

TO: Ron Robinson, Mike Price, Ron Devitt,
Ron Pine & Files

FROM: Darrel Anderson

SUBJECT: Cherrybrook Mobile Home STP

DATE: October 10, 1973

**State of
Washington
Department of
Ecology**



On September 5, 1973, I conducted an efficiency study on Cherrybrook Mobile Home STP near Puyallup, Washington.

The small tertiary plant seemed to be operating very well. The sludge tank needs to be pumped. The operator from Sumner STP stated that it was to be pumped on the following day. In general, the area needs to be cleaned up.

The 5-day BOD reduction is 95 percent, COD reduction is 92 percent and total solids was 40 percent. Fecal coliform did not exceed <40/100 mls.

DA:jmh

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)

Cherrybrook
 City Mobile Home STP Plant Type Tertiary Population App. 47 Design Unknown
 (near Puyallup) Served Capacity
 Receiving Water Wapato Creek Engineer Unknown
 Date Sept. 5, 1973 Survey Period 0930-1300 hrs. Survey Personnel D. L. Anderson
 Comp. Sampling Frequency 1/2 hour Weather Conditions Clear-hot
 (last 48 hours)
 Sampling Alequot 600 ml.

PLANT OPERATION

Total Flow 1080 gallons/0930-1300 hrs. How Measured Timer reading on intermittent pump.
 Max. (Flow) N/A Time of Max. N/A Min. N/A Time of Min. N/A
 Pre Cl₂ None #/day Post Cl₂ Unknown #/day

FIELD RESULTS

Determinations	Influent				Effluent			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	20	19	19.5	19.5	18	16	17	17
pH	8.6	8.2	8.4	8.4	7.4	7.2	7.4	7.4
Conductivity (umhos/cm)	Undetermined				Undetermined			
Settleable Solids	15	13	13.3	13.3	Trace			

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
	73-3237	73-3238	
5-Day BOD	80	4	95
COD	390	31	92
T.S.	604	360	40
T.N.V.S.	307	270	13
T.S.S.	230	19	92
N.V.S.S.	26	0	100
pH	7.7	7.7	
Conductivity	860	550	
Turbidity	80	<1	

Cherrybrook STP

BACTERIOLOGICAL RESULTS

Na₂S₂O₃ added to sample _____ Before sample taken. After _____ min.

LAB #	SAMPLING TIME	COLONIES/100 MLS (MF)	Cl Residual	
			ppm	(after secs)
73-3238	1120	<40	.2	.4

Operator's Name Operator's from Sumner STP Phone # _____

Comments: Expansion slated for mobile home area which also includes
expansion and improvement of STP, sludge tank was to be pumped
on September 6, 1973.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
WATER QUALITY LABORATORY

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

DATA SUMMARY

Source Cherrybeak Mobile Home STP

Collected By D. D.

Date Collected 9-5-23

Goal, Pro./Obj. _____

Log Number:	23	227	228	STORET									
Station:	INF	EFF											
pH	7.7	7.7											00403
Turbidity (JTU)	80	<1											00070
Conductivity (umhos/cm)@25°C	860	550											00095
COD	390	31											00340
BOD (5 day)	80	4											00310
Total Coliform (Col./100ml)	-	<100											31504
Fecal Coliform (Col./100ml)	-	<40											31616
NO3-N (Filtered)													00620
NO2-N (Filtered)													00615
NH3-N (Unfiltered)													00510
T. Kjeldahl-N (Unfiltered)													00625
C-PO4-P (Filtered)													00671
Total Phos.,-P (Unfiltered)													00665
Total Solids	604	360											00500
Total Non Vol. Solids	307	270											
Total Suspended Solids	230	19											00530
Total Sus. Non Vol. Solids	26	0											

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 D. Red Date 9-21-23

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

FORM APPROVED
BUDGET BUREAU NO. 42-7152T

CHECK ONE: 1ST AUDIT RE-AUDIT DATE OF AUDIT: **9-5-73** PLANT DESCRIPTION CODE (For Office Use Only)

A. GENERAL INFORMATION

1. PROJECT (State, Number) _____ SCOPE OF PROJECT (new plant, additions, etc.) _____

2. PLANT LOCATION (City, County) **Wagner ARIZONA** IDENTIFICATION OF AREAS SERVED **TRAILER COURT 95 people**

3. POPULATION _____

3A. FRACTION OF AREA POPULATION SERVED (%) **ALL** 3B. PLANT DESIGN (population equivalent) **unk.** 3C. SERVED BY PLANT (domestic) **95**

4. TYPE OF COLLECTION SYSTEM

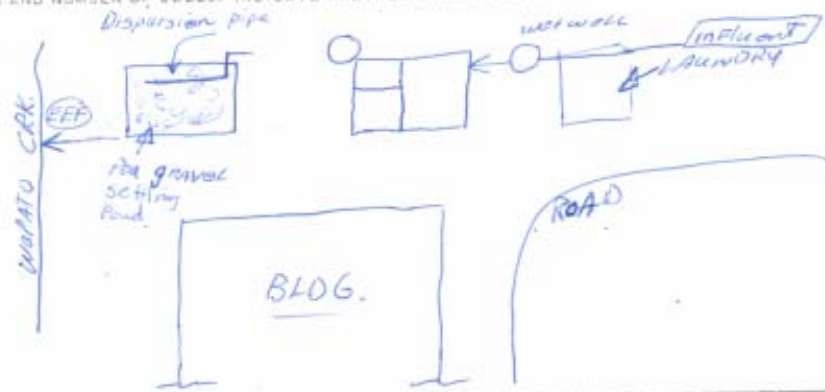
4A. COMBINED SEPARATE BOTH 4B. ESTIMATED FLOW CONTRIBUTED BY SURFACE OR GROUND WATER (infiltration, mgd) **NONE**

5. YEAR COMMUNITY BEGAN SEWAGE TREATMENT _____ 6. YEAR PRESENT SYSTEM PLACED IN OPERATION _____

6A. SEWER _____ 6B. PLANT _____ 6C. ANCILLARY WORKS _____

7A. SIZE OF PLANT SITE (acres) **100' x 50'** 7B. APPROXIMATE AREA LEFT FOR EXPANSION (acres) _____

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 SOLIDS 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 **WAPATO CRK**

9B. STREAM FLOW IS: PERENNIAL INTERMITTENT NATURAL REGULATED INTERSTATE INTRASTATE COASTAL

B. CURRENT PERFORMANCE AND PLANT LOADING INFORMATION

1A. ANNUAL AVERAGE DAILY FLOW RATE (mgd) **6,600 gpd** 1B. PEAK FLOW RATE (mgd) DRY WEATHER **unk.** WET WEATHER **unk.** 1C. MINIMUM FLOW RATE (mgd) **unk.**

2. AVERAGE BOD OF RAW SEWAGE (5 DAY 20°C) (ppm) **unk.** 3. AVERAGE SETTLEABLE SOLIDS OF RAW SEWAGE (5 DAY 20°C) (mg/l) **unk.**

4. AVERAGE SUSPENDED SOLIDS OF RAW SEWAGE (mg/l) **unk.** 5. AVERAGE COLIFORM DENSITY OF RAW SEWAGE (NO. /100 ml) **unk.**

6. ANNUAL AVERAGE PLANT PRODUCTION

6A. BOD (mg/l) **unk.** 6B. SETTLEABLE SOLIDS (mg/l) **unk.** 6C. SUSPENDED SOLIDS (mg/l) **unk.** 6D. COLIFORM DENSITY (NO. /100 ml) **unk.**

7A. DOES PLANT HAVE STANDBY POWER GENERATION FOR MAJOR PUMPING FACILITIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	7D. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
8. ARE CHLORINATION FACILITIES PROVIDED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, ANSWER QA THRU QG	7F. YES, IS CHLORINATION CONTINUOUS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF NO, EXPLAIN REASON FOR INTERMITTENT CHLORINATION
8A. PURPOSE OF CHLORINATION <p style="text-align: center;"><i>Disinfection</i></p>	
8B. TYPE OF CHLORINATION <p style="text-align: center;"><i>WALLACE - TIERNEY</i></p>	
8C. POINT OF APPLICATION OF CHLORINE	8D. CAN BYPASSED SEWAGE BE CHLORINATED? <input type="checkbox"/> YES <input type="checkbox"/> NO
8E. AVERAGE FEED RATE OF CHLORINE (lb./day) <p style="text-align: center;"><i>none</i></p>	8F. CHLORINE RESIDUAL IN EFFLUENT <p style="text-align: center;"><i>.15 ppm at end of 3 minutes</i></p>
8G. MINIMUM SUPPLY OF CHLORINE CYCLES ON PREMISES (lb.) <p style="text-align: center;"><i>none</i></p>	
9. ARE FACILITIES PROVIDED FOR COMPLETE BYPASS OF RAW SEWAGE? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, ANSWER A THRU G BELOW, ANSWER H IN EITHER CASE.	
9A. FREQUENCY (times a month)	9B. AVERAGE DURATION (hours)
9C. REASON FOR BYPASSING	
10. ESTIMATED FLOW RATE DURING BYPASS IS <input type="checkbox"/> WITHIN HYDRAULIC CAPACITY OF PLANT <input type="checkbox"/> BEYOND HYDRAULIC CAPACITY OF PLANT BY	1E. DOES SEWAGE OVERFLOW IN DRY WEATHER? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
9F. TYPE OF DIVERSION STRUCTURE <p style="text-align: center;"><i>NONE</i></p>	9G. AGENCIES NOTIFIED OF BYPASS ACTION
10. DO OPERATORS HAVE OPTION TO BYPASS INDIVIDUAL PLANT UNITS? (If no, has this caused any operational problems?) <input type="checkbox"/> YES <input type="checkbox"/> NO	
10A. ARE BACK FLOW DEVICES PROVIDED AT ALL CONNECTIONS TO CITY WATER SUPPLY? (If no, explain) <input type="checkbox"/> YES <input type="checkbox"/> NO	
10B. CHECK TYPE OF BACK FLOW PREVENTION DEVICE <input type="checkbox"/> DOUBLE CHECK VALVE <input type="checkbox"/> PRESSURE OPERATED <input type="checkbox"/> PHYSICAL DISCONNECT <input type="checkbox"/> OTHER (specify)	
11. USES OF TREATMENT PLANT EFFLUENT <p style="text-align: center;"><i>NONE</i></p>	
12. USES OF RECEIVING STREAM WITHIN 10 MILES OF OUTFALL <p style="text-align: center;"><i>NONE</i></p>	
13. HAVE THERE BEEN ANY ODOR COMPLAINTS BEYOND THE PLANT PROPERTY? (If yes, explain) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
14. OBSERVED APPEARANCE AND CONDITION OF EFFLUENT, RECEIVING STREAM, OR DRAINAGE WAY <p style="text-align: center;"><i>Clear - with very little solids.</i></p>	

15. STABILIZATION PONDS

A. WEEDS/CUT AND VEGETATIVE GROWTH IN PONDS ELIMINATED? <input type="checkbox"/> YES <input type="checkbox"/> NO		D. BANKS AND DIKES MAINTAINED (erosion etc.)? <input type="checkbox"/> YES <input type="checkbox"/> NO	
C. FENCING AND "FAPPING" - POLLUTED WATER? SIGNS PRESENT AND IN GOOD REPAIR? <input type="checkbox"/> YES <input type="checkbox"/> NO		E. FREQUENCY OF INSPECTION BY OPERATOR	
E. WATER DEPTH (feet) _____ HIGH _____ LOW _____ MEDIUM			
F. ADEQUATE CONTROL OF DEPTH? <input type="checkbox"/> YES <input type="checkbox"/> NO		G. SEEPAGE REPORTED? <input type="checkbox"/> YES <input type="checkbox"/> NO	
H. ANY REPORTS OF GROUND WATER CONTAMINATION FROM POND (If yes, give details)? <input type="checkbox"/> YES <input type="checkbox"/> NO			

I. MOSQUITO BREEDING PROBLEM? <input type="checkbox"/> YES <input type="checkbox"/> NO	J. IF YES, NAME OF SPECIES IF KNOWN	K. CAN SURFACE RUN-OFF ENTER POND? <input type="checkbox"/> YES <input type="checkbox"/> NO
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C. SUPERVISORY SERVICES

1. IS A CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATING AND MAINTENANCE PROBLEMS?
 YES NO. IF YES IS IT ON: CONTINUING BASIS OR UPON REQUEST BASIS
IF CONTINUING BASIS, WHAT IS THE FREQUENCY OF VISITS:

2. DO OPERATORS AND OTHER PERSONNEL ROUTINELY ATTEND SHORT COURSES, SCHOOLS OR OTHER TRAINING ACTIVITIES?
 YES NO
IF YES, CITE COURSE SPONSOR AND DATE OF LAST COURSE ATTENDED
IF NO, DO YOU KNOW OF ANY COURSES AVAILABLE TO SERVE THIS AREA?

3A. ARE ALL EQUIPMENT AND PARTS OF THE PRESENT PLANT STILL IN OPERATION? YES NO (If no, explain)

B. ARE PROCESSING UNITS OPERATING AT DESIGN EFFICIENCY? YES NO (If no, explain)

4. HAVE THERE BEEN ANY DIFFICULTIES WITH THE SEWAGE TREATMENT PLANT?

A. STRUCTURAL YES NO (If yes explain)

B. MECHANICAL YES NO (If yes, explain)

C. OPERATIONAL YES NO (If yes, explain)

D. BASED ON OPERATING EXPERIENCE TO DATE WHAT IF ANY CHANGES WOULD YOU RECOMMEND TO IMPROVE OPERATION OF THE PLANT?

5. Are OPERATING RECORDS MAINTAINED? <input type="checkbox"/> YES <input type="checkbox"/> NO <i>(If maintained, check control items included)</i>						REPORTED? <input type="checkbox"/> YES <input type="checkbox"/> NO TO WHOM?					
FREQUENCY	WEATHER	FLOW	SLUDGE HANDLED	CHEMICALS USED	REGISTER	GRIIT HANDLED	ELEC. USED	COST DATA	AIR USED	MAIN-TENANCE	OTHER
DAILY											
WEEKLY											
MONTHLY											
ANNUALLY											

6. ARE LABORATORY RECORDS MAINTAINED? *(check appropriate box)*
 NOT AT ALL DAILY WEEKLY MONTHLY ANNUALLY
 IF MAINTAINED CHECK FORM OF RECORD BELOW:
 LOG BOOK TABULAR SHEET SEPARATE BY OPERATION CONTROL CHARTS GRAPHS
 WHAT PLANT AND/OR LABORATORY EQUIPMENT, GAGES AND METERS ARE CALIBRATED PERIODICALLY?
 7. IS LABORATORY TESTING ADEQUATE FOR THE CONTROL REQUIRED FOR THIS SIZE AND TYPE OF PLANT?
 YES NO *(If no, explain)*

6. INDUSTRIAL WASTES DISCHARGED TO MUNICIPAL SYSTEM	A. NUMBER AND TYPES OF INDUSTRIES DISCHARGING TO SYSTEMS
B. POPULATION EQUIVALENT (BOD) OF INDUSTRIAL WASTES (pp)	C. POPULATION EQUIVALENT (SS) OF INDUSTRIAL WASTES (pp)
D. VOLUME OF INDUSTRIAL WASTES (mgd)	E. COMPOSITION AND CHARACTERISTICS OF INDUSTRIAL WASTES
F. MAIN DIFFICULTY EXPERIENCED WITH INDUSTRIAL WASTE <i>(explain)</i>	

8. HAVE INDUSTRIAL EFFLUENT PROBLEMS BEEN SOLVED? YES NO *(If yes, how?)*

9A. METHOD OR METHODS USED TO ASSESS INDUSTRIAL WASTE TREATMENT COST *(check appropriate box)*
 NO CHARGE BY CITY PROPERTY TAX WATER USE ASSESSMENT CHARGE BASED ON FLOW
 CHARGED BASED ON BOD CHARGE BASED ON SS OTHER METHODS *(describe)*
 COMMENT ON HOW CHARGE IS COLLECTED *(fixed charge, sliding scale, etc.)*

9B. IS INDUSTRIAL WASTE ORDINANCE IN EFFECT AND ENFORCED? YES NO

10. WHO PROVIDED INITIAL INSTRUCTION IN THE OPERATION OF THE PLANT?

11. IS A MANUAL OF PRACTICE OR INSTRUCTIONS AVAILABLE? YES NO
 IF YES, WHO WROTE AND PROVIDED IT?

12. ESTIMATE OF MAN-HOURS PER WEEK DEVOTED TO LABORATORY WORK AND MAINTENANCE OF RECORDS AND REPORTS

D. PLANT PERSONNEL *(Annual Average Staff for Most Recent Year Reported in Section "F")*

JOB CATEGORY	NUMBER	TOTAL MAN-HOURS PER WEEK	TOTAL NUMBER CERTIFIED OR LICENSED	RANGE IN YEARS EMPLOYED AT PRESENT PLANT	RANGE IN YEARS OF EXPERIENCE IN TREATMENT
1. SUPERINTENDENT					
2. OPERATORS					
3. LABORATORY TECHNICIANS					
4. LABORERS					
5. PART-TIME LABORERS					
6. TOTAL					

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 STREAM
					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. D. 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.E.

INFORMATION FURNISHED BY	TITLE	ORGANIZATION	DATE
		Summer STP	9-5-73

G. NOTATIONS BY EVALUATOR

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

EXPERIENCED operator not on hand at all times, Employee
From ~~Summer~~ Summer STP does tests one a day.

2. GENERAL COMMENTS ON HOUSEKEEPING AND MAINTENANCE

POOR HOUSE KEEPING & SECURITY is Fair.

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