

April 11, 1974

State of
Washington
Department
of Ecology



Memo to: John Arnquist

From: Darrel Anderson **DA**

Subject: ~~Granger STP~~ Efficiency Survey.

On February 27, 1974, I conducted an efficiency survey at the City of Granger sewage treatment plant. Security at the plant is very good, housekeeping was very poor. A safety hazard exists at the east side of the grit chamber and Parshall Flume where a hand railing is missing - distance to the ground is about 20 feet. The clarifier needs to be cleaned out and repaired because a short circuit exists at the sludge and scum box. The 5 day BOD reduction is 87%, COD 73% and fecal coliform colonies are at <10/100 mls.

Sampling frequency was every 1/2 hour for seven hours with 800 ml per 1/2 hour influent and effluent.

DA:jmh

STP Survey Report Form

Efficiency Study

City Granger Plant Type Trickling Filter Pop. Served 1,567 Design Unknown
 Receiving Water Yakima River Perennial xx Intermittent _____
 Date 2-27-74 Survey Period 0900-1600 Survey Personnel D. Anderson
 Comp. Sampling Frequency 1/2 hour Sampling Alequot 800 ml
 Weather Conditions (24 hr) Clear-cold Are facilities provided for complete by-
 pass of raw sewage? ✓ Yes No/Frequency of bypass unk
 Reason for bypass _____ Is bypass chlorinated? x Yes No _____
 Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow .12 MGD How measured 6" Parshall Flume
 Maximum flow .13 MGD Time of Max. 1200 hr.
 Minimum flow .07 MGD Time of Min. 1600 hr.
 Pre Cl₂ 0 #/day Post Cl₂ 8 #/day

Field Results

Influent

Effluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	14.0	12.0		13.0	11.0	9.0		11.0
pH (Units)	8.4	7.4		--	7.6	7.3		--
Conductivity (µmhos/cm ²)	1150	1000		---	1100	950		---
Settleable Solids (mls/l)	27.0	5.0	10.1	7.5	7.1	Trace	---	---

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	<u>74-592</u>	<u>74-593</u>	
5-Day BOD ppm	<u>223</u>	<u>30</u>	<u>86%</u>
COD ppm	<u>630</u>	<u>174</u>	<u>73%</u>
T.S. ppm	<u>719</u>	<u>513</u>	<u>29%</u>
T.N.V.S. ppm	<u>404</u>	<u>360</u>	<u>11%</u>
T.S.S. ppm	<u>362</u>	<u>75</u>	<u>80%</u>
N.V.S.S. ppm	<u>70</u>	<u>8</u>	<u>84%</u>
pH (Units)	<u>7.7</u>	<u>7.6</u>	
Conductivity (µmhos/cm ²)	<u>880</u>	<u>820</u>	
Turbidity (JTU's)	<u>120</u>	<u>35</u>	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15 sec	3 min
74-594	0900	140*	<10		0.2	0.5
595	1000	100*	10*		0.2	0.5
596	1100	120*	10*		0.15	0.3
597	1300	240*	<10		0.15	0.4
598	1400	40*	<10		0.15	0.3
599	1500	160*	<10		0.2	0.5

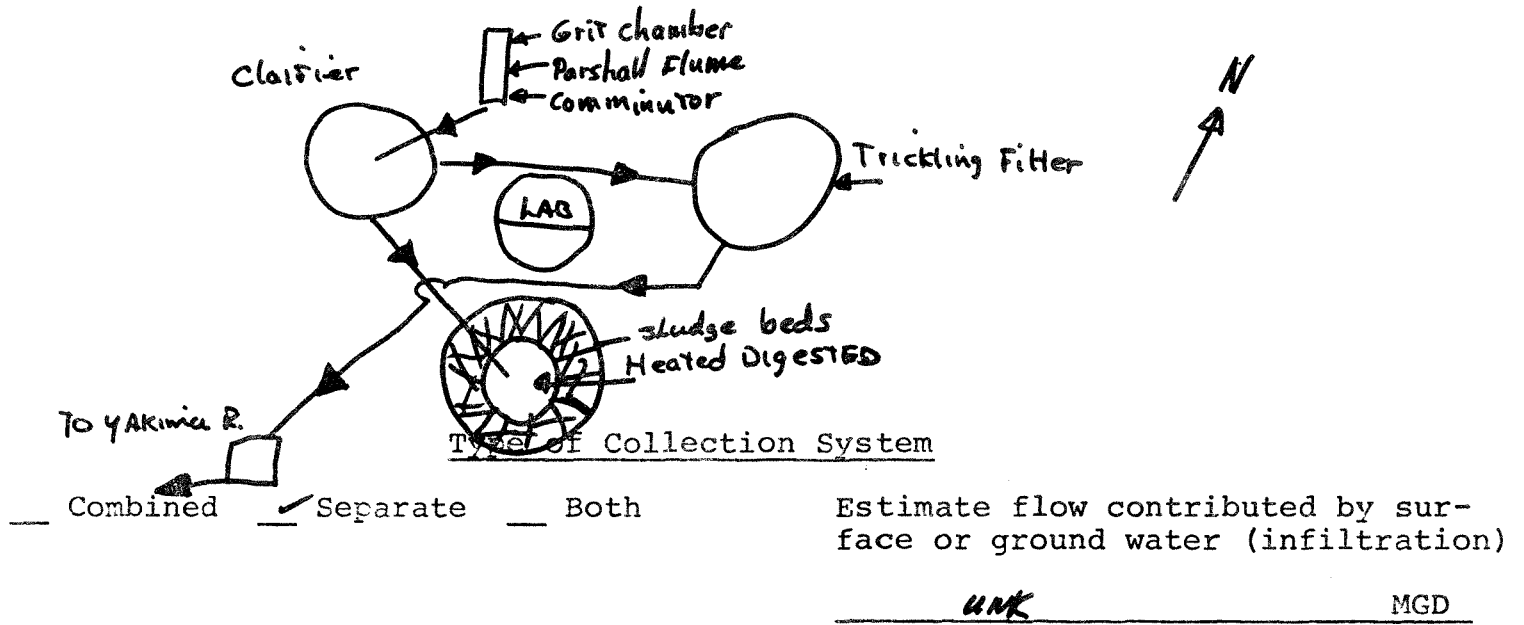
*Estimated

Additional Laboratory Results

NO ₃ -N ppm	-	.85	
NO ₂ -N ppm	-	.05	
NH ₃ -N ppm	-	17.5	
T. Kjeldahl-N ppm	-	23.7	
O-PO ₄ -P ppm	-	9.70	
T-PO ₄ -P ppm	-	9.90	

Operator's Name Joe Salinas Phone No. 854-3627

Furnish a flow diagram with sequence and relative size and points of chlorination.



Plant Loading Information

Annual average daily flow rate (mgd)	Peak flow rate (mgd)
Dry _____	Dry _____
Wet _____	Wet _____

COMMENTS: _____

U.S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
**SEWAGE TREATMENT PLANT OPERATION AND MAINTENANCE
PRACTICES QUESTIONNAIRE**

FORM APPROVED
BUDGET BUREAU NO. 42-11527

CHECK ONE <input type="checkbox"/> 1ST AUDIT <input type="checkbox"/> RE-AUDIT	DATE OF AUDIT 2-27-74	PLANT DESCRIPTION CODE (For Official Use Only)
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A. GENERAL INFORMATION

1. PROJECT (State, Number) GRANGER, YAKIMA	SCOPE OF PROJECT (new plant, additions, etc.)
2. PLANT LOCATION (City, county)	IDENTIFICATION OF AREAS SERVED City

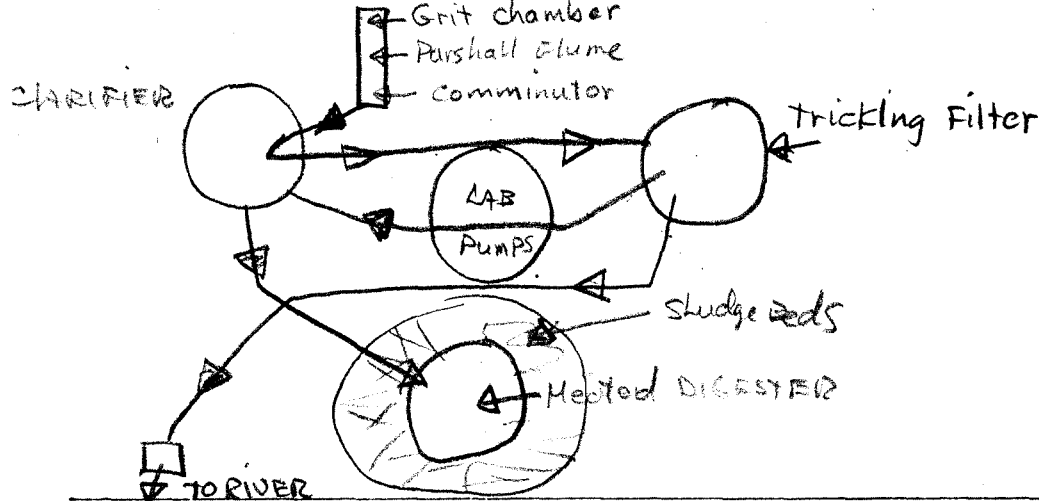
3. POPULATION		
3A. FRACTION OF AREA POPULATION SERVED (%) 100	3B. PLANT DESIGN (population equivalent) -	3C. SERVED BY PLANT (domestic) 1567

4. TYPE OF COLLECTION SYSTEM		4B. ESTIMATE FLOW CONTRIBUTED BY SURFACE OR GROUND WATER (infiltration, mgd) NO Problem
4A. <input type="checkbox"/> COMBINED <input checked="" type="checkbox"/> SEPARATE <input type="checkbox"/> BOTH		

5. YEAR COMMUNITY BEGAN SEWAGE TREATMENT 1952	6. YEAR PRESENT SYSTEM PLACED IN OPERATION		
	6A. SEWER 1952	6B. PLANT 1952	6C. ANCILLARY WORKS

7A. SIZE OF PLANT SITE (acres) 1	7B. APPROXIMATE AREA LEFT FOR EXPANSION (acres)
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8A. IN THE SPACE PROVIDED BELOW FURNISH A SIMPLIFIED FLOW DIAGRAM OR A WRITTEN DESCRIPTION OF THE PLANT UNITS IN FLOW SEQUENCE. INCLUDE THE METHOD OF ULTIMATE SLUDGE DISPOSAL. SHOW APPROXIMATE SURFACE AREA OF STABILIZATION PONDS AND NUMBER OF CELLS. INDICATE WHETHER FLOW TO AND FROM PLANT IS BY PUMPING OR GRAVITY.



8B. NOTE ANY SIGNIFICANT OR UNIQUE PROCESSING CONDITIONS.

9. RECEIVING STREAM

9A. NAME OF STREAM YAKIMA RIVER			
9B. STREAM FLOW IS		<input type="checkbox"/> INTERSTATE <input checked="" type="checkbox"/> INTRASTATE <input type="checkbox"/> COASTAL	
<input checked="" type="checkbox"/> PERENNIAL	<input type="checkbox"/> INTERMITTENT	<input type="checkbox"/> NATURAL	<input checked="" type="checkbox"/> REGULATED

B. CURRENT PERFORMANCE AND PLANT LOADING INFORMATION

1A. ANNUAL AVERAGE DAILY FLOW RATE (mgd) 127 TGD	1B. PEAK FLOW RATE (mgd)	1C. MINIMUM FLOW RATE (mgd)
	DRY WEATHER	WET WEATHER
2. AVERAGE BOD OF RAW SEWAGE (5 DAY 20°C) (ppm)	3. AVERAGE SETTLEABLE SOLIDS OF RAW SEWAGE (mg/l)	
4. AVERAGE SUSPENDED SOLIDS OF RAW SEWAGE (mg/l)	5. AVERAGE COLIFORM DENSITY OF RAW SEWAGE (ppm/100 ml)	
5. ANNUAL AVERAGE PLANT REDUCTION		
6A. BOD (%)	6B. SETTLEABLE SOLIDS (%)	6C. SUSPENDED SOLIDS (%)
		6D. COLIFORM DENSITY (%)

7A. DOES PLANT HAVE STANDBY POWER GENERATOR FOR MAJOR PUMPING FACILITIES? YES NO

7B. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES? YES NO

8. ARE CHLORINATION FACILITIES PROVIDED? YES NO
IF YES, ANSWER 8A THRU G

IF YES, IS CHLORINATION CONTINUOUS? YES NO
IF NO, EXPLAIN REASON FOR INTERMITTENT CHLORINATION

8A. PURPOSE OF CHLORINATION

DISINFECTION

8B. TYPE OF CHLORINATOR

WALLACE & TIERNAN

8C. POINT OF APPLICATION OF CHLORINE

AFTER TRICKLING FILTER

8D. CAN BYPASSED SEWAGE BE CHLORINATED?

YES NO

8E. AVERAGE FEED RATE OF CHLORINE (lb/day)

8

8F. CHLORINE RESIDUAL IN EFFLUENT

_____ PPM AT END OF _____ MINUTES

8G. MINIMUM SUPPLY OF CHLORINE STORED ON PREMISES (lb)

3 cylinders

9. ARE FACILITIES PROVIDED FOR COMPLETE BYPASS OF RAW SEWAGE?

YES NO

IF YES, ANSWER A THRU G BELOW, ANSWER H IN EITHER CASE.

9A. FREQUENCY (times monthly)

9B. AVERAGE DURATION (hours)

9C. REASON FOR BYPASSING

9D. ESTIMATED FLOW RATE DURING BYPASS IS

- WITHIN HYDRAULIC CAPACITY OF PLANT
 BEYOND HYDRAULIC CAPACITY OF PLANT BY

9E. DOES SEWAGE OVERFLOW IN DRY WEATHER?

YES NO

9F. TYPE OF DIVERSION STRUCTURE

9G. AGENCIES NOTIFIED OF BYPASS ACTION

9H. DO OPERATORS HAVE OPTION TO BYPASS INDIVIDUAL PLANT UNITS? (If no, has this caused any operational problems?)

YES NO

10A. ARE BACK FLOW DEVICES PROVIDED AT ALL CONNECTIONS TO CITY WATER SUPPLY? (If no, explain)

YES NO

10B. CHECK TYPE OF BACK FLOW PREVENTION DEVICE

DOUBLE CHECK VALVE PRESSURE OPERATED PHYSICAL DISCONNECT OTHER (specify)

11. USES OF TREATMENT PLANT EFFLUENT

12. USES OF RECEIVING STREAM WITHIN 10 MILES OF OUTFALL

13. HAVE THERE BEEN ANY ODOR COMPLAINTS BEYOND THE PLANT PROPERTY? (If yes, explain)

YES NO

14. OBSERVED APPEARANCE AND CONDITION OF EFFLUENT, RECEIVING STREAM, OR DRAINAGE WAY

E. LABORATORY CONTROL

Enter test codes opposite appropriate items. If any of the below tests are used to monitor industrial wastes place an "X" in addition to the test code.

CODES

- 1 - 7 or more per week 3 - 1, 2, or 3 per week 5 - 2 or 3 per month 7 - Quarterly 9 - Annually
 2 - 4, 5 or 6 per week 4 - as required 6 - 1 per month 8 - Semi-Annually

ITEM	RAW	PRIMARY EFFLUENT	MIXED LIQUOR	FINAL	SLUDGE		DIGESTOR	RECEIVING AREA
					RAW	SUPER-NATANT		
1. BOD								
2. SUSPENDED SOLIDS								
3. SETTLEABLE SOLIDS								
4. SUSPENDED VOLATILE								
5. DISSOLVED OXYGEN								
6. TOTAL SOLIDS								
7. VOLATILE SOLIDS								
8. pH								
9. TEMPERATURE								
10. COLIFORM DENSITY								
11. RESIDUAL CHLORINE								
12. VOLATILE ACIDS								
13. M. B. STABILITY								
14. ALKALINITY								
15.								
16.								
17.								
18.								
19.								

F. OPERATION AND MAINTENANCE COST FOR PLANT

YEAR OF OPERATION	SALARIES/WAGES	ELECTRICITY	CHEMICALS	MAINTENANCE	OTHER ITEMS	TOTAL
MOST CURRENT YEAR 19						
PRIOR YEAR 19						
PRIOR YEAR 19						
PRIOR YEAR 19						

EVALUATION PERFORMED BY	TITLE	ORGANIZATION
DARREL ANDERSON	ENVIRO TECH II	D.O.F.

INFORMATION FURNISHED BY	TITLE	ORGANIZATION	DATE
Joe Salinas	STP Operator	City of Granger	2-27-74

G. NOTATIONS BY EVALUATOR

1. ADDITIONAL REMARKS (If remarks refer to a particular item, identify by number)

60-1157 27A P# 27 - 3627

2. GENERAL COMMENTS ON HOUSEKEEPING AND MAINTENANCE

House keeping - poor
maintenance - poor
clarifier - needs to be
cleaned & Skimmer needs to be repaired. short circuit at sludge & scum
BOX.

- SAFETY HAZARD -
Railing missing on EAST side
OF grit chamber & parshal Flume

3. REQUIREMENTS OF HIGHER AUTHORITY

3A. DOES THE PLANT PROVIDE THE DEGREE OF TREATMENT PRESENTLY REQUIRED BY THE STATE? (If no, explain)

YES NO

3B. ARE THERE ANY PENDING ACTIONS (enforcement conferences, change in water quality standards, etc.) THAT WOULD REQUIRE UPGRADING OF TREATMENT BY THIS PLANT?

YES NO (If yes, explain)

3C. NUMBER OF STATE INSPECTIONS OF PRESENT PLANT TO DATE.

4. IS ANY FOLLOW-THRU ACTION REQUIRED TO (1) CORRECT DEFICIENCIES IN THE PLANT OR ITS OPERATION OR (2) RESOLVE INDUSTRIAL WASTE PROBLEMS? (If yes, describe required corrective action) YES NO