cottage on incline quite a distance from shore. AB WH and wood sided cottage, possibly AB.
104	OH	P	A group of 15 cottages 25 to 70mfs, with 1 OH visible. Owners report ST/DB with overflow PI to wooded area. The land space is limited for a good drainage. A small lagoon is nearby. ** Bad odour, thought to be direct pipe, neighbour has complaints.
105	PI	P	A 4" overflow PI from ST to ground, 100mfs.
106	ST	N	A ST/TF at a 1 1/2 sty wht house, 300mfs.
107	ST	N	1 1/2 sty seasonal wht cottage, ST/TF 300mfs.
108	PI	P	A 4" overflow pipe to ground from ST, 60mfpound
109	ST	N	A 1 sty wht/grn house, 400mfs, ST/TF, "751".
110	ST	N	1 sty red cottage, 200mfs
111	ST	N	Three structures; 2 cottages and 1 trailer 50 to 150mfs. No pipes visible, road to structures was washed out.
112	ST	N	A 2 sty grn house, ST/TF 400mfs, "779".
113	OH	N	1 OH 400mfs at wht/grn mobile home, new road across main road, no homes as of yet.
114	OH	N	1 OH at seasonal cottage, 400mfs.
115	ST	N	A 1 1/2 sty brwn house, ST/TF 60mfs, 1 swimming pool. NS BRN panelled boat shed, across yard from BRN BLK wood sided cottage
116	PI	P	4 cottages with 4" overflow pipes to ground from ST, 1 pool in area. ST GR 1STY new home.
117	PI	P	6 cottages, all with ST. One pipe was seen to beach with a soapy discharge.
118	PI	N	2 cottages with 4" PI to ground, 400mfs, project card in window from the planning commission.
119	ST	N	1 sty wht cottage, 400mfs. NS RD/WH mobile trailer boarded up on lot next door.
120	OH	N	1 1/2 sty cottage with OH 300mfs.
121	OH	P	A public beach area (East Bay Beach).
122	PI	P	1 4" PI to shore from cottage 30mfs, 1 wharf & 2 speed boats.
123	ST	N	New 2 sty cottage, 100mfs ST/TF
124	ST	N	New blu mobile home and 1 sty brwn house, 200 mfs. Just inside of East Bay sand bar.
125	WV	P	Two 1 sty cottages ST/TF 40mfs, 1 wharf 2 boat
126	PI	P	6 cottages; 4 have 4" PI's to ground, 2 have ST/TF's. 50 to 120mfs. No actual effluent seen. ST Huge GR 3STY panelled house.
127	OH	P	Cottage and OH.
128	ST	N	New 1 sty brw house, ST/TF 300mfs, "1005 JACKSON".
129	ST	N	A 1 sty wht/blk trim house, "1065", ST/TF 500mfs. ST New 3STY YLW house, no lawn, WH trim.

130	ST	N	1 1/2 sty wht/blue house
131	ST	N	1 sty wht house 500mfs.
132	PI	N	4"PI to ground from 1 sty cream/beige cottage 300mfs, "DON MACEACHERN".
133	NS	N	Abandoned farm house.
134	ST	N	2 cottages,ST/TF,100 to 150mfs, at top of road is trailer.
135	LE	P	Dispose of waste by burying to ground from a seasonal cottage,50mfs.
136	ST	P	2 sty red cottage,100mfs. Also new cottage in area not yet finished
137	OH	P	1 sty wht cottage, with OH 200mfs, 3 camper trailers in yard, people use septic system of cottage.
138	OH	P	1 OH 100mfs at 1 sty wht seasonal cottage on raised foundation.
139	ST	N	BRN/WH cottage.
140	ST	N	2 sty blu house, ST/TF 500mfs
141	OH	N	1 sty red cottage with OH 700mfs, owl marks driveway.
142	ST	N	A-frame style cottage,400mfs WH/RED camper trailer, "ARSENEAU".
143	ST	N	600mfs 1 WH sided BRN trim house, ST/TF
144	ST	N	400mfs 1 sty blu cottage, road forks leading to GR 1STY sided cottage on incline above shore.
145	XX	P	Dredging of shore for new dock installation.
146	ST	P	8 structures,2 mobile homes both 200mf pond
147	NP	P	4 cottages, ST/TF that are pumped out annually 60 to 100mfs, has one horse in penned area.
148	ST	P	1 1/2 sty farm house and barn 300mfs, "1619", many fenced off areas in front and on side, NVA. BL/WH camper trailer on empty lot next door.
149	ST	N	Three 1 sty homes,ST/TF,400mfs.

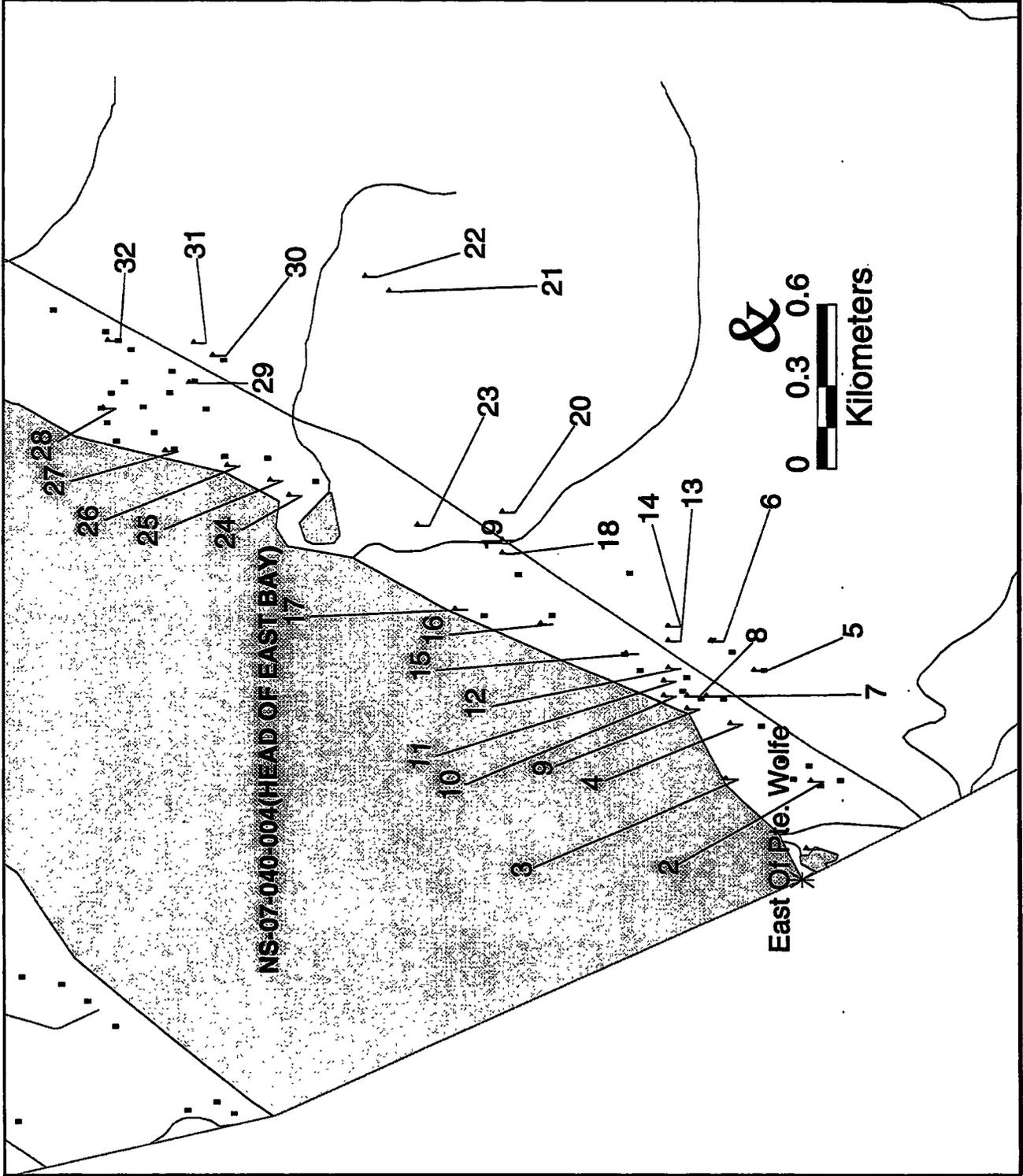


FIGURE 23A. SANTARY OBSERVATION SITE LOCATIONS, HEAD OF EAST BAY (NS-7-040-004)

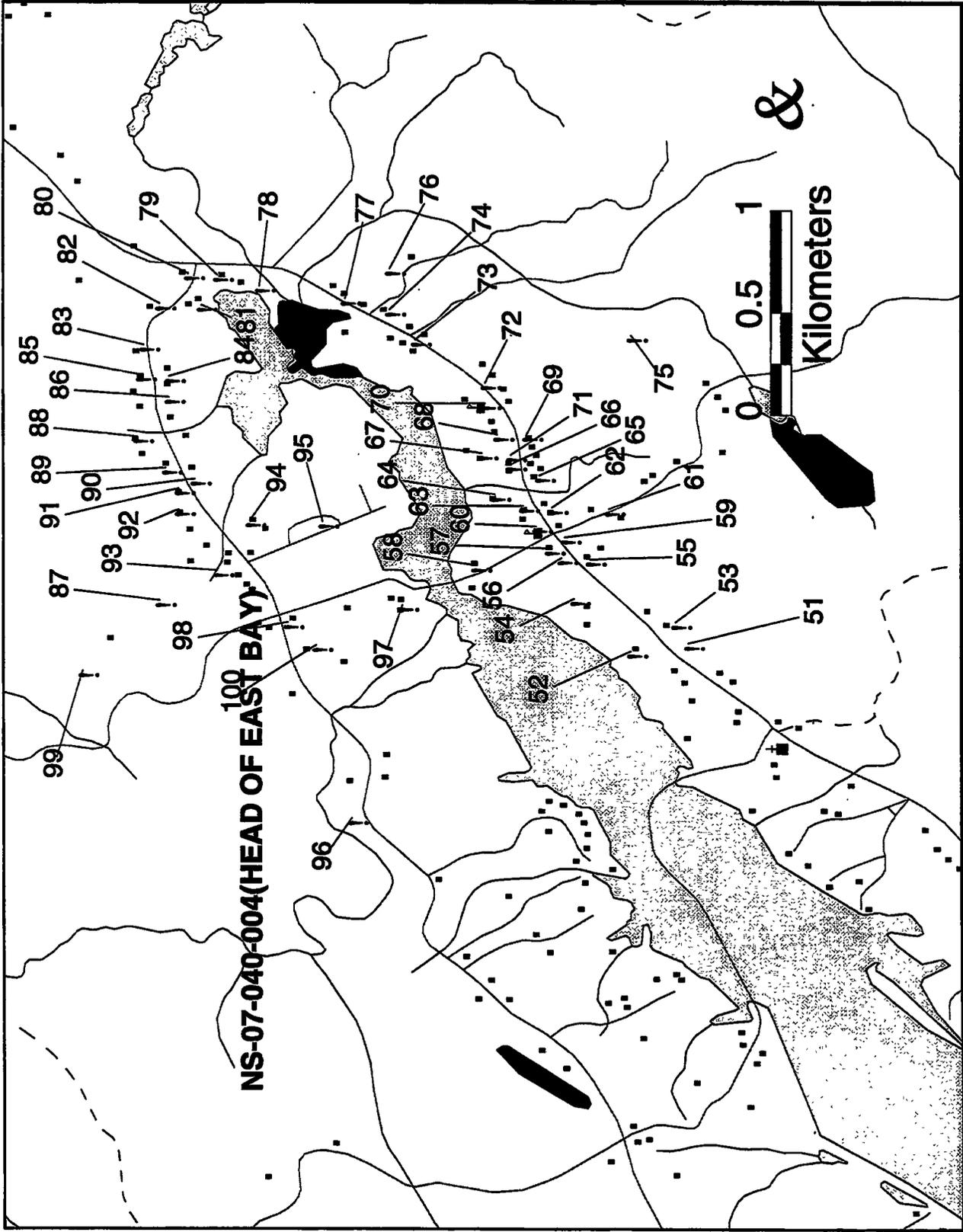


FIGURE 23A(CONT.). SANITARY OBSERVATION SITE LOCATIONS, HEAD OF EAST BAY (NS-7-040-004)

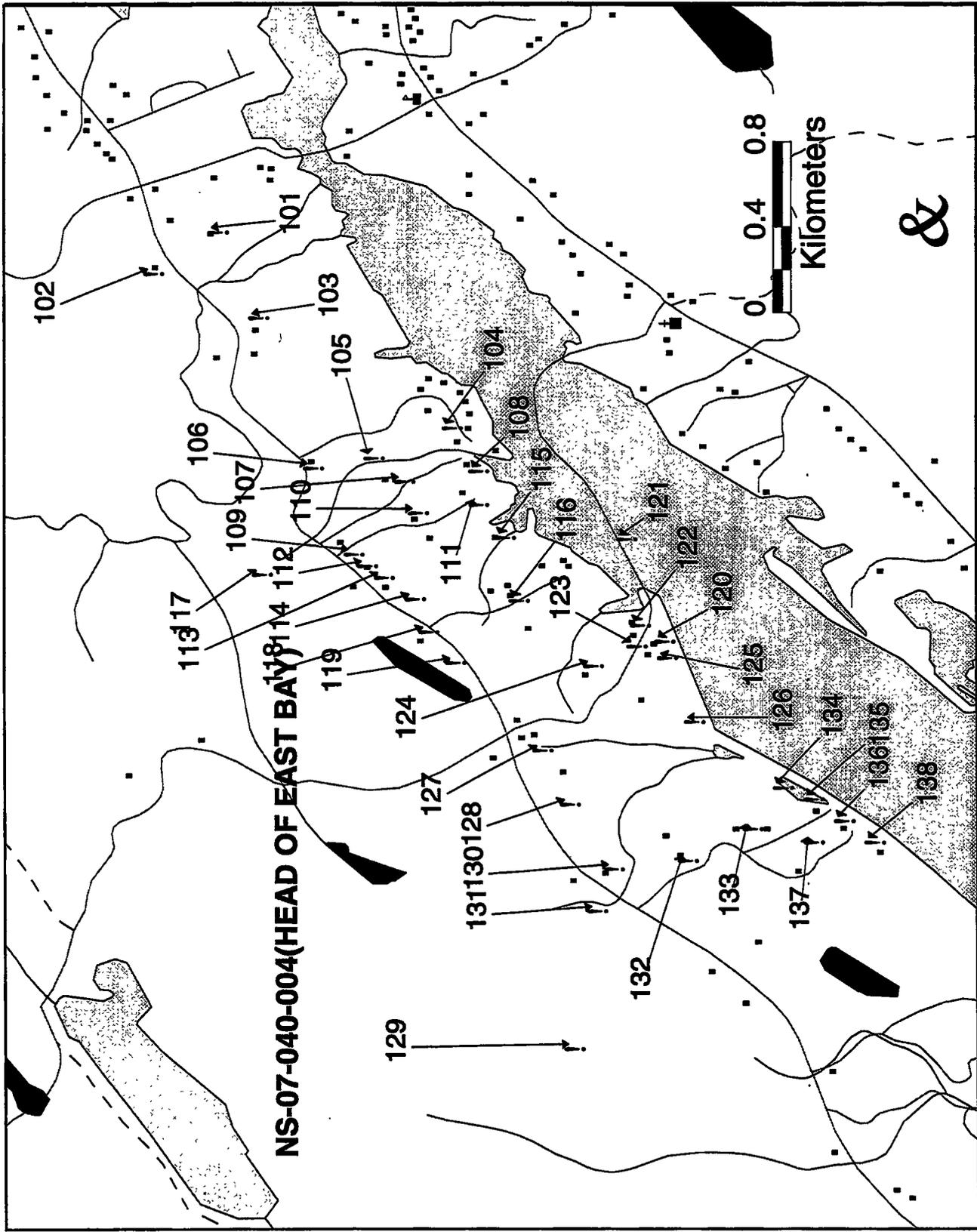


FIGURE 23A(CONT.). SANITARY OBSERVATION SITE LOCATIONS, HEAD OF EAST BAY (NS-7-040-004)

Sub-sector Name (Number):

Eskasoni (NS-7-040-005)

Date surveyed:	1990-95
No. of sampling runs:	17
Shellfish classification:	Figure 24A
Sampling station locations:	Figure 24B
Fecal coliform results:	Tables 24A & 24B
Salinity data:	Table 24C
Water temperature data:	Table 24D
Shoreline sanitary observations:	Table 24E & Figure 22C

Area Description

Development in the area is typical of much of the rural areas of Bras D'Or lakes being mainly residential or agricultural. The First Nations Eskasoni community is located in this subsector. Shellfish culture is active in the area, several shellfish leases have been issued and more are pending. The habitat appears suitable for the american oyster (*Crassostrea sp.*), and mussels (*Mytilus sp.*). The small tidal amplitude of the Bras D'Or lakes provides a limited intertidal zone and therefore a limited habitat for soft-shell clams (*Mya sp.*).

The sub-sector was last evaluated in 1995 (Craig & Walter, 1995). The current classification (Figure 24A) includes two shellfish closures as follows:

Closed

That portion of Crane Cove (Eskasoni) inside of a line drawn from grid reference 8650 9142 to grid reference 8660 9130. Refer to map Grand Narrows 11F/15.

That portion of East Bay (Bras d'Or Lake) inside of a line drawn from grid reference 8620 9041 to grid reference 8442 8917 and thence to grid reference 8395 8907. Refer to map Grand Narrows 11F/15.

Approved

The remaining classified areas of the sub-sector beyond the closures described above.

Sanitary Conditions

For information refer to Shoreline Sanitary Survey (Table 24E) below.

Bacteriological Water Quality

The seventeen key stations (Figure 24B) surveyed on approximately fifteen occasions since 1990 (Tables 24A & 24B) continue to meet the criteria for an approved classification.

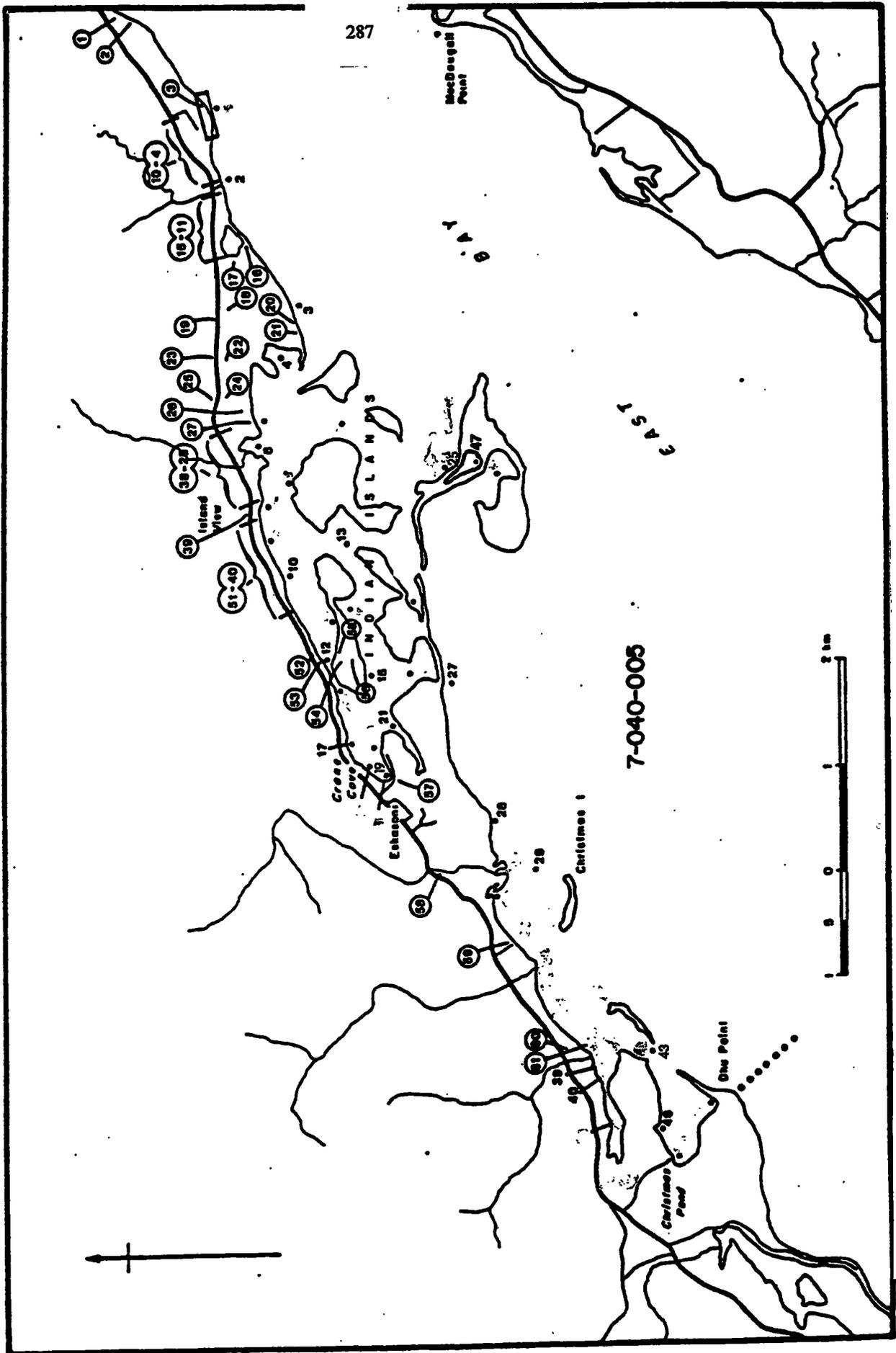


FIGURE 24B. KEY STATION SAMPLING LOCATIONS IN ESKASONI

TABLE 24A. ESKASONI (NS-7-040-005) - FECAL COLIFORM SUMMARY STATISTICS

Station	Samples	Period	Min FC	Max FC	GMean	Median	P90	% > 43
2	13	1990-1995	1.9	240	6	2	37	8
4	17	1990-1995	1.9	7	2	1.9	3	0
6	17	1990-1995	1.9	7	2	1.9	5	0
10	16	1990-1995	1.9	920	3	1.9	25	6
12	17	1990-1995	1.9	33	2	1.9	6	0
13	17	1990-1995	1.9	2	1.9	1.9	2	0
15	17	1990-1995	1.9	7	2	1.9	3	0
17	17	1990-1995	1.9	46	3	1.9	7	6
19	17	1990-1995	1.9	22	2	1.9	5	0
21	16	1990-1995	1.9	14	2	1.9	4	0
25	17	1990-1995	1.9	2	1.9	1.9	2	0
27	16	1990-1995	1.9	5	2	1.9	3	0
28	17	1990-1995	1.9	33	3	1.9	7	0
43	17	1990-1995	1.9	240	3	1.9	17	6
46	17	1990-1995	1.9	70	4	2	15	6
47	5	1995-1995	1.9	2	1.9	1.9		0

Recommendations

The present evaluation indicates there is no major change in the sanitary or bacteriological water quality conditions in the area. The classification of the area (Figure 24A) should remain unchanged.

TABLE 24C. ESKASONI (NS-7-040-005) - SALINITIES (‰)

Station	28 May 90	07 Jun 90	15 Jun 90	18 Jun 90	25 Jun 90	01 Jul 90	11 Jul 90	16 Jul 90	30 Jul 90	08 Aug 90	20 Aug 90	26 Aug 90	25 Sep 90	28 Sep 90	05 Jun 95	20 Jun 95	26 Jun 95	16 Jul 95	16 Aug 95
2	20	20	20	20	19	20	20	20	20	20	19	20	19	17	16	16	12	18	20
4	20	20	20	20	21	20	22	20	20	21	20	22	23	18	16	19	19	18	20
6	20	21	20	20	22	20	20	20	20	19	20	22	22	20	16	18	18	18	20
10	20	20	20	22	22	21	22	21	20	20	20	21	22	20	16	18	19	18	20
12	22	20	22	22	22	22	22	20	21	20	20	20	23	20	17	18	20	18	20
13	20	20	22	22	22	22	22	20	20	20	20	21	22	20	17	18	18	18	20
15	20	20	22	22	22	22	22	20	20	20	20	23	20	20	17	18	18	18	20
17	18	20	20	20	21	22	22	21	19	19	19	20	21	20	17	18	18	18	20
19	20	20	20	22	21	22	22	21	20	20	20	21	22	20	18	18	18	18	20
21	20	20	20	20	20	21	22	20	20	20	19	22	22	20	18	18	18	18	19
25	20	20	20	20	20	21	21	20	19	20	20	22	22	20	18	18	18	18	18
27	20	20	20	20	20	20	20	20	20	19	20	20	20	20	18	18	18	18	18
28	18	18	20	20	20	17	20	20	20	20	20	22	14	14	17	18	18	18	18
43	20	19	19	20	20	19	20	20	20	20	19	20	21	20	18	18	18	18	18
46	20	18	20	20	20	20	20	20	20	20	19	19	22	18	18	12	15	18	16
47															18	18	17	18	18
Tide					MF	HF-MF	MR-HR	MR-HR	MR-HR	MR-HR	MR-HT	MR-HT	MF-LF	HF-MF	LR-MR	MR-HT	HR-HF	HF-MT	HF-HR
Rain (mm)																			
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1.6	2	1
0-48h	0	0	0	0	20.1	0	0	0	0	0	0	0	0	0	0	12.2	1.6	3.2	1
0-72h	0	0	0	0	10.4	1.8	0	0	0	0	0	0	0	0	0	12.2	1.6	4.2	6

TABLE 24D. ESKASONI (NS-7-040-005) - WATER TEMPERATURE (°C)

Station	28 May 90	07 Jun 90	15 Jun 90	18 Jun 90	25 Jun 90	11 Jul 90	16 Jul 90	30 Jul 90	08 Aug 90	20 Aug 90	26 Aug 90	25 Sep 90	29 May 95	05 Jun 95	20 Jun 95	25 Jun 95	16 Jul 95	16 Aug 95	
2						18	23		22	22	22	16		8	16	16	22	20	
4						18	22		22	22	22	16		11	12	16	21	20	
6						19	23		21	23	23			12	13	16	22	20	
10						19	24		21	23				14	14	17	22	20	
12						18	24		22	22	16			10	14	16	22	20	
13														11	14	17	22	20	
15						17								11	14	17	22	20	
17						17								10	14	17	22	20	
19						16								9	14	16	22	20	
21						17								11	14	16	22	20	
25						16								10	12	15	21	20	
27						17								10	13	16	21	20	
28						19	24		21	22	16			11	13	16	21	20	
43						18			21	23				11	14	16	21	21	
46						20	25		21	23				14	13	19	22	21	
47														14	16	19	23	20	
Tide																			
Rain (mm)																			
0-24h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	2	1
0-48h	0	0	0	0	20.1	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2	1
0-72h	0	0	0	10.4	1.8	0	0	0	0	0	0	0	0	0	0	1.6	4.2	6	6

TABLE 24E. SHORELINE SANITARY SURVEY:

NS-07-040-005: ESKASONI
 FROM COSSIT POINT TO DHU POINT
 INSPECTOR: ROBERT KENNEY
 COMPREHENSIVE: JULY 15, 1990 REVIEWED: AUGUST, 1996

Refer to: Figure 22C for location of sites; & Appendix A for abbreviations used in following.

Site	Type	Status	Observations
0	GD	G	GENERAL DESCRIPTION: This area of survey encompasses the waters of Indian Islands, Eskasoni Harbour, Christmas Pond. The Indian reserve of Eskasoni is located here with a population of approx. 2400. Most of the homes are on the reserve sewage treatment plant (95 to 98%). The remaining homes are using either ST/DB, sand filters or OH's. There are a few suspected direct discharges to waters near Eskasoni I.R. In This shore includes the area from the community of Island View and the Eskasoni Indian Reserve of Cape Breton County. There is mostly seasonal cottages, local residences and the sewage treatment plant of Eskasoni as the sources impacting on water quality. From visual inspection of various homes and cottages along the shore near the community of Island View (north/east of Eskasoni) very few discharge pipes were actually detected but suspected sources here are believed (sites 21,28,29,30,37,46) due to their proximity to shore. Most of the Eskasoni Indian Reserve is connected to the sewage treatment plant (site 43), the remaining homes are serviced by individual on site systems. The final effluent from the treatment plant is chlorinated though there are intervals when the chlorinator has not been operating. In conjunction with the treatment plant are 5 lift stations throughout the reserve (sites 57,58,59,62) the last being located in the next subsector of NS-07-040-006. At times of high rainfall these stations may become surcharged, however this has not been a reported common occurrence.
1	ST	N	A 1 sty yel/brw trim cottage on hill, 30mf lagoon. No pipes visible and very bushy shore.
2	LE	P	A 1 sty red seasonal cottage on a sand bar also 20mf lagoon, 30mfs, and 1 meter above water level. (Lynch)
3	ST	P	A group of 6 cottages, 25 to 80mfs, all with ST&TF, 4 WV, 1 speedboat, no pipes visible
4	DR	P	Yel/brw mobile home, drainage to ditch than to road, 200mfs.
5	PI	P	3 seasonal cottages, 1 red, 1 yel, 1 wht, 300mfs all with ST.A 2" PI to field, 4" PI to ditch.
6	ST	P	A new 1 sty wht house, raised foundation, ST/TF
7	ST	P	Wht seasonal mobile home, 150mfs ST/TF (Aucoin)
8	OH	P	1 sty wht seasonal cottage, OH & humus toilet
9	DR	P	1 sty wht/blk trim house, 50mfs, DR to left of house, no pipes seen though murky color.
10	ST	P	Wht/grn seasonal mobile home, 40mfs ST/TF
11	OH	P	3 seasonal trailers with OH's, 10mfwc
12	ST	P	2 one sty seasonal cottages, 100mf pond ST/TF
13	OH	P	A 1 1/2 sty grn. seasonal cottage, stone foundation, chemical toilet & OH 200mf pond.
14	PI	P	ST/TF with overflow to woods 1 sty wht/red cottage & mobile home, 40-70mfs
15	ST	P	Wht/blu A-frame cottage, ST/TF boat house 3 boats, 100mf pond.
16	ST	P	Wht/blu seasonal mobile cottage, ST/TF, 40mfs

17	AG	P	2 sty wht house,3 barns,1 pool,6 cows,goats.
18	ST	N	A 1 1/2 sty/wht house on foundation with a ST/TF approx 300mfs,no outlet sources seen.
19	ST	N	A old style ST with outlet drainage to field, no leaching or outlet pipe seen.Near a 2 sty
20	PI	P	A 2 sty brwn seasonal cottage,approx 40mfs with drainage to ground at back of house,no
21	ST	P	A new log home,50mfs with ST/TF situated on point near Little Is.
22	ST	N	Near main road is a mobile home with wood front,has ST/TF no pipes seen.
23	ST	N	A 2sty yel/wood home with ST/TF,no pipe seen.
24	OH	P	Two structures located at site;1 1/2stry red
25	OH	P	Three cottages with OH's approx 80mf WC
26	ST	N	A 1sty wht cottage,seasonal,100mfs ST/TF,has
27	ST	P	New beige seasonal cottage,ST/TF 80mfs.Small
28	OH	P	A group of 4 cottages with 4 OH's,one cottage located on opposite side of road,50 to 100mfs. A small wharf located at point.
29	ST	N	Yel/red trim cottage,50mfs ST/TF
30	OH	P	A seasonal trailer and cottage,chemical toilet dumped to old OH,50mfs.
31	ST	P	Two homes;wht/red trim & wht/blu trim have ST/TF approx 80mf McGillivray Brook.
32	ST	P	A yel/red cottage,ST/TF,40mf brook,no leaching seen.
33	PI	P	A seasonal trailer,4"PI to ground,8 power boats,4 sailboats off shore.Approx 50mfs.
34	PI	P	A 1 sty grn cottage & a 1 sty abandoned wht cottage. Has 4"PI to ground,70mfs.Boats moored to wharf in area.
35	ST	N	A wht/brn mobile home,ST/TF,100mfs.
36	ST	P	Blu seasonal cottage,ST/TF 40mfs.
37	PI	P	A 1 sty wht/red trim cottage,10mf swamp,has a 4"PI to ground near swamp.
38	NS	N	One sty red/wht trim seasonal cottage,no PI's visible,30mfs.
39	ST	N	A 1 sty wht/blk trim house,100mfs,ST/TF
40	WV	N	A boarded up red seasonal cottage,2 wharves,
41	ST	N	A 1 sty blu seasonal cottage,ST/TF,50mfs.No pipes seen.
42	ST	P	A 1sty grn/wht trim seasonal cottage,10mf a wet section of ground & 30mfs,no pipes seen.
43	ST	N	A 1sty wht seasonal cottage,ST/TF 100mfs.In the community of Island View.
44	ST	N	A group of 6 seasonal cottages all with ST/TF 3 wharves,2 power boats.
45	OH	P	Three cottages;two have ST/TF the third has a OH. There are two wharves,all approx 70mfs.
46	PI	P	Two trailers,10mfs with direct discharge.No pipes can be seen,no on site treatment.
47	ST	P	A Winobego mobile home with ST/TF,70mfs.
48	ST	P	One sty wht seasonal cottage and trailer,has ST pumped out,approx 10mfs.
49	NS	N	A 1 sty seasonal wht cottage,70mfs.
50	ST	N	A 1 sty seasonal cottage,ST/TF,no pipes.
51	WV	N	Two wht seasonal cottages on a hill have a wharf with 2 fishing boats.Approx 90mfs.
52	OH	P	A 1stry brn shingled cottage,OH,5mfs.
53	NS	P	On Eskasoni I.R.,1 sty brwn wood cottage,no sewage system seen.

54	OH	P	Brwn seasonal cottage with OH,30mfs.
55	ST	P	Seasonal cottage,no sewage hookup,40mfs.
56	ST	P	Seasonal trailer home ,no sewage system,40mfs
57	LS	P	Lift station for sewage treatment plant.
58	LS	P	Lift station for STP for Eskasoni I.R.
59	LS	P	Lift station for Eskasoni I.R. STP
60	TP	P	The Eskasoni I.R. sewage treatment plant. Oxidation ditch,4000imp gal/day. Very well maintained by operator.
61	PI	D	The outfall for STP of Eskasoni,chlorinated.
62	LS	P	Lift station for treatment plant.

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APPENDIX A. SHORELINE SANITARY SURVEY LEGEND

The following abbreviations are used in the sanitary shoreline survey.

Type (Pollution Source)

- 00** The code given for the type under the site number 000 and designates a general non-type designation.
- AB** *Abandoned*; indicates that there still appears to be a structure at this site location yet appears not inhabited.
- AG** *Agriculture*; could indicate an agriculture source that for most part is non-point in nature but is associated with farming industry, (IE; livestock, mixed crops, manure piles, chemical fertilizers). Different animal species can attribute various faecal coliform levels.
- AQ** *Aquaculture*; indicates if a visible aquaculture industry is in the area, (IE; fin fish, lobsters, shellfish....etc).
- CU** *Culvert*; drainage culverts along shoreline can direct surface runoff to receiving waters. Can be made of plastic, metal or wood.
- DI** *Ditch*; drainage ditches dug along road side, homes, industry or to receiving waters. These are open land features.
- DR** *Drainage*; surface drainage or runoff that can impact receiving waters.
- DS** *Dump Station*; often situated at campgrounds, used by recreational vehicles to empty on board septic tanks.
- FP** *Fish Plant*; any industry associated with processing (IE; lobsters, shellfish, fish). May also be used to indicate food processing as well.
- LE** *LE*; leaching type source that may impact receiving waters either directly or indirectly.
- LS** *Lift Station*; a pump station that handles water flow from one source to transfer to another location. Often associated with sewage treatment plants but could handle other forms of wastewater.
- NP** *Non-Point*; indicates a source that is not specifically set in one location either mobile or over a larger area (IE; wildlife on land or water)
- NS** *Non-Source*; used in conjunction with a reference point to aid the sanitary inspector.
- OH** *Out House*; the classic out door facility before the flush toilet was invented.
- PI** *Pipe*; to indicate pipes of either PVC, ABS, metal, concrete,...etc.
- ST** *Septic Tank*; a holding tank for settling septic waste solids, may be associated with a septic drainage field, direct discharge or full retention.
- TP** *Treatment Plant*; indicates a plant that treats waste either sewage or industrial.
- WC** *Water Course*; a stream, river, brook. May be useful in possible water sampling.
- WV** *Wharf*; a shoreline structure as built by man, may be wood, concrete, stone, landfill.0
- XX** *Miscellaneous*; an unknown source in nature (IE; dump, garbage).

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