

TO: John Arnquist
FROM: Darrel Anderson
SUBJECT: Waitsburg STP
DATE: April 6, 1973

State of
Washington
Department of
Ecology



On March 31, 1973, an efficiency survey was conducted at Waitsburg STP. The survey period was from 0900 to 1600 hours, composite sample taken every hour. Overall plant housekeeping was fair, with some cleanup and painting needed. Plant security is good.

Percent reduction for BOD, COD, and solids were low. Only 27% for BOD and 32% for COD. Total solids was 10% and total non-volatile solids was 25%. The six coliform samples taken from the effluent ranged from 16,000 - 80,000/100 mls.

DA:bj

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)

City Waitsburg Plant Type Primary Population 1,000 Design Capacity 1,000
 Receiving Water Coppei Creek Engineer Unknown
 Date 3-21-73 Survey Period 0900-1630 Survey Personnel Darrel Anderson
 Comp. Sampling Frequency 1200 ml/hr. Weather Conditions Partly cloudy
 (last 48 hours)
 Sampling Alequot _____

PLANT OPERATION

Total Flow 55 g/min or 273,600 g/day How Measured 60° "V" notch weir
 Max. (Flow) 60 g/min Time of Max. 1200 hrs. Min. 55 g/min Time of Min. 1500
 Pre Cl₂ -- 0/day Post Cl₂ 5 0/day

FIELD RESULTS

Determinations	Influent				Effluent			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	13	13	13	13	14	12	12.9	13
pH	7.2	6.8	7.1	7.2	7.4	7.0	7.3	7.0
Conductivity (umhos/cm)	650	375	587.5	650	600	525	594	600
Settleable Solids	5.0	2.0	2.9	2.0	—	—	TRACE	—

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
	73-1164	73-1165	
5-Day BOD	59	43	27
COD	183	124	32
T.S.	564	509	10
T.N.V.S.	300	227	25
T.S.S.	92	56	39
N.V.S.S.	15	4	74
pH	7.5	7.8	--
Conductivity	810	860	--
Turbidity	35	25	--

Waitsburg STP

BACTERIOLOGICAL RESULTS

$\text{Na}_2\text{S}_2\text{O}_3$ added to sample before sample ~~XXXXX~~ was taken. XXX.

LAB #	SAMPLING TIME	COLONIES/100 MLS (MF)	Cl Residual	
			ppm	(after secs)
73-1166	0900	> 80,000	.05	
73-1167	1000	> 40,000	.05	
73-1168	1100	> 16,000	.05	
73-1169	1300	> 40,000	.05	
73-1170	1400	> 80,000	.15	
73-1171	1500	> 40,000	.1	

Operator's Name Walter Harris Phone # 337-6343

Comments: _____

Estimated

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

FORM APPROVED BY
PROJECT BUREAU NO. 42-11527

CHECK ONE: 151-Audit RE-AUDIT
DATE OF AUDIT: 3-21-73
PLANT DESCRIPTION CODE (Use Official Use Only)

A. GENERAL INFORMATION

1. PROJECT (State, Number): W.N.
2. PLANT LOCATION (City, County): WAITSBURG, WALLA WALLA, W.N.
SCOPE OF PROJECT (new plant, additions, etc.):
IDENTIFICATION OF AREAS SERVED: IMMEDIATE COMMUNITY

3. POPULATION

3A. FRACTION OF AREA POPULATION SERVED (%): 1000
3B. PLANT DESIGN (population equivalent): PRIMARY
3C. SERVED BY PLANT (domestic): HOUSEHOLD

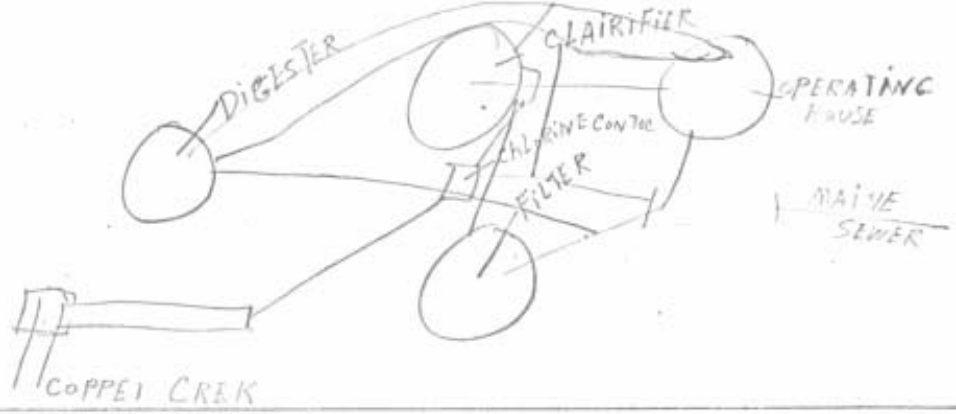
4. TYPE OF COLLECTION SYSTEM

4A. COMBINED SEPARATE BOTH
4B. ESTIMATED FLOW CONTRIBUTED BY SURFACE OR GROUND WATER (infiltration, etc.): 20% AT HIGH WATER

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): 7

8A. IN THE SPACE PROVIDED, PLEASE 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: COPPER CREEK
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): 219,500
1B. PEAK FLOW RATE (mgd):
 DRY WEATHER: 200,000
 WET WEATHER: 350,000
1C. MINIMUM FLOW RATE (mgd): 180,000
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 (per 100 ml):
6. ANNUAL AVERAGE PLANT REDUCTION:
6A. BOD (%)
6B. SETTLEABLE SOLIDS (%)
6C. SUSPENDED SOLIDS (%)
6D. COLIFORM (%)

67. DOES PLANT HAVE STANDBY POWER GENERATION FOR MAJOR PUMPING FACILITIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	70. ADEQUATE ALARM SYSTEM FOR PUMP OR EQUIPMENT FAILURE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
68. ARE CHLORINATION FACILITIES PROVIDED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, ANSWER 6A THRU G	IF YES, IS CHLORINATION CONTINUOUS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF NO, EXPLAIN REASON FOR INTERMITTENT CHLORINATION

6A. PURPOSE OF CHLORINATION

Water Purification

6D. TYPE OF CHLORINATION
WALLACE + TERNIN Variable orifice

6C. POINT OF APPLICATION OF CHLORINE
in line to filter & outfall

6D. CAN BYPASSED SEWAGE BE CHLORINATED?
 YES NO

6E. AVERAGE FEED RATE OF CHLORINE (lb/day)
5 lbs/day

6F. CHLORINE RESIDUAL IN EFFLUENT
3 ppm at end of 2 minutes

6G. MINIMUM SUPPLY OF CHLORINE STORED ON PREMISES (lb)
150 lbs

69. ARE FACILITIES PROVIDED FOR COMPLETE BYPASS OF RAW SEWAGE?
 YES NO IF YES, ANSWER A THRU G BELOW, ANSWER H IN EITHER CASE.

6A. FREQUENCY (days/week)

6D. AVERAGE DURATION (hours)

6C. REASON FOR BYPASSING
power off Break down for 24

6D. ESTIMATED FLOW RATE DURING BYPASS IS
 WITHIN HYDRAULIC CAPACITY OF PLANT
 BEYOND HYDRAULIC CAPACITY OF PLANT BY

6E. DOES SEWAGE OVERFLOW IN DRY WEATHER?
 YES NO

6F. TYPE OF DIVERSION STRUCTURE
NONE

6G. AGENCIES NOTIFIED OF BYPASS ACTION

6H. 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
NONE

12. USES OF RECEIVING STREAM WITHIN 10 MILES OF OUTFALL

13. HAVE THERE BEEN ANY ODDOR COMPLAINTS BEYOND THE PLANT PROPERTY? (If yes, explain)
 YES NO

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

1. ALGAE IN POND

1. NEEDS ULTRAVIOLET RAY GROWTH IN POND IRRADIATED? YES NO

2. DAMPS AND DIRT MAINTAINED (occasion etc.)? YES NO

3. LEAKING AND SEWAGE - POLLUTED WATER? SIGNS PRESENT AND IN GOOD REPAIR? YES NO

4. FREQUENCY OF INSPECTION BY OPERATOR
DAILY

5. WATER DEPTH (ft) _____ HIGH _____ LOW _____ MEDIUM

6. ADEQUATE CONTROL OF DEPTH? YES NO

7. SEEPAGE REPORTED? YES NO

8. ANY REPORTS OF GROUND WATER CONTAMINATION FROM POND (if yes, give details)?
 YES NO

9. MOSQUITO BREEDING PROBLEM? YES NO

IF YES, NAME OF SPECIES IF KNOWN _____

10. CAN SURFACE RUN-OFF ENTER POND? YES NO

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?
NONE

OPERATING RECORDS MAINTAINED? YES NO

REPORTED TO WHOM? STATE YES NO

FREQUENCY	WEATHER	FLOW	SUDGE HANDLED	CHEMICALS USED	REGISTER	GRI HANDLED	ELEC. USED	COST DATA	AIR USED	MAINTENANCE	OTHER
DAILY											
WEEKLY											
MONTHLY <input checked="" type="checkbox"/>											
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, GAUGES 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)

8. INDUSTRIAL WASTES DISCHARGED TO MUNICIPAL SYSTEM NO

A. NUMBER AND TYPES OF INDUSTRIES DISCHARGING TO SYSTEMS

B. POPULATION EQUIVALENT (POD) OF INDUSTRIAL WASTES (pe)

C. POPULATION EQUIVALENT (PE) OF INDUSTRIAL WASTES (pe)

D. VOLUME OF INDUSTRIAL WASTES (mgd)

E. COMPOSITION AND CHARACTERISTICS OF INDUSTRIAL WASTES

F. MAIN DIFFICULTY EXPERIENCED WITH INDUSTRIAL WASTE (explain)

G. 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 \$\$ 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?

GRAY + OSBERN

11. IS A MANUAL OF PRACTICE OR INSTRUCTIONS AVAILABLE? YES NO

IF YES, WHO WROTE AND PROVIDED IT? STATE DEPT.

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

24 hrs

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 THIS TYPE OF WORK
1. SUPERINTENDENT					
2. OPERATORS	<u>1</u>				
3. LABORATORY TECHNICIANS					
4. LABORERS					
5. PART-TIME LABORERS					
6. TOTAL					

F. 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	3	1		1	1	1	1	1
2. SUSPENDED SOLIDS								
3. SETTLEABLE SOLIDS	1	1		1		1	1	1
4. SUSPENDED VOLATILE								
5. DISSOLVED OXYGEN	1	1	1	1				
6. TOTAL SOLIDS								
7. VOLATILE SOLIDS								
8. pH	1	1	1	1	1	1	1	
9. TEMPERATURE	1							
10. COLIFORM DENSITY								
11. RESIDUAL CHLORINE				1				1
12. VOLATILE ACIDS								
13. H. D. STABILITY								
14. ALKALINITY							1	
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 L. ANDERSON	SGT II	DEPT. OF ECOLOGY

INFORMATION FURNISHED BY	TITLE	ORGANIZATION	DATE
WALTER HARRIS	PLANT OPERATOR	CITY OF WAITSBURG	3-21-73

G. NOTATIONS BY EVALUATOR

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

2. GENERAL COMMENTS ON HOUSEKEEPING AND MAINTENANCE

FAIR HOUSEKEEPING - needs some cleanup and painting.

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