STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

KITSAP

Publication No. 71-e23

M E M O R A N D U M

TO: MIKE PRICE & GENE ASSELSTINE December 17, 1971

FROM: RON PINE

SUBJECT: Gig Harbor Bacteriological Survey

At your request dated November 11, 1971, a bacteriological survey was made in Gig Harbor on November 30, 1971. The objective of the study was to gather evidence that specific dischargers are violating State Water Quality Standards. You requested that the survey include names and addresses of specific dischargers and samples to show their effects upon water quality.

In subsequent discussions with Mike Price, it was my understanding that our phase of the study would involve sampling in the receiving water (Gig Harbor) only, and that sampling and obtaining names and addresses of specific dischargers would be done by the Pierce County Health Department.

The results of the study are presented in Table 1. The specific station locations are described in Table 2 and are shown in Figure 1. All samples were collected between 1110 and 1141 PST. The morning low tide was 6.9 feet at 0842 and the next high was 12.1 feet at 1400. Water temperature was 9.0 C at all stations.

All of the total coliform values, except at stations 12, 13, and 18 exceed the maximum criteria of 230 colonies/100 ml's for Class AA waters.

RP:dc

18/01

TABLE 1

Results of Gig Harbor Bacteriological Study, November 30, 1971

STATION	COLIFORM	FECAL COLIFORM
1 -1	900	50
2 -2	15,000	600
3 -5	80,000	3,000
4	10,000	350
5	10,000	1,500
6	60,000	7,000
7	4,000	450
8	7,000	1,000
9	1,200	150
10	900	60
11	300	20
12 -3	150	20
13	100	40
14	600	70
15	800	90
16	600	70
17	600	120
18	20	40

TABLE 2

Station Descriptions, Gig Harbor Bacteriological Study November 30, 1971

STATION	DESCRIPTION
1 — 1	Crescent Creek on Gig Harbor Side of culvert
2	Peninsula Yacht Basin Dock east of Standard oil dock
3	Shoreline Cafe Dock on north side over sewer discharge
4	North side of Eddom Boat Company
5	North side of Washington Fish and Oyster Company
6	South side of Pleasure Craft Marina over storm sewer discharge
7	South side of Shell oil dock
8	North side Bay Shore Marina
9	South side of Bayshore Marina
10	Shoreline Cafe at end of dock
11	North side of Harbor near Crescent Creek adjacent to olive green apartment House
12	North side of Harbor near red House with white trim
13	North west center of Harbor
14	Midway down north shore of Harbor
15	Two-thirds of the way down north side of Harbor
16	Opposite Station 15 and middle of Harbor
17	North side of Harbor close to Harbor entrance
18	At entrance to Gig Harbor

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY — OFFICE OF TECHNICAL SERVICES

ANALYTICAL REPORT SHEET

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Original to LABORATORY
Copies to:
Ron Pine
Mike Price
Merley McCa

The following are the analytical results from survey conducted at:

Eg Harbor — 03-02-21

Collected 11/30/71

LAB. NO.	STATION NO	Total coliforms colonies/100ml	Fecal coliform colonies/100ml
71-3816	1	900.	50.
17	2	15,000.	>600.
18	3	80,000.	3000.
19	4	10,000.	350.
20	5	10,000.	1500.
21	6	60,000.	7000.
22	7	4,000.	450.
23	8	1,000.	1000
24	9	1,200.	150.
25	10	900.	60.
26	11	300	20
2	12	50.	<20
28	13	00.	<40.
9	14	600.	70.
30	5	800.	90
31	16	60	7.
33	17	600	1'0.
'3		<20	4

Notes:

Pat Lee

Date 2/7/71

MEMORANDUM

Department of Ecology
P. O. Box 26
OLYMPIA, WASHINGTON
98501

Information
For Action
Permit
Other

TO: Pete Hildebrandt & Ron Pine

DATE: November 11, 1971

FROM: Gene Asselstine & Mike Price

SUBJECT: Gig Harbor

We have a need for a survey and sampling in Gig Harbor. The town at the last election did not vote favorably on bond issue to finance sewers and a treatment facility. It appears some sort of enforcement action will be needed against private dischargers and/or the Town of Gig Harbor. It is a matter of gathering evidence that specific dischargers are, in fact, illegally discharging to state waters, thereby violating regulations and water quality standards.

Therefore, the survey should include samples from existing specific discharges (name & address of owner or occupant), private and public, and some samples to show effects on water quality. These will include houses or buildings with direct or indirect discharge to the Harbor and also storm sewer or other piped discharges to the Harbor.

There should be samples taken along the entire periphery of the Harbor at and near points of discharges and at the mouth or just outside the mouth of the Harbor.

We will be meeting with the County Health Dept. on November 18, and hope to get a commitment of one or two men from them to assist. They may also be doing some dye testing from houses suspected of being hooked to storm sewers.

The survey done on April 5, 1971 by Ron Lee would serve as a guide - one sample per site and total and fecal coliform tests.

EWA:dlb

MEMORANDUM

Department of Ecology
P. O. Box 829
OLYMPIA, WASHINGTON
98501

	Check
Information	
For Action	
Permit	
Other	

TO: George Houck DATE: April 19, 1971

FROM: Ron Lee

SUBJECT: Gig Harbor Bacteriological Survey

From May 5, to December 22, 1965, the Pierce County Health Department conducted weekly coliform analysis on water samples from twelve locations near the west shoreline of Gig Harbor (Figure 1). The data obtained from this study indicated that bacteriological contamination clearly exceeded water quality standards (Table 1). Gig Harbor has been designated as a class AA interstate waterway and by definition, water quality of this class should markedly and uniformly exceed the requirements for all, or substantially all uses. The water quality criteria in this class state that total coliform organisms shall not exceed median values of 70 with less than 10% of samples exceeding 230 when associated with any fecal source. As can be seen in Table 1, total coliform counts at all twelve sampling locations fail to comply with class AA water quality criteria. At five locations more than 75% of the samples exceeded 230.

On April 5, 1971, bacteriological samples were collected from city storm drains which discharge to Gig Harbor by Department of Ecology personnel. In addition, water samples from areas adjacent to storm drain outfalls were obtained (Figure 2). Subsequent bacteriological analysis on these samples confirmed that the water flowing into Gig Harbor from storm drains was grossly contaminated with fecal bacteria (Table 2).

Table 1. Median total coliform values from twelve selected locations near the west shoreline of Gig Harbor. Samples were collected at weekly intervals from May 5, to December 22, 1965.

Station	Sample Size	Total Coliform Median	Percent of samples exceeding 230
A	31	100	22
B	31	100	19
C	31	270	55
D	31	840	61
E	31	1000	77
F	31	150	48
G	31	2100	84
H	31	20,000	100
I	30	10,000	97
J	30	35,000	100
K	31	90	29
L	30	90	22

MEMORANDUM

Department of Ecology

P. O. Box 829
OLYMPIA, WASHINGTON
98501

	Check
Information	
For Action	
Permit	
Other	

TO: George Houck DATE: April 19, 1971

FROM: Ron Lee

SUBJECT: Gig Harbor Bacteriological Survey, (Continued)

Table 2. Total and fecal coliform counts in water samples taken from city storm drains entering Gig Harbor on April 5, 1971. Values are expressed in colonies per 100 ml.

Station	Description	Total Coliform	Fecal Coliform
1	Crescent Creek	200	∠40
2	Penninsula Yacht Basin dock	1000	< 40
3	Shoreline Cafe dock	>800,000	2500
4	Storm drain	6,000	400
5	Storm drain	70,000	20,000
6	Pleasure Craft Marina dock	60,000	1,000
7	Storm drain	30,000	1,000
8	Storm drain	500,000	>30,000
9	Storm drain	80,000	> 6,000

RL:jae

Figure 1. Sampling station locations for a bacteriological water quality study conducted from May 5 to December 22, 1966.

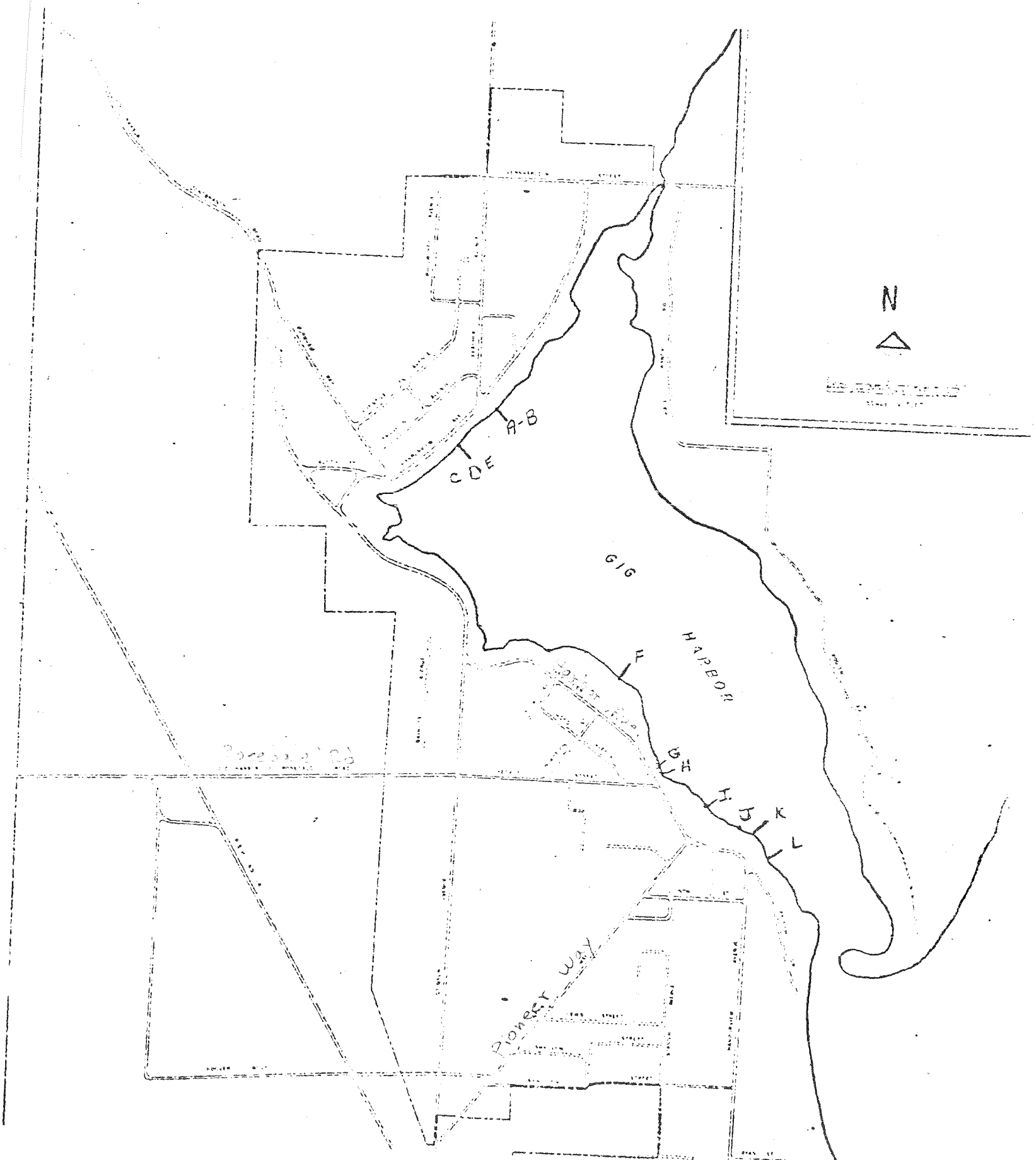
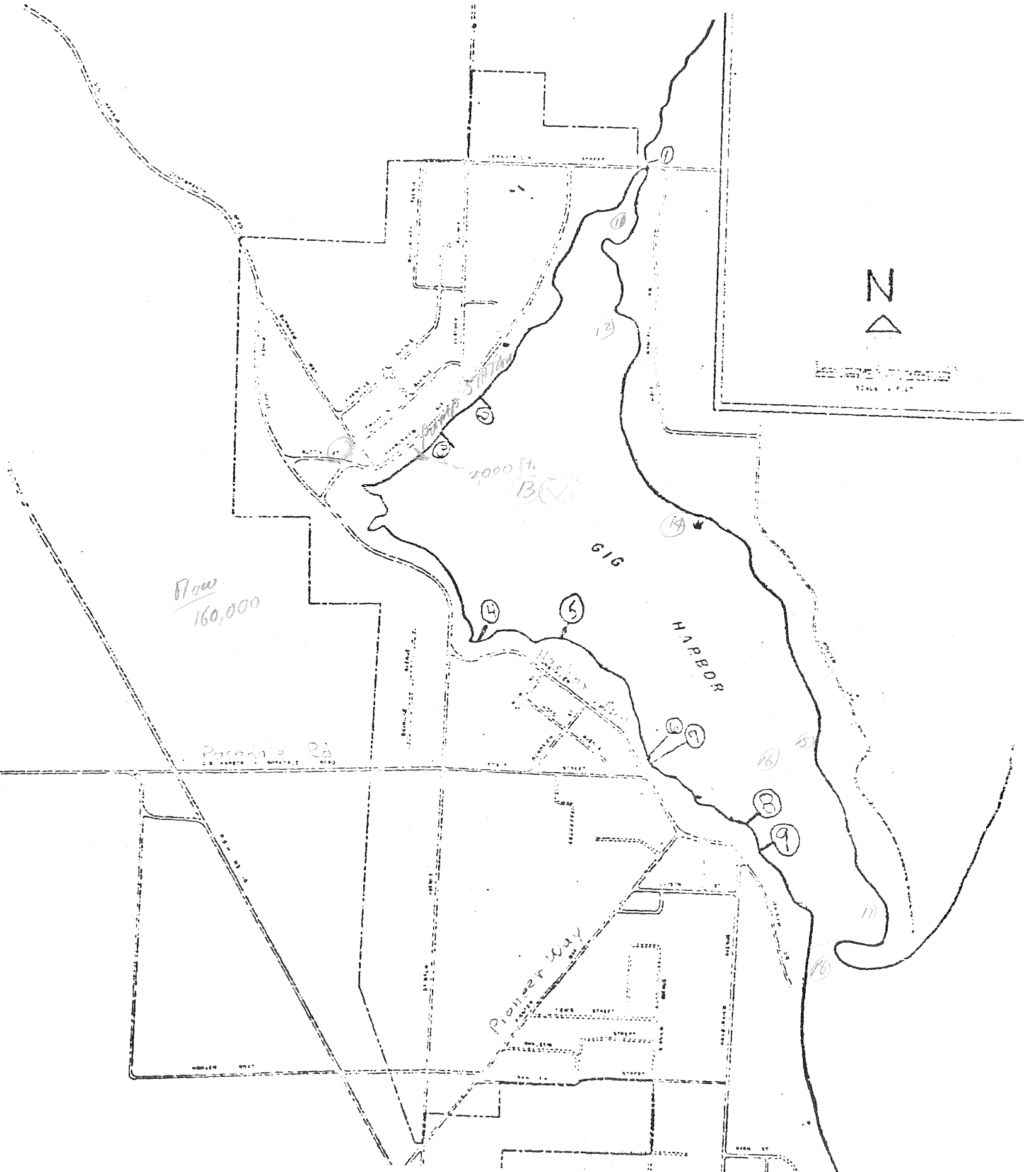


Figure 2. Storm drain and sampling station locations for a bacteriological water quality survey conducted at high-low tide on April 5, 1971.



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY — OFFICE OF TECHNICAL SERVICES

ANALYTICAL REPORT SHEET

Routing

Original to LABORATORY

Copies to: Ron Lee

DON PROVOST

To: Ron Lee

The following are the analytical results from survey conducted at:

Gig Harbor Storm Drains — 04-002

Collected 4/5/71

LAB. NO.	STATION NO.	Total Coliform colonies/100 ml	Total Coliform (Rerun) colonies/100 ml	Fecal Coliform colonies/100 ml	Enterococcus Coliform colonies/100 ml			
71-973	Crescent Creek	200.		<40.		1		
974	Pen. Yacht Basin	1000.		<40.		2		
975	Shoreline Cafe Dock	>80,000.	>800,000.	2,500.	400.	3		
976	Pleasure Craft Dock	60,000.		1,000.		6		
977	Storm Drain Pleasure Craft	30,000.		1,000.		7		
978	S.D. Ford Dealer	6,000.		400.		4		
979	S.D. Novatis Harbor	70,000.		20,000.		5		
980	S.D. Gig H. Marina Entr.	>160,000. *	500,000.	>30,000.	>10,000.	8		
981	S.D. Shell Gas Dock	80,000.		>6,000.		9		

Notes: * Confluent growth

Summarized by Pat Lee

Date 4/12/71

SAMPLING POINTS

1966

DATE	#1 Coli/100 cc	#1 Plate Count /1 cc	#2 Coli/100 cc	#2 Plate Count /1 cc	#3 Coli/100 cc	#3 Plate Count /1 cc
5-5	100	10	l.t. 100	39	100	60
5-12	l.t. 100	---	100	---	200	---
5-19	l.t. 100	3	100	20	200	46
5-26	l.t. 100	15	100	19	300	228
6-2	52	40	82	60	300	110
6-9	49	3	80	2	l.t. 100	17
6-16	45	42	16	18	338	169
6-23	60	19	260	114	150	513
6-30	30	10	10	15	l.t. 10	1
7-7	20	7	30	8	70	19
7-14	940	61	70	35	180	43
7-28	30	4	l.t. 10	2	40	2
8-4	470	48	470	23	1,700	39
8-11	l.t. 10	25	l.t. 10	30	70	37
8-18	40	5	80	spreader	270	171
8-25	140	51	220	80	2,000	570
9-1	20	16	60	20	2,500	240
-8	80	34	40	10	40	8
-15	70	22	l.t. 10	9	l.t. 10	684
9-22	l.t. 10	2	130	228	100	25
9-29	100	22	20	63	10	34
10-6	136	10	120	23	600	140
10-13	130	31	100	44	280	70
10-20	2,000	250	1,200	400	4,000	630
10-27	480	31	60	34	2,200	400
11-3	l.t. 10	13	40	11	260	40
11-17	180	39	150	42	990	78
12-1	1,000	340	800	510	1,580	740
12-8	790	45	550	51	1,270	340
12-15	1,400	290	1,300	150	1,700	140
12-22	230	44	200	25	1,300	88

SAMPLING POINTS

1966

DATE	#4 Coli/100 cc	#4 Plate Count /1 cc	#5 Coli/100 cc	#5 Plate Count /1 cc	#6 Coli/100 cc	#6 Plate Count /1 cc
5-5	40,000	510	60,000	2,600	100	23
5-12	100	---	100	---	100	---
5-19	500	72	1,900	171	l.t. 100	18
5-26	l.t. 100	22	l.t. 100	34	100	22
6-2	500	240	1,500	570	1,000	2,100
6-9	l.t. 100	114	11,000	171	l.t.1,000	spreader
6-16	47	190	1,000	33	600	13
6-23	6,000	399	31,000	1,254	l.t.1,000	52
6-30	l.t. 100	56	90,000	1,590	330	11
7-7	50	8	100,000	1,590	l.t. 10	2
7-14	840	80	1,000	160	350	150
7-28	10	5	l.t1,000	4	90	2
8-4	1,700	72	44,000	485	60	5
8-11	30	29	l.t.1,000	24	60	33
8-18	1,500	74	21,000	570	l.t. 10	spreader
8-25	5,000	800	1,000	140	1,280	210
9-1	850	170	60	19	70	33
9-8	70	28	50	15	150	14
9-15	l.t. 10	285	80	25	l.t. 10	25
-22	70	21	20	4	460	80
-29	1,400	98	3,200	100	60	23
10-6	370	76	130	13	400	88
10-13	120	53	420	59	110	11
10-20	2,640	1,400	1,360	400	1,200	160
10-27	1,500	135	300	160	80	20
11-3	1,750	130	1,200	340	120	7
11-17	[illegible]	[illegible]	900	42	620	63
12-1	2,000	800	2,500	460	3,000	400
12-8	2,000	92	1,120	150	1,000	50
12-15	3,000	85	2,800	180	2,700	160
12-22	840	37	370	42	660	57

SAMPLING POINTS

1966

	#7		#8		#9	
DATE	Coli/100 cc	Plate Count /1 cc	Coli/100 cc	Plate Count /1 cc	Coli/100 cc	Plate Count /1 cc
5-5	400	6	60,000	3,600	1,300	30
5-12	800	---	120,000	---	8,900	---
5-19	100	5	100,000	3,591	30,000	1,425
5-26	2,100	104	2,200	285	1,300	171
6-2	400	26	2,800	160	2,300	60
6-9	l.t. 100	2	400	3,591	3,300	171
6-16	120	14	2,800	140	l.t.1,000	6
6-23	5,000	2,565	12,000	3,078	1,000	285
6-30	4,000	684	20,000	1,254	200	912
7-7	60	7	400,000	5,643	200	7
7-14	2,200	400	49,000	2,100	4,000	630
7-28	53,000	912	74,000	1,254	17,000	513
8-4	16,000	1,197	15,000	1,140	9,000	513
8-11	14,000	969	2,000	100	21,000	456
8-18	62,000	2,052	25,000	912	12,000	228
8-25	l.t.1,000	10	70,000	9,000	15,000	570
9-1	l.t.1,000	17	85,000	4,400	l.t.1,000	130
9-8	130	4	35,000	684	3,000	140
9-15	8,000 T.N.T.C.	3,078	55,000	3,600	10,000 T. N. T. C.	3,078
9-22	3,500	855	46,000	684	10,000 T.N. T. C.	3,078
9-29	390	210	l.t.1,000	250	10,000 T. N. T. C.	18,000
10-6	360	130	22,000	1,000	73,000	780
10-13	500	33	l.t.1,000	160	180,000	6,700
10-20	8,000 T.N.T.C.	2,100	2,700	290	1,200	600
10-27	1,000	228	3,500	399	10,000	1,140
11-3	l.t.1,000	9	3,000	570	300,000	4,100
11-17	6,000	660	2,200	290	25,000	910
12-1	21,000	2,500	4,500	510	100,000	4,100
12-8	16,000	860	13,000	1,000	---	---
12-15	110,000	3,100	70,000	1,300	600,000	8,700
12-22	82,000	2,600	26,000	1,400	68,000	1,500

SAMPLING POINTS

1966

DATE	#10 Coli/100 cc	#10 Plate Count /1 cc	#11 Coli/100 cc	#11 Plate Count /1 cc	#12 Coli/100 cc	#12 Plate Count /1 cc
5-5	40,000	4,100	l.t. 100	4	l.t. 100	3
5-12	700,000	---	2,200	---	400	---
5-19	200,000	1,324	l.t. 100	0	100	5
5-26	T. N. T. C	T.N.T.C.	100	2	100	2
6-2	26,000	2,100	10	3	46	8
6-9	67,000	741	0	2	9	5
6-16	l.t.1,000	19	24	5	0	3
6-23	35,000	18,801	l.t. 10	228	80	19
6-30	300,000	5,143	l.t. 10	0	l.t. 10	1
7-7	1,000	2,052	10	5	10	5
7-14	320,000	15,000	50	9	80	7
7-28	51,000	1,381	40	3	10	3
8-4	2,000	456	170	22	800	104
8-11	100,000	3,078	90	30	l.t. 10	32
8-18	l.t.1,000	38	l.t. 10	4	20	7
25	1,700	460	2,000	8	90	33
y-1	2,000	5,400	l.t. 100	7	20	12
9-8	35,000	855	l.t. 10	7	l.t. 10	5
9-15	20,000	2,565	10	130	l.t. 10	7
9-22	2,000	342	l.t. 10	8	160	6
9-29	12,000	800	160	56	160	120
10-6	1,000	88	52	12	580	31
10-13	13,000	1,500	20	3	40	7
10-20	40,000	9,700	400	53	-----	---
10-27	100,000	1,539	728	80	124	72
11-3	7,000	460	30	18	20	14
11-17	78,000	860	500	66	230	20
12-1	9,000	2,000	440	80	300	150
12-8	60,000	1,600	2,000	460	1,500	230
12-15	-----	---	620	120	780	110
12-22	68,000	2,000	2,500	240	1,500	220