Publication No. 73-e18
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TO: Stew Messman and Larry Lewis

FROM: Jim Armstrong

SUBJECT: McRae Meat Packing Effluent Evaluation

DATE: September 13, 1973

State of Washington Department of Ecology

On Friday, August 17, 1973, an effluent evaluation was made at McRae Meat Packers. The survey started at 0930 hours and lasted until 1430 hours with samples taken every one half hour.

McRae started killing at approximately 0700 hours and finished at 1230 hours. The effluent to the river did not start flowing until 0930 hours.

At 1400 hours blood appeared in the sea gate outfall.

Late in the afternoon the cattle pens were washed out. The drainage from these pens goes to the river.

The total flow from 0752 hours to 1537 hours was 680 cubic feet, or 4,086.4 gallons. There were eight people working at the slaughter house for a total of 80 gallons of domestic sewage at 10 gallons per day per person.

Usually cattle are slaughtered twice a week at this plant, but due to the beef situation, cattle were only slaughtered one day that week (August 13-17, 1973).

Forty-five cattle were killed. Of these, one was deemed unfit for human consumption by the U.S.D.A. inspector. Approximately 52% of the live weight is dressed beef.

The total live weight for these cattle was 49,310 pounds. Of this, 25,641.2 pounds were dressed weight and 23,668.8 pounds were sent to a pet food company.

Most of the blood is drained into a portable tank and dumped in a field near the slaughter house.

JA:jmh

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: J. ARMSTRONG
COPIES TO:
LAB FILES

DATA SUMMARY

Source Mc Rae Packing — Collected By _____

Date Collected _____ — Goal, Pro./Obj. _____

Log Number: 73- 3022 23 24 25 3089 30

Station:	EFF 1100	Sea Gate 1135	Effluent 1310	EFF ?	EFF	Sea Gate					STORET
pH					7.3						00403
Turbidity (JTU)					80.						00070
Conductivity (umhos/cm)@25°C					1110						00095
COD					4,900						00340
BOD (5 day)					2,900						00310
Total Coliform (Col./100ml)	4.7×10^5	7.2×10^5	<20,000	$>8 \times 10^6$							31504
Fecal Coliform (Col./100ml)	14,000	14,000	<10,000	>160,000							31616
NO3-N (Filtered)					.43	.59					00620
NO2-N (Filtered)					.01	.01					00615
NH3-N (Unfiltered)					12.6	3.2					00610
T. Kjeldahl-N (Unfiltered)					32.6	7.3					00625
O-PO4-P (Filtered)											00671
Total Phos.-P (Unfiltered)					330	112					00665
Total Solids					3545						00500
Total Non Vol. Solids					401						
Total Suspended Solids					528						00530
Total Sus. Non Vol. Solids					40						
Color					28,000						
Fecal Strep (col/100ml)	2.1×10^5	1,500	<10,000	>160,000							
* Total Nitrates (Nitrate-Ex.)					250.	285.					

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

Summary By Taylor F. Hall Date 9-4-73

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)

City Edison Plant Type McRae Meat Packers Population Served _____ Design Capacity _____

Receiving Water N. Fork Samish River Engineer _____

Date August 17, 1973 Survey Period 0930-1430 hrs Survey Personnel Armstrong

Comp. Sampling Frequency Every half hr. Weather Conditions (last 48 hours) Rain

Sampling Alequot 600 mls.

PLANT OPERATION

Total Flow 680 cu. ft. How Measured City water meter

Max. (Flow) _____ Time of Max. _____ Min. _____ Time of Min. _____

Pre Cl_2 _____ #/day Post Cl_2 _____ #/day

FIELD RESULTS

	Influent				Effluent			
Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C					27.9	21.7	25	24.5
pH					8.0	7.4		7.8
Conductivity (umhos/cm)					900	650		850
Settleable Solids					1.5	<.1	.6	.4

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
5-Day BOD		2,900	
COD		4,900	
T.S.		3,545	
T.N.V.S.		401	
T.S.S.		528	
N.V.S.S.		40	
pH		7.3	
Conductivity		1,110	
Turbidity		80	

BACTERIOLOGICAL RESULTS

$Na_2S_2O_3$ added to sample Added Previous After to Sampling min.

Fecal Strep

LAB #	SAMPLING TIME	COLONIES/100 MLS (MF)	Cl Residual	
			ppm	(after secs)
3022 Main Eff.	1100	2.1×10^5		
3023 Sea Gate	1135	15,000		
3024 Drainage/Pens	1310	10,000		
3025 Main Eff.	No Time	>160,000		

rator's Name Phone #

ments: