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SHELLFISH GROWING WATER SANITARY SURVEY

OF THETIS AND KUPER ISLANDS, B.C. 1973

**Surveillance Report
EPS-5-PR-73-7**

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Shellfish Growing Water
Sanitary Survey of Tides
and Kuper Islands
British Columbia 1973

Surveillance Report
EPS 5-PR-73-7

Pacific Region
December, 1973

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SHELLFISH GROWING WATER SANITARY SURVEY
OF
THETIS AND KUPER ISLANDS
BRITISH COLUMBIA, 1973

by

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Environmental Protection Service
Pacific Region
Vancouver, B. C.

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ABSTRACT

A sanitary survey of the waters encompassing Thetis and Kuper Islands, and of Stuart Channel was conducted during August, 1973 by personnel of the Environmental Protection Service, Pacific Region.

The primary purpose of the survey was to evaluate the impact of sewage discharges from pleasure craft on the quality of shellfish growing waters. This data was required to verify the accuracy of the existing Schedule J closures. With the exception of the waters adjacent to the Telegraph Harbour Marina and the waters on the western side of Tent Island, the coliform levels obtained in shellfish growing areas were acceptable.

A recommendation is made to remove Clam Bay from Schedule J and to limit the extent of the Tent Island closure.

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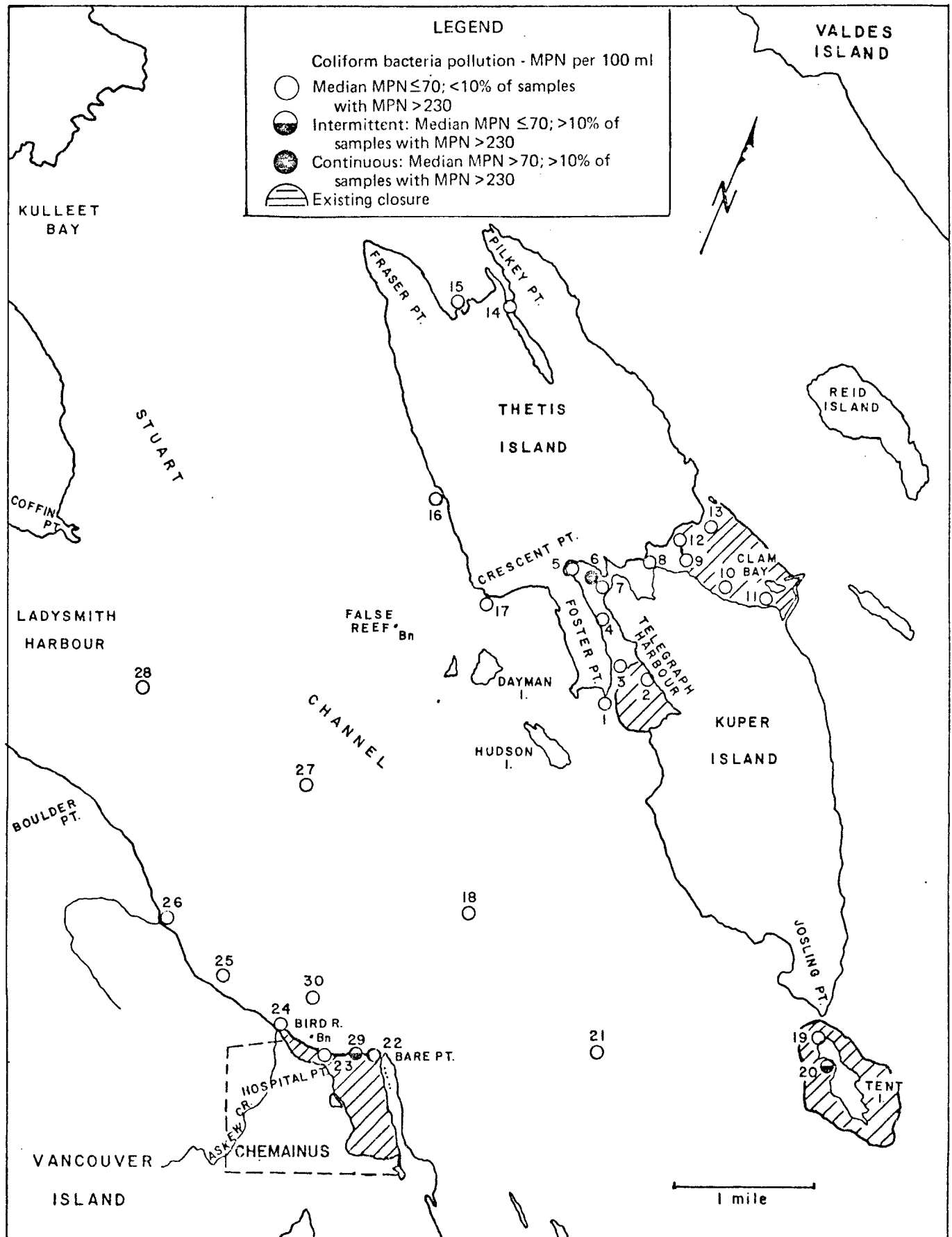
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1. INTRODUCTION

Commercial oyster leases are located on Thetis Island and both Thetis and Kuper Island have a significant shellfish resource. To determine the water quality of the growing areas, a sanitary survey of both Thetis and Kuper Island was carried out between June 20 and 29, 1972, by personnel of the Environmental Protection Service, Pacific Region (Surveillance Report EPS 5-WP-73-3). The survey concerned itself mainly with determining the pollution impact of domestic sewage discharges into Telegraph Harbour, Kuper Island. Sampling was also performed in the channel between Thetis and Kuper Islands. As a result of this survey, it was concluded that, with the exception of Schedule J contaminated area 17-13 and the wharf closure at Preedy Harbour, all the waters surrounding Thetis and Kuper Islands could be approved for shellfish harvesting except during the summer months. It was further recommended that a summer bacteriological survey be conducted to determine the pollution inputs resulting from heavy summer boating and summer home occupation in the area.

Acting on this recommendation, personnel of the Shellfish Water Quality Program (EPS, Pacific Region) carried out a sanitary survey of Thetis and Kuper Islands from August 21 to August 31, 1973. Particular attention was given to the two marinas located in Telegraph Harbour as well as the tidal foreshore of Clam Bay. Other areas surveyed during this period included (a) the tidal foreshore of Tent Island, (b) the entrance to Chemainus Harbour and the surrounding tidal foreshore and (c) the waters of Stuart Channel (Figure 1).

FIGURE 1.
SAMPLE STATION LOCATIONS



2. FIELD PROCEDURES AND METHODS

Sampling stations were selected and a bacteriological, chemical and physical water testing program developed to assess the shellfish growing water quality and the source of pollutants.

2.1 Bacteriological Sampling and Analysis

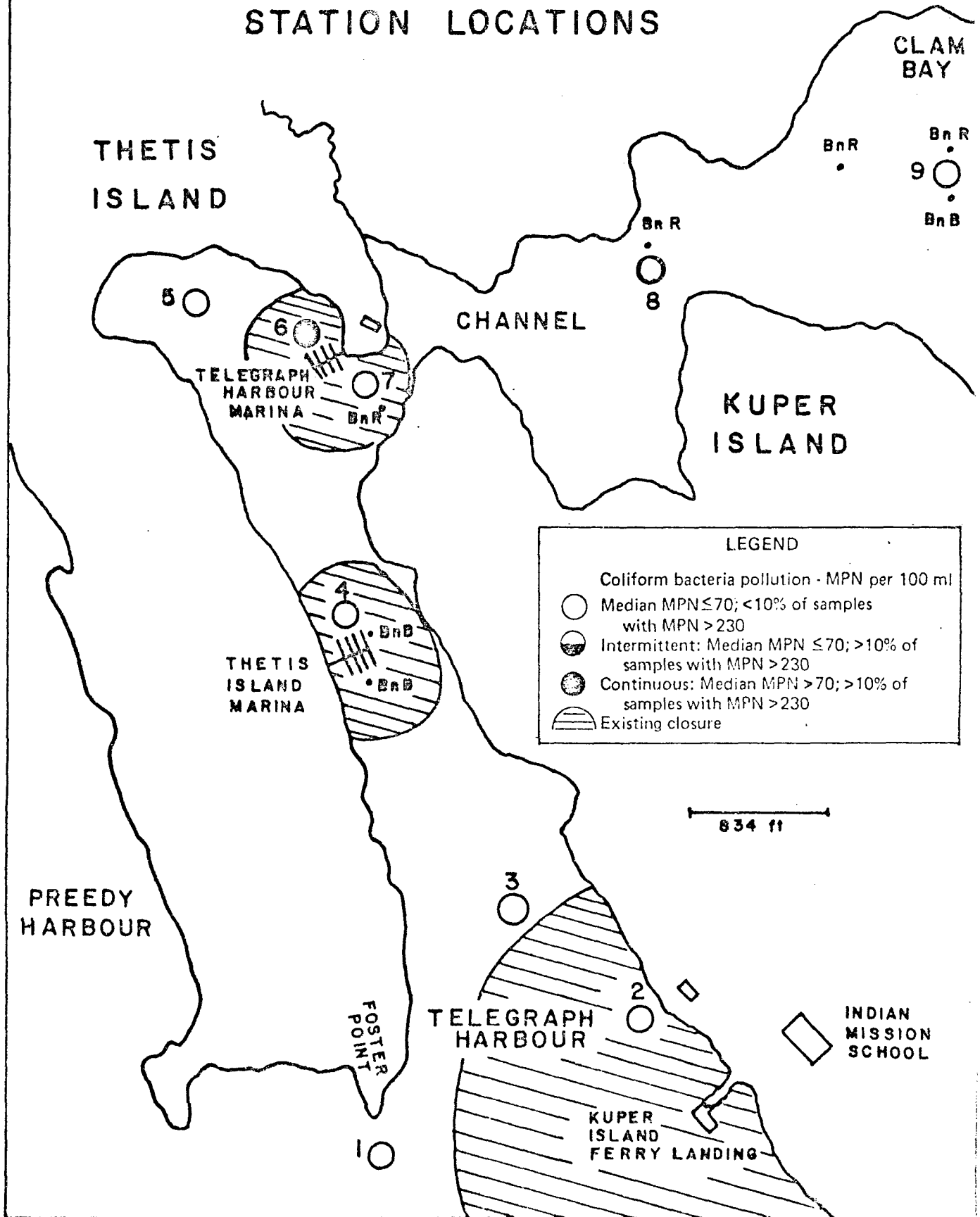
Samples were collected in sterile 6 oz. wide-mouth bottles approximately 6 inches to one foot below the water surface. All samples were collected by boat and stored in coolers (temperature not exceeding 10°C) until processed. Analyses were carried out in the Environmental Protection Service Field Laboratory located 30 minutes travel time from the sampling area and were performed within 2½ hours of collection. The total confirmed coliform MPN was obtained using the multiple-tube fermentation technique (3 decimal dilutions of five tubes each) as described in the 13th edition of Standard Methods for the Examination of Water and Wastewater, Part 407A, page 664. Fecal coliform results were obtained as described in Part 407C, page 669 of Standard Methods.

2.2 Chemical and Physical Sampling and Analysis

Temperature and salinity measurements were made at a depth of 6 inches to one foot below the water surface using test equipment carried in the boat. The temperature was measured

FIGURE 2.

**TELEGRAPH HARBOUR SAMPLE
STATION LOCATIONS**



using a standard centigrade thermometer and salinity was determined with a Beckman Model Rb 3-349 Solubridge Electrolytic Conductivity Meter. Results are presented in Appendix B.

3. DISCUSSION OF RESULTS

Sample station locations are shown in Figures 1 and 2. Bacteriological results are summarized in Tables 1 and 2, with more complete data listed in Appendix B and C. Elemental Conditions are also listed in Appendix B. A description of the sample station locations can be found in Appendix A. In order that an area be considered safe for the harvesting of shellfish, it must meet both the following bacteriological criteria: the total coliform median MPN of the water must not exceed 70 per 100 ml, and not more than 10% of the meaningful and representative samples can exceed an MPN of 230 per 100 ml. In addition, a comprehensive sanitary survey of the area is required to identify and evaluate all sources of pollution.

On the basis of the bacteriological standards, sample station 6, 20 and 29 do not fall within the acceptable water quality limits (Table 1). Station 6 is located on the north side of the Telegraph Harbour Marina, opposite the center float. During the survey period, this station was subject to continuous bacterial pollution, having a total coliform median MPN of 350 per 100 ml. The corresponding

TABLE 1

SUMMARY OF BACTERIOLOGICAL RESULTS:

STANDARD TOTAL CONFIRMED COLIFORM MPN/100 ml.

Station Number	No. of Samples Collected	MPN Range	Median MPN/100ml	% Over 230 MPN/100ml
1	9	<1.8 - 7.8	2.0	0.0
2	9	1.8 - 13	6.8	0.0
3	9	2.0 - 33	13	0.0
4	9	2.0 - 49	13	0.0
5	9	<1.8 - 23	7.8	0.0
6	9	4.0 - 9200	350	55.5
7	9	6.8 - 95	17	0.0
8	9	<1.8 - 49	33	0.0
9	9	<1.8 - 13	6.1	0.0
10	9	<1.8 - 21	<1.8	0.0
11	9	<1.8 - 4.5	2.0	0.0
12	9	<1.8 - 6.8	2.0	0.0
13	9	<1.8 - 6.8	<1.8	0.0
14	9	<1.8 - 33	<1.8	0.0
15	9	<1.8 - 2.0	<1.8	0.0

TABLE 1 (Cont'd)

SUMMARY OF BACTERIOLOGICAL RESULTS:

STANDARD TOTAL CONFIRMED COLIFORM MPN/100 ml.

Station Number	No. of Samples Collected	MPN Range	Median MPN/100ml	% Over 230 MPN/100ml
16	9	<1.8 - 2.0	<1.8	0.0
17	9	<1.8 - 13	<1.8	0.0
18	9	<1.8 - 2.0	<1.8	0.0
19	9	<1.8 - 4.5	<1.8	0.0
20	9	<1.8 - 350	4.5	11.1
21	9	<1.8 - 4.5	<1.8	0.0
22	9	<1.8 - 79	6.8	0.0
23	9	<1.8 - 49	13	0.0
24	9	<1.8 - 23	4.5	0.0
25	9	<1.8 - 4.5	<1.8	0.0
26	9	<1.8 - 4.5	<1.8	0.0
27	9	<1.8 - 2.0	<1.8	0.0
28	9	<1.8 - 2.0	<1.8	0.0
29	6	<1.8 - 240	10.2	16.6
30	6	<1.8 - 110	4.5	0.0

TABLE 2
SUMMARY OF BACTERIOLOGICAL RESULTS
FECAL COLIFORM MPN per 100 ml

Station Number	No. of Samples Collected	MPN Range	Median MPN/100 ml
1	9	<1.8 - 4.5	<1.8
2	9	<1.8 - 4.5	2.0
3	9	<1.8 - 9.3	2.0
4	9	<1.8 - 7.8	2.0
5	9	<1.8 - 13	2.0
6	9	1.8 - 2200	20
7	9	<1.8 - 95	4.5
8	9	<1.8 - 33	17
9	9	<1.8 - 13	<1.8
10	9	<1.8 - 2.0	<1.8
11	9	<1.8 - 4.5	2.0
12	9	<1.8 - 6.8	<1.8
13	9	<1.8 - 4.0	<1.8
14	9	<1.8 - 11	<1.8
15	9	<1.8 - 2.0	<1.8

TABLE 2 (Cont'd)
SUMMARY OF BACTERIOLOGICAL RESULTS
FECAL COLIFORM MPN per 100 ml

Station Number	No. of Samples Collected	MPN Range	Median MPN/100 ml
16	9	<1.8 - 2.0	<1.8
17	9	<1.8 - 6.8	<1.8
18	9	<1.8 - <1.8	<1.8
19	9	<1.8 - 2.0	<1.8
20	9	<1.8 - 350	<1.8
21	9	<1.8 - 2.0	<1.8
22	9	<1.8 - 4.0	2.0
23	9	<1.8 - 11	2.0
24	9	<1.8 - 23	2.0
25	9	<1.8 - 2.0	<1.8
26	9	<1.8 - 2.0	<1.8
27	9	<1.8 - <1.8	<1.8
28	9	<1.8 - <1.8	<1.8
29	6	<1.8 - 34	<3.2
30	6	<1.8 - 12	<1.8

fecal coliform median MPN of 20 per 100 ml indicated the contamination was of public health significance. Unacceptable bacterial pollution was not observed at any other station in the channel between Thetis and Kuper Islands, including Clam Bay, nor was there evidence of contamination of the northern or western tidal foreshore of Thetis Island (stations 14, 15, 16 and 17).

Stations 15 and 16 were located fronting Pioneer Pacific summer camp, and Camp Columbia, respectively. Information concerning sewage disposal at these two camps can be found in EPS surveillance report, EPS 5-WP-73-3, page 8. Intermittent pollution was observed at station 20, Tent Island, where high total coliform MPN's of 79/100 ml and 350/100 ml indicate a possible health hazard.

Intermittent pollution was also observed at station 29, located at the entrance to Chemainus Harbour. Interpretation of the data for this station must be reserved however, as only six samples were taken from this point. Stations 18, 21, 27, and 28 located in Stuart Channel all had a total coliform median MPN of less than 1.8 per 100 ml.

4. SOURCES OF POLLUTION

4.1 Telegraph Harbour Marina.

The two possible sources of pollution include effluent seepage from the onshore washrooms and laundry, and discharges of sewage from boats with on-board toilet facilities. The

washrooms are located approximately 50 feet above the high water line on rocky, sandy ground. The septic tank and tile field are located on the water side of the structure, approximately 30 feet above the high water line. During the survey period, bacterial densities offshore from the washrooms (station 7) were low, with a total coliform median MPN of 17 per 100 ml. However, station 6 displayed a total coliform median MPN of 350 per 100 ml. Station 5, located approximately 700 feet west of station 6 had a total coliform median MPN of 7.8 per 100 ml suggesting the high MPN values at station 6 were not the result of onshore sources. The major source of pollution would therefore appear to be discharges of sewage from moored boats equipped with on-board toilet facilities. Over the survey period, an average of 29 boats equipped with toilet facilities were moored at the marina each day. During the aforementioned 1972 survey, only an average of nine boats equipped with toilet facilities were moored at the marina each day. Consequently, a much lower median MPN of 49 per 100 ml was obtained. This supports the contention that heavy summer boating can significantly reduce the water quality of the marina and surrounding waters.

It is interesting to note that very low MPN values were obtained for the Thetis Island Marina (station 4). During the survey period, this marina had a much lower boat count than did the Telegraph Harbour Marina, with an average of 15 boats equipped

with toilet facilities moored each day. This would partially explain the low bacterial densities observed at station 4. It is also likely that dilution and dispersion of the bacteria occurs more quickly at this marina than at the Telegraph Harbour Marina, which is located in a well protected bay.

4.2 Tent Island.

Sewage discharges from pleasure craft were responsible for intermittent pollution observed at station 20. During the survey period the number of boats located on the west side of the island ranged from 0 to 8 each day. The island, a provincial marine park, is uninhabited and therefore there are no onshore source of human fecal pollution. Coliform counts could not be attributed to landwash as rainfall was minimal during the survey period. Station 19, located at the north west end of Tent Island, exhibited very low coliform levels. Only a maximum of three boats were observed at this sample station. The low MPN values could probably be attributed both to tidal influence and fewer boats, as station 19 was much more exposed to open waters than was station 20.

4.3 Chemainus Harbour and Contiguous Tidal Foreshore.

The town of Chemainus discharges raw sewage into the receiving waters through a 1500 foot outfall on a bearing line from Hospital Point due north to Bird Rock. The quality of the

water along the tidal foreshore (specifically station 23, 24, 25 and 26) of Vancouver Island between Boulder Point and Chemainus was not influenced by the outfall. Station 29, located at the entrance to Chemainus Bay, experienced a single high MPN of 240 per 100 ml on August 28. The corresponding fecal MPN was 34 per 100 ml. The source of the pollution was not ascertained however.

5. CONCLUSIONS

- (a) The present contaminated area 17-14 in Schedule J is not supported by the bacteriological data obtained during the month of August. It would appear that summer home occupation has little effect on water quality in this area.
- (b) The waters in the area of Telegraph Harbour Marina are subject to localized bacterial pollution resulting from on-board discharges from moored boats. The present 400 foot wharf closure around the Thetis Island Marina is sufficient.
- (c) The tidal foreshore of Vancouver Island, between the mouth of the Askew Creek, and Boulder Point, is of acceptable quality for the taking of shellfish during favourable summer conditions. The area should be resurveyed during winter conditions to determine the effect of land wash on the water quality.

6. RECOMMENDATIONS

- (i) Contaminated area 17-14 should be removed from Schedule J since the closure is not supported by the sanitary survey data

obtained in June 1972 and by the present survey.

- (ii) Contaminated area 17-15 should be amended to read " the large bay on the west side of Tent Island lying between latitudes $48^{\circ}55.60'N$ and $48^{\circ}55.74'N$ ".

ACKNOWLEDGEMENTS

Mr. B. Kay, Bacteriologist, conducted the bacteriological analyses in the Environmental Protection Service mobile laboratory, compiled the bacteriological data, writing and assembling the report.

Mr. M. Nider, Bacteriological Technician, assisted in the bacteriological analyses.

Mr. D. Low, Field Technician, assisted by Mr. G. Derksen, Field Technician, conducted the Field survey and compiled the hydrographic data.

Mr. T. Tevendale, Project Engineer, sample site selection and suggestions on the final report write-up.

A P P E N D I X A

DESCRIPTION OF SAMPLE STATION LOCATIONS

DESCRIPTION OF SAMPLE STATION LOCATIONS

<u>STATION NO.</u>	<u>DESCRIPTION</u>
1.	Opposite ¹ Foster Point on Thetis Island.
2.	Opposite white house approximately 200 yards north-west ² of Kuper Island Ferry Landing.
3.	Mid-Channel in Telegraph Harbour. ³
4.	Off north end of Thetis Island Marina jetty.
5.	North-west end of Telegraph Harbour approximately 650 feet west of Telegraph Harbour Marina jetty.
6.	Off centre float on north side of Telegraph Harbour Marina jetty.
7.	Opposite washroom and laundry facilities at Telegraph Harbour Marina.
8.	Opposite channel marker approximately midway through channel between Thetis and Kuper Islands.
9.	Midway between channel markers at east end of channel between Thetis and Kuper Islands.
10.	Off moorage drum on south-west side of Clam Bay.
11.	Off Indian Village float at south-east end of Clam Bay.
12.	Opposite double chimney split level house on north-west shore of Clam Bay.
13.	Opposite unnamed point at north-east end of Clam Bay.
14.	Off Limberis jetty in unnamed inlet at north-west end of Thetis Island.
15.	Off diving float at Pioneer Pacific summer camp in North Cove.
16.	Off diving float at Camp Columbia summer camp on west side of Thetis Island.

DESCRIPTION OF SAMPLE STATION LOCATIONS

<u>STATION NO.</u>	<u>DESCRIPTION</u>
17.	Opposite most easterly marker of Limberis oyster lease on Crescent Point
18.	Stuart Channel approximately midway on bearing line from Bare Point near Chemainus to the south-end of Hudson Island.
19.	Bay at north-west end of Tent Island.
20.	Opposite Provincial Marine Park in bay on west side of
21.	Stuart Channel approximately midway on bearing line from Bare Point near Chemainus to sample station 20.
22.	Opposite east tip of Bare Point.
23.	Opposite cable marker on Hospital Point.
24.	Opposite mouth of Askew Creek.
25.	Opposite flagpole located in middle of residential area north-west of sample station 24.
26.	Opposite mouth of unnamed creek north-west of sample station 25.
27.	Stuart Channel approximately midway on bearing line from Boulder Point to the south tip of Hudson Island.
28.	Stuart Channel approximately midway on bearing line from Boulder Point to Fraser Point on Thetis Island.
29.	Chemainus Bay approximately midway between sample stations 22 and 23.
30.	Approximately 1500 feet off Hospital Point on extension of bearing line from cable marker to Bird Rock.

NOTES:

- (1) The distances from shore reference points varied with the tide as offshore samples were collected where the water depths were approximately 3 feet.
- (2) All compass bearings are magnetic.
- (3) Sample station 3 was located with an Ebbco Sextant with left and right azimuths from a common centre point. Readings were taken with an accuracy of within one minute of arc.

Left Azimuth	Centre	Right Azimuth
Foster Point	Active Point	Donckele Point
28° 11'		7° 5'

A P P E N D I X B

Daily record of Bacteriological Results & Sampling
conditions for each sample point.

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Area: Foster Point (Thetis Island)

[illegible]

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Area: Telegraph Harbour

[illegible]

TABLE B-3

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Area: Telegraph Harbour													
In Date	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks		
		Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud			
1	21	0925	2.0	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 5	Calm	Clear		
2	22	0910	33	2.0	0605 1500	2.3 9.6	47-70	0	0	Calm	Clear		
4	23	0905	4.5	<1.8	0705 1605	1.9 10.1	44-66	0	S.E. @ 2	Calm	7/10		
6	24	0925	7.8	4.5	0810 1645	1.6 10.4	42-67	Trace	0	Calm	6/10		
7	27	1110	33	2.0	1050 1815	2.0 10.6	45-72	0	0	Calm	8/10		
9	28	0905	4.5	2.0	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 2	Light chop	Overcast	Temp. = 14.8°C Salinity = 29 ppt.	
10	29	0935	13	4.5	0600 1215	9.7 3.7	48-70	0	S @ 5	Rippled	3/10	Temp. = 15.5°C Salinity = 31 ppt.	
12	30	0905	4.5	<1.8	0715 1250	9.5 4.9	49-67	Trace	0	Calm	5/10		
14	31	0855	27	9.3	0810 1325	9.3 6.0	43-66	0	N.W. @ 3	Rippled	5/10		

TABLE B-4

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 4

Area: Thetis Island Marina

Run No.	Date Aug.	Sampling Time	Coliform		Fecal	Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions		Remarks
			Total	MPN/100ml		Time	Ht (ft)			Wind	Sea	
1	21	0930	49	1.8		0505 1335	2.8 9.1	40-72	0	S.E. @ 5	Calm Clear	15 Boats ¹
2	22	0915	49	4.5		0605 1500	2.3 9.6	47-70	0	0	Calm Clear	13 Boats
4	23	0910	7,8	<1.8		0705 1605	1.9 10.1	44-66	0	S.E. @ 2	Calm 7/10	16 Boats
6	24	0925	7.8	<1.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm 6/10	19 Boats
7	27	1110	2.0	<1.8		1050 1815	2.0 10.6	45-72	0	0	Calm 8/10	18 Boats
9	28	0905	13	2.0		0455 1135	9.8 2.7	51-64	0.07	S.E. @ 2	Light chop Overcast	13 Boats
10	29	0940	11	4.0		0600 1215	9.7 3.7	48-70	0	S @ 5	Rippled 3/10	17 Boats Temp. = 15.2°C
12	30	0905	22	7.8		0715 1250	9.5 4.9	49-67	Trace	0	Calm 5/10	13 Boats Salinity = 30 ppt.
14	31	0855	17	4.5		0810 1325	9.3 6.0	43-66	0	N.W. @ 3	Rippled 5/10	16 Boats

NOTE: ¹Moored boats greater than 20 feet in length equipped with on-board toilet facilities.

TABLE B-5

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 5

Area: Telegraph Harbour

Run No.	Date Aug.	Sampling Time	Coliform		MPN/100ml	Tides		Air Temp Range(°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal		Time	Ht(ft)			Wind	Sea	Cloud	
1	21	0935	2.0	2.0		0505 1335	2.8 9.1	40-72	0	S.E. @ 5	Calm	Clear	4 Boats ¹
2	22	0920	23	2.0		0605 1500	2.3 9.6	47-70	0	0	Calm	Clear	5 Boats
4	23	0910	<1.8	<1.8		0705 1605	1.9 10.1	44-66	0	S.E. @ 2	Calm	7/10	1 Boat
6	24	0930	22	6.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm	6/10	5 Boats
7	27	1105	2.0	2.0		1050 1815	2.0 10.6	45-72	0	0	Calm	8/10	4 Boats
9	28	0910	13	13		0455 1135	9.8 2.7	51-64	0.07	S.E. @ 2	Light chop	Overcast	4 Boats
10	29	0945	11	6.8		0600 1215	9.7 3.7	48-70	0	S @ 5	Rippled	3/10	4 Boats Temp. = 15.6°C
12	30	0910	7.8	2.0		0715 1250	9.5 4.9	49-67	Trace	0	Calm	5/10	4 Boats Salinity = 30 ppt.
14	31					0810 1325	9.3 6.0	43-66	0	N.W. @ 3	Rippled	5/10	6 Boats

NOTE: Unmanned boats greater than 20 feet in length equipped with on-board toilet facilities.

BACTERIOLOGICAL ANALYSES, RESULTS AND SAMPLING CONDITIONS.

TABLE B-6

Sample Stations: 6											
Area: Telegraph Harbour Marina											
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions		
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud
1	21	0940	350	130	0505 1335	2.8 9.1	40-72	0	S.E. @ 5	Calm	Clear
2	22	0925	>1600	95	0605 1500	2.3 9.6	47-70	0	0	Calm	Clear
4	23	0915	400	330	0705 1605	1.9 10.1	44-66	0	S.E. @ 2	Calm	7/10
6	24	0935	3500	20	0810 1645	1.6 10.4	42-67	Trace	0	Calm	6/10
7	27	1100	9200	2200	1050 1815	2.0 10.6	45-72	0	0	Calm	8/10
9	28	0910	130	7.8	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 2	Light chop	Overcast
10	29	0950	49	11	0600 1215	9.7 3.7	48-70	0	S @ 5	Rippled	3/10
12	30	0915	17	6.8	0715 1250	9.5 4.9	49-67	Trace	0	Calm	5/10
14	31	0900	4.0	1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 3	Rippled	5/10

NOTE: ¹Moored boats greater than 20 feet in length equipped with on-board toilet facilities.

TABLE B-7

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Area: Telegraph Harbour												
Run No.	Date Aug.	Sampling Time	Coliform MPN/100m		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1	21	1010	7.8	4.5	0505 1335	2.8 9.1	40-72	0	S.E. @ 5	Calm	Clear	
2	22	0925	33	<1.8	0605 1500	2.3 9.6	47-70	0	0	Calm	Clear	
4	23	0930	17	2.0	0705 1605	1.9 10.1	44-66	0	S.E. @ 2	Calm	7/10	
6	24	0940	23	7.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	6/10	
7	27	1055	13	4.5	1050 1815	2.0 10.6	45-72	0	0	Calm	8/10	
9	28	0945	95	95	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 2	Light chop	Overcast	
10	29	0955	79	11	0600 1215	9.7 3.7	48-70	0	S @ 5	Rippled	3/10	Temp. = 15.0°C Salinity = 29 ppt
12	30	0950	17	11	0715 1250	9.5 4.9	49-67	Trace	0	Calm	5/10	
14	31	0905	6.8	4.0	0810 1325	9.3 6.0	43-66	0	N.W. @ 3	Rippled	5/10	

TABLE B-8

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 8											
Area: Channel Between Thetis & Kuper Islands											
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions		Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	
1	21	1015	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	E @ 5	Calm	Clear
2	22	0930	32	17	0605 1500	2.3 9.6	47-70	0	E @ 5	Calm	Clear
4	23	0930	49	33	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Calm	7/10
6	24	0945	33	33	0810 1645	1.6 10.4	42-67	Trace	0	Calm	7/10
7	27	1215	49	11	1050 1815	2.0 10.6	45-72	0	S.E. @ 8	Calm	9/10
9	28	0950	33	33	0455 1135	9.8 2.7	51-64	0.07	N.E. @ 3	Light chop	Temp. = 14.6°C Salinity = 28 ppt Overcast
10	29	0955	33	33	0600 1215	9.7 3.7	48-70	0	E. @ 4	Rippled	Temp. = 14.5°C Salinity = 29 ppt
12	30	0955	13	2.0	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 5	Calm	4/10
14	31	0905	7.8	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 12	Light chop	4/10

TABLE B-9

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 9												
Area: Clam Bay												
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range(°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht(ft)			Wind	Sea	Cloud	
1	21	1020	11	11	0505 1335	2.8 9.1	40-72	0	E @ 5	Calm	Clear	
2	22	0935	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	E @ 5	Calm	Clear	
4	23	0935	2.0	2.0	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Calm	7/10	
6	24	0950	2.0	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	7/10	
7	27	1210	2.0	<1.8	1050 1815	2.0 10.6	45-72	0	S.E. @ 8	Calm	9/10	
9	28	0955	13	13	0455 1135	9.8 2.7	51-64	0.07	N.E. @ 3	Light chop	Overcast	
10	29	1000	7.8	2.0	0600 1215	9.7 3.7	48-70	0	E. @ 4	Rippled	4/10	Temp. = 13.5°C Salinity = 30 ppt
12	30	0955	7.8	<1.8	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 5	Calm	4/10	
14	31	0910	6.1	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 12	Light chop	4/10	

TABLE B-10

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 10												
Area: Clam Bay												
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1	21	1025	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	E @ 5	Calm	Clear	
2	22	0940	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	E @ 5	Calm	Clear	6 Boats ¹
4	23	0945	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Calm	7/10	2 Boats
6	24	0955	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	7/10	3 Boats
7	27	1205	2.0	<1.8	1050 1815	2.0 10.6	45-72	0	S.E. @ 8	Calm	9/10	
9	28	0955	7.8	2.0	0455 1135	9.8 2.7	51-64	0.07	N.E. @ 3	Light chop	Overcast	4 Boats
10	29	1000	<1.8	<1.8	0600 1215	9.7 3.7	48-70	0	E. @ 4	Rippled	4/10	Temp. = 13.4°C Salinity = 30 ppt.
12	30	1000	4.5	<1.8	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 5	Calm	4/10	
14	31	0910	21	2.0	0810 1325	9.3 6.0	43-66	0	N.W. @ 12	Light chop	4/10	4 Boats

NOTE: ¹Moored boats greater than 20 feet in length equipped with on-board toilet facilities.

TABLE B-11

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Run No.		Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
				Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1		21	1030	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	E @ 5	Calm	Clear	
2		22	0945	2.0	2.0	0605 1500	2.3 9.6	47-70	0	E @ 5	Calm	Clear	
4		23	0950	2.0	2.0	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Calm	7/10	
6		24	1000	4.5	4.5	0810 1645	1.6 10.4	42-67	Trace	0	Calm	7/10	
7		27	1200	4.0	4.0	1050 1815	2.0 10.6	45-72	0	S.E. @ 8	Calm	9/10	
9		28	1000	4.5	4.5	0455 1135	9.8 2.7	51-64	0.07	N.E. @ 3	Light chop	Overcast	Temp. = 12.3°C Salinity = 27 ppt.
10		29	1005	<1.8	<1.8	0600 1215	9.7 3.7	48-70	0	E. @ 4	Rippled	4/10	Temp. = 13.2°C Salinity = 30 ppt.
12		30	1000	<1.8	<1.8	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 5	Calm	4/10	
14		31	0915	2.0	2.0	0810 1325	9.3 6.0	43-66	0	N.W. @ 12	Light chop	4/10	

Area: Clam Bay

Sample Stations: 11

TABLE B-12

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 12												
Area: Clam Bay												
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	HT (ft)			Wind	Sea	Cloud	
1	21	1035	2.0	<1.8	0505 1335	2.8 9.1	40-72	0	E @ 5	Calm	Clear	
2	22	0950	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	E @ 5	Calm	Clear	
4	23	0955	2.0	2.0	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Calm	7/10	
6	24	1005	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	7/10	
7	27	1155	4.0	4.0	1050 1815	2.0 10.6	45-72	0	S.E. @ 8	Calm	9/10	
9	28	1005	6.8	6.8	0455 1135	9.8 2.7	51-64	0.07	N.E. @ 3	Light chop	Overcast	
10	29	1010	4.5	4.5	0600 1215	9.7 3.7	48-70	0	E. @ 4	Rippled	4/10	Temp. = 13.2°C Salinity = 30 ppt
12	30	1005	2.0	<1.8	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 5	Calm	4/10	
14	31	0920	2.0	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 12	Light chop	4/10	

TABLE B-13

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 13

Area: Clam Bay

Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range(°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht(ft)			Wind	Sea	Cloud	
1	21	1010	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	E @ 5	Calm	Clear	
2	22	1150	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	E @ 5	Calm	Clear	
4	23	1005	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Calm	7/10	
6	24	1040	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	7/10	
7	27	0955	2.0	2.0	1050 1815	2.0 10.6	45-72	0	S.E. @ 8	Calm	9/10	
9	28	1000	2.0	2.0	0455 1135	9.8 2.7	51-64	0.07	N.E. @ 3	Light chop	Overcast	
10	29	1015	6.8	4.0	0600 1215	9.7 3.7	48-70	0	E. @ 4	Rippled	4/10	Temp. = 13.2°C. Salinity = 30 ppt.
12	30	1005	4.8	<1.8	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 5	Calm	4/10	
14	31	0925	2.0	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 12	Light chop	4/10	

TABLE B-14

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 14													
Area: North Cove													
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks	
			Total	Feca ¹	Time	Ht (ft)			Wind	Sea	Cloud		
1	21	1100	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	N.E. @ 5	Light chop	Clear	1 Boat ¹	
2	22	1015	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	N @ 5	Light chop	Clear	2 Boats	
4	23	1030	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Light chop	6/10	2 Boats	
6	24	1015	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	3 Boats	
7	27	1140	<1.8	<1.8	1050 1815	2.0 10.6	45-72	0	N.W. @ 2	Light chop	8/10	1 Boat	
9	28	1020	17	2.0	0455 1135	9.8 2.7	51-64	0.07	0	Rippled	Overcast	Temp. = 13.5°C Salinity = 35 ppt.	
10	29	1030	2.0	1.8	0600 1215	9.7 3.7	48-70	0	N.E. @ 5	Light chop	4/10	Temp. = 14.2°C Salinity = 29 ppt.	
12	30	1015	33	11	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 11	Light chop	4/10	1 Boat	
14	31	0930	7.8	2.0	0810 1325	9.3 6.0	43-66	0	N.W. @ 15	Medium chop	3/10		

NOTE: ¹Moored boats greater than 20 feet in length equipped with on-board toilet facilities.

TABLE B-15

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 15

Sample Stations: 15

Area: North Cove.

Run No.	Date Aug.	Sampling Time	Coliform Total	Coliform MPN/100ml Fecal	Tides		Air Temp Range(°F)	Total Precip. (in.)	Elemental Conditions			Remarks
					Time	Ht(ft)			Wind	Sea	Cloud	
1	21	1110	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	N.E. @ 5	Light chop	Clear	
2	22	1020	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	N @ 5	Light chop	Clear	
4	23	1030	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.E. @ 6	Light chop	6/10	
6	24	1020	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
7	27	1135	<1.8	<1.8	1050 1815	2.0 10.6	45-72	0	N.W. @ 2	Light chop	8/10	
9	28	1025	<1.8	<1.8	0455 1135	9.8 2.7	51-64	0.07	0	Rippled	Overcast	Temp. = 13.5°C Salinity = 34 ppt.
10	29	1030	<1.8	<1.8	0600 1215	9.7 3.7	48-70	0	N.E. @ 5	Light chop	4/10	Temp. = 14.5°C Salinity = 30 ppt.
12	30	1025	2.0	2.0	0715 1250	9.5 4.9	49-67	Trace	N.E. @ 11	Light chop	4/10	
14	31	0935	<1.8	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 15	Medium chop	3/10	

TABLE B-16

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 16												
Area: Camp Columbia (Thetis Island)												
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
21	21	1120	2.0	<1.8	0505 1335	2.8 9.1	40-72	0	N.W. @ 2	Rippled	Clear	
2	22	1030	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	0	Calm	Clear	
4	23	1035	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.W. @ 5	Light chop	6/10	
6	24	1030	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	Clear	
7	27	1130	<1.8	<1.8	1050 1815	2.0 10.6	45-72	0	W @ 2	Light chop	8/10	
9	28	1040	<1.8	<1.8	0455 1135	9.8 2.7	51-64	0.07	0	Rippled	Overcast	Temp. = 15.0°C Salinity = 31 ppt
10	29	1040	2.0	<1.8	0600 1215	9.7 3.7	48-70	0	N @ 2	Light chop	4/10	Temp. 14.5°C Salinity = 30 ppt
12	30	1030	2.0	2.0	0715 1250	9.5 4.9	49-67	Trace	N.W. @ 3	Rippled	4/10	
14	31	0940	2.0	<1.8	0810 1325	9.3 6.0	43-66	0	W @ 2	Light chop	3/10	

TABLE B-17

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 17

Area:

Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
21	21	1125	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 2	Calm	Clear	
2	22	1035	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	0	Calm	Clear	
4	23	1045	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	S.E. @ <2	Calm	7/10	
5	24	1035	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	6/10	
7	27	1125	<1.8	<1.8	1050 1815	2.0 10.6	45-72	0	0	Calm	8/10	
9	28	1040	<1.8	<1.8	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 2	Light chop	Overcast	
10	29	1045	<1.8	<1.8	0600 1215	9.7 3.7	48-70	0	S @ 3	Ripples	3/10	Temp. = 14.5°C Salinity = 30 ppt.
12	30	1035	6.8	<1.8	0715 1250	9.5 4.9	49-67	Trace	0	Calm	5/10	
14	31	0950	13	6.8	0810 1325	9.3 6.0	43-66	0	W @ 2	Rippled	5/10	

TABLE B-18

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 18

Sample Stations: 18

Area: Stuart Channel

Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1	21	1135	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear	
3	22	1440	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10	
5	23	1310	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	
6	24	1040	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8	27	1420	2.0	<1.8	1050 1815	2.0 10.5	45-72	0	S.E. @ 10	Medium chop	Overcast	
9	28	1050	<1.8	<1.8	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11	29	1420	<1.8	<1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 15.0°C Salinity = 29 ppt.
13	30	1420	<1.8	<1.8	1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10	
14	31	0955	2.0	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

TABLE B-19

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 19															Area: Tent Island				
Run No.	Date Aug.	Sampling Time	Coliform		MPN/100ml	Tides		Air Temp Range(°F)	Total precip. (in.)	Elemental Conditions				Remarks					
			Total	Fecal		Time	Ht(ft)			Wind	Sea	Cloud							
1	21	1145	<1.8	<1.8		0505 1335	2.8 9.1	40-72	0	S @ 5	Light chop	Clear	1 Boat ¹						
3	22	1450	4.5	2.0		0605 1500	2.3 9.6	47-70	0	S @ 8	Light chop	5/10	3 Boats						
5	23	1320	<1.8	<1.8		0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	1 Boat						
6	24	1045	<1.8	<1.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	2 Boats						
8	27	1425	2.0	<1.8		1050 1815	2.0 10.6	45-72	0	S.W. @ 8	Light chop	Overcast							
9	28	1055	2.0	<1.8		0455 1135	9.8 2.7	51-64	0.07	S @ 4	Light chop	Overcast							
11	29	1425	<1.8	<1.8		1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10							
13	30	1430	<1.8	<1.8		1250 1935	4.9 10.6	49-67	Trace	S @ 5	Light chop	5/10							
14	31	1000	2.0	<1.8		0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Light chop	3/10							

NOTE: Manned boats greater than 20 feet in length equipped with on-board toilet facilities.

NOTE: Moored boats greater than 20 feet in length equipped with on-board toilet facilities.

TABLE B-20

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Area: Tent Island												
Sample Stations: 20												
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1	21	1150	33	1.8	0505 1335	2.8 9.1	40-72	0	S @ 5	Light chop	Clear	3 Boats ¹
3	22	1455	2.0	1.8	0605 1500	2.3 9.6	47-70	0	S @ 8	Light chop	5/10	8 Boats
5	23	1320	4.5	2.0	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	8 Boats
6	24	1050	350	350	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	8 Boats
8	27	1430	11	1.8	1050 1815	2.0 10.6	45-72	0	S.W. @ 8	Light chop	Overcast	4 Boats
9	28	1100	2.0	1.8	0455 1135	9.8 2.7	51-64	0.07	S @ 4	Light chop	Overcast	Temp. = 15.5°C Salinity = 30 ppt.
11	29	1430	1.8	1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	1 Boat
13	30	1430	1.8	1.8	1250 1935	4.9 10.6	49-67	Trace	S @ 5	Light chop	5/10	5 Boats
14	31	1005	79	7.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Light chop	3/10	3 Boats

NOTE: ¹Moored boats greater than 20 feet in length equipped with on-board toilet facilities.

TABLE B-21

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 21														Area: Stuart Channel			
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions		Remarks						
			Total	Fecal	Time	Ht (ft)			Wind	Sea		Cloud					
1	21	1200	4.5	2.0	0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear						
3	22	1500	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10						
5	23	1325	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast						
6	24	1055	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10						
8	27	1435	<1.8	<1.8	1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Medium chop	Overcast						
9	28	1105	2.0	2.0	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	Temp. = 15.0°C Salinity = 30 ppt.					
11	29	1440	<1.8	<1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 14.5°C Salinity = 29 ppt.					
13	30	1435	<1.8	<1.8	1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10						
14	31	1010	<1.8	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10						

TABLE B-22

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 22

Area: Baie Point

Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1	21	1245	4.0	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear	
3	22	1505	11	4.0	0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10	
5	23	1330	2.0	<1.8	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	
6	24	1100	4.5	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8	27	1440	13	2.0	1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Medium chop	Overcast	
9	28	1110	79	22	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11	29	1450	4.8	<1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 14.5°C Salinity = 29 ppt.
13	30	1440	17	4.0	1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10	
14	31	1015	6.8	2.0	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

TABLE B-23

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 23										Area: Hospital Point			
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml	Tides		Air Temp Range(°F)	Total Precip. (in.)	Elemental Conditions			Remarks		
				Fecal	Time			Ht(ft)	Wind	Sea		Cloud	
1	21	1250	6.8	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear		
3	22	1510	13	2.0	0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10		
5	23	1330	14	4.0	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast		
6	24	1100	23	2.0	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10		
8	27	1450	11	11	1050 1815	2.0 10.5	45-72	0	S.E. @ 10	Medium chop	Overcast		
9	28	1115	49	6.1	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast		
11	29	1455	1.8	<1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 16.2°C Salinity = 29 ppt.	
13	30	1450	17	4.0	1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10		
14	31	1015	2.0	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10		

TABLE B-24

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 24

Area: Mouth of Askew Creek

Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud	
1	21	1255	2.0	1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear	
3	22	1515	23	2.0	0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10	
5	23	1335	1.8	1.8	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	
6	24	1110	1.8	1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8	27	1455	13	2.0	1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Medium chop	Overcast	
9	28	1120	4.5	2.0	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11	29	1500	1.8	1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 15.2°C Salinity = 29 ppt.
13	30	1505	23	23	1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10	
14	31	1020	4.5	2.0	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

Temp. = 15.2°C
Salinity = 29 ppt.

TABLE B-25

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Run No.		Date	Sampling Time	Coliform		Fecal		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
				Total	MPN/100ml	Total	MPN/100ml	Time	Ht (ft)			Wind	Sea	Cloud	
1		21	1300	1.8		1.8		0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear	
3		22	1520	4.5		2.0		0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10	
5		23	1340	1.8		1.8		0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	
6		24	1115	1.8		1.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8		27	1500	1.8		1.8		1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Medium chop	Overcast	
9		28	1120	1.8		1.8		0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11		29	1505	1.8		1.8		1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 15.80C Salinity = 29 ppt.
13		30	1510	4.0		2.0		1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10	
14		31	1025	1.8		1.8		0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

Sample Stations: 25

Area:

TABLE B-26

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Run No.		Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks
										Wind	Sea	Cloud	
1		21	1305	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear	
3		22	1525	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10	
5		23	1345	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast	
6		24	1115	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8		27	1505	4.5	2.0	1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Medium chop	Overcast	
9		28	1125	<1.8	<1.8	0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11		29	1510	<1.8	<1.8	1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 15.8°C Salinity = 29 ppt
13		30	1515	2.0	<1.8	1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10	
14		31	1030	4.0	<1.8	0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

TABLE B-27

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 27													Area: Stuart Channel				
Run No.	Date Aug.	Sampling Time	Coliform	Total	Fecal	MPN/100ml	Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks			
							Time	Ht (ft)			Wind	Sea	Cloud				
1	21	1315	<1.8	<1.8	<1.8		0505 1335	2.8 9.1	40-72	0	S.E. @ 7.	Light chop	Clear				
3	22	1430	<1.8	<1.8	<1.8		0605 1500	2.3 9.6	47-70	0	S.E. @ 12	Medium chop	5/10				
5	23	1305	<1.8	<1.8	<1.8		0705 1605	1.9 10.1	44-66	0	N.W. @ 2	Rippled	Overcast				
6	24	1120	<1.8	<1.8	<1.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10				
8	27	1410	<1.8	<1.8	<1.8		1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Medium chop	Overcast				
9	28	1130	<1.8	<1.8	<1.8		0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast				
11	29	1515	<1.8	<1.8	<1.8		1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 15.2°C Salinity = 29 ppt.			
13	30	1415	<1.8	<1.8	<1.8		1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10				
14	31	1035	2.0	<1.8	<1.8		0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10				

TABLE B-28

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 28														Area: Stuart Channel			
Run No.	Date Aug.	Sampling Time	Coliform MPN/100ml		Tides		Air Temp Range (°F)	Total Precip. (in.)	Elemental Conditions			Remarks					
			Total	Fecal	Time	Ht (ft)			Wind	Sea	Cloud						
1	21	1325	<1.8	<1.8	0505 1335	2.8 9.1	40-72	0	S.E. @ 5	Light chop	Clear						
2	22	1045	<1.8	<1.8	0605 1500	2.3 9.6	47-70	0	S.E. @ 3	Light chop	Clear						
4	23	1100	<1.8	<1.8	0705 1605	1.9 10.1	44-66	0	S.E. @ 5	Light chop	6/10						
6	24	0910	<1.8	<1.8	0810 1645	1.6 10.4	42-67	Trace	S.E. @ 2	Rippled	8/10						
7	27	1230	<1.8	<1.8	1050 1815	2.0 10.6	45-72	0	E @ 5	Light chop	8/10						
9	28	1130	<1.8	<1.8	0455 1135	9.8 2.7	51-64	0.07	S @ 13	Medium chop	Overcast	Temp. = 12.5°C Salinity = 30 ppt.					
10	29	0920	<1.8	<1.8	0600 1215	9.7 3.7	48-70	0	S.E. @ 5	Rippled	3/10	Temp. = 14.2°C Salinity = 30 ppt.					
12	30	0850	<1.8	<1.8	0715 1250	9.5 4.9	49-67	Trace	0	Calm	5/10						
14	31	0825	2.0	<1.8	0810 1325	9.3 6.0	43-66	0	E @ 5	Light chop	4/10						

TABLE B-29

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 29

Area: Cherrai Bay

Run No.	Date Aug	Sampling Time	Coliform		MPN/100ml	Tides		Air Temp Range(°F)	Total Precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal		Time	Ht(ft)			Wind	Sea	Cloud	
6	24	1100	4.5	<1.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8	27	1445	9.3	4.5		1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Mod. Chop	Overcast	
9	28	1115	240	34		0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11	29	1455	<1.8	<1.8		1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 14.8°C Salinity = 29 ppt.
13	30	1445	33	7.8		1250 1935	4.9 10.6	49-57	Trace	S.E. @ 5	Light chop	5/10	
14	31	1015	11.0	<1.8		0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

Temp. = 14.8°C
Salinity = 29 ppt.

TABLE B-30

BACTERIOLOGICAL ANALYSES RESULTS AND SAMPLING CONDITIONS.

Sample Stations: 30

Area: Bird Rock

Run No.	Date	Sampling Time	Coliform		MPN/100ml	Tides		Air Temp Range(°F)	Total precip. (in.)	Elemental Conditions			Remarks
			Total	Fecal		Ht(ft)	Time			Wind	Sea	Cloud	
6	24	1110	4.5	<1.8		0810 1645	1.6 10.4	42-67	Trace	0	Calm	8/10	
8	27	1450	4.5	2.0		1050 1815	2.0 10.6	45-72	0	S.E. @ 10	Mod. Chop	Overcast	
9	28	1115	110	12		0455 1135	9.8 2.7	51-64	0.07	S.E. @ 4	Light chop	Overcast	
11	29	1500	<1.8	<1.8		1215 1855	3.7 10.6	48-70	0	N @ 4	Rippled	3/10	Temp. = 15.0°C Salinity = 29 pot.
13	30	1455	<1.8	<1.8		1250 1935	4.9 10.6	49-67	Trace	S.E. @ 5	Light chop	5/10	
14	31	1020	2.0	<1.8		0810 1325	9.3 6.0	43-66	0	N.W. @ 5	Medium chop	3/10	

A P P E N D I X C

Total confirmed and fecal coliform MPN
per 100 ml for Sample Stations 1-30
inclusive

TABLE 1

TOTAL CONFIRMED AND FECAL COLIFORM MPN per 100 ml
FOR SAMPLE STATIONS 1-30 INCLUSIVE.

Date	1		2		3		4		5		6	
	TC*	FC**	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
August 21	<1.8	<1.8	2.0	2.0	2.0	<1.8	49	<1.8	2.0	2.0	350	130
22	2.0	<1.8	1.8	1.8	33	2.0	49	4.5	23	2.0	1600	95
23	2.0	2.0	2.0	<1.8	4.5	<1.8	7.8	<1.8	<1.8	<1.8	400	330
24	<1.8	<1.8	7.8	<1.8	7.8	4.5	7.8	<1.8	22	6.8	3500	20
27	2.0	<1.8	2.0	<1.8	33	2.0	2.0	<1.8	2.0	2.0	9200	2200
28	7.8	4.5	14	4.5	4.5	2.0	13	2.0	13	13	130	7.8
29	<1.8	<1.8	9.3	4.0	13	4.5	11	4.0	11	6.8	49	11
30	4.5	4.5	6.8	4.5	4.5	<1.8	22	7.8	7.8	2.0	17	6.8
31	7.8	<1.8	13	2.0	27	9.3	17	4.5	7.8			

TOTAL CONFIRMED AND FECAL COLIFORM MPN per 100 ml
FOR SAMPLE STATIONS 1-30 INCLUSIVE.

Date	7		8		9		10		11		12	
	TC*	FC**	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
August 21	7.8	4.5	<1.8	<1.8	11	11	<1.8	<1.8	<1.8	<1.8	2.0	<1.8
22	33	<1.8	32	17	<1.8	<1.8	<1.8	<1.8	2.0	2.0	<1.8	<1.8
23	17	2.0	49	33	2.0	2.0	<1.8	<1.8	2.0	2.0	2.0	2.0
24	23	7.8	33	33	2.0	<1.8	<1.8	<1.8	4.5	4.5	<1.8	<1.8
27	13	4.5	49	11	2.0	<1.8	2.0	<1.8	4.0	4.0	4.0	4.0
28	95	95	33	33	13	13	7.8	2.0	4.5	4.5	6.8	6.8
29	79	11	33	33	7.8	2.0	<1.8	<1.8	<1.8	<1.8	4.5	4.5
30	17	11	13	2.0	7.8	<1.8	4.5	<1.8	1.8	<1.8	2.0	<1.8
31	6.8	4.0	7.8	<1.8	6.1	<1.8	2.1	2.0	2.0	2.0	2.0	<1.8

** FC denotes fecal coliform MPN/100 ml.

TABLE C-1 (Cont'd)

TOTAL CONFIRMED AND FECAL COLIFORM MPN per 100 ml
FOR SAMPLE STATIONS 1-30 INCLUSIVE.

Date	13		14		15		16		17		18	
	TC*	FC**	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
August 21	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	2.0	<1.8	<1.8	<1.8	<1.8	<1.8
22	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
23	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
24	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
27	2.0	2.0	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	2.0	<1.8
28	2.0	2.0	17	2.0	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
29	6.8	4.0	2.0	<1.8	<1.8	<1.8	2.0	<1.8	<1.8	<1.8	<1.8	<1.8
30	<1.8	<1.8	33	11	2.0	2.0	2.0	2.0	6.8	<1.8	<1.8	<1.8
	2.0	<1.8	7.8	2.0	<1.8	<1.8	2.0	<1.8	13	6.8	2.0	<1.8

TOTAL CONFIRMED AND FECAL COLIFORM MPN per 100 ml
FOR SAMPLE STATIONS 1-30 INCLUSIVE.

Date	19		20		21		22		23		24	
	TC*	FC**	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
August 21	<1.8	<1.8	33	<1.8	4.5	2.0	4.0	<1.8	6.8	<1.8	2.0	<1.8
22	4.5	2.0	2.0	<1.8	<1.8	<1.8	11	4.0	13	2.0	23	2.0
23	<1.8	<1.8	4.5	2.0	<1.8	<1.8	2.0	<1.8	14	4.0	<1.8	<1.8
24	<1.8	<1.8	350	350	<1.8	<1.8	4.5	<1.8	23	2.0	<1.8	<1.8
27	2.0	<1.8	11	<1.8	<1.8	<1.8	13	2.0	11	11	13	2.0
28	<1.8	<1.8	2.0	<1.8	2.0	2.0	79	22	49	6.1	4.5	2.0
29	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
30	1.8	<1.8	1.8	<1.8	<1.8	<1.8	17	4.0	17	4.0	23	23
31	2.0	<1.8	79	7.8	<1.8	<1.8	6.8	2.0	2.0	<1.8	4.5	2.0

* TC denotes total confirmed coliform MPN/100 ml

** FC denotes fecal coliform MPN/100 ml.

TABLE C-1 (Cont'd)

TOTAL CONFIRMED AND FECAL COLIFORM MPN per 100 ml
FOR SAMPLE STATIONS 1-30 INCLUSIVE.

Date	25		26		27		28		29		30	
	TC*	FC**	TC	FC	TC	FC	TC	FC	TC	FC	TC	FC
August	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8				
21												
22	4.5	2.0	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8				
23	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8				
24	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	4.5	<1.8	4.5	<1.8
27	<1.8	<1.8	4.5	2.0	<1.8	<1.8	<1.8	<1.8	9.3	4.5	4.5	2.0
28	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	240	34	110	12
29	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
30	4.0	2.0	2.0	<1.8	<1.8	<1.8	<1.8	<1.8	33	7.8	<1.8	<1.8
31	<1.8	<1.8	4.0	<1.8	2.0	<1.8	2.0	<1.8				