

MEMORANDUM

February 18, 1975

State of  
Washington  
Department  
of Ecology



TO: JOHN GLYNN, Northwest Regional Office  
FROM: DARREL ANDERSON  
SUBJECT: Manchester STP

On January 22, 1975, an efficiency study was conducted at Manchester STP, Kitsap County. The primary heated digester system seems to be operating efficiently, except for high conductivity readings obtained (4500) from the influent samples. The operator explained that there is some infiltration of sea water from the lines and pump station near the beach.

Overall disinfection is good, only 10/100 ml. A more efficient method should be used to control chlorine feed to the effluent, presently it does not coincide with flow variations.

Housekeeping and security is good.

DA:bj

STP Survey Report Form

Efficiency Study

City Manchester Plant Type Primary Heated Digester Pop. Served 400 Design 100,000 GPD  
 Capacity Puget Sound Receiving Water Perennial -- Intermittent --

Date 1/22/75 Survey Period 0900-1630 Survey Personnel D. Anderson

Comp. Sampling Frequency 1/2 hour Sampling Alequot 1,000 ml

Weather Conditions (24 hr) cloudy Are facilities provided for complete by-pass of raw sewage? X Yes      No/Frequency of bypass unknown

Reason for bypass      -- Is bypass chlorinated? X Yes      No

Was DOE Notified?      -- Discharge - Intermittent      -- Continuous      --

Plant Operation

Total flow approx. .35-.40 MGD How measured Badger flow meter

Maximum flow      -- Time of Max.      --

Minimum flow      -- Time of Min.      --

Pre Cl<sub>2</sub>      -- #/day Post Cl<sub>2</sub> Approx. 3 #/day

Field Results

Influent

Effluent

<u>5</u> Determinations	<u>Influent</u>				<u>Effluent</u>			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	13	12		13	12	11		11
pH (Units)	8.2	7.4		7.4	7.7	7.0		7.4
Conductivity (µmhos/cm <sup>2</sup> )	4500	950		1900	1900	1050		1250
Settleable Solids (mls/l)	20	3	9.3	9	Trace			→

Laboratory Results on Composites

	<u>Influent</u>	<u>Effluent</u>	<u>% Reduction</u>
Laboratory No.	<u>75-0341</u>	<u>0341</u>	
5-Day BOD ppm	<u>190</u>	<u>83</u>	<u>66</u>
COD ppm	<u>349</u>	<u>140</u>	<u>60</u>
T.S. ppm	<u>1135</u>	<u>631</u>	<u>45</u>
T.N.V.S. ppm	<u>863</u>	<u>479</u>	<u>45</u>
T.S.S. ppm	<u>147</u>	<u>33</u>	<u>78</u>
N.V.S.S. ppm	<u>10</u>	<u>2</u>	<u>80</u>
pH (Units)	<u>7.9</u>	<u>7.7</u>	
Conductivity (µmhos/cm <sup>2</sup> )	<u>2100</u>	<u>1200</u>	
Turbidity (JTU's)	<u>60</u>	<u>27</u>	

Laboratory Bacteriological Results

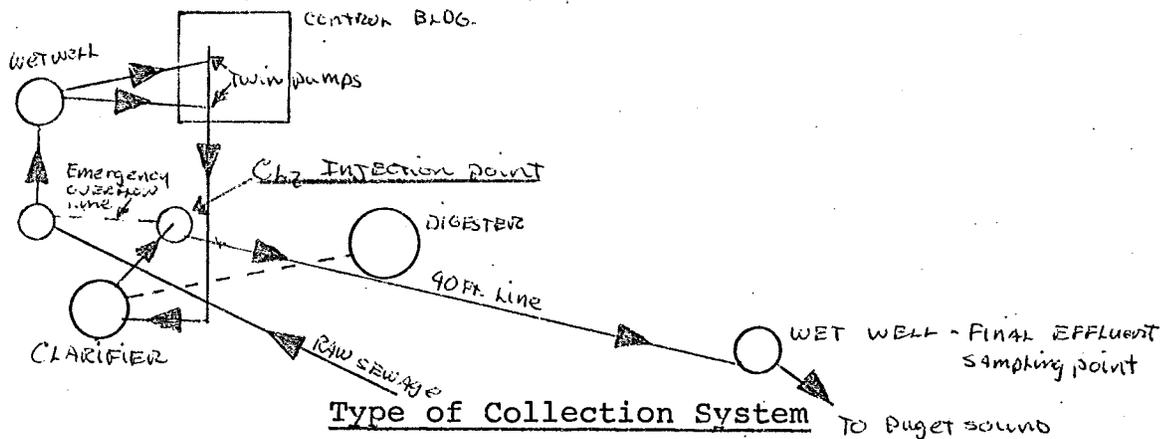
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl <sub>2</sub> Residual	
		Total Coliform	Fecal Coliform	Fecal Strep		
75-0343	0900	< 20	< 10		.05	1.0
0344	1000	Est 20	< 10		0.2	0.75
0345	1100	< 20	< 10		0.2	+1.0
0346	1300	< 20	< 10		0.1	0.1
0347	1400	< 20	< 10		0.05	0.05
0348	1500	< 20	< 10		0.05	0.05

Additional Laboratory Results

	EFF.
NO <sub>3</sub> -N ppm -	0.01
NO <sub>2</sub> -N ppm -	N.D.
NH <sub>3</sub> -N ppm -	13.2
T. Kjeldahl-N ppm -	31.6
O-PO <sub>4</sub> -P ppm -	N.D.
T-PO <sub>4</sub> -P ppm -	0.01

Operator's Name Mark Stephens Phone No. TR 1-3156

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



Type of Collection System To Puget sound

Combined  Separate  Both

Estimate flow contributed by surface or ground water (infiltration)

Unknown MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry     --    

Dry     --    

Wet     --    

Wet     --    

COMMENTS: Plant operates on pumping cycle as the wet well is filled. Effluent is not at a constant flow, is cyclick to pumps.

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO: A. Messer  
COPIES TO:  
.....  
.....  
LAB FILES .....

Source Manchester STP

Collected By AWM

Date Collected 1-22-75

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

Log Number:	75-0341	42	43	44	45	46	47	48			STORET
Station:	INF	eff	0900	1000	1100	1300	1400	1500			
pH	7.9	7.7									00403
Turbidity (JTU)	60.	27.									00070
Conductivity (umhos/cm)@25°C	2100	1,200									00095
COD	349	190									00340
BOD (5 day)	190.	83.									00310
Total Coliform (Col./100ml)	-	-	<20	EST 20	<20	<20	<20	<20			31504
Fecal Coliform (Col./100ml)	-	-	<10	<10	<10	<10	<10	<10			31616
NO3-N (Filtered)	-	.01									00620
NO2-N (Filtered)	-	ND									00615
NH3-N (Unfiltered)	-	13.2									00610
T. Kjeldahl-N (Unfiltered)	-	31.6									00625
O-PO4-P (Filtered)	-	ND									00671
Total Phos.-P (Unfiltered)	-	.01									00665
Total Solids	1135	631									00500
Total Non Vol. Solids	863	479									
Total Suspended Solids	147	33									00530
Total Sus. Non Vol. Solids	10	2									

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. Poll Date 2-5-75