

TO: Tom McCann, Ron Pine, Ron Devitt & Files  
FROM: Darrel Anderson  
SUBJECT: Kelley-Farquar Co. (Food Processors-Peas)  
Efficiency Study.  
DATE: October 10, 1973

State of  
Washington  
Department of  
Ecology



On Wednesday, August 15, 1973, I conducted an efficiency study at the Kelley-Farquar Company in Ferndale, Washington. The survey lasted from 0900 to 1630 hours. Samples for composite were taken every 1/2 hour.

Total flow, taken from 4 meters at the plant from 0900-1630 hours was 71.8 cubic feet of water. *.85 MGD AVG. Summer flow (Monthly industry reports) (JMT)*

There was 171,258 pounds of raw peas brought in and 148,920 pounds of peas processed.

The cannery effluent is transferred by pipeline to aeration ponds and to settling ponds, then to the Nooksack River via cannery effluent sump. Effluent water after treatment is very turbid, with suspended solids present. At approximately 10 minute intervals, cannery effluent water overflows into effluent from ponds via overflow wier at the top of the sump. Transfer of water to ponds is by gravitation only.

D.O. in the aeration pond ranges from 1.2-2.2 ppm. Capacity of the pond is approximately 4.7 mg.

DA:jmh

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)  
Kelley-Farquar

City Ferndale, WA Plant Type Company Population Served Design Capacity  
Receiving Water Nooksack River Engineer \_\_\_\_\_  
Date Aug 15, 1973 Survey Period 0900-1630 hrs. Survey Personnel D.L. Anderson  
Comp. Sampling Frequency 1/2 hour Weather Conditions overcast  
(last 48 hours)  
Sampling Alequot 1000 ml.

PLANT OPERATION

Total Flow 71.8 cubic feet How Measured Plant meters (4 each)  
Max. (Flow) \_\_\_\_\_ Time of Max. \_\_\_\_\_ Min. \_\_\_\_\_ Time of Min. \_\_\_\_\_  
Pre Cl<sub>2</sub> \_\_\_\_\_ #/day Post Cl<sub>2</sub> \_\_\_\_\_ #/day

From plant to Settling ponds. FIELD RESULTS  
Aerators & Influent

From settling ponds  
Effluent

Determinations	Influent				Effluent			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	20.0	16.4	17.8	19.0	19.0	18.2	18.6	18.6
pH	7.5	6.6	7.0	7.1	7.2	6.2	6.5	6.8
D.O.	5.2	2.2	3.8	4.0	2.6	2.0	2.2	2.0
P.P.M.								
Settleable Solids	3.0	1.5	2.08	2.0	300	250	277	370

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
73-2973		74	
5-Day BOD	1440	326	77%
COD	2110	458	78%
T.S.	3592	2645	26%
T.N.V.S.	1930	2019	
T.S.S.	588	854	
N.V.S.S.	319	226	
pH	5.7	---	
Conductivity	3500	9200	
Turbidity	280	10000	

BACTERIOLOGICAL RESULTS

Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> added to sample ----- After ----- min.

LAB #	SAMPLING TIME	COLONIES/100 MLS (MP)	Cl Residual	
			ppm	(after secs)
73-2975	1100	2000		
76	1430	2000		

Operator's Name \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

	Influent	Effluent
NO <sub>3</sub> -N (Filtered)	--	.93
NO <sub>2</sub> -N (Filtered)	--	.21
Total Phos.-P (unfiltered)	--	4.6
MBAS	0.7	20.05
Color (Apha)	240	54
Chlorides	820	1450

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: . R. Devitt.....  
COPIES TO:  
.....  
.....  
LAB FILES.....

DATA SUMMARY

Source Kelley FARQUAR Co.

Collected By D.A.

Date Collected 8/15/73

Goal, Pro./Obj. \_\_\_\_\_

Log Number:	23	2923	74	75	76						STORET
Station:	INF	EFF	1100	1430							
pH	5.7	-	-	-							00403
Turbidity (JTU)	280	10,000									00070
Conductivity (umhos/cm)@25°C	3500	9200									00095
COD	2110	458									00340
BOD (5 day)	1490	326									00310
Total Coliform (Col./100ml)	-	-	>1.6x10 <sup>6</sup>	>1.12x10 <sup>6</sup>							31504
Fecal Coliform (Col./100ml)	-	-	<2,000	<2,000							31616
NO3-N (Filtered)	-	.93									00620
NO2-N (Filtered)	-	.21									00615
NH3-N (Unfiltered)											00610
T. Kjeldahl-N (Unfiltered)											00625
O-PO4-P (Filtered)											00671
Total Phos.-P (Unfiltered)	-	4.6									00665
Total Solids	3592	2645									00500
Total Non Vol. Solids	1930	2019									
Total Suspended Solids	589	854									00530
Total Sus. Non Vol. Solids	319	226									
MIBAS	0.7	<0.05									
COLOR (APHA)	240	54									
CHLORIDES	820	1450									

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

Summary By Stephen D. Nell Date 8-29-73