

M E M O R A N D U M

January 14, 1976

To: John Glynn

From: Allen Moore

Subject: Penn Cove STP Efficiency Survey

An efficiency survey was conducted at the Penn Cove STP on October 6, 1975. The plant consists of a headworks with a three-inch Parshall flume, an Imhoff ~~cone~~^{tank}, and chlorination. The BOD reduction is a poor 25%. The effluent conductivity readings are much higher than the influent indicating a seawater infiltration into the plant - probably in the clarifier area. Disinfection is adequate. The one high reading at 1400 may be due to poor sampling technique. Overall the plant looks fairly clean.

AWM:ee

STP Survey Report Form

Efficiency Study

City Penn Cove STP Plant Type Imhoff Cone Pop. Served _____ Design _____
 Receiving Water Penn Cove Perennial X Intermittent _____
 Date 6 Oct. 75 Survey Period 1100-1600 Survey Personnel Allen Moore
 Comp. Sampling Frequency 1/2 hour Sampling Alequot Flow Max. flow X 1000 ml
 Weather Conditions (24 hr) clear, cool 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 6354 gal/5 hr or .0305 MGD How measured Hand measure 3" Parshall flume
 Maximum flow .095 MGD Time of Max. 1530
 Minimum flow .013 MGD Time of Min. 1330
 Pre Cl₂ _____ #/day Post Cl₂ _____ #/day

Field Results

Influent

Effluent

___Determinations	Influent			Effluent			Median
	Max.	Min.	Mean	Max.	Min.	Mean	
Temp °C	20.0	17.0		18.5	19.5	18.0	19.0
pH (Units)	8.7	7.8		8.1	7.6	7.0	7.35
Conductivity (µmhos/cm ²)	2000	1400		1900	5000	3750	4625
Settleable Solids (mls/l)	5.0	3.0	3.7	3.0	.2	.1	.16

Laboratory Results on Composites

Laboratory No.	Influent	Effluent	% Reduction	lbs/day
	75-4626	75-4627		
5-Day BOD ppm	185	140	25	35.6
COD ppm	545	346		
T.S. ppm	1255	2118		
T.N.V.S. ppm	750	1803		
T.S.S. ppm	161	86	47	21.9
N.V.S.S. ppm	18	13		
pH (Units)	8.1	7.4		
Conductivity (µmhos/cm ²)	910	2,400		
Turbidity (JTU's)	--	--		

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual
		Total Coliform	Fecal Coliform	Fecal Strep	
75-4628	1130	*	Est 25		
4629	1200	*	Est 10		
4630	1300	< 100	< 10		> 1.0
4631	1400	> 40,000	1200		< .05
4632	1500	*	< 10		> 1.0
4633	1530	Est. 120	< 10		.15
4634	1600	Est 20	< 10	- Sample from Penn Cove Receiving Water	

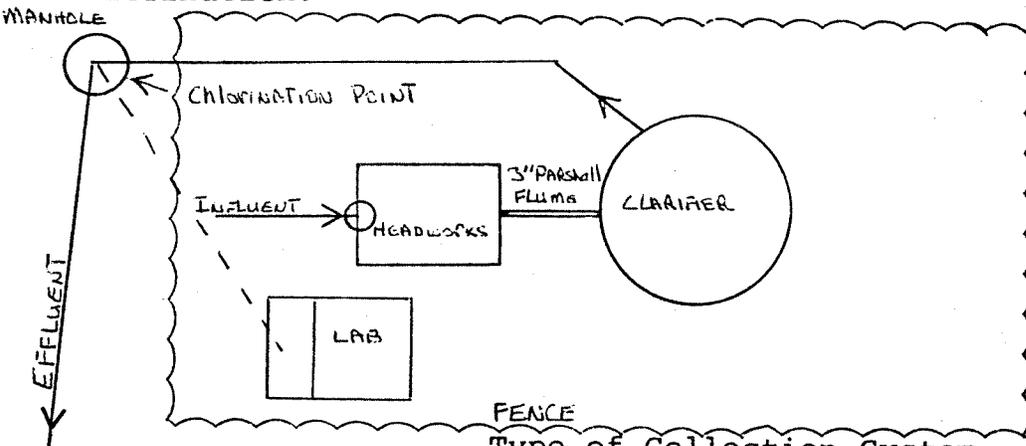
* No report due to lab contamination

Additional Laboratory Results

NO ₃ -N ppm	-	.04	
NO ₂ -N ppm	-	ND	
NH ₃ -N ppm	-	30	
T. Kjeldahl-N ppm	-	44	
O-PO ₄ -P ppm	-	11.1	
T-PO ₄ -P ppm	-	15.0	

Operator's Name _____ Phone No. _____

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



FENCE
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: _____

