STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

January 26, 2026

Mr. Brent Mayo
Senior Site Manager
CTC Property LLC - Colossus Water Recycling Plant
e-copy: brent@colossusx.com
3231 Paul R. Lowry Rd.
Memphis, TN 38109

Subject: **State Operating Permit No. SOP-24025**
CTC Property LLC
Colossus Water Recycling Plant
Memphis, Shelby County, Tennessee

Dear Mr. Mayo:

In accordance with the provisions of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.), Sections 69-3-101 through 69-3-120, the Division of Water Resources hereby issues the enclosed State Operating Permit. The continuance and/or reissuance of this Permit is contingent upon your meeting the conditions and requirements as stated therein.

Please be advised that a petition for permit appeal may be filed, pursuant to T.C.A. Section 69-3-105, subsection (i), by the permit applicant or by any aggrieved person who participated in the public comment period or gave testimony at a formal public hearing whose appeal is based upon any of the issues that were provided to the commissioner in writing during the public comment period or in testimony at a formal public hearing on the permit application.

Additionally, for those permits for which the department gives public notice of a draft permit, any permit applicant or aggrieved person may base a permit appeal on any material change to conditions in the final permit from those in the draft, unless the material change has been subject to additional opportunity for public comment.

Any petition for permit appeal under this subsection (i) shall be filed with the technical secretary of the Water Resources Board within thirty (30) days after public notice of the commissioner's decision to issue or deny the permit. A copy of the filing should also be sent to TDEC's Office of General Counsel.

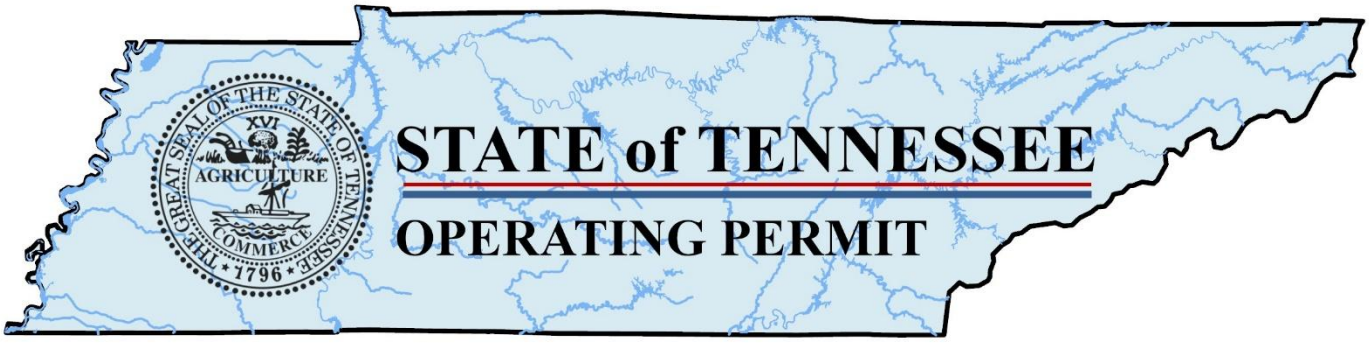
TDEC has activated an email address to accept appeals electronically. If you wish to file an appeal, you may do so by emailing the appeal and any attachments to TDEC.Appeals@tn.gov. If you file an appeal electronically, you do not have to send a paper copy. Electronic filing is encouraged, but not required.

If you have questions, please contact the Memphis EFO at 1-888-891-TDEC; or, at this office, please contact Mr. Wade Murphy at (615) 532-0666 or by E-mail at *wade.murphy@tn.gov*.

Sincerely,

Sarah Terpstra
Manager, Water-Based Systems

cc: Mr. Mark Carroll, P.E., CWRP Project Mgr/Engr/Ops Mgr, markcarroll@tesla.com
Mr. Randy Booker, Jr., Ph.D., P.E., Gresham Smith, randy.booker@greshamsmith.com
Mr. Ben Luke, Senior Project Engineer, Gresham Smith, ben.luke@greshamsmith.com
Mr. Scott Morgan, P.E., City of Memphis, Division of Public Works, scott.morgan@memphistn.gov
TDEC Office of External Affairs, katy.smith@tn.gov
EFO-Memphis-DWR, kyle.mabry@tn.gov; Joellyn.brazille@tn.gov
TDEC-DWR-Engineering Services Unit, angela.jones@tn.gov, timothy.hill@tn.gov
List of Public Participants
Permit File



State of Tennessee Operating Permit
Permit Number SOP-24025

Issued by
State of Tennessee
Department of Environment and Conservation
Division of Water Resources
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

In accordance with the provisions of Tennessee Code Annotated Section §69-3-108 and regulations promulgated pursuant thereto, permission is hereby granted to:

Permittee:	**CTC Property LLC** **Colossus Water Recycling Plant (CWRP)**
for the operation of:	a treated wastewater reuse system
from a facility located at:	3644 Riverport Rd, Memphis, Shelby County, Tennessee

This permit shall become effective on:	**February 1, 2026**
This permit shall expire on:	**January 31, 2031**
Issuance date:	**January 26, 2026**

for April Grippo
Director

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PART 1

1. GENERAL PERMIT REQUIREMENTS

CTC Property LLC, is authorized to operate a treated wastewater, restricted urban, non-potable, reuse system in Memphis, Shelby County, Tennessee. This permit is issued as a result of the application filed on 18-FEB-25, and the updated Recycled Water Management Plan (RWMP) received on 18-MAR-25, with the office of the Tennessee Division of Water Resources and in conformity with approved plans, specifications, and other data submitted to the Department in support of the above application, all of which are filed with and considered as part of this permit, together with the following named conditions and requirements. The system is comprised of a lift station with flow metering at the T.E. Maxson Wastewater Treatment Plant (WWTP), the Colossus Water Recycle Plant (CWRP) on Riverport Road (Paul Lowery Road) between T.E. Maxson WWTP and xAI, two storage tanks for recycled water, and a water supply distribution system to the xAI data center, and the TVA Allen Combined Cycle Plant.

The operation of this reuse system will be regulated by a contract with the City of Memphis, a Reclaimed Wastewater Management Plan, End User Agreements, and numeric and narrative conditions in this permit.

1.1. CONTRACT WITH CITY OF MEMPHIS

The permittee shall maintain a written agreement with the City of Memphis for the purchase of treated wastewater effluent from the T.E. Maxson Wastewater Treatment Plant and for the return of products and byproducts from the reclaimed wastewater treatment processes. The agreement shall, at a minimum, address the following factors:

- The volume and flow rate of water to be purchased;
- The characteristics of the water to be purchased;
- Surcharges or other remedies for volume and characteristics that do not meet contracted specifications;
- Ownership and maintenance responsibilities for the lift station, flow metering device(s) and related appurtenances located at the T.E. Maxson wastewater treatment plant for transfer of treated effluent to the CWRP;
- The return of CWRP waterborne pollutants, biosolids and sludges, and unused or off-specification reclaimed wastewater at the CWRP to the T.E. Maxson wastewater treatment plant.

This permit does not relieve the permittee from any requirements of the municipality or utility where wastewater from the reuse facility is disposed. The permittee must obtain approval for the connection from that municipality or utility and must comply with all their

requirements including pretreatment regulations, the exclusion of storm and other extraneous water, etc.

1.2. RECLAIMED WASTEWATER MANAGEMENT PLAN

The permittee shall operate in accordance with the Division approved Reclaimed Wastewater Management Plan (RWMP).

The End User Education plan implemented under the RWMP will encompass the need for each end user to maintain cross connection control measures in compliance with Memphis Light Gas and Water's (MLGW) Cross Connection Control program. As warranted, the standard specifications, plans and details for the reclaimed water distribution system will encompass cross connection control devices consistent with MLGW's cross connection control program.

The permittee shall maintain a copy of the most up-to-date RWMP on file at the CWRP. The permittee shall update the RWMP as needed throughout the permit to keep its content current. The permittee shall only submit updated copies to TDEC upon request by TDEC representatives except that the most updated copy shall be submitted with the next application for permit renewal.

1.3. END USER AGREEMENT CONDITIONS

The permittee shall maintain written agreements with the end users of the reclaimed wastewater. The permittee shall execute an agreement with each end user prior to the distribution of reclaimed water to that end user.

At a minimum, end user agreements shall encompass the following factors:

- End user control over rates of delivery of reclaimed water, including minimum and maximum delivery rates and any applicable conditions for determining the rates;
- Standards of water quality for the reclaimed water including the monitoring location and frequency of sampling and analyses used to determine the quality; and
- Acknowledgment by the end user of its responsibilities regarding the appropriate and permitted use of the reclaimed water including prohibition to redistribute reclaimed water to another person.

The permittee shall maintain a copy of the most up-to-date end user agreements on file at the CWRP. The permittee shall submit a copy of executed agreements to TDEC only upon request, in the format and timeline within a written request from the Division, and with confidential information redacted.

The permittee shall submit written notification to TDEC, to water.permits@tn.gov, of the date on which CTC Property LLC initiates supply of reclaimed water to end user(s) pursuant to the end user agreement(s). The permittee shall submit the notification within 30 days of the initial service date to the initial user.

The permittee shall supply end users with reclaimed water fit for use as defined by the end user(s) and as otherwise specified in this permit.

The permittee shall supply each end user with reclaimed wastewater via a dedicated, metered service. The permittee shall prohibit end users from supplying reclaimed wastewater to any other end user.

End user agreements shall restrict use of reclaimed water as cooling water supply and require that reclaimed water not used for cooling and any cooling system blowdown of reclaimed water be discharged either into the public sanitary sewer system or discharged 1) within the authority[1] of and 2) in compliance with terms and conditions of the end user's NPDES permit.

The permittee shall provide the Division with written notification of the date of cancellation of any end user agreement within 30 days of effective date of the cancellation or termination.

1.4. ADDITIONAL NARRATIVE CONDITIONS

This permit must be issued with an effective date, or administratively extended beyond its expiration date based on a complete application for renewal, prior to resale of reclaimed water to any end user, or prior to contracting for sale or use of reclaimed water with other end users who are not identified on the application that is the basis for this permit.

Reclaimed wastewater shall not be used, distributed, sold for any potable purpose.

Pipes conveying reclaimed wastewater shall be readily identifiable as carrying non-potable water. The permittee shall maintain provisions for pipes conveying reclaimed wastewater to be readily identified as non-potable water in its design standards for the reuse system components.

The permittee shall maintain cross connection control devices at the CWRP consistent with the Memphis Light Gas and Water cross connection program.

The operation of the wastewater system should be such that there is no contamination of and no wastewater discharge to any surface or subsurface stream. Any improper operation

[1] Authority stems from the discharge being identified and characterized in the application for a permit or permit modification.

resulting in a discharge to any waters must be reported in writing to the Division of Water Resources, Memphis Environmental Field Office within 5 days of the incident.

The reuse system must be operated in a manner preventing the creation of a public health hazard or a public/private nuisance.

The wastewater treatment plant shall be operated under the supervision of a TDEC-licensed, Grade IV wastewater treatment operator as established under Rule 0400-49-01 et. seq.

All monitoring conducted pursuant to this permit shall be representative of the water being sampled or measured and shall be conducted in compliance with all applicable quality control assurance procedures of the monitoring and/or measurement method.

Wastewater intended for reuse but that is not fit for use by the end user(s) shall be diverted back to treatment in the CWRP or into city sewer.

Note: Division reuse regulation, Rule § 0400-40-.06(10), distinguishes between reclaimed water supplied to end users and reclaimed water used by the permittee at its CWRP. The former is regulated by rule; the latter is not. Therefore, the permittee shall measure flow redirected for equipment washdown, screen wash and other such uses at the CRWP in a format sufficient to account for and to report flow balance in the reuse system and otherwise comply with the narrative conditions of this permit.

All pump/lift stations shall be inspected daily. The inspector shall note the date, time, and inspector's initials in a bound logbook. Alternately, the permittee may provide telemetering devices for any pump station to reduce the frequency of actual inspections.

Daily flow data collected at the tie-in/discharge point shall be reported quarterly to the Division of Water Resources, Memphis Environmental Field Office. Reports shall be submitted or postmarked no later than 15 days after the completion of the reporting period and shall be submitted electronically via MyTDEC Forms, if available, or to the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Memphis Environmental Field Office
8383 Wolf Lake Drive
Bartlett, Tennessee 38133

1.5. NUMERIC CONDITIONS

The permittee shall operate the CWRP to produce reclaimed water meeting the following effluent characteristics and monitoring frequencies:

EFFLUENT LIMITATIONS AND MONTITORING REQUIREMENTS

LIMITS

Restricted Urban Reuse			
Parameter	Daily Limit	Sample Type	Monitoring Frequency[1]
pH	6.0 - 9.0	Continuous or Grab	Weekly[2]
$CBOD_5$ or NH_3-N	30 mg/L $CBOD_5$ or 10 mg/L NH_3-N	Continuous or Grab	Weekly[2]
NTU or TSS	30 NTU[4] or 30 mg/L TSS	Continuous or Grab	Weekly[2]
E. coli	200 cfu/100 mL	Grab	Weekly[2,3]
Chlorine Residual	Minimum of 1 mg/L	Continuous or Grab	Weekly[2,3]
Influent Flow to the CWRP	Report Daily Average, MGD	Calculated	Weekly[2]
Effluent Flow, Each End User and the CWRP	Report Daily Average, MGD	Calculated	Weekly[2]

SAMPLING NOTES

[1]Weekly minimum may be increased in the permit for cause or by parties to an end user agreement.

[2]At a minimum, these parameters shall be sampled, measured, and reported at the CWRP pumping station at the specified frequency unless noted otherwise. More stringent requirements may be included in End-User Agreements.

[3]The Chlorine residual applies as a limit only upon failure to comply with the E. coli limits more than 10% of the time for the previous month after the CWRP start up is meeting delivery standards for use.

[4]Within seven days of turbidity exceeding 30 NTU for any period of time, the permittee shall conduct and report a TSS result. Only one TSS test is required in any seven-day period.

The permittee may collect more samples than specified as the monitoring frequency in the permit. Samples may not be collected at intervals of less than 12 hours.

1.6. 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 water. 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 water. The devices shall be installed and calibrated by a qualified source[2], and maintained to ensure that the accuracy of the measurements is consistent with accepted capability of that type of device. Calibration shall occur at manufacturer recommended intervals by a qualified source. 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.

1.7. SAMPLING FREQUENCY

The permittee should report "No Discharge" on Monitoring Reports (MORs) only if the reuse treatment plant does not distribute water to end users at any time during the monitoring period. If the reuse treatment facility distributes water at any time during the monitoring period, the permittee must provide at least one sampling result from the distributed water.

If the required monitoring frequency is once per month or 1/month, the monitoring period is one month. If reuse water distribution occurs during only one day in that period, the permittee must sample on that day and report the results of analyses accordingly.

1.8. TEST PROCEDURES

a) Instruments used for continuous monitoring shall be calibrated and maintained per manufacturer's recommendations by a qualified source. Otherwise, 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 for analyses of treated municipal wastewater.

b) Unless otherwise noted in the permit, all pollutant parameters shall be determined using sufficiently sensitive methods as required in state rule 0400-40-03-.05(8).

c) Where the analytical results are below the method detection limit (MDL), the permittee shall report the actual laboratory MDL and ML values. See **Section Reporting Less Than Detection; Reporting Significant Figures** below for instructions regarding reporting less than detection.

[2] 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.

1.9. RECORDING OF RESULTS

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

a) The date, exact place, and time of sampling or measurements;

b) The individual(s) who performed the sampling or measurements;

c) The date analyses were performed;

d) The individual(s) who performed the analyses;

e) The laboratory where the analyses were performed;

f) The analytical techniques or methods used; and

g) The results of such analyses.

For analyses that are performed on a continuous automated basis (versus manual collection and analysis), the electronic data collection system shall time stamp all data and the corresponding date and time of the chosen data shall be entered in any submitted reports.

1.10. 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.

1.11. 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. Electronic submission is required when available unless waived by the Commissioner.

1.12. MONITORING RESULTS

Monitoring results shall be recorded and submitted monthly using Monthly Operational Reports (MORs).

See below for more specific information for MOR requirements:

MOR Reporting:

Monitoring results shall be recorded monthly and submitted monthly using Monthly Operational Reports (MORs). MORs shall be submitted by the 15th day of the month following data collection and shall be submitted by **one** of the following methods, presented below in order of preference:

1) Using MyTDEC Forms, if available.

2) Submitting both a signed and certified copy in pdf format *and* a copy of the native format spreadsheet file emailed to water.permits@tn.gov and to the Memphis EFO:

Chattanooga	TDEC.Chattanooga.EFO@tn.gov
Columbia	TDEC.Columbia.EFO@tn.gov
Cookeville	TDEC.Cookeville.EFO@tn.gov
Jackson	TDEC.Jackson@tn.gov
Johnson City	TDEC.JohnsonCity.EFO@tn.gov
Knoxville	TDEC.KEFO.DWRPermits@tn.gov
Memphis	TDEC.Memphis.EFO@tn.gov
Nashville	DWR.NEFO@tn.gov

3) Submitting signed and certified forms to the EFO at the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT UNIT
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

Monthly Operation Reports must be signed and certified by a responsible corporate officer, as defined at 0400-40-05-.07(2)(i), or a general partner or proprietor, or a duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

1.13. 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 MOR or other reporting form specified by the Commissioner.

1.14. 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 § 69-3-115 of the Tennessee Water Quality Control Act.

1.15. 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). 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”. Whenever “BDL” is reported, the actual MDL must be reported in the MOR comments or in an attachment submitted with MOR.

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.

PART 2

2. STANDARD CONDITIONS

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

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 include 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.

Components in both new and expanded systems that are designed to collect, treat, store and distribute wastewater for reuse shall comply with the document submission and fee requirements of Rules 0400-40-02 and 0400-40-11 as applied to wastewater systems.

2.1.4. Right of Entry

The permittee shall allow the Commissioner, or an authorized representative, 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.

2.1.5. Availability of Reports

All reports and data shall be kept for a minimum of three years.

2.1.6. Property Rights

This permit does not convey property rights of any sort, or any exclusive privilege.

2.1.7. Severability

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

2.1.8. 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. Permit Modification, Revocation, or Termination

a) This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. 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. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

2.2.2. Change of Ownership

Individual permits are not transferable to any person except after notice to the Commissioner, as specified below. The Commissioner may require modification or revocation and reissuance of the permit to change the name of the permittee.

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.

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.

2.2.3. 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. Effect of Noncompliance

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

2.3.2. 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.

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. For overflows and releases, 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, the permittee shall submit a written report containing the information required by sub-part a) ii. 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.

2.3.3. Overflows and Releases

a) 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[3] 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
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 to the EFO. 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.

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

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

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.

2.4. LIABILITIES

2.4.1. Civil and Criminal Liability

The permittee is subject to civil and criminal liability for violation of this permit. 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.

2.5. PROHIBITIVE DISCHARGE STANDARDS

1) Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:

    a. Pollutants which create a fire or explosion hazard in the POTW;

    b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0 unless the works is specifically designed to accommodate such discharges;

    c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

    d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;

    e. Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in no case heat in such quantities that the

temperature at the POTW treatment plant exceeds 40° C (104° F) unless the Division, upon request of the POTW, approves alternate temperature limits;

f. Any priority pollutant in amounts that will contaminate the treatment works sludge;

g. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

h. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; or

i. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2) The permittee shall notify the Division of any of the following changes in user discharge to the system no later than 30 days prior to change of discharge:

a. New introductions into such works of pollutants from any source which would be a new source as defined in Section 306 of the Act if such source were discharging pollutants;

b. New introductions of pollutants into such works from a source which would be subject to Section 301 of the "Federal Water Pollution Control Act as Amended" if it were discharging such pollutants; or

c. A substantial change in volume or character of pollutants being introduced into such works by a source already discharging pollutants into such works at the time the permit is issued.

This notice will include information on the quantity and quality of the wastewater introduced by the new source into the publicly owned treatment works, and on any anticipated impact on the effluent discharged from such works.

PART 3

3. DEFINITIONS AND ACRONYMS

3.1. DEFINITIONS

All terminology not specifically defined herein shall be defined in accordance with the Water Quality Control Act of 1977, T.C.A. Title 69, Chapter 3, Part 1. When used in this chapter and in permits issued pursuant to this chapter, the following terms have the meanings given below unless otherwise specified:

Act or ***TWQCA*** means the Water Quality Control Act of 1977, T.C.A. Title 69, Chapter 3, Part 1.

Agricultural reuse for food crops means the non-potable reuse of reclaimed wastewater to irrigate food crops that are intended for human consumption.

Agricultural reuse for processing food crops and non-food crops means the non-potable reuse of reclaimed wastewater to irrigate crops that are processed by humans before consumption.

Agronomic application rate with respect to categories of Urban or Agricultural Reuse, means the application of reclaimed wastewater to meet nutrient or hydraulic uptake needs of food crops, feed crops, fiber crops, cover crops, or vegetation grown on land, the latter category including but not limited to athletic fields and ornamental landscaping. Agronomic application rates vary with the type and density of the crops, the seasonal and ambient weather conditions, shade coverage, and characteristics of the reclaimed wastewater.

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.

Continuous monitoring means collection of samples using a probe and a recorder with at least one data point per dosing cycle.

Discharge of a pollutant, ***discharge of pollutants***, and ***discharge*** when used without qualification, each refer to the addition of pollutants to waters from a source.

A ***dry weather overflow*** means a sanitary sewer overflow that is not directly related to a rainfall event.

End user of reclaimed wastewater means the recipient and user of reclaimed wastewater from a permitted provider at the end of a distribution network who is engaging in beneficial reuse. Any individual who engages in the sale or resale of reclaimed wastewater is not an end user of the reclaimed wastewater.

Environmental reuse means the non-potable reuse of reclaimed wastewater that is of such quality that it could be used to create, enhance, sustain, or augment water bodies including wetlands, aquatic habitats, or stream flow.

Grab sample means a single sample collected at a particular time.

Groundwater recharge for non-potable reuse means the non-potable reuse of reclaimed wastewater of such quality that it is suitable to recharge aquifers that are not used as potable water sources.

Irrigation means the beneficial application of reclaimed wastewater to land or soil to assist with the growing of agricultural crops and maintenance of landscapes during periods of insufficient rainfall.

Monthly average concentration means the arithmetic mean of all samples collected in a calendar-month, expressed in units of mass per volume, for any pollutant.

Non-potable reuse of reclaimed wastewater means the planned and intentional reuse of reclaimed wastewater that does not involve direct production of potable water.

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.

Potable reuse of reclaimed wastewater means the planned augmentation of a drinking water source with reclaimed wastewater.

A ***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, 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.

Reclaimed wastewater means wastewater that has been treated to meet minimum criteria with the intent of being used for non-potable purposes in a non-discharging wastewater system.

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.

Restricted urban reuse means the non-potable reuse of reclaimed wastewater in municipal or suburban settings that is of such quality that public access is controlled or restricted by physical or institutional barriers, such as fencing, advisory signage, or temporal access restrictions.

Reuse in impoundments with restricted access means the non-potable reuse of reclaimed wastewater in an impoundment that is of such quality that bodily contact is restricted.

Reuse in impoundments with unrestricted access means the non-potable reuse of reclaimed wastewater in an impoundment that is of such quality that there are no limitations imposed on bodily contact for recreational activities.

Reuse of reclaimed wastewater means the application of reclaimed wastewater of sufficient quality to be reused in a non-discharging wastewater system in a manner protective of human health and the environment.

Sanitary sewer overflow or ***SSO*** means an unpermitted discharge of wastewater from the collection, transmission, or treatment system other than through the permitted outfall.

Sewage means water-carried waste or discharges from human beings or animals, from residences, public or private buildings, or industrial establishments, or boats, together with such other wastes and ground, surface, storm, or other water as may be present

Sewerage system means the conduits, sewers, and all devices and appurtenances by means of which sewage and other waste is collected, pumped, treated, or disposed.

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

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

Surface impoundment or ***impoundment*** means a facility or part of a facility that is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and that is not an injection well.

Unrestricted urban reuse means the non-potable reuse of reclaimed wastewater in municipal or suburban settings that is of such quality that public access is not restricted, such as irrigation for athletic fields, landscaping, or other approved "purple pipe" residential uses.

Wastewater means ***sewage*** as defined herein.

Wastewater reclamation means the treatment of wastewater or effluent to produce reclaimed wastewater such that it is acceptable for reuse that would not otherwise occur.

Waters means any and all water, public or private, on or beneath the surface of the ground, that 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 that do not combine or effect a junction with natural surface or underground waters.

Wet weather overflow means a sanitary sewer overflow that is directly related to a specific rainfall event.

Wet weather release means a release that is directly related to a specific rainfall event.

3.2. ACRONYMS AND ABBREVIATIONS AND ICONS

BOD_5 – five-day biochemical oxygen demand
CFR – code of federal regulations
CWRP -= Colossus Water Recycling Plant
EPA – Environmental Protection Agency
EFO – environmental field office
MGD – million gallons per day
MLGW - Memphis Light Gas and Water
MOR – monthly operating report
POTW – publicly owned treatment works
SSO – sanitary sewer overflow
STP – sewage treatment plant
TCA – Tennessee code annotated
TDEC – Tennessee Department of Environment and Conservation
WWTP - Wastewater Treatment Plant
- Document submission required

3.3. RESOURCES, HYPERLINKS, AND WEB PAGES

MyTDEC Forms Login
https://forms.tdec.tn.gov/

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

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

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

MONTHLY OPERATING REPORT FORM

COLUSSUS WATER RECYCLING PLANT
3644 RIVERPORT ROAD, MEMPHIS, SHELBY COUNTY
SOP-24025

MONTH: _____ YEAR: _____

DAY	pH SU	Report Either One: CBOD5 mg/L	NH3-N mg/L	Report Either One*: NTU	TSS mg/L	E.COLI #/100 ml	TRC mg/L	Q INFLUENT MGD	Q EFFLUENT MGD CTC	Q EFFLUENT MGD TVA	Q EFFLUENT MGD End User	Sample Type	COMMENTS (Explain Exceedences or Absence of Data)
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
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20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
LIMIT	6.0-9.0	30	10	30	30	200	1.0	Report	Report	Report	Report		

NOTES:
1) At a minimum, all parameters shall be sampled and reported a minimum of weekly at the CWRP pumping station.
2) The total chlorine residual (TRC) applies as a limit only upon failure to comply with the E. coli limits more than 10% of the time for the previous month after the CWRP start up is meeting delivery standards.
* Any exceedence of 30 NTU must be followed up with a TSS result within 7 days of the NTU exceedence to demonstrate compliance with the TSS limit. Only one TSS analysis is reuqired in any 7 day period.

CERTIFICATION: I· certify· under· penalty· of· law· that· this· document· and· all· attachments· were· prepared· under· my· direction· or· supervision·in·accordance·with·a·system·designed·to·assure·that·qualified·personnel·properly·gather·and·evaluate· the· information· submitted.· Based· on· my· inquiry· of· the· person· or· persons· who· manage· the· system,· or· those· persons· directly· responsible· for· gathering· the· information,· the· information· submitted· is,· to· the· best· of· my· knowledge·and·belief,·true,·accurate,·and·complete.·I·am·aware·that·there·are·significant·penalties·for·submitting· false· information,· including· the· possibility· of· fine· and· imprisonment· for· knowing· violations.· As· specified· in· Tennessee·Code·Annotated·Section·39-16-702(a)(4),·this·declaration·is·made·under·penalty·of·perjury.¤

PRINTED NAME	OFFICAL TITLE	SIGNATURE	DATE

SUBMISSION: Send signed form by the 15th of the following month to water.permits@tn.gov and TDEC.Memphis.EFO@tn.gov.

ADDENDUM TO RATIONALE AT PERMIT ISSUE

CTC Property LLC
State Operating Permit No. SOP-24025
Permit Writer: Wade Murphy
Date: January 22, 2025

This addendum to rationale addresses verbal comments heard at the public hearings and written comments submitted on the draft permit and fact sheet (rationale) document submitted by CTC Properties LLC and the City of Memphis.

Verbal Comment

Several people at the public hearings stated a desire for transparency relative to the operation of this facility. The proposed permit did initially incorporate monitoring and reporting conditions, but the Division realized it failed to include several pages of standard conditions into the permit regarding representative sampling, test procedures, recording of results, records retention and procedures for reporting to TDEC. In response, the Division has included these standard conditions in Sections 1.6 through 1.15 on Pages 6-9 of the permit and included a Monthly Operating Reporting (MOR) form after Page 23 of the permit.

Written Comment from CTC Property LLC

By email sent on April 25, 2025, Mr. Mark Carroll, representing CTC Properties, LLC, submitted comments on the terms and conditions of the draft permit and rationale. This addendum serves to addend the rationale published with the draft permit on April 15, 2025, so the Division makes no changes to the rationale document dated April 9, 2025, except as noted for corrections to names. The Division incorporates the following changes into the final permit in consideration of the applicant/permittee comments:

- The Division changed all references to CWRF (Colossus Water Recycle Facility) in the permit and rationale dated April 9, 2025, to CWRP (Colossus Water Recycle Plant).
- The Division changed the misspelling of “Colussus” on R-2 to “Colossus”.
- The Division changed language on Page 3 to reflect that TVA and Nucor have the potential to discharge unused reuse water or reuse water blowdown via their NPDES permits in addition to discharging into the sanitary sewer system.
- The Division has agreed to alter a few words in the permit as requested by the permittee. This includes deleting an erroneous reference to the system being a “collection” system, changing “equalization” tanks to “storage tanks”, and clarifying that the certified operator is a “TDEC-licensed” operator.

- The Division has simplified the notes on the effluent limits table on Page 5. Simplification consists of combining the notes originally proposed as Notes 2 and 5 and elimination of Notes 3 and 4 altogether. The originally proposed Notes 3 and 4 consist of content from the reuse rule itself, Rule 0400-40-06-.10. The Division initially proposed to include these notes from the rule as a part of the explanation for why they do not apply in this proposed reuse scenario. After reconsideration, the Division decided the permit will be easier to read when the explanation just presents in the rationale. Rationale on R-7 already states, "The Division sets the monitoring frequency for chlorine residual and E. coli at weekly in consideration that "application" is not specifically defined in the rules, and the CWRP will produce water on demand, with limited storage for volume control to the multiple end users, for immediate use by three end users whose use activities are not accessible to the public." That rationale explains why the following monitoring frequencies, based on application rates of reuse water, do not apply to this permitted activity:

Weekly application volume	Required measurement frequency
</= 100,000 gal per week	Once per week when activated
>/= 100,000 gal per week	Twice per week when activated
>/= 1,000,000 gal per week	Daily when activated

  So then, for this activity, chlorine monitoring will be required a minimum of weekly. The chlorine value of 1 mg/L will only apply as an enforceable limit if the *E.coli* limit is exceeded more than 10% of the time for the previous month.
- The applicant requested that the above 10% threshold for the chlorine limit applicability be changed to more than 25% since a weekly sampling frequency will give each sample a 20-25% value. The Division did not alter the 10% threshold set in the rule for meeting the *E.coli* limit. The specified monitoring frequency of weekly is a minimum. If a sample exceeds the *E.coli* limit, the permittee is encouraged to make necessary adjustments to the disinfecting system and then to take additional samples within the month so that the one exceedance represents less than 10% of the sample set to avoid residual chlorine becoming an enforceable limit.

Additionally, this addendum acknowledges the following errors in the fact sheet below dated April 9, 2025:

On Page R-4, "two flow equalization tanks" needs to correctly read, "two flow storage tanks".

Written Comment by the City of Memphis

By email sent on July 03, 2025, Mr. Scott Morgan, P.E. Public Works Director for the City of Memphis, submitted comments on the terms and conditions of the draft permit and

rationale. The Division addresses all but the following comments in the Notice of Determination:

The city points out in its letter that a sentence in Section 1.4 has an unclear reference to "above limits" since the only numeric limits in the permit follow in Section 1.5.

The Division appreciates the city pointing the unclear reference and has changed the "not meeting the above limits" to, "that is not fit for use by the end user(s)" on Page 4 of the final permit. The numeric limits are the minimum treatment standards, but end users may have need to specify fit for use in more stringent terms.

CORRECTION:

The fact sheet dated April 9, 2025, incorrectly states in Section 5 on Page R-3 that, "Engineers with Gresham Smith and Barge Design represented the applicant in this virtual meeting", referring to the preliminary project discussion held virtually on September 18, 2024. This is in error. The correct fact is that representatives of Barge Design represented the City of Memphis and not the applicant. The Division appreciates Memphis pointing out this error. The meeting minutes that the Division prepared and distributed after the preliminary project discussion is silent on who Barge Design represented at the meeting and do not need correction.

<u>Email Comment on Final Draft by CTC Property and Their Consultant</u>

By email on January 20, 2026, from Randy Booker, P.E., on behalf of CTC Property, LLC. CTC Property commented on the proposed additional conditions on Pages 6-9 regarding representative sampling, test procedures, recording of results, records retention, and procedures for reporting to TDEC. In response to the comments, the Division makes the following revisions to the final permit:

- The Division revises the limits table on Page 5 of the permit to include a limit on turbidity of 30 NTU (nephelometric turbidity units). In Tennessee's reuse regulation, turbidity is imposed as a limited parameter for unrestricted urban reuse but not for restricted urban reuse. Even so, CTC Property, LLC intends to monitor turbidity continuously, which provides the potential for greater transparency than weekly grab samples. For unrestricted urban reuse, the regulation correlates 5 TSS with 5 NTU. Therefore, this permit correlates the 30 mg/L TSS limit with a turbidity limit of 30 NTU with the added condition that TSS be measured and reported within seven days of a NTU measurement exceeding 30 NTU.
- In consideration of continuous turbidity monitoring, the Division adds continuous as a sample type for turbidity (NTU), and pH, $CBOD_5$, NH_3-N, TSS and chlorine residual in the limit table on Page 5 with a companion requirement in Section 1.8 on Page 6 that,

"Instruments used for continuous monitoring shall be calibrated and maintained per manufacturer's recommendations by a qualified source". Continuous monitoring is normal in water treatment processes enabling the water treatment operator to demonstrate it is meeting product delivery requirements. It will also provide potential for greater transparency to the public since data output is recorded continuously. However, the quality control and quality assurance procedures for continuous monitoring are a function of equipment maintenance and calibration rather than test methodologies published pursuant to Section 304 (h) of the Clean Water Act. The Division refrains from defining "qualified source" in the permit but envisions a qualified source to be an operator who can demonstrate training for the task(s) via records and record keeping.

- The Division deletes references to Nucor Steel from the permit based on the email notification that Nucor Steel will no longer be a partner end user. Related to this, the Division changed the effluent flow parameter in the limits table on Page 5 from "Effluent Flow, Each of Three End Users and the CWRP" to "Effluent Flow, Each End User and the CWRP". Reference to Nucor Steel remains in the original fact sheet dated April 9, 2025, because Nucor Steel was a factor in the proposal at that time.
- The Division changed the narrative requirement to calibrate flow measurement devices once per 12 months to per the manufacturer recommended intervals in consideration that the permittee proposes to use magnetic flow meters which are accurate over long periods of time and do not have a mechanism for calibration. This revision is consistent with the footnoted reference to EPA's NPDES Compliance Inspection Manual. The manual says that electromagnetic flow meters need to have their electrodes regularly checked and cleaned but acknowledges that calibration may only happen by returning the meter to the factory.
- The Division agrees with CTC Property LLC to add the following narrative condition to Section 1.9 of the permit for recording results that are monitored on a continuous basis: "*For analyses that are performed on a continuous automated basis (versus manual collection and analysis), the electronic data collection system shall time stamp all data and the corresponding date and time of the chosen data shall be entered in any submitted reports.*"
- The Division retains references in the permit to the T.E. Maxson treatment infrastructure as a "plant" and refrains from changing these references to "facility" as requested by CTC Property LLC. The City of Memphis itself uses both "facility" and "plant" to describe T.E. Maxson on its webpage and the embedded brochure at https://memphistn.gov/environmental-engineering/. The Memphis treatment plant moniker has no relevance to operation of the Colossus Wastewater Treatment Plant.
- The Division removes one reference to Nucor from Page 1 of the permit at issue now that Nucor is no longer a partner end user.

◊

RATIONALE

CTC Property LLC
State Operating Permit No. SOP-24025
Permit Writer: Wade Murphy
Date: April 9, 2025

1. PUBLIC NOTICE AND PARTICIPATION

As provided under Rule 0400-40-06-.04, 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:	April 15, 2025
Comment Period Ends*:	May 15, 2025

*This is the minimum comment period. The comment period is extended through dates established in a public hearing process.

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
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, TN 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 water quality 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. PROJECT PURPOSE AND OBJECTIVES

The Colossus Water Recycle Plant (CWRP) is a collaborative private project to provide treated non-potable water for water supply purposes to three project partners:

- xAI Colossus data center,
- TVA Allen Combined Cycle Plant, and
- Nucor Steel Memphis Facility.

Up to 13.5 MGD of treated effluent from the nearby City of Memphis T.E. Maxson WWTP will be withdrawn from the disinfection tank and pumped to the CWRP for treatment via a membrane bioreactor (MBR)-based treatment to State of Tennessee/TDEC restricted urban (non-potable) reuse standards. The majority of the treated recycled water conveyed to the project partners will be used for evaporative cooling purposes. The CWRP will have a treatment capacity of approximately 13 MGD. The CWRP will only withdraw effluent from T.E. Maxson as needed. This facility will reduce future water withdrawals from the Memphis Aquifer for industrial uses by up to 13 MGD. End users will maintain potable water connections.

3. OWNER

CTC Property LLC (TN Business Filing # 001523768)

PLANT CONTACT INFORMATION:
Mr. Mark Carroll
Project Manager/Engineer/Operations Manager
Phone: [redacted]
markcarroll@tesla.com
3644 Riverport Rd

4. LOCATION

On Riverport Rd. (Paul Lowery Rd.) between the T.E. Maxson Wastewater Treatment Plant (WWTP) and the xAI facility. The plant will be constructed on a parcel of land purchased by CTC Property/xAI and located within 1.5 miles of the end users of the reclaimed water.

See location map below:

5. SUPPORTING ENGINEERING

TDEC conducted a preliminary project discussion virtually on September 18, 2024, pursuant to the applicant's request of September 11, 2024. That meeting is tracked as WPN# 24.0716. Engineers with Gresham Smith and Barge Design represented the applicant in this virtual meeting.

Gresham Smith submitted a preliminary engineering report for the wastewater recycle facility on February 18, 2025. This document is tracked as WPN # 25.0104.

6. PROPOSED TREATMENT

A lift station and electromagnetic flow meters on the premises of the T.E. Maxson WWTP, influent fine screens, a two-step activated sludge process designed for total nitrogen removal, a ceramic membrane bioreactor, two flow equalization tanks for reclaimed water, effluent pumps for each of the three end users and the CWRP (for onsite reuse water demand) and a reuse water distribution system.

7. REGULATORY CONTROLS

a) State Operating Permit issued by TDEC
Reclaimed Wastewater Management Plan
Certified Wastewater Treatment Operator

b) Contract with the City of Memphis

c) Industrial Pretreatment Permits with City of Memphis

d) End User Agreements with TVA and Nucor

Pursuant to Part 2.4.2 of the permit, this permit does not waive any regulations of the Tennessee Public Utility Commission applicable to privately-owned public utility service.

8. RECLAIMED WASTEWATER MANAGEMENT PLAN

The Division's reuse regulation, Rule § 0400-40-06-.10, requires the permittee development, submit with its application and to maintain a Reclaimed Wastewater Management Plan (RWMP). The plan is required to:

- identify the treatment, storage and distribution systems,
- identify the process for system expansion,
- identify procedures for metering water,
- identify procedures for monitoring and reporting user compliance,
- include an end user education plan, a contingency plan for disposal of unused reuse water, and standard specifications for the distribution system.

The applicant submitted an initial RWMP with its application for a permit on February 18, 2025, and an updated RWMP on March 18, 2025. The permittee intends to update this plan as circumstances require.

The RWMP is a living document so the permit requires the permittee to maintain an updated copy at the CWRP and to submit the most up to date RWMP to the Division upon request

and with each application for permit renewal. Additionally, this permit includes narrative requirements that the education plan and distribution system specifications include provisions to ensure that end users comply with Memphis, Light, Gas & Water cross connection control program.

9. END USER AGREEMENTS

The Division's reuse regulation, Rule § 0400-40-06-.10, requires the permittee develop, submit an example with its application, and to maintain contracts with end users.

The applicant submitted an example end user agreement within the updated RWMP received on March 18, 2025. Key points of the draft agreement related to the supply of reuse water are that:

- End users are restricted to using reuse water as cooling water make up supply;
- All unused water is to be sent to the Memphis sanitary sewer system,
- Contents of actual agreements are confidential;
- Fees and payments begin after startup of the CWRP is capable of supplying reuse water 24/7;
- Each end user has the right, with notice, to inspect its dedicated flow meter at the CWRP measuring water transfer;
- End users may terminate the agreement with a 120 day notice.

Therefore, this permit proposes the following terms and conditions:

- Reuse water must only be used as cooling system make up water;
- Unused water must be returned to public sanitary sewer;
- End user agreement must be maintained at the CWRP for inspection and submitted to TDEC on request with redaction of confidential content;
- The permittee must notify the Division in writing of the date that startup for payment begins;
- The permittee must report to the Division the water transfer flows to each end user; and
- The permittee must provide the Division written notification of end user cancellation of their agreement.

10. CERTIFIED WASTEWATER OPERATOR

This permit requires the permittee to have the CWRP operated under the supervision of a certified wastewater operator in accordance with Rule 0400-49-01 et. seq. The Division imposes this requirement pursuant to TCA. 69-3-108(g)(1) rather than the State Water and

Wastewater Operator Certification Act which applies to treatment of domestic sewage. The attached rating sheet results in a Grade IV Wastewater Operator classification.

11. PERMIT PROCESS

Division regulations require a minimum, 30-day, public notice of a draft permit based on a complete application and preliminary engineering prior to approval of construction plans for the reclaimed wastewater treatment facility. The Division will approve final facility design and issue a final operating permit in consideration of relevant water quality comments received during the public participation process which may include a public hearing. This project is being privately funded so there are no permitting contingencies associated with public funding (e.g. Environmental Impact Statements). At the time of public notice, the Division has not received the final construction design drawings for the CWRP.

Additional water quality permitting may be required during construction such as construction stormwater permitting (CGP) and/or aquatic resource alteration permitting (ARAP).

12. PERMIT LIMITATIONS

The treated wastewater will have to meet the following characteristics promulgated for restricted urban reuse in Rule 0400-40-06.10:

Restricted Urban Reuse	
Parameter	Daily Limit
pH	6.0 - 9.0
$CBOD_5$ or NH_3-N	30 mg/L $CBOD_5$ or 10 mg/L NH_3-N
NTU or TSS	30 mg/L TSS
E. coli	200 cfu/100 mL
Chlorine Residual	Minimum of 1 mg/L

The pH, five-day carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia as nitrogen (NH_3-N), and total suspended solids (TSS) are standard measures of biological treatment of wastewater. Turbidity (NTU) is a measure of tertiary treatment. *E.coli* are indicators of recent fecal contamination. They measure the effectiveness of disinfecting. The total chlorine residual is an indicator that sufficient chlorine remains present in the distribution system to prevent regrowth of bacteria.

The Division sets the monitoring frequency for chlorine residual and *E. coli* at weekly in consideration that "application" is not specifically defined in the rules, and the CWRP will produce water on demand, with limited storage for volume control to the multiple end users, for immediate use by three end users whose use activities are not accessible to the public.

13. PERMIT PERIOD

This permit will be issued for a five-year period effective from the issuance date on the cover page.

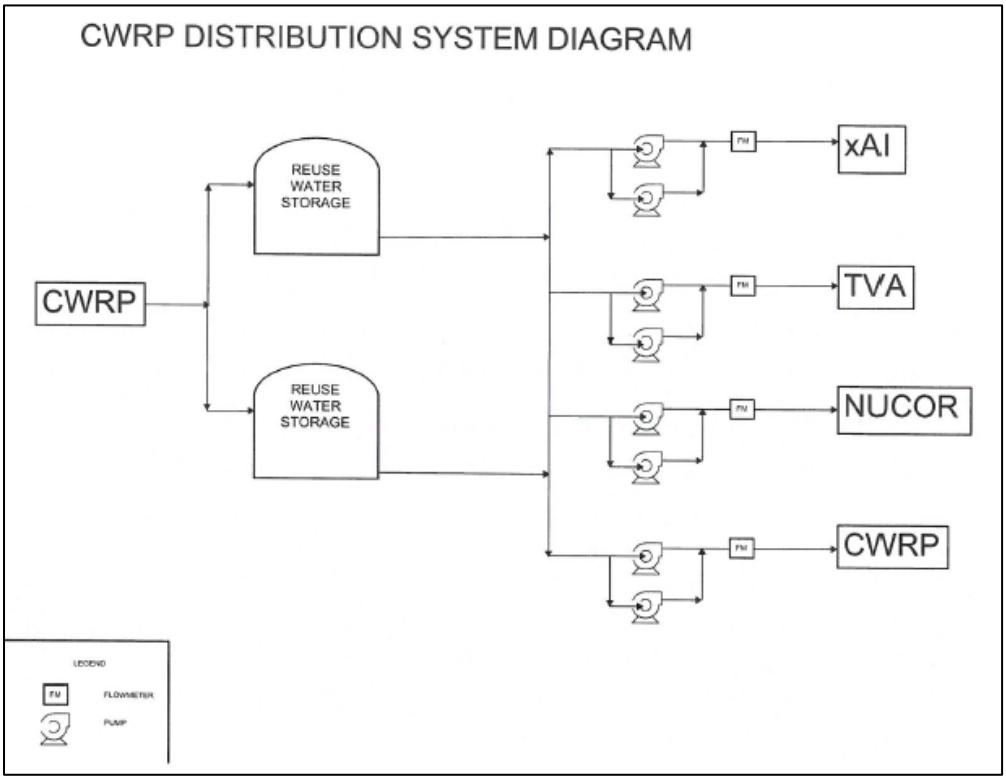
14. FINANCIAL SECURITY

A financial security pursuant to Rule 0400-40-06-.11 is set at zero dollars in consideration that each end user will maintain connection to potable water supply as backup to the CWRP.

15. ANNUAL MAINTENANCE FEE

The permit annual maintenance fee is $4,840.00 as a non-discharging facility with influent flow greater than 0.5 MGD pursuant to Tennessee Rule 0400-40.11-.02, payable each fiscal year (July 1 – June 30) upon receipt of an invoice.

16. SYSTEM SCHEMATIC



17. WASTEWATER OPERATING GRADE RATING SHEET

State of Tennessee
Department of Environment and Conservation -Division of Water Resources
Wastewater System Operator Grade Calculation Sheet for Grades II, III, IV
Wastewater Plants with a design flow of less than 0.075 MGD are Grade I
1/6/2017

Instructions:
1. Complete only boxes with red background. All other values are standard or calculated.
2. Fill in red boxes in Section 1.
3. Fill in red box with number of connections in collection system.
4. In "Variation Raw Wastewater" Section place a "Y" in one of the four options provided in list.
5. In "Effluent/Permit Characteristics" input CBOD/BOD and NH3 limits from NPDES permit
6. In "Receiving Stream Sensitivity" section place a "Y" in one of the six options provided in list.
7. In the "Treatment Processes", "Sludge Treatment and Handling", and "Laboratory Control" sections place a "Y" in all processes that are applicable to this plant.

Section 1			
Facility Name *(Colossus Water Recycling Plant)*	CWRP	NPDES Number	NA
Facility Contact	Mark Carroll	Phone Number	[redacted]
Form Completed By	Mark Carroll	Date	4/1/2025
Design Flow (MGD)	13		

Section2			
Wastewater Plant Total Points	81	Wastewater Plant Grade	4
# of Connections for Collection System	0	Collection System Grade	1

Section 3					
Variation Raw Wastewater (flow, BOD, or SS use ratio of peak to average) Select only one box.			Effluent/Permit Characteristics *(per restricted reuse limits)*	CBOD/BOD	30
				NH3	10
Less than 100 percent	0		Design Flow Points (30 max.) (Qd X 2)	26	
100-200 percent *(BOD peak to avg, 2024)*	2	Y	Receiving Stream Sensitivity (Select only one box)		
More than 200 percent	4		Secondary (STP limits: BOD≥30 and no NH3)	1	Y
Subject to toxic wastes	6		Adv. Sec. (BOD = 10-29 and any NH3)	3	
			Tertiary (BOD<10 and any NH3)	5	
			Direct Reuse	7	
			Land Disposal, evaporation	2	
			Subsurface discharge	4	

Treatment Processes					
Manually cleaned screens	2		Two-stage activated sludge	10	
Mechanically cleaned screens	3		Polishing pond or effluent flow equal	2	
Preareation	2		Land application of treated effluent	5	
Comminutor, barminutor, grinders, etc.	3		Chemical treatment removal	6	
Grit removal	3		Denitrification	10	Y
Raw sewage pumping (on-site)	3		Sand or mixed media filters	8	
Flow equalization basin (aerated)	5		Activated carbon beds	10	
Flow equalization basin (unaerated)	3		Nitrification required by permit *(via restricted reuse NH3 limit)*		
Fine screens (preliminary treatment)	3	Y	By activated sludge	6	Y
Pre-chlorination	3		By other processes	5	
Primary clarifiers	5		Disinfection		
Primary clarifiers with chemical settling aid	7		Chlorination/PAA	5	
Swirl system	3		Dechlorination	5	
Secondary clarifiers	5	Y	Ozonation	10	
Flocculation with or without chemical aid	7		Ultraviolet	5	
Trickling filter with or without chemical aid	6				
Trickling filter with recirulation	8				
Activated Sludge					
Oxidation ditch	8				
Mechanical aeration	9				
Diffused or dispersed aeration	10	Y			
Batch treatment (SBR, ICEAS, etc.)	10				
Pure oxygen	15				

Sludge Treatment and Handling					
Anaerobic digestion (check either unheated or heated)			Solids reduction (incinerator, wet oxidation, etc.)	15	
Unheated	5		Chemical stabilization with lime	8	
Heated	10		All other dewatering units including wedgewire and vacuum beds, both with polymers	5	
Aerobic digestion	7		Composting:in vessel	10	
Drying beds	3		Composting:static pile	5	
Sand bed with polymer added	5		Land application	5	
Gravity thickener	5		Sludge lagoon	3	
Dissolved air flotation thickener	8		Sludge disposal (Landfill, land application, etc.)		
Vacuum filter	8				
Centrifuge	8				
Belt press, plate & frame filter press	8				

Laboratory Control (Check all that apply)					
Bacteriological			Chemical/Physical		
Lab work done outside the plant	0		Lab work done outside the plant	0	
Membrane filter procedures *(E. coli)*	3	Y	Push-button or visual methods for simple tests such as pH,	3	Y
Use of fermentation tubes or any dilution method	5		Test such as DO, COD, BOD, titrations, gas analysis, volatile content	5	Y
Biological identification *(biomass / mixed liquor)*	7	Y	Specific nutrients, total oils, phenols, etc.	7	
			A/A or GC/MS	10	

Point system taken from operator rules. (TN Rule 0400-49-01-.08 CLASSIFICATION OF WASTEWATER TREATMENT PLANTS AND WASTEWATER COLLECTION SYSTEMS)