STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
500 James Robertson Pkwy, 9th Floor
Nashville, Tennessee 37243

April 30, 2024

Mr. Michael A. Thompson
Senior Environmental, Health & Safety Engineer
e-copy: michael.thompson@sunpharma.com
Chattem Chemicals, Inc.
3708 St. Elmo Ave
Chattanooga, TN 37409

Subject: **Draft of NPDES Permit No. TN0002780**
Chattem Chemicals, Inc. (SUN-PHARMA)
Chattanooga, Hamilton County, Tennessee

Dear Mr. Thompson:

Enclosed please find a draft copy of the NPDES Permit No. TN0002780, which the Division of Water Resources proposes to issue. This draft copy is furnished to you solely for your review of its provisions. No wastewater discharges are authorized by this draft permit. The issuance of this permit is contingent upon your meeting all of the requirements of the Tennessee Water Quality Control Act and the Rules and Regulations of the Tennessee Water Quality, Oil and Gas Board.

Also enclosed is a copy of the public notice that announces our intent to issue this permit. The notice affords the public an opportunity to review the draft permit and, if necessary, request a public hearing on this issuance process. If you disagree with the provisions and requirements contained in the draft permit, you have thirty (30) days from the date of this correspondence to notify the division of your objections. If your objections cannot be resolved, you may appeal this permit upon issuance. This appeal should be filed in accordance with Section 69-3-110 of the Tennessee Code Annotated.

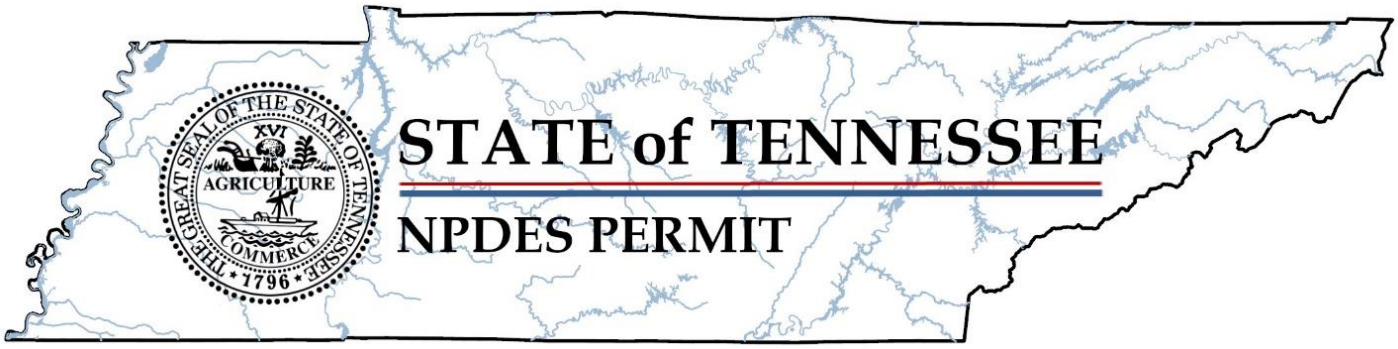
If you have questions, please contact the Chattanooga EFO at 1-888-891-TDEC; or, at this office, please contact Mr. Oscar Montenegro at (615) 532-0623 or by E-mail at *Oscar.Montenegro@tn.gov*.

Sincerely,

Vojin Janjić
Manager, Water-Based Systems

Enclosure

cc: Permit File
Chattanooga Environmental Field Office (EFO)
Mr. Jason Paul Allen, General Manager - Vice President, Chattem Chemicals, Inc., jason.allen@sunpharma.com
Dr. Mounir Minkara, Water Quality Manager, City of Chattanooga MS4 Program, mminkara@chattanooga.gov



Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES) Permit Number TN0002780

Issued by

Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass - Tennessee Tower
500 James Robertson Pkwy, 9th Floor
Nashville, Tennessee 37243

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.)

Permittee: **Chattem Chemicals, Inc. (SUN-PHARMA)**

is authorized to discharge: **noncontact cooling water (sourced from 2 wells onsite) and stormwater from Outfall 001**

from a facility located at: **3708 St. Elmo Avenue, Chattanooga, Hamilton County, Tennessee**

to receiving waters named: **Chattanooga Creek at mile 0.3 via storm sewer system**

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

This permit shall become effective on:

This permit shall expire on:

Issuance date:

DRAFT

for April Grippo
Interim Director

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PART 1

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. NUMERIC AND NARRATIVE EFFLUENT LIMITATIONS

Chattem Chemicals, Inc. (SUN-PHARMA) is authorized to discharge noncontact cooling water and stormwater from Outfall 001 to Chattanooga Creek at mile 0.3 via storm sewer system.

1.1.1. Numeric Effluent Limitations

Authorized discharges shall be limited and monitored by the permittee as specified below:

External Outfall 001, Monitoring: Effluent Gross, All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00010	Temperature, water deg. C	Report	-	deg C	Grab	Five Per Week	Daily Maximum
00300	Oxygen, dissolved (DO)	>=	5.0	mg/L	Grab	Three Per Week	Minimum
00310	BOD, 5-day, 20 C	<=	20	mg/L	Composite	Semiannual	Daily Maximum
00400	pH	>=	6.0	SU	Grab	Five Per Week	Minimum
00400	pH	<=	9.0	SU	Grab	Five Per Week	Maximum
00530	Total Suspended Solids (TSS)	<=	25	mg/L	Grab	Semiannual	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	1.2	mg/L	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.4	mg/L	Composite	Weekly	Daily Maximum
01092	Zinc, total (as Zn)	<=	0.05	mg/L	Composite	Monthly	Monthly Average
01092	Zinc, total (as Zn)	<=	0.3	mg/L	Composite	Monthly	Daily Maximum
01105	Aluminum, total (as Al)	Report	-	mg/L	Composite	Semiannual	Daily Maximum
03582	Oil and grease	<=	10	mg/L	Grab	Quarterly	Daily Maximum

50050	Flow	Report	-	MGD	Recorder	Continuous	Monthly Average
50050	Flow	Report	-	MGD	Recorder	Continuous	Daily Maximum
71900	Mercury, total (as Hg)	Report	-	mg/L	Composite	Semiannual	Daily Maximum

Notes:

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

See **Part 1.2.3** for test procedures.

1.1.2. Narrative Conditions

Additional monitoring and reporting requirements and conditions include:

Status	Comments
Active - Permit Requirement	The permittee shall comply with new limitations for Ammonia within two years of the effective date of this permit

The authorized discharge(s) shall not:

- Result in distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits, or sludge banks of such size or character as may be detrimental to fish and aquatic life.
- Result in total suspended solids, turbidity, or color in such amounts or character that will result in any objectionable appearance to the water, considering the nature and location of the water.
- 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, Tennessee Code Annotated (Tenn. Code Ann.) §68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, Tenn. Code Ann. §68-46-101 et. seq.

1.2. MONITORING PROCEDURES

1.2.1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified herein shall be representative of the volume and nature of the monitored discharge and shall be taken after treatment and prior to mixing with uncontaminated stormwater runoff or the receiving stream. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed and calibrated by a qualified source at least once every 12 months[1], and maintained to ensure 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 plus or minus 10% from the true discharge rates throughout the range of expected discharge volumes.

Composite samples must be proportioned by flow at the time of sampling. Aliquots may be collected manually or automatically. The sample aliquots must be maintained at ≤ 6°C during the compositing period, or as otherwise specified in 40 CFR §136 or in the method.

Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of the monitored discharge. Samples must be representative of the effluent being discharged and collected prior to mixing with any other discharge or the receiving stream. This can be at a different point for different parameters but must be after all treatment for that parameter or all expected changes. Biomonitoring tests, if required, must be conducted on final effluent.

1.2.2. Sampling Frequency

The permittee should report "No Discharge" on Discharge Monitoring Reports (DMRs) only if a permitted outfall does not discharge at any time during the monitoring period. If the outfall discharges effluent at any time during the monitoring period, the permittee must provide at least one sampling result from the effluent of that outfall.

If the required monitoring frequency is once per month or 1/month, the monitoring period is one month. If the discharge occurs during only one day in

[1] The Division expects for permittees to meet EPA's guidance on proper operation and maintenance of flow measurement devices, as stated in the NPDES Compliance Inspection Manual.

that period, the permittee must sample on that day and report the results of analyses accordingly.

1.2.3. 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 using sufficiently sensitive methods in Title 40 CFR § 136, as amended, and promulgated pursuant to Section 304 (h) of the Act. The chosen methods must be sufficiently sensitive as required in state rule 0400-40-03-.05(8).

c) If the ML for all methods available in accordance with 40 CFR § 136 are above the stated permit limit or applicable water quality criteria for that parameter, then the method with the lowest ML shall be used.

d) Where the analytical results are below the method detection limit (MDL), the permittee shall report the actual laboratory MDL and ML values. See **Section 1.3.4.** for instructions regarding reporting less than detection.

e) When there is no analytical method that has been approved under 40 CFR §136 or required under 40 CFR chapter I, subchapter N or O, and a specific method is not otherwise required by the Director, the permittee may use any suitable method but shall provide a description of the method. When selecting a suitable method, factors such as a method's precision, accuracy, or resolution must be considered when assessing the performance of the method.

1.2.4. Recording of Results

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

i. The date, exact place, and time of sampling or measurements;
ii. The individual(s) who performed the sampling or measurements;
iii. The date analyses were performed;
iv. The individual(s) who performed the analyses;
v. The laboratory where the analyses were performed;
vi. The analytical techniques or methods used; and

vii. The results of such analyses.

1.2.5. Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

1.3. REPORTING

1.3.1. Monitoring Results

Monitoring results shall be recorded monthly and submitted monthly on Discharge Monitoring Reports (DMRs) using EPA's NetDMR website. The first DMR is due on the 15th of the month following permit effectiveness. Subsequent DMRs shall be submitted through NetDMR no later than 15 days after the completion of the reporting period. In compliance with the Federal NPDES Electronic Reporting Rule, DMRs may not be submitted via email under any circumstances.

Discharge Monitoring Reports and any other information or report must be signed and certified by a responsible corporate officer as defined in Tennessee Rules, Chapter 0400-40-05-.07(2)(i), a general partner or proprietor, a principal municipal executive officer or ranking elected official, or his or her duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

In the event that electronic reporting is unavailable, the permittee shall comply with reporting conditions provided in **Section 1.7.**

1.3.2. Additional Monitoring by Permittee

If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR § 136, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or other reporting form specified by the Commissioner. Such increased frequency shall also be indicated.

1.3.3. 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 § 69-3-115 of the Tennessee Water Quality Control Act.

1.3.4. Reporting Less Than Detection; Reporting Significant Figures

For the purpose of evaluating compliance with the permit limits established herein, where certain limits are below the minimum level (ML) of 40 CFR § 136 approved analytical methods, compliance will be demonstrated when a non-detect result is obtained using the most sensitive method available. The results of non-detect analyses, in this case, shall be reported as Below Detection Limit (BDL) or "NODI = B" in NetDMR. Reporting examples are provided below.

Reporting Example 1: If the permit limit is 0.02 mg/L with a method detection limit (MDL) of 0.05 mg/L and no detection is shown, the permittee must report "BDL" or "NODI = B" on DMRs in NetDMR. Whenever "BDL" or "NODI = B" is reported, the actual MDL must be reported in the DMR comments or in an attachment submitted in NetDMR.

Reporting Example 2: If the permit limit is 0.02 mg/L with an MDL of 0.05 mg/L and detection is shown, the actual detected value must be reported.

Reporting Example 3: If the permit limit is 0.02 mg/L with an MDL of 0.01 mg/L and no detection is shown, the permittee must report less than MDL (<0.01 mg/L in this case).

For purposes of calculating monthly averages, zero may be assigned for values less than the MDL, the numeric value of the MDL may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the permittee must report "less than {numeric value of the MDL}" and if the average value is less than the ML, the permittee must report "less than {numeric value of the ML}." If a value is equal to or greater than the ML, the permittee must report and use the actual value. The resulting average value must be compared to the compliance level, the ML, in assessing compliance.

Reported results are to correspond to the number of significant figures (decimal places) set forth in the permit conditions. The permittee shall round values, if allowed by the method of sample analysis, using a uniform rounding convention adopted by the permittee.

1.3.5. Outlier Data

Outlier data include analytical results that are probably false. The validity of results is based on operational knowledge and a properly implemented quality

assurance program. False results may include laboratory artifacts, potential sample tampering, broken or suspect sample containers, sample contamination or similar demonstrated quality control flaw.

Outlier data are identified through a properly implemented quality assurance program, and according to ASTM standards (e.g. Grubbs Test, 'h' and 'k' statistics). Furthermore, outliers should be verified, corrected, or removed based on further inquiries into the matter. If an outlier was verified (through repeated testing and/or analysis), it should remain in the preliminary data set. If an outlier resulted from a transcription or similar clerical error, it should be corrected and subsequently reported.

Therefore, only if an outlier was associated with problems in the collection or analysis of the samples and as such does not conform with the Guidelines Establishing Test Procedures for the Analysis of Pollutants (40 CFR §136), can it be removed from the data set and not reported on DMRs. Otherwise, all results (including monitoring of pollutants more frequently than required at the location(s) designated, using approved analytical methods as specified in the permit) should be included in the calculation and reporting of the values required in the DMR form. The permittee should use the "comment" section in NetDMR to explain any potential outliers or dubious results.

1.4. 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.

1.5. 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 304(b)(2) of the Clean Water Act, as amended, if the effluent standard or limitation so issued or approved:

a) Contains different conditions or is otherwise more stringent than any condition in the permit; or

b) 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.

1.6. SCHEDULE OF COMPLIANCE

Full compliance and operational levels shall be attained from the effective date of this permit.

1.7. ELECTRONIC REPORTING

This permit requires the submission of forms developed by the Director in order for a person to comply with certain requirements, including, but not limited to, making reports, submitting monitoring results, and applying for permits. The Director may make these forms available electronically and, if submitted electronically, then that electronic submission shall comply with the requirements of Chapter 0400-01-40.

In the event of large-scale emergencies and/or prolonged electronic reporting system outages, an episodic electronic reporting waiver may be granted by the Commissioner in accordance with 40 CFR § 127.15. A request for a deadline extension or episodic electronic reporting waiver should be submitted to DWRWater.Compliance@tn.gov, in compliance with the Federal NPDES Electronic Reporting Rule.

If an episodic electronic reporting waiver is granted, reports with wet-ink original signatures shall be mailed to the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT UNIT
William R. Snodgrass - Tennessee Tower
500 James Robertson Pkwy, 9th Floor
Nashville, Tennessee 37243

For purposes of determining compliance with this permit, data provided to the Division electronically is legally equivalent to data submitted on signed and certified forms. A copy must be retained for the permittee's files.

PART 2

2. GENERAL PERMIT REQUIREMENTS

2.1. GENERAL PROVISIONS

2.1.1. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Water Quality Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

2.1.2. Duty to Reapply

The 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 Division Director no later than 180 days prior to the expiration date. Such forms shall be properly signed and certified.

2.1.3. 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, or other technology based effluent limitations such as those established in Tennessee Rule 0400-40-05-.09.

2.1.4. Duty to Provide Information

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

2.1.5. 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, to:

a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records shall be kept under the conditions of this permit;

b) Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this permit;

c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d) Sample or monitor at reasonable times for the purposes of assuring permit compliance or as otherwise authorized by the Director.

2.1.6. 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 Division's offices or via the Department's dataviewer webpage. As required by the Federal Act, effluent data shall not be considered confidential.

2.1.7. 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.

2.1.8. 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.

2.1.9. 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.

2.1.10. Other Information

If the permittee becomes aware of failure to submit any relevant facts in a permit application, or of submission of incorrect information in a permit application or in any report to the Director, then the permittee shall promptly submit such facts or information.

2.2. CHANGES AFFECTING THE PERMIT

2.2.1. 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 as defined in Rule 0400-40-05-.02;

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); or

c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices.

2.2.2. 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. Causes for such permit action include but are not limited to the following:

   i. Violation of any terms or conditions of the permit;
   ii. Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; and
   iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

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.

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 for 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.

2.2.3. Change of Ownership

Except as provided in Tennessee Rule Chapter 0400-40-05-.06(5)(a) or (b), 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 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 permittee shall provide the following information to the Director in their formal notice of intent to transfer ownership:

i. The permit number of the subject permit;
ii. The effective date of the proposed transfer;
iii. The name, address, and contact information of the transferor;
iv. The name, address, and contact information of the transferee;

v. The names of the responsible parties for both the transferor and transferee;
vi. A statement that the transferee assumes responsibility for the subject permit;
vii. A statement that the transferor relinquishes responsibility for the subject permit;
viii. The signatures of the responsible parties for both the transferor and transferee pursuant to the signatory requirements of subparagraph (i) of Rule 0400-40-05-.07(2); and
ix. 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.

2.2.4. 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.

2.3. NONCOMPLIANCE

2.3.1. Reporting of Noncompliance

a) 24-hour Reporting:

In the case of any noncompliance, or any release (whether or not caused by improper operation and maintenance), which could cause a threat to human health or the environment, the permittee shall:

i. Report the noncompliance or release to the Commissioner within 24 hours from the time the permittee becomes aware of the circumstances. Such noncompliance or release includes, but is not limited to, any unanticipated bypass exceeding any effluent limitation, any upset exceeding any effluent limitation, and violations of any maximum daily effluent limitation identified in the permit as requiring 24-hour reporting. (The EFO should be contacted for names and phone numbers of the environmental response team.)

ii. Submit a written report within five days of the time the permittee becomes aware of the noncompliance. The permittee shall provide the following information:

1. A description of and the cause of the noncompliance or release;

2. The period of noncompliance or release, including start and end dates and times i.e. duration or, if not corrected, the anticipated time the noncompliance or release is expected to continue;

3. The steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance or release; and

4. For POTWs or domestic wastewater treatment plants, reporting any dry weather overflow, wet weather overflow, dry weather release, wet weather release, combined sewer overflow, or bypass, this written report must also include the following:

   I. Type of event;
   II. Type of sewer overflow, release, or bypass structure (e.g., manhole, combined sewer overflow outfall);
   III. Estimated volume (gallons);
   IV. Types of human health and environmental impacts;
   V. Location (latitude and longitude);
   VI. Estimated duration (hours);
   VII. The next downstream pump station (for overflows and releases only); and
   VIII. The name of receiving water (if applicable).

iii. Industrial dischargers that do not treat domestic waste shall comply with subpart a) ii. 4. of this subparagraph with respect to bypasses only.

iv. For overflows, releases, bypasses, upsets and washouts, the report required by a) ii. Shall be submitted electronically via MyTDEC Forms.

b) Other Noncompliance.

i. All permittees shall report each instance of noncompliance or any release (whether or not caused by improper operation and maintenance), not reported under sub-part a) at the time of submitting the next routine monitoring report, including all information required by sub-parts a) ii. 1-3.

ii. In addition to the information required by part i of this sub-part, POTWs and domestic wastewater treatment plants shall submit a written report containing the information required by sub-part a) i. 4. If these events are

caused by an extreme weather event, the Commissioner may provide a written waiver of some or all of these reporting requirements.

iii. In addition to the information required by sub-part i, industrial dischargers shall submit a written report of bypasses containing the information required by sub-part a) i. 4. This part does not relieve industrial dischargers from any applicable reporting requirements of 40 C.F.R. Part 117 (2021) and 40 C.F.R. Part 302 (2021).

2.3.2. Overflows and Releases

a) For publicly owned treatment works (POTW) or domestic wastewater treatment plants, sanitary sewer overflows, including dry-weather overflows and wet weather overflows, are prohibited.

b) Releases caused by improper operation and maintenance, which is to be determined by the Commissioner based on the totality of the circumstances, are prohibited.

c) The permittee shall operate the collection, transmission, and treatment system so as to avoid sanitary sewer overflows and releases due to improper operation or maintenance. A "release" may be due to improper operation or maintenance of the collection system or may be due to other cause(s).

d) The permittee shall take all reasonable steps to minimize any adverse impact associated with overflows and releases.

e) No new or additional flows shall be added upstream of any point in the collection, transmission, or treatment system that experiences greater than 5 sanitary sewer overflows and/or releases per year[2] or would otherwise overload any portion of the system. 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

[2] This includes dry weather overflows, wet weather overflows, dry weather releases and wet weather releases.

3) The cumulative, peak-design flows potentially added from new connections and line extensions upstream of any chronic overflow or release point are less than or proportional to the amount of inflow and infiltration removal documented upstream from that point.

The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the environmental engineering field and reported in an attachment to the permittee's DMR and uploaded to NetDMR. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.

f) In the event that chronic sanitary sewer overflows or releases have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium of the actions identified in this paragraph, the permittee may request a meeting with Division EFO staff to petition for a waiver based on mitigating evidence.

g) For industrial dischargers, the discharge of pollutants from any location other than a permitted outfall is prohibited.

2.3.3. Upset

a) An upset shall constitute an affirmative defense to an action brought for noncompliance with 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".

b) In any enforcement proceeding, the permittee seeking to establish the affirmative defense of an upset has the burden of proof.

2.3.4. 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.

2.3.5. Bypass

a) Bypasses (see subpart 4.1) are prohibited unless all the following conditions are met:

   i. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
   ii. There are no feasible alternatives to bypass, such as the 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; and
      a. For anticipated bypass, the permittee submits prior notice, if possible at least ten days before the date of the bypass, or
      b. For unanticipated bypass, the permittee submits notice of an unanticipated bypass within 24 hours from the time that the permittee becomes aware of the bypass.

b) Bypasses that do not cause effluent limitations to be exceeded may be allowed only if the bypass is necessary for essential maintenance to assure efficient operation. The permittee must sample and report the discharge during each bypass to demonstrate that the bypass does not cause effluent limitations to be exceeded.

2.3.6. 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 decreases due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to inflow and infiltration.

b) A washout is prohibited. If a washout occurs the permittee must report the incident to the Division in the appropriate EFO within 24 hours by telephone. A written submission must be provided within five days. The washout must be noted on that month's DMR. Each day of a washout is a separate violation.

2.4. LIABILITIES

2.4.1. Civil and Criminal Liability

Except as provided in permit conditions for "*Bypass*" (**Section 2.3.5**), "*Overflows and Releases*" (**Section 2.3.2**), and "*Upset*" (**Section 2.3.3**), 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.

2.4.2. 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 3

3. PERMIT SPECIFIC REQUIREMENTS

3.1. TOXIC POLLUTANTS

The permittee shall notify the Division as soon as it knows or has reason to believe that:

a) Any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic substance(s) not limited in the permit (listed in 40 CFR 122, Appendix D, Table II and III), if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);
ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five times the maximum concentration value reported for that pollutant(s) in the permit application in accordance with 40 CFR 122.21(g)(7); or
iv. The level established by the Director in accordance with 40 CFR 122.44(f).

b) Any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
iv. The level established by the Director in accordance with 40 CFR 122.44(f).

3.2. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign at each outfall or the nearest publicly accessible location. 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 Resources. The following are given as examples of the minimal amount of information that must be included on the signs:

INDUSTRIAL STORMWATER RUNOFF
Chattem Chemicals, Inc. (SUN-PHARMA)

(423) 822-5029
NPDES Permit No. TN0002780
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Chattanooga

PART 4

4. DEFINITIONS AND ACRONYMS

4.1. DEFINITIONS

For the purposes of this permit, ***annually*** is defined as a monitoring frequency of once every 12 months beginning with the effective date of this permit, so long as the following set of measurements for a given 12 month period are made approximately 12 months subsequent to that time.

An ***Alert Value*** is a benchmark concentration that indicates presence of pollutants in concentrations that shall require a review of BMPs used in a corresponding drainage area. An alert value differs from an enforceable numerical limit in that an exceedance of the alert value is not a permit violation. However, the failure to report a sampled concentration with an alert value is a permit violation.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

A ***calendar day*** means the 24-hour period from midnight to midnight or any other 24-hour period that reasonably approximates the midnight to midnight time period.

A ***composite sample*** means a combination of not less than eight influent or effluent portions (aliquots), collected over a 24-hour period. Under certain circumstances a lesser time period may be allowed, but in no case less than eight hours. A sufficient volume of sample to perform all required analyses plus any additional amount for quality control must be obtained. For automatic samplers that use a peristaltic pump, a minimum 100 ml aliquot must be obtained.

Cooling water means water used for contact or non-contact cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes used, or from auxiliary operations at the facility's premises.

Cooling water intake structure means the total physical structure and any associated constructed waterways used to withdraw cooling water form waters of the United States. The cooling water intake structure extends from the point at

which water is first withdrawn from waters of the United States up to, and including, the intake pumps.

The ***daily maximum amount*** means the total amount of any pollutant in the discharge by weight during any calendar day.

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

Degradation means the alteration of the properties of waters by the addition of pollutants, withdrawal of water, or removal of habitat, except those alterations of a short duration.

De Minimis is degradation of a small magnitude, as provided in this paragraph:

(a) Discharges and withdrawals:

1. Subject to the limitation in part 3 of this subparagraph, a single discharge other than those from new domestic wastewater sources will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged.

   (Note: Consistent with T.C.A. § 69-3-108, special consideration will be given to bioaccumulative substances to confirm the effect is de minimis, even if they are less than five percent of the available assimilative capacity.)

2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the stream.
3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than 10% of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses 10% of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the Division finds on a scientific basis that the additional degradation has an insignificant effect on the resource.

(b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the Division finds that the impacts, individually and cumulatively, are offset by impact minimization and/or in-system mitigation, provided however, in Outstanding National Resource Waters (ONRWs) the mitigation must occur within the ONRW.

Discharge or ***discharge of a pollutant*** refers to the addition of pollutants to waters from a source.

An ***ecoregion*** is a relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

Entrainment means the incorporation of all life stages of fish and shellfish with intake water flow entering and passing through a cooling water intake structure and into a cooling water system.

The ***geometric mean*** of any set of values means 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 shall be considered to be one.

A ***grab sample*** means a single sample collected at a particular time.

IC_{25} means the inhibition concentration in which at least a 25% reduction in reproduction and/or growth in test organisms occurs.

Industrial discharger means those industries identified in the standard industrial classification manual, Bureau of the Budget, 1987, as amended and supplemented, under the category "Division D - Manufacturing" and such other classes of significant waste producers as the Board or Commissioner deems appropriate.

Industrial wastes means any liquid, solid, or gaseous substance, or combination thereof, or form of energy including heat, resulting from any process of industry, manufacture, trade, or business or from the development of any natural resource.

LC_{50} means the concentration that causes at least 50% lethality of the test organisms.

Major facility means a municipal or domestic wastewater treatment plant with a design capacity of one million gallons per day or greater; or any other facility or activity classified as such by the Commissioner.

Minor facility means any facility that is not a major facility.

The ***monthly average amount*** means the arithmetic mean of all the measured daily discharges by weight during the calendar month when the measurements were made.

The ***monthly average concentration***, means the arithmetic mean of all samples collected in a one calendar-month period, expressed in units of mass per volume of any pollutant other than bacteria.

National Pollutant Discharge Elimination System or ***NPDES*** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the federal CWA. The term includes an "approved program."

New or increased discharge is a new discharge of pollutants to waters of the state or an increase in the authorized loading of a pollutant above either (1) numeric effluent limitations established in a National Pollutant Discharge Elimination System permit for that discharge, or (2) if no such limitations exist, the actual discharges of that pollutant.

New source means any building, structure, facility, area, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced after the publication of state or federal regulations prescribing a standard of performance.

Owner or ***operator*** means any person who owns, leases, operates, controls, or supervises a source.

Person means an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof.

Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may

be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant means sewage, industrial wastes, or other wastes.

Pollution means such alteration of the physical, chemical, biological, bacteriological, or radiological properties of the waters of this state including, but not limited to, changes in temperature, taste, color, turbidity, or odor of the waters that will:

(a) Result or will likely result in harm, potential harm, or detriment to the public health, safety, or welfare;

(b) Result or will likely result in harm, potential harm, or detriment to the health of animals, birds, fish, or aquatic life;

(c) Render or will likely render the waters substantially less useful for domestic, municipal, industrial, agricultural, recreational, or other reasonable uses; or

(d) Leave or likely leave the waters in such condition as to violate any standards of water quality established by the Board.

A ***qualifying storm event*** is a storm event in which greater than 0.1 inches of rainfall occurs after a period of at least 72 hours following any previous storm event with rainfall of 0.1 inches or greater.

Quarter means 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.

Rainfall event means 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.

Rationale or ***fact sheet*** means a document that is prepared when drafting an NPDES permit or permit action. It provides the technical, regulatory and administrative basis for an agency's permit decision.

A ***reference site*** means the least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

Release means the flow of sewage from any portion of the collection or transmission system owned or operated by a publicly owned treatment works (POTW) or a domestic wastewater treatment plant, other than through permitted outfalls, that does not reach waters. In addition, a "release" includes a backup into a building or private property that is caused by blockages, flow conditions, or other malfunctions originating in the collection or transmission system owned or operated by the permittee. A "release" does not include:

(a) Backups into a building or private property caused by blockages or other malfunctions originating in a private lateral;

(b) Events caused by vandalism;

(c) Events caused by lightning strike;

(d) Events caused by damage due to third parties working on other utilities in the right of way, e.g., cross bore from telecommunications line; or

(e) Events that are directly incidental to planned, preventative, or predictive maintenance provided the site is under the direct control of a certified operator or contractor, public access is restricted, and the site is disinfected.

Schedule of compliance means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, condition of a permit, other limitation, prohibition, standard, or regulation. This term includes, but is not limited to, schedules authorized by national effluent limitations guidelines or by Tennessee's water quality standards.

The term ***semi-annually***, for the purposes of this permit, means the same as once every 6 months. Measurements of the limited effluent parameters may be made any time during a 6 month period beginning from the effective date of this permit, so long as the second set of measurements for a given 12 month period are made approximately 6 months subsequent to that time, if feasible.

Severe property damage, when used to consider the allowance of a bypass, 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.

Source means any activity, operation, construction, building, structure, facility, or installation from which there is or may be the discharge of pollutants.

Standard of performance means a standard for the control of the discharge of pollutants that reflects the greatest degree of effluent reduction that the Commissioner determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

Stream means a surface water that is not a wet weather conveyance.

Total dissolved solids or ***TDS*** means nonfilterable residue.

Unpermitted discharge refers to the discharge of pollutants to waters not authorized by this permit.

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.

The term ***washout*** is applicable to domestic wastewater activated sludge plants and is defined as loss of mixed liquor suspended solids (MLSS) of 30.00% or more from the aeration basin(s).

Waters means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

Watercourse means a man-made or natural hydrologic feature with a defined linear channel that discretely conveys flowing water, as opposed to sheet-flow.

Wet weather conveyance means, notwithstanding any other law or rule to the contrary, man-made or natural watercourses, including natural watercourses that have been modified by channelization:

(a) That flow only in direct response to precipitation runoff in their immediate locality;

(b) Whose channels are at all times above the groundwater table;

(c) That are not suitable for drinking water supplies; and

(d) In which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

Wet weather flow shall be construed to represent stormwater runoff which, in combination with all process and/or non-process wastewater discharges, as applicable, is discharged during a qualifying storm event.

4.2. ACRONYMS AND ABBREVIATIONS

1Q10 – 1-day minimum, 10-year recurrence interval
30Q5 – 30-day minimum, 5-year recurrence interval
7Q10 – 7-day minimum, 10-year recurrence interval
BAT – best available technology economically achievable
BCT – best conventional pollutant control technology
BDL – below detection limit
BOD_5 – five-day biochemical oxygen demand
BPT – best practicable control technology currently available
$CBOD_5$ – five-day carbonaceous biochemical oxygen demand
CEI – compliance evaluation inspection
CFR – code of federal regulations
CFS – cubic feet per second
CFU – colony forming units
CIU – categorical industrial user
CSO – combined sewer overflow
DMR – discharge monitoring report
D.O. – dissolved oxygen
E. coli – *Escherichia coli*
EPA – Environmental Protection Agency
EFO – environmental field office
GPM – gallons per minute
IC_{25} – inhibition concentration causing 25% reduction in survival, reproduction, and growth of the test organisms
IU – industrial user
IWS – industrial waste survey
LB (lb) – pound
LC_{50} – acute test causing 50% lethality
MDL – method detection limit
MGD – million gallons per day
mg/L – milligrams per liter
ML – minimum level of quantification
mL – milliliter
MLSS – mixed liquor suspended solids
MOR – monthly operating report
NODI – no discharge code in NetDMR
NPDES – national pollutant discharge elimination system
PL – permit limit
POTW – publicly owned treatment works
SAR – semi-annual report [pretreatment program]

SIU – significant industrial user
SSO – sanitary sewer overflow
STP – sewage treatment plant
TBEL – technology-based effluent limit
TCA – Tennessee code annotated
TDEC – Tennessee Department of Environment and Conservation
TIE/TRE – toxicity identification evaluation/toxicity reduction evaluation
TMDL – total maximum daily load
TRC – total residual chlorine
TSS – total suspended solids
WQBEL – water quality-based effluent limit

4.3. RESOURCES, HYPERLINKS, AND WEB PAGES

Clean Water Act NPDES Electronic Reporting (eReporting) Information
https://www.epa.gov/compliance/npdes-ereporting

Clean Water Act Section 316(b) Cooling Water Intake Existing Facility Final Rule
https://www.federalregister.gov/documents/2014/08/15/2014-12164/national-pollutant-discharge-elimination-system-final-regulations-to-establish-requirements-for

Electronic Code of Federal Regulations (eCFR), Title 40 (40 CFR § 1 through § 1099)
https://www.ecfr.gov/cgi-bin/text-idx?SID=75202eb5d09974cab585afeea981220b&mc=true&tpl=/ecfrbrowse/Title40/40chaptERl.tpl

Electronic Reporting (NetDMR) Waiver Request
https://www.tn.gov/content/dam/tn/environment/water/documents/wr_ereporting_waiver.pdf

Low Flow Statistics Tools: A How-To Handbook for NPDES Permit Writers (EPA)
https://www.epa.gov/sites/production/files/2018-11/documents/low_flow_stats_tools_handbook.pdf

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA)
https://www.epa.gov/sites/production/files/2015-08/documents/acute-freshwater-and-marine-wet-manual_2002.pdf

NetDMR Login
https://cdxnodengn.epa.gov/net-netdmr/

NetDMR, MyTDEC Forms, & Electronic Reporting Information
https://www.tn.gov/environment/program-areas/wr-water-resources/netdmr-and-electronic-reporting.html

NPDES Compliance Inspection Manual (EPA)
https://www.epa.gov/sites/production/files/2017-01/documents/npdesinspect.pdf

NPDES Electronic Reporting Rule
https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule

Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys (QSSOP)
https://www.tn.gov/content/dam/tn/environment/water/documents/DWR-PAS-P-01-Quality_System_SOP_for_Macroinvertebrate_Stream_Surveys-081117.pdf

Rules of the TN Department of Environment and Conservation, Chapter 0400-40
https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40.htm

Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA)
https://www.epa.gov/sites/production/files/2015-08/documents/short-term-chronic-freshwater-wet-manual_2002.pdf

TDEC Water Quality Rules, Reports, and Publications
https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html

Technical Support Document for Water Quality-based Toxics Control (EPA)
https://www3.epa.gov/npdes/pubs/owm0264.pdf

Tennessee Nutrient Reduction Framework
https://www.tn.gov/content/dam/tn/environment/water/tmdl-program/wr-ws_tennessee-draft-nutrient-reduction-framework_030315.pdf

Tennessee Plant Optimization Program (TNPOP)
https://www.tn.gov/environment/program-areas/wr-water-resources/tn-plant-optimization-programs/tnpop.html

Tennessee Water Resources Data and Map Viewers
https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-resources-data-map-viewers.html

USGS StreamStats
https://www.usgs.gov/mission-areas/water-resources/science/streamstats-streamflow-statistics-and-spatial-analysis-tools?qt-science_center_objects=0#qt-science_center_objects

USGS Hydrologic Toolbox
https://pubs.usgs.gov/publication/tm4D3

PART 5

5. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The discharger will develop, document, and maintain a stormwater pollution prevention plan (SWPPP) pursuant to the requirements set forth in EPA guidance manuals titled *Stormwater Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006) and the document's *Summary Guidance* (EPA 833-R-92-002). The plan shall be signed by either a principal executive officer of a corporation, the owner or proprietor of a sole proprietorship, or a partner or general partner of a partnership. The SWPPP developed and implemented shall be site specific to the permitted facility with regard to the general terms and conditions outlined in the guidance manuals cited herein, and, at a minimum, shall contain the following items:

5.1. POLLUTANT SOURCES AND PATHWAYS

a) A site map outlining the individual stormwater drainage areas, existing structural control measures, surface waterbodies, and sinkholes.

b) A narrative description of significant materials (40 CFR § 122.26) that are currently being, or in the past have been, treated, stored, or disposed outside; materials management practices; existing structural and non-structural control measures to reduce pollutants; and a description of any stormwater treatment.

c) A list of significant spills and leaks of toxic or hazardous pollutants at the facility that have taken place after the effective date of the permit.

d) A prediction of direction of flow and the possible pollutants associated with each area of the plant that generates stormwater.

e) A record of available sampling data describing pollutants in stormwater discharges.

5.2. STORMWATER MANAGEMENT CONTROLS

The permittee shall:

a) Formulate a pollution prevention team with named individuals who will develop the stormwater pollution prevention plan and assist the plant manager in its implementation.

b) Inventory types of materials handled and associated potential of release to storm water. Evaluate the following for potential pollutant contribution: loading and unloading operations, outdoor storage and manufacturing activities, dust or particulate generating processes, and on-site waste disposal practices. Consider toxicity of chemicals, quantity of chemicals, and history of leaks or spills of toxic or hazardous pollutants.

c) Design a preventative maintenance program including inspection and maintenance of stormwater management devices and testing plant equipment and systems to uncover conditions, which could cause failures.

d) Maintain a clean, orderly facility.

e) Establish prevention and response procedures. Identify potential spill areas and drainage points. Specify material handling procedures and storage requirements. Identify spill cleanup procedures and provide to responsible personnel. Make available to responsible personnel the necessary equipment to implement cleanup at all times when the facility is in operation.

f) Include in the plan a narrative of traditional stormwater management practices, i.e., other than those that control the source of pollutants.

g) Identify areas of potentially high soil erosion and measures to limit erosion.

h) Train employees at all levels of responsibility in the components of the stormwater pollution prevention plan.

i) Identify qualified personnel to inspect equipment, plant areas, and material handling areas. Develop a tracking system to ensure corrective action and maintain records of inspections.

j) Designate a person in the plan who will keep records of spills or other discharges, inspections and maintenance activities, and information describing the quality and quantity of stormwater discharges.

k) Identify any non-stormwater discharges associated with the stormwater outfalls and their source(s). In the event non-stormwater discharges are discovered in combination with the stormwater discharges, the permittee must submit the appropriate EPA form(s) for the characterization of these non-stormwater discharges as warranted.

5.3. FACILITY INSPECTION

Responsible person(s) named in the plan will inspect the facility at least semi-annually for the accuracy of the plan and maps, adequate measures to reduce pollutants in stormwater runoff, and the need for additional controls. Records of these inspections will be maintained for a period of three years.

5.4. SPILL PREVENTION CONTROL AND COUNTERMEASURES

Stormwater management programs may reflect requirements for spill prevention control and countermeasures (SPCC) plans under Section 311 of the Clean Water Act.

5.5. PLAN REVIEW AND UPDATE

The plan will be reviewed and updated, if necessary, by the facility at least annually. The plan and all records will be retained for at least three years after expiration of this permit.

5.6. PLAN IMPLEMENTATION

The plan should be developed and available for review within 30 days after permit coverage. Facilities should implement the management practices as soon as possible, but not later than one year after permit coverage. Where new construction is necessary to implement the management plan, a construction schedule should be included. Construction should be completed as soon as possible.

5.7. PLAN AVAILABILITY

The plan will be maintained by the discharger on the site or at a nearby office. Copies of the plan will be submitted to the Division within ten business days of any request.

5.8. PLAN MODIFICATION

The plan will be modified as required by the Division Director.

5.9. MONITORING PLAN

The stormwater discharges will be monitored as required in **Part 1.1.** of the permit, as applicable to stormwater outfalls. For each outfall monitored, the surface area and type of cover (*e.g.* roof, pavement, grassy areas, gravel) will be identified.

RATIONALE

Chattem Chemicals, Inc. (SUN-PHARMA)
NPDES Permit No. TN0002780
Permit Writer: Oscar Montenegro

1. PERMIT STATUS & PUBLIC PARTICIPATION

Permit Type:	Industrial
Previous Issuance Date:	February 1, 2019
Previous Expiration Date:	February 29, 2024
Previous Effective Date:	March 1, 2019

As provided under Rule 0400-40-05-.06, this permit allows 30 days for public comment on the proposed permit. The 30-day public comment period begins the date this permit is placed on public notice. The public notice document for this permit can be found at the Division's Water Notices and Hearings website under "Permit Public Notices".

Public Notice Date:	04/30/24
Comment Period Ends:	05/30/24

Those wishing to make a formal comment on the proposed permit may submit comments electronically to Water.Permits@tn.gov, or by mail to:

Division of Water Resources - Water Based Systems Unit
William R. Snodgrass Tennessee Tower
500 James Robertson Pkwy, 9th Floor
Nashville, Tennessee 37243

The public may also request a public hearing on a proposed permit by submitting such a request in writing during the public comment period specified above. The request should indicate the interest of the party filing it and the reasons why a hearing is warranted. A request for public hearing should be submitted as soon as practicable to the addresses provided above. Questions regarding the draft permit may be directed to 1-888-891-TDEC.

2. FACILITY INFORMATION

Permittee Name:	**Chattem Chemicals, Inc. (SUN-PHARMA)**
Project Name:	
Location:	3708 St. Elmo Avenue, Chattanooga, Hamilton County, Tennessee
Contact:	Mr. Michael Thompson - Senior Environmental, Health & Safety Engineer (423) 822-5029 michael.thompson@sunpharma.com
Average Flow Rate:	0.776 MGD
Nature of Business:	manufacturer of small batch controlled substance pharmaceuticals, bulk non-controlled substance pharmaceuticals and specialty industrials chemicals.
SIC Code(s):	2833
Industrial Classification:	Primary Facility *
Discharger Rating:	Minor

* PRIMARY INDUSTRY CATEGORY means any industry category listed in the NRDC Settlement Agreement (Natural Resources Defense Council v. Train, 8 ERC 2120 [D.D.C. 1976], modified 12 ERC 1833 [D.D.C. 1979])

FACILITY DISCHARGES AND RECEIVING WATERS

OUTFALL 001	
LONGITUDE	LATITUDE
35.0116	-85.3282

RECEIVING STREAM DISCHARGE ROUTE
Chattanooga Creek at mile 0.3 via storm sewer system

FLOW (MGD)	DISCHARGE SOURCE
0.7760	Noncontact cooling water and stormwater
0.7760	TOTAL DISCHARGE

STREAM LOW FLOW (CFS) *	7Q10	1Q10	30Q5
	0.00	NA	NA
(MGD)	0.00	NA	NA

STREAM USE CLASSIFICATIONS (WATER QUALITY)				
FISH & AQUATIC LIFE	RECREATION	IRRIGATION	LIVESTOCK & WILDLIFE	DOMESTIC WATER SUPPLY
X	X	X	X	
INDUSTRIAL	NAVIGATION			
X				

Treatment: No physical, chemical or biological treatment of Non-contact cooling water

3. FACILITY DISCHARGES AND RECEIVING STREAM INFORMATION

Receiving Waterbody: **Chattanooga Creek at mile 0.3 via storm sewer system**
Watershed Group: Tennessee River (Chattanooga Area - Nickajack)
Hydrocode: 06020001
Primary Outfall Latitude: 35.0116
Primary Outfall Longitude: -85.3282
Low Flow: 7Q10 = 0 MGD (0 CFS)
Low Flow Reference: USGS StreamStats
Stream Designated Uses:

Domestic Water Supply	*Industrial*	*Fish & Aquatic Life*	*Recreation*
	X	X	X
Livestock & Wildlife	*Irrigation*	*Navigation*	*Trout*
X	X		

Chattem Chemicals, Inc. (SUN-PHARMA, the permittee) discharges noncontact cooling water and unaffected stormwater from Outfall 001 to Chattanooga Creek at mile 0.3 via the Chattanooga storm sewer system. Process wastewater and industrial stormwater for this site is discharged to the Chattanooga sewer system; this discharge is overseen by Tennessee's pretreatment program. Appendix 4 summarizes facility discharges and the receiving stream information for the relevant outfall.

In this permit, no sufficient gage data is available to characterize the receiving stream. Thus, USGS Streamstats was used to delineate the critical low flow at the point of discharge. Streamstats estimates flow conditions based on geological survey data and the size of the drainage area above the point of discharge. When the drainage area to the receiving stream is outside the accepted drainage area range for Streamstats to run the model, a zero critical low flow (7Q10 = 0 MGD) is assumed based on the permit writer's Best Professional Judgment (BPJ).

The receiving stream has been largely channelized and covered, serving as part of Chattanooga's municipal separate storm sewer system (MS4). Appendix 4 shows the Streamstats output used for this estimation.

4. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

There are no EPA effluent guidelines for the discharges from this facility. Standards of performance are therefore established in accordance with existing state regulations using available treatability information.

5. PERMIT HISTORY

5.1. PREVIOUS PERMIT TERM REVIEW

Chattem Chemicals has been previosuly considered to have reasonable potential to discharge various pollutants including metals and toxics. The source of these pollutants has been traced to the wells used to source process water according to the permittee. Long-term average concentrations of metals and toxics in the effluent remain consistently low, supporting this assertion.

The division confirmed that the non-contact cooling water was not chlorinated and that there is no additional stormwater affected by industrial acivity contributing to these pollutants. The reasonable potential for all parameters has thus been reconsidered for this permit cycle. Sampling may be reduced but will still apply to demonstrate that this site is not discharging significant amounts of pollutants to Chattanooga's MS4.

Chattem Chemicals analyzes samples in their in-house laboratory. A review of the permittee's Discharge Monitoring Reports (DMRs) from March 2019 to February 2024 revealed possible detects for Mercury and Zinc due to the test used, but this is not considered reasonable potential. The permittee has reported the appropriate codes when data was not available. A summary of data reported on DMRs during the previous permit term is located in Appendix 2.

During the previous permit term, Division personnel from the Chattanooga Environmental Field Office performed a Compliance Evaluation Inspection (CEI) of the permittee's facility. The CEI was performed by Jennifer Innes on July 28 of 2022, and the permittee was found to be in compliance. The inspection report described no further discrepancies with the terms of the permit.

5.2. PERMIT TIMELINE

Date	Permit Activity
01-FEB-19	Permit Issued
27-DEC-21	Clarification received that this site has no relation to Chattem, Inc.
31-JUL-22	TN0002780 participation in DMR-QA study 42, 2022; exempt NCCW
29-NOV-23	Application Received
14-DEC-23	Application Deemed Incomplete
15-DEC-23	Application Received
04-JAN-24	Application Deemed Complete

Note: Due to the Department's retention procedures outlined in the Tennessee Department of State Records Disposition Authorization, the history outlined above may not represent a complete and comprehensive summary, but instead reflects the best information available at this time.

6. NEW PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

The proposed new permit limits have been selected by determining a technology-based limit and evaluating if that limit protects the water quality of the receiving stream. If the technology-based limit would cause violations of water quality, the water quality-based limit is chosen. The technology-based limit is determined from EPA effluent limitations guidelines if applicable (see Part 4 above) or from State of Tennessee maximum effluent limits for effluent limited segments per Rule 0400-40-05-.08. Note that in general, the term "anti-backsliding" refers to a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluents limits, permit conditions, or standards that are less stringent than those established in the previous permit.

a) Reasonable potential for various parameters was revaluated this permit cycle. This resulted in updated limits for Mercury, Aluminum, Zinc, Oil & Grease, TSS, BOD5, Ammonia, and Chlorine. Please refer below for the basis for each of these changes.

b) Language throughout the permit has been updated to reflect the eReporting Phase 2 requirements in 40 CFR § 127.

c) For comparison, this rationale contains the previous permit limits and effluent monitoring requirements in Appendix 1.

6.1. FLOW

Monitoring of flow quantifies the load of pollutants to the stream. Flow shall be reported in million gallons per day (MGD) and monitored at the time of sample collection.

6.2. METALS AND TOXICS

Effluent permit limits for metals and toxics were calculated as shown in Appendix 3.

6.2.1. Mercury

The limit for the permit was the instream water quality criteria of 0.00005 mg/L as a monthly average concentration and 0.0001 mg/L daily maximum. The site is no longer considered to have reasonable potential to discharge this pollutant above allowable values and the limit is thus being changed in the new issuance. The permittee must still monitor for this parameter on a “Report Only” basis, semi-annually.

6.2.2. Aluminum

The limits for the permit are the instream water quality criteria of 0.087 mg/L as a monthly average concentration and 0.750 mg/L as a daily maximum concentration. Aluminum was detected in the effluent but there have been no near exceedances for this parameter. This limit will remain on a semi-annual basis.

6.2.3. Zinc

The limit from the previous permit is more restrictive than the instream water quality criteria of 0.475 mg/L as a monthly average concentration. Therefore, previous permit limits of 0.3 mg/L daily maximum and 0.05 mg/L monthly average will be retained in the new permit.

6.3. OIL AND GREASE

The Division had determined that an oil and grease limitation was needed for this facility based on the potential of contamination from spills, leaks, and other

activities present at the site. Technology-based limits were set up to address this. The permittee has demonstrated values well below the imposed limit, but as this a common contaminant expected in stormwater there is still potential for it to be discharged and therefore the limit will be retained.

According to the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 0400-40-03-.03(3)(c)], there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life in the receiving stream.

Considering a sample measurement frequency of over once per month only a daily maximum concentration of 10 mg/L for oil and grease will be retained.

6.4. TOTAL SUSPENDED SOLIDS (TSS) AND BOD5

Total Suspended Solids is a general indicator of the quality of a wastewater and will be limited in this permit. The State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 0400-40-03-.03(3)(c)] state there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life in the receiving stream.

The reasonable potential for TSS and BOD5 are being reconsidered for this permit cycle. Stormwater discharged through this permit is not affected by industrial activity and is thus not expected to contribute to these parameters. DMR values also support this, containing only minimal amounts of solids and biological material. The limits are being retained but frequency for TSS and BOD5 are being reduced to semi-annually this permit cycle. There may be reduced potential, but this limit will continue to track levels for these pollutants going into the MS4 system. Since there is no average being taken, only the daily maximum limits are being applied.

BOD5 and other pollutants cause demand for dissolved oxygen (DO) levels in the effluent and receiving stream. This must be additionally considered since the receiving stream is impacted by low DO levels. However, the permittee has demonstrated through sufficiently high DO levels that the discharge is not expected to negatively affect the stream's designated uses. Limits for DO will continue to apply and will help to show the wastewater is being properly treated.

6.5. PH

According to the State of Tennessee Water Quality Standards [Chapter 0400-40-03-.03(3) (b)], the pH for the protection of Fish and Aquatic Life shall not fluctuate more than 1.0 unit over a period of 24 hours and shall not be outside the following ranges: 6.0 – 9.0 standard units (SU) in wadeable streams and 6.5 – 9.0 SU in larger rivers, lakes, reservoirs, and wetlands

6.6. AMMONIA (NH_3-N)

To assess ammonia toxicity impacts, the state utilizes Tennessee Rules, Chapter 0400-40-03-.03-3(3)(j), dated September 11, 2019, to derive allowable instream protection values protective of chronic and acute exposures to a continuous discharge. A mass balance equation with the treatment facility, stream flows, and these allowable values determines the monthly average and daily maximum permit limits.

The temperature used in calculations is determined based on measured ambient instream temperature or is estimated according to Tennessee's Three Grand Divisions as follows: East (winter 15°C, summer 25°C), Middle (winter 17°C, summer 27°C), and West (winter 20°C, summer 30°C). A pH value of 8 (instead of historically used 7.5) is used because ambient monitoring in West Tennessee showed that pH often exceeds 7.5 and is sometimes as high as 8, and because this assumption is more conservative.

Using temperature and pH values, the criterion continuous concentration (CCC) and criterion maximum concentration (CMC) values are calculated using the following equations:

$$CCC = 0.8876 * \left(\frac{0.0278}{1 + 10^{7.688-pH}} + \frac{1.1994}{1 + 10^{pH-7.688}}\right) * \left(2.126 * 10^{0.028*\left(20-MAX(T,7)\right)}\right)$$

and

$$CMC = MIN\left\{\begin{array}{c}\left(\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}\right), \\ \left(0.7249 * \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}}\right) * \left(23.12 * 10^{0.036*(20-T)}\right)\right)\end{array}\right\}$$

The determined CCC and CMC values are then used in the mass balance equation as follows:

$$CCC = \frac{Q_S C_S + Q_d C_d}{Q_S + Q_d} \quad \text{or} \quad C_d = \frac{CCC(Q_S + Q_d) - (Q_S C_S)}{Q_d}$$

where:

CCC	=	Criteria continuous concentration (mg/L)
Q_S	=	7Q10 flow of receiving stream (MGD)
Q_d	=	Average flow of facility (MGD)
C_S	=	Assumed/Measured instream NH_3 (mg/L)
C_d	=	Allowable facility discharge of NH_3 (mg/L)

See below for calculations:

CCC Calculation: Chronic Limits

	Winter		Summer
Temp (°C)=	15	Temp (°C)=	25
pH=	8	pH=	8
MAX Expression	15.0000	MAX Expression	25.0000
Winter CCC=	**1.07**	Summer CCC=	**0.56**

CCC - Continuous Chronic Criterion Allowable instream NH3 concentration [mg/l]

$$CCC = \frac{(\text{Critical Low Flow [MGD]} * \text{Background Ammonia [mg/L]}) + (\text{Design Flow [MGD]} * \textbf{Effluent Concentration [mg/L]})}{(\text{Critical Low Flow [MGD]} + \text{Design Flow [MGD]})}$$

where:	0	Critical Low Flow [MGD] (7Q10 value)
	0.3869	Background Ammonia Concentration [mg/L] *
	0.776	WWTP Design Flow or long-term average flow [MGD]

Therefore, the Allowable **Effluent Concentrations** and corresponding **Amounts** in winter and summer are:

Winter		Summer	
1.07	Concentration [mg/L]	**0.563**	Concentration [mg/L]
6.9	Amount [lb/day]	**3.6**	Amount [lb/day]

* In the absence of measured data, an assumed background concentration of 0.1 mg/L is used based on an Agreed Wasteload Allocation Modeling Methodology between the EPA and State of TN

CMC Calculation: Acute Limits

Winter		Summer	
Temp (°C)=	15	Temp (°C)=	25
pH=	8	pH=	8
MAX Expression	15.0000	MAX Expression	25.0000
Winter CMC=	**5.62**	Summer CMC=	**2.58**

CMC - Continuous Maximum Criterion Allowable instream NH3 concentration [mg/l]

$$CMC = \frac{(\text{Critical Low Flow [MGD]} * \text{Background Ammonia [mg/L]}) + (\text{Design Flow [MGD]} * \textbf{Effluent Concentration [mg/L]})}{(\text{Critical Low Flow [MGD]} + \text{Design Flow [MGD]})}$$

where:	0	Critical Low Flow [MGD] (7Q10 value)
	0.3869	Background Ammonia Concentration [mg/L]
	0.776	WWTP Design Flow or long-term average flow [MGD]

Therefore, the Allowable **Effluent Concentrations** and corresponding **Amounts** in winter and summer are:

Winter		Summer	
5.62	Concentration [mg/L]	**2.580**	Concentration [mg/L]
36.3	Amount [lb/day]	**16.7**	Amount [lb/day]

* In the absence of measured data, an assumed background concentration of 0.1 mg/L is used based on an Agreed Wasteload Allocation Modeling Methodology between the EPA and State of TN

The calculated acute and chronic toxicity values above are compared to ammonia limits previously imposed to prevent ammonia toxicity or calculated to protect ambient dissolved oxygen levels.

This permit considers that ammonia may be coming from the facility's well water source since the nature of the business does not contribute additional biological material. This permit also considers this site discharges to an MS4 rather than directly to ambient waters. The previous limits for ammonia (1.2 mg/L monthly average, 2.4 mg/L daily max.) will continue to apply, in combination with sufficiently high DO this will be considered protective of the receiving stream.

6.7. CHLORINATION

The total residual chlorine (TRC) limit was derived using the mass balance formula and the EPA acute instream protection value of 0.019 mg/L for fish and aquatic life. For this permitting cycle, the division confirmed the well water used for this site is not chlorinated. The permittee continues to discharge water with no detectable values for chlorine according to their DMRs. Therefore, there is no reasonable potential for chlorine to be discharged, and this limit is being removed from this reissuance.

6.8. EFFLUENT TEMPERATURE

Temperature will be limited according to the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 0400-40-03-.03(3)(e)].

It is recognized that the temperature of the cooling water discharge will be greater than the temperature of the water prior to its use for cooling or other purposes. This discharge must not cause the temperature change in receiving stream to exceed 3°C relative to an upstream control point. Also, this discharge must not cause the temperature of receiving stream to exceed 30.5°C (except as a result of natural causes), and this discharge must not cause the maximum rate of temperature change in receiving stream to exceed 2°C per hour (except as a result of natural causes).

Temperature is a parameter of concern for facilities operating cooling water units, but the permittee has not demonstrated elevated temperatures or high variabilities. Temperature will remain as a "Report Only" limit.

7. OTHER PERMIT REQUIREMENTS AND CONDITIONS

7.1. PERMIT TERM

In order to meet the target reissuance date for the Tennessee River (Chattanooga Area - Nickajack) watershed and following the directives for the Watershed Management Program initiated in January 1996, the permit will be issued to expire in 2029.

7.2. ELECTRONIC REPORTING

The NPDES Electronic Reporting Rule (eRule), which became effective on December 21, 2016, replaces most paper-based reporting requirements with electronic reporting requirements. NetDMR allows NPDES permittees to submit DMRs electronically to EPA through a secure internet application and has been approved by Tennessee as the official electronic reporting tool for DMRs. The permittee has been reporting electronically via NetDMR since July of 2019.

Monitoring results shall be recorded monthly and submitted monthly using Discharge Monitoring Reports (DMRs) based on the effluent limits in **section 1.1** of the permit. DMRs and DMR attachments, including laboratory data and overflow reports, shall be submitted electronically in NetDMR or other electronic reporting tool approved by the State, no later than the 15th of the month following the end of the monitoring period. All NPDES program reports must be signed and certified by a responsible official or a duly authorized representative, as defined in 40 CFR § 122.22.

According to 40 CFR § 127.15, states have the flexibility to grant temporary or episodic waivers from electronic reporting to NPDES permittees who are unable

to meet the electronic reporting requirements. To obtain an electronic reporting waiver, an electronic reporting waiver request must be submitted by email to DWRwater.compliance@tn.gov or by mail to the following address:

Division of Water Resources
Compliance and Enforcement Unit – NetDMR Waivers
William R. Snodgrass Tennessee Tower
500 James Robertson Pkwy, 9th Floor
Nashville, Tennessee 37243

For contact and training information about NetDMR electronic reporting, visit the Division's website here.

The permit language has been modified to accommodate the implementation of the MyTDEC Forms electronic reporting tool. For more information, visit EPA's website on eReporting requirements.

7.3. ANTIDEGRADATION STATEMENT / WATER QUALITY STATUS

Tennessee's Antidegradation Statement is found in the Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03-.06. It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act.

Stream determinations for this permit action are associated with the waterbody segment identified by the Division as segment ID# TN060200011244_1000.

The Division has made a water quality assessment of the receiving waters associated with the subject discharge and has found the receiving stream to be neither an exceptional nor outstanding national resource water. Additionally, this water partially supports designated uses due to E.coli and low DO from municipal sources, and from siltation contaminated with dioxin, Polychlorinated Biphenyls (PCBs), and creosote from human activity.

APPENDIX 1 – PREVIOUS PERMIT LIMITS

External Outfall 001, Monitoring: Effluent Gross, All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00010	Temperature, water deg. C	Report	-	deg C	Grab	Five Per Week	Daily Maximum
00300	Oxygen, dissolved (DO)	>=	5.0	mg/L	Grab	Three Per Week	Minimum
00310	BOD, 5-day, 20 C	<=	10	mg/L	Composite	Weekly	Monthly Average
00310	BOD, 5-day, 20 C	<=	20	mg/L	Composite	Weekly	Daily Maximum
00400	pH	>=	6.0	SU	Grab	Five Per Week	Minimum
00400	pH	<=	9.0	SU	Grab	Five Per Week	Maximum
00530	Total Suspended Solids (TSS)	<=	15	mg/L	Grab	Weekly	Monthly Average
00530	Total Suspended Solids (TSS)	<=	25	mg/L	Grab	Weekly	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	1.2	mg/L	Composite	Three Per Week	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.4	mg/L	Composite	Three Per Week	Daily Maximum
01092	Zinc, total (as Zn)	<=	0.05	mg/L	Composite	Monthly	Monthly Average
01092	Zinc, total (as Zn)	<=	0.3	mg/L	Composite	Monthly	Daily Maximum
01105	Aluminum, total (as Al)	<=	0.087	mg/L	Composite	Quarterly	Monthly Average
01105	Aluminum, total (as Al)	<=	0.75	mg/L	Composite	Quarterly	Daily Maximum
03582	Oil and grease	<=	10	mg/L	Grab	Quarterly	Monthly Average
03582	Oil and grease	<=	15	mg/L	Grab	Quarterly	Daily Maximum
50050	Flow	Report	-	MGD	Recorder	Continuous	Monthly Average
50050	Flow	Report	-	MGD	Recorder	Continuous	Daily Maximum
50060	Chlorine, total residual (TRC)	Report	-	mg/L	Grab	Quarterly	Monthly Average

50060	Chlorine, total residual (TRC)	Report	-	mg/L	Grab	Quarterly	Daily Maximum
71900	Mercury, total (as Hg)	<=	0.00005	mg/L	Composite	Quarterly	Monthly Average
71900	Mercury, total (as Hg)	<=	0.0001	mg/L	Composite	Quarterly	Daily Maximum

APPENDIX 2 – DMR SUMMARY

Date	Flow, Effluent		BOD 5, Effluent		DO, Effluent	pH, Effluent	
	Monthly or total (MGD)	Weekly or daily (MGD)	Monthly Average (mg/L)	Daily max. (mg/L)	Minimum (mg/L)	Minimum (SU)	Daily max. (SU)
01/31/2024	0.288	0.304	2	2	7.8	7.5	8.2
12/31/2023	0.289	0.303	2	2	8	7.5	7.9
11/30/2023	0.291	0.337	2	2	7.4	7.5	7.9
10/31/2023	0.294	0.302	2	2	7.2	6.9	7.9
09/30/2023	0.307	0.588	2	2	7.7	7.7	7.9
08/31/2023	0.288	0.295	2	2	7.4	7.3	8.3
07/31/2023	0.292	0.295	2	2	8.4	7.7	7.9
06/30/2023	0.295	0.301	3.5	8	7.6	7.7	7.9
05/31/2023	0.24	0.3	2	2	8.2	7.7	7.9
04/30/2023	0.298	0.301	2	2	8	7.7	7.9
03/31/2023	0.314	0.427	2	2	7.4	7.1	7.9
02/28/2023	0.322	0.469	2	2	7.8	7.7	7.9
01/31/2023	0.503	0.649	3	6	8	7.7	7.9
12/31/2022	0.497	0.516	2	2	8.4	7.7	7.9
11/30/2022	0.5	0.534	< 2	< 2	8.2	7.7	8
10/31/2022	0.5	0.507	2	2	8.1	7.6	7.9
09/30/2022	0.495	0.528	0.5	1	8.1	7.8	7.9
08/31/2022	0.447	0.599	2.5	4	7.9	7.7	7.9
07/31/2022	0.499	0.506	2	2	7.5	7.7	7.9
06/30/2022	0.501	0.581	< 2	< 2	7	7.8	7.9
05/31/2022	0.5	0.512	2	2	7.7	7.1	7.9
04/30/2022	0.483	0.491	2	2	7.7	7.6	7.9
03/31/2022	0.486	0.494	< 2	< 2	7.6	7.7	7.9
02/28/2022	0.486	0.496	2	2	7.7	7.7	7.9
01/31/2022	0.482	0.607	2	2	7.7	7.7	7.8
12/31/2021	0.484	0.499	2	2	7.9	7.5	7.9
11/30/2021	0.483	0.499	2	2	7	7.6	7.9
10/31/2021	0.48	0.487	2	2	7	7.7	7.9
09/30/2021	0.477	0.506	2.2	3	7.5	7.7	7.9
08/31/2021	0.482	0.491	2	2	7.2	7.7	7.9
07/31/2021	0.502	0.507	2	2	7.6	7.7	7.9
06/30/2021	0.496	0.512	2	2	7.6	7.6	7.9
05/31/2021	0.489	0.529	2	2	8	7.6	7.9
04/30/2021	0.51	0.518	2	2	7.9	7.7	7.9
03/31/2021	0.512	0.534	3	6	8.3	7.6	7.9

02/28/2021	0.513	0.524	2	2	8.2	7.6	7.9
01/31/2021	0.517	0.607	2	2	8.2	7.5	7.8
12/31/2020	0.512	0.57	2	2	8.5	7.7	7.9
11/30/2020	0.51	0.524	2	2	8.2	7.2	7.9
10/31/2020	0.509	0.604	2	2	8	7.2	7.8
09/30/2020	0.504	0.572	2.2	3	7.4	7.3	7.8
08/31/2020	0.421	0.511	2	2	7.7	7.4	7.8
07/31/2020	0.504	0.518	2	2	7.1	7.6	7.9
06/30/2020	0.542	0.835	2.4	3	7.5	7.4	7.8
05/31/2020	0.564	0.816	2	2	7.7	7.6	7.9
04/30/2020	0.633	0.761	2.8	4	7.4	7.6	7.9
03/31/2020	0.605	0.656	5	6	8.4	7.5	7.9
02/29/2020	0.619	0.761	3	4	8.4	7.6	7.9
01/31/2020	0.557	0.607	3	4	8.2	7.5	7.8
12/31/2019	0.569	0.656	3	6	7.9	7.5	7.8
11/30/2019	0.532	0.656	2	3	8	7.5	7.9
10/31/2019	0.478	0.513	2	3	7.7	7.6	7.9
09/30/2019	0.482	0.513	2.3	3	8.2	7.5	7.8
08/31/2019	0.428	0.559	2	2	7.4	7.4	7.9
07/31/2019	0.475	0.513	2	2	7.6	7.2	7.8
06/30/2019	0.598	0.656	2	2	7.1	7.4	8.3
05/31/2019	0.491	0.513	2.7	4	7.3	7.3	7.8
04/30/2019	0.53	0.559	3.2	4	7.7	7.6	7.7
03/31/2019	0.393	0.427	2	3	7.9	7.5	7.8
Std. dev.	**0.097955904**	**0.126597225**	**0.586955053**	**1.371320342**	**0.393147519**	**0.189974723**	**0.099985875**
Min:	**0.24**	**0.29**	**0.5**	**1**	**7**	**6.9**	**7.7**
Max:	**0.633**	**0.835**	**5**	**8**	**8.5**	**7.8**	**8.3**
Average:	**0.453237395**	**0.5126444**	**2.209948391**	**2.752056277**	**7.645922976**	**7.423650392**	**7.777777554**
Permit limit:			**10**	**20**	**5**	**6**	**9**
Ratio of long term average to limit			**22%**	**14%**	**153%**	**81%**	**86%**

Date	TSS, Effluent		Temperature, Effluent	Ammonia, Effluent		Zinc, Effluent	
	Monthly Average (mg/L)	Daily max. (mg/L)	Daily max. (deg C)	Monthly average (mg/L)	Daily max. (mg/L)	Monthly average (mg/L)	Daily max. (mg/L)
01/31/2024	2	4	23	0.54	0.8	0.0075	0.0075
12/31/2023	1	3	25	0.42	0.48	0.008	0.008
11/30/2023	3	5	24	0.37	0.62	<= .02	<= .02
10/31/2023	2	4	25	0.32	0.4	0.02	0.02
09/30/2023	0	1	26	0.4	0.53	0.017	0.017
08/31/2023	1	1	25	0.43	0.59	0.007	0.007
07/31/2023	1	2	26	0.4	0.53	0.016	0.016
06/30/2023	1	3	26	0.34	0.43	0.0297	0.0297
05/31/2023	1	4	26	0.37	0.53	NODI 3	NODI 3
04/30/2023	3	8	24	0.28	0.34	0.122	0.122
03/31/2023	3.2	11	23	0.37	0.5	0.0075	0.0075
02/28/2023	2	4	26	0.37	0.5	<= .0375	<= .0375
01/31/2023	2	7	22	0.4	0.59	-	-
12/31/2022	1	2	21	0.41	0.53	0.0148	0.0148
11/30/2022	3	5	25	0.41	0.46	0.013	0.013
10/31/2022	1	2	21	0.42	0.46	0.0302	0.0302
09/30/2022	0.5	1	25	0.32	0.43	0.004	0.004
08/31/2022	1	1	26	0.3	0.8	0.0334	0.0334
07/31/2022	1	2	28	0.2	0.38	0.038	0.038
06/30/2022	0	1	23	0.3	0.8	0.035	0.035
05/31/2022	1	2	25	0.39	0.74	0.05	0.05
04/30/2022	1	2	26	0.3	0.4	0.0131	0.0131
03/31/2022	0.6	2	26	0.31	0.48	0.004	0.004
02/28/2022	0.75	1	25	0.4	0.7	0.004	0.004
01/31/2022	1	2	23	0.4	0.8	0.009	0.009
12/31/2021	1	3	24	0.37	0.62	0.0047	0.0047
11/30/2021	0	1	26	0.4	0.5	0.006	0.006
10/31/2021	2	4	30	0.4	0.6	0.005	0.005
09/30/2021	1	2	25	0.5	0.7	0.0125	0.0125
08/31/2021	1	1	29	0.6	0.9	0.0073	0.0073
07/31/2021	1	1	27	0.59	1.1	0.0059	0.0059
06/30/2021	1	2	29	0.5	0.9	-	-
05/31/2021	1	4	25	0.5	0.7	0.0043	0.0043
04/30/2021	2	4	24	0.5	1	0.0056	0.0056
03/31/2021	1	2	22	0.6	0.8	0.0075	0.0075
02/28/2021	2	3	21	0.5	0.7	0.0076	0.0076
01/31/2021	1	2	19	0.4	0.9	0.207	0.207
12/31/2020	1	1	19	0.6	1	0.038	0.038

11/30/2020	1	2	23	0.4	0.9	0.005	0.005
10/31/2020	0	1	25	0.5	0.8	0.0042	0.0042
09/30/2020	1	3	24	0.5	1.3	0.0044	0.0044
08/31/2020	2	6	25	0.9	2.2	0.0068	0.0068
07/31/2020	1	2	26	0.5	2.4	0.0109	0.0109
06/30/2020	2	3	22	0.8	2	0.007	0.007
05/31/2020	1	2	25	0.3	0.7	0.02	0.02
04/30/2020	2	4	23	0.5	1.7	< .02	< .02
03/31/2020	3	6	24	0.3	0.7	< .02	< .02
02/29/2020	0	0	24	0.4	0.7	0.02	0.02
01/31/2020	1	2	22	0.5	1.1	< .02	< .02
12/31/2019	1	2	23	0.4	1.1	0.023	0.023
11/30/2019	1	1	25	0.5	1.4	0.018	0.018
10/31/2019	1	1	23	0.1	0.3	0.004	0.004
09/30/2019	0.3	1	25	0.2	0.5	0.022	0.022
08/31/2019	2	4	25	0.6	1.5	0.0332	0.0345
07/31/2019	1	5	26	0.2	0.4	0.11	0.11
06/30/2019	0	1	28	0.2	0.3	0.0383	0.0383
05/31/2019	2	7	31	0.1	0.4	0.004	0.004
04/30/2019	2	4	22	0.2	0.3	< .01	< .01
03/31/2019	4	6	21	0.2	0.5	0.019	0.019
Std. dev.	**0.86907437**	**2.08647785**	**2.39608909**	**0.146761256**	**0.449204245**	**0.03525079**	**0.03525903**
Min:	**0**	**0**	**19**	**0.1**	**0.3**	**0.004**	**0.004**
Max:	**4**	**11**	**31**	**0.9**	**2.4**	**0.207**	**0.207**
Average:	**1.3368107**	**3.01724568**	**24.2285094**	**0.404463891**	**0.783696843**	**0.026238694**	**0.026263378**
Permit limit:	**15**	**25**		**1.2**	**2.4**	**0.05**	**0.3**
Ratio of long term average to limit	**9%**	**12%**		**34%**	**33%**	**52%**	**9%**

Date	Aluminum, Effluent		TRC, Effluent		Mercury, Effluent		Oil & Grease, Effluent	
	Monthly average (mg/L)	Daily max. (mg/L)	Monthly average(mg/L)	Daily max. (mg/L)	Monthly average (mg/L)	Daily max. (mg/L)	Monthly average (mg/L)	Daily max. (mg/L)
01/31/2024								
12/31/2023	0.0375	0.0375	0	0	<= .00000001	<= .00000001	2	2
11/30/2023								
10/31/2023								
09/30/2023	0.048	0.048	0	0	Lab Error	Lab Error	Lab Error	Lab Error
08/31/2023								
07/31/2023								
06/30/2023	0.0375	0.0375	0	0	<= .00000001	<= .00000001	1	1
05/31/2023								
04/30/2023								
03/31/2023	0.0375	0.0375	0	0	0.00000001	0.00000001	2	2
02/28/2023								
01/31/2023								
12/31/2022	0.0375	0.0375	0	0	0.00000001	0.00000001	1	1
11/30/2022								
10/31/2022								
09/30/2022	0.0375	0.0375	0	0	0	0	2	2
08/31/2022								
07/31/2022								
06/30/2022	0.0375	0.0375	0	0	0.00001	0.00001	2	2
05/31/2022								
04/30/2022								
03/31/2022	0.0375	0.0375	0	0	0.00001	0.00001	1	1
02/28/2022								
01/31/2022								
12/31/2021	0.0375	0.0375	0	0	0.000005	0.000005	1	1
11/30/2021								
10/31/2021								
09/30/2021	0.0375	0.0375	0	0	0.00000622	0.00000622	2	2
08/31/2021								
07/31/2021								
06/30/2021	0.043	0.0485	0	0	0.00000828	0.00000828	2	2
05/31/2021								
04/30/2021								
03/31/2021	0.0375	0.0375	0	0	0.00000834	0.00000834	1	1
02/28/2021								
01/31/2021								

12/31/2020	0.0375	0.0375	0	0	0.00001	0.00001	2	2
11/30/2020								
10/31/2020								
09/30/2020	0.0375	0.0375	0	0	0.00000774	0.00000774	1	1
08/31/2020								
07/31/2020								
06/30/2020	0.039	0.039	-	-	< .0000006	< .0000006	2	2
05/31/2020								
04/30/2020								
03/31/2020	0.16	0.16	0	0	< .0002	< .0002	2	2
02/29/2020								
01/31/2020								
12/31/2019	0.0375	0.0375	0	0	0.0000119	0.0000119	5	5
11/30/2019								
10/31/2019								
09/30/2019	0.0375	0.0375	0	0	0.0000128	0.0000128	2	2
08/31/2019								
07/31/2019								
06/30/2019	0.0375	0.0375	-	-	0.000024	0.000024	1	1
05/31/2019								
04/30/2019								
03/31/2019	0.0375	0.0375	0	0	0.0000258	0.0000258	2	2
Std. dev.	**0.027308183**	**0.027319973**	**0**	**0**	**7.56055E-06**	**7.56055E-06**	**0.917662935**	**0.917662935**
Min:	**0.0375**	**0.0375**	**0**	**0**	**0**	**0**	**1**	**1**
Max:	**0.16**	**0.16**	**0**	**0**	**0.0000258**	**0.0000258**	**5**	**5**
Average:	**0.048469921**	**0.048709564**	**0**	**0**	**9.6367E-06**	**9.6367E-06**	**1.85989377**	**1.85989377**
Permit limit:	**0.087**	**0.75**			**0.0005**	**0.001**		
Ratio of long term average to limit	**56%**	**6%**			**2%**	**1%**		

APPENDIX 3 – METALS & TOXICS CALCULATIONS

The following procedure is used to calculate the allowable instream concentrations for pass-through guidelines and permit limitations:

a) The most recent background conditions of the receiving stream segment are compiled. This information includes:

- 7Q10 of receiving stream (0 MGD, USGS)
- Calcium hardness (25 mg/L, default)
- Total suspended solids (10 mg/L, default)
- Background metals concentrations (½ water quality criteria)
- Other dischargers impacting this segment (none)
- Downstream water supplies, if applicable

b) The chronic water quality criteria are converted from total recoverable metal at lab conditions to dissolved lab conditions for the following metals: cadmium, copper, trivalent chromium, lead, nickel, and zinc. Then translators are used to convert the dissolved lab conditions to total recoverable metal at ambient conditions.

c) The acute water quality criteria are converted from total recoverable metal at lab conditions to dissolved lab conditions for the following metals: cadmium, copper, trivalent chromium, lead, nickel, zinc, and silver. Then translators are used to convert the dissolved lab conditions to total recoverable metal at ambient conditions for the following metals: cadmium, copper, lead, nickel, and silver.

d) The resulting allowable trivalent and hexavalent chromium concentrations are compared with the effluent values characterized as total chromium on permit applications. If reported total chromium exceeds an allowable trivalent or hexavalent chromium value, then the calculated value will be applied in the permit for that form of chromium unless additional effluent characterization is received to demonstrate reasonable potential does not exist to violate the applicable state water quality criteria for chromium.

e) A standard mass balance equation determines the total allowable concentration (permit limit) for each pollutant. This equation also includes a percent stream allocation of no more than 90%.

The following formulas are used to evaluate water quality protection:

$$Cm = \frac{QsCs + QwCw}{Qs + Qw}$$

Where:

Cm = resulting instream concentration after mixing
Cw = concentration of pollutant in wastewater
Cs = stream background concentration
Qw = wastewater flow
Qs = stream low flow

To protect water quality:

$$Cw \leq \frac{(S_A)[Cm(Qs + Qw) - QsCs]}{Qw}$$

Where: S_A = the percent "Stream Allocation"

Calculations for this permit have been done using a standardized spreadsheet, titled "Water Quality Based Effluent Calculations". Division policy dictates the following procedures in establishing these permit limits:

1) The critical low flow values are determined using USGS data:

   Fish and Aquatic Life protection:
   7Q10 – Low flow under natural conditions
   1Q10 – Regulated low flow conditions

   Other than Fish and Aquatic Life protection:
   30Q5 – Low flow under natural conditions

2) Fish and Aquatic Life water quality criteria for certain metals are developed through application of hardness dependent equations. These criteria are combined with dissolved fraction methodologies in order to formulate the final effluent concentrations.

3) For criteria that are hardness dependent, chronic and acute concentrations are based on a hardness of 25 mg/L and Total Suspended Solids (TSS) of 10 mg/L unless available ambient monitoring information substantiates a different value. Minimum and maximum limits on the hardness value used for water quality calculations are 25 mg/L and 400 mg/L respectively. The minimum limit on the TSS value used for water quality calculations is 10 mg/L.

4) Background concentrations are determined from the Division database, results of sampling obtained from the permittee, and/or obtained from nearby stream sampling data. If this background data is not sufficient, one-half of the chronic "In-stream Allowable" water quality criteria for fish and aquatic life is used. If the measured background concentration is greater than the chronic "In-stream Allowable" water quality criteria, then the measured background concentration is used in lieu of the chronic "In-stream Allowable" water quality criteria for the purpose of calculating the appropriate effluent limitation (Cw). Under these circumstances, and in the event the "stream allocation" is less than 100%, the calculated chronic effluent limitation for fish and aquatic life should be equal to the chronic "In-stream Allowable" water quality criteria. These guidelines should be strictly followed where the industrial source water is not the receiving stream. Where the industrial source water is the receiving stream, and the measured background concentration is greater than the chronic "In-stream Allowable" water quality criteria, consideration may be given as to the degree to which the permittee should be required to meet the requirements of the water quality criteria in view of the nature and characteristics of the receiving stream.

The spreadsheet has 15 data columns, all of which may not be applicable to any particular characteristic constituent of the discharge. A description of each column is as follows:

Column 1: The "stream background" concentrations of the effluent characteristics.

Column 2: The "chronic" Fish and Aquatic Life water quality criteria. For cadmium, copper, trivalent chromium, lead, nickel, and zinc, this value represents the criteria for the dissolved form at laboratory conditions. The Criteria Continuous Concentration (CCC) is calculated using the equation:

$$CCC = (\exp\{m_C[\ln(stream\ hardness)] + b_C\}) * (CCF)$$

CCF = Chronic Conversion Factor

This equation and the appropriate coefficients for each metal are from Tennessee Rule 0400-40-03-.03 and the EPA guidance contained *in The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996). Values for other metals are in the total form and are not hardness dependent; no chronic criterion exists for silver. Published criteria are used for non-metal parameters.

Column 3: The "Acute" Fish and Aquatic Life water quality criteria. For cadmium, copper, trivalent chromium, lead, nickel, silver, and zinc, this value represents the

criteria for the dissolved form at laboratory conditions. The Criteria Maximum Concentration (CMC) is calculated using the equation:

$$CMC = (\exp\{m_A[\ln(stream\ hardness)] + b_A\}) * (ACF)$$

ACF = Acute Conversion Factor

This equation and the appropriate coefficients for each metal are from Tennessee Rule 0400-40-03-.03 and the EPA guidance contained in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996). Values for other metals are in the total form and are not hardness dependent. Published criteria are used for non-metal parameters.

Column 4: The "Fraction Dissolved" converts the value for dissolved metal at laboratory conditions (columns 2 & 3) to total recoverable metal at in-stream ambient conditions (columns 5 & 6). This factor is calculated using the linear partition coefficients found in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996) and the equation:

$$\frac{C_{\text{diss}}}{C_{\text{total}}} = \frac{1}{1 + \{[K_{\text{po}}][ss^{(1+a)}][10^{-6}]\}}$$

ss = in-stream suspended solids concentration (mg/L)

Linear partition coefficients for streams are used for unregulated (7Q10) receiving waters, and linear partition coefficients for lakes are used for regulated (1Q10) receiving waters. For those parameters not in the dissolved form in columns 2 & 3 (and all non-metal parameters), a Translator of 1 is used.

Column 5: The "Chronic" Fish and Aquatic Life water quality criteria at in-stream ambient conditions. This criteria is calculated by dividing the value in column 2 by the value in column 4.

Column 6: The "Acute" Fish and Aquatic Life water quality criteria at in-stream ambient conditions. This criteria is calculated by dividing the value in column 3 by the value in column 4.

Column 7: The "Chronic" Calculated Effluent Concentration for the protection of fish and aquatic life. *This is the chronic limit.*

Column 8: The "Acute" Calculated Effluent Concentration for the protection of fish and aquatic life. *This is the acute limit.*

Column 9: The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Organism Consumption (Recreation).

Column 10: The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Water and Organism Consumption. These criteria are only to be applied when the stream use classification for the receiving stream includes both “Recreation” and “Domestic Water Supply”.

Column 11: The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Domestic Water Supply.

Column 12: The Calculated Effluent Concentration associated with Organism Consumption.

Column 13: The Calculated Effluent Concentration associated with Water and Organism Consumption.

Column 14: The Calculated Effluent Concentration associated with Domestic Water Supply.

Column 15: The Effluent Limited criteria. This upper level of allowable pollutant loading is established if (a) the calculated water quality value is greater than accepted removal efficiency values, (b) the treatment facility is properly operated, *and* (c) full compliance with the pretreatment program is demonstrated. This upper level limit is based upon EPA's 40 POTW Survey on levels of metals that should be discharged from a POTW with a properly enforced pretreatment program and considering normal coincidental removals.

The most stringent water quality effluent concentration from Columns 7, 8, 12, 13, 14, and 15 is applied if the receiving stream is designated for domestic water supply. Otherwise, the most stringent effluent concentration is chosen from columns 7, 8, 12, and 15 only.

2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL 001

FACILITY:	PERMIT #:	DATE:	CALC BY:
Chattem Chemicals	TN0002780	3/20/2024	PDD

Stream (7Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0.00	**0.00**	**0.78**	**10**	**100**	**100**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Stream	Fish/Aqua. Life (F & AL) WQC			F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						Application data
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			
	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	
PARAMETER	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	ug/l
Copper (a,b)	1.316	8.956	13.439	0.348	25.764	38.663	**25.76**	**38.66**	N/A	N/A	N/A	**N/A**	N/A	N/A	
Chromium III	1.524	74.115	569.763	0.202	366.424	2816.923	**366.42**	**2816.92**	N/A	N/A	N/A	**N/A**	N/A	N/A	
Chromium VI	1.524	11.000	16.000	1.000	11.000	16.000	**11.00**	**16.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	
Chromium, Total	1.524	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	N/A	N/A	100.0	**N/A**	N/A	100.00	
Nickel (a,b)	1.563	52.007	468.236	0.432	120.296	1083.074	**120.30**	**1083.07**	4600.0	610.0	100.0	**4600.00**	610.00	100.00	
Cadmium (a,b)	0.211	0.718	1.801	0.252	2.845	7.134	**2.84**	**7.13**	N/A	N/A	5.0	**N/A**	N/A	5.00	
Lead (a,b)	0.913	2.517	64.581	0.184	13.685	351.174	**13.68**	**351.17**	N/A	N/A	5.0	**N/A**	N/A	5.00	
Mercury (T) (c)	0.036	0.770	1.400	1.000	0.770	1.400	**0.77**	**1.40**	0.051	0.05	2.0	**0.05**	0.05	2.00	**0.00960**
Silver (a,b,e)	1.608	N/A	3.217	1.000	N/A	3.217	**N/A**	**3.22**	N/A	N/A	N/A	**N/A**	N/A	N/A	
Zinc (a,b)	8.494	118.139	117.180	0.288	410.220	406.892	**410.22**	**406.89**	26000.0	7400.0	N/A	**26000.00**	7400.00	N/A	**26.2**
Cyanide (d)	2.600	5.200	22.000	1.000	5.200	22.000	**5.20**	**22.00**	140.0	140.0	200.0	**140.00**	140.00	200.00	
Toluene	0.000								15000.0	1300.0	1000.0	**15000.00**	1300.00	1000.00	
Benzene	0.000								510.0	22.0	5.0	**510.00**	22.00	5.00	
1,1,1 Trichloroethane	0.000								N/A	N/A	200.0	**N/A**	N/A	200.00	
Ethylbenzene	0.000								2100.0	530.0	700.0	**2100.00**	530.00	700.00	
Carbon Tetrachloride	0.000								16.0	2.3	5.0	**16.00**	2.30	5.00	
Chloroform	0.000								4700.0	57.0	N/A	**4700.00**	57.00	N/A	
Tetrachloroethylene	0.000								33.0	6.9	5.0	**33.00**	6.90	5.00	
Trichloroethylene	0.000								300.0	25.0	5.0	**300.00**	25.00	5.00	
1,2 trans Dichloroethylene	0.000								10000.0	140.0	100.0	**N/A**	140.00	100.00	
Methylene Chloride	0.000								5900.0	46.0	5.0	**5900.00**	46.00	N/A	
Total Phenols	0.000								860000.0	10000.0	N/A	**860000.00**	10000.00	N/A	
Naphthalene	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	
Total Phthalates	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	
Chlorine (T. Res.)	0.000	11.000	19.000	1.000	11.000	19.000	**11.00**	**19.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	

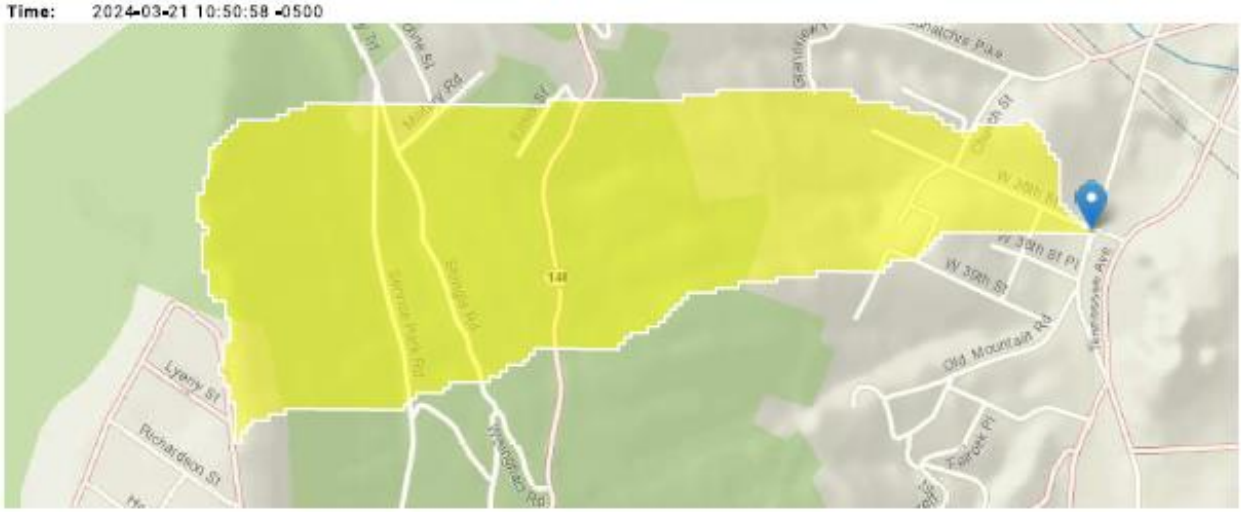
a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
d The criteria for this parameter is in the total form.
e Silver limit is daily max if column 8 is most stringent.
f When columns 7 or 8 result in a negative number, use results from columns 5 or 6, respectively.
g When columns 12, 13 or 14 result in a negative number, use results from columns 9, 10 or 11, respectively, as applicable.

* Domestic supply included in river use so pick from columns 7,8,12,13,14,15 or Domestic supply not included in river use so pick from columns 7, 8, 12 or 15.
** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

APPENDIX 4 – FACILITY DISCHARGES AND LOW FLOW DETERMINATION

StreamStats Report

Region ID: TN
Workspace ID: TN20240321155033370000
Clicked Point (Latitude, Longitude): 35.01123, -85.32828
Time: 2024-03-21 10:50:58 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.352	dimensionless
DRNAREA	Area that drains to a point on a stream	0.19	square miles
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	21.001	percent
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	65	days per log cycle
SOILPERM	Average Soil Permeability	1.475	inches per hour

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Central and East Regions 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.19	square miles	1.3	14441
RECESS	Recession Index	65	days per log cycle	32	175
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.352	dimensionless	2.056	2.46
SOILPERM	Average Soil Permeability	1.475	inches per hour	0.45	9.72
PERMGTE2IN	Percent permeability gte 2 in per hr	21.001	percent	2	100

APPENDIX 5 –
NEW PERMIT LIMITS

External Outfall 001, Monitoring: Effluent Gross, All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00010	Temperature, water deg. C	Report	-	deg C	Grab	Five Per Week	Daily Maximum
00300	Oxygen, dissolved (DO)	>=	5.0	mg/L	Grab	Three Per Week	Minimum
00310	BOD, 5-day, 20 C	<=	20	mg/L	Composite	Semiannual	Daily Maximum
00400	pH	>=	6.0	SU	Grab	Five Per Week	Minimum
00400	pH	<=	9.0	SU	Grab	Five Per Week	Maximum
00530	Total Suspended Solids (TSS)	<=	25	mg/L	Grab	Semiannual	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	1.2	mg/L	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.4	mg/L	Composite	Weekly	Daily Maximum
01092	Zinc, total (as Zn)	<=	0.05	mg/L	Composite	Monthly	Monthly Average
01092	Zinc, total (as Zn)	<=	0.3	mg/L	Composite	Monthly	Daily Maximum
01105	Aluminum, total (as Al)	Report	-	mg/L	Composite	Semiannual	Daily Maximum
03582	Oil and grease	<=	10	mg/L	Grab	Quarterly	Daily Maximum
50050	Flow	Report	-	MGD	Recorder	Continuous	Monthly Average
50050	Flow	Report	-	MGD	Recorder	Continuous	Daily Maximum
71900	Mercury, total (as Hg)	Report	-	mg/L	Composite	Semiannual	Daily Maximum