

MEMORANDUM

November 7, 1975

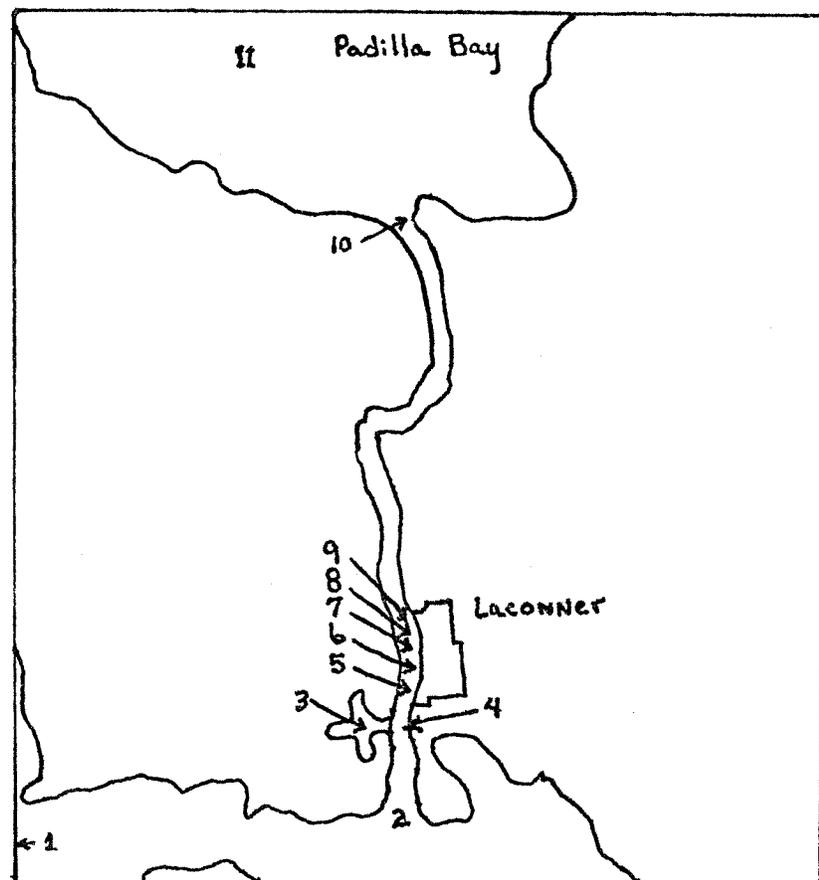
To: John Glynn

From: Phil Williams

Subject: Swinomish Channel Survey

Eleven samples were taken at various locations on the Swinomish Channel on October 15 at a low slack tide. Samples for bacterial analysis were sent to the Redmond laboratory and nutrient analyses were done at the Southwest Regional laboratory. The following is a list and diagram of the sample locations.

1. Skagit Bay
2. Southern entrance to channel
3. Center of Shelter Bay
4. Center of channel off New England Fish Co.
5. Under the bridge
6. Center of channel off Moore-Clark
7. Center of channel of Lighthouse Restaurant
8. Center of channel off sewer outfall by Texaco Marina
9. Center of channel 300 feet north #8
10. North end of channel
11. Padilla Bay



The results of all analyses are given in the attached lab sheet. Bacteriological counts show a definite increase in total and fecal coliform numbers in the channel over ambient levels in Skagit Bay and Padilla Bay. Background concentrations in these two areas were well within Class A marine

Swinomish Channel Survey

water standards. Of the nine samples taken in the channel all but the most northerly sample exceeded standards. Median values for these samples were 650 total and 108 fecal. Mean values were 592 and 88. Throughout the sampling run there were no visible signs of raw sewage coming from the city of LaConner's outfall pipes. This may be one reason for the values being much lower than the 36,000 and 160 (Est) values found in a sample taken July 9 of this year. One researcher has shown an 80% reduction in numbers of coliforms after 30 minutes contact with sea water. Therefore high bacterial counts can only be expected during and shortly after contamination.

Results of nutrient analyses were inconclusive.

PW:ee
Attachment

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO:

..F.W.....

COPIES TO:

LAB FILES

Source Swinomish Channel

Collected By P. Williams

Date Collected 10-15-75

Log Number:	75-4799	4800	01	02	03	04	05	06	07	08	09
Station:	1	2	3	4	5	6	7	8	9	10	11
pH											
Turbidity (JTU)	6	4	4	5	5	5	5	5	6	5	5
Conductivity (umhos/cm)@25°C											
COD											
BOD (5 day)											
Total Coliform (Col./100ml)	450	750	250	1100	750	450	650	900	450	32	30
Fecal Coliform (Col./100ml)	8	92	28	112	70	120	114	108	116	30	10
NO3-N (Filtered)	0.30	0.10	0.22	0.28	0.23	0.23	0.24	0.23	0.23	0.21	0.29
NO2-N (Filtered)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NH3-N (Unfiltered)	0.03	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06
T. Kjeldahl-N (Unfiltered)	0.26	0.16	0.18	0.20	0.14	0.18	0.18	0.20	0.22	0.28	0.18
O-PO4-P (Filtered)	0.06	0.02	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.07	0.07
Total Phos.-P (Unfiltered)	0.14	0.04	0.06	0.04	0.07	0.08	0.09	0.08	0.08	0.09	0.10
Total Solids											
Total Non Vol. Solids											
Total Suspended Solids											
Total Sus. Non Vol. Solids											

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10⁻³) prior to entry into STORET

MEMORANDUM

CHECK
INFORMATION _____
FOR ACTION _____
PERMIT _____
OTHER _____

TO: Tom McCann, Ron Pine,
Ron Devitt & Files

FROM: Darrel Anderson

SUBJECT: New England Fish Company Efficiency
Study

DATE: October 15, 1973

State of
Washington
Department
of Ecology



On Thursday, August 16, 1973, I conducted an efficiency study at New England Fish Company at LaConner, Washington. The survey period was from 0830 until 1300 hours and samples were taken every 1/2 hour.

Total flow from the city water meter was 48,066 gallons.

Work force at the cannery was approximately 50 people. Canning ceased at 1300 hours due to lack of fish. Fresh fish brought in was 44,651 pounds, cases canned were 637.5 cases at 48 1/4 pounds and 457 cases at 48 1/2 pounds.

DA:jmh

SURVEY REPORT FORM
Industrial
(EFFICIENCY STUDY)
New England

City LaConner, WA Plant Type Fish Co. Population Served ----- Design Capacity -----
 Receiving Water Swinomish Slough Engineer -----
 Date August 16, 1973 Survey Period 0830-1300 hours Survey Personnel D. Anderson
 Comp. Sampling Frequency 1/2 hours. Weather Conditions Rain
 (last 48 hours)
 Sampling Alequot 1,000 ml.

PLANT OPERATION

Total Flow 6,426 Cu. Ft. -48,066 Gal. How Measured City meter
 Max. (Flow) ----- Time of Max. ----- Min. ----- Time of Min. -----
 Pre Cl₂ ----- #/day Post Cl₂ ----- #/day

FIELD RESULTS

Determinations	Influent				Effluent			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	17.8	16.0	16.4	16.2	17.4	14.8	16.2	16.4
pH	7.2	6.4	6.4	6.4	7.0	6.2	6.5	6.4
Conductivity (umhos/cm)	1000	100	564	700	1300	200	707	700
Settleable Solids	100	45	71.6	70	50	42	45.6	42

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
73-3014		15	
5-Day BOD	1780	2195	---
COD	5820	4950	15
T.S.	3556	2969	17
T.N.V.S.	364	397	---
T.S.S.	2275	1625	29
N.V.S.S.	40	12	70
pH	6.5	6.4	
Conductivity	970	1040	
Turbidity	375	500	

Color: Influent 1700 Effluent 2400

BACTERIOLOGICAL RESULTS

Na₂S₂O₃ added to sample ----- After _____ min.

LAB #	SAMPLING TIME	COLONIES/100 MLS (MF)	Cl Residual	
			ppm	(after secs)
73-3016	1030	4000		
17	1200	4000		

Operator's Name _____ Phone # _____

Comments: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO:
~~D. Anderson~~
COPIES TO:
D. Anderson
.....
LAB FILES

DATA SUMMARY

Source New England Fish Co.

Collected By _____

Date Collected 8-16-73

Goal, Pro./Obj. _____

Log Number:	73-3014 15 16 17								STORET
Station:	1WF	EFF	1030	1200					
pH	6.5	6.4							00403
Turbidity (JTU)	375	500							00070
Conductivity (umhos/cm)@25°C	970	1040							00095
COD	5920	4950							00340
BOD (5 day)	1780	2195							00310
Total Coliform (Col./100ml)			7.4x10 ⁵ > 160,000						31504
Fecal Coliform (Col./100ml)			< 4000 < 4000						31616
NO3-N (Filtered)	-	.02							00620
NO2-N (Filtered)	-	ND							00615
NH3-N (Unfiltered)	-	5.0							00610
T. Kjeldahl-N (Unfiltered)	-	15.							00625
O-PO4-P (Filtered)	-	6.6							00671
Total Phos.-P (Unfiltered)	-	61.5							00665
Total Solids	3556	2969							00500
Total Non Vol. Solids	364	397							
Total Suspended Solids	2275	1625							00530
Total Sus. Non Vol. Solids	40	12							
COLOR	2700	2400							

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10³) prior to entry into STORET

Summary By Stephen J. Polk Date 9-4-73