OTHER REQUIREMENTS (Continued)

g. Source Reduction

Minimization of discharges of solids and floating materials by (1) regular cleaning of streets and catch basins, (2) installation of screens on CSOs, particularly those discharging to estuary waters, (3) reduction of infiltration/inflow where feasible.

h. Pretreatment Program

Review impact of Industrial Users toxics, BOD, and total suspended solids load to CSO overflows; review and modify pretreatment programs to assure CSO impacts are minimized.

i. Minimization of CSOs near sensitive areas

Examine elimination or minimization of CSO discharges near drinking water intakes, recreation areas, or unique ecological habitats.

2. WATER QUALITY IMPACTS - PLAN OF ACTION

A water quality impact plan of action for CSOs shall be based upon the results of the Delaware River Basin Commission (DRBC) CSO Comprehensive Study of the Delaware Estuary, currently underway. The permittee shall provide any monitoring data or other information requested by DRBC for the study.

The permittee shall submit a plan of action which sets forth an implementation plan and schedule to address the conclusions and recommendations of the DRBC study within 12 months after DRBC study completion.

If the DRBC study is not completed in a timely manner, the permittee will be required to conduct a CSO water quality impact study. Additional guidance and schedule will be provided by the Department.

3. REPORTING REQUIREMENTS

The permittee shall submit semi-annual (January 1, July 1) status reports to the Department and EPA, Region III (3WM53) on the development of the Minimum Technology-based control measures plan of action, implementation of the Minimum Technology-based control measures Plan, and development of the water quality plan.

The approved CSO discharge points are identified above. Each priority CSO overflow point, as identified by an asterisk on the CSOs listed above, shall be monitored for cause, frequency, duration and quantity of flow. All monitoring data shall be recorded and submitted monthly in the format specified by the Department (attached) and shall be summarized annually with the facility's Chapter 94 Wasteload Management Report.

OTHER REQUIREMENTS (Continued)

Annual CSO Status Report

The annual CSO status report shall be submitted with the Chapter 94 - "Municipal Wasteload Management Report". The report shall provide a summary of the frequency, duration, and volume of the CSOS for the past calendar year, operational status of major overflow points and identification of known/potential instream water quality impacts and their causes. The annual report shall also summarize all actions taken and their effectiveness in implementing the approved Plans of action, and shall evaluate and provide necessary revisions to the plans approved by the Department.

N. The permittee shall operate the sewage treatment plant to provide treatment for the maximum design wastewater flows of 315 mgd (maximum daily average) and 420 mgd (peak) without causing treatment plant upsets. Throttling of influent flows to the plant resulting in avoidable, premature sewer system overflows is prohibited.

O. An average monthly flow in excess of 210 mgd shall not be considered to be a violation of this permit.

P. An application may be made to the Delaware River Basin Commission to establish alternate/equivalent $CBOD_5$ effluent mass and concentration limits to replace the BOD_5 effluent limits in this permit. Upon establishment of such limits by the Commission, the BOD_5 limits shall cease to be in effect and the $CBOD_5$ limits established by the Commission shall become effective.

Q. Biomonitoring

I. General Requirements.

The permittee shall conduct acceptable toxicity tests in accordance with the appropriate test protocols described in Section V. Test Conditions and Methods. The permittee must collect discharge samples and perform the toxicity tests to generate chronic Ceriodaphnia dubia and fathead minnow (Pimephales promelas) test results (NOEC's) which will also enable a determination of the acute (LC50) value at the 48 hour interval. For purpose of reporting, all NOEC's shall be converted to TUc's by the following equation:

$$TUc = \frac{100}{NOEC}$$

In addition, all LC50 values shall be converted to TUa's by the following equation:

$$TUa = \frac{100}{LC50}$$

PART C

OTHER REQUIREMENTS (Continued)

Within sixty (60) days of the effective date of the NPDES permit, the permittee shall submit to the Department of Environmental Resources (DER) and the Environmental Protection Agency (EPA), Region III an acceptable plan of study for determining the chronic toxicity of wastewater discharged from outfall(s) 001 through the use of whole effluent toxicity testing (biomonitoring). If DER and EPA comment on the plan, the permittee shall make any modifications requested. If the Department and EPA do not comment on the plan within thirty (30) days of submission, the permittee shall begin the whole effluent toxicity testing program as outlined in the study plan.

At a minimum the study plan should include a discussion of:

-- Wastewater and production variability.

-- Source of test organisms.

-- Source of dilution water.

-- Test conditions.

-- Sampling methods.

-- Quality assurance/quality control information (including reference toxicity results and any deviations from recommended procedures).

II. Test Frequency.

Static renewal chronic testing shall be conducted on a quarterly basis (four times per year) beginning within thirty (30) days of submission of the biomonitoring study plan, provided that the Department and EPA do not comment on the plan and request modifications within the thirty (30) day period.

Two species shall be tested, the cladoceran Ceriodaphnia dubia for survival and reproduction and the fathead minnow Pimephales promelas for survival and growth. The two species must be tested each quarter, for a total of eight tests. Additional test species may be included, based on effluent characteristics, or as methods are developed.

III. Sample Collection.

For each sampling event, three, twenty-four (24) hour discharge composite samples collected at a frequency of not greater than every two hours and flow proportioned shall be collected over a seven (7) day exposure period. The initial sample taken on day 0 is used to start the test on day 1. The additional two samples are collected on day 2 and 4 to be used on day 3 and 5, respectively. Renewal of test concentrations is conducted daily with the most recently collected discharge sample.

OTHER REQUIREMENTS (Continued)

For effluents that are chlorinated, tests shall be conducted on a final effluent sample that has been dechlorinated. Dechlorinated samples will consist of the final effluent composites treated with sodium thiosulfate (see Section 7.4 of Weber, C.I, etal (ed). 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms).

All samples held overnight shall be refrigerated at 4°C.

IV. Dilution Water.

The dilution water source must consist of either moderately hard synthetic water (using either Millipore Milli-QR or equivalent deionized water and reagent grade chemicals) or deionized water (80%) combined with Perrier or chemically equivalent mineral water (20%).

V. Test Conditions and Methods.

The test conditions and methods shall conform to those developed by EPA as specified in the documents cited below. If DER or EPA determine that the proper test conditions have not been followed or if the test acceptability criteria are not met, the permittee must perform a re-test within thirty (30) days.

Weber, C.I. et al. (ed.). 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms. Second Edition. Office of Research and Oevelopment, Cincinnati, OH. EPA/600/4-89-001.

Weber, C.I. (ed) 1991. Methods for Measuring the Acute Toxicity of Effluents and receiving water to Freshwater and Marine Organisms, Fourth Edition. Office of Research and Development, Cincinnati, OH. EPA/600/4-90/027.

U.S. Environmental Protection Agency. 1991. Technical Support Document for Water Quality-based Toxics Control. Office of Water, Washington, OC EPA/505/2-90-001.

A. Summary of effluent toxicity test conditions and test acceptability criteria for the Ceriodaphnia dubia survival and reproduction test (adapted from EPA/600/4-89/001).

1. Renewal of test solutions: daily using most recently collected sample

PART C

OTHER REQUIREMENTS (Continued)

2.	Effluent concentrations:	5 concentrations and a control. An additional control (0% effluent) treated with the same concentration of sodium thiosulfate as used to dechlorinate the effluent sample will be run. If the initial sample has no chlorine present, start the additional control with no sodium thiosulfate
3.	Dilution factor:	0.5
4.	Test duration:	Until 60% of control animals have three broods (7 days or less)
5.	Sampling requirements:	A minimum of three samples are collected to be used on days 1, 3, and 5 for renewal. Test samples must be first used within 36 hours of collection.
6.	Sample volume required:	Minimum of 1 liter per day.
7.	Test acceptability criterion:	80% or greater survival and an average of 15 or more young per surviving animal in the control solutions. At least 60% of the surviving animals in controls must have produced their third brood in seven days or less.

B. Summary of effluent toxicity test conditions and test acceptability criteria for the fathead minnow (Pimephales promelas) survival and reproduction test (adapted from EPA/600/4-89/001).

1.	Test chamber size:	250-1000 ml
2.	Test solution volume:	200 ml/replicate (minimum)
3.	Number of larvae per test chamber:	10
4.	Number of replicate test chambers per concentration:	4

OTHER REQUIREMENTS (Continued)

5. Number of larvae per test concentration: 40

6. Feeding regime: Feed 0.1 ml newly hatched brine shrimp nauplii (less than 24 hours old) twice daily at 6 hour intervals (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient nauplii are added to provide an excess. Larvae are not fed during the final 12 hours of the test.

7. Effluent concentrations, Dilution series, Sampling requirements, and Renewal of test solution: Same as Section V. Test Conditions and Methods Part A, summary of effluent toxicity test conditions and test acceptability criteria for the Ceriodaphnia dubia survival and reproduction test.

8. Sample volume required: Minimum of 2.5 liters per day.

VI. Chemical Analyses

Chemical analysis shall be performed for each sampling and testing events as described below.

A. The following chemical analysis shall be performed for each sampling event, including each new batch of dilution water:

Parameter	Effluent	Diluent	Detection Limit (mg/l)
Hardness	x	x	0.5
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Residual Chlorine	x		0.02

OTHER REQUIREMENTS (Continued)

B. The following chemical analyses shall be performed as part of each daily renewal procedure on each dilution and the controls.

Parameter	Effluent	Diluent
Dissolved oxygen	x	x
Temperature	x	x
pH	x	x
Specific Conductance	x	x

In addition to the chemical analysis required above, those parameters listed in Part A of the NPDES permit for the outfall(s) 001 tested will be analyzed on at least the initial (day 0) sample by using the method specified in the NPDES permit or, if not specified, by EPA and DER (Chapter 16, Water Quality Toxics Management Strategy) approved methods

VII. Toxicity Test Report Elements.

The following must be reported:

-- Description of sample collection procedures and of the sample location.

-- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis.

-- General test description: origin and age of test organisms, dates and results of reference toxicant tests; light and temperature regimes; other information on test conditions is listed in Section V. Test Conditions and Methods.

-- All chemical and physical data generated (include detection limits).

-- Copies of raw data sheets and/or bench sheets.

-- Dechlorination procedure(s).

-- Any other observations or test conditions affecting the test outcome.

OTHER REQUIREMENTS (Continued)

Toxicity test data that is required includes the following:

-- Comparison of performance of controls with test acceptability criteria.

-- Daily survival of test organisms in the controls and all replicates for each dilution. Survival data should be analyzed by Fisher's exact test prior to analysis of reproduction data.

-- NOEC: No Observed Effect Concentration.

-- LOEC: Lowest Observed Effect Concentration.

-- Chronic Value (ChV): Geometric mean of the NOEC and LOEC.

-- Acute endpoints shall be derived from data obtained 48 hours into the chromic test. Survival data for each concentration and replication at 24 hours and 48 hours shall be obtained. LC50 and 95% confidence limits shall be calculated using the following methods: binomial, moving average, moving average-angle, probit, trimmed Spearman-Karber, or the graphical method (EPA/600/4-85/013). All printouts or copies of hand calculations must be submitted. The probit, trimmed Spearman-Karber, and moving average-angle methods can only be used when at least two test concentrations exhibit some (but not all) test organism mortality (partial mortality). If a test results in a 100% survival in one test concentration, and 100% mortality in an adjacent concentration (an "all or nothing" effect), and LC50value can be estimated using the graphical method.

Chronic reference toxicant tests, on both species, shall be conducted monthly in laboratories that maintain their own culturing facilities, while laboratories that secure test organisms from outside suppliers shall conduct chronic reference toxicant test on each separate batch of test organisms. These tests shall be conducted similarly to the effluent toxicity test (same dilution water, test organisms and conditions, chemical analyses, etc.) and shall follow guidelines put forth in EPA/600/4-89/001. The reference toxicant shall be a commonly used toxicant approved by the EPA. Reports of reference toxicant tests shall include all information needed for the propert evaluation of the test, including (but not limited to) the following:

-- Water chemistry parameters of controls and test concentrations.

-- Chronic and if applicable, acute endpoint(s), with appropriate statistical analyses.

OTHER REQUIREMENTS (Continued)

-- Control charts (for point estimates, cumulative mean + two standards deviations; or NOEC's central tendency + one concentration interval).

VIII. Reporting

Signed copies of each toxicity test's data/reports shall be submitted to DER and EPA at the addresses listed below within thirty (30) days of test completion, so that each individual test result can be reviewed and evaluated for content and performance prior to the initiation of the succeeding quarterly test.

If after review of test data, EPA or the Department may instruct the city to make appropriate changes in the test procedures.

U.S. Environmental Protection Agency, Region III
PA/DC Permit Section, 3WM53
841 Chestnut Building
Philadelphia, PA 19107

PA Department of Environmental Resources
Bureau of Water Quality Management
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

R. This permit may be reopened to incorporate the requirements or recommendations resulting from the Estuary Toxics Management Study being conducted by the Delaware River Basin Commission.

OTHER REQUIREMENTS (Continued)

S. Chlorine Minimization Plan

The permittee shall implement a Chlorine Minimization Plan similar to the Southwest Chlorine Minimization Plan submitted to EPA 4/2/91, according to the following schedule:

Permit Issuance Date (PID)

Description of Activity	Due Date (actual dates to be entered at issuance)
Chemical and Toxicity Evaluation issuance)	PID + 12 months
Determination of minimal chlorine dose necessary to achieve fecal coliform level of <200MPN/100 ml.	
Evaluation of toxicity of sample using minimal chlorine dosage and the minimal dosage plus a margin of safety.	
Evaluation of toxicity of dechlorinated post chlorinated effluent.	
Chemical evaluation of chlorinated and dechlorinated effluent.	
Engineering evaluation of facility's ability to reduce effluent toxicity by maintaining minimum chlorine dose or dechlorination of effluent.	PID + 15 months
Evaluate whether an alternative disinfection system or modification of existing chlorination system should be used.	PID + 20 months
Selection of control option	PID + 26 months
Implementation of selected option	PID + 38 months

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
FIELD OPERATIONS - WATER QUALITY MANAGEMENT
Suite 6010, Lee Park
555 North Lane
Conshohocken, PA 19428
215 832-6130

JUL 22 1992

City of Philadelphia Water Department
Executive Offices, 5th Floor
ARA Tower
1101 Market Street
Philadelphia, PA 19107

Attention: Mr. Kumar Kishinchand
Commissioner

Re: NPDES Draft Permit PA 0026689
City of Philadelphia Water Department
City of Philadelphia
Philadelphia County

Gentlemen:

A copy of the referenced draft permit for the discharge(s) from your facility is enclosed. Also, enclosed are four copies of the public notice which will be published in the Pennsylvania Bulletin within the next three weeks. A public comment period of thirty days will follow publication.

The copies of the public notice should be posted near the entrance to your premises and in nearby places.

Your attention is directed to Speical Condition M of Page 14e of 14 as it applies to combined sewer overflow (CSO) discharges. A requirement of this condition is that certain priority overflows must be monitored on a monthly basis for cause, frequency, duration and quantity of flow. In order to implement this condition, we request your assistance in identifying appropriate CSOs for monitoring. Please suggest ten (10) overflow points that you feel represent the various land use activities of the areas that discharge to the combined sewer system. We request that the suggested overflows be submitted prior to the conclusion of the public comment period.

JUL. 2 2 1992

City of Philadelphia Water Department

- 2 -

The draft permit should be carefully reviewed. We would appreciate if any questions or comments on the draft permit would be submitted within 30 days to Denis Strittmatter of my staff.

Very truly yours,

JAMES NEWBOLD
Chief, Permits Section

ENCLOSURES

cc: BCM Engineers, Inc.
Re 30 (NPDW).1

Southeast Water Pollution Control Plant
Existing And Draft NPDES Permits

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
1875 New Hope Street
Norristown, PA 19401
215 270-1975

cc J.C.
Jim

September 22,1986

Southeast Water Pollution Plant
City of Philadelphia Water Department
Executive Offices, 5th Floor
One Reading Center
1101 Market Street
Philadelphia, PA 19107

Attention: William J. Marrazzo
Commissioner

Re: Sewage NPDES Permit PA 0026662
Southeast Water Pollution
Control Plant
City of Philadelphia
Water Department
Philadelphia County

Gentlemen:

Referenced permit is enclosed.

In accordance with Other Requirements Item G (p. 14) please note that work is to begin on a Toxics Reduction Plan by November 1, 1986. The first progress report is due on May 1, 1987. For your reference, we have enclosed a copy of the "Guidelines for Conducting a Toxics Reduction Evaluation" dated October, 1985.

It will be necessary for you to submit a completed Discharge Monitoring Report (DMR) on a monthly basis to the appropriate agencies (see p. 5 of the NPDES permit and Other Requirements p. 14).

The Environmental Protection Agency will be sending you computer generated, preprinted discharge monitoring report (DMR) forms for your submittals. In the event that these forms are not received, use the attached DMR forms. Should you find significant discrepancies between the two versions, contact this office and use the attached form until the preprinted forms are corrected. Do not allow a problem with the preprinted forms to cause your failure to submit these reports in a timely manner as this will result in violations of your permit.

Please study the permit carefully and direct any questions to the Permits Section of this office.

To become operative this permit must be recorded in the Office of the Recorder of Deeds in the county in which the discharge is located. Enclosed is a certificate and pre-addressed envelope for this purpose. Please have the Recorder of Deeds accomplish the certificate and return it within ten (10) days.

Very truly yours,

Joseph A. Feola

JOSEPH A. FEOLA
Regional Water Quality Manager

ENCLOSURES: Permit
Master Discharge Monitoring Report
Recorder of Deeds Certificate with envelope
Notary Public Certificate
Guidelines for Conducting a Toxics Reduction Evaluation (Revised October, 1985)
Analytical Methods and Sampling Collection, Preservation and Handling Techniques for the 126 Priority Pollutants (January, 1985)
Suggested Method for the Determination of Free Cyanide (Draft May, 1984)

cc: Mr. William Wankoff, Philadelphia Water Department(Transmittal Letter Only)
EPA
DREC
Permits & Compliance
Re 30 (2NPDW10)

ER-PWQ-15.2 (3/81)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE PERMIT NO. PA 0026662

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

Southeast Water Pollution Control Plant
City of Philadelphia Water Department

is hereby authorized to discharge from a facility located in

City of Philadelphia
Philadelphia County

to the receiving waters named

Delaware River (Zone 3) Point Sources 001 through 017 and 020 through 037

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

This permit and the authorization to discharge shall expire at midnight 9/22/91.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the standard or special conditions, and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with any of the terms or conditions of this permit is grounds for enforcement action; for permit termination, revocation and reissuance or modification; or for denial of a permit renewal application.

3. It is required by law that this permit, before becoming operative, shall be recorded in the Office of the Recorder of Deeds for the county wherein the outlet of said sewer system is located.

4. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date), using the appropriate NPDES Permit Application Form. In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal.

5. This permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

PERMIT ISSUED

DATE 9/22/86

BY Joseph A. Feola

TITLE

Joseph A. Feola

II. MONITORING AND REPORTING

A. Representative Sampling and Test Procedures

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Unless otherwise specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 CFR Part 136, or alternate test procedures approved pursuant to that part.

B. Self-Monitoring and Reporting Requirements

The permittee shall effectively monitor the operation and efficiency of all treatment and control facilities and the quantity and quality of the discharge. Monitoring data required by this permit shall be submitted monthly.

--A Discharge Monitoring Report (DMR) properly completed and signed by the treatment plant operator in responsible charge, must be submitted within 45 days after the end of each monthly report period. Notification of the designatic of the responsible operator must be submitted to the permitting agency by the permittee within 60 days after the effective date of the permit and from time to time thereafter as the operator is replaced. The DMR must be sent to the Department and the EPA Regional Office at the following addresses:

Department of Environmental Resources
Bureau of Water Quality Management
1875 New Hope Street
Norristown, Pennsylvania 19401

Pennsylvania Section (3WM52)
Permits, Water Branch
Water Division
U.S. Environmental Protection Age
Region III
841 Chestnut Building
Philadelphia, PA 19106

C. If the permittee monitors any pollutant, using analytical methods described in Part A.2.A(2) above, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

D. Non-Compliance Reporting

1. 24-Hour Reporting:

The permittee shall orally report to the Department within 24 hours of becoming aware of the following:

(a) Actual or anticipated non-compliance with any term or condition of this permit which may endanger health or the environment.

(b) Actual or anticipated non-compliance with any "maximum daily" discharge limitation which is identified in Part A1 of this permit as being either:

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 75°08'09", LONGITUDE 39°54'07"

A. During the period beginning at issuance and lasting through expiration, the Permittee is authorized to discharge.
B. The average monthly flow of effluent discharged from the wastewater treatment facility shall not exceed 112 million gallons per day. (a)
C. The quality of effluent shall be limited at all times as specified in Footnote (3) and as follows:

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)			CONCENTRATIONS (mg/l)						
	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.
FLOW (MGD)								Continuous	Measured	
BOD-5 (b)	19650	29475		30	45		60	Daily	24 Hour Comp.	
BOD-5 % REMOVAL	DRBC ZONE 3 REQUIREMENT OF 86%							Daily	24 Hour Comp.	
SUSPENDED SOLIDS	28025	42035		30	45		60	Daily	24 Hour Comp.	
FIRST STAGE OXYGEN DEMAND(c)	33600							2/Week	24 Hour Comp.	
FECAL COLIFORM (5-1 to 9-30)				See Footnote (2)				Daily	Grab	
FECAL COLIFORM (10-1 to 4-30)				Same Limits as in Footnote (2)				Daily	Grab	
pH	Within Limits of 6 to 9 Standard Units at all times (f)							Daily	Grab	
NH_3-N				Monitor Only				1/Week	24 Hour Comp.	
TKN				Monitor Only				1/Week	24 Hour Comp.	
NO_3-N				Montior Only				1/Week	24 Hour Comp.	
NO_2-N				Monitor Only				1/Week	24 Hour Comp.	

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 75°08'09", LONGITUDE 39°54'07"

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)			CONCENTRATIONS (mg/l)						
	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.1
BERYLLIUM, TOTAL (d) & (e)				MONITOR ONLY				2/Month	24 Hr. Comp.	
IRON, DISSOLVED (d)				MONITOR ONLY				2/Month	24 Hr. Comp.	
ALUMINUM, TOTAL (d)				MONITOR ONLY				2/Month	24 Hr. Comp.	
CYANIDE, FREE (d) & (e)				MONITOR ONLY				2/Month	24 Hr. Comp.	
PHENOLICS, TOTAL (4AAP) (d)				MONITOR ONLY				2/Month	24 Hr. Comp.	
TETRA- (d) CHLOROETHYLENE				MONITOR ONLY				1/Month	Grab	
PHENOL (d)				MONITOR ONLY				1/Month	24 Hour Comp.	
CHLORODIBROMO-METHANE+ (d)&(e)				MONITOR ONLY				1/Month	Grab	
METHYLENE CHLORIDE+(d)&(e)				MONITOR ONLY				1/Month	Grab	
DICHLOROBROMO-METHANE (d)&(e)				MONITOR ONLY				1/Month	Grab	

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 75°08'09", LONGITUDE 39°54'07"

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)			CONCENTRATIONS (mg/l)						
	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.1
PCB 1260 (d)&(e)					MONITOR ONLY			1/Month	24 Hour Comp.	
PHENANTHRENE (d)&(e)					MONITOR ONLY			1/Month	24 Hour Comp.	
CHLOROFORM (d)&(e)					MONITOR ONLY			1/Month	Grab	
CADMIUM, TOTAL (d)&(e)					MONITOR ONLY			2/Month	24 Hour Comp.	
LEAD, TOTAL (d)&(e)					MONITOR ONLY			2/Month	24 Hour Comp.	
MERCURY, TOTAL (d)					MONITOR ONLY			2/Month	24 Hour Comp.	
NICKEL, TOTAL (d)&(e)					MONITOR ONLY			2/Month	24 Hour Comp.	
SILVER, TOTAL (d)&(e)					MONITOR ONLY			2/Month	24 Hour Comp.	
ZINC, TOTAL (d)					MONITOR ONLY			2/Month	24 Hour Comp.	
BARIUM, TOTAL (d)					MONITOR ONLY			2/Month	24 Hour Comp.	
TIN, TOTAL (d)&(e)					MONITOR ONLY			2/Month	24 Hour Comp.	
TITANIUM, TOTAL (d)&(e)					MONITOR ONLY			2/Month	24 Hour Comp.	

FOOTNOTES:
(a) See Paragraph L, Other Requirements (page 14g of 14).
(b) See Paragraph M, Other Requirements (page 14h of 14).
(c) First Stage Oxygen Demand - (20 Day Biochemical Oxygen Demand Test with Nitrogenous Oxygen Demand Inhibited).
(d) See Other Condition G, Water Quality - Based Effluent and Other Requirements for Management of Toxic Pollutants, (page 14a of 14).
(e) See Other Condition H, For Specific Test Methods (page 14d of 14).
(f) See Paragraph N, Other Requirements (page 14h of 14).

1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001 at the pier effluent sampling building.

(Footnotes Continued)

2. Effective disinfection to control disease producing organisms during the swimming season (May 1 through September 30) shall be the production of an effluent which will contain a concentration not greater than 200/100 ml of fecal coliform organisms as a geometric average value, nor greater than 1,000/100 ml of these organisms in more than 10% of the samples tested.

3. In no case shall the arithmetic means of the effluent values of th BOD_5 and Suspended Solids discharged during a period of 30 consecut days exceed 14% and 15% respectively of the associated arithmetic m of the influent values for those parameters during the same time period, except as specifically authorized by the permitting author

D. Definitions

1. The term "bypass" means the discharge of partially treated or untreated sewage from any device or structure of sewerage facilities due to a power failure, equipment failure, hydraulic overload, and/or blockage in all or any part of the sewerage facilities. This is to distinguish it from an overflow which is the systematic discharge of a mixture of partially treated or untreated sewage and stormwater from any device or structure of combined sewerage facilities which is in excess of the downstream hydraulic carrying capacity of these facilities.

2. The term "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does <u>not</u> mean economic loss caused by delays in production.

3. The "average monthly flow" means the arithmetic mean of daily flow measurements taken during a calendar month.

4. The "average monthly" mass discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the facility was operating. Where less than daily sampling is required by this permit, the (average) monthly mass discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

5. The "average weekly" mass discharge means the total discharge by weight during a calendar week divided by the number of days in the week that the facility was operating. Where less than daily sampling is required by this permit, the (average) weekly mass discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar week when the measurements were made.

6. The "maximum daily" mass discharge means the total discharge by weight during any calendar day.

7. The "average monthly" effluent concentration means the arithmetic average of all the daily determinations of concentration made during a calendar month.

8. The "average weekly" effluent concentration means the arithmetic average of all the daily determinations of concentration made during a calendar week.

9. The "maximum daily" effluent concentration means the daily determination of concentration for any calendar day.

10. The "instantaneous maximum" concentration means the concentration not to be exceeded at any time in any grab sample.

11. The "daily determination of concentration" means the concentration of a composite sample taken during a calendar day or the arithmetic average of all grab samples taken during a calendar day.

12. The term "composite sample" means a combination of individual samples obtained at regular intervals over a time period. The maximum time period between individual samples shall not exceed two hours.

13. The term "grab sample" means an individual sample collected in less than 15 minutes.

14. The term "measured flow" means any method of liquid volume measurement the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

15. The term "estimate" means to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

16. The term "Industrial User" means an establishment which discharges or introduces industrial wastes into a Publicly Owned Treatment Works (POTW).

17. The term "Publicly Owned Treatment Works" or "POTW" means a facility as defined by Section 212 of the Clean Water Act which is owned by a State or Municipality, as defined by Section 502(4) of the Clean Water Act, including any sewers that convey wastewater to such a treatment works, but not including pipes, sewers or other conveyances not connected to a facility providing treatment. The term also means the municipality as defined in Section 502(4) of the Clean Water Act which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

(i) A toxic pollutant effluent standard established by EPA pursuant to Section 307(a) of the Clean Water Act, or

(ii) A toxic or hazardous pollutant which, if not adequately treated, could constitute a threat to human health, welfare, or the environment,

(iii) Any pollutant identified as the method to control a toxic pollutant or hazardous substance (i.e., indicator pollutant).

(c) Any unanticipated bypass which exceeds any effluent limitations in the permit.

(d) Where the permittee orally reports this information within the above mentioned 24 hour time period, a written submission outlining the above information must be submitted to the Department within 5 days of becoming aware of such a condition, unless this requirement is waived by the Department upon receipt of the oral report.

2. Other Non-Compliance Reporting.

(a) The permittee shall give advance notice to the Department of any planned changes to the permitted activity or facility which may result in non-compliance with permit requirements.

(b) Where the permittee knows in advance of the need for a bypass which will exceed effluent limitations it shall submit prior notice to the Department at least 10 days, if possible, before date of the bypass.

(c) The permittee shall report all instances of non-compliance which are not reported above at the time of DMR submission.

3. The reports and notifications required above shall contain the following information:

(a) A description of the discharge and cause of non-compliance;

(b) The period of non-compliance, including exact date and times and/or the anticipated time when the discharge will return to compliance; and

(c) Steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

E. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The exact place, date, and time of sampling or measurement.
2. The person(s) who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The person(s) who performed the analyses.
5. The analytical techniques or methods used.
6. The results of such analyses.

F. Records Retention

All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three year period shall be extended as requested by the Department or the EPA Regional Administrator.

III. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with final effluent limitations or terminate this discharge in accordance with the following schedule:

A. Feasibility study completion _____

B. Final plan completion _____

C. Start construction _____

D. Construction progress report(s) _____

E. End construction _____

F. Compliance with effluent limitations _____

G. Terminate discharge _____

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to the Department a written notice of compliance or non-compliance with the specific schedule requirement(s). Each notice of non-compliance shall include the following information:

A. A short description of the noncompliance.

B. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirement.

C. A description of any factors which tend to explain or mitigate the noncompliance.

D. An estimate of the date that compliance with the elapsed schedule requirement will be achieved and an assessment of the probability that the next scheduled requirement will be met on time.

I. MANAGEMENT REQUIREMENTS

A. Publicly Owned Treatment Works (POTW)

1. Where the permittee is a Publicly Owned Treatment Works (POTW), the permittee shall provide adequate notice as discussed in A(2) below to the Department of the following:

   (a) Any new introduction of pollutants into the POTW from an Industrial User which would be subject to Sections 301 and 306 of the Clean Water Act if it were otherwise discharging directly into waters of the United States.

   (b) Any substantial change in the volume or character of pollutants being introduced into the POTW by an Industrial User which was discharging into the POTW at the time of issuance of this permit.

   (c) Any change in the quality and quantity of effluent introduced into the POTW.

   (d) The identity of significant Industrial Users served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also identify the character and volume of pollutants discharged into the POTW by the Industrial User.

2. The submission of the above information in the POTW's annual Wasteload Management Report, required under the provisions of 25 Pa. Code Chapter 94, will normally be considered as providing adequate notice to the Department. However, if the above changes in industrial pollutant loadings to the POTW are significant enough to warrant either modification or revocation and reissuance of this permit, then the permittee is required to meet the provisions of Management Requirements B below.

3. The POTW shall require all Industrial Users to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act and any regulations adopted thereunder, and the Clean Streams Law and any regulations adopted thereunder.

B. Permit Modification, Termination, or Revocation and Reissuance

1. This permit may be modified, terminated, or revoked and reissued during its term for any of the causes specified in 25 Pennsylvania Code, Chapter 92.

2. The filing of a request by the permittee for a permit modification, revocati and reissuance, or a notification of planned changes or anticipated non-compliance does not stay any permit condition.

3. Notwithstanding the above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, this permit shall be modified or revoked and reissued in accordance with the toxic effluent standard or prohibition and the permittee shall be so notified.

In the absence of a Departmental action to modify or to revoke and reissue this permit, any toxic effluent standard or prohibition established under Section 307(a) of the Act is considered to be effective and enforceable against the permittee.

C. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania Clean Streams Law and 25 Pennsylvania Code, Chapter 92, the permittee shall allow the head of the Department, the EPA Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

1. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit.

2. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit and other document as may be required by law.

3. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit.

4. To inspect any collection, treatment, pollution management, or discharge facilities required under the permit.

5. To sample any substances or parameters at any location.

D. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges; nor does it authorize any injury to private property or any invasion of personal rights.

E. Duty to Provide Information

1. The permittee shall furnish to the Department within a reasonable time, any information which the Department may request to determine whether cause exists for modifying revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

2. The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

3. Planned changes: The permittee shall give advance notice to the Department of any physical alterations or additions to the permitted facility.

4. Other Information: Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information to the Department.

F. Confidentiality

Except for data determined to be confidential under 25 Pennsylvania Code, Chapter 92, all required reports shall be available for public inspection at the offices of the Department and the EPA Regional Administrator. Effluent data shall not be considered confidential.

G. Facility Operation and Quality Control

The permittee shall at all times maintain in good working order and properly operate all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee for water pollution control and abatement to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes but is not limited to effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and processing controls including appropriate quality assurance procedures. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with this permit.

H. Bypassing

1. Bypassing Not Exceeding Permit Limitations: The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if the bypass is for essential maintenance to assure efficient operation. This type of bypassing is not subject to the reporting and notification requirements of Part A.2.D above.

2. In all other situations, bypassing is prohibited unless the following conditions are met:

   (a) A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage";

   (b) There are no feasible alternatives to a bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down-time; (This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance.); and

   (c) The permittee submitted the necessary reports required under Part A.2. above.

3. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the conditions listed under Part B.I.2. above.

I. Adverse Impact

Permittee shall take all reasonable steps to minimize any adverse impact on the environment resulting from noncompliance with this permit.

J. Solids Disposal

Collected screenings, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those waters (or runoff from the wastes) into waters of the Commonwealth.

K. Penalties and Liability

1. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

2. Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance pursuant to Section 309 of the Clean Water Act or Sections 602 or 605 of the Clean Streams Law.

L. Transfer of Ownership or Control

1. No permit may be transferred unless approved by the Department.

2. In the event of any pending change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the Department by letter of such pending change at least thirty days prior to the change in ownership or control.

3. The letter shall be accompanied by the appropriate Department forms for transfer of the permit and a written agreement between the existing permittee and the new owner or controller stating that the existing date of permit transfer and that the new owner or controller shall be liable for permit violations from that date on.

4. After receipt of the documentation above, the Department shall notify the existing permittee and the new owner or controller of its decision concerning approval of the transfer. In approving a transfer the Department may modify or revoke and reissue the permit.

5. In the event the Department does not approve transfer of the permit, the new owner or controller must submit a new permit application.

M. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

N. Other Laws

Nothing herein contained shall be construed to be an intent on the part of the Department to approve any act made or to be made by the permittee inconsistent with the permittee's lawful powers or with existing laws of the Commonwealth regulating sewerage discharge and the practice of professional engineering, nor shall this permit be construed to sanction any act otherwise forbidden by federal or state law or regulation, or by local ordinance. Nor does it pre-empt any duty to obtain State or local assent required by law for the discharge(s).

PART C

OTHER REQUIREMENTS

A. Effluent limitations, monitoring requirements, and other standard and special conditions which relate to the discharge(s) of pollutants authorized by this permit and which are contained in Water Quality Management Permit(s)

Nos. 9209S and 5173402 issued on February 25, 1959 and October 19, 1973

are superseded by the terms and conditions of this permit, unless specifically noted otherwise herein.

B. A copy of the Discharge Monitoring Report is to be sent to the following agency:

Delaware River Basin Commission
P.O. Box 7360
West Trenton, New Jersey 08628

C. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

D. For reporting purposes on the Discharge Monitoring Report, the term "average weekly" shall mean the highest average weekly value observed during the monthly monitoring period.

E. If, in the opinion of the Department, the sewage treatment plant is not so operated or if by reason of change in the character of the waste or increased load upon the sewage treatment plant, or changed use or condition of the receiving body of water, or otherwise, that the effluent ceases to be satisfactory or the sewage treatment plant creates a public nuisance, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the receiving body of water.

F. The BOD_5 in the raw wastewater shall be reduced by at least 86% as a monthly average in accordance with the requirements of the Delaware River Basin Commission for Zone 3 of the Delaware Estuary. The percent removal shall be calculated from daily 24 hour composite samples of the influent and effluent. The influent samples must reflect true characteristics of the raw wastewater and must not be affected by plant recycle flows.

PART C

OTHER REQUIREMENTS

G.. Water Quality-Based Effluent Limitations and Other Requirements for Management of Toxic Pollutants

a. Water Quality-Based Effluent Limitations

In addition to the effluent limitations shown in Part A of this permit, the Permittee is expected to achieve the water quality-based effluent limitations shown below.

No final date for compliance with these limitations is shown. The Department will modify this permit to establish a final compliance date, if necessary, upon the submittal by the Permittee and review by the Department of an acceptable Toxics Reduction Evaluation (TRE), or the failure of the Permittee to submit an acceptable TRE under the schedule established under Section G.b. of this Part C. The Permittee must submit the following requests, along with supporting documentation, to the Department at the time of submission of the TRE:

(1) A request for modification of water quality-based effluent limitations shown below; and/or,

(2) A request for an extension of time to achieve the water quality-based effluent limitations shown below; and/or,

(3) A request for alternative bioassay-based effluent limitations.

For purposes of compliance, effluent limitations listed in Part A of this permit apply unless changed by order, permit modification or other Department action.

Submittal by the Permittee of a TRE shall not be deemed to affect the appeal rights of the Permittee of final water quality-based effluent limitations upon action of the Department to make the limitations effective.

Outfall 001

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Maximum
Beryllium, Total	mg/l		Not Detectable	
Iron, Dissolved	mg/l	1.5		3.0
Aluminum, Total	mg/l	2.3		4.6
Cyanide, Free	mg/l	0.011		0.022
Phenolics, Total (4AAP)	mg/l	0.011		0.022
Tetrachloro-ethylene	mg/l		0.024	
PCB 1260			Not Detectable	
Phenanthrene	mg/l		Not Detectable	
Chloroform	mg/l		0.005	

PART C

OTHER REQUIREMENTS

Parameter	Units	Monthly	Daily	Maximum
Cadmium, Total	mg/l	0.004		0.008
Lead, Total	mg/l	0.09		0.18
Mercury, Total	mg/l	0.002		0.004
Nickel, Total	mg/l	0.024		0.048
Silver, Total	mg/l	0.004		0.008
Zinc, Total	mg/l	0.18		0.36
Barium, Total	mg/l	1.8		3.6
Tin, Total	mg/l	0.036		0.072
Titanium, Total	mg/l	0.11		0.22
Phenol	mg/l		0.011	
Chlorodibromo-methane+ Methylene Chloride+ Dichlorobromo-methane	mg/l		Sum of these three parameters must not exceed 0.003	

b. Toxics Reduction Evaluation (TRE)

In order to (1) verify the actual extent of the toxic pollutants associated with the wastewater, (2) determine sources of these toxic pollutants, and (3) recommend control and/or treatment technologies to reduce or eliminate these toxic pollutants, the Permittee is directed to carry out a Toxics Reduction Evaluation (TRE) in accordance with guidelines developed by the Department.

The Permittee shall submit three (3) copies of the completed TRE to the Department for review in accordance with the following schedule:

Step	Date
Begin Work on the TRE and so Notify the Department	11/01/86
Submit a Progress Report to the Department	05/01/87
Submit a Progress Report to the Department	11/07/87
Submit a Progress Report to the Department	05/01/88
Submit the Completed TRE to the Department	11/01/88

c. Modification of Permit to Incorporate Water Quality-Based Effluent Limitations for Toxic Pollutants.

Upon approval of the TRE and any additional submittals for the above toxic pollutants of concern, the Department will modify Part A of this permit to reflect the effluent limitations, monitoring requirements, and other conditions necessary for compliance with water quality standards.

A permit modification may include a schedule of compliance. Any such permit modification will be conducted in accordance with applicable permit modification procedures, which include development of draft and final permits and associated public

PART C

OTHER REQUIREMENTS

d. Procedures for Granting Extensions of Time to Achieve Water Quality-Based Effluent Limitations

At the request of the Permittee, in conjunction with modifying the permit to incorporate water quality-based effluent limitations under Subsection c. above, the Department may grant an extension of time to achieve the water quality-based effluent limitations shown in Subsection a. above, provided the Permittee meets all of the eligibility requirements contained in Section 95.4 of the Department's Rules and Regulations.

Requests for Section 95.4 time extension, including all documentation required to support such a request, must be submitted to the Department along with the Permittee's TRE as required under Subsection b. above.

e. Procedures for Demonstration of Alternative Site-Specific Bioassay-Based Effluent Limitations

Where the water quality-based effluent limitations listed in this Part C have been developed by the Department for protection of fish and aquatic life, the Permittee may request an opportunity to demonstrate alternative, site-specific, bioassay-based "safe concentration values" for the pollutants in question.

The following water quality-based effluent limitations in this Part C are based on protection of fish and aquatic life:

Aluminum, Cadmium, Lead, Silver, Zinc, Tin, Titanium.

The procedures for carrying out such demonstrations shall be approved in writing by the Department, and shall be conducted in accordance with the requirements of Sections 93.8(d)-(e) of the Department's Rules and Regulations.

Requests for alternative, site-specific, bioassay-based effluent limitations, including all documentation required to support such a request, must be submitted to the Department along with the Permittee's TRE as required under this Part C.

Where the demonstration results in more stringent limitations than those established by the Department in this Part C, the more stringent limitations will apply. Any less stringent limitations which are approved by the Department shall not violate applicable criteria for the protection of human health. This procedure does not apply to those parameters for which specific numeric criteria are listed in Section 93.7, Table 3 of the Department's Rules and Regulations.

PART C

OTHER REQUIREMENTS

H. Analysis for the following pollutant(s) shall be performed using the following test method(s) contained in the EPA publication entitled Methods for Chemical Analysis of Water and Wastes, or any approved test method(s) of equal or greater sensitivity.

Beryllium	EPA Method 210.2 Graphite Furnance A.A.
Cyanide Free	See Suggested DER Method for Determination of Free Cyanide (Draft 5-84)
Chloroform	EPA Method 624 Purge and Trap GC/MS
PCB 1260	EPA Method 608 GC with ECD for Pesticide and PCB
Phenanthrene	EPA Method 610 HPLC with Fluorescence-UV
Cadmium	EPA Method 200.7 ICP
Lead	EPA Method 200.7 ICP
Nickel	EPA Method 200.7 ICP
Silver	EPA Method 272.2 Graphite Furnance A.A.
Tin	EPA Method 282.2 Graphite Furnance A.A.
Titanium	EPA Method 283.2 Graphite Furnance A.A.
Chlorodibromomethane	EPA Method 601 Purge & Trap GC with ECD
Methylene Chloride	EPA Method 601 Purge & Trap GC with ECD
Dichlorobromomethane	EPA Method 601 Purge & Trap GC with ECD

I. Point Sources 002 through 017 and 020 through 037 (listed below) serve as combined sewer reliefs necessitated by stormwater entering the sewer system and exceeding the hydraulic capacity of the sewers and/or the treatment plant and are permitted to discharge only for such reason. There are at this time no specific effluent limitations on these discharges. The regulating chambers shall be maintained in operable condition including regular monitoring and inspection of regulator controls within the combined sewer system and prompt repair or replacement of malfunctioning regulator controls. Results of the inspections (Interceptors Services Report) shall be submitted monthly as part of the Discharge Monitoring Report.

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OTHER REQUIREMENTS

Discharges to Delaware River

Point Source	Interceptor Regulator Name	Location	Latitude ° ' "	Longitude ° ' "
035		Oregon Relief Sewer Oregon Ave. & Delaware River	39°54"44"	75°08'16"
036		Cumberland Street, East of Richmond Street (D-37)	39°58'06"	75°07'17"
037		Delaware Ave. North of Arch St (D-75) Shares Outfall with (D-52)	39°57'08"	75°08'25"
002		Dyott St. & Delaware Ave. (D-38)	39°58'08"	75°07'19"
003		Susquehanna Ave East of Beach St. (D-39)	39°58'07"	75°07'23"
004		Berks St. East of Beach St. (D-40)	39°58'04"	75°07'25"
005		Palmer St. East of Beach St. (D-41)	39°58'04"	75°07'38"
006		Columbia Ave East of Beach St. (D-42)	39°57'58"	75°07'44"
007		Marlborough St. and Delaware Ave. (D-43)	39°57'57"	75°07'49"
008		Shackamaxon St. East of Delaware Ave. (D-44)	39°57'53"	75°07'54"
009		Laurel St. and Delaware Ave. (D-45)	39°57'49"	75°08'01"
010		Penn St. and Delaware Ave. (D-46)	39°57'42"	75°08'12"
011		Fairmount Ave. West of Delaware Ave. (D-47)	39°57'39"	75°08'10"
012		Willow St. West of Delaware Ave. (D-48)	39°57'29"	75°08'17"
013		Callowhill St. and Delaware Ave. (D-49)	39°57'24"	75°08'20"
014		Delaware Ave. North of Vine St. (D-50)	39°57'22"	75°08'13"
015		Race St. West of Delaware Ave. (D-51)	39°57'11"	75°08'18"
016		Delaware Ave. and Arch St. (D-52)	39°57'08"	75°08'25"
017		Market Street and Front Street (D-53)	39°57'01"	75°08'20"
020		Front St. South of Chestnut St. (D-54)	39°56'47"	75°08'29"
021		South Street and Delaware Ave. (D-58)	39°56'27"	75°08'32"
022		Catherine St. East of Swanson St. (D-61)	39°56'12"	75°08'31"
023		Queen St. East of Swanson St. (D-62)	39°56'08"	75°08'31"

PART C

OTHER REQUIREMENTS

Discharges to Delaware River

Point Source	Interceptor Regulator Name.	Location	Latitude ° ' "	Longitude ° ' "
024	Christian St. West of Delaware Ave. (D-63)		39°56'03"	75°08'32"
025	Washington Ave. East of Delaware Ave. (D-64)		39°55'54"	75°08'32"
026	Reed St. East of Delaware Ave. (D-65)		39°55'45"	75°08'29"
027	Tasker St. East of Delaware Ave. (D-66)		39°55'36"	75°08'27"
028	Moore St. East of Delaware Ave. (D-67)		39°55'30"	75°08'21"
029	Snyder Ave and Delaware Ave. (D-68)		39°55'12"	75°08'20"
030	Delaware Ave. North of Porter St. (D-69)		39°55'00"	75°08'13"
031	Oregon Ave. and Delaware Ave. (D-70)		39°54'44"	75°08'16"
032	Bigler St. and Delaware Ave. (D-71)		39°54'33"	75°07'59"
033	Pattison Ave. and Swanson St. (D-73)		39°54'24"	75°08'06"
034	Packer Ave. East of Delaware (D-72)		39°54'07"	75°08'07"

J. The following requirements shall apply with regard to implementation of the required industrial pretreatment program.

(a) The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act and the General Pretreatment Regulations (40 CFR Part 403). The program shall also be implemented in accordance with the approved POTW pretreatment program submitted by the permittee.

(b) The permittee shall submit to EPA and DER an annual report that describes the permittee's program activities over the previous 12 months. The permittee must also report on the pretreatment program activities of all participating agencies, if more than one jurisdiction is involved in the local program.

(c) The report shall be incorporated into and submitted with the permittee's annual Municipal Wasteload Management report required by DER's Chapter 94 Rules and Regulations. The report shall include the following:

PART C

OTHER REQUIREMENTS

1) Compliance with Categorical and Local Standards - A summary of the compliance status for those industries affected by final Categorical Pretreatment Standards.

2) Review of Industrial Compliance - Information on the number and type of major violations of pretreatment regulations, and the actions taken or planned by the POTW to obtain compliance.

3) Summary of Industrial User Inspections - A summary of the number and type of industrial user inspections by the POTW.

4) Summary of POTW Operations - Any interference, upset, or permit violations experienced at the POTW directly attributable to industrial users, and actions taken to alleviate said events. Sampling and analysis of POTW influent, effluent, and sludge for toxic and incompatible pollutants shall also be included.

5) Pretreatment Program Changes - A description of any significant changes in operating the program from the original submission, including staffing and funding. An updated industrial survey shall be included, as appropriate.

6) Other Miscellaneous Pretreatment Developments - POTW facility changes, problems or improvements regarding sludge, water quality, data management, or any special concerns.

(d) EPA and DER retain the right to require the POTW to institute changes to its local pretreatment program:

1) If the program is not implemented in a way satisfying the requirements of 40 CFR 403;

2) If problems such as interference, pass through, or sludge contamination develop or continue;

3) If other Federal, State or local requirements (i.e., water quality standards) change.

K. The permittee shall operate the sewage treatment plant to provide treatment for the maximum design wastewater flows of 168 MGD (maximum daily average) and 224 MGD (peak) without causing treatment process upsets. Throttling of influent flows to the Plant resulting in avoidable, premature sewer system overflows is prohibited.

L. An average monthly flow in excess of 112 MGD shall not be considered to be a violation of this permit.

PART C

OTHER REQUIREMENTS

M. The mass limitation for BOD_5 shall not become effective until January 1, 1989. During the period January 1, 1987 through December 31, 1987 influent data (without impact of recycle streams) and effluent data shall be collected relative to BOD_5 (uninhibited) on a daily basis and First Stage Oxygen Demand (FSOD) on a twice per week basis. This data base will be used to determine whether the existing FSOD allocation, the equivalent BOD_5 mass effluent limitation and/or the current $FSOD/BOD_5$ ratio should be revised. Progress reports shall be submitted to the Delaware River Basin Commission and the Department by April 30, 1987 and September 30, 1987. A final report shall be submitted to the same agencies on or before March 31, 1988.

N. An excursion of the lower pH limitation in the effluent resulting from the use of the Oxygen Activated Sludge process shall not be considered a violation of this permit, so long as the excursion frequency does not exceed 2.0% of the time on an annual basis and the pH is not less than 5.5 standard units.

(2NPDW5).4/.4.8

Additional Instructions for Utilizing

The

National Pollutant Discharge Elimination System

DISCHARGE MONITORING REPORT

The attached originals of the NPDES Discharge Monitoring Report have been provided to you as a master. The permit establishes specific effluent monitoring and reporting requirements and these values are repeated on the original Discharge Monitoring Report provided for you. The 'N/A' placed in the permit condition block of the Discharge Monitoring Report indicates one of two things: (1) that the parameter is monitored but no limitations are imposed, and the pertinent values must be reported; or (2) that the parameter is limited elsewhere on the Discharge Monitoring Report, and the value should be reported if it is available.

Your reports are to be submitted by utilizing copies of the attached forms. Do not write on or send the attached originals, but rather: (1) make copies of them, (2) fill out the copies as appropriate, (3) make the necessary copies of the completed (filled out) form, and (4) submit these copies to the appropriate EPA and State Offices as provided in the permit.

ATTACHMENTS

ER—BWQ—15.2: Rev. 8/87

DRAFT

JUL. 22 1992

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM SEWAGE PERMIT NO. PA 0026662

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

City of Philadelphia Water Department

is hereby authorized to discharge from The Southeast Water Pollution Control Plant (Point Source 001) and 35 overflow points (Point Sources 002-017 and 020-038) located in the City of Philadelphia, Philadelphia County

to the receiving waters named Delaware River Zone 3 (Point Sources 001-017 and 020-037) and Schuylkill River (Point Source 038).

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

This permit and the authorization to discharge shall expire at midnight _____.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the standard or special conditions, and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with any of the terms or conditions of this permit is grounds for enforcement action; for permit termination, revocation and reissuance or modification; or for denial of a permit renewal application.

3. It is required by law that this permit, before becoming operative, shall be recorded in the Office of the Recorder of Deeds for the county wherein the outlet of said sewer system is located.

4. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date), using the appropriate NPDES Permit Application Form. In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal.

5. This permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

PERMIT ISSUED

DATE _____

BY _____

TITLE Joseph A. Feola
Regional Water Quality Manager

DRAFT

PART A

JUL 22 1992

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 39°54'24", LONGITUDE 75°08'07"

A. The Permittee is authorized to discharge during the period from issuance through expiration.
B. The average monthly flow of effluent discharged from the wastewater treatment facility shall not exceed 112 million gallons per day.
C. The quality of effluent shall be limited at all times as specified in Footnote (3) and as follows:

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)		CONCENTRATIONS (mg/l)				INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY				
FLOW (a)								Continuous	Recorded	
BOD_5 (b)	19,650	29,475		30	45		60	Daily	24 HC	
BOD_5 % REMOVAL (f)	DRBC Zone 3 Requirement of 86%							Daily	24 HC	
SUSPENDED SOLIDS	28,025	42,035		30	45		60	Daily	24 HC	
$CBOD_{20}$ (c)	33,600							Daily	24 HC	
FECAL COLIFORM (5-1 to 9-30)			SEE FOOTNOTE (2)					Daily	Grab	
FECAL COLIFORM (10-1 to 4-30)			SAME LIMITS AS IN FOOTNOTE (2)					Daily	Grab	
pH (d)	WITHIN LIMITS OF 6 TO 9 STANDARD UNITS AT ALL TIMES							Daily	Grab	
NH_3-N				MONITOR ONLY	MONITOR ONLY			1/Week	24 HC	
TKN				MONITOR ONLY	MONITOR ONLY			1/Week	24 HC	

CONTINUED ON PAGE 2a

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DISCHARGE PARAMETER	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS			
	MASS UNITS (lbs/day)		CONCENTRATIONS (mg/l)				INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY				
NO_2-N				Monitor Only	Monitor Only			1/Week	24 HC	
NO_3-N				Monitor Only	Monitor Only			1/Week	24 HC	
ALUMINUM, TOTAL (e)				Monitor Only				1/Month	24 HC	
CADMIUM, TOTAL (e)				Monitor Only				1/Month	24 HC	
CHROMIUM, TOTAL (e)				Monitor Only				1/Month	24 HC	
CHROMIUM, HEXAVALENT (e)				Monitor Only				1/Month	Grab	
IRON, TOTAL (e)				Monitor Only				1/Month	24 HC	
MANGANESE (e)				Monitor Only				1/Month	24 HC	
SILVER (e)				Monitor Only				1/Month	24 HC	
TIN (e)				Monitor Only				1/Month	24 HC	

CONTINUED ON PAGE 2b

CONTINUED FROM PAGE 2a

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)		CONCENTRATIONS (mg/l)				INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY				
TITANIUM (e)				Monitor Only				1/Month	24 HC	
ZINC (e)				Monitor Only				1/Month	24 HC	
CYANIDE, FREE (e)				Monitor Only				1/Month	24 HC	
CHLOROFORM (e)				Monitor Only				1/Month	Grab	
CHLORODIBROMOMETHANE (e)				Monitor Only				1/Month	Grab	
DICHLOROBROMOMETHANE (e)				Monitor Only				1/Month	Grab	
METHYLENE CHLORIDE (e)				Monitor Only				1/Month	Grab	
TETRACHLOROETHYLENE (e)				Monitor Only				1/Month	Grab	
TOTAL RESIDUAL CHLORINE				Monitor Only				Daily	Grab	

(a) See Paragraph O, Other Requirements (Page 14k of 14)
(b) See paragraph P, Other Requirements (Page 14k of 14)
(c) $CBOD_{20}$ - 20-Day Carbonaceous Biochemical Oxygen Demand Test With Nitrogenous Oxygen Demand Inhibited
(d) See Paragraph S, Other Requirements (Page 14r of 14)
(e) See Paragraph H, Other Requirements (Page 14a of 14)
(f) See Paragraph G, Other Requirements (Page 14 of 14)

FOOTNOTES: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 001 at the Pier Effluent Sampling Building.

DRAFT

JUL. 22 1992

PART A

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 39°54'24", LONGITUDE 75°08'07"

A. During the period beginning at issuance and lasting through expiration, the Permittee is authorized to discharge.

B. Based on production data and anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)		TUc ****					
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
WHOLE EFFLUENT TOXICITY - CERIODAPHNIA DUBIA *&**					MONITOR ONLY	QUARTERLY	24 H.C.	
WHOLE EFFLUENT TOXICITY - FATHEAD MINNOW * & ***					MONITOR ONLY	QUARTERLY	24 H.C.	

FOOTNOTES: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001 at the Pier Effluent Sampling Building.

* See Paragraph Q, Other Requirements (Page 141 of 14)

** Toxicity monitoirng based on static renewal chronic Ceriodaphnia dubia test reported as a maximum daily result.

*** Toxicity monitoring based on static renewal chronic Fathead minnow test reported as a maximum daily result.

**** TUc: Chronic Toxicity Units $TUc = \frac{100}{NOEC}$

JUL 22 1992

PART C

OTHER REQUIREMENTS

A. Effluent limitations, monitoring requirements, and other standard and special conditions which relate to the discharge(s) of pollutants authorized by this permit and which are contained in Water Quality Management Permit(s)

No. 9209S and 5173402 issued on February 25, 1959 and October 19, 1973

are superseded by the terms and conditions of this permit, unless specifically noted otherwise herein.

B. A copy of the Discharge Monitoring Report is to be sent to the following agencies:

Delaware River Basin Commission
P.O. Box 7360
West Trenton, New Jersey 08628

PA Enforcement Branch (3WM51)
U.S. Environmental Protection Agency
841 Chestnut Building
Philadelphia, PA 19107

C. For reporting purposes on the Discharge Monitoring Report, the term "average weekly" shall mean the highest average weekly value observed during the monthly monitoring period.

D. If, in the opinion of the Department, the sewage treatment plant is not so operated or if by reason of change in the character of the waste or increased load upon the sewage treatment plant, or changed use or condition of the receiving body of water, or otherwise, that the effluent ceases to be satisfactory or the sewage treatment plant creates a public nuisance, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the receiving body of water.

E. No storm water from pavements, area ways, roofs, foundation drains or other sources shall be admitted to the sanitary sewers associated with the herein approved discharge.

F. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

G. The BOD_5 in the raw wastewater shall be reduced by at least 86% as a monthly average in accordance with the requirements of the Delaware River Basin Commission for Zone 3 of the Delaware Estuary. The percent removal shall be calculated from daily 24 hour composite samples of the influent and effluent.

PART C

OTHER REQUIREMENTS

The influent samples must reflect the true characteristics of the raw wastewater and must not be affected by plant recycle flows. If equivalent $CBOD_5$ effluent limits replace the BOD_5 effluent limits, the percent removal shall be calculated using influent and effluent $CBOD_5$ measurements.

H. Analysis for the following pollutant(s) shall be performed using the following test method(s) contained in 40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants, or any approved test method(s) of equal or greater sensitivity.

Parameter	Test Method
Aluminum, Total	EPA Method 21D,1 (AA, Flame)
Cadmium, Total	EPA Method 213.2 (AA, Furnace)
Chromium, Total	EPA Method 218.1 (AA, Flame)
Chromium, Hexavalent	EPA Method 218.4 (AA, Extraction)
Iron, Total	EPA Method 236.1 (AA, Direct)
Manganese	EPA Method 242.1 (AA, Flame)
Silver	EPA Method 272.2 (AA, Furnace)
Tin	EPA Method 282.2 (AA, Furnace)
Titanium	EPA Method 283.2 (AA, Furnace)
Zinc	EPA Method 289.1 (AA, Flame)
Cyanide, Free	DER Method (See Attached)
Chloroform	EPA Method 624 (GC/MS)
Chlorodibromomethane	EPA Method 601 (GC/HAL.)
Dichlorobromomethane	EPA Method 601 (GC/HAL.)
Methylene Chloride	EPA Method 624 (GC/MS)
Tetrachloroethylene	EPA Method 601 (GC/MS)

I. The following requirements shall apply with regard to implementation of the required industrial pretreatment program:

(1) The permittee shall operate an industrial pretreatment program in accordance with the Clean Water Act and the General Pretreatment Regulations (40 C.F.R. 403). The program shall also be implemented in accordance with the approved and/or modified POTW pretreatment program submitted by the permittee.

(2) The permittee shall submit all changes, and obtain approval of all substantial changes, in its approved pretreatment program in accordance with 40 C.F.R. 403.18.

OTHER REQUIREMENTS

(3) The permittee's implementation of its pretreatment program shall, at a minimum, meet the requirements listed below. Where the approved program requires more stringent or more frequent activity, the requirements of the approved program shall apply.

(a) The permittee shall provide written notice of applicable pretreatment requirements to all industrial users. For significant industrial users (SIUs) such written notice shall be through individual discharge permits or other equivalent control mechanism in accordance with 40 C.F.R. 403.8(f). All SIU control mechanisms shall be in place within 6 months of program approval and shall not be issued for a period which exceeds 5 years. SIU control mechanisms shall be reissued within 3 months of expiration, and administrative extensions shall not be granted without written consent from the Approval Authority.

(b) Each SIU shall be sampled by the permittee at least once per year. Such sampling shall include all regulated parameters.

(c) Each SIU shall be inspected by the permittee at least once per year. Such inspection shall cover all areas which could result in wastewater discharge to the sewer including manufacturing areas, chemical storage areas, pretreatment facilities, spill prevention and control procedures, hazardous waste generation, and industrial self-monitoring procedures and records.

(d) The permittee shall implement the industrial reporting requirements of 40 C.F.R. 403.12.

(e) The permittee shall develop and obtain Approval Authority approval of a written enforcement response plan (ERP) within 6 months of permit issuance. The ERP shall indicate how instances of violation will be investigated, what enforcement options are available to the POTW, contain a listing of potential industrial violations, and state the type of action and timeframe for the permittee's enforcement for each violation. Where approval of the ERP has been previously granted, the permittee shall reevaluate its ERP and submit the results of the reevaluation and a revised ERP within 6 months of permit issuance.

(f) The permittee shall take timely and appropriate enforcement in accordance with its approved ERP for all instances of industrial violations.

PART C

OTHER REQUIREMENTS

(g) The permittee shall submit, to the Approval Authority, a reevaluation of its local limits based on a headworks analysis of its treatment plant within 1 year of permit issuance. At a minimum, the headworks analysis shall include arsenic, cadmium, chromium, copper, cyanide (T) lead, mercury, nickel, silver, zinc, any parameter limited by this permit or sludge disposal requirements, and any other pollutant which the permittee or approval authority believes may be discharged by its industries in amounts which may cause pass-through or interference. The list of pollutants to be evaluated shall be submitted within 3 months of permit issuance.

(h) The permittee shall conduct monitoring at its treatment plant based on its permitted flows, as follows:

i) > 20 MGD - monthly influent, effluent and sludge analysis for all local limit parameters, semi-annual priority pollutant scan for influent and sludge.

ii) > 5-20 MGD - monthly influent, effluent and sludge analysis for all local limit parameters, annual priority pollutant scan for influent and sludge.

iii) > 1-5 MGD - quarterly influent, effluent and sludge analysis for all local limit parameters, annual priority pollutant scan for influent and sludge.

iv) < 1 MGD - annual influent, effluent and sludge analysis for all local limit parameters, priority pollutant scan for influent and sludge within 1 year.

(i) The permittee shall ensure that adequate resources are available (equipment and personnel) to fully implement the pretreatment program.

(4) EPA and DER retain the right to require the permittee to institute changes to its pretreatment program if:

(a) the program is not implemented in a way satisfying the requirements of 40 C.F.R. 403;

(b) problems such as interference, pass-through or sludge contamination develop or continue;

(c) Federal, State, or local requirements change.

OTHER REQUIREMENTS

(5) By March 31 of each year, the permittee shall submit to EPA and DER an annual report that describes the permittee's pretreatment activities for the previous calendar year. The annual report shall include pretreatment activities in all municipalities from which wastewater is received at the permittee's treatment plant. The submission to DER shall be incorporated into the permittee's annual Municipal Wasteload Management report required by DER's Chapter 94 Rules and Regulations. The annual report shall include the following:

(a) Control Mechanism Issuance - a summary of SIU control mechanism issuance including a list of issuance and expiration dates of each SIU.

(b) Sampling and Inspection - a summary of the number and type of inspections and samplings of SIUs by the permittee, including a list of all SIUs either not sampled or not inspected.

(c) Industrial User CoListing and POTW Enforcement - a summary of the number and type of violations of pretreatment regulations and the actions taken by the permittee to obtain compliance. For each SIU, the report shall say whether the user was in significant noncompliance under 40 C.F.R. 403.8, infrequent (non-significant) noncompliance, or in compliance for the entire year. A copy of the published list of facilities in significant noncompliance shall be included.

(d) Industrial Listing - an updated industrial listing showing all current SIUs and the catergorical standard, if any, applicable to each.

(e) Summary of POTW Operations - any interference upset, or permit violations experienced at the POTW which may be attributed to industrial users, and actions taken to alleviate said events. Sampling and analysis of treatment plant influent and sludge for toxic and incompatible pollutants shall also be included with an analysis of any trends in the data since pretreatment program approval.

(f) Pretreatment Program Changes - a summary of any changes to the approved program and the date of submission to the Approval Authority.

OTHER REQUIREMENTS

J. The permittee will ensure that applied chlorine dosages, used for disinfection or other purposes, are optimized to the degree necessary such that the total residual chlorine (TRC) in the discharge effluent does not cause an adverse stream impact. In doing so, the permittee shall consider relevant factors affecting required chlorine dosage, such as wastewater characteristics, mixing and contact times, desired result of chlorination, and expected impact on the receiving water body. The TRC data shall be recorded daily and maintained at the facility. For municipal facilities the data shall be summarized annually as part of the Chapter 94 - Municipal Wasteload Management Report.

If the Department determines or receives documented evidence that levels of TRC in the permittee's effluent are causing adverse water quality impacts in the receiving water, the permittee shall be required to institute necessary additional steps to reduce or eliminate such impact.

K. Collected screenings, slurries, sludges, and other solids shall be handled and disposed of in compliance with 25 Pa. Code, Chapters 271, 273, 275, 283,and 285 (relating to permits and requirements for landfilling, land application, incineration, and storage of sewage sludge), Federal Regulation 40 CFR 257, and the Federal Clean Water Act and its amendments.

L. The Department may identify and require certain discharge specific data to be submitted before the expiration date of this permit. Upon notification by the Department, the permittee will have 12 months from the date of the notice to provide the required data. These data, along with any other data available to the Department, will be used in completing the Watershed TMDL/WLA Analysis and in establishing discharge effluent limits.

M. Combined Sewer Overflow

Point Sources 002 through 038 (listed below) serve as combined sewer reliefs necessitated by stormwater entering the sewer system and exceeding the hydraulic capacity of the sewers and/or treatment plant. Combined sewer overflows (CSO) are allowed only when flows in combined sewers exceed conveyance or treatment capacities during wet weather periods. Dry weather overflows are prohibited. CSOs are point source discharges which must be provided technology-based control measures in accordance with the Clean Water Act. Additional control measures will also have to be provided if determined necessary to comply with water quality standards. At a minimum, technology-based control measures must include best management practices and/or other non-capital intensive measures to minimize discharges and water quality impacts.

OTHER REQUIREMENTS

Discharges to Delaware River

Point Source	Interceptor Regulator Name	Latitude	Longitude
035	Oregon Relief Sewer Oregon Ave. & Delaware River	39°54'44"	75°08'16"
036	Cuberland Street, East of Richmond Street (D-37)	39°58'06"	75°07'17"
037	Delaware Ave. North of Arch St (D-75) Shares Outfall with (D-52)	39°57'08"	75°08'25"
002	Dyott St. & Delaware Ave. (D-38)	39°58'08"	75°07'19"
003	Susquehanna Ave. East of Beach St. (D-39)	39°58'07"	75°07'23"
004	Berks St. East of Beach St. (D-40)	39°58'04"	75°07'25"
005	Palmer St. East of Beach St. (D-41)	39°58'04"	75°07'38"
006	Columbia Ave. East of Beach St. (D-42)	39°57'58"	75°07'44"
007	Marlborough St. and Delaware Ave. (D-43)	39°57'57"	75°07'49"
008	Shackamaxon St. East of Delaware Ave. (D-44)	39°57'53"	75°07'54"
009	Laurel St. and Delaware Ave. (D-45)	39°57'49"	75°08'01"
010	Penn St. and Delaware Ave. (D-46)	39°57'42"	75°08'12"
011	Fairmount Ave. West of Delaware Ave. (D-47)	39°57'39"	75°08'10"
012	Willow St. West of Delaware Ave. (D-48)	39°57'29"	75°08'17"
013	Callowhill St. and Delwaware Ave. (D-49)	39°57'24"	75°08'20"
014	Delaware Ave. North of Vine St. (D-50)	39°57'22"	75°08'13"
015	Race St. West of Delaware Ave. (D-51)	39°57'11"	75°08'18"
016	Delaware Ave. and Arch St. (D-52)	39°57'08"	75°08'25"
017	Market Street and Front Street (D-53)	39°57'01"	75°08'20"
020	Front St. South of Chestnut St. (D-54)	39°56'47"	75°08'29"
021	South Street and Delaware Ave. (D-58)	39°56'27"	75°08'32"

OTHER REQUIREMENTS

022	Catherine St. East of Swanson St. (D-61)	39°56'12"	75°08'31"
023	Queen St. East of Swanson St. (D-62)	39°56'08"	75°08'31"
024	Christian St. West of Delaware Ave. (D-63)	39°56'03"	75°08'32"
025	Wasington Ave. East of Delaware Ave. (D-64)	39°55'54"	75°08'32"
026	Reed St. East of Delaware Ave. (D-65)	39°55'45"	75°08'29"
027	Tasker St. East of Delaware Ave. (D-66)	39°55'36"	75°08'27"
028	Moore St. East of Delaware Ave. (D-67)	39°55'30"	75°08'21"
029	Snyder Ave. and Delaware Ave. (D-68)	39°55'12"	75°08'20"
030	Delaware Ave. North of Porter St. (D-69)	39°55'00"	75°08'13"
031	Oregon Ave. and Delaware Ave. (D-70)	39°54'44"	75°08'16"
032	Bigler St. and Delaware Ave. (D-71)	39°54'33"	75°07'59"
033	Pattison Ave. and Swanson St. (D-73)	39°54'24"	75°08'06"
034	Packer Ave. East of Delaware (D-72)	39°54'07"	75°08'07"

Discharge to Schuylkill River

038	Stokley St. and Roberts Ave. (R-22)	40°01'12"	75°11'30"

1. MINIMUM TECHNOLOGY-BASED CONTROL MEASURES - PLAN OF ACTION

The permittee shall complete and implement a Minimum Technology-based Plan of Action for identification and minimization of all CSO discharges according to the following schedule:

Permit Issuance Date (PID)

Description of Activity	Due Date (actual dates to be entered at issuance)
Submit a conceptual plan to state and EPA, Region III, (3WM53)	PID + 4 months
State approval/modification of conceptual plan	PID + 6 months
Submittal of final plan to State and EPA, Region III including implementation plan and schedule	PID + 12 months

OTHER REQUIREMENTS

Completion of Plan recommendations final report to State and EPA, Region III — PID + 38 months

The Minimum Technology-based Limitation Plan of Action shall address at a minimum, the following measures:

a. Identification of Combined Sewer Overflows. Review and update the CSO discharge points listed in Part A of this permit. For each CSO indicate the following measures:

i. latitude and longitude of the CSO discharge point and associated regulator mechanism.

ii. A narrative description of the location of the CSO point and regulator mechanism with respect to direction and distance from street intersections.

iii. A location map (U.S.G.S. Topographic Quadrangle) with the location of the CSO point and associated regulator mechanism indicated.

iv. A description of the size and type of regulator mechanism, including engineering drawing.

v. A description of the size and type of outfall structure.

vi. A determination of whether the outfall structure is submerged, partially submerged or not submerged during times of critical condition by the receiving water.

vii. Verification of the presence or absence of a backflow prevention device on the CSO.

viii. Name of the receiving water.

ix. Development of a visual identification system on all CSO outfalls, by visually labeling the outfall pipe with a numbering system, submerged outfalls shall be identified at the nearest manhole/bulkhead.

x. Identification of CSOs near drinking water intakes, recreation areas, or unique ecological habitats.

xi. Identification of any continuous or chronic dry weather overflows.

OTHER REQUIREMENTS

b. System Inventory

The plan shall identify all overflow points, control structures, sewer sizes and control structure dimensions, industrial contributors and key hydraulic monitoring control points. The inventory shall include system maps, hydraulic analyses and flow measurements. Characterization of all overflows in terms of both frequency, quantity and quality; identification of the intensity and duration of the storm event that triggers an overflow.

Volume discharge from each overflow for various size storms, and number of events and total volume discharged per year based on historical rainfall records.

c. Operational Status and Assessment

Summarize the current operation status, control measures, and functional adequacy of all CSOs. A comprehensive engineering assessment of the operational status and condition of all portions of the CSO treatment works based on actual field verification/inspection records shall be included. Information on the determination of whether the sewers are cracked, depressed, or of questionable physical integrity, observances of the presence of flow restrictions due to excessive sludge or grease build-up, or other conditions, and an assessment of each regulator's and/or tide gate's operability and reliability. All dry weather overflows are prohibited.

Based upon the results of the engineering inspection and assessment, the report shall include a prioritized list, strategy and schedule for rehabilitating the system and bringing it into optimal operating condition. A prioritized list for correction of any continuous dry weather overflows with schedule shall also be included.

d. Inspection and Maintenance

Summarize the regular inspection and maintenance of the combined sewer system including regulators to ensure that (1) deposition of solids does not cause obstructions which result in overflows; (2) continuous dry weather discharges are not occurring, and (3) regulators are in good working order and adjusted to minimize overflows. Identify response time between initial dry weather CSO discharge and corrective action; include a plan to reduce response time. The permittee shall submit as part of the plan of action, a written Operation and Maintenance (O&M) Plan designed to ensure the above items.

OTHER REQUIREMENTS

e. High Flow Management

Development of a high flow management plan which (1) maximizes the capacity of the combined sewer system for storage without causing backup or surcharge problems, and (2) enables a maximum amount of flow to be conveyed to the treatment plant without upsetting normal plant operations. Measures to be evaluated should include raising existing overflow weir levels and possible utilization of primary settling facilities for treatment if sufficient excess capacity is available, and automatic regulator and computerized control system.

f. Ordinance Revisions

Modification of the sewer ordinance where necessary to ensure prohibitions of (1) dry weather overflows, (2) construction of new combined sewers, except where sewer separation is infeasible (3) inflow sources in sanitary sewer tributary to the combined system, and (4) dumping of motor oil and excessive grease into the sewer system.

g. Source Reduction

Minimization of discharges of solids and floating materials by (1) regular cleaning of streets and catch basins, (2) installation of screens on CSOs, particularly those discharging to estuary waters, (3) reduction of infiltration/inflow where feasible.

h. Pretreatment Program

Review impact of Industrial Users toxics, BOD, and total suspended solids load to CSO overflows; review and modify pretreatment programs to assure CSO impacts are minimized.

i. Minimization of CSOs near sensitive areas

Examine elimination or minimization of CSO discharges near drinking water intakes, recreation areas, or unique ecological habitats.

2. WATER QUALITY IMPACTS - PLAN OF ACTION

A water quality impact plan of action for CSOs shall be based upon the results of the Delaware River Basin Commission (DRBC) CSO Comprehensive Study of the Delaware Estuary, currently underway. The permittee shall provide any monitoring data or other information requested by DRBC for the study.

The permittee shall submit a plan of action which sets forth an implementation plan and schedule to address the conclusions and recommendations of the DRBC study within 12 months after DRBC study completion.

OTHER REQUIREMENTS

If the DRBC study is not completed in a timely manner, the permittee will be required to conduct a CSO water quality impact study. Additional guidance and schedule will be provided by the Department.

3. REPORTING REQUIREMENTS

The permittee shall submit semi-annual (January 1, July 1) status reports to the Department and EPA, Region III (3WM53) on the development of the Minimum Technology-based control measures plan of action, implementation of the Minimum Technology-based control measures Plan, and development of the water quality plan.

Each priority CSO overflow point, as identified by an asterisk on the CSOs listed above, shall be monitored for cause, frequency, duration and quantity of flow. All monitoring data shall be recorded and submitted monthly in the format specified by the Department (attached) and shall be summarized annually with the facility's Chapter 94 Wasteload Management Report.

Annual CSO Status Report

The annual CSO status report shall be submitted with the Chapter 94 - "Municipal Wasteload Management Report". The report shall provide a summary of the frequency, duration, and volume of the CSOS for the past calendar year, operational status of major overflow points and identification of known/potential instream water quality impacts and their causes. The annual report shall also summarize all actions taken and their effectiveness in implementing the approved Plans of action, and shall evaluate and provide necessary revisions to the plans approved by the Department.

N. The permittee shall operate the sewage treatment plant to provide treatment for the maximum design wastewater flows of 168 MGD (Maximum Daily Average) and 224 MGD (Peak) without causing treatment process upsets. Throttling of influent flows to the plant resulting in avoidable, premature sewer system overflows is prohibited.

O. An average monthly flow in excess 112 MGD shall not be considered to be a violation of this permit.

P. An application may be made to the Delaware River Basin Commission to establish alternate/equivalent $CBOD_5$ effluent mass and concentration limits to replace the BOD_5 effluent limits in this permit. Upon establishment of such limits by the commission, the BOD_5 limits shall cease to be in effect and the $CBOD_5$ limits established by the commission shall become effective.

Q. Biomonitoring

OTHER REQUIREMENTS

I. General Requirements.

The permittee shall conduct acceptable toxicity tests in accordance with the appropriate test protocols described in Section V. Test Conditions and Methods. The permittee must collect discharge samples and perform the toxicity tests to generate chronic Ceriodaphnia dubia and fathead minnow (Pimephales promelas) test results (NOEC's) which will also enable a determination of the acute (LC50) value at the 48 hour interval. For purpose of reporting, all NOEC's shall be converted to TUc's by the following equation:

$$TUc = \frac{100}{NOEC}$$

In addition all LC50 values shall be converted to Tua's by following equation:

$$TUa = \frac{100}{LC50}$$

Within sixty (60) days of the effective date of the NPDES permit, the permittee shall submit to the Department of Environmental Resources (DER) and the Environmental Protection Agency (EPA), Region III an acceptable plan of study for determining the chronic toxicity of wastewater discharged from outfall(s) 001 through the use of whole effluent toxicity testing (biomonitoring). If DER and EPA comment on the plan, the permittee shall make any modifications requested. If the Department and EPA do not comment on the plan within thirty (30) days of submission, the permittee shall begin the whole effluent toxicity testing program as outlined in the study plan.

At a minimum the study plan should include a discussion of:

--wastewater and production variability

--source of test organisms

--source of dilution water

--test conditions

--sampling methods

--quality assurance/quality control information (including reference toxicity results and any deviations from recommended procedures).

II. Test Frequency.

Static renewal chronic testing shall be conducted on a quarterly basis (four times per year) beginning within thirty (30) days of submission of the biomonitoring study plan, provided that the Department and EPA do not comment on the plan and request modifications within the thirty (30) day period.

PART C

OTHER REQUIREMENTS

Two species shall be tested, the cladoceran Ceriodaphnia dubia for survival and reproduction and the fathead minnow Pimephales promelas for survival and growth. The two species must be tested each quarter, for a total of eight tests. Additional test species may be included, based on effluent characteristics, or as methods are developed.

III. Sample Collection.

For each sampling event, three, twenty-four (24) hour discharge composite samples collected at a frequency of not greater than every two hours and flow proportioned shall be collected over a seven (7) day exposure period. The initial sample taken on day 0 is used to start the test on day 1. The additional two samples are collected on day 2 and 4 to be used on day 3 and 5, respectively. Renewal of test concentrations is conducted daily with the most recently collected discharge sample.

For effluents that are chlorinated, test shall be conducted on a final effluent sample that has been dechlorinated. Dechlorinated samples will consist of the final effluent composites treated with sodium thiosulfate (see Section 7.4 of Weber, C.I, etal (ed). 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms).

All samples held overnight shall be refrigerated at 4°C.

IV. Dilution Water.

The dilution water source must consist of either moderately hard synthetic water (using either Millipore Milli-QR or equivalent deionized water and reagent grade chemicals) or deionized water (80%) combined with Perrier or chemically equivalent mineral water (20%).

V. Test Conditions and Methods.

The test conditions and methods shall conform to those developed by EPA as specified in the documents cited below. If DER or EPA determine that the proper test conditions have not been followed or if the test acceptability criteria are not met, the permittee must perform a re-test within thirty (30) days.

Weber, C.I. et al. (ed.). 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water To Freshwater Organisms. Second Edition. Office of Research and Development, Cincinnati, OH. EPA/600/4-89/001.

Weber, C.I. (ed) 1991. Methods for Measuring the Acute Toxicity of Effluents and receiving water to Freshwater and Marine Organisms, Fourth Edition. Office of Research and Development, Cincinnati, OH. EPA/600/4-90/027.

PART C

OTHER REQUIREMENTS

U.S. Environmental Protection Agency. 1991. Technical Support Document for Water Quality-based Toxics Control. Office of Water, Washington, DC EPA/505/2-90-001.

A. Summary of effluent toxicity test conditions and test acceptability criteria for the Ceriodaphnia dubia survival and reproduction test (adapted from EPA/600/4-89/001).

1. Renewal of test solutions:	Daily using most recently collected sample.
2. Effluent concentrations:	5 concentrations and a control. An additional control (0% effluent) treated with the same concentration of sodium thiosulfate as used to dechlorinate the effluent sample will be run. If the initial sample has no chlorine present, start the additional control with no sodium thiosulfate.
3. Dilution factor:	0.5
4. Test duration:	Until 60% of control animals have three broods (7 days or less)
5. Sampling Requirements:	A minimum of three samples are collected to be used on days 1, 3, and 5 for renewal. Test samples must be first used within 36 hours of collection.
6. Sample volume required:	Minimum of 1 liter per day
7. Test acceptability criterion:	80% or greater survival and an average of 15 or more young per surviving animal in the control solutions. At least 60% of the surviving animals in controls must have produced their third brood in seven days or less.

B. Summary of effluent toxicity test conditions and test acceptability criteria for the fathead minnow (Pimephales promelas) survival and reproduction test (adapted from EPA/600/4-89/001).

1. Test chamber size:	250-1000 ml
2. Test solution volume:	200 ml/replicate (minimum)
3. No. of larvae per test chamber:	10

OTHER REQUIREMENTS

4. No. of replicate test chambers per concentration: 4

5. No. of larvae per test concentration: 40

6. Feeding regime: Feed 0.1 ml newly hatched brine shrimp nauplii (less than 24 hours old) twice daily at 6 hour intervals (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient nauplii are added to provide an excess. Larvae are not fed during the final 12 hours of the test.

7. Effluent concentrations, Dilution series, Sampling requirements, and Renewal of test solution: Same as Section V. Test Conditions and Methods Par A, summary of effluent toxicity test conditions and test acceptability criteria for the Ceriodaphnia dubia survival and reporduction test.

8. Sample volume required: Minimum of 2.5 Liters per day.

VI. Chemicals Analyses.

Chemical analysis shall be performed for each sampling and testing events as described below.

A. The following chemical analysis shall be performed for each sampling event, including each new batch of dilution water:

Parameter	Effluent	Diluent	Detection Limit (mg/L)
Hardness	X	X	0.5
Alkalinity	X	X	2.0
pH	X	X	-
Specific conductance	X	X	-
Total Residual Chlorine	X		0.02

PART C

OTHER REQUIREMENTS

B. The following chemical analyses shall be performed as part of each daily renewal procedure on each dilution and the controls.

Parameter	Effluent	Diluent
Dissolved oxygen	X	X
Temperature	X	X
pH	X	X
Specific Conductance	X	X

In addition to the chemical analysis required above, those parameters listed in Part A of the NPDES permit for the outfall(s) 001 tested will be analyzed on at least the initial (day 0) sample by using the method specified in the NPDES permit or, if not specified, by EPA and DER (Chapter 16, Water Quality Toxics Management Strategy) approved methods.

VII. Toxicity Test Report Elements.

The following must be reported:

-- description of sample collection procedures and of the sample location.

-- names of individuals collecting and transporting samples, times and dates of sample collection and analysis.

-- general test description: origin and age of test organisms, dates and results of reference toxicant tests; light and temperature regimes; other information on test conditions is listed in Section V. Test Conditions and Methods.

-- all chemical and physical data generated (include detection limits).

-- copies of raw data sheets and/or bench sheets.

-- dechlorination procedure(s).

-- any other observations or test conditions affecting the test outcome.

Toxicity test data that is required includes the following:

-- comparison of performance of controls with test acceptability criteria.

PART C

OTHER REQUIREMENTS

-- daily survival of test organisms in the controls and all replicates for each dilution. Survival data should be analyzed by Fisher's exact test prior to analysis of reproduction data.

-- NOEC: No Observed Effect Concentration.

-- LOEC: Lowest Observed Effect Concentration.

-- chronic value (ChV): Geometric mean of the NOEC and LOEC.

-- acute endpoints shall be derived from data obtained 48 hours into the chronic test. Survival data for each concentration and replication at 24 hours and 48 hours shall be obtained. LC50 and 95% confidence limits shall be calculated using the following methods: binomial, moving average, moving average-angle, probit, trimmed Spearman-Karber, or the graphical method (EPA/600/4-85/013). All printouts or copies of hand calculations must be submitted. The probit, trimmed Spearman-Karber, and moving average-angle methods can only be used when at least two test concentrations exhibit some (but not all) test organism mortality (partial mortality). If a test results in a 100% survival in one test concentration, and 100% mortality in an adjacent concentration (an "all or nothing" effect), and LC50 value can be estimated using the graphical method.

Chronic reference toxicant test, on both species, shall be conducted monthly in laboratories that maintain their own culturing facilities, while laboratories that secure test organisms from outside suppliers shall conduct chronic reference toxicant test on each separate batch of test organisms. These test shall be conducted similarly to the effluent toxicity test (same dilution water, test organisms and conditions, chemical analyses, etc.) and shall follow guidelines put forth in EPA/600/4-89/001. The reference toxicant shall be a commonly used toxicant approved by the EPA. Reports of reference toxicant tests shall include all information needed for the proper evaluation of the test, including (but not limited to) the following:

-- Water chemistry parameters of controls and test concentrations.

-- Chronic and if applicable, acute endpoint(s), with appropriate statistical analyses.

-- Control charts (for point estimates, cumulative mean + two standards deviations; for NOEC's central tendency + one concentration interval).

VIII Reporting.

Signed copies of each toxicity test's data/reports shall be submitted to DER and EPA at the addresses listed below within thirty (30) days of test completion, so that each individual test result can be reviewed and evaluated for content and performance prior to the initiation of the succeeding quarterly test.

OTHER REQUIREMENTS

If after review of test data, EPA or the Department may instruct the city to make appropriate changes in the test procedures.

U.S. Environmental Protection Agency, Region III
PA/DC Permit Section, 3WM53
841 Chestnut Building
Philadelphia, PA 19107

Pennsylvania Department of Environmental Resources
Bureau of Water Quality Management
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

R. This permit may be reopened to incorporate the requirements or recommendation resulting from the Estuary Toxics Study being conducted by the Delaware River Basin Commission.

S. An excursion of the lower pH limitation in the effluent, resulting from the use of the Oxygen Activated Sludge process, shall not be considered as a violation of this permit provided that the excursion frequency does not exceed 2.0% of the time on an annual basis and the pH is not less than 5.5 Standard Units.

T. Chlorine Minimization

The permittee shall implement a Chlorine Minimization Plan similar to the Southwest Chlorine Minimization Plan submitted to EPA 4/2/91, according to the following schedule:

Permit Issuance Date (PID)

Description of Activity	Due Date (Actual dates to be entered at issuance)
Chemical and Toxicity Evaluation	PID + 12 months
Determination of minimal chlorine dose necessary to achieve fecal coliform level of <200 MPN/100ml.	
Evaluation of toxicity of samples using minimal chlorine dosage and the minimal dosage plus a margin of safety.	
Evaluation of toxicity of dechlorinated post chlorinated effluent.	

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Chemical evaluation of chlorinated and dechlorinated effluent.	
Engineering evaluation of facility's ability to reduce effluent toxicity by maintaining minimum chlorine dose or dechlorination of effluent.	PID + 15 months
Evaluate whether an alternative disinfection system or modification of existing chlorination system should be used.	PID + 20 months
Selection of control option	PID + 26 months
Implementation of selected option	PID + 38 months

(NPDW)3./.9

Southwest Water Pollution Control Plant
Existing And Draft NPDES Permits

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
1875 New Hope Street
Norristown, PA 19401
215 270-1975

cc Work / Birch / Harley / Davis

SW

cc T. Laculetta / J. Coyne

September 22, 1986

Permit + DMR.

Southwest Water Pollution Plant
City of Philadelphia Water Department
Executive Offices, 5th Floor
One Reading Center
1101 Market Street
Philadelphia, PA 19107

Attention: William J. Marrazzo
Commissioner

Re: Sewage NPDES Permit PA 0026671
Southwest Water Pollution
Control Plant
City of Philadelphia
Water Department
Philadelphia County

Gentlemen:

Referenced permit is enclosed.

In accordance with Other Requirements Item G (p. 14) please note that work is to begin on a Toxics Reduction Plan by November 1, 1986. The first progress report is due on May 1, 1987. For your reference, we have enclosed a copy of the "Guidelines for Conducting a Toxics Reduction Evaluation" dated October, 1985.

It will be necessary for you to submit a completed Discharge Monitoring Report (DMR) on a monthly basis to the appropriate agencies (see p. 5 of the NPDES permit and p. 14 Other Requirements).

The Environmental Protection Agency will be sending you computer generated, preprinted discharge monitoring report (DMR) forms for your submittals. In the event that these forms are not received, use the attached DMR forms. Should you find significant discrepancies between the two versions, contact this office and use the attached form until the preprinted forms are corrected. Do not allow a problem with the preprinted forms to cause your failure to submit these reports in a timely manner as this will result in violations of your permit.

Please study the permit carefully and direct any questions to the Permits Section of this office.

To become operative this permit must be recorded in the Office of the Recorder of Deeds in the county in which the discharge is located. Enclosed is a certificate and pre-addressed envelope for this purpose. Please have the Recorder of Deeds accomplish the certificate and return it within ten (10) days.

Very truly yours,

Joseph A. Feola

JOSEPH A. FEOLA
Regional Water Quality Manager

ENCLOSURES: Permit
Master Discharge Monitoring Report
Recorder of Deeds Certificate with envelope
Notary Public Certificate
Guidelines for Conducting a Toxics Reduction Evaluation (Revised October, 1985)
Analytical Methods and Sample Collection, Preservation and Handling Techniques for the 126 Priority Pollutants (January 1985)
Suggested Method for the Determination of Free Cyanide (Draft) May 198.

cc: Mr. William Wankoff, City of Philadelphia Water Department
(Transmittal Letter Only
EPA
DRBC
Permits & Compliance
Re 30 NPDW/

ER-BWQ-15.2 (3/81)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE PERMIT NO. PA .0026671

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

Southwest Water Pollution Control Plant
City of Philadelphia Water Department

is hereby authorized to discharge from a facility located in

The City of Philadelphia
Philadelphia

to the receiving waters named Delaware River (Zone 4), Point Source 001; Schuylkill River, Point Sources 002 through 040 and 073 through 077; Cobbs Creek, Point Sources 041 through 072 an 078 through 084

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

This permit and the authorization to discharge shall expire at midnight 9/22/91.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the standard or special conditions, and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with any of the terms or conditions of this permit is grounds for enforcement action; for permit termination, revocation and reissuance or modification; or for denial of a permit renewal application.

3. It is required by law that this permit, before becoming operative, shall be recorded in the Office of the Recorder of Deeds for the county wherein the outlet of said sewer system is located.

4. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date), using the appropriate NPDES Permit Application Form. In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal.

5. This permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

PERMIT ISSUED

DATE 9/22/86

BY Joseph A. Feola
Joseph A. Feola
TITLE Regional Water Quality Manager

PART C

OTHER REQUIREMENTS

Central Schuylkill East Side

Point Source	Interceptor Regulator Name	Longitude	Latitude
075	Main Relief Sewer - S. of Fairmount Ave. and Schuylkill River	75°11'01"	39°58'10"
076	24th St. N. of Chestnut St. Bridge (S-12)	75°10'50"	39°57'11"

K. The permittee shall operate the sewage treatment plant to provide treatment for the maximum design wastewater flows of 300 MGD (maximum daily average) and 400 MGD (peak) without causing treatment process upsets. Throttling of influent flows to the Plant resulting in avoidable, premature sewer system overflows is prohibited.

L. An average monthly flow in excess of 200 MGD shall not be considered to be a violation of this permit.

M. The mass limitation for BOD_5 shall not become effective until January 1, 1989. During the period January 1, 1987 through December 31, 1987 influent data (without impact of recycle streams) and effluent data shall be collected relative to BOD_5 (uninhibited) on a daily basis and First Stage Oxygen Demand (FSOD) on a twice per week basis. This data base will be used to determine whether the existing FSOD allocation, the equivalent BOD_5 mass effluent limitation and/or the current $FSOD/BOD_5$ ratio should be revised. Progress reports shall be submitted to the Delaware River Basin Commission and the Department by April 30, 1987 and September 30, 1987. A final report shall be submitted to the same agencies on or before March 31, 1988.

N. An excursion of the lower pH limitation in the effluent, resulting from the use of the Oxygen Activated Sludge process, shall not be considered as a violation of this permit so long as the excursion frequency does not exceed 2.0% of the time on an annual basis and the pH is not less than 5.5 standard units.

(2NPDW5).4/.4.8

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001;
LOCATED AT LATITUDE 75°13'13", LONGITUDE 39°52'08"

A. During the period beginning at issuance and lasting through expiration, the Permittee is authorized to discharge.
B. The average monthly flow of effluent discharged from the wastewater treatment facility shall not exceed 200 million gallons per day. (a)
C. The quality of effluent shall be limited at all times as specified in Footnote (3) and as follows:

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)			CONCENTRATIONS (mg/l)						
	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.I
LOW (MGD)								Continuous	Measured	
OD-5 b)	21,650	32,475		30	45		60	Daily	24 Hr. Comp.	
OD-5 Removal (g)	DRBC Zone 4 Requirement of 89.25%							Daily	24 Hr. Comp.	
USPENDED SOLIDS	50,040	75,060		30	45		60	Daily	24 Hr. Comp.	
SOD c)	37,020							2/Week	24 Hr. Comp.	
ECAL COLIFORM 5-1 to 9-30)				See Footnote (2)				Daily	Grab	
ECAL COLIFORM 10-1 to 4-30)				Same Limits as in Footnote (2)				Daily	Grab	
H f)	Within Limits of 6 to 9 Standard Units at all times							Daily	Grab	
NH_3-N			Monitor Only					1/Week	24 Hr. Comp.	
KN			Monitor Only					1/Week	24 Hr. Comp.	
NO_3-N			Monitor Only					1/Week	24 Hr. Comp.	
NO_2-N			Monitor Only					1/Week	24 Hr. Comp.	

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001;
LOCATED AT LATITUDE 75°13'13", LONGITUDE 39°52'08"

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)			CONCENTRATIONS (mg/l)						
	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.I
LUMINUM, TOTAL d)					Monitor Only			2/Month	24 Hour Comp.	
RON, DISSOLVED, d)					Monitor Only			2/Month	24 Hour Comp.	
ILVER, TOTAL d) & (e)					Monitor Only			2/Month	24 Hour Comp.	
INC, TOTAL d)					Monitor Only			2/Month	24 Hour Comp.	
YANIDE, FREE d) & (e)					Monitor Only			2/Month	24 Hour Comp.	
HENOLICS, TOTAL AAP) (d)					Monitor Only			2/Month	24 Hour Comp.	
IN, TOTAL d) & (e)					Monitor Only			2/Month	24 Hour Comp.	
ITANIUM, TOTAL d) & (e)					Monitor Only			2/Month	24 Hour Comp.	

a) See Paragraph L, Other Requirements (pg. 14h of 14)
b) See Paragraph M, Other Requirements (pg. 14h of 14)
c) FSOD - First Stage Oxygen Demand - (20 day Biochemical Oxygen Demand Test with Nitrogenous Oxygen Demand Inhibited)
d) See Other Condition G - Water Quality - Based Effluent Limitations and Other Requirements for Management of Toxic Pollutants. (pg. 14a of 14)
e) See Other Condition I, for specific test methods. (pg. 14d of 14)
f) See Paragraph N, Other Requirements (pg. 14h of 14)
g) See Paragraph F, Other Requirements (pg. 14 of 14)

FOOTNOTES: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001 Delaware River (Zone 4), at the Pier Effluent Sampling Building.

(Footnotes Continued)

2. Effective disinfection to control disease producing organisms during the swimming season (May 1 through September 30) shall be the production of an effluent which will contain a concentration not greater than 200/100 ml of fecal coliform organisms as a geometric average value, nor greater than 1,000/100 ml of these organisms in more than 10% of the samples tested.

3. In no case shall the arithmetic means of the effluent values of the BOD_5 and Suspended Solids discharged during a period of 30 consecutive days exceed 10.75% and 15% respectively of the associated arithmetic means of the influent values for those parameters during the same time period, except as specifically authorized by the permitting authority.

D. Definitions

1. The term "bypass" means the discharge of partially treated or untreated sewage from any device or structure of sewerage facilities due to a power failure, equipment failure, hydraulic overload, and/or blockage in all or any part of the sewerage facilities. This is to distinguish it from an overflow which is the systematic discharge of a mixture of partially treated or untreated sewage and stormwater from any device or structure of combined sewerage facilities which is in excess of the downstream hydraulic carrying capacity of those facilities.

2. The term "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

3. The "average monthly flow" means the arithmetic mean of daily flow measurements taken during a calendar month.

4. The "average monthly" mass discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the facility was operating. Where less than daily sampling is required by this permit, the (average) monthly mass discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

5. The "average weekly" mass discharge means the total discharge by weight during a calendar week divided by the number of days in the week that the facility was operating. Where less than daily sampling is required by this permit, the (average) weekly mass discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar week when the measurements were made.

6. The "maximum daily" mass discharge means the total discharge by weight during any calendar day.

7. The "average monthly" effluent concentration means the arithmetic average of all the daily determinations of concentration made during a calendar month.

8. The "average weekly" effluent concentration means the arithmetic average of all the daily determinations of concentration made during a calendar week.

9. The "maximum daily" effluent concentration means the daily determination of concentration for any calendar day.

10. The "instantaneous maximum" concentration means the concentration not to be exceeded at any time in any grab sample.

11. The "daily determination of concentration" means the concentration of a composite sample taken during a calendar day or the arithmetic average of all grab samples taken during a calendar day.

12. The term "composite sample" means a combination of individual samples obtained at regular intervals over a time period. The maximum time period between individual samples shall not exceed two hours.

13. The term "grab sample" means an individual sample collected in less than 15 minutes.

14. The term "measured flow" means any method of liquid volume measurement the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

15. The term "estimate" means to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

16. The term "Industrial User" means an establishment which discharges or introduces industrial wastes into a Publicly Owned Treatment Works (POTW).

17. The term "Publicly Owned Treatment Works" or "POTW" means a facility as defined by Section 212 of the Clean Water Act which is owned by a State or Municipality, as defined by Section 502(4) of the Clean Water Act, including any sewers that convey wastewater to such a treatment works, but not including pipes, sewers or other conveyances not connected to a facility providing treatment. The term also means the municipality as defined in Section 502(4) of the Clean Water Act which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

II. MONITORING AND REPORTING

A. Representative Sampling and Test Procedures

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Unless otherwise specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 CFR Part 136, or alternate test procedures approved pursuant to that part.

B. Self-Monitoring and Reporting Requirements

The permittee shall effectively monitor the operation and efficiency of all treatment and control facilities and the quantity and quality of the discharge. Monitoring data required by this permit shall be submitted monthly.

--A Discharge Monitoring Report (DMR) properly completed and signed by the treatment plant operator in responsible charge, must be submitted within 45 days after the end of each monthly report period. Notification of the designation of the responsible operator must be submitted to the permitting agency by the permittee within 60 days after the effective date of the permit and from time to time thereafter as the operator is replaced. The DMR must be sent to the Department and the EPA Regional Office at the following addresses:

Department of Environmental Resources
Bureau of Water Quality Management
1875 New Hope Street
Norristown, Pennsylvania 19401

Pennsylvania Section (3WM52)
Permits, Water Branch
Water Division
U.S. Environmental Protection Agenc
Region III
841 Chestnut Building
Philadelphia, PA 19106

C. If the permittee monitors any pollutant, using analytical methods described in Part A.2.A(2) above, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

D. Non-Compliance Reporting

1. 24-Hour Reporting:

The permittee shall orally report to the Department within 24 hours of becoming aware of the following:

(a) Actual or anticipated non-compliance with any term or condition of this permit which may endanger health or the environment.

(b) Actual or anticipated non-compliance with any "maximum daily" discharge limitation which is identified in Part A1 of this permit as being either:

(i) A toxic pollutant effluent standard established by EPA pursuant to Section 307(a) of the Clean Water Act, or

(ii) A toxic or hazardous pollutant which, if not adequately treated, could constitute a threat to human health, welfare, or the environment,

(iii) Any pollutant identified as the method to control a toxic pollutant or hazardous substance (i.e., indicator pollutant).

(c) Any unanticipated bypass which exceeds any effluent limitations in the permit.

(d) Where the permittee orally reports this information within the above mentioned 24 hour time period, a written submission outlining the above information must be submitted to the Department within 5 days of becoming aware of such a condition, unless this requirement is waived by the Department upon receipt of the oral report.

2. Other Non-Compliance Reporting.

(a) The permittee shall give advance notice to the Department of any planned changes to the permitted activity or facility which may result in non-compliance with permit requirements.

(b) Where the permittee knows in advance of the need for a bypass which will exceed effluent limitations it shall submit prior notice to the Department at least 10 days, if possible, before date of the bypass.

(c) The permittee shall report all instances of non-compliance which are not reported above at the time of DMR submission.

3. The reports and notifications required above shall contain the following information:

(a) A description of the discharge and cause of non-compliance;

(b) The period of non-compliance, including exact date and times and/or the anticipated time when the discharge will return to compliance; and

(c) Steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

E. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The exact place, date, and time of sampling or measurement.
2. The person(s) who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The person(s) who performed the analyses.
5. The analytical techniques or methods used.
6. The results of such analyses.

F. Records Retention

All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three year period shall be extended as requested by the Department or the EPA Regional Administrator.

III. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with final effluent limitations or terminate this discharge in accordance with the following schedule:

A. Feasibility study completion _____

B. Final plan completion _____

C. Start construction _____

D. Construction progress report(s) _____

E. End construction _____

F. Compliance with effluent limitations _____

G. Terminate discharge _____

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to the Department a written notice of compliance or non-compliance with the specific schedule requirement(s). Each notice of non-compliance shall include the following information:

A. A short description of the noncompliance.

B. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirement.

C. A description of any factors which tend to explain or mitigate the noncompliance.

D. An estimate of the date that compliance with the elapsed schedule requirement will be achieved and an assessment of the probability that the next scheduled requirement will be met on time.

I. MANAGEMENT REQUIREMENTS

A. Publicly Owned Treatment Works (POTW)

1. Where the permittee is a Publicly Owned Treatment Works (POTW), the permittee shall provide adequate notice as discussed in A(2) below to the Department of the following:

   (a) Any new introduction of pollutants into the POTW from an Industrial User which would be subject to Sections 301 and 306 of the Clean Water Act if it were otherwise discharging directly into waters of the United States.

   (b) Any substantial change in the volume or character of pollutants being introduced into the POTW by an Industrial User which was discharging into the POTW at the time of issuance of this permit.

   (c) Any change in the quality and quantity of effluent introduced into the POTW.

   (d) The identity of significant Industrial Users served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also identify the character and volume of pollutants discharged into the POTW by the Industrial User.

2. The submission of the above information in the POTW's annual Wasteload Management Report, required under the provisions of 25 Pa. Code Chapter 94 will normally be considered as providing adequate notice to the Department. However, if the above changes in industrial pollutant loadings to the POTW are significant enough to warrant either modification or revocation and reissuance of this permit, then the permittee is required to meet the provisions of Management Requirements B below.

3. The POTW shall require all Industrial Users to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act and any regulations adopted thereunder, and the Clean Streams Law and any regulations adopted thereunder.

B. Permit Modification, Termination, or Revocation and Reissuance

1. This permit may be modified, terminated, or revoked and reissued during its term for any of the causes specified in 25 Pennsylvania Code, Chapter 92.

2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or a notification of planned changes or anticipated non-compliance does not stay any permit condition.

3. Notwithstanding the above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, this permit shall be modified or revoked and reissued in accordance with the toxic effluent standard or prohibition and the permittee shall be so notified.

In the absence of a Departmental action to modify or to revoke and reissue this permit, any toxic effluent standard or prohibition established under Section 307(a) of the Act is considered to be effective and enforceable against the permittee.

C. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania Clean Streams Law and 25 Pennsylvania Code, Chapter 92, the permittee shall allow the head of the Department, the EPA Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

1. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit.

2. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit and other documents as may be required by law.

3. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit.

4. To inspect any collection, treatment, pollution management, or discharge facilities required under the permit.

5. To sample any substances or parameters at any location.

D. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges; nor does it authorize any injury to private property or any invasion of personal rights.

E. Duty to Provide Information

1. The permittee shall furnish to the Department within a reasonable time, any information which the Department may request to determine whether cause exists for modifying revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

2. The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

3. Planned changes: The permittee shall give advance notice to the Department of any physical alterations or additions to the permitted facility.

4. Other Information: Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information to the Department.

F. Confidentiality

Except for data determined to be confidential under 25 Pennsylvania Code, Chapter 92, all required reports shall be available for public inspection at the offices of the Department and the EPA Regional Administrator. Effluent data shall not be considered confidential.

G. Facility Operation and Quality Control

The permittee shall at all times maintain in good working order and properly operate all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee for water pollution control and abatement to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes but is not limited to effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and processing controls including appropriate quality assurance procedures. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with this permit.

H. Bypassing

1. Bypassing Not Exceeding Permit Limitations: The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if the bypass is for essential maintenance to assure efficient operation. This type of bypassing is not subject to the reporting and notification requirements of Part A.2.D above.

2. In all other situations, bypassing is prohibited unless the following conditions are met:

   (a) A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage";

   (b) There are no feasible alternatives to a bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down-time; (This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance.); and

   (c) The permittee submitted the necessary reports required under Part A.2.D. above.

3. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the conditions listed under Part B.I.2. above.

I. Adverse Impact

Permittee shall take all reasonable steps to minimize any adverse impact on the environment resulting from noncompliance with this permit.

J. Solids Disposal

Collected screenings, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those waters (or runoff from the wastes) into waters of the Commonwealth.

K. Penalties and Liability

1. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

2. Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance pursuant to Section 309 of the Clean Water Act or Sections 602 or 605 of the Clean Streams Law.

L. Transfer of Ownership or Control

1. No permit may be transferred unless approved by the Department.

2. In the event of any pending change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the Department by letter of such pending change at least thirty days prior to the change in ownership or control.

3. The letter shall be accompanied by the appropriate Department forms for transfer of the permit and a written agreement between the existing permittee and the new owner or controller stating that the existing date of permit transfer and that the new owner or controller shall be liable for permit violations from that date on.

4. After receipt of the documentation above, the Department shall notify the existing permittee and the new owner or controller of its decision concerning approval of the transfer. In approving a transfer the Department may modify or revoke and reissue the permit.

5. In the event the Department does not approve transfer of the permit, the new owner or controller must submit a new permit application.

M. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

N. Other Laws

Nothing herein contained shall be construed to be an intent on the part of the Department to approve any act made or to be made by the permittee inconsistent with the permittee's lawful powers or with existing laws of the Commonwealth regulating sewerage discharge and the practice of professional engineering, nor shall this permit be construed to sanction any act otherwise forbidden by federal or state law or regulation, or by local ordinance. Nor does it pre-empt any duty to obtain State or local assent required by law for the discharge(s).

PART C

OTHER REQUIREMENTS

A. Effluent limitations, monitoring requirements, and other standard and special conditions which relate to the discharge(s) of pollutants authorized by this permit and which are contained in Water Quality Management Permit(s)

No. 9213S, 766S2, 5172419 issued on February 27, 1959, April 26, 1966, October 1, 1973

are superseded by the terms and conditions of this permit, unless specifically noted otherwise herein.

B. A copy of the Discharge Monitoring Report is to be sent to the following agency:

Delaware River Basin Commission
P.O. Box 7360
West Trenton, New Jersey 08628

C. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

D. For reporting purposes on the Discharge Monitoring Report, the term "average weekly" shall mean the highest average weekly value observed during the monthly monitoring period.

E. If, in the opinion of the Department, the sewage treatment plant is not so operated or if by reason of change in the character of the waste or increased load upon the sewage treatment plant, or changed use or condition of the receiving body of water, or otherwise, that the effluent ceases to be satisfactory or the sewage treatment plant creates a public nuisance, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the receiving body of water.

F. The BOD_5 in the raw wastewater shall be reduced by at least 89.25% as a monthly average in accordance with the requirements of the Delaware River Basin Commission for Zone 4 of the Delaware Estuary. The percent removal shall be calculated from daily 24 hour composite samples of the influent and effluent. The influent samples must reflect true characteristics of the raw wastewater and must not be affected by plant recycle flows.

The BOD_5 percentage removal requirement of 89¼% will be relaxed to 86% when the influent BOD_5 concentration is less than 110 mg/l on a monthly average basis so long as the FSOD allocation, the equivalent mass BOD_5 limitation and an effluent BOD_5 concentration of 15 mg/l are not exceeded on a monthly average basis.

PART C

OTHER REQUIREMENTS

e. Procedures for Demonstration of Alternative Site-Specific Bioassay-Based Effluent Limitations

Where the water quality-based effluent limitations listed in this Part C have been developed by the Department for protection of fish and aquatic life, the Permittee may request an opportunity to demonstrate alternative, site-specific, bioassay-based "safe concentration values" for the pollutants in question.

The following water quality-based effluent limitations in this Part C are based on protection of fish and aquatic life:

Aluminum, Silver, Zinc, Tin, Titanium.

The procedures for carrying out such demonstrations shall be approved in writing by the Department, and shall be conducted in accordance with the requirements of Sections 93.8(d)-(e) of the Department's Rules and Regulations.

Requests for alternative, site-specific, bioassay-based effluent limitations, including all documentation required to support such a request, must be submitted to the Department along with the Permittee's TRE as required under this Part C.

Where the demonstration results in more stringent limitations than those established by the Department in this Part C, the more stringent limitations will apply. Any less stringent limitations which are approved by the Department shall not violate applicable criteria for the protection of human health. This procedure does not apply to those parameters for which specific numeric criteria are listed in Section 93.7, Table 3 of the Department's Rules and Regulations.

H. The following requirements shall apply with regard to implementation of the required industrial pretreatment program.

(a) The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act and the General Pretreatment Regulations (40 CFR Part 403). The program shall also be implemented in accordance with the approved POTW pretreatment program submitted by the permittee.

(b) The permittee shall submit to EPA and DER an annual report that describes the permittee's program activities over the previous 12 months. The permittee must also report on the pretreatment program activities of all participating agencies, if more than one jurisdiction is involved in the local program.

(c) The report shall be incorporated into and submitted with the permittee's annual Municipal Wasteload Management report required by DER's Chapter 94 Rules and Regulations. The report shall include the following:

PART C

OTHER REQUIREMENTS

1) Compliance with Categorical and Local Standards - A summary of the compliance status for those industries affected by final Categorical Pretreatment Standards.

2) Review of Industrial Compliance - Information on the number and type of major violations of pretreatment regulations, and the actions taken or planned by the POTW to obtain compliance.

3) Summary of Industrial User Inspections - A summary of the number and type of industrial user inspections by the POTW.

4) Summary of POTW Operations - Any interference, upset, or permit violations experienced at the POTW directly attributable to industrial users, and actions taken to alleviate said events. Sampling and analysis of POTW influent, effluent, and sludge for toxic and incompatible pollutants shall also be included.

5) Pretreatment Program Changes - A description of any significant changes in operating the program from the original submission, including staffing and funding. An updated industrial survey shall be included, as appropriate.

6) Other Miscellaneous Pretreatment Developments - POTW facility changes, problems or improvements regarding sludge, water quality, data management, or any special concerns.

(d) EPA and DER retain the right to require the POTW to institute changes to its local pretreatment program:

1) If the program is not implemented in a way satisfying the requirements of 40 CFR 403;

2) If problems such as interference, pass through, or sludge contamination develop or continue;

3) If other Federal, State or local requirements (i.e., water quality standards) change.

I. Analysis for the following pollutant(s) shall be performed using the following test method(s) contained in the EPA publication entitled Methods for Chemical Analysis of Water and Wastes, or any approved test method(s) of equal or greater sensitivity.

Silver	EPA Method 272.2 Graphite Furnance A.A.
Cyanide, Free	See Suggested PA. DER method for Determination of Free, Cyanide (Draft 5-84)
Tin	EPA Method 282.2 Graphite Furnance A.A.
Titanium	EPA Method 283.2 Graphite Furnance A.A.

PART C

OTHER REQUIREMENTS

G.. Water Quality-Based Effluent Limitations and Other Requirements for Management of Toxic Pollutants

a. Water Quality-Based Effluent Limitations

In addition to the effluent limitations shown in Part A of this permit, the Permittee is expected to achieve the water quality-based effluent limitations shown below.

No final date for compliance with these limitations is shown. The Department will modify this permit to establish a final compliance date, if necessary, upon the submittal by the Permittee and review by the Department of an acceptable Toxics Reduction Evaluation (TRE), or the failure of the Permittee to submit an acceptable TRE under the schedule established under Section G.b. of this Part C. The Permittee must submit the following requests, along with supporting documentation, to the Department at the time of submission of the TRE:

(1) A request for modification of water quality-based effluent limitations shown below; and/or,

(2) A request for an extension of time to achieve the water quality-based effluent limitations shown below; and/or,

(3) A request for alternative bioassay-based effluent limitations.

For purposes of compliance, effluent limitations listed in Part A of this permit apply unless changed by order, permit modification or other Department action.

Submittal by the Permittee of a TRE shall not be deemed to affect the appeal rights of the Permittee of final water quality-based effluent limitations upon action of the Department to make the limitations effective.

Outfall 001

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Maximum
Aluminum	mg/l	2.3		4.6
Iron, Dissolved	mg/l	0.921		1.84
Silver, Total	mg/l	0.005		0.010
Zinc, Total	mg/l	0.18		0.36
Cyanide, Free	mg/l	0.011		0.022
Phenolics, Total (4AAP)	mg/l	0.047		0.094
Tin, Total	mg/l	0.036		0.072
Titanium, Total	mg/l	0.108		0.216

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OTHER REQUIREMENTS

b. Toxics Reduction Evaluation (TRE)

In order to (1) verify the actual extent of the toxic pollutants associated with the wastewater, (2) determine sources of these toxic pollutants, and (3) recommend control and/or treatment technologies to reduce or eliminate these toxic pollutants, the Permittee is directed to carry out a Toxics Reduction Evaluation (TRE) in accordance with guidelines developed by the Department.

The Permittee shall submit three (3) copies of the completed TRE to the Department for review in accordance with the following schedule:

Step	Date
Begin Work on the TRE and so Notify the Department	11/01/86
Submit a Progress Report to the Department	05/01/87
Submit a Progress Report to the Department	11/01/87
Submit a Progress Report to the Department	05/01/88
Submit the Completed TRE to the Department	11/01/88

c. Modification of Permit to Incorporate Water Quality-Based Effluent Limitations for Toxic Pollutants

Upon approval of the TRE and any additional submittals for the above toxic pollutants of concern, the Department will modify Part A of this permit to reflect the effluent limitations, monitoring requirements, and other conditions necessary for compliance with water quality standards.

A permit modification may include a schedule of compliance. Any such permit modification will be conducted in accordance with applicable permit modification procedures, which include development of draft and final permits and associated public notification requirements.

d. Procedures for Granting Extensions of Time to Achieve Water Quality-Based Effluent Limitations

At the request of the Permittee, in conjunction with modifying the permit to incorporate water quality-based effluent limitations under Subsection c. above, the Department may grant an extension of time to achieve the water quality-based effluent limitations shown in Subsection a. above, provided the Permittee meets all of the eligibility requirements contained in Section 95.4 of the Department's Rules and Regulations.

Requests for Section 95.4 time extension, including all documentation required to support such a request, must be submitted to the Department along with the Permittee's TRE as required under Subsection b. above.

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OTHER REQUIREMENTS

J. Point Sources 002 through 084 (listed below) serve as combined sewer reliefs necessitated by stormwater entering the sewer system and exceeding the ydraulic capacity of the sewers and/or the treatment plant and are permitted to discharge only for such reason. There are at this time no specific effluent limitations on these discharges. The regulating chambers shall be maintained in operable condition including regular monitoring and inspection of regulator controls within the combined sewer system and prompt repair or replacement of malfunctioning regulator controls. Results of the inspections shall be submitted monthly as part of the Discharge Monitoring Report. (Interceptors Services Report)

Schuylkill River

Lower Schuylkill East Side

Point Source	Interceptor Regulator Name	Longitude	Latitude
002	Reed St. & Schuylkill Ave (S31)	75°12'18"	40°56'17"
003	34th St. & Mifflin Sts. (S36A)	75°12'25"	39°55'55"
004	Vare Avenue & 29th St. (S-37)	75°12'37"	39°55'41"
005	Passyunk Ave. & 29th St. (S-42)	75°12'05"	39°55'11"
006	Passyunk Ave. & 28th St. (S-42A)	75°12'05"	39°55'11"
007	26th St. 700' N of Hartranft St. (S-44)	75°12'13"	39°54'53"
008	Penrose Ave. & 26th St. (S-46)	75°12'40"	39°53'54"

Central Schuylkill East Side

009	24th St. 155' S of Parktowne Place (S-5)	75°10'49"	39°57'41"
010	24th St. 350' S of Parktowne Place (S-6)	75°10'50'	39°57'39"
011	24th St E. of Schuylkill River (S-7)	75°10'47"	39°57'37"
012	Race St & Bonsall St. (S-8)	75°10'45"	39°57'30"
013	Arch St. W. of 23rd St. (S-9)	75°10'46"	39°57'24"
014	Market ST. 25' E. of 24th St. (S-10)	75°10'48"	39°57'16"
015	Chestnut St. & 24th St. (S-12A)	75°10'50"	39°57'11"
016	Sansom St. W. of 24th St. (S-13)	75°13'52"	39°57'08"
017	Walnut St. W. of 24th St. (S-15)	75°10'54"	39°57'05"
018	Locust St. & 25th St. (S-16)	75°10'56"	39°57'00"
019	Spruce St. & 25th St. (S-17)	75°11'00"	39°56'57"
020	Pine St. W of Taney St. (S-18)	75°11'06"	39°56'53"
021	Lombard St. W. of 27th St. (S-19)	75°11'09"	39°56'52"
022	South St. E. of 27th St. (S-21)	75°11'12"	39°56'48"
023	Schuylkill Ave. & Bainbridge St. (S-23)	75°11'17"	39°56'45"

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Point Source	Interceptor Regulator Name	Longitude	Latitude
024	Schuylkill Ave. & Christian St. (S-25)	75°11'28"	39°56'36"
025	Ellsworth St. W. of Schuylkill Ave. (S-26)	75°11'35"	39°56'30"
	Central Schuylkill Interceptor Central Schuylkill West Side		
026	Mantua Ave. & West River Drive (S-1)	75°11'17"	39°58'02"
027	Haverford Ave. & West River Drive (S-2)	75°11'06"	39°57'54"
028	Spring Garden St. W. of Schuylkill Expressway (S-3)	75°11'04"	39°57'53"
029	Powelton Ave. W. of Schuylkill Expressway (S-4)	75°10'56"	39°57'42"
030	Market St. in the PRR Baggage Rm (S-11)	75°10'53"	39°57'17"
031	Schuylkill Expressway and Walnut St. Bridge (S-14)	75°10'58"	39°57'05"
032	440 Ft. N. W. of South St. PRR Property (S-20)	75°11'12"	39°56'52"
033	660 Ft. S. of South St. E. of Pennfield (S-22)	75°11'22"	39°56'43"
034	1,060 Ft. S. of South St. E. of Pennfield (S-24)	75°11'26"	39°56'43"
	Southwest Main Gravity		
035	46th St. & Paschall Ave. (S-30)	75°12'23"	39°56'31"
036	43rd St. S.E. of Woodland Ave. (S-50)	75°12'18"	39°56'36"
077	42nd St. S.E. of Woodland Ave. (S-51)	75°12'18"	39°56'36"
	Lower Schuylkill West Side		
037	49th St. S. of Botanic St. (S-32)	75°12'23"	39°56'14"
038	51st ST. and Botanic St. (S-33)	75°12'23"	39°56'08"
039	56th St. E. of P&R Railroad (S-38)	75°12'49"	39°55'43"
040	67th St. E. of P&R Railroad (S-45)	75°12'58"	39°54'29"
	Discharge to Cobbs Creek Cobbs Creek Low Level		
041	60th St. & Cobbs Creek Parkway (C-18)	75°14'08"	39°56'11"
042	Mount Moriah Cemetary & 62nd St. (C-19)	75°14'19"	39°55'57"
043	65th St. & Cobbs Creek Parkway (C-20)	75°14'39"	39°55'46"
044	68th St. & Cobbs Creek Parkway (C-21)	75°15'40"	39°55'38"
045	70th St. & Cobbs Creek Parkway (C-22)	75°14'46"	39°55'27"
046	Upland St. & Cobbs Creek Parkway (C-23)	75°14'52"	39°55'14"
047	Woodland Ave. E. of Island Ave.	[illegible]	[illegible]

PART C

OTHER REQUIREMENTS

Point Source	Interceptor Regulator Name	Longitude	Latitude
048	75th St. & Grays Ave. (C-28)	75°14'55"	39°54'45"
078	Island Ave. S. E. of Glenmore Ave. (C-28A)	75°14'58"	39°54'60"
049	Claymont St. & Grays Ave. (C-29)	75°14'56"	39°54'75"
050	77th St. W. of Elmwood Ave. (C-30)	75°15'02"	39°54'34"
079	Saybrook Ave. & Island Ave. (C-26)	75°14'51"	39°55'00"
	Cobbs Creek High Level		
051	City Line Ave. & 73rd St. (C-1)	75°16'04"	39°58'51"
052	City Line Ave. 100 Ft. South Side of Creek (C-2)	75°16'02"	39°58'51"
053	Malvern Ave. & 68th St. (C-4)	75°15'28"	39°58'39"
054	Lebanon Ave. S. W. of 73rd St. (C-5)	75°15'26"	39°58'31"
055	Lebanon Ave. & 68th St. (C-6)	75°15'26"	39°58'31"
056	Lansdowne Ave. & 69th St. (C-7)	75°15'26"	39°58'27"
080	Paschall Ave. & Island Ave. (C-27)	75°14'51"	39°55'00"
081	Greenway Ave. & Cobbs Creek Parkway (C-24)	75°14'51"	39°55'00"
057	64th St. & Cobbs Creek (C-9)	75°14'57"	39°57'52"
058	Gross St. & Cobbs Creek (C-10)	75°14'53"	39°57'50"
059	Cobbs Creek Parkway S. of Market St. (C-11)	75°14'54"	39°57'43"
060	Spruce St. & Cobbs Creek (C-12)	75°14'59"	39°57'26"
061	62nd St. & Cobbs Creek (C-13)	75°14'57"	39°56'56"
062	Baltimore Ave. & Cobbs Creek (C-14)	75°14'50"	39°56'44"
063	59th St. & Cobbs Creek Parkway (C-15)	75°14'26"	39°56'32"
064	Thomas Ave. & Cobbs Creek (C-16)	75°14'22"	39°56'27"
065	Beaumont St. & Cobbs Creek (C-17)	75°14'06"	39°56'15"
066	Cobbs Creek Parkway S. of City Line Ave. (C-31)	75°16'50"	39°28'29"
067	Brockton Rd. & Farrington Rd. (C-33)	75°15'55"	39°38'13"
068	Woodcrest Ave. & Morris Park (C-34)	75°15'43"	39°58'41"
069	Morris Park W. of 72nd St. and Sherwood Rd. (C-35)	75°15'55"	39°58'46"
070	Woodbine Ave. S. of Brentwood Rd. (C-36)	75°15'33"	39°57'55"
071	Cobbs Creek Parkway S. of 67th St. and Callowhill St. (C-37)	75°15'15"	39°57'55"
072	Cobbs Creek Parkway & 77th St. (C-32)	75°16'12"	39°58'21"
082	Malvern Ave. N.W. of 68th St. (C-4A)	75°15'28"	39°58'39"
083	Thomas Run Relief Sewer - Cobbs Creek Parkway W. of Ashland St.	75°14'24"	39°56'29"
084	Arch St. Relief Sewer - Arch St. and Cobbs Creek	75°14'53"	39°57'48"
	Discharges to Schuylkill River Lower Schuylkill East Side		
073	35th St. & Mifflin St. (S-35)	75°12'25"	39°55'55"
074	36th St. & Mifflin St. (S-36)	75°12'25"	39°55'55"

PART C

OTHER REQUIREMENTS

O. Biomonitoring Requirements

Upon the effective date of this permit, the permittee shall initiate a 12-month biomonitoring program to assess the potential toxicity of the effluent on the aquatic life in the receiving stream. As a minimum, the following requirements shall be met in conducting this program:

a. For the first two months, toxicity tests shall be conducted on Ceriodaphnia and Fathead Minnow. After the first two months, toxicity tests shall be conducted only on the most sensitive organism. Twenty-Four hour composite samples shall be taken for 7 consecutive days each month. Each composite shall be used as daily-renewal water for the 7 day chronic tests.

b. For each 24-hour composite sample taken, a chemical analysis of the sample shall be provided for BOD_5 and suspended solids.

c. The chemical monitoring required in this permit shall be conducted on at least one composite sample/month used in the biomonitoring tests.

d. Only chronic tests shall be conducted. The test procedures (including quality assurance) to be used are described in EPA's Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA-600/4-85-014 December, 1985). The 0.5 dilution factor series shall be used in the toxicity testing.

e. Dilution water shall be obtained from a flow weighted composite of the raw water intakes servicing this facility. If the dilution water shows any toxicity, separate chronic tests shall be conducted from each of the sources of dilution water.

f. Separate tests shall be conducted on the treated effluent prior to chlorination and on the chlorinated effluent.

g. Commencement of sample collection per item a, shall be at a time when there is minimal storm drainage inflow to the collection system. A description of the degree of inflow at the time of sample collection shall be provided.

h. All tests results shall be reported as well as the calculated effect levels as prescribed in EPA methods manual along with quarterly Discharge Monitoring Reports.

If the most toxic of the biomonitoring results indicates that the no observed effect level (NOEL) is at a point where the effluent portion is less than 50% of the total test water volume, the permittee may be required to submit a Toxic Reduction Plan. This plan, upon approval by EPA may become an enforceable part of this permit.

ER—BWQ—15.2: Rev. 8/87

DRAFT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

JUL. 22 1992

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM SEWAGE PERMIT NO. PA ~~0026671~~

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

City of Philadelphia Water Department

is hereby authorized to discharge from the Southwest Water Pollution Control Plant (Point Source 001) and 83 overflow points (Point Sources 002-084) located in the City of Philadelphia, Philadelphia County.

to the receiving waters named Delaware River Zone 4 (Point Source 001); Schuylkill River (Point Sources 002-040 and 073-077); Cobbs Creek (Point Sources 041-072 and 078-084).

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

This permit and the authorization to discharge shall expire at midnight _____.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the standard or special conditions, and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with any of the terms or conditions of this permit is grounds for enforcement action; for permit termination, revocation and reissuance or modification; or for denial of a permit renewal application.

3. It is required by law that this permit, before becoming operative, shall be recorded in the Office of the Recorder of Deeds for the county wherein the outlet of said sewer system is located.

4. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date), using the appropriate NPDES Permit Application Form. In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal.

5. This permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

PERMIT ISSUED BY _____

DATE _____ TITLE Joseph A. Feola

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JUL. 22 1992

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 75°13'13", LONGITUDE 39°52'08"

A. The Permittee is authorized to discharge during the period from issuance through expiration.
B. The average monthly flow of effluent discharged from the wastewater treatment facility shall not exceed 200 million gallons per day.
C. The quality of effluent shall be limited at all times as specified in Footnote (3) and as follows:

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)		CONCENTRATIONS (mg/l)				INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY				
FLOW (a)								Continuous	Recorded	
BOD_5 (b)	21,650	32,475		30	45		60	Daily	24 HC	
BOD_5 % REMOVAL (f)	DRBC Zone 4 Requirement of 89.25%							Daily	24 HC	
SUSPENDED SOLIDS	50,040	75,060		30	45		60	Daily	24 HC	
$CBOD_{20}$ (c)	37,020							2/Week	24 HC	
FECAL COLIFORM (5-1 to 9-30)			See Footnote (2)					Daily	Grab	
FECAL COLIFORM (10-1 to 4-30)			Same Limits as in Footnote (2)					Daily	Grab	
pH (d)	Within Limits of 6 to 9 Standard Units at all times							Daily	Grab	
NH_3-N				Monitor Only	Monitor Only			1/Week	24 HC	
TKN				Monitor Only	Monitor Only			1/Week	24 HC	
NO_3-N				MONITOR ONLY	MONITOR ONLY			1/Week	24 HC	
NO_2-N				MONITOR ONLY	MONITOR ONLY			1/Week	24 HC	

Continued on Page 2a

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS			
	MASS UNITS (lbs/day)			CONCENTRATIONS (mg/l)			INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY				
ALUMINUM, TOTAL (e)				MONITOR ONLY				1/Month	24 HC	
CHROMIUM, TOTAL (e)				MONITOR ONLY				1/Month	24 HC	
CHROMIUM, HEXAVALENT (e)				MONITOR ONLY				1/Month	Grab	
COPPER (e)				MONITOR ONLY				1/Month	24 HC	
IRON, TOTAL (e)				MONITOR ONLY				1/Month	24 HC	
IRON, DISSOLVED (e)				MONITOR ONLY				1/Month	24 HC	
MANGANESE (e)				MONITOR ONLY				1/Month	24 HC	
SILVER (e)				MONITOR ONLY				1/Month	24 HC	
ZINC (e)				MONITOR ONLY				1/Month	24 HC	
CYANIDE, FREE (e)				MONITOR ONLY				1/Month	24 HC	
TETRACHLOROETHYLENE (e)				MONITOR ONLY				1/Month	Grab	
TOTAL RESIDUAL CHLORINE				MONITOR ONLY				Daily	Grab	

(a) See Paragraph O, Other Requirements (Page 14m of 14)
(b) See Paragraph P, Other Requirements (Page 14m of 14)
(c) $CBOD_{20}$- 20-day Carbonaceous Biochemical Oxygen Demand Test with Nitrogenous Oxygen Demand Inhibited
(d) See Paragraph T, Other Requirements (Page 14v of 14)
(e) See Paragraph H, Other Requirements (Page 14a of 14)
(f) See Paragraph G, Other Requirements (Page 14a of 14)

FOOTNOTES: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 001 at the Pier Effluent Sampling Building.

DRAFT

JUL. 22 1992

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 75°13'13", LONGITUDE 39°52'08"

A. During the period beginning at issuance and lasting through expiration, the Permittee is authorized to discharge.
B. Based on production data and anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply.

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS			
	MASS UNITS (lbs/day)		TUc ****							
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	INSTAN-TANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
WHOLE EFFLUENT TOXICITY - CERIODAPHNIA DUBIA * & **						MONITOR ONLY		QUARTERLY	24 H.C.	
WHOLE EFFLUENT TOXICITY - FATHEAD MINNOW * & ***						MONITOR ONLY		QUARTERLY	24 H.C.	

FOOTNOTES: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001 at the Pier Effluent Sampling Building

* See Paragraph Q, Other Requirements (14m of 14)
** Toxicity monitoring based on the static renewal chronic Ceriodaphnia dubia test reported as a maximum daily result.
*** Toxicity monitoring based on the static renewal chronic Fathead minnow test reported as a maximum daily result.
**** TUc: Chronic Toxicity Units $TUc = \frac{100}{NOEC}$

PART C

OTHER REQUIREMENTS

A. Effluent limitations, monitoring requirements, and other standard and special conditions which relate to the discharge(s) of pollutants authorized by this permit and which are contained in Water Quality Management Permit(s)

No. 9213S, 766S2 and 5172419 issued on February 27, 1959; April 26, 1966 and October 1, 1972.

are superseded by the terms and conditions of this permit, unless specifically noted otherwise herein.

B. A copy of the Discharge Monitoring Report is to be sent to the following agencies:

Delaware River Basin Commission
P.O. Box 7360
West Trenton, New Jersey 08628

PA Enforcement Branch (3WM51)
U.S. Environmental Protection Agency
841 Chestnut Building
Philadelphia, PA 19107

C. For reporting purposes on the Discharge Monitoring Report, the term "average weekly" shall mean the highest average weekly value observed during the monthly monitoring period.

D. If, in the opinion of the Department, the sewage treatment plant is not so operated or if by reason of change in the character of the waste or increased load upon the sewage treatment plant, or changed use or condition of the receiving body of water, or otherwise, that the effluent ceases to be satisfactory or the sewage treatment plant creates a public nuisance, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactory for discharge into the receiving body of water.

E. No storm water from pavements, area ways, roofs, foundation drains or other sources shall be admitted to the separate sanitary sewers associated with the herein approved discharge.

F. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

PART C

OTHER REQUIREMENTS

G. The BOD_5 in the raw wastewater shall be reduced by at least 89.25% as a monthly average in accordance with the requirements of the Delaware River Basin Commission for Zone 4 of the Delaware Estuary. The percent removal shall be calculated from daily 24 hour composite samples of the influent and effluent. The influent must reflect true characteristics of the raw wastewater and must not be affected by plant recycle flows. If equivalent $CBOD_5$ effluent limits replace the BOD_5 effluent limits, the percent removal shall be calculated using influent and effluent $CBOD_5$ measurements.

The BOD_5 percent removal requirement will be relaxed to 86% when the influent BOD_5 concentration is less than 110 mg/l on a monthly average basis so long as the $CBOD_{20}$ allocation, equivalent mass BOD_5 limitation and an effluent BOD_5 concentration of 15 mg/l are not exceeded on a monthly average basis. If equivalent $CBOD_5$ effluent limits replace the BOD_5 effluent limits, the above percent removal requirements shall apply to $CBOD_5$ and the 110 mg/l and 15 mg/l BOD_5 concentrations shall be converted to equivalent $CBOD_5$ concentrations based on the ratio of monthly average $CBOD_5$ to BOD_5 mass effluent limitations.

H. Analysis for the following pollutant(s) shall be performed using the following test method(s) contained in 40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants, or any approved test method(s) of equal or greater sensitivity.

Parameter	Test Method
Aluminum, Total	EPA Method 210.1 (AA, Flame)
Chromium, Total	EPA Method 218.1 (AA, Flame)
Chromium, Hexavalent	EPA Method 218.4 (AA, Extraction)
Copper	EPA Method 220.2 (AA, Furnace)
Iron, Total	EPA Method 236.1 (AA, Direct)
Iron, Dissolved	EPA Method 236.1 (AA, Direct)
Manganese	EPA Method 242.1 (AA, Flame)
Silver	EPA Method 272.2 (AA, Furnace)
Zinc	EPA Method 289.1 (AA, Flame)
Cyanide, Free	DER Method (See Attached)
Tetrachloroethylene	EPA Method 601 (GC/Hal.)

I. The following requirements shall apply with regard to implementation of the required industrial pretreatment program.

(1) The permittee shall operate an industrial pretreatment program in accordance with the Clean Water Act and the General Pretreatment Regulations (40 C.F.R. 403). The program shall also be implemented in accordance with the approved and/or modified POTW pretreatment program submitted by the permittee.

(2) The permittee shall submit all changes, and obtain approval of all substantial changes, in its approved pretreatment program in accordance with 40 C.F.R. 403.18.

(3) The permittee's implementation of its pretreatment program shall, at a minimum, meet the requirements listed below. Where the approved program requires more stringent or more frequent

OTHER REQUIREMENTS

(a) The permittee shall provide written notice of applicable pretreatment requirements to all industrial users. For significant industrial users (SIUs) such written notice shall be through individual discharge permits or other equivalent control mechanism in accordance with 40 C.F.R. 403.8(f). All SIU control mechanisms shall be in place within 6 months of program approval and shall not be issued for a period which exceeds 5 years. SIU control mechanisms shall be reissued within 3 months of expiration, and administrative extensions shall not be granted without written consent from the Approval Authority.

(b) Each SIU shall be sampled by the permittee at least once per year. Such sampling shall include all regulated parameters.

(c) Each SIU shall be inspected by the permittee at least once per year. Such inspection shall cover all areas which could result in wastewater discharge to the sewer including manufacturing areas, chemical storage areas, pretreatment facilities, spill prevention and control procedures, hazardous waste generation, and industrial self-monitoring procedures and records.

(d) The permittee shall implement the industrial reporting requirements of 40 C.F.R. 403.12.

(e) The permittee shall develop and obtain Approval Authority approval of a written enforcement response plan (ERP) within 6 months of permit issuance. The ERP shall indicate how instances of violation will be investigated, what enforcement options are available to the POTW, contain a listing of potential industrial violations, and state the type of action and time frame for the permittee's enforcement for each violation. Where approval of the ERP has been previously granted, the permittee shall reevaluate its ERP and submit the results of the re-evaluation and a revised ERP within 6 months of permit issuance.

(f) The permittee shall take timely and appropriate enforcement in accordance with its approved ERP for all instances of industrial violations.

(g) The permittee shall submit, to the Approval Authority, a re-evaluation of its local limits based on a headworks analysis of its treatment plant within 1 year of permit issuance. At a minimum, the headworks analysis shall include arsenic, cadmium, chromium, copper, cyanide (T) lead,

PART C

OTHER REQUIREMENTS

mercury, nickel, silver, zinc, any parameter limited by this permit or sludge disposal requirements, and any other pollutant which the permittee or approval authority believes may be discharged by its industries in amounts which may cause pass-through or interference. The list of pollutants to be evaluated shall be submitted within 3 months of permit issuance.

(h) The permittee shall conduct monitoring at its treatment plant based on its permitted flows, as follows:

i) > 20 MGD - monthly influent, effluent and sludge analysis for all local limit parameters, semi-annual priority pollutant scan for influent and sludge.

ii) > 5-20 MGD - monthly influent, effluent and sludge analysis for all local limit parameters, annual priority pollutant scan for influent and sludge.

iii) > 1-5 MGD - quarterly influent, effluent and sludge analysis for all local limit parameters, annual priority pollutant scan for influent and sludge.

iv) < 1 MGD - annual influent, effluent and sludge analysis for all local limit parameters, priority pollutant scan for influent and sludge within 1 year.

(i) The permittee shall ensure that adequate resources are available (equipment and personnel) to fully implement the pretreatment program.

(4) EPA and DER retain the right to require the permittee to institute changes to its pretreatment program if:

(a) the program is not implemented in a way satisfying the requirements of 40 C.F.R. 403;

(b) problems such as interference, pass-through or sludge contamination develop or continue;

(c) Federal, State, or local requirements change.

OTHER REQUIREMENTS

(5) By March 31 of each year, the permittee shall submit to EPA and DER an annual report that describes the permittee's pretreatment activities for the previous calendar year. The annual report shall include pretreatment activities in all municipalities from which wastewater is received at the permittee's treatment plant. The submission to DER shall be incorporated into the permittee's annual Municipal Wasteload Management report required by DER's Chapter 94 Rules and Regulations. The annual report shall include the following:

(a) Control Mechanism Issuance - a summary of SIU control mechanism issuance including a list of issuance and expiration dates of each SIU.

(b) Sampling and Inspection - a summary of the number and type of inspections and samplings of SIUs by the permittee, including a list of all SIUs either not sampled or not inspected.

(c) Industrial User Compliance and POTW Enforcement - a summary of the number and type of violations of pretreatment regulations and the actions taken by the permittee to obtain compliance. For each SIU, the report shall say whether the user was in significant noncompliance under 40 C.F.R. 403.8, infrequent (non-significant) noncompliance, or in compliance for the entire year. A copy of the published list of facilities in significant noncompliance shall be included.

(d) Industrial Listing - an updated industrial listing showing all current SIUs and the categorical standard, if any, applicable to each.

(e) Summary of POTW Operations - any interference upset, or permit violations experienced at the POTW which may be attributed to industrial users, and actions taken to alleviate said events. Sampling and analysis of treatment plant influent and sludge for toxic and incompatible pollutants shall also be included with an analysis of any trends in the data since pretreatment program approval.

(f) Pretreatment Program Changes - a summary of any changes to the approved program and the date of submission to the Approval Authority.

PART C

OTHER REQUIREMENTS

J. The permittee will ensure that applied chlorine dosages, used for disinfection or other purposes, are optimized to the degree necessary such that the total residual chlorine (TRC) in the discharge effluent does not cause an adverse stream impact. In doing so, the permittee shall consider relevant factors affecting required chlorine dosage, such as wastewater characteristics, mixing and contact times, desired result of chlorination, and expected impact on the receiving water body. The TRC data shall be recorded daily and maintained at the facility. For municipal facilities the data shall be summarized annually as part of the Chapter 94 - Municipal Wasteload Management Report.

If the Department determines or receives documented evidence that levels of TRC in the permittee's effluent are causing adverse water quality impacts in the receiving water, the permittee shall be required to institute necessary additional steps to reduce or eliminate such impact.

K. Collected screenings, slurries, sludges, and other solids shall be handled and disposed of in compliance with 25 Pa. Code, Chapters 271, 273, 275, 283,and 285 (relating to permits and requirements for landfilling, land application, incineration, and storage of sewage sludge), Federal Regulation 40 CFR 257, and the Federal Clean Water Act and its amendments.

L. The Department may identify and require certain discharge specific data to be submitted before the expiration date of this permit. Upon notification by the Department, the permittee will have 12 months from the date of the notice to provide the required data. These data, along with any other data available to the Department, will be used in completing the Watershed TMDL/WLA Analysis and in establishing discharge effluent limits.

M. Combined Sewer Overflows

Point Sources 002 through 084 (listed below) serve as combined sewer reliefs necessitated by stormwater entering the sewer system and exceeding the hydraulic capacity of the sewers and/or the treatment plant. Combined sewer overflows (CSO) are allowed only when flows in combined sewers exceed conveyance or treatment capacities during wet weather periods. Dry weather overflows are prohibited. CSOs are point source discharges which must be provided technology-based control measures in accordance with the Clean Water Act. Additional control measures will also have to be provided if determined necessary to comply with water quality standards. At a minimum, technology-based control measures must include best management practices and/or other non-capital intensive measures to minimize discharges and water quality impacts.

OTHER REQUIREMENTS

Schuylkill River

Lower Schuylkill East Side

Point Source	Interceptor Regulator Name	Longitude	Latitude
002	Reed St. & Schuylkill Ave (S31)	75°12'18"	40°56'17"
003	34th St. & Mifflin Sts. (S36A)	75°12'25"	39°55'55"
004	Vare Avenue & 29th St. (S-37)	75°12'37"	39°55'41"
005	Passyunk Ave. & 29th St. (S-42)	75°12'05"	39°55'11"
006	Passyunk Ave. & 28th St. (S-42A)	75°12'05"	39°55'11"
007	26th St. 700' N of Hartranft St. (S-44)	75°12'13"	39°54'53"
008	Penrose Ave. & 26th St. (S-46)	75°12'40"	39°53'54"

Central Schuylkill East Side

Point Source	Interceptor Regulator Name	Longitude	Latitude
009	24th St. 155' S of Parktowne Place (S-5)	75°10'49"	39°57'41"
010	24th St. 350' S of Parktowne Place (S-6)	75°10'50'	39°57'39"
011	24th St E. of Schuylkill River (S-7)	75°10'47"	39°57'37"
012	Race St & Bonsall St. (S-8)	75°10'45"	39°57'30"
013	Arch St. W. of 23rd St. (S-9)	75°10'46"	39°57'24"
014	Market St. 25' E. of 24th St. (S-10)	75°10'48"	39°57'16"
015	Chestnut St. & 24th St. (S-12A)	75°10'50"	39°57'11"
016	Sansom St. W. of 24th St. (S-13)	75°13'52"	39°57'08"
017	Walnut St. W. of 24th St. (S-15)	75°10'54"	39°57'05"
018	Locust St. & 25th St. (S-16)	75°10'56"	39°57'00"
019	Spruce St. & 25th St. (S-17)	75°11'00"	39°56'57"
020	Pine St. W of Taney St. (S-18)	75°11'06"	39°56'53"
021	Lombard St. W. of 27th St. (S-19)	75°11'09"	39°56'52"
022	South St. E. of 27th St. (S-21)	75°11'12"	39°56'48"
023	Schuylkill Ave. & Bainbridge St. (S-23)	75°11'17"	39°56'45"

Point Source	Interceptor Regulator Name	Longitude	Latitude
024	Schuylkill Ave. & Christian St. (S-25)	75°11'28"	39°56'36"
025	Ellsworth St. W. of Schuylkill Ave. (S-26)	75°11'35"	39°56'30"

PART C

OTHER REQUIREMENTS

	Central Schuylkill Interceptor Central Schuylkill West Side		
026	Mantua Ave. & West River Drive (S-1)	75°11'17"	39°58'02"
027	Haverford Ave. & West River Drive (S-2)	75°11'06"	39°57'54"
028	Spring Garden St. W. of Schuylkill Expressway (S-3)	75°11'04"	39°57'53"
029	Powelton Ave. W. of Schuylkill Expressway (S-4)	75°10'56"	39°57'42"
030	Market St. in the PRR Baggage Rm (S-11)	75°10'53"	39°57'17"
031	Schuylkill Expressway and Walnut St. Bridge (S-14)	75°10'58"	39°57'05"
032	440 Ft. N. W. of South St. PRR Property (S-20)	75°11'12"	39°56'52"
033	660 Ft. S. of South St. E. of Pennfield (S-22)	75°11'22"	39°56'43"
034	1,060 Ft. S. of South St. E. of Pennfield (S-24)	75°11'26"	39°56'43"
	Southwest Main Gravity		
035	46th St. & Paschall Ave. (S-30)	75°12'23"	39°56'31"
036	43rd St. S.E. of Woodland Ave. (S-50)	75°12'18"	39°56'36"
077	42nd St. S.E. of Woodland Ave. (S-51)	75°12'18"	39°56'36"
	Lower Schuylkill West Side		
037	49th St. S. of Botanic St. (S-32)	75°12'23"	39°56'14"
038	51st ST. and Botanic St. (S-33)	75°12'23"	39°56'08"
039	56th St. E. of P&R Railroad (S-38)	75°12'49"	39°55'43"
040	67th St. E. of P&R Railroad (S-45)	75°12'58"	39°54'29"
	Discharge to Cobbs Creek Cobbs Creek Low Level		
041	60th St. & Cobbs Creek Parkway (C-18)	75°14'08"	39°56'11"
042	Mount Moriah Cemetary & 62nd St. (C-19)	75°14'19"	39°55'57"
043	65th St. & Cobbs Creek Parkway (C-20)	75°14'39"	39°55'46"
044	68th St. & Cobbs Creek Parkway (C-21)	75°15'40"	39°55'38"
045	70th St. & Cobbs Creek Parkway (C-22)	75°14'46"	39°55'27"
046	Upland St. & Cobbs Creek Parkway (C-23)	75°14'52"	39°55'14"
047	Woodland Ave. E. of Island Ave. (C-25)	75°14'51"	39°55'00"

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Point Source	Interceptor Regulator Name	Longitude	Latitude
048	75th St. & Grays Ave. (C-28)	75°14'55"	39°54'45"
078	Island Ave. S. E. of Glenmore Ave. (C-28A)	75°14'58"	39°54'60"
049	Claymont St. & Grays Ave. (C-29)	75°14'56"	39°54'75"
050	77th St. W. of Elmwood Ave. (C-30)	75°15'02"	39°54'34"
079	Saybrook Ave. & Island Ave. (C-26)	75°14'51"	39°55'00"
	Cobbs Creek High Level		
051	City Line Ave. & 73rd St. (C-1)	75°16'04"	39°58'51"
052	City Line Ave. 100 Ft. South Side of Creek (C-2)	75°16'02"	39°58'51"
053	Malvern Ave. & 68th St. (C-4)	75°15'28"	39°58'39"
054	Lebanon Ave. S. W. of 73rd St. (C-5)	75°15'26"	39°58'31"
055	Lebanon Ave. & 68th St. (C-6)	75°15'26"	39°58'31"
056	Lansdowne Ave. & 69th St. (C-7)	75°15'26"	39°58'27"
080	Paschall Ave. & Island Ave. (C-27)	75°14'51"	39°55'00"
081	Greenway Ave. & Cobbs Creek Parkway (C-24)	75°14'51"	39°55'00"
057	64th St. & Cobbs Creek (C-9)	75°14'57"	39°57'52"
058	Gross St. & Cobbs Creek (C-10)	75°14'53"	39°57'50"
059	Cobbs Creek Parkway S. of Market St. (C-11)	75°14'54"	39°57'43"
060	Spruce St. & Cobbs Creek (C-12)	75°14'59"	39°57'26"
061	62nd St. & Cobbs Creek (C-13)	75°14'57"	39°56'56"
062	Baltimore Ave. & Cobbs Creek (C-14)	75°14'50"	39°56'44"
063	59th St. & Cobbs Creek Parkway (C-15)	75°14'26"	39°56'32"
064	Thomas Ave. & Cobbs Creek (C-16)	75°14'22"	39°56'27"
065	Beaumont St. & Cobbs Creek (C-17)	75°14'06"	39°56'15"
066	Cobbs Creek Parkway S. of City Line Ave. (C-31)	75°16'50"	39°28'29"
067	Brockton Rd. & Farrington Rd. (C-33)	75°15'55"	39°38'13"
068	Woodcrest Ave. & Morris Park (C-34)	75°15'43"	39°58'41"
069	Morris Park W. of 72nd St. and Sherwood Rd. (C-35)	75°15'55"	39°58'46"
070	Woodbine Ave. S. of Brentwood Rd. (C-36)	75°15'33"	39°57'55"
071	Cobbs Creek Parkway S. of 67th St. and Callowhill St. (C-37)	75°15'15"	39°57'55"
072	Cobbs Creek Parkway & 77th St. (C-32)	75°16'12"	39°58'21"
082	Malvern Ave. N.W. of 68th St. (C-4A)	75°15'28"	39°58'39"
083	Thomas Run Relief Sewer - Cobbs Creek Parkway W. of Ashland St.	75°14'24"	39°56'29"
084	Arch St. Relief Sewer - Arch St. and Cobbs Creek	75°14'53"	39°57'48"

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Discharges to Schuylkill River
Lower Schuylkill East Side

073	35th St. & Mifflin St. (S-35)	75°12'25"	39°55'55"
074	36th St. & Mifflin St. (S-36)	75°12'25"	39°55'55"

Central Schuylkill East Side

Point Source	Interceptor Regulator Name	Longitude	Latitude
075	Main Relief Sewer - S. of Fairmount Ave. and Schuylkill River	75°11'01"	39°58'10"
076	24th St. N. of Chestnut St. Bridge (S-12)	75°10'50"	39°57'11"

1. MINIMUM TECHNOLOGY-BASED CONTROL MEASURES - PLAN OF ACTION

The permittee shall complete and implement a Minimum Technology-based Plan of Action for identification and minimization of all CSO discharges according to the following schedule:

Permit Issuance Date (PID)

Description of Activity	Due Date (Actual date to be entered at issuance)
Submit a conceptual plan to state and EPA, Region III, (3WM53)	PID + 4 months
State approval/modification of conceptual plan	PID + 6 months
Submittal of final plan to State and EPA, Region III including implementation plan and schedule	PID + 12 months
Completion of Plan recommendations final report to State and EPA, Region III	PID + 38 months

The Minimum Technology-based Limitation Plan of Action shall address at a minimum, the following measures:

a. Identification of Combined Sewer Overflows. Review and update the CSO discharge points listed above. For each CSO indicate the following measures:

   i. latitude and longitude of the CSO discharge point and associated regulator mechanism.

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ii. A narrative description of the location of the CSO point and regulator mechanism with respect to direction and distance from street intersections.

iii. A location map (U.S.G.S. Topographic Quadrangle) with the location of the CSO point and associated regulator mechanism indicated.

iv. A description of the size and type of regulator mechanism, including engineering drawing.

v. A description of the size and type of outfall structure.

vi. A determination of whether the outfall structure is submerged, partially submerged or not submerged during times of critical condition by the receiving water.

vii. Verification of the presence or absence of a backflow prevention device on the CSO.

viii. Name of the receiving water.

ix. Development of a visual identification system on all CSO outfalls, by visually labeling the outfall pipe with a numbering system, submerged outfalls shall be identified at the nearest manhole/bulkhead.

x. Identification of CSOs near drinking water intakes, recreation areas, or unique ecological habitats.

xi. Identification of any continuous or chronic dry weather overflows.

b. System Inventory

The plan shall identify all overflow points, control structures, sewer sizes and control structure dimensions, industrial contributors and key hydraulic monitoring control points. The inventory shall include system maps, hydraulic analyses and flow measurements. Characterization of all overflows in terms of both frequency, quantity and quality; identification of the intensity and duration of the storm event that triggers an overflow.

Volume discharge from each overflow for various size storms, and number of events and total volume discharged per year based on historical rainfall records.

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c. Operational Status and Assessment

Summarize the current operation status, control measures, and functional adequacy of all CSOs. A comprehensive engineering assessment of the operational status and condition of all portions of the CSO treatment works based on actual field verification/inspection records shall be included. Information on the determination of whether the sewers are cracked, depressed, or of questionable physical integrity, observances of the presence of flow restrictions due to excessive sludge or grease build-up, or other conditions, and an assessment of each regulator's and/or tide gate's operability and reliability. All dry weather overflows are prohibited.

Based upon the results of the engineering inspection and assessment, the report shall include a prioritized list, strategy and schedule for rehabilitating the system and bringing it into optimal operating condition. A prioritized list for correction of any continuous dry weather overflows with schedule shall also be included.

d. Inspection and Maintenance

Summarize the regular inspection and maintenance of the combined sewer system including regulators to ensure that (1) deposition of solids does not cause obstructions which result in overflows; (2) continuous dry weather discharges are not occurring, and (3) regulators are in good working order and adjusted to minimize overflows. Identify response time between initial dry weather CSO discharge and corrective action; include a plan to reduce response time. The permittee shall submit as part of the plan of action, a written Operation and Maintenance (O&M) Plan designed to ensure the above items.

e. High Flow Management

Development of a high flow management plan which (1) maximizes the capacity of the combined sewer system for storage without causing backup or surcharge problems, and (2) enables a maximum amount of flow to be conveyed to the treatment plant without upsetting normal plant operations. Measures to be evaluated should include raising existing overflow weir levels and possible utilization of primary settling facilities for treatment if sufficient excess capacity is available, and automatic regulator and computerized control system.

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f. Ordinance Revisions

Modification of the sewer ordinance where necessary to ensure prohibitions of (1) dry weather overflows, (2) construction of new combined sewers, except where sewer separation is infeasible (3) inflow sources in sanitary sewer tributary to the combined system, and (4) dumping or motor oil and excessive grease into the sewer system.

g. Source Reduction

Minimization of discharges of solids and floating materials by (1) regular cleaning of streets and catch basins, (2) installation of screens on CSOs, particularly those discharging to estuary waters, (3) reduction of infiltration/inflow where feasible.

h. Pretreatment Program

Review impact of Industrial Users toxics, BOD, and total suspended solids load to CSO overflows; review and modify pretreatment programs to assure CSO impacts are minimized.

i. Minimization of CSOs near sensitive areas

Examine elimination or minimization of CSO discharges near drinking water intakes, recreation areas, or unique ecological habitats.

2. WATER QUALITY IMPACTS - PLAN OF ACTION

A water quality impact plan of action for CSOs shall be based upon the results of the Delaware River Basin Commission (DRBC) CSO Comprehensive Study of the Delaware Estuary, currently underway. The permittee shall provide any monitoring data or other information requested by DRBC for the study.

The permittee shall submit a plan of action which sets forth an implementation plan and schedule to address the conclusions and recommendations of the DRBC study within 12 months after DRBC study completion.

If the DRBC study is not completed in a timely manner, the permittee will be required to conduct a CSO water quality impact study. Additional guidance and schedule will be provided by the Department.

3. REPORTING REQUIREMENTS

The permittee shall submit semi-annual (January 1, July 1) status reports to the Department and EPA, Region III (3WM53) on the development of the Minimum Technology-based control measures plan of action, implementation of the Minimum Technology-based control measures Plan, and development of the water quality plan.

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Each priority CSO overflow point, as identified by an asterisk on the CSOs listed above, shall be monitored for cause, frequency, duration and quantity of flow. All monitoring data shall be recorded and submitted monthly in the format specified by the Department (attached) and shall be summarized annually with the facility's Chapter 94 Wasteload Management Report.

Annual CSO Status Report

The annual CSO status report shall be submitted with the Chapter 94 - "Municipal Wasteload Management Report". The report shall provide a summary of the frequency, duration, and volume of the CSOs for the past calendar year, operational status of major overflow points and identification of known/potential instream water quality impacts and their causes. The annual report shall also summarize all actions taken and their effectiveness in implementing the approved Plans of action, and shall evaluate and provide necessary revisions to the plans approved by the Department.

N. The permittee shall operate the sewage treatment plant to provide treatment for the maximum design wastewater flows of 300 mgd (maximum daily average) and 400 mgd (peak) without causing treatment plant upsets. Throttling of influent flows to the plant resulting in avoidable, premature sewer system overflows in prohibited.

O. An average monthly flow in excess of 200 mgd shall not be considered to be a violation of this permit.

P. An application may be made to the Delaware River Basin Commission to establish alternate/equivalent $CBOD_5$ effluent mass and concentration limits to replace the BOD_5 effluent limits in this permit. Upon establishment of such limits by the Commission, the BOD_5 limits shall cease to be in effect and the $CBOD_5$ limits established by the Commission shall become effective.

Q. Biomonitoring

I. General Requirements.

The permittee shall conduct acceptable toxicity tests in accordance with the appropriate test protocols described in Section V. Test Conditions and Methods. The permittee must collect discharge samples and perform the toxicity tests to generate chronic Ceriodaphnia dubia and fathead minnow (Pimephales promelas) test results (NOEC's) which will also enable a determination of the acute (LC50) value at the 48 hour interval. For purpose of reporting, all NOEC's shall be converted to TUc's by the following equation:

$$TUc = \frac{100}{NOEC}$$

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In addition all LC50 values shall be converted to TUa's by following equation:

$$TUa = \frac{100}{LC50}$$

Within sixty (60) days of the effective date of the NPDES permit, the permittee shall submit to the Department of Environmental Resources (DER) and the Environmental Protection Agency (EPA), Region III an acceptable plan of study for determining the chronic toxicity of wastewater discharged from outfall(s) 001 through the use of whole effluent toxicity testing (biomonitoring). If DER and EPA comment on the plan, the permittee shall make any modifications requested. If the Department and EPA do not comment on the plan within thirty (30) days of submission, the permittee shall begin the whole effluent toxicity testing program as outlined in the study plan.

At a minimum the study plan should include a discussion of:

--wastewater and production variability

--source of test organisms

--source of dilution water

--test conditions

--sampling methods

--quality assurance/quality control information (including reference toxicity results and any deviations from recommended procedures).

II. Test Frequency.

Static renewal chronic testing shall be conducted on a quarterly basis (four times per year) beginning within thirty (30) days of submission of the biomonitoring study plan, provided that the Department and EPA do not comment on the plan and request modifications within the thirty (30) day period.

Two species shall be tested, the cladoceran Ceriodaphnia dubia for survival and reproduction and the fathead minnow Pimephales promelas for survival and growth. The two species must be tested each quarter, for a total of eight tests. Additional test species may be included, based on effluent characteristics, or as methods are developed.

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III. Sample Collection.

For each sampling event, three, twenty-four (24) hour discharge composite samples collected at a frequency of not greater than every two hours and flow proportioned shall be collected over a seven (7) day exposure period. The initial sample taken on day 0 is used to start the test on day 1. The additional two samples are collected on day 2 and 4 to be used on day 3 and 5, respectively. Renewal of test concentrations is conducted daily with the most recently collected discharge sample.

For effluents that are chlorinated, test shall be conducted on a final effluent sample that has been dechlorinated. Dechlorinated samples will consist of the final effluent composites treated with sodium thiosulfate (see Section 7.4 of Weber, C.I, etal (ed). 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms).

All samples held overnight shall be refrigerated at 4°C.

IV. Dilution Water.

The dilution water source must consist of either moderately hard synthetic water (using either Millipore Milli-QR or equivalent deionized water and reagent grade chemicals) or deionized water (80%) combined with Perrier or chemically equivalent mineral water (20%).

V. Test Conditions and Methods.

The test conditions and methods shall conform to those developed by EPA as specified in the documents cited below. If DER or EPA determine that the proper test conditions have not been followed or if the test acceptability criteria are not met, the permittee must perform a re-test within thirty (30) days.

Weber, C.I. et al. (ed.). 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water To Freshwater Organisms. Second Edition. Office of Research and Development, Cincinnati, OH. EPA/600/4-89/001.

Weber, C.I. (ed) 1991. Methods for Measuring the Acute Toxicity of Effluents and receiving water to Freshwater and Marine Organisms, Fourth Edition. Office of Research and Development, Cincinnati, OH. EPA/600/4-90/027.

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U.S. Environmental Protection Agency. 1991. Technical Support Document for Water Quality-based Toxics Control. Office of Water, Washington, DC EPA/505/2-90-0D1.

A. Summary of effluent toxicity test conditions and test acceptability criteria for the Ceriodaphnia dubia survival and reproduction test (adapted from EPA/600/4-89/001).

1. Renewal of test solutions:	Daily using most recently collected sample.
2. Effluent concentrations:	5 concentrations and a control. An additional control (0% effluent) treated with the same concentration of sodium thiosulfate as used to dechlorinate the effluent sample will be run. If the initial sample has no chlorine present, start the additional control with no sodium thiosulfate.
3. Dilution factor:	0.5
4. Test duration:	Until 60% of control animals have three broods (7 days or less)
5. Sampling Requirements:	A minimum of three samples are collected to be used on days 1, 3, and 5 for renewal. Test samples must be first used within 36 hours of collection.
6. Sample volume required:	Minimum of 1 liter per day
7. Test acceptability criterion:	80% or greater survival and an average of 15 or more young per surviving animal in the control solutions. At least 60% of the surviving animals in controls must have produced their third brood in seven days or less.

B. Summary of effluent toxicity test conditions and test acceptability criteria for the fathead minnow (Pimephales promelas) survival and reproduction test (adapted from EPA/600/4-89/001).

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1. Test chamber size:	250-1000 ml
2. Test solution volume:	200 ml/replicate (minimum)
3. No. of larvae per test chamber:	10
4. No. of replicate test chambers per concentration:	4
5. No. of larvae per test concentration:	40
6. Feeding regime:	Feed 0.1 ml newly hatched brine shrimp nauplii (less than 24 hours old) twice daily at 6 hour intervals (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient nauplii are added to provide an excess. Larvae are not fed during the final 12 hours of the test.
7. Effluent concentrations, Dilution series, Sampling requirements, and Renewal of test solution:	Same as Section V. Test Conditions and Methods Par A, summary of effluent toxicity test conditions and test acceptability criteria for the Ceriodaphnia dubia survival and reporduction test.
8. Sample volume required:	Minimum of 2.5 Liters per day.

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VI. Chemicals Analyses.

Chemical analysis shall be performed for each sampling and testing events as described below.

A. The following chemical analysis shall be performed for each sampling event, including each new batch of dilution water:

Parameter	Effluent	Diluent	Detection Limit (mg/L)
Hardness	X	X	0.5
Alkalinity	X	X	2.0
pH	X	X	-
Specific conductance	X	X	-
Total Residual Chlorine	X		0.02

B. The following chemical analyses shall be performed as part of each daily renewal procedure on each dilution and the controls.

Parameter	Effluent	Diluent
Dissolved oxygen	X	X
Temperature	X	X
pH	X	X
Specific Conductance	X	X

In addition to the chemical analysis required above, those parameters listed in Part A of the NPDES permit for the outfall(s) 001 tested will be analyzed on at least the initial (day 0) sample by using the method specified in the NPDES permit or, if not specified, by EPA and DER (Chapter 16, Water Quality Toxics Management Strategy) approved methods.

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VII Toxicity Test Report Elements.

The following must be reported:

-- description of sample collection procedures and of the sample location.

-- names of individuals collecting and transporting samples, times and dates of sample collection and analysis.

-- general test description: origin and age of test organisms, dates and results of reference toxicant tests; light and temperature regimes; other information on test conditions is listed in Section V. Test Conditions and Methods.

-- all chemical and physical data generated (include detection limits).

-- copies of raw data sheets and/or bench sheets.

-- dechlorination procedure(s).

-- any other observations or test conditions affecting the test outcome.

Toxicity test data that is required includes the following:

-- comparison of performance of controls with test acceptability criteria.

-- daily survival of test organisms in the controls and all replicates for each dilution. Survival data should be analyzed by Fisher's exact test prior to analysis of reproduction data.

-- NOEC: No Observed Effect Concentration.

-- LOEC: Lowest Observed Effect Concentration.

-- chronic value (ChV): Geometric mean of the NOEC and LOEC.

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-- acute endpoints shall be derived from data obtained 48 hours into the chronic test. Survival data for each concentration and replication at 24 hours and 48 hours shall be obtained. LC50 and 95% confidence limits shall be calculated using the following methods: binomial, moving average, moving average-angle, probit, trimmed Spearman-Karber, or the graphical method (EPA/600/4-85/013). All printouts or copies of hand calculations must be submitted. The probit, trimmed Spearman-Karber, and moving average-angle methods can only be used when at least two test concentrations exhibit some (but not all) test organism mortality (partial mortality). If a test results in a 100% survival in one test concentration, and 100% mortality in an adjacent concentration (an "all or nothing" effect), and LC50 value can be estimated using the graphical method.

Chronic reference toxicant test, on both species, shall be conducted monthly in laboratories that maintain their own culturing facilities, while laboratories that secure test organisms from outside suppliers shall conduct chronic reference toxicant test on each separate batch of test organisms. These test shall be conducted similarly to the effluent toxicity test (same dilution water, test organisms and conditions, chemical analyses, etc.) and shall follow guidelines put forth in EPA/600/4-89/001. The reference toxicant shall be a commonly used toxicant approved by the EPA. Reports of reference toxicant tests shall include all information needed for the proper evaluation of the test, including (but not limited to) the following:

-- Water chemistry parameters of controls and test concentrations.

-- Chronic and if applicable, acute endpoint(s), with appropriate statistical analyses.

-- Control charts (for point estimates, cumulative mean + two standards deviations; for NOEC's central tendency + one concentration interval).

VIII Reporting.

Signed copies of each toxicity test's data/reports shall be submitted to DER and EPA at the addresses listed below within thirty (30) days of test completion, so that each individual test result can be reviewed and evaluated for content and performance prior to the initiation of the succeeding quarterly test.

If after review of test data, EPA or the Department may instruct the city to make appropriate changes in the test procedures.

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U.S. Environmental Protection Agency, Region III
PA/DC Permit Section, 3WM53
841 Chestnut Building
Philadelphia, PA 19107

Pennsylvania Department of Environmental Resources
Bureau of Water Quality Management
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

R. This permit may be reopened to incorporate the requirements or recommendations resulting from the Estuary Toxics Study being conducted by the Delaware River Basin Commission.

S. Chlorine Minimization

The permittee shall implement the Chlorine Minimization Plan submitted to EPA April 2, 1991 according to the following schedule:

Permit Issuance Date (PID)

Description of Activity	Due Date (Actual dates to be entered at issuance)
Chemical and Toxicity Evaluation	PID + 12 months
Determination of minimal chlorine dose necessary to achieve fecal coliform level of <200 MPN/100ml.	
Evaluation of toxicity of samples using minimal chlorine dosage and the minimal dosage plus a margin of safety.	
Evaluation of toxicity of dechlorinated post chlorinated effluent.	
Chemical evaluation of chlorinated and dechlorinated effluent.	
Engineering evaluation of facility's ability to reduce effluent toxicity by maintaining minimum chlorine dose or dechlorination of effluent.	PID + 15 months

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Evaluate whether an alternative disinfection system or modification of existing chlorination system should be used.	PID + 20 months
Selection of control option	PID + 26 months
Implementation of selected option	PID + 38 months

T. An excursion of the lower pH limitation in the effluent, resulting from the use of the Oxygen Activated Sludge process, shall not be considered as a violation of this permit provided that the excursion frequency does not exceed 2.0% of the time on an annual basis and the pH is not less than 5.5 Standard Units.

(NPDW)3./.12

APPENDIX I

Water Pollution Control Plants Exceedances

Northeast Water Pollution Control Plant Exceedances

NEWPCP NPDES PERMIT EXCEEDANCES

Date	Discharge Parameter	Permit Level	Exceedance Value	Corrective Actions/Comments
3/07/92 3/10/92 3/19/92	Suspended Solids Daily Maximum	60 mg/l	126 mg/l 69 mg/l 99 mg/l	A bundle of RBC media had broken off of an RBC and migrated to the secondary clarifiers, impeding flow and causing a hydraulic imbalance. The pieces of RBC media were removed on a daily basis from the tank influent channels. The exceedances occurred during rain events.
12/03/91	Daily Maximum Flow	315 MGD	379.47 MGD	A storm event caused the daily maximum flow to be exceeded. No damage to the plant occurred and all other effluent parameters were in compliance.
11/22/91	Daily Maximum Flow	315 MGD	322.77 MGD	A storm event caused the daily maximum flow to be exceeded. No damage to the plant occurred and all other effluent parameters were in compliance.
9/12/91	Daily Maximum Fecal Coliform	200/100 ml	1600/100 ml	The plant ran out of chlorine for disinfection of the effluent at 7:30 a.m. Chlorine was delivered and disinfection restarted at 9:00 p.m.
6/20/91	Combined Sewer Overflow	No Discharge until Plant reaches maximum capacity	Overflow Discharge	The PTB operator took an hourly elevation reading and left the area to perform maintenance operations. Upon returning for the next reading, the overflow elevation was exceeded due to an intense rain. Pumping was immediately increased to lower the elevation and cease the discharge. Pump controls were scheduled to be automated.

TABLE 4.1-3 (Continued)

Date	Discharge Parameter	Permit Level	Exceedance Value	Corrective Actions/Comments
10/19-21 & 23/91	Daily Maximum Fecal Coliform	200/100 ml	1600/100 ml	The south chlorine contact chamber was placed in service after repairs to the chlorine solution line were made on October 19th. Exceedances of the fecal coliform limit occurred on the 19th through the 21st. Subsequent adjustments to the line fixed the problem on the 22nd. The exceedance on the 23rd is not readily understood but compliance was achieved and maintained.
8/13-14,16,18/1990	Daily Maximum Fecal Coliform	200/100 ml	1600/100 ml	It has been surmised that these exceedances were caused by utilization of contaminated collection bottles during sample collection. The problem ceased when a new batch of properly cleaned bottles was used.
8/11/90	Combined Sewer Overflow	No Discharge until Plant reaches Maximum Capacity	Overflow Discharge	The screw conveyor on the #3 grit basin failed and the #2 grit basin was unavailable. Flows through the plant had to be throttled until repairs to the #3 screw conveyor were completed. The flow was throttled for a total of 8 hours. A rain occurrence also influenced the flow to the plant.
8/27/90	Combined Sewer Overflow	No Discharge until Plan reaches Maximum Capacity	Overflow Discharge	The screw conveyor on the #3 grit basin failed and had to be back flushed. The flow to all grit basins had to be reduced to prevent overflow to #3 to accomplish the back flushing. The flow was throttled for a total of 3 hours. A rain occurrence also influenced the flow to the plant.
7/2 & 13/90	Combined Sewer Overflow	No Discharge until Plant reaches Maximum Capacity	Overflow Discharge	The screw conveyor on the #3 grit basin required repairs. A limited number of basins were available due to grit pump replacements. To repair #3, flows to the others had to be throttled resulting in overflows on the 2nd and 13th. The flows were throttled for a total of 8 and 6 hours on the 2nd and 13th respectively. Rain events influenced the flow to the plant on both days.

TABLE 4.1-3 (Continued)

Date	Discharge Parameter	Permit Level	Exceedance Value	Corrective Actions/Comments
6/14-15/90	Combined Sewer Overflow	No Discharge until Plant reaches Maximum Capacity	Overflow Discharge	During this period only two grit basins were in service. A contractor had removed a grit pump from one basin and plugged the line. The plug leaked and flooded the chamber containing two sets of pumps. A rain event influenced the plant flow during this period. The duration of the overflow was 14 hours.
6/15-19/90	Combined Sewer Overflow	No Discharge until Plant reaches Maximum Capacity	Overflow Discharge	The screw conveyor in one grit basin required maintenance. Flow had to be throttled to prevent water entry into the grit chamber. A rain event influenced the plant flow during this period. The duration of the overflow included a total of 8 hours.
6/21/90	Combined Sewer Overflow	No Discharge until Plant reaches Maximum Capacity	Overflow Discharge	A combined sewer overflow occurred when maintenance operations were required on one grit chamber leaving only two in operation. Plant flows had to be throttled to prevent flows into the third chamber. After repairs were completed the basin was put back into service. The duration of the overflow was 3 hours.
6/22-23/90	Combined Sewer Overflow	No Discharge until Plant reaches Maximum Capacity	Overflow Discharge	The influent flow to the plant was throttled causing a combined sewer overflow. The duration of the overflow was 5 hours.

Southeast Water Pollution Control Plant Exceedances

SEWPCP NPDES PERMIT EXCEEDANCES

Date	Discharge Parameter	Permit Limit	Exceedance Value	Corrective Actions/Comments
February/91	Monthly Average Suspended Solids Percent Removed	85%	83%	Very low influent suspended solids resulted in an extremely low effluent suspended solids requirement which was not achieved. Monthly average suspended solids in the effluent was 17 mg/l.
12/02/91 12/29/91	Instantaneous Maximum Suspended Solids	60 mg/l	73 mg/l 80 mg/l	The average daily flows on these days were high due to rain events. Above normal sludge blanket levels resulted in a washout of solids on these dates.
December/91	Monthly Average Suspended Solids Percent Removal	85%	82%	High sludge blankets contributed to higher effluent solids loading.
11/11/91 11/22/91	Instantaneous Maximum Suspended Solids	60 mg/l	70 mg/l 130 mg/l	The average daily flows were high on these dates due to rain events. High flows in conjunction with high sludge blanket levels caused these exceedances.
October/91	Fecal Coliform	No more than 1000/100 ml in 10% of samples (3)	More than limit in 7 samples.	Residual chlorine levels were in a range which normally provides sufficient disinfection. Sampling procedures are suspected as the cause.
8/09/91	Instantaneous Maximum Suspended Solids	60 mg/l	180 mg/l	Heavy rains and high sludge blankets resulted in a high suspended solids discharge.
7/24/91	Instantaneous Maximum Suspended Solids	60 mg/l	62 mg/l	High sludge blanket levels resulted in an elevated suspended solids. The sludge levels were elevated due to restricted waste activated sludge pumping time to the SW plant.

TABLE 4.2-3 (Continued)

Date	Discharge Parameter	Permit Limit	Exceedance Value	Corrective Actions/Comments
April/91 March/91	Combined Sewer Overflow	No discharge until plant reaches maximum capacity	Overflow Discharge	Influent throttling may have occurred during March and April 1991. A review of operating procedures was conducted to determine the reason and duration of influent throttling.
July/1990	Fecal Coliform	No more than 1000/100 ml in 10% of samples (3)	More than limit in 5 samples	Fecal coliform exceedances were measured on five days. A hydraulic flushing of the effluent conduits and increasing the chlorine dosage has apparently solved the problem.

March of the 1992 fiscal year are presented in Table 4.2-4. The flows presented were consistently below the plant design value except for August of 1991. The flows in July, August and September 1991 exceeded the permitted average monthly flow, but did not approach the maximum daily average of 168 MGD.

Southwest Water Pollution Control Plant Exceedances

SWWCP NPDES PERMIT EXCEEDANCES

Date	Discharge Parameter	Permit Limit	Exceedance Value	Corrective Action/Comments
3/19/92	Suspended Solids Daily Maximum	60 mg/l	79 mg/l	Due to rain events, a flow of 286.1 MGD was being treated by the plant. Three out of eight DAFs were out of service due to instrumentational problems and sludge could not be pumped to the SPDC for disposal.
December 1991 12/20/91 12/28/91	FSOD Loading Suspended Solids Loading Suspended Solids Daily Maximum	37,020 lbs/day 50,040 lbs/day 60 mg/l 60 mg/l	37,617 lbs/day 53,673 lbs/day 68 mg/l 82 mg/l	An unusually high average monthly flow of 208.5 MGD (Design 210 MGD) combined with cryogenic oxygen plant problems and sludge processing problems caused the elevated discharge parameters.
7/13/91	Maximum Daily Average Flow	300 MGD	331.3 MGD	The elevated flow was caused by a rain event. All discharge parameters were met and no plant damage occurred as a result of the high flow.
6/28/91 6/29/91 6/30/91	Suspended Solids Daily Maximum	60 mg/l	88 mg/l 157 mg/l 66 mg/l	During this period, the cryogenic oxygen plant was shut down. No oxygen was fed to the aeration tanks.
1/12/91	Suspended Soilds Daily Maximum	60 mg/l	80 mg/l	High influent flows resulted in a washout of sludge from the final sedimentation tanks.
January 1991	Suspended Solids Percent Removal	85%	82%	High flows and solids washout of sludge from the final sedimentation system resulted in a decreased suspended solids percent removal.
December 1990	Suspended Solids Percent Removal	85%	84%	A cryogenic oxygen plant outage resulted in operating the aeration tanks without oxygen for several days, resulting in an elevated suspended solids discharge.
September 1990	BOD_5 Percent Removal	89.25%	70%	BOD_5 levels as compared to nitrogen inhibited samples were significantly elevated. The difference may have been due to the growth of nitrifying bacteria in portions of the automatic sampler.
August 1990	BOD_5 Percent Removal	89.25%	73%	A weak BOD_5 influent level and the effects of nitrification have resulted in a decreased BOD_5 percent removal.
July 1990	BOD_5 Percent Removal	89.25%	73%	A weak BOD_5 influent level and the effects of nitrification have resulted in a decreased BOD_5 percent removal.
June 1990	BOD_5 Percent Removal Suspended Solids Percent Removal	89.25% 85%	75% 84%	A weak BOD_5 influent (79 mg/l) and electrical problems with the cryogenic oxygen plant resulted in poor BOD_5 and suspended solids removals.

APPENIX J

Basis Of Design For Water Pollution Control Plants

Bases of Design, Northeast WPCP

TABLE 2-1-1 (Continued)

BASES OF DESIGN

SECONDARY TREATMENT (Continued)

Process Air Requirements (Continued)

Total, ppd		238,000
mg/l		136
Process Air Requirements, scfm		
Activated sludge		61,000
Channel aeration		16,000
Total requirements		77,000
Process Air Blowers, Blowers 1 through 4		
Capacity of each, actual cfm (acfm), [scfm]	35,000	[51,000]
Installed capacity, acfm [scfm]	140,000	[204,000]
Blowers 5 and 6		
Capacity of each, acfm [scfm]	27,000	[39,300]
Installed capacity, acfm [scfm]	54,000	[78,600]
Blowers 1 through 6		
Total installed capacity, acfm [scfm]	194,000	[282,600]
Total firm capacity, acfm [scfm]	159,000	[231,600]

Final Sedimentation Tanks	Tank Set 1		Tank Set 2
Wastewater Flow, mgd	105		105
Number of Tanks	8		8
Size, Each Tank L x W, ft	214 x 75		231 x 70
Average Liquid Depth, ft	11		13
Area Each Tank, sf	16,100		16,200
Area Each Set, sf	128,800		129,600
Surface Loading, gpd/sf	815		810
Total Area, sf		258,400	
Volume Each Tank, cf	177,000		211,000
Volume Each Set, cf	1,416,000		1,688,000
Total Volume, cf		3,104,000	
million gallons		23.2	
Weir Length, ft	6,900		6,900
Weir Loading, gpd/linear foot (lf)		15,200	
* Displacement Time, hrs	2.5		3.0
Final Sedimentation Tank Effluent			
S.S., ppd		52,500	
mg/l		30	
BOD_5, ppd		33,300	
mg/l		19	

BASES OF DESIGN

DISINFECTION

Chlorine Contact Tank

Wastewater Flow, mgd	210
Contact Tanks	
Number of channels	6
Size each channel, L x W, ft	300 x 28
Average water depth, ft	11
Volume, cf	549,800
million gallons	4.11
Displacement Time, minutes*	35
Chlorine Dosage, mg/l	8.0
ppd	14,000
Chlorine Storage, days	7.9
Tank Car Capacity, tons	55
Chlorinators	
Type	Solution Feed
Number	4
Capacity of ~~each~~, ppd (3 plant H_2O (1)	8,000

SLUDGE AND SCUM TREATMENT

Scum Removal

Scum Quantities	
Primary Sedimentation Tanks	
Wastewater flow, mgd	210
Dry pounds/mg	75
Dry ppd	15,750
Final Sedimentation Tanks**	
Wastewater flow, mgd	210
Dry pounds/mg	168**
Dry ppd	17,640
Total	
Dry ppd	33,390
Dry pounds/hr	1,410
Firm Pumping Capacity, gpm	
Primary Sedimentation Tank Set 1	350
Primary Sedimentation Tank Set 2	150
Final Sedimentation Tank Sets 1 and 2	460
Total capacity	960
Scum Concentration Tanks	
Number	2
Size, L x W, ft	30 x 10
Average depth, ft	9.5
Total volume, cf	5,700
Maximum surface loading rate, gpd/sf	2,320
Minimum displacement time, minutes	44

* Includes the minimum volume in the outfall conduits

** Scum removal dry pounds/mg figure based on scum being generated in Final Sedimentation Tank Set 1 only. Tank Set 2 is designed to remove scum if Primary Sedimentation Tanks are out of service.

TABLE 2-1-1 (Continued)

BASES OF DESIGN

SLUDGE AND SCUM TREATMENT (Continued)

Scum Removal (Continued)

Scum Incinerators	
Number	2
Capacity, dry ppd	
Installed	76,800
Firm	38,400

Sludge Thickener Building

Excess Secondary Sludge for Disposal	
ppd	217,000*
percent solids	1.2
mgd	2.17
gpm	1,510
Excess Secondary Sludge to Thickeners (ESS for Disposal/0.85)	
ppd	255,000
percent solids	1.2
mgd	2.55
gpm	1,780
Dilution Water Requirements	
percent of ESS flow	225
flow, gpm	4,000
Thickener Tanks	
Number	12
Active (one tank out of service)	11
Tank Dimensions	
L x W, ft	90 x 20
Surface area per tank, sf	1,800
Thickener Tanks (one tank out of service)	
Total surface area, sf	19,800
Liquid depth, ft	12
Total volume, cf	237,600
Hydraulic detention time, minutes	310
Overflow rate, gal/day/sf	420
Thickener Performance (one tank out of service)	
Gross loading, pounds/sf/day	12.9
Net loading, pounds/sf/day	11.0
Thickener efficiency, percent	85
Thickened Excess Secondary Sludge**	
ppd	217,000
percent solids	4
mgd	0.65
gpm	450
Thickener Underflow	
ppd	38,000
percent solids	0.060
mgd	7.68
gpm	5,330

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* Based on 0.8 pounds of excess secondary sludge produced per pound of BOD_5 applied to Aeration Tanks

** Based on 85% recovery in thickener tanks

TABLE 2-1-1 (Continued)

BASES OF DESIGN

SLUDGE AND SCUM TREATMENT (Continued)

Sludge Thickener Building (Continued)

Thickener Process Air Requirements*	
Air-to-solids ratio	0.015
Air flow rate, scfm	50.1
Pressurization tank pressure, psig	60

Sludge Digestion Tanks	Tank Set 1	Tank Set 2
Primary Sludge		
Flow, gpm	330	
Percent solids	6	
Percent volatile	65	
Volatile solids, ppd	153,700	
Inert solids, ppd	82,800	
Total solids, ppd	236,500	
Thickened Excess Secondary Solids		
Flow, gpm	450	
Percent solids	4	
Percent volatile	75	
Volatile solids, ppd	162,700	
Inert solids, ppd	54,300	
Total solids, ppd	217,000	
Total Sludge to Digestion Tanks		
Flow, gpm	780	
Percent solids	4.8	
Percent volatile	69.8	
Volatile solids, ppd	316,400	
Inert solids, ppd	137,100	
Total solids, ppd	453,500	
Digestion Tanks		
Total number of tanks**	8	4
Tank dimensions		
Diameter, ft	110	105
Depth at side wall, ft	30	28.5
Volume per tank, cf	300,000 = 2.24 x gallons	260,000
Total volume		
All tanks active, cf***	3,180,000	
One tank out of service, cf	2,920,000	
Displacement Time		
All tanks active, days	21.2	
One tank out of service, days	19.4	
Volatile Solids Loading		
All tanks active, lbs VSS/cf/day	0.099	
One tank out of service, lbs VSS/cf/day	0.108	
Volatile Solids Reduction, percent	50	
Volatile Solids Destroyed, ppd	158,200	

* Includes the thickener process air demand only. Does not represent the quantity necessary for air compressor sizing

** One tank from Tank Set 2 normally used as Sludge Storage Tank

*** Based on 11 tanks available for digestion

TABLE 2-1-1 (Continued)

BASES OF DESIGN

SLUDGE AND SCUM TREATMENT (Continued)

Sludge Digestion Tanks (Continued)	Tank Set 1	Tank Set 2
Digested Sludge from Digestion Tanks		
Flow, gpm	780	
Percent solids	3.2	
Percent volatiles	53.6	
Volatile solids, ppd	158,200	
Inert solids, ppd	137,100	
Total solids, ppd	295,300	
Sludge Gas Facilities		
Volatile Solids Destroyed, ppd		158,200
Gas Production, scf/lb VSS destroyed		13
Sludge Gas, 1,000 scf/day		2,060
Heat Value, million Btu/day*		1,240
million Btu/hr		52
Gas Compressors		
Type	Rotary lobe positive displacement	
Number		2
Capacity of each, scfm		2,250
Operating pressure, psig		6 to 7
Waste Gas Burners		
Type		Ring type pilot
Number		10
Capacity of each, scfh		30,000
Total capacity, scfh		300,000
Gas Storage Tank		
Type		Floating Cover
Number		1
Capacity, cf		50,000
Operating pressure, inches W.C.		6
Sludge Dewatering Facility		
Digested Sludge to Sludge Dewatering Facility		
Total solids, ppd**		413,400
Percent solids		3.2
Flow, gpm**		1,750

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* Based on 600 Btu/cf

** Values adjusted to reflect 5 day per week and 2 shift per day operation of Sludge Dewatering Facility

TABLE 2-3-1 (Continued)

BASES OF DESIGN
SLUDGE HANDLING

Waste Activated Sludge Transfer Pumps	
Number of Pumps	2
Capacity	
Each Pump - GPM	500
Head - Ft	200

TABLE 2-3-2

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
SCUM REMOVAL

Scum Quantities	
Wastewater Flow - MGD	120
Dry Pounds/Million Gallons	50-100
Dry Pounds/Day	6,000-12,000
Dry Pounds/Hour	250-500
Primary Scum Ejectors	
Number	2
Capacity each, GPM	300
Final Scum Pumps	
Number	8
Capacity each, GPM	400
Scum Concentration Tanks	
Number	2
Size - L x W - Ft	30 x 7.5
Side Water Depth - Ft	9.67
Total Volume - Cu Ft	4350
Surface Loading Rate - GPD/Sq Ft (@ 400 GPM)	1440
Detention Time - Minutes (@ 400 GPM)	72
Grease Burners	
Number	2
Maximum Feed Rate/Burner - Dry Lbs/Day - Dry Lbs/Hr	21,600 900

Bases of Design, Southeast WPCP

TABLE 2-2-1

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
PRELIMINARY TREATMENT

Influent Pumping	
Number of Pumps	
Variable Speed Pumps	3
Constant Speed Pumps	3
Capacity - each pump - MGD	70
Head - Ft	45
Screenings Removal	
Screenings Removed - Cu Ft/Million Gallons	0.85
- Cu Ft/Day (Annual Average)	102
Density - Lbs/Cu Ft (Wet)	55
Screenings Removed - Lbs/Day (Annual Average)	5,600
- Lbs/Hr (Maximum Rate)	470
Percent Moisture	75
Percent Volatiles	75
Bar Screens	
Number of Screens	6
Clear Bar Spacing - Inches	1
Type	Catenary
Angle of Inclination - Degrees	75
Width of Screen Channels - Ft	6.5
Maximum Velocity through the Screens - Ft/Sec	2.3

TABLE 2-2-1 (Continued)

BASES OF DESIGN
PRELIMINARY TREATMENT

Grit Removal

Grit Removed - Cu Ft/Million Gallons	3.7
- Cu Ft/Day (Annual Average)	440
- Cu Ft/Day (Maximum Rate)	890
Density - Lbs/Cu Ft (Wet)	100
Grit Removed - Lbs/Day (Annual Average)	44,000
- Lbs/Hr (Maximum Rate)	3,700
Percent Moisture	30
Percent Volatiles	15
Grit Removal Facilities	
Number of Channels	6
Channel Width - Ft	10
Channel Length - Ft	140
Particle Size Removed:	
Mesh	65
Percent Removal	95
Chain Flight Collectors	
Number of Units	6
Length - Ft	140
Width - Ft	9
Screw Conveyors	
Number of Units	6
Conveyor Capacity - Lbs/Hr	2,000

TABLE 2-2-1 (Continued)

BASES OF DESIGN
PRELIMINARY TREATMENT

Grit Removal (Continued)

Pneumatic Transporters	
Number of Units	2
Transporter Capacity - Cu Ft/Hr	120

TABLE 2-. -2

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
PRIMARY TREATE NT

Primary Sedimentation Tanks	
Number of Tanks	4
Length - Ft	250
Width - Ft	125
Nur :r of Channels	7
Average Water Depth - Ft	12
Total Surface Area - Sq Ft	125,000
Total Volume - Cu Ft	1,500,000
- Million Gallons	11.2
Weirs	
Length - Ft	2,540
Overflow Rate - Gal/Ft/Day	47,000
Surface Loading - Gal/Sq Ft/Day	960
Displacement - Hours	2.2
Suspended Solids Loading (Annual Average)	
Lbs/Day	208,000
Percent Removed	55
Lbs/Day Removed	114,000
BOD Loading (Annual Average)	
Lbs/Day	196,000
Percent Removed	40
Lbs/Day Removed	78,000

TABLE 2-2-3

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
SECONDARY TREATMENT

Aeration Tanks

Mixed Liquor Flow - MGD	
25% Return Sludge	150
50% Return Sludge	180
Suspended Solids Applied to the Aerator (Annual Average)	
Settled Sewage - Lbs/Day	94,000
Total Loading - Lbs/Day	94,000
- Mg/L	94
BOD Applied to the Aerator (Annual Average)	
Settled Sewage - Lbs/Day	118,000
Total Loading - Lbs/Day	118,000
- Mg/L	118
Number of Tanks	8
Number of Stages per Tank	4
Average Water Depth - Ft	14.3
Size of Stage - Ft	52.5 x 52.5
Total Volume of Aerator - Cu Ft	1,261,000
- Million Gallons	9.4
Aerator Average MLSS - Mg/L	4,000
Mixed Liquor Volatile Solids - Percent	75
Displacement - Hrs	
Wastewater Flow	1.9

TABLE 2-2-3 (Continued)

BASES OF DESIGN
SECONDARY TREATMENT

Final Sedimentation Tanks	
Number of Tanks	12
Size of Each Tank	
Length - Ft	214
Width - Ft	68
Average Water Depth - Ft	11
Total Surface Area of Tanks - Sq Ft	175,000
Total Volume of Tanks - Cu Ft	1,925,000
- Million Gallons	14.4
Weirs	
Length - Ft	9,408
Overflow Rate - Gal/Ft/Day	12,700
Surface Loading - Gal/Sq Ft/Day	
Wastewater Flow	685
Mixed Liquor Flow	
25% Return Sludge	860
50% Return Sludge	1,030
Displacement - Hrs	
Wastewater Flow	2.9
Mixed Liquor	
25% Return Sludge	2.3
50% Return Sludge	1.9

TABLE 2-2-4

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
OXYGEN GENERATING PLANT

Type of Facility	Cryogenic
Number of Units	2
Size of Units - Tons/Day	50
Maximum Oxygen Production - Tons/Day	100
Liquid Storage - Gal.	25,000

TABLE 2-2-5

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
EFFLUENT PUMPING

Number of Effluent Pumps	
Variable Speed Pumps	3
Constant Speed Pumps	2
Capacity	
Each Pump - MGD	70
Total - MGD	280
Head - Ft	11

TABLE 2-2-6

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
CHLORINATION

Wastewater Flow - MGD	
Annual Average	120
Maximum Rate	240
Chlorine Dosage - Mg/L	8
- Lbs/Day (Annual Average)	8,000
Chlorinators	
Type	Solution Feed
Number	3
Capacity (each) - Lbs/Day	8,000
Chlorine Storage	
Type	Tank Car
Capacity - Tons	~~55~~ 90
- Days	13
Outfall Conduit Retention Time (Mean High Tide Elevation 97.75)	
At Annual Average Flow - Minutes	37.2
At Maximum Rate of Flow - Minutes	18.9

TABLE 2-3-1

SOUTHEAST WPCP
OPERATION AND MAINTENANCE MANUAL

BASES OF DESIGN
SLUDGE HANDLING

Sludge Production	
Primary Sludge	
- Lbs/Day (dry basis)	131,000
- Percent Solids	5
- GPM	220
Waste Activated Sludge	
- Lbs/Day (dry basis)	77,800
- Percent Solids	1.5
- GPM	432
Storage Tanks	
Number of Tanks	2
Tank Dimensions	
Diameter - Ft	68
Sidewater Depth - Ft	30
Volume Per Tank - Cu Ft	112,000
- Gallons	840,000
Storage Time - Days	
Primary Sludge	2.65
Waste Activated Sludge	1.35
Primary Sludge Transfer Pumps	
Number of Pumps	2
Capacity	
Each Pump - GPM	540
Head - Ft	350

Bases of Design, Southwest WPCP

PHILADELPHIA WATER DEPARTMENT

SOUTHWEST WPC PLANT

BASIS OF DESIGN

TABLE 6

THE CITY OF PHILADELPHIA

SOUTHWEST PLANT

Bases of Design (1990)

October 1972

	Design
1. Basic Data	
Tributary Area - Acres	
Philadelphia	27,200
Suburban Areas	88,500
Total	115,700
Population	
Philadelphia	655,000
Suburban Areas	700,000
Total	1,355,000
Population Density - Persons/Acre	
Philadelphia	24.1
Suburban Areas	7.9
Total	11.7
2. Wastewater Quantities	
Annual Average - MGD	
Philadelphia	118
Suburban Areas	92
Total	210

	Design
2. Wastewater Quantities (Continued)	
Maximum Month DWF (An. Avg. x 1.2) - MGD	252
Maximum Day DWF (An. Avg. x 1.5) - MGD	315
Maximum Rate (An. Avg. x 2.0) - MGD	420
3. Wastewater Characteristics	
Annual Average SS - mg/l	279
- Lbs/Day (Dry Basis)	488,000
- Lbs/Cap/Day	0.36
Annual Average BOD - mg/l	193
- Lbs/Day	339,000
- Lbs/Cap/Day	0.25
Screenings - Cu.Ft./Mil.Gal.	0.85
- Cu.Ft./Day	178 ←
Grit - Cu.Ft./Mil.Gal.	5.20
- Cu.Ft./Day	1,090 ←
Scum - Dry Lbs/Mil.Gal.	50-100
- Lbs/Day	10,500-21,000
4. Wastewater Pumping (Low Level System)	1050 / 178 / 1260
Raw Sewage Pumps	
Existing	2
New	2
Total	4

	Design
4. Wastewater Pumping (Low Level System) (Continued)	
Capacity - MGD	
Existing - 1 @ 10 MGD, 1 @ 20 MGD	30
New - 2 @ 20 MGD	40
Total (installed)	70
Total (firm)	50
Head - Ft.	48
Screens	
Type	Trash Rack
Number	2
Clear Bar Spacing - Inches	4
5. Grit Removal	
Grit Removal - Cu.Ft./Mil.Gal.	5.20
- Cu.Ft./Day (An. Avg.)	1,090
- Cu.Ft./Day (Max. Rate)	2,180
Density - Lbs/Cu.Ft. (Wet)	120
Grit Removed - Lbs/Day (An. Avg. Wet)	131,000
- Lbs/Hr. (An. Avg. Wet)	5,460
- Lbs/Hr. (Max. Rate Wet)	10,920
Percent Moisture	50
Percent Volatiles	25
Type of Facility	Detritor Basin
Number of Units	4

Ash quantity 12.5 tons/d grit X 0.75 X 0.25 [illegible]

	Design
5. Grit Removal (Continued)	
Dimensions - Ft.	60 x 60
Maximum Flow - MGD (Year 2020)	570
Particle Size Removed - Mesh	65
Grit Removal Equipment	
Number of Inclined Flight Collectors	4
Flight Collector Capacity - Tons/Hr.	3
Number of Tube Conveyors	4
Tube Conveyor Capacity - Tons/Hr.	3
6. Screenings Removal	
Screenings Removal - Cu.Ft./Mil.Gal.	0.85
- Cu.Ft./Day (An. Avg.)	178
- Cu.Ft./Day (Max. Rate)	356
Density - Lbs/Cu.Ft. (Wet)	55
Screenings Removed - Lbs/Day (An. Avg. Wet)	9,600
- Lbs/Hr. (An. Avg. Wet)	400
- Lbs/Hr. (Max. Rate Wet)	800
Percent Moisture	85
Percent Volatiles	75
Mechanical Sewage Screens	
Flow - MGD (Max. Rate Year 2020)	570
Number of Screens	8
Width of Channel - Ft.	6

July Aug '72 = 58%

	Design
6. Screenings Removal (Continued)	
Maximum Velocity - Fps (570 MGD-Year 2020)	3.2
Clear Bar Spacing - Inches	1
Type	84-degree, inclined front cleaned
Screenings Removal Equipment	
Screen Belt Conveyors	2
Belt Conveyor Capacity - Cu.Ft./Day (Max. Rate)	180
- Lbs/Hr. (Max. Rate)	400
Combined, Inclined Screen Belt Conveyor	1
Belt Conveyor Capacity - Cu.Ft./Day (Max. Rate)	360
- Lbs/Hr. (Max. Rate)	800
Shredder Feed Belt Conveyor	
Belt Conveyor Capacity - Cu.Ft./Day (Max. Rate)	360
- Lbs/Hr. (Max. Rate)	800
Screening Shredder	
Number of Units	2
Shredder Capacity - Cu.Ft./Day (Max. Rate)	360

	Design
7. Grit and Screenings Incineration	
Combined Grit and Screenings Belt Conveyor	
Belt Conveyor Capacity - Cu.Ft./Day (Max. Rate)	2,600
- Lbs/Hr. (Max. Rate)	12,000
Grit and Screenings Storage Hoppers	
Number of Units	4
Hopper Capacity - Cu.Ft. (Each)	600
Hopper Discharge Belt Conveyor	
Number of Units	2
Belt Conveyor Capacity - Cu.Ft./Day (An. Avg.)	1,300
- Lbs/Hr. (An. Avg.)	6,000
Bucket Elevator	
Number of Units	2
Bucket Elevator Capacity - Tons/Hr.	3
Multiple Hearth Incinerator	
Number of Units	2
Operating Time - Hr./Week 7x24=168	168
Cake Feed - Lbs/Hr. (Year 1990)	6,000
Moisture @ 60% of Cake Feed - Lbs/Hr.	3,600
Solids @ 40% of Cake Feed - Lbs/Hr.	2,400
Volatile @ 30% of Cake Feed - Lbs/Hr.	720

	Design
7. Grit and Screenings Incineration (Continued)	
Outside Diameter - Ft.	16'-9"
Number of Hearths (Including Afterburner)	7
Feed Screw Conveyors	
Number of Units	2
Screw Conveyor Capacity - Lbs/Hr.	6,000
Feed Hoppers	
Number of Units	2
Hopper Capacity - Cu.Ft.	50
Discharge Ash Hopper	
Number of Units	2
Hopper Capacity - Cu.Ft.	80
Ash Storage Hopper	
Number of Units	1
Hopper Capacity - Cu.Ft.	2,800
Ash Unloader Capacity - Tons/Hr.	50

8. Primary Sedimentation Tanks

	Existing	New and Existing
Wastewater Flow - MGD (An. Avg.)	136	210
Number of Tanks	4	5
Size Each Tank - Ft.	250'Lx125'W	250'Lx125'W
Average Water Depth - Ft.	12	12

		Design
8. Primary Sedimentation Tanks (Continued)	Existing	New and Existing
Total Surface Area - Sq. Ft.	124,800	156,000
Total Volume - Cu. Ft.	1,500,000	1,815,000
- MG	11.24	14.05
Surface Loading - Gal/Sq.Ft./Day	1,090	1,350
Displacement Time - Hrs.	2.0	1.6
Weir Length - Ft.	1,064	4,600
Weir Overflow - Gal/Ft/Day	128,000	45,700
SS Loading - Lbs/Day (An. Avg.)	-	488,000
Percent Removed	-	45
Lbs/Day Removed	-	220,000
BOD Loading - Lbs/Day (An. Avg.)	-	339,000
Percent Removed	-	25
Lbs/Day Removed	-	85,000
9. Aeration Tanks (Oxygen)		
Wastewater Flow - MGD		210
Mixed Liquor Flow - MGD		
30% Return Sludge		273
50% Return Sludge		315
SS Applied to Aerator - Lbs/Day		268,000
- mg/l		153

	Design
9. Aeration Tanks (Oxygen) (Continued)	
BOD Applied to Aerator - Lbs/Day	254,000
- mg/l	145
Number of Tanks	10
Number of Stages per Tank	4
Average Water Depth - Ft.	16
Total Volume of Aerator - Cu.Ft.	2,320,000
H_2O - Gal	17,300,000
Aerator Average MLSS - mg/l	5,900
Mixed Liquor Volatile Solids - percent	66
BOD Loading	
Lbs. BOD Applied per 1,000 Ft.^{3} per Day	108
Lbs. BOD Applied per 100 Lbs. MLSS per Day	30
Lbs. BOD Applied per Lb. MLVSS per Day (F/M)	0.45
BOD Sludge Age - Days	3.3
Solids Retention Time - Days	2.1
Displacement Time - Hrs. (An. Avg.)	
Wastewater Flow	1.98
30% Return Sludge	1.52
50% Return Sludge	1.32
Oxygen Required - Tons/Day (An. Avg.)	170
- Tons/Day (Max. Day)	195

	Design
10. Oxygen Generation	
Type of Facility	Cryogenic
Number of Units	2
Size - Tons/Day	90
Total Oxygen Production - Tons/Day	180
Liquid Oxygen Storage - Gallons	50,000
11. Final Sedimentation Tanks	
Number of Tanks	20
Size of Each Tank - Ft.	76'Wx260'L
Average Water Depth - Ft.	11
Total Surface Area - Sq.Ft.	395,000
Total Volume - Cu.Ft.	4,345,000
- MG	32.35
Surface Loading - Gal/Sq.Ft./Day	
Wastewater Flow	530
30% Return Sludge	~~635~~
50% Return Sludge	795
Displacement Time - Hrs.	
Wastewater Flow	3.70
30% Return Sludge	2.85
50% Return Sludge	2.46
Weir Length - Ft.	16,320
Weir Overflow - Gal/Ft./Day	12,800

	Design
11. Final Sedimentation Tanks (Continued)	
SS Removal - Lbs/Day	153,000
BOD Removal - Lbs/Day	232,000
Effluent Characteristics (An. Avg.)	
Flow	210
Suspended Solids - Lbs/Day	49,000
- mg/l	28
BOD - Lbs/Day	21,830
- mg/l	13
12. Scum Removal	
Annual Average Quantity - Lbs/MG	50-100
- Lbs/Day	10,500-21,000
Scum Flow Rate - MGD	1.50
Scum Incinerators (Under Construction)	
Type	Water Grate
Number	2
Capacity (Each) - Lbs/Hr.	1,500
Scum Concentration Tanks	
Number	2
Size (Each) - Ft.	8'-6"Wx34'-0"L
Total Volume - Cu.Ft.	4,600
Detention Time - Min.	30

	Design
13. Chlorination	
Chlorine Dosage - Lbs/Day	14,000
- mg/l	8.0
Chlorinators	
Type	Solution Feed
Number of Units	4
Capacity (Each) - Lbs/Day	8,000
Chlorine Storage	
Type	Tank Car
Capacity - Tons	55
- Days	8
Outfall Residence Time, Min., at Mean High Tide Elevation 97.75	
At Annual Average Flow	32.8
At Maximum Rate Flow	24.5
14. Sludge Thickening Tanks	
Solids to Thickeners - Waste Activated Sludge	
Lbs/Day (Dry Basis)	153,000
Percent Solids	2.2
MGD	0.83
GPM	578
Thickening Tanks (Air Flotation)	
Number (Active)	7

	Design
14. Sludge Thickening Tanks (Continued)	
Number (Total)	8
Size - Ft.	18x70
Depth - Ft.	8
Area per Tank - Sq.Ft.	1,260
Total Area - Sq.Ft.	9,820
Total Volume - Cu.Ft.	~~78,560~~ 80,496
Thickener Loading - Lbs/Sq.Ft./Day	17
Dilution Water Ratio - Percent	450
Overflow Rate - Gal/Sq.Ft./Day	525
Detention Time - Min.	180
Thickened Sludge	
Lbs/Day	153,000
Percent Solids	4.0
MGD	0.46
GPM	318
15. Sludge Digestion Tanks	
Solids to Digesters	
Primary Sludge - Existing Tanks	
Lbs/Day	220,000
Percent Solids	5.0
GPM	367

	Design
15. Sludge Digestion Tanks	
Waste Activated Sludge	
Lbs/Day	153,000
Percent Solids	4.0
GPM	318
Combined Sludge	
Lbs/Day	373,000
Percent Solids	4.5
GPM	685
Digesters (New)	
Number	8
Size - Ft.	110 Diam., 30 SWD
Total Volume - Cu.Ft.	2,800,000
Average Displacement Time - Days	21.2
Percent Volatile Solids in Sludge	66
Volatile Solids Loading - Lbs/Day/Cu.Ft.	0.088
One Digester Out of Service	
Displacement Time - Days	18.6
Volatile Solids Loading - Lbs/Cu.Ft./Day	0.100
Digested Sludge	
Destruction of Volatile Solids - Percent	50

	Design
15. Sludge Digestion Tanks (Continued)	
Volatile Solids Destroyed - Lbs/Day	123,000
Sludge from Digesters	
Lbs/Day	250,000
MGD	0.88
GPM	690
Percent Solids	3.0
Wet Sludge - Lbs/Day	8,280,000
Sludge Storage Tank	
Size - Ft.	110 Diam., 30 SWD
Total Volume - Cu.Ft.	133,000

Volume of New Digesters (Each) 331,000 ft³
Volume of Modified Digesters (Each) 277,500 ft³
Dia. of Modified Digesters 104 ft

TABLE 2-2

CITY OF PHILADELPHIA
WATER DEPARTMENT

SOUTHWEST WATER POLLUTION CONTROL PLANT
SLUDGE DEWATERING FACILITY

Bases of Design

Greeley and Hansen
March 1984

	Design Condition	
	Annual Avg.	Max. Monthly
1. Wastewater Flow		
Southwest WPCP, mgd	117	140
Southwest WPCP, mgd	200	240
2. Raw Sludge Production		
SE-WPCP and SW-WPCP Combined		
Total Solids, lbs/day	474,000	570,000
, tons/day	237	285
Volatile Solids, lbs/day	315,000	381,000
Inert Solids, lbs/day	159,000	189,000
Percent Solics	4.5	4.5
Flow, gpm	875	1,060
3. Digested Sludge to Sludge Storage Tanks		
Volatile Solids Reduction by Digestion, %	50	50
Volatile Solids Remaining, lbs/day	157,500	190,500
Inert Solids, lbs/day	159,000	189,000
Total Solids, lbs/day	316,500	379,500
, tons/day	158	190
Percent Solids	3	3
Flow, gpm	875	1,060
4. Sludge Storage Tanks		
Number of Tanks	2	2
Tank Inside Dimensions, ft.	96 x 96	96 x 96
Side-wall Water Depth, ft.	27	27
Volume per Tank, cu.ft.	250,000	250,000
Total Volume, cu.ft.	500,000	500,000
Hydraulic Detention Time, days	3	2.5

APPENDIX K

Consent Order

TO : Distribution

DATE 4/27/90

FROM : Abby L. Pozefsky, Divisional Deputy City Solicitor

SUBJECT: CONSENT DECREE IN US V. CITY OF PHILADELPHIA, CIVIL ACTION #88-6791, UNITED STATES DISTRICT COURT, EASTERN DISTRICT PENNSYLVANIA

Attached please find a copy of the Partial Consent Decree governing the Southwest Plant as agreed to by the City, the Pennsylvania Department of Environmental Resources, U.S. Environmental Protection Agency and the U.S. Department of Justice. It is a Partial Consent Decree in that the City continues to negotiate with DER a companion decree dealing with solid waste management issues at the Southwest Plant and the Sludge Processing and Distribution Center; I anticipate that the second decree will be filed with the Court within the next month.

The salient features of the Partial Consent Decree are as follows:

1. The City must complete five identified rehabilitation projects at the Southwest plant by certain milestone dates, and must maintain the equipment strictly for six months thereafter.
   Paragraphs 8 - 12

2. The City must comply with interim and final effluent limitations.
   Paragraphs 15 - 18.

3. The City must issue pretreatment permits containing effluent limits and monitoring and reporting requirements for the City's Belmont and Queen Lane Water Treatment Plants. The plants must maintain strict compliance with the terms for between 12 and 18 months.
   Paragraphs 20-24.

4. The City must institute biomonitoring.
   Paragraphs 25-26; Attachment A.

5. The City must retain an independent consultant to evaluate remedial action, staffing and maintenance requirements for the Southwest Plant. The City is required to fully implement the plan.
   Paragraphs 27-40.

6. The City undertakes substantial reporting requirements in connection with the Decree.
   Paragraphs 43 and 44.

7. The City shall pay stipulated penalties for any violations of the Decree, and pay civil penalties in the amount of 1.5 million dollars in satisfaction of the government's past claims against the City.
   Paragraphs 45-48.

This Decree was submitted to Judge Ditter on Tuesday, April 24, 1990. The judge has allotted one week for the City to sign, and an additional three weeks for other parties' signatures. After this, the Decree is subject to a 30 day public comment period prior to its entry. The effective date of the Decree and its requirements is the date of entry, unless the entry date is

later than a specific milestone date set forth in the Decree (e.g. we are bound to complete the four primary sedimentation tanks by June 1, 1990, as set forth in paragraph 8, even if the effective date of the Decree is later than that).

Please call me if you have any questions or comments, or if you need extra copies of this Decree.

ALP:sb

cc: Charisse Lilly
John Plonski
Patrick Cairo
Kumar Kishinchand
Joan Becker
Ron Coy
Bruce Aptowicz
Tom Kulesza
Bill McKeon
Eugene Gruber
Jeff Brock
Kate Ellis-Guest
Jerry Kuziw

CJG:jmb/CITYPA1/251.16

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA and the COMMONWEALTH OF PENNSYLVANIA,	:	
Plaintiffs,	:	
v.	:	CIVIL ACTION NO. 88-6791
CITY OF PHILADELPHIA, PENNSYLVANIA,	:	
Defendant	:	

PARTIAL CONSENT DECREE

Plaintiff, the United States of America ("United States"), on behalf of the United States Environmental Protection Agency ("EPA"), filed the complaint herein on September 1, 1988, alleging that Defendant, City of Philadelphia ("the City"), had violated the Clean Water Act, 33 U.S.C. § 1251 et seq. ("the Act"), and the conditions and limitations of National Pollutant Discharge Elimination System ("NPDES") Permit Number PA0026671.

The City owns and operates a 200 million gallon per day (200 MGD) sewage treatment plant known as the "Southwest Plant", located at 8200 Enterprise Avenue, Philadelphia, the County of Philadelphia, Pennsylvania.

The Commonwealth of Pennsylvania (the "Commonwealth") has intervened as a plaintiff in this action, pursuant to section 309(e) of the Clean Water Act, 33 U.S.C. § 1319(e), to enforce the Clean Water Act and the Pennsylvania Clean Streams Law, 35 P.S. § 691.1 et seq.

The United States, the Commonwealth and the City have consented to the entry of this Decree without trial of any issues, and the United States, the Commonwealth and the City hereby stipulate to the Court that in order to resolve the issues stated in the United States' and the Commonwealth's Complaints, this Consent Decree should be entered.

This Decree shall not constitute an admission by the City of any allegation contained in the Complaints filed by the United States or the Commonwealth in this action.

NOW, THEREFORE, it is hereby ORDERED, ADJUDGED, and DECREED as follows:

A. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action and over the parties thereto, pursuant to section 309 of the Act, 33 U.S.C. § 1319, and 28 U.S.C. § 1345. The Complaint of the United States states a claim upon which relief may be granted under section 309 of the Act, 33 U.S.C. § 1319. The Commonwealth's claim in its complaint in intervention is one upon which relief against the City can be granted under sections 601 and 605 of the Pennsylvania Clean

Streams Law, 35 P.S. §§ 691.601 and 691.605, and the Court has pendent jurisdiction over the claims made under Pennsylvania law.

B. BINDING EFFECT

2. The provisions of this Consent Decree shall apply to and be binding upon the United States, the Commonwealth and the City and upon their officers, elected representatives, directors, agents, trustees, servants, employees, successors, assigns, attorneys, and all persons, firms, and corporations acting under their control or direction.

3. No later than thirty (30) days prior to transfer of ownership, operation, or other interest in the Southwest Plant, the City shall give written notice of this Consent Decree to any successors in interest. Upon transfer of ownership, operation, or other interest in the Southwest Plant, the City shall provide a copy of this Decree to any successor in interest. The City shall condition the transfer of ownership, operation or other interest upon the successful execution of the terms and conditions of this Decree. The City shall notify, in writing, the United States and the Commonwealth of any successor in interest or any transfer of operating responsibility at least 30 days prior to transfer, which notification shall include a statement of the City's compliance with the requirements of this paragraph.

C. OBJECTIVES

4. It is the express purpose of the parties in entering this Consent Decree to further the objectives of the Clean Water Act, as enunciated at section 101 of the Act, 33 U.S.C. § 1251, and of the Pennsylvania Clean Streams Law, 35 P.S. § 691.1 et seq., as enunciated in section 4 thereof. All plans, studies, construction, remedial maintenance, monitoring programs, and other obligations in this Decree, or resulting from the activities required by this Decree, shall have the objective of causing the City to achieve and remain in compliance with the Clean Water Act, and the Pennsylvania Clean Streams Law, including compliance with the terms and conditions of NPDES Permit Number PA0026671, all renewals or amendments to such Permit, and the provisions of applicable Federal and State laws and regulations governing discharges from the Southwest Plant.

D. DEFINITIONS

5. Unless otherwise defined herein, terms used in this Decree shall have the meaning given to those terms in the Clean Water Act, 33 U.S.C. § 1251 et seq., the regulations promulgated thereunder (see 33 U.S.C. § 1362 and 40 C.F.R. § 122.21), and in any applicable NPDES permit.

6. "Permit" as used herein shall mean NPDES Permit Number PA0026671, issued for the Southwest Plant, and all

revisions, modifications, amendments or reissuances of said permit that are legally enforceable against the City.

E. REHABILITATION SCHEDULE

7. The City shall undertake a program to rehabilitate and thereafter maintain the equipment at the Southwest Plant. This compliance program shall be accomplished in accordance with the schedule set forth in this section of the Decree.

8. The City shall rehabilitate a minimum of four (4) primary sedimentation tanks by June 1, 1990, and shall maintain a minimum of four (4) primary sedimentation tanks in service for at least six (6) consecutive months. An in-service primary sedimentation tank shall be defined as having a minimum of one (1) primary sludge pump, five (5) longitudinal collectors and two (2) cross collectors available for operation. The City will be allowed up to seventy-two (72) hours from the time that a piece of equipment is not in operation to remedy any failure before any primary sedimentation tank is determined to be out of service for purposes of this Decree.

9. The City shall rehabilitate a minimum of nine (9) aeration tanks by December 1, 1990, and shall maintain in service a minimum of nine (9) aeration tanks for at least six (6) consecutive months. An in-service aeration tank shall be defined as having a minimum of three (3) mixers in operation, with the proviso that the City must have four (4) mixers

available for operation in at least four (4) of the nine (9) tanks to satisfy the obligations of this paragraph. The City will be allowed up to one hundred and twenty (120) hours from the time that a piece of equipment is not in operation to remedy any failure in an individual mixer before that mixer is determined to be out of service for purposes of this Decree.

10. The City shall rehabilitate the sludge thickening system by December 1, 1990, and shall maintain it in service for at least six (6) consecutive months. An in-service sludge thickening system shall be defined as having seven (7) DAF tanks available for operation (each pair, defined by having a common sump, must have available at least one (1) operable floated sludge pump), one (1) air compressor, one (1) dilution water pump, two (2) waste activated sludge pumps and two (2) mixed sludge pumps available for operation. The City will be allowed twenty-four (24) hours from the time any piece of equipment is not in operation to remedy failures for the air compressor and the dilution water pump and seventy-two (72) hours from the time the piece of equipment is not in operation to remedy failures in DAF tanks, waste activated sludge pumps, mixed sludge pumps and floated sludge pumps before those items are determined to be out of service for purposes of this Decree.

11. The City shall rehabilitate the sludge digestion system by October 1, 1990, and shall maintain it in service for at least six (6) consecutive months. An in-service sludge

digestion system shall be defined as ten (10) sludge digesters each having an operable heat exchanger and either a sludge heating or a sludge circulating pump in service. The average monthly temperature of the in-service digesters shall be maintained at no lower than 90 degrees Fahrenheit. A minimum of two (2) digested sludge pumps on each of the north and south digester banks will be available for service. The City will be allowed up to seventy-two (72) hours from the time a piece of equipment is not in operation to remedy any failure before a piece of equipment in the sludge digestion system is determined to be out of service. If the results of the on-going digester rehabilitation program indicate that the gas mixing system must be further modified to meet the design standard for these digesters, the number of digesters in service may be reduced to nine (9), for the period of such modification only, which period shall be defined in the final report of the independent consultant, produced pursuant to paragraph 30 of this Decree.

12. The City shall rehabilitate a minimum of eighteen (18) final sedimentation tanks by January 1, 1991, and shall maintain a minimum of eighteen (18) final sedimentation tanks in service for at least six (6) consecutive months. An in-service final sedimentation tank shall be defined as having in operation six (6) longitudinal collectors, a cross collector and one (1) designated return sludge pump. The City will be allowed seventy-two (72) hours from the time any piece of equipment is out of operation to remedy any failure before

any final sedimentation tank is determined to be out of service.

13. Paragraphs 8 through 12 shall be considered separately for purposes of determining whether a violation has occurred and whether stipulated penalties are due as a result under paragraph 45 of this Decree. Separate violations of this Section E, subject to the stipulated penalties, shall be deemed to have occurred if: 1) Any of the five rehabilitation projects defined in paragraphs 8 through 12 hereof have not been completed by the deadlines designated for these rehabilitation projects in paragraphs 8 through 12, or 2) after the respective completion of each of the five rehabilitation projects defined in paragraphs 8 through 12 hereof, the requisite treatment equipment as defined in each of paragraphs 8 through 12 is not maintained "in service" (or returned to service within the time provided in each of paragraphs 8 through 12). A day of violation, for purposes of assessment of stipulated penalties, shall be each twenty-four (24) hour period, or portion thereof, in which any of the rehabilitation or maintenance requirements of paragraphs 8 through 12 hereof is not achieved.

14. The City shall be released from the stipulated penalty provisions of this Decree applicable to each of paragraphs 8 through 12 after the City has achieved six (6) consecutive months of compliance with the provisions of that particular paragraph; provided, however, that temporary, minor

deviations from such provisions, which (i) do not significantly impair the Southwest Plant's ability to provide treatment and (ii) are not indicative of any more serious failure to maintain that facility, shall not preclude EPA from exercising its discretion to find compliance under this paragraph. Release from stipulated penalties for any of the requirements of paragraphs 8 through 12 shall not release the City from the other requirements of that paragraph or from the requirements of any other of such paragraphs until such time as the City achieves six consecutive months of compliance with such other requirements. The City shall send a written certificate of compliance, in the form set forth in paragraph 68, signed by either a principal executive officer or ranking elected official or an individual having responsibility for the overall operation of the Southwest Treatment Plant, together with supporting documentation, to the United States and to the Commonwealth at any time after the City believes that it has achieved six consecutive months of compliance with the requirements of any of the paragraphs 8 through 12 hereof. The United States, after consultation with the Commonwealth, shall promptly review any such certificate, and, at its discretion, request that the City provide further information. Following the latest of (i) receipt by the United States and the Commonwealth of any such certificate, (ii) receipt of further

information requested of the City, or (iii) a statement that the City declines to provide such information, the United States, after consultation with the Commonwealth, will attempt in good faith to respond to such certificate within thirty (30) days; provided, however, that where the United States is unable to so respond it shall, within that thirty (30) day period and with no prejudice to its eventual position on such certificates, notify the City of the additional time needed for a response. In the event that the United States declines to approve any such certificate, its response shall state the reason(s) for that position. If the certificate is approved by the United States, after consultation with the Commonwealth, the City shall be released from the stipulated penalty provisions of the Decree as they relate to the paragraph with which the City has achieved compliance. If the certificate is not approved by the United States, after consultation with the Commonwealth, the City may resubmit a certificate at a later date or may submit the matter for resolution pursuant to paragraph 58 of this Decree.

F. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

Interim Effluent Limits and Monitoring Requirements

15. The City shall comply with the following interim effluent limits at the Southwest Plant from the date of entry of this Decree until December 31, 1990.

PARAMETER	Monthly Ave. Concentration	Monthly Ave. Loading	Monthly Ave. % Removal
Biochemical Oxygen Demand (5-day) (BOD_5)	30 mg/l monthly ave.	-	80%*
Total Suspended Solids	30 mg/l	50,040 lbs/day	80%
First Stage Oxygen Demand (FSOD)	-	50,000 lbs/day	-
Fecal Coliform	-	200/100 ml. (all permit conditions)	-

* If FSOD is less than 37,020 lbs./day monthly average for any month in which the City fails to achieve this interim limit, no stipulated penalty shall be assessed for violations of this interim limit.

16. Monitoring and reporting requirements shall remain as required in the City's NPDES Permit for the Southwest Plant.

Final Effluent Limits

17. Beginning January 1, 1991, the City shall comply with the final effluent limits and monitoring requirements set forth in the City's NPDES Permit for the Southwest Plant.

18. Beginning January 1, 1991, the City shall be assessed stipulated penalties pursuant to paragraph 47 for violations of paragraph 17, except that for the period between January 1, 1991, and January 1, 1992, no stipulated penalties shall be assessed for violations of Biochemical Oxygen Demand 5-day) ("BOD5") mass loading or BOD percent removal effluent limitations for any month in which the City complies with final

limits for FSOD. No later than November 1, 1991, the parties shall meet to determine what, if any, additional measures are necessary to assure compliance with said BOD5 limitations, taking into consideration the then-current state of compliance with said limitations and the status of any then-pending request by the City for modifications of any or all such limitations. Prior to December 31, 1991, and at the Court's convenience, the parties shall report to the Court the outcome of these discussions, including any agreed modifications to the Decree. In the event that any request by the City for modification of said BOD5 limitations is denied by the Delaware River Basin Commission prior to November 1, 1991, the discussion process outlined in this paragraph shall commence within a month after the denial, and the United States' and the Commonwealth's right to petition the Court for additional injunctive and penalty relief with respect to the BOD5 limitations of the City's permit shall accrue two months thereafter, i.e., three months after the denial by the Delaware River Basin Commission of the City's application for modification of the BOD5 limitations.

19. The City shall be released from stipulated penalties for violations of final effluent limits and monitoring requirements after six (6) consecutive months for which the City is not assessed stipulated penalties pursuant to paragraph 18. At such time after the City believes that it has achieved six (6) consecutive months in which it has not been

assessed stipulated penalties under paragraph 18, the City shall submit to the United States and the Commonwealth a written certificate of compliance, in the form set forth in paragraph 68 of this Decree, signed by either a principal executive officer or ranking elected official or an individual having responsibility for the overall operation of the Southwest Treatment Plant. The United States, after consultation with the Commonwealth, shall promptly review any such certificate and, at its discretion, request that the City provide further information. Following the latest of (i) receipt by the United States and the Commonwealth of any such certificate; (ii) receipt of further information requested of the City, or; (iii) receipt of a statement that the City declines to provide such information; the United States, after consultation with the Commonwealth, will attempt in good faith to respond to such certificate within thirty (30) days; provided, however, that where the United States is unable to so respond it shall, within such thirty (30) day period and without prejudice to its eventual position on such certificate, notify the City of the additional time needed for response. In the event that the United States declines to approve any such certificate, its response shall state the reason(s) for that position. If the certificate is approved by the United States, after consultation with the Commonwealth, the City shall be released from the stipulated penalty provisions of paragraph 18 of the Decree. If the certificate is not approved by the

United States, after consultation with the Commonwealth, the stipulated penalty provisions will continue to apply, until such time as a certificate of compliance is approved by the United States, provided that the City may submit the matter to the Court for resolution pursuant to paragraph 58 of this Decree.

G. PRETREATMENT

20. No later than thirty (30) days after entry of this Decree, the City shall issue draft industrial user pretreatment permits containing effluent limits, monitoring and reporting requirements for the City's Belmont and Queen Lane Water Treatment Plants. The effluent limits in these permits shall be sufficient to prevent pass through or interference, as defined in 40 C.F.R. § 403, at the Southwest Plant. Such draft permits, along with supporting documentation setting forth the technical basis for the permit limits selected, shall be submitted for review to the United States, the Commonwealth, and the independent consultant hired pursuant to section I hereof.

21. The parties to the Decree shall have thirty (30) days after the issuance of the independent consultant's final report required by paragraph 33 hereof to send comments on the draft permits to the City.

22. The City shall issue final industrial user pretreatment permits to the Belmont and Queen Lane Water

Treatment Plants within ninety (90) days of receiving the independent consultant's final report, and such permits shall be consistent with the independent consultant's recommendations and with the applicable federal pretreatment statutes and regulations.

23. The City's Belmont and Queen Lane Water Treatment Plants shall comply with the effluent limits and the monitoring and reporting requirements in the final issued permits. Failure to comply with the effluent limitations contained in the final industrial user pretreatment permits shall subject the City to stipulated penalties as set forth in paragraph 48 hereof. Any discharge or release of pollutants from the Belmont or Queen Lane Water Treatment Plants that causes interference or pass through at the Southwest Plant, whether or not such discharge or release is in violation of any permit limits applicable to that Water Treatment Plant, shall subject the City to stipulated penalties as set forth in paragraph 48 hereof, for each day that such discharge or release continues.

24. The City shall be released from stipulated penalties for all violations of section G after the City has achieved compliance with all of the effluent limitations contained in the final Belmont and Queen Lane industrial user pretreatment permits through no fewer than eight (8) events by which a Belmont or Queen Lane Water Treatment Plant sedimentation tank is drained, in a minimum twelve and a

maximum eighteen month period. At such time as the City believes that it has achieved compliance with the provisions of this paragraph, the City shall submit to the United States and the Commonwealth a written certificate of compliance, in the form set forth in paragraph 68 of this Decree, signed by either a principal executive officer or ranking elected official or an individual having responsibility for the overall operation of the Southwest Treatment Plant. The United States, after consultation with the Commonwealth, shall promptly review any such certificate and, at its discretion, request that the City provide further information. Following the latest of (i) receipt by the United States and the Commonwealth of any such certificate; (ii) receipt of further information requested of the City, or; (iii) receipt of a statement that the City declines to provide such information; the United States, after consultation with the Commonwealth, will attempt in good faith to respond to such certificate within thirty (30) days; provided, however, that where the United States is unable to so respond it shall, within such thirty (30) day period and without prejudice to its eventual position on such certificate, notify the City of the additional time needed for response. In the event that the United States declines to approve any such certificate, its response shall state the reason(s) for that position. If the certificate is approved by the United States, after consultation with the Commonwealth, the City shall be released from the stipulated penalty provisions of paragraph 33

of the Decree. If the certificate is not approved by the United States, after consultation with the Commonwealth, the stipulated penalty provisions will continue to apply, until such time as a certificate of compliance is approved by the United States, provided that the City may submit the matter to the Court for resolution pursuant to paragraph 58 of this Decree.

H. BIOMONITORING

25. The City shall institute a biomonitoring program no later than 30 days after the entry of this Decree. Such biomonitoring program shall be conducted for, at a minimum, one full year, unless otherwise provided by Attachment A.

26. The City's biomonitoring program shall be conducted in accordance with the requirements set forth in Attachment A to this Decree, which is incorporated herein and enforceable hereunder.

I. REMEDIAL ACTION, STAFFING AND MAINTENANCE

27. The City shall retain an independent consultant to conduct the work specified in this section of the Decree and in the work plan. For purposes of this Decree, the work plan shall mean the "work plan-scope of work" that is Appendix 1 to the request for proposals, page 4 through 15, which is attached hereto as Attachment B. The work plan is incorporated herein by reference. The parties will attempt to

select the independent consultant by agreement of all of the parties to this Decree, based upon the independent consultant's expertise, experience, independence and availability. In the event that the parties are unable to reach agreement on the selection of an independent consultant within sixty (60) days of receipt of responses to the request for proposals issued by the City, the selection process shall proceed as described herein. The parties to the Decree will alternately strike one name from the list of contractors responding to the request for proposals, a copy of which is attached hereto as Attachment B, provided that any names may first be removed from the list by mutual agreement of all parties. For purposes of this procedure only, the United states and the Commonwealth shall jointly exercise their strike, i.e., the first strike shall be made by the United States and the Commonwealth and the second strike by the City, alternating in this fashion until only one name remains on the list. The responding contractor whose name remains on the list at the end of this process shall be selected by the City as the independent consultant to perform the work under this Decree. If this process does not produce a consultant acceptable to all parties within ninety (90) days of the receipt of responses to the request for proposals, any party may petition the Court for resolution of the dispute.

28. The City shall direct the independent consultant to proceed with the work described in this Decree, the work plan and the City's contract with the independent consultant.

no later than sixty (60) days after final selection of the independent consultant.

29. The independent consultant selected to perform work under this Decree shall be prohibited from working for any party to the Decree, or for anyone else, for purposes of challenging or promulgating an NPDES permit for the Southwest Plant, or to assist in, or defend, enforcement actions regarding compliance with the NPDES permit for the Southwest Plant, except that the independent consultant may be called as a witness by any party in any action under paragraph 58 or 59 of this Decree or to enforce this Decree. The parties shall consider including in the contract with the independent consultant a requirement that for two years after the termination of all provisions of section I of this Decree, the independent consultant shall not be retained, for any purpose, by the City's Water Department, the Water Management Division of EPA Region III or the Bureau of Water Quality Management of the Pennsylvania Department of Environmental Resources. In the event that the parties are unable to agree on the restrictions that should apply to the independent consultant, the provision for consideration set forth in this paragraph shall be the provision inserted in the contract, unless the City seeks resolution of the dispute under the provisions of paragraph 58 of this Decree. The provisions that are agreed upon shall be included in the contract between the City and the independent consultant.

30. The City shall require and the contract between the independent consultant and the City shall provide that the independent consultant shall conduct the work described in the work plan, and shall produce a draft report as described in that work plan within 120 days of receiving the direction to proceed from the City. The draft report shall be given simultaneously to all parties to this Decree, and each such party shall have thirty (30) days to submit comments on the draft report to the consultant, with copies to all other parties to the Decree. The contract with the City shall provide that the independent consultant will then have forty-five (45) days to consider and evaluate the comments submitted by the parties and to produce and distribute a final report. ~~Not less than thirty (30) days after receipt by all parties of the final report,~~ said report shall be filed by the United States with the Court and ~~shall become part of the Consent Decree and enforceable thereunder.~~ Thereafter, the dispute resolution provisions contained in Paragraph 59 of this Decree shall apply should any party seek to challenge any aspect of the final report as filed with the Court. Any party's failure to raise an issue in comments on any drafts of reports by the independent consultant, or the failure of the independent consultant to adopt any party's comments in a final document, shall not, by itself, bar a party from raising such issues or comments in a dispute or enforcement action in federal court. The City shall implement the recommendations of the final

report, which shall include any amendments thereto, in accordance with the schedules for implementation included therein, and the City's failure to perform shall be subject to penalties set forth in paragraph 49. The City shall require and the City's contract with the independent consultant shall specify that the consultant shall operate in a manner consistent with section I of this Consent Decree.

31. The contract between the independent consultant and the City shall provide that the findings of the final report and the schedules for implementation of those findings shall be separately stated for the three sections of the work plan, under the headings Remedial Action, Staffing and Maintenance Management. Work items deemed by the independent consultant to be desireable but not necessary to compliance may be identified in the final report but shall not be included in any schedule for implementation that is binding upon the City. The contract shall also provide that the independent consultant shall, to the maximum extent possible, group the deadlines and requirements of the final report into two or more groups of decreasing relative priority or importance whenever such distinctions can usefully be made and shall consider the relative priority of the tasks in fixing scheduling requirements, provided that the independent consultant shall be entitled to reevaluate and recommend reordering of the relative priority or importance of binding final plan requirements and deadlines through the mechanism of the quarterly reports if