

MEMORANDUM

January 12, 1976

To: Howard Steeley

From: Scott Jeane

Subject: Willapa Salmon Hatchery

Shirley Prescott and I met with Tom Damron of the hatchery on September 15, 1975. Our survey included sampling from the two main rearing locations and the receiving water (see Figure I)).

The 8 horseshoe-shaped rearing ponds held 22,797 lbs fish and had 3000 gal/min or 4.32 MGD flow. The rate of feed for the horseshoe ponds was a total of 450 lbs/day. The only other rearing pond contained 2,281 lbs of fish which were fed 60 lbs/day for 5 out of 7 days. The flow rate in the small pond is 300 gal/min or 0.43 MGD.

	U-Ponds		Gravel Ponds		Downstream		Upstream	
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
COD	28.0	1,009.4	<6.0	21.2	6.0	811.14	6.0	811.14
NO <sub>3</sub> -N	.17	6.1	.14	.5	0.15	20.28	0.15	20.28
NH <sub>3</sub> -N	.10	3.6	.10	.4	0.04	5.41	<0.02	2.70
Tot. Coli.	2600*	--	3200*	--	> 750		1800*	
Fec. Coli.	30*	--	28*	--	65*		28*	
Flow Rate	4.32 MGD	--	0.43 MGD	--	--	16.2 MGD**		

No detectable levels of NO<sub>2</sub> were observed at all stations

\* Estimated colonies/100 ml

\*\* Mean Discharge September 1970 - 25 cfs - [16.2 MGD]

Comparison of above and below hatchery samples revealed changes in only two parameters (fecal coliform and NH<sub>3</sub>-N). The fecal coliform increased from 28 colonies to 65 colonies per /100 ml. While this increase represents 100% increase, the fecal bacterial levels sampled in the two rearing ponds were very similar to the upstream control. The increase in the fecal bacteria levels of the receiving waters is not believed to cause degradation of water quality. The total coliform bacteria levels at both the upstream and downstream sample locations were in violation of class "A" water quality standards. A significant increase in NH<sub>3</sub>-N receiving water levels was measured. Resultant algae growth downstream was observed but at present levels should remain below nuisance levels.

GSJ:ee

Willapa Salmon Hatchery Diagram - (not to scale)

Figure I

