

M E M O R A N D U M

February 28, 1975

State of
Washington
Department
of Ecology



TO: JOHN GLYNN
FROM: HANS CREGG *HJC*
SUBJECT: Silverdale STP

On January 22, 1975, an efficiency study was conducted at the Silverdale wastewater treatment plant.

The plant provides primary treatment and appears to be operating within the scope of EPA suggested interim effluent limitations. The treatment facility is, however, plagued by high coliform levels of both total and fecal colonies. This problem could be readily corrected through proper chlorination.

An area of far graver concern is a housing development approximately 8 miles east of Silverdale called Kariotis West. A county maintained drainfield spills raw sewage into the streets of the development and poses a definite health hazard. Coliform samples taken at this location reveal a total count of $>1.6 \times 10^5$ and a fecal count of >16000 .

The Redmond office of the Department of Ecology was immediately informed of this situation so that corrective action could be taken as soon as possible.

HJC:bj

STP Survey Report Form

Efficiency Study

City Silverdale Plant Type Primary Pop. Served 1,500 Design Capacity _____
 Receiving Water Puget Sound Perennial _____ Intermittent _____
 Date 1/22/75 Survey Period 6 hours Survey Personnel Hans Cregg
 Comp. Sampling Frequency hourly Sampling Alequot 1,000 mls
 Weather Conditions (24 hr) showers Are facilities provided for complete by-pass of raw sewage? Yes No/Frequency of bypass _____
 Reason for bypass _____ Is bypass chlorinated? Yes No
 Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow 20,000 How measured Totalizer
 Maximum flow _____ Time of Max. _____
 Minimum flow _____ Time of Min. _____
 Pre Cl₂ _____ #/day Post Cl₂ 12-15 #/day

Field Results

Influent

Effluent

Determinations	Influent			Effluent				
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	12	11		12	12	11		11.5
pH (Units)	7.0	6.8		7.0	6.8	6.6		6.6
Conductivity (µmhos/cm ²)	--	--		--	--	--		--
Settleable Solids (mls/l)	12	10	10	10	0.2	0.1	0.1	0.1

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	<u>75-0356</u>	<u>75-0357</u>	
5-Day BOD ppm	<u>140</u>	<u>105</u>	<u>25</u>
COD ppm	<u>212</u>	<u>140</u>	<u>33</u>
T.S. ppm	<u>313</u>	<u>263</u>	<u>16</u>
T.N.V.S. ppm	<u>170</u>	<u>158</u>	<u>7</u>
T.S.S. ppm	<u>86</u>	<u>55</u>	<u>36</u>
N.V.S.S. ppm	<u>9</u>	<u>5</u>	<u>45</u>
pH (Units)	<u>7.5</u>	<u>7.3</u>	
Conductivity (µmhos/cm ²)	<u>420</u>	<u>390</u>	
Turbidity (JTU's)	<u>45</u>	<u>33</u>	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep		
75-0358	12:00	Est 100	Est 10		*	
75-0359	12:00	> 4 x 10 ⁴	Est 130		.1	.75
75-0360	14:00	> 4 x 10 ⁴	Est 650		.05	.4
75-0361	15:00	> 4 x 10 ⁴	> 4000		.05	.4
75-0362	16:00	> 4 x 10 ⁴	1300		.05	.4
75-0363	20:00	> 1.6 x 10 ⁵	> 16000		+	

* taken at beach

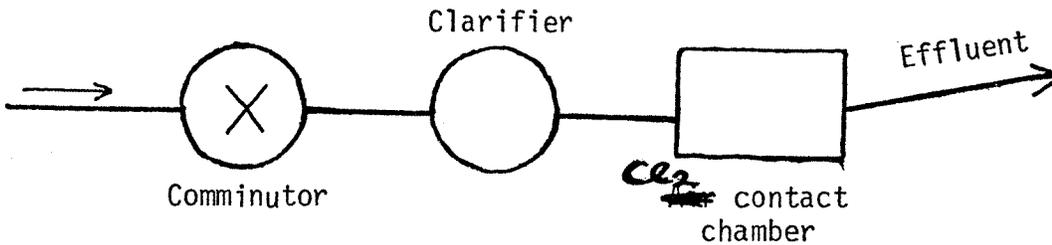
+ taken at Kariotis West (housing development)

Additional Laboratory Results

NO ₃ -N ppm -	N.D.
NO ₂ -N ppm -	N.D.
NH ₃ -N ppm -	13.0
T. Kjeldahl-N ppm -	16.6
O-PO ₄ -P ppm -	4.7
T-PO ₄ -P ppm -	7.8

Operator's Name _____ 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: _____

