

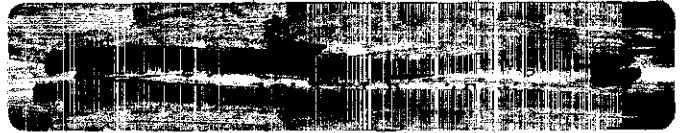
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STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
401 CHURCH STREET
L & C ANNEX 6TH FLOOR
NASHVILLE TN 37243-1534

December 31, 2003

Mr. Jerry Stewart, P.E.
Director - Waste Resources Division
455 Moccasin Bend Road
Chattanooga, TN 37405

Subject: NPDES Permit No. TN0024210
Chattanooga - Moccasin Bend WWTP & Combined Sewer System
Chattanooga, Hamilton County, Tennessee


Dear Mr. Stewart:

In accordance with the provisions of the Tennessee Water Quality Control Act, Tennessee Code Annotated, Sections 69-3-101 through 69-3-120, the enclosed NPDES Permit is hereby issued by the Division of Water Pollution Control. The continuance and/or reissuance of this NPDES Permit is contingent upon your meeting the conditions and requirements as stated therein.

Please be advised that you have the right to appeal any of the provisions established in this NPDES Permit, in accordance with Tennessee Code Annotated, Section 69-3-110, and the General Regulations of the Tennessee Water Quality Control Board. If you elect to appeal, you should file a petition within thirty (30) days of the receipt of this permit.

If you have questions, please contact the Division of Water Pollution Control at your local Environmental Assistance Center at 1-888-891-TDEC; or, at this office, please contact Mr. Wade Murphy at (615) 532-0666 or by E-mail at Wade.Murphy@state.tn.us.

Sincerely,


Saya Ann Qualls, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAQ/WDM

Enclosure

cc: Ms. Alice Cannella, P.E., Plant Superintendent, Moccasin Bend WWTP, Chattanooga
Mr. Rick Tate, Pretreatment Program Coordinator, Moccasin Bend WWTP, Chattanooga
Mr. Paul Patrick, Laboratory Manager, Moccasin Bend WWTP, Chattanooga
Mr. Gary M. Cosby, P.E., Senior Project Manager, Consolidated Technologies, Inc., Chattanooga
Ms. Connie Kagey, EPA Region IV, Water Mgmt. Div., NPDES and Biosolids Permits Sec.,
Atlanta
TDEC-EAC-CH
TDEC-WPC, Central Office Permit Section File

[REDACTED]

[REDACTED]

STATE OF TENNESSEE



NPDES PERMIT

No. TN0024210
REISSUE WITH EXPANDED TREATMENT CAPACITY

Authorization to discharge under the
National Pollutant Discharge Elimination System (NPDES)

Issued By
Tennessee Department of Environment and Conservation
Division of Water Pollution Control
401 Church Street
6th Floor, L & C Annex
Nashville, Tennessee 37243-1534

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.)

Discharger: **Chattanooga - Moccasin Bend STP and Combined Sewer Collection System**

is authorized to discharge: treated municipal wastewater and a primary treated mixture of municipal wastewater and combined sewer wastewater from Outfall 001, primary treated combined sewer wastewater from Outfalls 002 through 009 for designed releases and partial treatment for limited flows

from a facility located: **in Chattanooga, Hamilton County, Tennessee**

to receiving waters named: **Tennessee River (Nickajack Reservoir) mile 457.8 (001)***

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on: **February 01, 2004**

This permit shall expire on: **December 31, 2004**

Issuance date: **December 31, 2003**


Paul E. Davis, Director
Division of Water Pollution Control

CN-0759

RDAs 2352 and 2366

*The permittee is authorized to discharge primary treated and partially treated combined sewer wastewater from outfalls listed on the following page.



CSO Outfall No. and Name	Discharge Location	Former Outfall No.
002 Central Avenue	Chattanooga Creek mile 2.0	19A
003 Williams Street	Chattanooga Creek mile 1.4	16A
004 Citico	Tennessee River mile 465.2	04A
005 Tremont	Tennessee River mile 463.3	21A
006 Ross's Landing	Tennessee River mile 464.0	01A
007 M.L. King Blvd.	Tennessee River mile 463.3	11A
008 19 th Street	Tennessee River mile 462.5	13A
009 Carter Street	Tennessee River mile 461.6	14A

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TN0024210PMT.DOC

PART I

A.1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS –OUTFALL 001 - APPLIES NOVEMBER 1 THROUGH APRIL 30

The City of Chattanooga is authorized to discharge treated municipal wastewater and partially treated combined sewer wastewater from Outfall 001 to the Tennessee River mile 457.8 (Nickajack Reservoir). Discharge 001 consists of municipal wastewater and combined sewer wastewater from a treatment facility with a design capacity of 149 MGD (140 MGD secondary treatment; 9 MGD wet weather treatment of combined wastewater). Discharge 001 shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Percent Removal	Daily Maximum Conc.* (mg/l)	Daily Minimum Percent Removal*	Measurement Frequency	Sample Type	Sampling Point
CBOD ₅	25 Report	31066	35	65	40* Report	40*	7/week	composite	effluent
Ammonia as N	15	18640	20	65	30*		7/week	composite	influent
Suspended Solids	30 Report	37280	40	65	45* Report	40*	7/week	composite	effluent

*Applies to daily flows equal to or below 140 MGD (secondary treatment level achieved during dry weather.) Weekly removal rates and monthly mass limitations apply during both dry and wet weather.

Note: The permittee shall achieve 79% removal of CBOD₅ and 80% removal of TSS on a monthly average basis. The permittee shall report all instances of overflow and/or bypasses occurring at locations other than permitted discharge points. See Part 1.D.5a for reporting requirements.

Note: Unless elsewhere specified, summer months are May through October; winter months are November through April.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements		
	Monthly Average	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type	Sampling Point	
Fecal Coliform	200/100 ml (see the following paragraphs)		1000/100 ml	7/week	grab	effluent	
<i>E. coli</i> *	126/100 ml (see the following paragraphs)		0.28 mg/l instantaneous	7/week	grab	effluent	
Chlorine residual (Total)			1.0 ml/l	7/week	composite	effluent	
Settleable solids				7/week	grab	effluent	
Dissolved oxygen		4.0 mg/l instantaneous		7/week	grab	effluent	
PH (Standard Units)		6.0	9.0	7/week	grab	effluent	
Flow (MGD)	Report Report		Report Report	7/week 7/week	continuous continuous	influent effluent	
Combined flow receiving partial treatment (MGD)	Report		Report	7/week	continuous	effluent	
IC ₂₅	Survival, growth, and reproduction in 6.7% concentration			Annually Nov.-April	composite	effluent	
Combined Releases**	Report occurrences			monthly	visual	effluent	
Rainfall events	Report total occurrences separated by 10 hours time			monthly	visual	NA	
Rainfall amount	Report total (inches)			monthly	visual	NA	
Rainfall duration	Report monthly total (hours)			monthly	calculated	NA	

Note: See Page 12 for percent removal calculations.

* In the absence of a method in 40 CFR, Part 136 for measuring *E. coli* in effluent matrices, the permittee shall use methods proposed or added to Part 136 for measuring *E. coli* in ambient water.

**The permittee shall comply with bypass reporting requirement Part II.C.6.b.iii. for combined discharge releases of partially treated wastewater at the Moccasin Bend WWTP.

A.2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – OUTFALL 001 - APPLIES MAY 1 –31 AND SEPTEMBER 1 - 30

The City of Chattanooga is authorized to discharge treated municipal wastewater and partially treated combined sewer wastewater from Outfall 001 to the Tennessee River mile 457.8 (Nickajack Reservoir). Discharge 001 consists of municipal wastewater and combined sewer wastewater from a treatment facility with a design capacity of 130 MGD. Discharge 001 shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Percent Removal	Daily Maximum Conc. (mg/l)	Daily Minimum Percent Removal	Measurement Frequency	Sample Type	Sampling Point
CBOD ₅	25 Report	27105	35	65	40* Report	40	7/week	composite	effluent
Ammonia as N	15	16263	20	65	30*		7/week	composite	influent
Suspended Solids	30 Report	32526	40	65	45* Report	40	7/week	composite	effluent

*Applies to daily flows equal to or below 130 MGD.

Note: The permittee shall achieve 79% removal of CBOD₅ and 80% removal of TSS on a monthly average basis. The permittee shall report all instances of overflow and/or bypasses occurring at locations other than permitted discharge points. See Part 1.D.5a for reporting requirements.

Note: Unless elsewhere specified, summer months are May through October; winter months are November through April.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements		
	Monthly Average	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type	Sampling Point	
Fecal Coliform	200/100 ml (see the following paragraphs)		1000/100 ml	7/week	grab	effluent	
<i>E. coli</i> *	126/100 ml (see the following paragraphs)			7/week	grab	effluent	
Chlorine residual (Total)			0.68 mg/l instantaneous	7/week	grab	effluent	
Settleable solids			1.0 ml/l	7/week	composite	effluent	
Dissolved oxygen		4.0 mg/l instantaneous		7/week	grab	effluent	
pH (Standard Units)		6.0	9.0	7/week	grab	effluent	
Flow (MGD)	Report Report		Report Report	7/week 7/week	continuous continuous	influent effluent	
Combined flow receiving partial treatment (MGD) IC ₂₅	Report		Report	7/week	continuous	effluent	
	Survival, growth, and reproduction in 2.8% concentration						
Combined Releases**	Report occurrences						
Rainfall events	Report total occurrences separated by 10 hours time						
Rainfall amount	Report total (inches)						
Rainfall duration	Report monthly total (hours)						
				Annually May or Sept.	composite	effluent	
				monthly	visual	effluent	
				monthly	visual	NA	
				monthly	visual	NA	
				monthly	calculated	NA	

Note: See Page 12 for percent removal calculations.

* In the absence of a method in 40 CFR, Part 136 for measuring *E. coli* in effluent matrices, the permittee shall use methods proposed or added to Part 136 for measuring *E. coli* in ambient water.

**The permittee shall comply with bypass reporting requirement Part II.C.6.b.iii. for combined discharge releases of partially treated wastewater at the Moccasin Bend WWTP.

A.3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – OUTFALL 001 - APPLIES JUNE 1 THROUGH AUGUST 31

The City of Chattanooga is authorized to discharge treated municipal wastewater and partially treated combined sewer wastewater from Outfall 001 to the Tennessee River mile 457.8 (Nickajack Reservoir). Discharge 001 consists of municipal wastewater and combined sewer wastewater from a treatment facility with a design capacity of 100 MGD. Discharge 001 shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Percent Removal	Daily Maximum Conc. (mg/l)	Daily Minimum Percent Removal	Measurement Frequency	Sample Type	Sampling Point
CBOD ₅	25 Report	20850	35	65	40* Report	40	7/week	composite	Effluent
Ammonia as N	15 Report	12510	20	65	30*		7/week	composite	influent
Suspended Solids	30 Report	25020	40	65	45* Report	40	7/week	composite	effluent

*Applies to daily flows equal to or below 100 MGD.

Note: The permittee shall achieve 79% removal of CBOD₅ and 80% removal of TSS on a monthly average basis. The permittee shall report all instances of overflow and/or bypasses occurring at locations other than permitted discharge points. See Part 1.D.5a for reporting requirements.

Note: Unless elsewhere specified, summer months are May through October; winter months are November through April.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements		
	Monthly Average	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type	Sampling Point	
Fecal Coliform	200/100 ml (see the following paragraphs)		1000/100 ml	7/week	grab	effluent	
<i>E. coli</i> *	126/100 ml (see the following paragraphs)			7/week	grab	effluent	
Chlorine residual (Total)			1.61 mg/l instantaneous	7/week	grab	effluent	
Settleable solids			1.0 ml/l	7/week	composite	effluent	
Dissolved oxygen		4.0 mg/l instantaneous		7/week	grab	effluent	
pH (Standard Units)		6.0	9.0	7/week	grab	effluent	
Flow (MGD)	Report Report		Report Report	7/week 7/week	continuous continuous	influent effluent	
Combined flow receiving partial treatment (MGD) IC ₂₅	Report		Report	7/week	continuous	effluent	
Survival, growth, and reproduction in 1.2% concentration				Annually June - August	composite	effluent	
Combined Releases**	Report occurrences			monthly	visual	effluent	
Rainfall events	Report total occurrences separated by 10 hours time			monthly	visual	NA	
Rainfall amount	Report total (inches)			monthly	visual	NA	
Rainfall duration	Report monthly total (hours)			monthly	calculated	NA	

Note: See Page 12 for percent removal calculations.

* In the absence of a method in 40 CFR, Part 136 for measuring *E. coli* in effluent matrices, the permittee shall use methods proposed or added to Part 136 for measuring *E. coli* in ambient water.

**The permittee shall comply with bypass reporting requirement Part II.C.6.b.iii. for combined discharge releases of partially treated wastewater at the Moccasin Bend WWTP.

A.4. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – OUTFALL 001 - APPLIES OCTOBER 1 THROUGH 31

The City of Chattanooga is authorized to discharge treated municipal wastewater and partially treated combined sewer wastewater from Outfall 001 to the Tennessee River mile 457.8 (Nickajack Reservoir). Discharge 001 consists of municipal wastewater and combined sewer wastewater from a treatment facility with a design capacity of 114 MGD. Discharge 001 shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Percent Removal	Daily Maximum Conc. (mg/l)	Daily Minimum Percent Removal	Measurement Frequency	Sample Type	Sampling Point
CBOD ₅	25 Report	23769	35	65	40* Report	40	7/week	composite	effluent
Ammonia as N	15	14261	20	65	30*		7/week	composite	influent
Suspended Solids	30 Report	28523	40	65	45* Report	40	7/week	composite	effluent

*Applies to daily flows equal to or below 114 MGD.

Note: The permittee shall achieve 79% removal of CBOD₅ and 80% removal of TSS on a monthly average basis. The permittee shall report all instances of overflow and/or bypasses occurring at locations other than permitted discharge points. See Part 1.D.5a for reporting requirements.

Note: Unless elsewhere specified, summer months are May through October; winter months are November through April.

Effluent Characteristics	Effluent Limitations			Monitoring Requirements		
	Monthly Average	Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type	Sampling Point
Fecal Coliform	200/100 ml (see the following paragraphs)		1000/100 ml	7/week	grab	effluent
<i>E. coli</i> *	126/100 ml (see the following paragraphs)			7/week	grab	effluent
Chlorine residual (Total)			0.34 mg/l instantaneous	7/week	grab	effluent
Settleable solids			1.0 ml/l	7/week	composite	effluent
Dissolved oxygen		4.0 mg/l instantaneous		7/week	grab	effluent
pH (Standard Units)		6.0	9.0	7/week	grab	effluent
Flow (MGD)	Report Report		Report Report	7/week 7/week	continuous continuous	influent effluent
Combined flow receiving partial treatment (MGD) IC ₂₅	Report		Report	7/week	continuous	effluent
	Survival, growth, and reproduction in 5.5% concentration			Annually October	composite	effluent
Combined Releases**	Report occurrences			monthly	visual	effluent
Rainfall events	Report total occurrences separated by 10 hours time			monthly	visual	NA
Rainfall amount	Report total (inches)			monthly	visual	NA
Rainfall duration	Report monthly total (hours)			monthly	calculated	NA

Note: See Page 12 for percent removal calculations.

* In the absence of a method in 40 CFR, Part 136 for measuring *E. coli* in effluent matrices, the permittee shall use methods proposed or added to Part 136 for measuring *E. coli* in ambient water.

**The permittee shall comply with bypass reporting requirement Part II.C.6.b.iii. for combined discharge releases of partially treated wastewater at the Moccasin Bend WWTP.

A.5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALLS 002 AND 003

The City of Chattanooga Combined Sewer System is authorized to discharge primary treated and partially treated combined sewer flow during wet weather only to miles 2.0 Chattanooga Creek (002), and mile 1.4 Chattanooga Creek (003). Discharges 002 and 003 shall be limited and monitored by the permittee as specified below.

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Amount (lb/day)	Daily Maximum Conc. (mg/l)	Daily Minimum Percent Removal	Measurement Frequency	Sample Type	Sampling Point
BOD ₅	report	report			report		1 event/quarter	composite	effluent
Suspended Solids	report	report			report		1 event/quarter	composite	effluent

Effluent Characteristics	Effluent Limitations				Monitoring Requirements				
	Monthly Average	Daily Minimum	Daily Maximum	Sampling Point	Measurement Frequency	Sample Type	Measurement Frequency	Sample Type	Sampling Point
Fecal Coliform			report	report	1 event/quarter	grab	1 event/quarter	grab	effluent
<i>E. coli</i> *					1 event/quarter	grab	1 event/quarter	grab	effluent
Settleable solids			report	report	1 event/quarter	grab	1 event/quarter	grab	effluent
Dissolved oxygen		report			1 event/quarter	grab	1 event/quarter	grab	effluent
pH (Standard Units)		6.0	9.0		1 event/quarter	grab	1 event/quarter	grab	effluent
Nitrate plus nitrite			report		1 event/quarter	composite	1 event/quarter	composite	effluent
Total kjeldahl nitrogen			report		1 event/quarter	composite	1 event/quarter	composite	effluent
Total phosphorous			report		1 event/quarter	composite	1 event/quarter	composite	effluent
Oil & Grease			report		1 event/quarter	grab	1 event/quarter	grab	effluent
Flow (MGD)	report		report		monthly	continuous	monthly	continuous	effluent
Releases, primary treated	Report occurrences; each outfall								
Releases, partially treated*	3 occurrences; sum of 002 and 003 (annual maximum)-see note								
Releases, partially treated*	1 (average occurrences per year for outfall group)-see note								

* Partially treated releases are discharges of combined sewer wastewater in excess of primary treatment capacity. Part II.C.6.b.iii applies.

Note: See page 17 for definition of "release". The average number of untreated, or partially treated, releases per year for this outfall group shall be calculated by dividing the cumulative total of partially treated releases during the permit term by the months in the permit term and multiplying the result by 12 for permit terms of three years or more. Report result on final DMR for reporting period. For permit terms of less than three years, the limitation for average annual, partially treated releases, will not apply.

See Pages 37-40 for stream assessment associated with discharges from Outfalls 002 and 003.

A.6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALLS 004, 005, 007, 008, AND 009

The City of Chattanooga Combined Sewer System is authorized to discharge primary treated and partially treated, combined sewer flow during wet weather only to miles of the Tennessee River: mile 465.2 (004), mile 463.3 (005), mile 463.3 (007), mile 462.5 (008), and mile 461.6 (009). Discharges 002 through 009 excepting 006 shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Amount (lb/day)	Daily Maximum Conc. (mg/l)	Daily Minimum Percent Removal	Measurement Frequency	Sample Type	Sampling Point
BOD ₅	report	report			report		see note	composite	effluent
Suspended Solids	report	report			report		see note	composite	effluent

Effluent Characteristics	Effluent Limitations				Monitoring Requirements				
	Monthly Average	Daily Minimum	Daily Maximum	Daily Maximum	Measurement Frequency	Sample Type	Sampling Point	Measurement Frequency	Sample Type
Fecal Coliform	report			report	see note	grab	effluent	see note	grab
<i>E. coli</i> *	report			report	see note	grab	effluent	see note	grab
Settleable solids				report	see note	grab	effluent	see note	grab
Dissolved oxygen				report	see note	grab	effluent	see note	grab
pH (Standard Units)				6.0	see note	grab	effluent	see note	grab
Flow (MGD)	report			report	monthly	continuous	effluent	monthly	continuous
Releases, primary treated	Report occurrences; each outfall								
Releases, partially treated*	6 occurrences; sum of outfall group (annual maximum) - see note			report	monthly	visual	effluent	monthly	visual
Releases, partially treated*	4 (average occurrences per year for outfall group)-see note			report	annually	visual	effluent	once/prmtcycle	calctd

* Partially treated releases are discharges of combined sewer wastewater in excess of primary treatment capacity. Part II.C.6.b.iii applies.

See Page 17 for the definition of "release". The average number of untreated, or partially treated, releases per year shall be calculated by dividing the cumulative total of releases during the permit term by the months in the permit term and multiplying the result by 12 for permit terms of three years or more. Report result on final DMFR for reporting period. For permit terms of less than three years, the limitation for average annual, partially treated releases, will not apply.

Note: Monitoring Frequencies: 1 event/quarter for Outfalls 004 and 005 (public use areas); 1 event/ 6 months for Outfalls 007, 008, and 009.

A.7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL 006 (ROSS'S LANDING)

The City of Chattanooga Combined Sewer System is authorized to discharge primary treated and partially treated combined sewer flow during wet weather only to mile 464 of the Tennessee River. Discharge 006 shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations						Monitoring Requirements		
	Monthly Average Conc. (mg/l)	Monthly Average Amount (lb/day)	Weekly Average Conc. (mg/l)	Weekly Average Amount (lb/day)	Daily Maximum Conc. (mg/l)	Daily Minimum Percent Removal	Measurement Frequency	Sample Type	Sampling Point
BOD ₅	report	report			report		1 event/quarter	composite	effluent
Suspended Solids	report	report			report		1 event/quarter	composite	effluent

Effluent Characteristics	Effluent Limitations				Monitoring Requirements			
	Monthly Average	Daily Minimum	Daily Maximum	Daily Maximum	Measurement Frequency	Sample Type	Sampling Point	Sampling Point
Fecal Coliform	report		report	report	1 event/quarter	grab	effluent	effluent
<i>E. coli</i> *	report				1 event/quarter	grab	effluent	effluent
Settleable solids			report	report	1 event/quarter	grab	effluent	effluent
Dissolved oxygen			Report		1 event/quarter	grab	effluent	effluent
pH (Standard Units)		6.0	9.0	9.0	1 event/quarter	grab	effluent	effluent
Flow (MGD)	report		report	report	monthly	continuous	effluent	effluent
Releases, treated	Report occurrences				monthly	visual	effluent	effluent
Releases, partially treated*	12 occurrences (annual maximum)				annually	visual	effluent	effluent

*Partially treated releases are discharges of combined sewer wastewater in excess of primary treatment capacity. Part II.C.6.b.iii applies.

See Page 17 for the definition of "release".

The wastewater discharge from Outfall 001 must be disinfected to the extent that viable coliform organisms are effectively eliminated. The concentration of the fecal coliform group after disinfection shall not exceed 200 per 100 ml, nor shall the *E. coli* concentration exceed 126 per 100 ml as the geometric mean based on a minimum of 10 samples, collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purpose of determining the geometric mean, individual samples having a fecal coliform or *E. coli* group concentration of less than one (1) per 100 ml shall be considered as having a concentration of one (1) per 100 ml. In addition, the concentration of the fecal coliform group in any individual sample shall not exceed 1,000 per 100 ml.

There shall be no distinctly visible floating scum, oil or other matter contained in the wastewater discharge. The wastewater discharge must not cause an objectionable color contrast in the receiving stream.

The wastewater discharge shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

Sludge or any other material removed by any treatment works must be disposed of in a manner that prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

For the purpose of evaluating compliance with the permit limits established herein, where certain limits are below the State of Tennessee published required detection levels (RDLs) for any given effluent characteristics, the results of analyses below the RDL shall be reported as Below Detection Level (BDL), unless in specific cases other detection limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed.

For BOD₅, the treatment facility shall demonstrate a minimum of 79% removal efficiency on a monthly average basis from Outfall 001. For TSS, the treatment facility shall demonstrate a minimum of 80% removal efficiency on a monthly average basis from Outfall 001. These are calculated by determining an average of all daily influent concentrations and comparing this to an average of all daily effluent concentrations. The formula for this calculation is as follows:

$$\left[1 - \frac{\text{average of daily effluent concentration}}{\text{average of daily influent concentration}} \right] \times 100\% = \% \text{ removal}$$

For BOD₅ and TSS, the treatment facility shall demonstrate a minimum of 65% removal efficiency on a weekly average basis from Outfall 001. This shall be determined by calculating weekly removal rates and reporting the minimum value. The formula for this calculation is as follows:

$$\left[1 - \frac{\text{Weekly average effluent concentration}}{\text{Weekly average influent concentration}} \right] \times 100\% = \% \text{ removal}$$

B. MONITORING PROCEDURES

1. Representative Sampling

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than plus or minus 10% from the true discharge rates throughout the range of expected discharge volumes.

Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of the monitored discharge, and shall be taken at the following location(s):

Influent samples must be collected prior to mixing with any other wastewater being returned to the head of the plant, such as sludge return. Those systems with more than one influent line must collect samples from each and proportion the results by the flow from each line.

Effluent samples must be representative of the wastewater being discharged and collected prior to mixing with any other discharge or the receiving stream. This can be a different point for different parameters, but must be after all treatment for that parameter or all expected change:

- a. BOD₅ samples can be collected before chlorination to avoid having to dechlorinate and seed the samples.
- b. The chlorine residual must be measured after the chlorine contact chamber and any dechlorination. It may be to the advantage of the permittee to measure at the end of any long outfall lines.
- c. Samples for fecal coliform and *E.coli* can be collected at any point between disinfection and the actual discharge.
- d. The dissolved oxygen can drop in the outfall line; therefore, D.O. measurements are required at the discharge end of outfall lines greater than one mile long. Systems with outfall lines less than one mile may measure dissolved oxygen as the wastewater leaves the treatment facility. For systems with dechlorination, dissolved oxygen must be measured after this step and as close to the end of the outfall line as possible.
- e. Total suspended solids and settleable solids can be collected at any point after the final clarifier.
- f. Biomonitoring tests (if required) shall be conducted on final effluent.

2. Sampling Frequency

Where the permit requires sampling and monitoring of a particular effluent characteristic(s) at a frequency of less than once per day or daily, the permittee is precluded from marking the "No Discharge" block on the Discharge Monitoring Report if there has been any discharge from that particular outfall during the period which coincides with the required monitoring frequency; i.e. if the required monitoring frequency is once per month or 1/month, the monitoring period is one month, and if the discharge occurs during only one day in that period then the permittee must sample on that day and report the results of analyses accordingly.

3. Test Procedures

- a. Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304 (h) of the Clean Water Act (the "Act"), as amended, under which such procedures may be required.
- b. Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR, Part 136, as amended, promulgated pursuant to Section 304 (h) of the Act. In the absence of a method in 40 CFR, Part 136 for measuring *E. coli* in effluent matrices, the permittee shall use methods proposed or added to Part 136 for measuring *E. coli* in ambient water.
- c. Composite samples of Outfall 001 must be proportioned by flow at time of sampling. Aliquots may be collected manually or automatically. The sample aliquots must be maintained at 4 degrees Celsius during the compositing period.
- d. Composite samples of Outfalls 002 through 009 inclusive (combined sewer discharges) may be proportioned either by flow or time interval over a period of approximately four hours. Reasonable effort should be made to collect the composite sample during the first four hours of the release. If the discharge event lasts less than four hours, the permittee may discard the sample; or the permittee may submit the sample analysis. Samples collected from releases, of less than four hours must be accompanied by a written statement explaining the circumstances and noting the duration of the discharge.
- e. Reasonable effort must be made to collect grab samples from Outfalls 002 through 009 inclusive during the first thirty minutes of a combined sewer discharge release or overflow. The permittee may discard grab samples from discharge events lasting less than four hours.
- f. Should circumstances prevent the procedures of d and e above from being implemented, the permittee must submit the following information along with the sample results;
 - 1) Documentation of the circumstances that prevented the sample collection procedures of d and e above, and

- 2) The time that the discharge began and the time at which sample collection began.

4. Recording of Results

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

- a. The exact place, date and time of sampling;
- b. The exact person(s) collecting samples;
- c. The dates and times the analyses were performed;
- d. The person(s) or laboratory who performed the analyses;
- e. The analytical techniques or methods used, and;
- f. The results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of three (3) years, or longer, if requested by the Division of Water Pollution Control.

C. DEFINITIONS

The "**instantaneous minimum concentration**" is the minimum allowable concentration, in milligrams per liter, of a pollutant parameter contained in the wastewater discharge determined from a grab sample taken from the discharge at any point in time.

The "**instantaneous maximum concentration**" is a limitation on the concentration, in milligrams per liter, of any pollutant contained in the wastewater discharge determined from a grab sample taken from the discharge at any point in time.

The "**daily maximum concentration**" is a limitation on the average concentration in milligrams per liter, of the discharge during any calendar day. When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24-hour composite; when other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.

A "**one week period**" (or "**calendar-week**") is defined as the period from Sunday through Saturday. For reporting purposes, a calendar week that contains a change of month shall be considered part of the latter month.

The "**weekly average concentration**", is the arithmetic mean of all the composite samples collected in a one-week period. The permittee must report the highest weekly average in the one-month period.

The "**weekly average amount**", 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.

The "**monthly average concentration**", other than for fecal coliform bacteria, is the arithmetic mean of all the composite or grab samples collected in a one-calendar month period.

The "**monthly average amount**", 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.

A "**composite sample**" is a combination of not less than 8 influent or effluent portions, of at least 100 ml, collected over a 24-hour period. Under certain circumstances a lesser time period may be allowed, but in no case, less than 8 hours.

A "**grab sample**" is a single influent or effluent sample collected at a particular time.

The "**geometric mean**" of any set of values is the n^{th} root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For the purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

A "**calendar day**" is defined as any 24-hour period.

A "**quarter**" is defined as any one of the following three-month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, and/or October 1 through December 31.

A "**bypass**" is defined as the intentional diversion of waste streams from any portion of a treatment facility.

A "**dry weather overflow event**" is defined as one day or any portion of a day in which discharge to land or water of wastewater from the collection or treatment system other than through the permitted outfall occurs and is not directly related to a rainfall event. Discharge from more than one point within a 24-hour period shall be counted as separate events.

A "**rainfall event**" is defined as any occurrence of rain, preceded by 10 hours without precipitation that results in an accumulation of 0.01 inches or more. Instances of rainfall occurring within 10 hours of each other will be considered a single rainfall event.

A "**sanitary sewer overflow event**" is defined as an unpermitted discharge to land or water of wastewater from the collection or treatment system other than through the permitted outfall that is directly related to a specific rainfall event. Multiple discharge occurrences within a single rainfall event are considered a single sanitary sewer overflow event.

A "**release**" is a discharge from a permitted outfall in the Chattanooga combined sewer system having primary treatment capability. For the three (3) permitted groups of outfalls specified as 002 & 003, 006, and 004, 005, 007, 008, & 009, partially treated releases from multiple outfalls within a group that are related to the same rainfall event shall be counted as one release for that group. Additionally, continuous releases spanning several days and related to a single rainfall event shall also be counted as one release for the affected outfall group(s).

D. REPORTING

1. Monitoring Results

Monitoring results shall be recorded monthly and submitted monthly using Discharge Monitoring Report (DMR) forms supplied by the Division of Water Pollution Control. Submittals shall be postmarked no later than 15 days after the completion of the reporting period. The top two copies of each report are to be submitted. A copy should be retained for the permittee's files. DMRs and any communication regarding compliance with the conditions of this permit must be sent to:

**TENNESSEE DEPT. OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
COMPLIANCE REVIEW SECTION
401 CHURCH STREET
L & C ANNEX 6TH FLOOR
NASHVILLE TN 37243-1534**

The first DMR is due on the 15th of the month following permit effectiveness.

DMRs and any other report or information submitted to the Division must be signed and certified by a responsible corporate officer as defined in 40 CFR 122.22, a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or his duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

2. Additional Monitoring by Permittee

If the permittee monitors any pollutant specifically limited by this permit more frequently than required at the location(s) designated, using approved analytical methods as specified herein, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form. Such increased frequency shall also be indicated on the form.

3. Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

4. Monthly Report of Operation

Monthly operational reports shall be submitted on standard forms to the appropriate Division of Water Pollution Control Environmental Assistance Center in Jackson, Nashville, Chattanooga, Columbia, Cookeville, Memphis, Johnson City, or Knoxville. Reports shall be submitted by the 15th day of the month following data collection.

5. Bypass and Overflow Reporting

a. Report Requirements

A summary report of known or suspected instances of overflows in the separate sanitary or combined collection system other than through permitted outfalls or bypass of wastewater treatment facilities other than per the long term control plan or in compliance with combined sewer requirements of this permit shall accompany the Discharge Monitoring Report. An unpermitted overflow is an overflow which cannot be appropriately reported as releases in Tables A.1. through A.7. The report must contain the date and duration of the instances of the unpermitted overflow and/or bypassing and the estimated quantity of wastewater discharged and/or bypassed.

The report must also detail activities undertaken during the reporting period to (1) determine if unpermitted overflow is occurring in the collection system, (2) correct those known or suspected overflow points and (3) prevent future or possible overflows and any resulting bypassing at the treatment facility.

On the DMR, the permittee must report the number of unpermitted sanitary or combined sewer overflows, dry-weather overflows and unpermitted in-plant bypasses separately. Three lines must be used on the DMR form, one for unpermitted sanitary and combined sewer overflows, one for dry-weather overflows and one for unpermitted in-plant bypasses.

b. Anticipated Bypass Notification

If, because of unavoidable maintenance or construction, the permittee has need to create an in-plant bypass which would cause an effluent violation, the permittee must notify the Division as soon as possible, but in any case, no later than 10 days prior to the date of the bypass.

6. Reporting Less Than Detection

A permit limit may be less than the accepted detection level. If the samples are below the detection level, then report "BDL" or "NODI =B" on the DMRs. The permittee must use the correct detection levels in all analytical testing required in the permit. The required detection levels are listed in the Rules of the Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3-.05(8).

For example, if the limit is 0.02 mg/l with a detection level of 0.05 mg/l and detection is shown; 0.05 mg/l must be reported. In contrast, if nothing is detected reporting "BDL" or "NODI =B" is acceptable.

E. COMPLIANCE WITH SECTION 208

The limits and conditions in this permit shall require compliance with an area-wide waste treatment plan (208 Water Quality Management Plan) where such approved plan is applicable.

F. REOPENER CLAUSE

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 307(a)(2) and 405(d)(2)(D) of the Clean Water Act, as amended, if the effluent standard, limitation or sludge disposal requirement so issued or approved:

1. Contains different conditions or is otherwise more stringent than any condition in the permit; or
2. Controls any pollutant or disposal method not addressed in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

This permit may be modified or revoked and reissued for to following reasons related to combined sewer discharge controls:

1. To include new or revised conditions developed to comply with any State or Federal law or regulation that is adopted or promulgated subsequent to the effective date of this permit to address combined sewer discharges.
2. To include new or revised conditions if new information not available at the time of permit issuance, indicates that combined sewer discharge controls imposed in this permit have failed to ensure the attainment of state water quality standards.

3. To include new or revised conditions based on new information generated from the long term control plan.
4. To require the permittee to conduct or to participate in biological assessment, and/or chemical sampling relevant to that biological assessment, of the Nickajack Reservoir in the vicinity of the combined sewer discharge outfalls per methodologies selected or proposed by the division to standardize the water quality assessment of reservoirs via reservoir biology.

PART II

A. GENERAL PROVISIONS

1. Duty to Reapply

Permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of Water Pollution Control (the "Director") no later than 180 days prior to the expiration date. Such forms shall be properly signed and certified.

2. Right of Entry

The permittee shall allow the Director, the Regional Administrator of the U.S. Environmental Protection Agency, or their authorized representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and at reasonable times to copy these records;
- b. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit; and
- c. To sample at reasonable times any discharge of pollutants.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Water Pollution Control Act, as amended, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Pollution Control. As required by the Federal Act, effluent data shall not be considered confidential.

4. Proper Operation and Maintenance

- a. The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.
- b. Dilution water shall not be added to comply with effluent requirements to achieve BCT, BPT, BAT and or other technology based effluent limitations such as those in State of Tennessee Rule 1200-4-5-.03.

5. Treatment Facility Failure (Industrial Sources)

The permittee, in order to maintain compliance with this permit, shall control production, all discharges, or both, upon reduction, loss, or failure of the treatment facility, until the facility is restored or an alternative method of treatment is provided. This requirement applies in such situations as the reduction, loss, or failure of the primary source of power.

6. 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, nor any infringement of Federal, State, or local laws or regulations.

7. Severability

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

8. Other Information

If the permittee becomes aware that he failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he shall promptly submit such facts or information.

B. CHANGES AFFECTING THE PERMIT

1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants, which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

2. Permit Modification, Revocation, or Termination

- a. This permit may be modified, revoked and reissued, or terminated for cause as described in 40 CFR 122.62 and 122.64, Federal Register, Volume 49, No. 188 (Wednesday, September 26, 1984), as amended.
- b. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- c. If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for any toxic pollutant under Section 307(a) of the Federal Water Pollution Control Act, as amended, the Director shall modify or revoke and reissue the permit to conform to the prohibition or to the effluent standard, providing that the effluent standard is more stringent than the limitation in the permit on the toxic pollutant. The permittee shall comply with these effluent standards or prohibitions within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified or revoked and reissued to incorporate the requirement.
- d. The filing of a request by the permittee for a modification, revocation, reissuance, termination, or notification of planned changes or anticipated noncompliance does not halt any permit condition.

3. Change of Ownership

This permit may be transferred to another party (provided there are neither modifications to the facility or its operations, nor any other changes which might affect the permit limits and conditions contained in the permit) by the permittee if:

- a. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;
- b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and liability between them; and
- c. The Director, within 30 days, does not notify the current permittee and the new permittee of his intent to modify, revoke or reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

Pursuant to the requirements of 40 CFR 122.61, concerning transfer of ownership, the permittee must provide the following information to the Division in their formal notice of intent to transfer ownership: 1) the NPDES permit number of the subject permit; 2) the effective date of the proposed transfer; 3) the name and address of the transferor; 4) the name and address of the transferee; 5) the names of the responsible parties for both the transferor and transferee; 6) a statement that the transferee assumes responsibility for the subject NPDES permit; 7) a statement that the transferor relinquishes responsibility for the subject NPDES permit; 8) the signatures of the responsible parties for both the transferor and transferee pursuant to the requirements of 40 CFR 122.22(a), "Signatories to permit applications"; and, 9) a statement regarding any proposed modifications to the facility, its operations, or any other changes which might affect the permit limits and conditions contained in the permit.

4. Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

C. NONCOMPLIANCE

1. Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2. Reporting of Noncompliance

a. 24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Pollution Control in the appropriate Environmental Assistance Center within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental Assistance Center should be contacted for names and phone numbers of environmental response team).

A written submission must be provided within five days of the time the permittee becomes aware of the circumstances unless the Director on a case-by-case basis waives this requirement. The permittee shall provide the Director with the following information:

- i. A description of the discharge and cause of noncompliance;
- ii. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
- iii. The steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph 2.a above, the permittee shall report the noncompliance on the Discharge Monitoring Report. The report shall contain all information concerning the steps taken, or planned, to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

3. Overflow

- a. "**Overflow**" means the discharge to land or water of wastes from any portion of the collection, transmission, or treatment system other than through permitted outfalls.
- b. Overflows are prohibited.
- c. The permittee shall operate the collection system so as to avoid overflows. No new or additional flows shall be added upstream of any point in the collection system, which experiences chronic overflows (greater than 5 events per year) or would otherwise overload any portion of the system.

- d. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after: 1) an authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem; 2) the correction work is underway; and 3) the cumulative, peak-design, flows potentially added from new connections and line extensions upstream of any chronic bypass point are less than or proportional to the amount of inflow and infiltration removal documented upstream of that point. The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the flow measurement industry and reported in an attachment to a Monthly Operating Report submitted to the local TDEC Environmental Assistance Center. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.
- e. In the event that more than 5 overflows have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium or completion of the actions identified in this paragraph, the permittee may request a meeting with the Division of Water Pollution Control EAC staff to petition for a waiver based on mitigating evidence.

4. Upset

- a. "**Upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;
 - iii. The permittee submitted information required under "Reporting of Noncompliance" within 24-hours of becoming aware of the upset (if this information is provided orally, a written submission must be provided within five days); and
 - iv. The permittee complied with any remedial measures required under "Adverse Impact."

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Bypass

- a. "**Bypass**" is the intentional diversion of wastewater away from any portion of a treatment facility other than through peak excess flow treatment facilities or permitted outfalls in accordance with both the long term control plan and the nine minimum technology-based effluent controls for combined sewer systems. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities that would cause them to become inoperable, or substantial and permanent loss of natural resources that 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.
- b. Bypasses are prohibited unless all of the following 3 conditions are met:
 - i. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There are not feasible alternatives to bypass, such as the construction and use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass, which occurred during normal periods of equipment downtime or preventative maintenance;
 - iii. The permittee submits notice of an unanticipated bypass to the Division of Water Pollution Control in the appropriate environmental assistance center within 24 hours of becoming aware of the bypass (if this information is provided orally, a written submission must be provided within five days). When the need for the bypass is foreseeable, prior notification shall be submitted to the Director, if possible, at least 10 days before the date of the bypass.
- c. Bypasses not exceeding permit limitations are allowed **only** if the bypass is necessary for essential maintenance to assure efficient operation. All other bypasses are prohibited. Allowable bypasses not exceeding limitations are not subject to the reporting requirements of 6.b.iii, above.

7. Washout

- a. For domestic wastewater plants only, a "washout" shall be defined as loss of Mixed Liquor Suspended Solids (MLSS) of 30.00% or more. This refers to the MLSS in the aeration basin(s) only. This does not include MLSS decrease due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to infiltration and inflow.
- b. A washout is prohibited. If a washout occurs the permittee must report the incident to the Division of Water Pollution Control in the appropriate Environmental Assistance Center within 24 hours by telephone. A written submission must be provided within five days. The washout must be noted on the discharge monitoring report. Each day of a washout is a separate violation.

D. LIABILITIES

1. Civil and Criminal Liability

Except as provided in permit conditions for "***Bypassing,***" "***Overflow,***" and "***Upset,***" nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability Under State Law

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 established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

PART III

OTHER REQUIREMENTS

A. CERTIFIED OPERATOR

The waste treatment facilities shall be operated under the supervision of a Grade 4 certified wastewater treatment operator and the collection system operated under the supervision of a Grade 2 Collection System certified operator in accordance with the Water Environmental Health Act of 1984.

B. POTW PRETREATMENT PROGRAM GENERAL PROVISIONS

As an update of information previously submitted to the Division, the permittee will undertake the following activity.

1. The permittee has been delegated the primary responsibility and therefore becomes the "control authority" for enforcing the 40 CFR 403 General Pretreatment Regulations. Where multiple plants are concerned the permittee is responsible for the Pretreatment Program for all plants within its jurisdiction. The permittee shall implement and enforce the Industrial Pretreatment Program in accordance with section 403(b)(8) of the Clean Water Act, the Federal Pretreatment Regulations 40 CFR 403, Tennessee Water Quality Control Act Part 63-3-123 through 63-3-128, and the legal authorities, policies, procedures, and financial provisions contained in its approved Pretreatment Program, except to the extent this permit imposed stricter requirements. Such implementation shall require but not limit the permittee to do the following:
 - a. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user (IU), whether the IU is in compliance with the pretreatment standards;
 - b. Require development, as necessary, of compliance schedules for each IU for the installation of control technologies to meet applicable pretreatment standards;
 - c. Require all industrial users to comply with all applicable monitoring and reporting requirements outlined in the approved pretreatment program and IU permit;
 - d. Maintain and update, as necessary, records identifying the nature and character of industrial user discharges, and retain such records for a minimum of three (3) years;
 - e. Obtain appropriate remedies for noncompliance by an IU with any pretreatment standard and/or requirement;

- f. Publish annually, pursuant to 40 CFR 403.8 (f)(2)(vii), a list of industrial users that have significantly violated pretreatment requirements and standards during the previous twelve-month period.
 - g. Maintain an adequate revenue structure for continued operation of the pretreatment program.
 - h. Update its Industrial Waste Survey at least once every five years.
 - i. Submit a written technical evaluation of the need to revise local limits within 120 days of the effective date of the governing NPDES permit to the state pretreatment program coordinator. The evaluation shall include the most recent pass-through limits proposed by the division. The technical evaluation shall be based on practical and specialized knowledge of the local program and not be limited by a specified written format.
2. The permittee shall enforce 40 CFR 403.5, "prohibited discharges". Pollutants introduced into the POTW by a non-domestic source shall not cause pass through or interference as defined in 40 CFR Part 403.3. These general prohibitions and the specific prohibitions in this section apply to all non-domestic sources introducing pollutants into the POTW whether the source is subject to other National Pretreatment Standards or any State or local Pretreatment Requirements.

Specific prohibitions. Under no circumstances shall the permittee allow introduction of the following wastes in the waste treatment system:

- a. Pollutants which create a fire or explosion hazard in the POTW;
- b. Pollutants which will cause corrosive structural damage to the treatment works, but in no case discharges with pH less than 5.0 unless the system is specifically designed to accept such discharges.
- c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the treatment system resulting in interference.
- d. Any pollutant, including oxygen-demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment works.
- e. Heat in amounts which will inhibit biological activity in the treatment works resulting in interference, but in no case heat in such quantities that the temperature at the treatment works exceeds 40°C (104°F) unless the works are designed to accommodate such heat.
- f. Any priority pollutant in amounts that will contaminate the treatment works sludge.

- g. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - h. Pollutants which result in the presence of toxic gases, vapors or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
 - i. Any trucked or hauled pollutants except at discharge points designated by the POTW.
3. The permittee shall notify the Tennessee Division of Water Pollution Control of any of the following changes in user discharge to the system no later than 30 days prior to change of discharge:
- a. New introductions into such works of pollutants from any source which would be a new source as defined in Section 306 of the Act if such source were discharging pollutants.
 - b. New introductions of pollutants into such works from a source which would be subject to Section 301 of the "Federal Water Quality Act as Amended" if it were discharging such pollutants.
 - c. A substantial change in volume or character of pollutants being introduced into such works by a source already discharging pollutants into such works at the time the permit is issued.

This notice will include information on the quantity and quality of the wastewater introduced by the new source into the publicly owned treatment works, and on any anticipated impact on the effluent discharged from such works. If this discharge necessitates a revision of the current NPDES permit or pass-through guidelines, discharge by this source is prohibited until the Tennessee Division of Water Pollution Control gives final authorization.

C. SLUDGE MANAGEMENT PRACTICES

1. The permittee must comply with 40 CFR 503 et seq. Sludge shall be sampled and analyzed at a frequency dependant both on the amount of sludge generated annually and on the disposal practice utilized. Whenever sampling and analysis are required of 40 CFR 503, the permittee shall report to the Division the quantitative data for the following parameters:

1)	Arsenic	7)	Nickel
2)	Cadmium	8)	Selenium
3)	Copper	9)	Zinc
4)	Lead	10)	Nitrite plus Nitrate, NO ₂ , + NO ₃ as N
5)	Mercury	11)	Total Kjeldahl Nitrogen, as N
6)	Molybdenum	12)	Ammonia, NH ₃ , as N

This sludge analysis must be submitted by February 19th of each calendar year. This information shall be submitted to the Division of Water Pollution Control, Central Office, 401 Church Street, 6th Floor Annex, Nashville TN 37243-1534, Attention: Sludge Coordinator, Municipal Facilities Section.

2. Land application of sludge shall halt immediately if any of the following concentrations are exceeded:

POLLUTANT	CONCENTRATION (mg/kg ¹)
Arsenic	75
Cadmium	85
Zinc	7500
Copper	4300
Lead	840

POLLUTANT	CONCENTRATION (mg/kg ¹)
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100

¹ Dry Weight Basis

- a) Monthly average pollutant concentrations shall not exceed Table 3 of 40 CFR §503.13. If they are exceeded cumulative pollutant loading rates are to be calculated and recorded and shall not exceed Table 2 of 40 CFR §503.13 for the life of the land application site.
3. If land application is the final disposition of the wasted sludge, the permittee shall provide pathogen reduction, sludge stabilization and comply with land and crop usage controls as listed in 40 CFR Part 503, as authorized by the Clean Water Act. Records must be maintained by the permittee that indicates compliance or non-compliance with this rule. If the permittee is required to report to EPA, copies of all reports should be sent to the Division, at the address listed in paragraph 1 of this section.
4. Before land applying municipal sludge the permittee must obtain approvals for each site(s) in writing from the Division using the latest revision of Guidelines for Land Application or Surface Disposal of Biosolids, unless the sludge being land applied meets the pollutant concentrations of 40 CFR 503.13(b)(3), the Class A pathogen requirements in 40 CFR 503.32(a), and one of the vector attraction reduction requirements in 40 CFR 503.33 (b)(1) through (b)(8).
5. Reopener: If an applicable "acceptable management practice" or numerical limitation for pollutants in sewage sludge promulgated under Section 405(d)(2) of the Clean Water Act, as amended by the Water Quality Act of 1987, is more stringent than the sludge pollutant limit or acceptable management practice in this permit, or controls a pollutant not limited in this permit, this permit shall be promptly modified or revoked and reissued to conform to the requirements promulgated under Section 405(d)(2). The permittee shall comply with the limitations by no later than the compliance deadline specified in the applicable regulations as required by Section 405(d)(2) of the Clean Water Act.

6. Notice of change in sludge disposal practice: The permittee shall give prior notice to the Director of any change planned in the permittee's sludge disposal practice. If land application activities are suspended permanently and sludge disposal moves to a municipal solid waste landfill, the permittee shall contact the local Division of Solid Waste Management office address for other permitting and approvals (see table below):

Division of Solid Waste Management			
Office	Location	Zip Code	Phone No.
Chattanooga	540 McCallie Avenue, Suite 550	37402-2013	(423) 634-5745
Jackson	362 Carriage House Drive	38305-2222	(731) 512-1300
Cookeville	1221 South Willow Avenue	38506	(931) 432-4015
Columbia	2484 Park Plus Drive	38401	(931) 380-3371
Johnson City	2305 Silverdale Road	37601	(423) 854-5400
Knoxville	2700 Middlebrook Pike, Suite 220	37921	(865) 594-6035
Memphis	2510 Mt. Moriah Road, Suite E-645	38115-1511	(901) 368-7939
Nashville	711 R.S. Gass Boulevard	37243-1550	(615) 687-7000

D. BIOMONITORING REQUIREMENTS, CHRONIC

The permittee shall conduct a 3-Brood *Ceriodaphnia dubia* Survival and Reproduction Test and a 7-Day Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test on samples of final effluent from Outfall 001 annually for each of the four (4) permitted seasons: November through April, May and September, June through August, and October.

The measured endpoint for toxicity will be the inhibition concentration causing 25% reduction in survival, reproduction and growth (IC₂₅) of the test organisms. The IC₂₅ shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of *Ceriodaphnia dubia* or *Pimephales promelas* larvae used to initiate the test.

Test shall be conducted and its results reported based on appropriate replicates of a total of five serial dilutions and a control, using the percent effluent dilutions as presented in the following tables:

November through April:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
4 X PL	2 X PL	Permit Limit (PL)	0.50 X PL	0.25 X PL	Control
% effluent					
26.8	13.4	6.7	3.4	1.68	0

May and September:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
4 X PL	2 X PL	Permit Limit (PL)	0.50 X PL	0.25 X PL	Control
% effluent					
11.2	5.6	2.8	1.4	0.7	0

June through August:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
4 X PL	2 X PL	Permit Limit (PL)	0.50 X PL	0.25 X PL	Control
% effluent					
4.8	2.4	1.2	0.6	0.3	0

October:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
4 X PL	2 X PL	Permit Limit (PL)	0.50 X PL	0.25 X PL	Control
% effluent					
22	11	5.5	2.8	1.38	0

The dilution/control water used will be moderately hard water as described in EPA-821-R-02-013 (or the most current edition). A chronic standard reference toxicant quality assurance test shall be conducted with each species used in the toxicity tests and the results submitted with the discharge monitoring report. Additionally, the analysis of this multi-concentration test shall include review of the concentration-response relationship to ensure that calculated test results are interpreted appropriately.

Toxicity will be demonstrated if the IC₂₅ is less than or equal to the permit limit indicated for each outfall in the above table(s). Toxicity demonstrated by the tests specified herein constitutes a violation of this permit.

All tests will be conducted using a minimum of three 24-hour flow-proportionate composite samples of final effluent collected on days 1, 3 and 5. If, in any control more than 20% of the test organisms die in 7 days, the test (control and effluent) is considered invalid and the test shall be repeated within two (2) weeks. Furthermore, if the results do not meet the acceptability criteria of EPA-821-R-02-013 (or the most current edition), or if the required concentration-response review fails to yield a valid relationship per guidance contained in Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing, EPA-821-B-00-004 (or the most current edition), that test shall be repeated. Any test initiated but terminated before completion must also be reported along with a complete explanation for the termination.

The toxicity tests specified herein shall be conducted quarterly (1/Quarter) for Outfall 001 and begin no later than 90 days from the effective date of this permit.

In the event of a test failure, the permittee must start a follow-up test within 2 weeks and submit results from a follow-up test within 30 days from obtaining initial WET testing results. The follow-up test must be conducted using the same serial dilutions as presented in the corresponding table(s) above. **The follow-up test will not negate an initial failed test. In addition, the failure of a follow-up test will constitute a separate permit violation.**

In the event of 2 consecutive test failures or 3 test failures within a 12-month period for the same outfall, the permittee must initiate a Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) study within 30 days and so notify the Division by letter. This notification shall include a schedule of activities for the initial investigation of that outfall. **During the term of the TIE/TRE study, the frequency of biomonitoring shall be once every three months.** Additionally, the permittee shall submit progress reports once every three months throughout the term of the TIE/TRE study. The toxicity must be reduced to allowable limits for that outfall within 2 years of initiation of the TIE/TRE study. Subsequent to the results obtained from the TIE/TRE studies, the permittee may request an extension of the TIE/TRE study period if necessary to conduct further analyses. The final determination of any extension period will be made at the discretion of the Division.

The TIE/TRE study may be terminated at any time upon the completion and submission of 2 consecutive tests (for the same outfall) demonstrating compliance. Following the completion of TIE/TRE study, the frequency of monitoring will return to a regular schedule, as defined previously in this section as well in Part I of the permit. **During the course of the TIE/TRE study, the permittee will continue to conduct toxicity testing of the outfall being investigated at the frequency of once every three months but will not be required to perform follow-up tests for that outfall during the period of TIE/TRE study.**

Test procedures, quality assurance practices, determinations of effluent survival/reproduction and survival/growth values, and report formats will be made in accordance with Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013, or the most current edition.

Results of all tests, reference toxicant information, copies of raw data sheets, statistical analysis and chemical analyses shall be compiled in a report. The report will be written in accordance with Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013, or the most current edition.

Two copies of biomonitoring reports (including follow-up reports) shall be submitted to the Division. One copy of the report shall be submitted along with the discharge monitoring report (DMR). The second copy shall be submitted to the local Division of Water Pollution Control office address:

**Environmental Assistance Center- Chattanooga
Division of Water Pollution Control
540 McCallie Avenue, Suite 550
Chattanooga, TN 37402-2013**

E. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign(s) at each outfall and any bypass/overflow point in the collection system. For the purposes of this requirement, any bypass/overflow point that has discharged five (5) or more times in the last year must be so posted. The sign(s) should be clearly visible to the public from the bank and the receiving stream. The minimum sign size should be two feet by two feet (2' x 2') with one-inch (1") letters. The sign should be made of durable material and have a white background with black letters.

The sign(s) are to provide notice to the public as to the nature of the discharge and, in the case of the permitted outfalls, that the discharge is regulated by the Tennessee Department of Environment and Conservation, Division of Water Pollution Control. The following is given as an example of the minimal amount of information that must be included on the sign:

Permitted CSO or unpermitted bypass/overflow point:

**COMBINED SEWER WASTEWATER DISCHARGE POINT
or UNTREATED WASTEWATER DISCHARGE POINT
Chattanooga - Moccasin Bend STP
(423) 757-5026
NPDES Permit NO. TN0024210
TENNESSEE DIVISION OF WATER POLLUTION CONTROL
1-888-891-8332 ENVIRONMENTAL ASSISTANCE CENTER - Chattanooga**

NPDES Permitted Municipal/Sanitary Outfall:

**TREATED MUNICIPAL/SANITARY WASTEWATER
Chattanooga - Moccasin Bend STP
(423) 757-5026
NPDES Permit NO. TN0024210
TENNESSEE DIVISION OF WATER POLLUTION CONTROL
1-888-891-8332 ENVIRONMENTAL ASSISTANCE CENTER - Chattanooga**

No later than sixty (60) days from the effective date of this permit, the permittee shall have the above sign(s) on display in the location specified.

F. ANTIDegradation

Pursuant to the Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-.06, titled "Tennessee Antidegradation Statement," and in consideration of the Department's directive in attaining the greatest degree of effluent reduction achievable in municipal, industrial, and other wastes, the permittee shall further be required, pursuant to the terms and conditions of this permit, to comply with the effluent limitations and schedules of compliance required to implement applicable water quality standards, to comply with a State Water Quality Plan or other State or Federal laws or regulations, or where practicable, to comply with a standard permitting no discharge of pollutants.

G. OTHER COMBINED SEWER CONTROLS

The permittee shall continue to comply with the following technology-based requirements (nine minimum controls).

1. Proper operation and regular maintenance programs for the sewer system and the combined sewer discharge points.
2. Maximum use of the collection system for storage.
3. Review and modification of pretreatment programs to assure combined sewer discharge impacts are minimized.
4. Maximization of flow to the Public Owned Treatment Works (POTW or sewage treatment plant (STP)) for treatment.
5. Prohibition of combined sewer discharges during dry weather.
6. Control of solid and floatable materials in combined sewer discharges.
7. Pollution prevention programs that focus on contaminant reduction activities.
8. Public notification to ensure that the public receives adequate notification of combined sewer discharge occurrences and combined sewer discharge impacts.
9. Monitoring to effectively characterize combined sewer discharge impacts and the efficacy of combined sewer discharge controls.

The permittee shall comply with the following water-based monitoring requirements:

1. Pollution from a combined sewer discharge causing deviation from the stated water quality criteria of Chapter 1200-4-3 will be a violation of this permit. Samples of combined sewer releases effluent having fecal coliform in excess of the daily maximum water quality standard are not permit violations but suggest contribution to possible water quality violations.
2. Chattanooga shall develop baseline average, maximum, and minimum values from the previously collected data, if possible, for each permitted group of combined sewer outfalls and each of the four time periods on which limits are established for Outfall 001. The set of summaries should identify all known or suspected conditions having potential for rendering the stream sampling unrepresentative. Such conditions may include, but not be limited to, sources of contaminated storm runoff between the sampling locations and differences in monitoring location caused by changes in river height, etc. The summaries shall be completed within 365 days of permit effectiveness and maintained on file available for review by the public and division staff.
3. The permittee shall collect samples at points upstream and downstream of permitted combined sewer outfalls. Once per quarter, the permittee shall perform receiving stream sampling as follows:

Sample locations (all mid-channel):

- (1) the Tennessee River at mile 467 (upstream)
- (2) the Tennessee River at mile 464 (Ross's Landing)
- (3) the Tennessee River at mile 462.5 (19th Street)
- (4) the Tennessee River at mile 461.3 (U.S. Pipe/downstream)
- (5) Chattanooga Creek at mile 2.5 (Southern Wood Piedmont/upstream)*
- (6) Chattanooga Creek at mile 0.9 (Wheland Bridge/downstream)

*sample collected from bank

The once per quarter sampling requirement applies to each outfall separately during a release event from the outfall. If all outfalls do not release simultaneously during the same event, then more than one sampling event per quarter may be required.

Parameters: BOD, TSS, fecal coliform, *E coli*, D.O., pH, temperature, hardness, and ammonia.

The permittee must conduct the stream sampling after the combined sewer discharge has had time to reach the river.

Stream Assessment – Chattanooga Creek

The permittee must perform stream monitoring as specified below. Reports of the results including complete taxa lists shall be submitted as a separate annual reports to three locations: 1) WPC central office along with a DMR, 2) WPC EAC-Chattanooga along with an MOR, and 3) Planning & Standard Section of WPC-Central office.

A. Chemical

1. Locations

- a) upstream of the CSO outfalls at Chattanooga Creek mile 8.0
- b) upstream of the CSO outfalls at Chattanooga Creek mile 4.1
- c) downstream of the CSO outfalls at Chattanooga Creek mile 0.9

2. Analysis/Frequency

- a. CBOD₅, ammonia, nitrate + nitrite, and total phosphorous shall be grab sampled annually within 90 days of a partially treated wastewater release from either or both of the Central Avenue and Williams Street combined sewer overflow facilities and when Chattanooga Creek is free flowing and when creek levels are not in direct response to a rainfall event.
- b. Time of day and water temperature should be recorded when these parameters are collected.
- c. One sample shall be collected at each location, mid channel, mid-depth.

B. Biological

- 3. Frequency – Annually within 90 days of a partially treated wastewater release from either or both of the Central Avenue and Williams Street combined sewer overflow facilities and when Chattanooga Creek is free flowing and when creek levels are not in direct response to a rainfall event.
- 4. The survey shall be conducted by qualified biologists. The permittee shall notify the EAC - Chattanooga, Division of Water Pollution Control, at least two weeks prior to conducting the biological survey.
- 5. Locations
 - a) upstream of the CSO outfalls at Chattanooga Creek mile 8.0
 - b) upstream of the CSO outfalls at Chattanooga Creek mile 4.1
 - c) downstream of the CSO outfalls at Chattanooga Creek mile 0.9

The sites selected must provide appropriate habitat and must be generally comparable. Prior to sampling, all selected stream sampling points shall be marked on a topographical map, submitted to and approved by the EAC.

- 4. The biosurvey will consist of a single habitat semi-quantitative macroinvertebrate sample and a habitat survey. Habitat assessments, sample collection, subsampling, taxonomy and metric calculation must adhere exactly to the following methodology.
 - a. Habitat Assessment

Appropriate habitat assessment forms will be completed concurrent with each biological survey. These forms can be found in Appendix B-1 of State of Tennessee's Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys (March 2002, or latest revision). The High Gradient Form will be used in conjunction with riffle kick collections and the Low Gradient Form will be used in conjunction with rooted bank collections.

b. Macroinvertebrate Sample Collection

A semi-quantitative single habitat macroinvertebrate sample will be collected at each site in accordance with Protocol G of the above referenced document. The habitat to be sampled will be appropriate for ecoregion 67f.

Collection at each station will consist of three (3) rooted bank sweeps collected using a 500 micron mesh triangular dip net. These are to include at least one sample from each bank, samples from different velocities and incorporate different bank types. Approximately one meter is to be sampled during each sweep. The debris from all three sweeps will be composited and preserved. All sorting and identification is to be conducted in the laboratory.

c. Subsampling

All samples will be reduced to 200+/- 20% organisms following subsampling protocols detailed in Protocol I, *Sampling Procedure for Semi-Quantitative Samples*, of State of Tennessee's Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys (March 2002, or latest revision).

d. Taxonomy

All taxa in the subsample will be identified to genus level.

e. Biometrics

The following biometrics will be calculated for each subsample (without extrapolation).

Taxa Richness (TR)
EPT Richness (EPT)
EPT Abundance (%EPT)
Chironomidae and Oligochaeta Abundance (%OC)
North Carolina Biotic Index (NCBI)
Percent Contribution of Single Most Dominant Taxon (%DOM)
Percent Clingers (%CLINGERS)

5. The following information will be recorded at each station during the biosurvey
 - a. Water temperature (°C)
 - b. Dissolved Oxygen (mg/l)
 - c. pH (S.U.)
 - d. Conductivity (umhos)
 - e. Stream Flow (cfs)

Adherence by the permittee or its consultants to modifications, recommended in writing by either division biologists or assessment staff, of the procedures or locations specified in this part shall not be construed as a violation of the permit.