



GILBERT ASSOCIATES, INC.
ENGINEERS AND CONSULTANTS
P.O. BOX 1498 / READING, PA. 19603

April 27, 1973

RECEIVED

APR 30 1973

ENVIRONMENTAL RESOURCES
WATER QUALITY MANAGEMENT
NORRISTOWN REGIONAL OFFICE

Pennsylvania Department of Environmental Resources
1875 New Hope Street
Norristown, Pennsylvania 19404

Attention: Mr. R. W. Pfaehler
Environmental Protection Specialist

Re: Bishop Tube Company
East Whiteland Township
Chester County
Industrial Wastes
W.O. 07 7379-000

Gentlemen:

As per your request for a preliminary report, we are submitting three copies of an Engineering Report based on a waste water survey made at Bishop Tube Company.

The following summarizes recommendations made to Bishop Tube in the report:

1. Pickle rinse waste water shall be treated to neutralize acidity and reduce the concentration of heavy metals and fluorides. The treated effluent shall be discharged to Little Valley Creek until such time that connection can be made to the proposed East Whiteland Township sanitary system.
2. We feel the existing cooling water effluents are acceptable for discharge to Little Valley Creek without any treatment. Fluoride concentration in the cooling water which results in a stream concentration above the 1.0 mg/l criteria should gradually diminish once the pickle rinse discharge to the underground is eliminated.
3. Sanitary wastes shall be discharged to the proposed East Whiteland Township sanitary system as soon as the system is available.

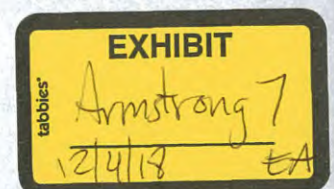
Should you have any questions concerning this report or require additional information, do not hesitate to contact me.

Very truly yours,

Jonathan J. Escott
Industrial Waste Engineer

JJE:mlm

cc: P.P. Gyrsting, President
C. W. Janus, Plant Engineer



RECEIVED

APR 30 1973

ENVIRONMENTAL RESOURCES
WATER QUALITY MANAGEMENT
NORRISTOWN REGIONAL OFFICE

ENGINEERING REPORT
BISHOP TUBE COMPANY
FRAZER, PENNSYLVANIA
April 9, 1973

Reviewed by *(Rke)*
6/27/73

077379-000
JJE

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INTRODUCTION

Bishop Tube Company, located in East Whiteland Township, Chester County, Pennsylvania, fabricates specialty items in the stainless steel tubing field. The plant is classified as a redraw mill. Stainless steel pipe is reduced to specific diameters and wall thickness by successive redraws and heat treatment.

Water for normal sanitary use is purchased from Philadelphia Suburban Water Company. Bishop Tube maintains a water storage reservoir on its property to supply plant process and cooling water requirements and the plant fire protection system. Water level in the reservoir is automatically maintained by makeup from two wells located on the company's property, supplemented by Philadelphia Suburban Water when necessary. *Cross-connection?*

There are five main *? (minor ones)* industrial waste water sources exiting the plant:

1. Furnace and degreaser cooling water. —
2. A - furnace cooling water. —
3. Compressor and aftercooler cooling water. —
4. Pickle rinse water and floor drains. ← IW
5. Boiler blowdown. ←

Plant sanitary wastes are directed to an aeration tower pit where the sewage is continuously pumped over the tower. Sludge which settles in the pit bottom is pumped out by a waste acceptance firm as required (approximately every six months to a year). The liquid effluent flows by gravity to a holding tank and is then pumped to an underground cesspool for disposal. For location of sanitary waste and industrial waste discharges see Plot Plan D-9-28. *O.K. with CCH D*

The first three industrial waste sources listed above result in two distinct

discharge points to Little Valley Creek. One discharge is furnace and degreaser cooling water which is directed from the building to the creek via a 12" asphalt-coated corrugated metal pipe.

one thru uncontaminated

A-furnace cooling water and compressor and aftercooler cooling water are both discharged from the north side of the plant and combine in a drainage ditch along the Penn Central Railroad tracks to constitute the second discharge point to the creek.

two discharges

Overflow from the pickle acid-rinse water tanks and pickle area floor drains discharge to a holding tank where they are mixed with the sanitary effluent from the aeration tower. From the holding tank this mixed waste is then pumped to the underground cesspool for disposal.

Bad scene

Intermittent boiler blowdown discharges are directed to a small pit under the driveway. This blowdown water overflows on the driveway and/or evaporates.

Bad scene

The Norristown Office of the Pennsylvania Department of Environmental Resources (DER) made several site investigations of the Bishop facilities in 1972. It was determined that Bishop Tube Company was discharging industrial waste waters without DER permits. As a result, Mr. Pfaehler of the Norristown office urged in his letter dated September 11, 1972, that Bishop Tube take steps necessary to secure permits for all industrial discharges. This letter additionally stated that DER analyses made on samples of the pickle acid-rinse waters indicated that "these discharges are not suitable for subsurface disposal and will have to be removed from the sanitary system." A copy of Mr. Pfaehler's letter is included in the Appendix.

In January 1973, Bishop Tube retained Gilbert Associates, Inc. (GAI) to set up a waste water sampling program at the plant site and prepare a preliminary

report for submission as requested by the DER.

SITE INVESTIGATION

A waste water survey and sampling program was set up to determine the sources, quantity and quality of existing industrial discharges. Samples of the following waste streams were taken hourly over an eight-hour normal operating period and were individually mixed to comprise eight-hour composites listed below:

1. Furnace and degreaser cooling water
2. A-furnace cooling water
3. Compressor and after cooler cooling water
4. Pickle rinse water and floor drains

Boiler B/D - ? Characteristics
Temperatures and flow data were also determined.

In addition, grab samples were taken of the reservoir water and of Little Valley Creek both above and below the plant discharges to serve as background data.

Boiler blowdown from the two low pressure boilers is intermittent, conducted once or twice per day for a period of 15 - 45 seconds depending on dissolved solids concentration. Boiler water samples are analyzed twice a month for Bishop Tube by GAI.

Bishop Tube uses a variety of oils, lubricants, drawing compounds and solvents typical of redraw mill and machine shop operations. These materials are generally stored outside the building in 55 - gallon drums. Most of these materials, about 50 to 60 drums, are kept in a general storage area (see Plot Plan D-9-28); however, some drums are located around the building conveniently located near process operations.

PDP

Bishop also has underground No. 2 and No. 6 fuel oil storage tanks to service the plant boilers. Fuel oil is supplied by local tank trucks.

RESULTS

Results of laboratory analyses conducted on the above samples appear in Table I.

Furnace and degreaser cooling water is used for heat exchange only and in no way contacts any process stream. This water is discharged from the plant directly to the Little Valley Creek via a 12" asphalt-coated corrugated metal pipe.

Indirect Contact

A-furnace cooling water is used for heat exchange only; however, as the hot tubes leave the furnace, the cooling water directly contacts the tubes. It is possible for a slight amount of scale to discharge with this cooling water. Visual inspection of this cooling water effluent revealed some small black suspended particles (most likely scale); however, laboratory analyses showed that no amounts of either suspended solids or metallic ions in excess of probable DER standards are carried by this cooling water stream.

Direct Contact

Compressor and aftercooler cooling water is used for heat exchange only and is not contaminated. Both A-furnace cooling water and compressor cooling water combine in a natural drainage ditch which discharges to Little Valley Creek.

Indirect Contact

The waste stream comprised of overflow from the pickle acid-rinse tanks and drips from the pickle acid tanks exits the plant via the floor drains. This stream is directed to a holding tank where it and the effluent from the sanitary waste aeration tower are mixed and then pumped to an underground cesspool. Analyses of the pickle area waste water appear in Table I. This waste is acidic, pH of 2.0, and high in nitrates and fluorides, reflecting the background of the nitric-hydrofluoric acid pickle liquor. As expected, concentrations of heavy

metals are present - iron 89.9 ppm, nickel 12.5 ppm, and total chromium 17.2 ppm.
Note, however, that the hexavalent chromium concentration at 0.033 ppm is below expected DER limitations.

Reservoir water is supplied by two on-site wells supplemented with Philadelphia Suburban water as necessary to maintain liquid level. Analyses of the reservoir water show concentrations of 3.4 ppm fluoride and 25.0 ppm nitrates indicating that seepage from the cesspool used to dispose pickle rinse wastes has slightly contaminated the ground water. The pH of the reservoir water is within acceptable range and the concentration of iron at 0.04 ppm is considered insignificant.

How is ground water

Comparison of analyses made on samples of Little Valley Creek both above and below the plant discharges show an increase in concentrations of fluorides and nitrates in the stream. It is suspected that this results indirectly from the pickle acid-rinse waters discharged to the cesspool, since the process cooling water discharging directly to the creek is supplied by underground well water.

CONCLUSIONS AND RECOMMENDATIONS

All three existing cooling water discharges should be acceptable for discharge to the creek without any treatment. The DER indicated in their letter dated September 27, 1972 (copy in Appendix), that the allowable concentration of fluoride in the stream is 1.0 mg/l. *@Critical Flow* Although the present fluoride concentration of 3.4 mg/l in the raw cooling water results in a fluoride concentration of 2.7 mg/l in the stream, we feel that once the pickle acid-rinse water discharge to the underground has been eliminated, the fluoride concentration in the raw (well) water will gradually decrease to a point where fluoride level in the creek will be acceptable.

dilution factor

We recommend that Bishop Tube seek required discharge permits from the DER for two discharge points; namely, furnace and degreaser cooling water discharging to the creek via the 12" corrugated metal pipe, and combined A-furnace, compressor, and after cooler cooling water discharging to the creek via the drainage ditch.

No (two points)

Suggest pump back to Reservoir - recycle

The pickle area rinse water and floor drain discharge directly to the underground cesspool must be eliminated. *Agreed* This waste water shall be neutralized by addition of lime or caustic and the heavy metals, iron, nickel, and tri-chrome, precipitated as a sludge and removed prior to discharge. *U.H. next to who?*

Neutralization by lime also offers the advantage that the fluoride concentration can be reduced by precipitation of calcium fluoride. However, no reduction of nitrate concentration through precipitation is afforded by addition of either lime or caustic due to the general overall solubility of nitrates. The treated waste water to be discharged after the neutralization and precipitation processes will have a higher concentration of total dissolved solids in addition to a fairly high concentration of nitrates.

What conc. of fluoride, nitrates, heavy metals, flow?

Discharge of a large quantity of waste water containing high total dissolved solids and nitrates will most likely overload Little Valley Creek. Therefore, the quantity of waste water must be minimized by better "housekeeping" methods and water conservation by Bishop Tube. The following recommendations will aid in achieving a reduced waste load:

In plant control

1. Avoid excess drips of pickle acid on floor and to rinse tanks by allowing tubes to drip dry longer over respective pickle tanks and by catching and directing drips between tanks back to the pickle tanks.

- Good
2. Use a single rinse tank with no running water or overflow for the first rinse. Use this first (most concentrated) rinse for make-up water to pickle tanks during the week (make-up for drip losses) and for the following week acid make-up dilution water.
 3. Install rotameter on raw water line to existing three tank counter-current rinse system. Cut back on rinse water flow rate to determine minimum acceptable flow to maintain adequate rinsing of tubes. *Use from reservoir*
 4. Overflow from counter-current rinse system shall be neutralized, heavy metals and fluorides precipitated, and waste water clarified before being discharged. See Figure 3 for waste treatment schematic. *Sand Filtration*
 5. Spent acid shall be pumped out weekly (as present) by Gray Brothers, a waste acceptance firm. *Where to?*

Should the DER feel that the treated discharge (item 4 above), although small in volume, but high in nitrates and total dissolved solids, will pose a load on Little Valley Creek, Bishop Tube shall advise that they intend to discharge the subject waste water to the proposed East Whiteland Township sanitary system as soon as this system is completed. In this way the high solids will be afforded dilution with other waste flows. A study must be conducted to determine the feasibility of water re-use and conservation as outlined in items 1-5 above.

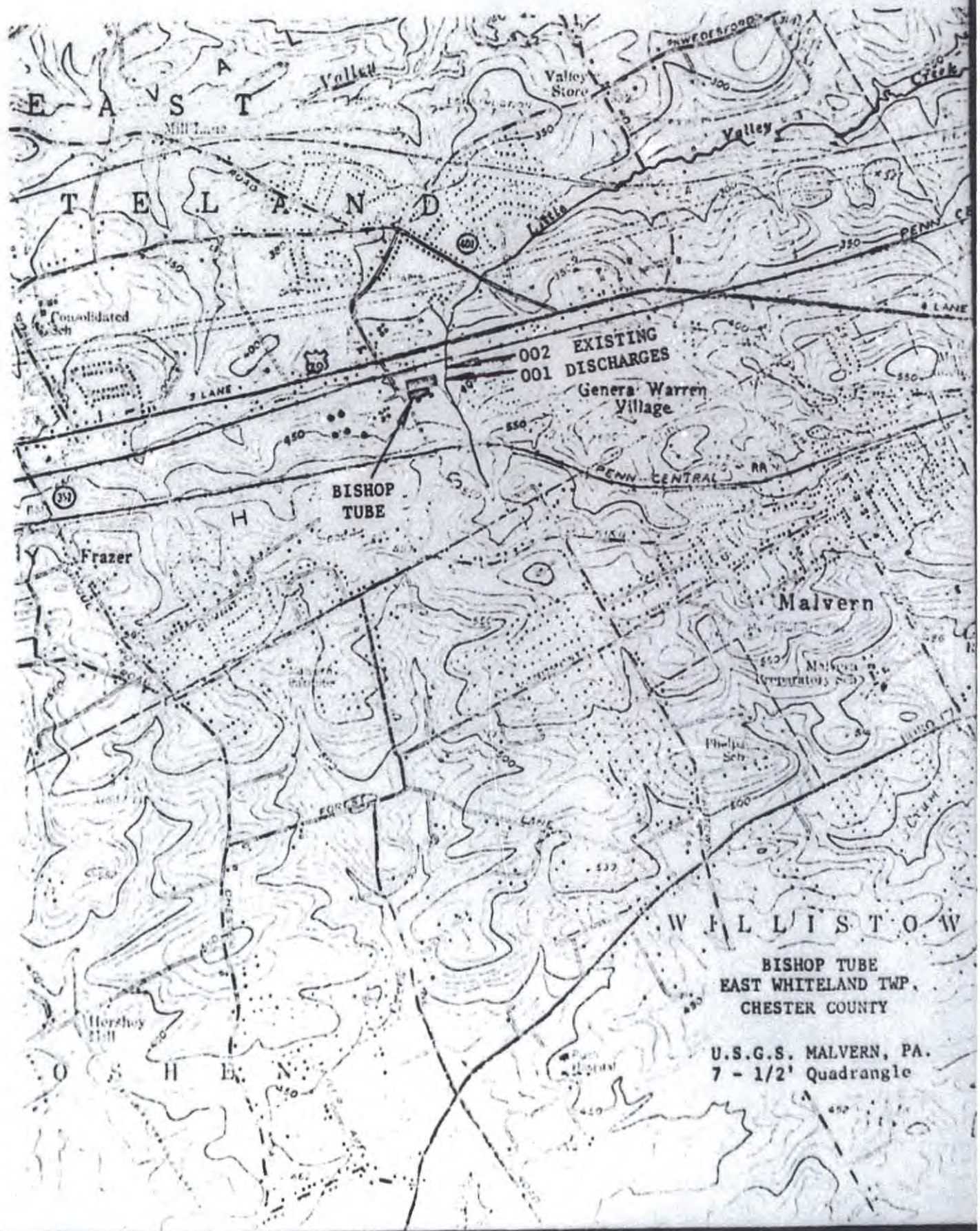
Periodic boiler blowdowns shall be mixed with pickle rinse water for equalization prior to neutralization. O.K

Sanitary wastes shall be hooked into proposed East Whiteland Township sanitary system as soon as system is completed. Until then, efforts to rehabilitate hypochlorinator system or other satisfactory disinfection system shall be made.

Yes.

APPENDIX

Figure 1 - Location Plan



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

APERTURE



CARD

REFER TO:

15.925 1 W Bishop Tube Co. C

1 map

COMMONWEALTH of PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES
NORRISTOWN ADDRESS: 1875 New Hope Street
Norristown, Pennsylvania 19401

September 11, 1972

CERTIFIED MAIL

Re: Industrial Waste
Bishop Tube Company
East Whiteland Township
Chester County

Mr. Alfred K. Alexy, Purchasing Agent
Bishop Tube Company
Route 30 and Malin Road
Frazer, Penna. 19355

Dear Mr. Alexy:

I am in receipt of your August 31, 1972 letter and the accompanying Project Status Schedule Cards dated September 1, 1972.

Please be advised that your reply and accompanying cards are inadequate. The agreement made at a meeting with representatives of Bishop Tube on August 9, 1972 and confirmed in a letter of August 11, 1972 indicated under "B" that, "A copy of chemical analyses performed on those acid-rinse water wastes discharged to the company sanitary cess-pools," shall be submitted to this office by August 18, 1972. None have been submitted, though you indicated that "preliminary indications" pointed toward their refusal to the sanitary system.

Additionally, an inspection conducted on August 18, 1972 revealed from sample analyses of the acid-rinse waste waters that these discharges are not suitable for subsurface disposal and will have to be removed from the sanitary system. These wastes must be included in your permit-application for industrial waste discharge.

The schedule cards that were submitted indicated only a date for a feasibility report, other dates were listed as "not applicable."

Page 2

Mr. Alfred K. Alexy, Purchasing Agent
September 11, 1972

Industrial Waste

This is not true. These cards are incomplete and shall be considered void. Enclosed you'll find four (4) more copies of the schedule cards, complete and return to this office three (3) copies within seven (7) days of receipt of this letter.

When completing these schedule cards, the following guidelines should be used to allow for Departmental review:

Preliminary Report - one (1) month

Final Plans and Application - three (3) months.

Industrial wastewaters require a permit under the Clean Streams Law. This permit must normally be obtained prior to construction of any necessary treatment facilities and/or commencement of the discharge; however, since the discharge of cooling waters and acid-rinse wastes already existing, steps should be promptly taken to obtain a permit.

Therefore, we suggest that you retain a qualified professional engineer, registered in Pennsylvania, to make a study of the overall industrial wastewater problem at your East Whiteland plant.

We recommend that a preliminary report be prepared for submission to this office regarding any and all discharges from your Company's plant (i.e. sewage, cooling water, boiler blowdown, any other liquid discharges) and indicating the treatment to be provided. We will evaluate the preliminary information to determine if the proposed discharge quality and any necessary treatment is generally satisfactory. This preliminary report can prove beneficial to all parties in that it may save many hours that might be spent on revising the actual permit-application.

Our Department's requirements regarding the effluent quality are not the same in all respects for each and every discharge. A discharge must, at a minimum, meet the following limitations and in some instances may be more stringent.

1. pH: not less than 6, nor greater than 9
2. Iron: Dissolved - not greater than 7 mg/l
Total - not greater than 10 mg/l

Also stream < 8.5

Also stream < 1.5 T.I.

Page 3
Mr. Alfred K. Alexy, Purchasing Agent
September 11, 1972

Industrial Waste

3. Oil: not greater than 10 mg/l + no visible

Other criteria such as B.O.D. removal, suspended solids, heavy metals, toxic substances, etc. are normally determined on an individual basis depending on the circumstances.

A copy of our Department's Industrial Waste Manual, which is a guide for the preparation of an application can be obtained by contacting:

Division of Management Services
Pennsylvania Department of Environmental Resources
P. O. Box 2351
Harrisburg, Pa. 17105
(717) 787-3220

A permit-application consists of the following documents:

1. Two (2) application forms properly completed, signed, and notarized.
2. Two (2) volumes of modular report forms properly completed.
3. Two (2) sets of necessary plans and specifications.
4. \$25.00 filing fee check made out to the Pennsylvania Department of Environmental Resources.
5. Proof of Public Notice: The Clean Streams Law requires that public notice for every industrial waste application be published in a newspaper of general circulation in the county where the treatment facilities and/or discharge are located, one a week for four weeks. (See Industrial Waste Manual)
6. Two (2) copies of a Pollution Incident Prevention Report (See Industrial Waste Manual)

Please be advised that if the discharge from a treatment facility is greater than 50,000 gpd or the treatment of toxic material is involved, a third set of the data is required. This third set will, in turn, be forwarded by our Department to the Delaware River Basin

Page 4
Mr. Alfred K. Alexy
September 11, 1972

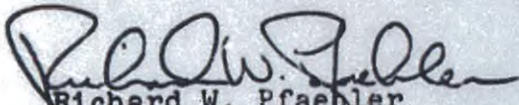
Industrial Waste

Commission for its review.

We are enclosing application and modular report forms for your use in preparation of a permit-application.

I hasten to add, that should Bishop Tube Company not take prompt and satisfactory action towards compliance with Department requirements, we shall not hesitate in referring this case to our legal counsel.

Very truly yours,



Richard W. Pfaenler
Environmental Protection Specialist
Compliance
Norristown Office

RWP/m

c.c. Chester County Health Department
Division of Industrial Waste

Encl.

BISHOP TUBE COMPANY	MADE	GILBERT ASSOCIATES, INC.			
	CHK'D	ENGINEERS AND CONSULTANTS			
	BY CP	READING, PENNA.			
	GP. DPH.	077379			
	END. JTB	WORK ORDER	DATE	DRAWING	REV.
REV. CH. APP. DATE					

TABLE I - LABORATORY ANALYSES

PARAMETER	UNITS	RESERVOIR WATER	FURNACE & DEGREASER COOLING WATER	A-FURNACE COOLING	COMPRESSOR COOLING	PICKLE AREA WASTEWATER	LITTLE VALLEY CREEK ABOVE DISCH.	LITTLE VALLEY CREEK BELOW DISCH.
pH Value		6.9	7.7	7.3	7.4	high 2.1	7.5	7.3
Fluoride	ppm F	high 3.4	high 3.6	high 3.5	high 3.3	11 400 → 20	40.1	high 2.7
Nitrate Nitrogen	ppm N	ok 5.6	ok 5.6	5.6	5.6	11 198	1.35	4.63
Total Iron	ppm Fe	0.04	0.06	0.26	0.03	11 89.8	0.12	0.04
Dissolved Iron	ppm Fe			0.08		11 73.6	0.03	0.02
Nickel	ppm Ni			0.2		11 13.5		
Total Chromium	ppm Cr			40.1 (all in stream)		11 17.2		
Hexavalent Chromium	ppm Cr			ok 0.023		11 0.033		
Dissolved Solids	ppm	253	289	268	284	ok 643	98	175
Suspended Solids	ppm	2	9	11	2	ok 22	7.5	11.5
Calcium	ppm Ca	47.2				40.0		
Magnesium	ppm Mg	10.7				10.3		
Sodium	ppm Na	25.7				--		
Sulfates	ppm SO ₄	25.7				22.3		
Chlorides	ppm Cl	31.0				30.0		
Conductivity	Mmho	435				5200		
M.O. Alkalinity	ppm CaCO ₃	127				--		
Free Mineral Acidity	ppm CaCO ₃	--				high 150		
Total Hardness	ppm CaCO ₃	162				142		
Silica - Soluble	ppm SiO ₂	13.2				37.9		
Manganese - Total	ppm Mn	0.26 (<0.05)				high 3.2		
Color		2				high 20		
Turbidity		0				high 10		
Estimated Flow	gpm		30.8	25.2	6.1	7-10		
Temperature	°F		64-70	60-84	60-62		43	48

73,000 gpd
36,200 gpd
82,000 gpd
11,800 gpd cooling water
10-14,000 gpd wastewater
? boiler blow probably small

Temperature data on stream (from letters)

NOTE: 1. Less than (<0.X) indicates that due to present laboratory techniques the lower limit of detection of a certain parameter is 0.X; therefore, the parameter's actual value is somewhere between zero and 0.X.

2. All samples collected February 20, 1973.

Let go into sewers -
BUT
Ground Water Pollution
(Treat by Batch immediately + monitor)

Test Work to determine treatment effectiveness

COMMONWEALTH of PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES

NORRISTOWN ADDRESS: 1875 New Hope Street
Norristown, Pennsylvania 19401

September 27, 1972

CERTIFIED MAIL

Re: Industrial Waste
Bishop Tube Company
East Whiteland Township
Chester County

Mr. Alfred K. Alexy
Purchasing Agent
Bishop Tube Company
Route 30 & Malin Rd.,
Frazer, Pa. 19355

Dear Mr. Alexy:

This is to confirm our phone discussion of September 22, 1972, regarding your industrial waste discharges to surface and sub-surface waters of the Commonwealth.

I am in receipt of your letter dated September 15, 1972 with accompanying waste water analyses. A review of these analyses and of the analyses collected during an inspection of August 18, 1972 indicates that additional treatment must be provided before a permit from this Department can be issued for the discharge of these industrial waste materials.

It must be understood that each waste stream must be considered on its individual merits and not evaluated on its combination and subsequent dilution with other waste water streams. It is understood you are presently discharging your acid rinse wastes to your sanitary subsurface septic tank facilities and the cooling water waste is being discharged to Little Valley Creek. The criteria for discharge to ground water, as is the case with your acid rinse waste,

Industrial Waste

is established under U. S. Public Health Service Drinking Water Standards/ A number of constituents relevant to your waste water are listed below:

1. Fluoride - 1.3 mg/l ← high (1.0 mg/l)
2. Lead - 0.05 mg/l
3. Iron - 0.3 mg/l

Drinking water standards

(Some constituents relevant to your discharge and their related limitations for discharge to surface waters are as follows:

1. Iron (1.5) mg/l in the stream O.K. we 16
2. Fluoride (1.0) mg/l in the stream O.K. 15.5
3. Oil - none visible OK = ← 10 mil
4. Lead 0.1 mg/l in the discharge → and 0.05 in stream we < .2
5. Mercury 0.01 mg/l in the discharge → and 0.005 in stream

As indicated above, neither the acid rinse water nor cooling water wastes meet the criteria. The discharge of these industrial waste materials to waters of the Commonwealth constitute a violation of the Clean Streams Law. Accordingly, Bishop Tube Company must immediately stop these unapproved discharges and notify this office within five (5) days from receipt of this letter as to the means by which compliance will be accomplished.

Very truly yours,

Richard W. Pfaehler

Richard W. Pfaehler
Environmental Protection Specialist
Compliance - Norristown Office

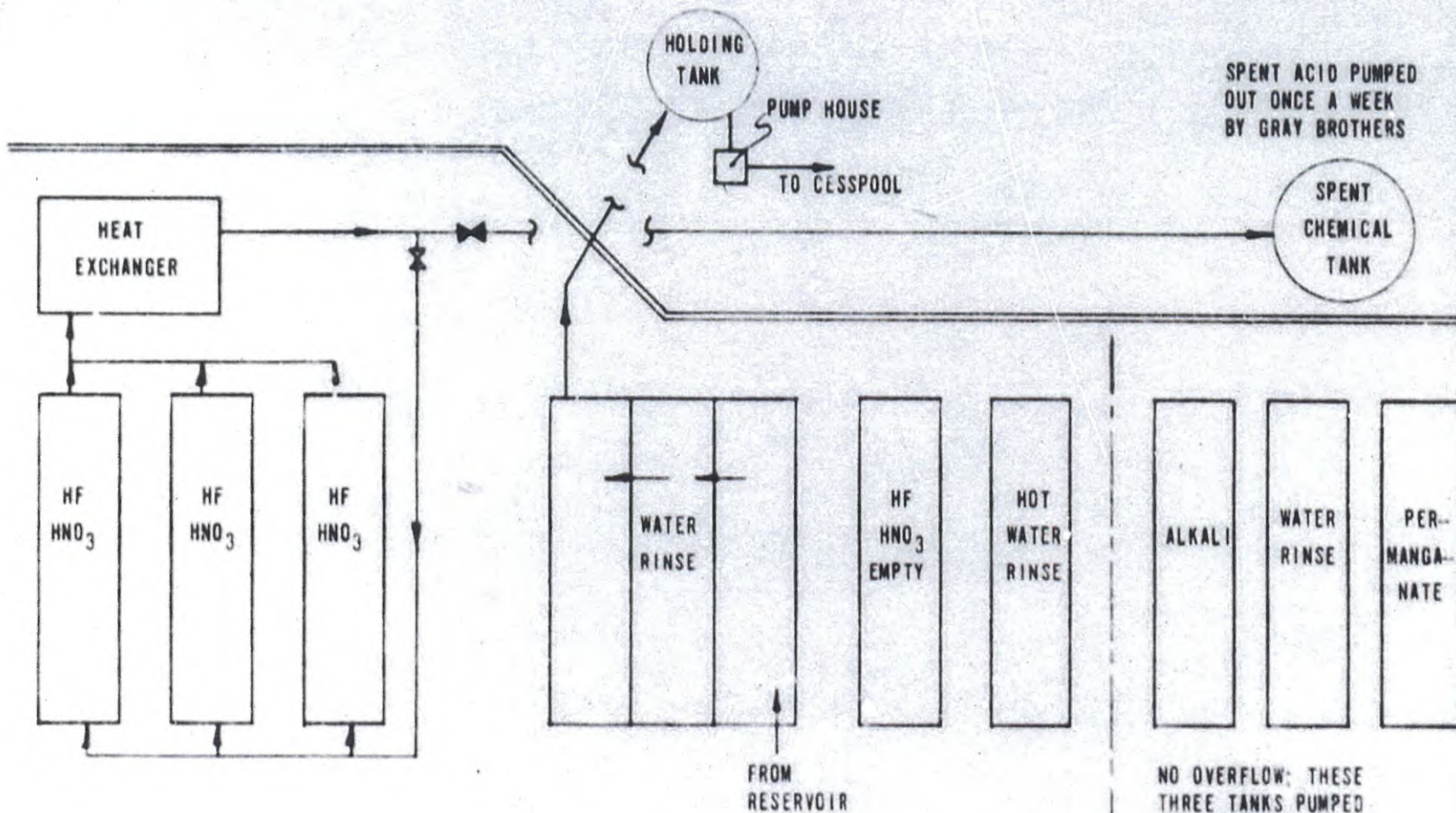
RWP/m

c.c. Division of Industrial Wastes

*Rinse water goes in
septic system*

*Iron can be precipitated
(if soluble now) into
a sludge, etc., then
then in a worst
discharge*

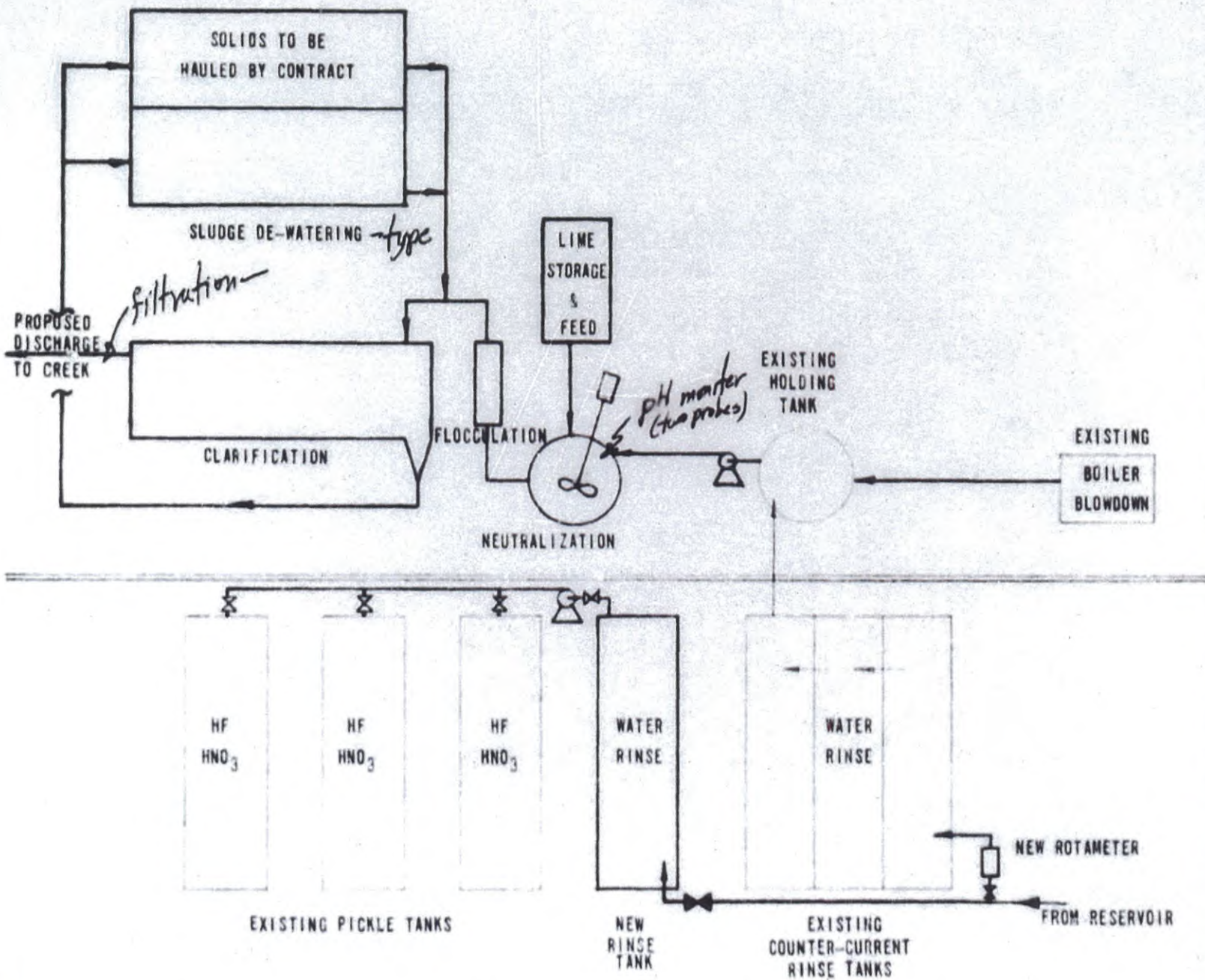
For a treatment



NO OVERFLOW; THESE THREE TANKS PUMPED OUT TWICE A YEAR BY GRAY BROTHERS

		BISHOP TUBE COMPANY	
FIGURE 2		EXISTING SCHEMATIC	
STEEL TUBE PICKLING AREA			
MADE	CHG. D.	GILBERT ASSOCIATES, INC.	
ENG.	CF. DPN.	ENGINEERS AND CONSULTANTS	
REV. CM. APP. DATE	7379	READING, PENNA.	
WORK ORDER	SIZE	DRAWING	REV.

5/50/73



		BISHOP TUBE COMPANY	
PROPOSED SCHEMATIC		FIGURE 3	
RINSE WATER TREATMENT SYSTEM			
MADE	C.H.O.	GILBERT ASSOCIATES, INC.	
S.D.	S.D.	ENGINEERS AND CONSULTANTS	
C.P.	C.P.	READING, PENNA.	
REV. CH. APP. DATE	7379	WORK ORDER	SIZE
		DRAWING	REV.

BISHOP TUBE

6/28/73
(RP)

Insp. 1/23/73

Stream upstream	Mixture of Sewage + LW	Ground Water Resv. Water	Cooling Water Storm Drain	Two (2) Cooling Water Discharges	Stream below property
685369 Sample.	685368	685389	685370	685372	685388
6.0 pH	2.4	7.2	7.2	7.8	8.0
1.96 Fe. (Total)	67	0.05	0.09	0.07	0.2
4.6 F	340	22 4.0	4.9	3.9	3.6
100 T. Solids	775	115 245	235	265	155
0.02 Copper	0.12	0.02	0.02	0.02	0.01
0.38 Total Cr.	16	0.03	0.05	0.04	0.02
0.30 Nickel	10.5	0.22	0.27	0.13	0.19
0.04 Zinc	0.1	0.05	0.04	0.04	0.06
40.2 Lead	0.28	<0.2	<0.2	<0.2	<0.2
0 Cadmium	0	0	0	0	0
6.0 Field pH	2.3			7.7	7.0

SENDER: Be sure to follow instructions on other side

PLEASE FURNISH SERVICE(S) INDICATED BY CHECKED BLOCK(S)
(Additional charges required for these services)

Show to whom, date and address where delivered

Delivery ONLY to addressee

RECEIPT

Received the numbered article described below

ARTICLE NO.

NAME OF CONTRIBUTOR OR NAME OF POSTOFFICE (Name always to filled in)

ARTICLE NO.

530714

NAME OF ADDRESSEE'S UNIT, IF ANY

ARTICLE NO.

DATE DELIVERED

2-7-73

HOW THIS RECEIPT TO BE USED (Only if required, and include ZIP CODE)

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

No. 530714

SENDER'S NAME AND NO.	Charles Janus	POSTMARK OR DATE
STREET AND NO.	Rt 30 + Main Road	
P.O. STATE AND ZIP CODE	Frageo Pa	
OPTIONAL SERVICES FOR ADDITIONAL FEES		
RETURN RECEIPT SERVICES	Shows to whom and date delivered	15c
	With delivery to addressee only	65c
	2 Shows to whom, date and where delivered	35c
	With delivery to addressee only	85c
	DELIVER TO ADDRESSEE ONLY	50c
SPECIAL DELIVERY (extra fee required)		

PS Form 3800 Nov. 1971 NO INSURANCE COVERAGE PROVIDED— See other side. NOT FOR INTERNATIONAL MAIL

Insp. 4/4/73

	Upstream Sample	Cooling Water Storm Sewer	Sewer 1W	East Well	West Well
#	688542	688539	688540	688541	688543
pH	7.5	7.2	2.8	7.3	6.7
Total Iron	0.18	(2.6) ^{0.3}	(2.9)	0.56	0.12
Fluoride	(3.7)	(2.5) ^{0.2}	(130)	(4.2)	(7.5)
Copper	0	(0.04) ^{0.02}	(0.03)	0.01	0
Chromium	0	(0.09) ^{0.05}	(5.7)	0.05	0.01
Nickel	0	(0.14) ^{0.10}	(4.3)	0.06	(0.46)
Zinc	0.08 (0.05)	(0.3) ^{0.02}	(0.13)	(0.16)	(0.07)
Lead	<0.05	(0.06) ^{0.05} <0.05	(0.07)	(0.07)	<0.05
Cl.	0	0	0.01	0.01	0

Ground
Water

Insp	12/5/12 Cooling Water Ditch @ Reservoir	Sump Pit (S.W. + W.)	Cooling Water Ditch @ Reservoir	Raw Water Reservoir
Sample	683528	683529	683530	683531
pH	8.0	7.7	7.1	7.1
Iron	0.28	118	1.84	0.07
SO ₄	25	25	15	15
F	5.0	340	11.5	5.4
NO ₃ -N	5.4	130	10.0	5.60
Ag	—	0.01	0	0
Copper	0.06	0.17	0.04	0.02
Chromium	0.12	22.6	0.39	0.07
Nickel	0.26	13.0	0.42	0.20
Zinc	0.12	0.13	0.01	0
Lead	0.48	0.30	0.24	0.3
Cl.	0.04	0.02	0.01	0
Field pH	7.1	2.5	7.7	6.65
Field Temp	20°C	18.0°C	15°C	16°C