

M E M O R A N D U M

April 9, 1975

To: Jim Milton

From: Dan Glantz *DG*

Subject: Prosser Domestic STP Efficiency Study

The study at this STP was made on January 15, 1975. The Industrial STP is located on the same site; however it is a completely separate unit and operation. The results of the study on the industrial plant will be transmitted to you by a separate memo.

The survey report form and lab data summary are attached. You will notice unusually high temperature and pH readings. This may be attributed to cooling and packing process water discharged into the system. The high alkaline condition may be inhibiting the biological activity.

Removal of suspended solids is good, but total solids removal is well below what it should be and may be preventing successful chlorination. It is likely these solids are of a saline nature as evidenced by the high conductivity reading. This may be a caustic product entering from a processing plant.

The influent is probably too much of an industrial nature to be satisfactorily handled by this plant.

DG:ee
Attachment

STP Survey Report Form

Efficiency Study

City Prosser Plant Type Secondary Pop. Served 3,000 Design Capacity _____
 Receiving Water Yakima River Perennial X Intermittent _____
 Date 1/15/75 Survey Period 1000 - 1500 Survey Personnel Dan Glantz
 Comp. Sampling Frequency 1/2 hour Sampling Alequot 1000 ML (Proportioned)
 Weather Conditions (24 hr) Overcast and cool Are facilities provided for complete by-
 pass of raw sewage? X Yes _____ No/Frequency of bypass _____
 Reason for bypass _____ Is bypass chlorinated? _____ Yes _____ No _____
 Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow .75 MGD How measured Recorder
 Maximum flow .80 MGD Time of Max. 1100
 Minimum flow .74 MGD Time of Min. 1200
 Pre Cl₂ _____ #/day Post Cl₂ _____ #/day

Field Results

Influent

Effluent

6 Determinations

| | Max. | Min. | Mean | Median | Max. | Min. | Mean | Median |
|---------------------------------------|------|------|------|--------|------|------|------|--------|
| Temp °C | 19° | 18° | | 17.5° | 15° | 13° | | 14° |
| pH (Units) | 8.4 | 8.1 | | 8.3 | 7.7 | 7.3 | | 7.7 |
| Conductivity (µmhos/cm ²) | 975 | 850 | | 945 | 940 | 860 | | 925 |
| Settleable Solids (mls/l) | 28.0 | 11.0 | 18.0 | 15.0 | TR | TR | TR | TR |

Laboratory Results on Composites

| | Influent | Effluent | % Reduction |
|---------------------------------------|---------------|------------------|-------------|
| Laboratory No. | <u>75-266</u> | <u>75-267</u> | |
| 5-Day BOD ppm | <u>115</u> | <u>< 40 *</u> | <u>65%</u> |
| COD ppm | <u>215</u> | <u>54</u> | <u>75%</u> |
| F.S. ppm | <u>674</u> | <u>537</u> | <u>20%</u> |
| F.N.V.S. ppm | <u>388</u> | <u>357</u> | <u>8%</u> |
| F.S.S. ppm | <u>160</u> | <u>14</u> | <u>91%</u> |
| V.V.S.S. ppm | <u>29</u> | <u>4</u> | <u>86%</u> |
| pH (Units) | <u>8.5</u> | <u>8.0</u> | |
| Conductivity (µmhos/cm ²) | <u>890</u> | <u>820</u> | |
| Turbidity (JTU's) | <u>45</u> | <u>11</u> | |

* Est. 16 ppm

Laboratory Bacteriological Results

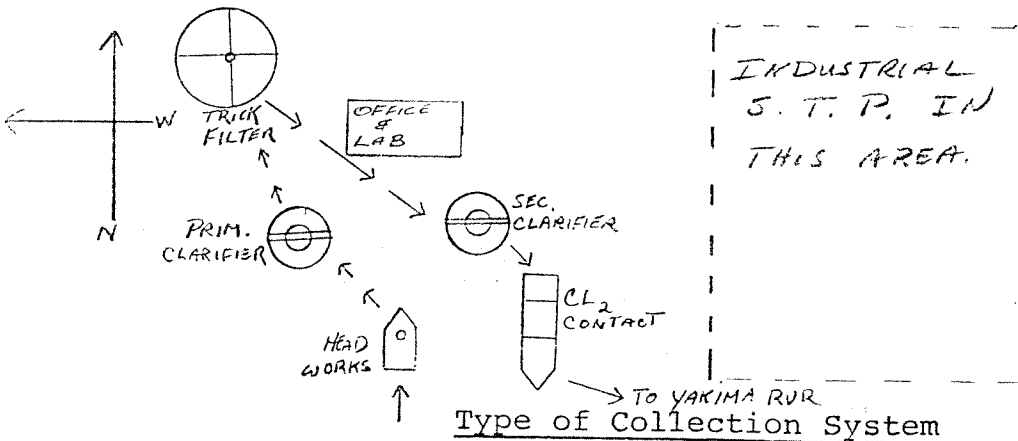
| Lab No. | Sampling Time | Colonies/100 ml (MF) | | | Cl ₂ Residual |
|---------|---------------|----------------------|----------------|-------------|--------------------------|
| | | Total Coliform | Fecal Coliform | Fecal Strep | |
| 75-268 | 1000 | >1,600 | 10 (est) | | .5 .75 |
| 72-259 | 1100 | 10,400 | 40 (est) | | .3 .5 |
| 72-270 | 1300 | 4,500 (est) | 10 (est) | | .4 .75 |
| 72-271 | 1400 | 12,000 | 10 (est) | | |
| | | | | | |
| | | | | | |

Additional Laboratory Results

| | |
|----------------------------|------|
| NO ₃ -N ppm - | 9.56 |
| NO ₂ -N ppm - | .04 |
| NH ₃ -N ppm - | 2.4 |
| T. Kjeldahl-N ppm - | 4.36 |
| O-PO ₄ -P ppm - | 2.80 |
| T-PO ₄ -P ppm - | 4.40 |

Operator's Name Matt Lyczewski Phone No. _____

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



Type of Collection System

Combined Separate Both

Estimate flow contributed by surface or ground water (infiltration)

MGD

Plant Loading Information

Annual average daily flow rate (mgd) _____

Peak flow rate (mgd) _____

Dry _____

Dry _____

Wet _____

Wet _____

COMMENTS: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO:
P. Lee.....
COPIES TO:
D. GLANTZ.....
.....
LAB FILES.....

Source Prosser Domestic STP

Collected By GLANTZ

Date Collected 1-15-75

Goal, Pro./Obj. _____

| Log Number: | 75-266 | 267 | 268 | 269 | 270 | 271 | | | | | | STORET |
|------------------------------|----------------|-----------------|-----------|----------------------------|-------------|--------------------------|--|--|--|--|--|--------|
| Station: | (COMP.) INF | (COMP.) EFF. | 1000 | 1100 | 1300 | 1400 | | | | | | |
| pH | 8.5 | 8.0 | | | | | | | | | | 00403 |
| Turbidity (JTU) | 45. | 11. | | | | | | | | | | 00070 |
| Conductivity (umhos/cm)@25°C | 890. | 820. | | | | | | | | | | 00095 |
| COD | 215 | 54 | | | | | | | | | | 00340 |
| BOD (5 day) | 115. | <40* | | | | | | | | | | 00310 |
| Total Coliform (Col./100ml) | - | - | >1600 | EST 2.6x10 ⁴ | EST 4500 | EST 3x10 ⁴ | | | | | | 31504 |
| Fecal Coliform (Col./100ml) | - | - | EST 10 | EST 40 | EST 10 | EST 10 | | | | | | 31616 |
| NO3-N (Filtered) | - | 9.56 | | | | | | | | | | 00620 |
| NO2-N (Filtered) | - | .04 | | | | | | | | | | 00615 |
| NH3-N (Unfiltered) | - | 2.4 | | | | | | | | | | 00610 |
| T. Kjeldahl-N (Unfiltered) | - | 4.36 | | | | | | | | | | 00625 |
| O-PO4-P (Filtered) | - | 2.80 | | | | | | | | | | 00671 |
| Total Phos.-P (Unfiltered) | - | 4.40 | | | | | | | | | | 00665 |
| Total Solids | 674 | 537 | | | | | | | | | | 00500 |
| Total Non Vol. Solids | 388 | 357 | | | | | | | | | | |
| Total Suspended Solids | 160 | 14. | | | | | | | | | | 00530 |
| Total Sus. Non Vol. Solids | 29 | 4. | | | | | | | | | | |

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

* best estimate: 16 ppm

Summary By 15. D. O. D. H.

Date 1-27-75