

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Final Documents Team Leader Date: October 30, 2025
Chief Clerk's Office

From: Maricela Zertuche
Staff Attorney
Environmental Law Division

Subject: Backup Documents Filed for Consideration of Hearing Requests at Agenda

Applicant: CITY OF ABILENE
Proposed Permit No.: WQ0005213000
Program: Water Quality Division
TCEQ Docket No.: 2025-1451-IWD

Enclosed please find a copy of the following documents for inclusion in the background material for this permit application:

- Proposed Permit
- Statement of Basis/Technical Summary and ED's Preliminary Decision
- Compliance History Report



TEXAS COMMISSION ON ENVIRONMENTAL
QUALITY

P.O. Box 13087
Austin, Texas 78711-3087

TPDES PERMIT NO.
WQ0005213000
*[For TCEQ office use only -
EPA I.D. No. TX0137383]*

This renewal replaces TPDES Permit
No. WQ0005213000, issued on
September 12, 2018.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

City of Abilene

whose mailing address is

P.O. Box 60
Abilene, Texas 79604

is authorized to treat and discharge wastes from the Possum Kingdom Raw Water Roughing Facility,
a reverse osmosis water treatment facility (SIC 4941)

located at 105 East Elliot Street, in the City of Breckenridge, Stephens County, Texas 76424

via pipeline directly to Possum Kingdom Lake in Segment No. 1207 of the Brazos River Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, five years from the date of permit issuance.

ISSUED DATE:

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS- PHASE IOutfall Number 001

1. During the period beginning upon the date of permit issuance and lasting through the initiation of the Final Phase (Phase II), the permittee is authorized to discharge water treatment waste ¹ subject to the following effluent limitations:

The annual average flow of effluent shall not exceed 1.09 million gallons per day (MGD). The daily maximum flow shall not exceed 1.38 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	1.09 MGD ²	1.38 MGD	N/A	Continuous	Meter
Total Dissolved Solids	N/A	Report	N/A	1/month	Grab
Chloride	N/A	Report	N/A	1/month	Grab
Sulfate	N/A	Report	N/A	1/month	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day by grab sample.
3. There must be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples must be taken at the following location: for Outfall 001, at the sample tap on the reverse osmosis concentrate pipeline before it leaves the Membrane Building.

¹ Refer to Other Requirement No. 3.

² Calculate and report as the annual average flow, as defined on page 3, Item 1.a. of this permit.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS- PHASE IIOutfall Number 001

1. During the period beginning upon initiation of the Final Phase (Phase II) and lasting through the date of permit expiration, the permittee is authorized to discharge water treatment waste ¹ subject to the following effluent limitations:

The annual average flow of effluent shall not exceed 1.51 million gallons per day (MGD). The daily maximum flow shall not exceed 1.81 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	1.51 MGD ²	1.81 MGD	N/A	Continuous	Meter
Total Dissolved Solids	N/A	Report	N/A	1/month	Grab
Chloride	N/A	Report	N/A	1/month	Grab
Sulfate	N/A	Report	N/A	1/month	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day by grab sample.
3. There must be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples must be taken at the following location: for Outfall 001, at the sample tap on the reverse osmosis concentrate pipeline before it leaves the Membrane Building.

¹ Refer to Other Requirement No. 3.

² Calculate and report as the annual average flow as defined on page 3, Item 1.a. of this permit.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

- a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.
- b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.
- d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

- a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.
 - i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.
 - ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.
- b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

- d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

- e. Bacteria concentration (Fecal coliform, *E. coli*, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the *n*th root of the product of all measurements made in a calendar month, where *n* equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.
- f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD × Concentration, mg/L × 8.34).
- g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

- a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(c).
 - b. Grab sample - an individual sample collected in less than 15 minutes.
4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
 5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.
 6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division

(MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

- a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.
- b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

- a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.
- c. Records of monitoring activities shall include the following:
 - i. date, time, and place of sample or measurement;
 - ii. identity of individual who collected the sample or made the measurement;
 - iii. date and time of analysis;
 - iv. identity of the individual and laboratory who performed the analysis;
 - v. the technique or method of analysis; and
 - vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the regional office and the Enforcement Division (MC 224).

7. Noncompliance Notification

- a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the regional office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the regional office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:
 - i. unauthorized discharges as defined in Permit Condition 2(g).
 - ii. any unanticipated bypass that exceeds any effluent limitation in the permit.
 - iii. violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.
- c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the regional office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.
- d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the regional office, orally or by facsimile transmission within 24 hours, and both the regional office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

- a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, 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 (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. the level established by the TCEQ.
- b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that 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 (10) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. the level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

- a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;
- b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
- c. for the purpose of this paragraph, adequate notice shall include information on:
 - i. the quality and quantity of effluent introduced into the POTW; and
 - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

- a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
- b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:
 - i. violation of any terms or conditions of this permit;
 - ii. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
 - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

- c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.
- c. It shall not be a defense for a 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 the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.
- e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA §402, or any requirement imposed in a pretreatment program approved under the CWA §§402(a)(3) or 402(b)(8).

3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.
- b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a

condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:
 - i. the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or
 - ii. the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9; or
 - iii. the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.
- d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants

within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

- a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.
- b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

- a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
 - i. the permittee;
 - ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
 - iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.
- b. This notification must indicate:
 - i. the name of the permittee;
 - ii. the permit number(s);
 - iii. the bankruptcy court in which the petition for bankruptcy was filed; and
 - iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.
2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.
3. Domestic wastewater treatment facilities shall comply with the following provisions:
 - a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.
 - b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment or other treatment unit regulated by this permit.
4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, or retention of inadequately treated wastewater.
5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).
7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
 - a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion or upgrading of the domestic

wastewater treatment or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
 - c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.
9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.
10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.
11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:
 - a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
 - b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
 - c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

- d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.
- e. The term “industrial solid waste management unit” means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
- f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
 - i. volume of waste and date(s) generated from treatment process;
 - ii. volume of waste disposed of on-site or shipped off-site;
 - iii. date(s) of disposal;
 - iv. identity of hauler or transporter;
 - v. location of disposal site; and
 - vi. method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

- 12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 3 within 24 hours from the time the permittee becomes aware of the violation, followed by a written report within five working days to TCEQ Region 3 and the Enforcement Division (MC 224): None.
2. This permit does not authorize the discharge of domestic wastewater. All domestic wastewater must be disposed of in an approved manner, such as routing to an approved on-site septic tank and drainfield system or to an authorized third party for treatment and disposal.
3. Water treatment waste includes, but is not limited to, reverse osmosis (RO) reject water. This permit does not authorize the discharge of tertiary microfiltration (MF) backwash waste, MF and RO clean-in-place wastes, plant drains, and process sampling wastewater and these waste streams must be disposed of in an approved manner, such as routing to an authorized third party for treatment and disposal.
4. The chronic aquatic life mixing zone is defined as a rectangle 158.74 feet by 198.0 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is equivalent to the area of a 100-foot radius circle. Chronic toxic criteria apply at the edge of the chronic aquatic life mixing zone.

5. Phase I:

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum dilution of 5.36 percent effluent at the edge of the ZID. The ZID is defined as a rectangle 28.8 feet by 68.2 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 25-foot radius circle.

The permittee shall maintain Outfall 001 to achieve a maximum dilution of 1.73 percent effluent at the edge of the chronic aquatic life mixing zone. The chronic aquatic life mixing zone is defined as a rectangle 158.74 feet by 198.0 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 100-foot radius circle.

The permittee shall maintain Outfall 001 to achieve a maximum dilution of 1.51 percent effluent at the edge of the human health mixing zone. The human health mixing zone is defined as a rectangle 335.4 feet by 374.7 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 200-foot radius circle.

Final Phase (Phase II):

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum dilution of 3.15 percent effluent at the edge of the ZID. The ZID is defined as a rectangle 28.8 feet by 68.2 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 25-foot radius circle.

The permittee shall maintain Outfall 001 to achieve a maximum dilution of 1.83 percent effluent at the edge of the chronic aquatic life mixing zone. The chronic aquatic life mixing zone is defined as a rectangle 158.74 feet by 198.0 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 100-foot radius circle.

The permittee shall maintain Outfall 001 to achieve a maximum dilution of 1.67 percent effluent at the edge of the human health mixing zone. The human health mixing zone is defined as a rectangle 335.4 feet by 374.7 feet centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 200-foot radius circle.

6. Reporting requirements pursuant to 30 TAC Sections 319.1-319.11 and any additional effluent reporting requirements contained in the permit are suspended from the effective date of the permit until discharge begins from the facility described by this permit. The permittee shall provide written notice to the TCEQ Region 3 Office and the Applications Review and Processing Team (MC-148) of the Water Quality Division at least forty-five (45) days prior to anticipated discharge, and prior to completion of each additional phase on Notification of Completion Form 20007.
7. Wastewater discharged via Outfall 001 must be sampled and analyzed as directed below for those parameters listed in Tables 1, 2, and 3 of Attachment A of this permit. Analytical testing for Outfall 001 must be completed within 60 days of initial discharge that is representative of normal operations. Results of the analytical testing must be submitted within 90 days of initial discharge that is representative of normal operations to the TCEQ Industrials Permits Team (MC-148). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.

Table 1: Analysis is required for all pollutants. Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of four sampling events at least one week apart.

Table 2: Analysis is required for those pollutants in Table 2 that are used at the facility that could in any way contribute to contamination in the Outfall 001 discharge. Sampling and analysis must be conducted for a minimum of four sampling events at least one week apart.

Table 3: For all pollutants listed, the permittee shall indicate whether each pollutant is believed to be present or absent in the discharge. Sampling and analysis must be conducted for each pollutant believed present for a minimum of one sampling event.

The permittee shall report the flow at Outfall 001 in million gallons per day (MGD) in the attachment. The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

Attachment A

Table 1

Outfall No.:	☐ C ☐ G	Effluent Concentration (mg/L)				
Pollutants		Samp.	Samp.	Samp.	Samp.	Average
Flow (MGD)						
BOD (5-day)						
CBOD (5-day)						
Chemical Oxygen Demand						
Total Organic Carbon						
Dissolved Oxygen						
Ammonia Nitrogen						
Total Suspended Solids						
Nitrate Nitrogen						
Total Organic Nitrogen						
Total Phosphorus						
Oil and Grease						
Total Residual Chlorine						
Total Dissolved Solids						
Sulfate						
Chloride						
Fluoride						
Temperature (°F)						
Total Alkalinity (mg/L as CaCO ₃)						
pH (Standard Units; min/max)						

	Effluent Concentration (µg/L)					MAL ¹ (µg/L)
Total Aluminum						2.5
Total Antimony						5
Total Arsenic						0.5
Total Barium						3
Total Beryllium						0.5
Total Cadmium						1
Total Chromium						3
Trivalent Chromium						N/A
Hexavalent Chromium						3
Total Copper						2
Cyanide						10
Total Lead						0.5
Total Mercury						0.005
Total Nickel						2
Total Selenium						5
Total Silver						0.5
Total Thallium						0.5
Total Zinc						5.0

¹ Minimum Analytical Level

Table 2

Outfall No.:	☐ C ☐ G	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)
Pollutant							
Acrylonitrile							50
Anthracene							10
Benzene							10
Benidine							50
Benzo(a)anthracene							5
Benzo(a)pyrene							5
Bis(2-chloroethyl)ether							10
Bis(2-ethylhexyl)phthalate							10
Bromodichloromethane							10
Bromoform							10
Carbon Tetrachloride							2
Chlorobenzene							10
Chlorodibromomethane							10
Chloroform							10
Chrysene							5
Cresols							10
1,2-Dibromoethane							10
<i>m</i> -Dichlorobenzene							10
<i>o</i> -Dichlorobenzene							10
<i>p</i> -Dichlorobenzene							10
3,3'-Dichlorobenzidine							5
1,2-Dichloroethane							10
1,1-Dichloroethylene							10
Dichloromethane							20
1,2-Dichloropropane							10
2,4-Dimethylphenol							10
Di- <i>n</i> -Butyl Phthalate							10
Ethylbenzene							10
Fluoride							500
Hexachlorobenzene							5
Hexachlorobutadiene							10
Hexachlorocyclopentadiene							10
Hexachloroethane							20
Methyl Ethyl Ketone							50
Nitrobenzene							10
<i>N</i> -Nitrosodiethylamine							20
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine							20
Nonylphenol							333
Pentachlorobenzene							20
Pentachlorophenol							5
Phenanthrene							10
Polychlorinated Biphenyls (PCBs) (**)							0.2
Pyridine							20
1,2,4,5-Tetrachlorobenzene							20
1,1,2,2-Tetrachloroethane							10
Tetrachloroethylene							10

Outfall No.:	☐ C ☐ G	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)
Pollutant							
Toluene							10
1,1,1-Trichloroethane							10
1,1,2-Trichloroethane							10
Trichloroethylene							10
2,4,5-Trichlorophenol							50
TTHM (Total Trihalomethanes)							10
Vinyl Chloride							10

(*) Indicate units if different from µg/L.

(**) Total PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016

Table 3

Outfall No.:	☐ C ☐ G	Believed Present	Believed Absent	Effluent Concentration (mg/L)		No. of Samples
Pollutant				Average	Maximum	
Bromide						
Color (PCU)						
Nitrate-Nitrite (as N)						
Sulfide (as S)						
Sulfite (as SO ₃)						
Surfactants						
Total Boron						
Total Cobalt						
Total Iron						
Total Magnesium						
Total Molybdenum						
Total Manganese						
Total Tin						
Total Titanium						

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DESCRIPTION OF APPLICATION

Applicant: City of Abilene; Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005213000 (EPA I.D. No. TX0137383)

Regulated activity: Industrial wastewater permit

Type of application: Renewal

Request: Renewal without changes

Authority: Federal Clean Water Act (CWA) §402; Texas Water Code (TWC) §26.027; 30 Texas Administrative Code (TAC) Chapter 305, Subchapters C-F, and Chapters 307 and 319; commission policies; and Environmental Protection Agency (EPA) guidelines

EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit will expire at midnight, five years from the date of permit issuance according to the requirements of 30 TAC §305.127(1)(C)(i).

REASON FOR PROJECT PROPOSED

The applicant applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of its existing permit.

PROJECT DESCRIPTION AND LOCATION

The applicant owns and proposes to operate the Possum Kingdom Raw Water Roughing Facility (RWRF), a reverse osmosis water treatment facility, which will treat Possum Kingdom Lake raw water with a microfiltration (MF) and reverse osmosis (RO) system.

Possum Kingdom Lake raw water will be treated with a MF and RO system and transferred for additional water treatment prior to distribution. A portion of the raw surface water will undergo MF and RO to reduce chloride and Total Dissolved Solids (TDS) levels. A membrane feed pump station will transfer raw water from the raw water storage tank to the MF system. The MF system will consist of a primary recovery system and a tertiary recovery system designed to maximize recovery of raw water through the MF system. The primary and tertiary recovery MF systems will provide a net recovery of raw water of approximately 99%. The MF system will send MF filtrate feed water to a 3-stage RO system designed for 85-90% recovery depending on the season and raw water temperature. The RO permeate and untreated raw surface water will be blended together in the Product Water Storage Tank before being pumped to the City of Abilene Grimes Water Treatment Plant (WTP), the Northeast WTP, or both for complete water treatment. The quality of the product water will generally match raw water quality in Hubbard Creek Reservoir, which the RWRF water supply is intended to replace during the times of dry weather and drought. Reject water will be transferred offsite via approximately 24 miles of 12-inch PVC pipe to proposed Outfall 001 in the Cedar Creek Arm of Possum Kingdom Lake. The outfall will consist of a unidirectional multiport diffuser that is 12 meters long with 10 equally spaced ports.

The ports will be angled upwards at 60 degrees from the horizontal with the diffuser perpendicular to the bank so wastewater will be discharged generally parallel to the bank and toward the main pool of the lake. Each port will use a variable velocity orifice valve arranged in a fanned-out pattern. The port

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area will vary with effluent flow. Water treatment wastes will be discharged at an annual average flow of 1.09 MGD during Phase I and at an annual average flow of 1.51 MGD during Phase II via Outfall 001.

Other waste streams (tertiary MF backwash waste, MF and RO clean-in-place wastes, plant drains, and domestic wastewater) must be disposed of in an approved manner, such as routing to an authorized third party for treatment and disposal.

The facility is located at 105 East Elliot Street, in the City of Breckenridge, Stephens County, Texas 76424.

Discharge Route and Designated Uses

The effluent is discharged directly to Possum Kingdom Lake in Segment No. 1207 of the Brazos River Basin. The designated uses for Segment No. 1207 are primary contact recreation, public water supply, and high aquatic life use. The effluent limits in the draft permit will maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and revisions.

Endangered Species Review

The discharge from this permit is not expected to have an effect on any federal endangered or threatened aquatic or aquatic-dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS's) biological opinion on the State of Texas authorization of the TPDES program (September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and the EPA only considered aquatic or aquatic-dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS's biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threatened species.

Impaired Water Bodies

Segment No. 1207 is not currently listed on the state's inventory of impaired and threatened waters, the 2022 CWA §303(d) list.

Completed Total Maximum Daily Loads (TMDLs)

There are no completed TMDLs for Segment No. 1207.

Dissolved Oxygen

Due to the low concentrations of oxygen demanding constituents expected in the wastewater being proposed for discharge, no significant dissolved oxygen depletion is anticipated in the receiving waters as a result of this proposed discharge.

SUMMARY OF EFFLUENT DATA

Self-reporting data is not available because the facility has not discharged.

DRAFT PERMIT CONDITIONS

The draft permit authorizes the discharge of water treatment waste at an annual average flow not to exceed 1.09 million gallons per day (MGD) via Outfall 001 (Phase I); and water treatment waste at an annual average flow not to exceed 1.51 MGD via Outfall 001 (Phase II). Effluent limitations are established in the draft permit as follows:

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Outfall	Pollutant	Daily Average mg/L	Daily Maximum mg/L
001 (Phase I)	Flow	1.09 MGD ¹	1.38 MGD
	Total Dissolved Solids	Report	Report
	Chloride	Report	Report
	Sulfate	Report	Report
	pH (standard units, SU)	6.0 SU (min.)	9.0 SU
001 (Phase II)	Flow	1.51 MGD ¹	1.81 MGD
	Total Dissolved Solids	Report	Report
	Chloride	Report	Report
	Sulfate	Report	Report
	pH (standard units, SU)	6.0 SU (min.)	9.0 SU

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	32.886100 N	98.588000 W

Technology-Based Effluent Limitations

Regulations in Title 40 of the Code of Federal Regulations (40 CFR) require that technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, or on best professional judgment (BPJ) in the absence of guidelines. The discharge of water treatment waste is not subject to any federal effluent limitations guidelines.

Water Quality-Based Effluent Limitations

Calculations of water quality-based effluent limitations for the protection of aquatic life and human health are presented in Appendix A. Aquatic life criteria established in Table 1 and human health criteria established in Table 2 of 30 TAC Chapter 307 are incorporated into the calculations, as are recommendations in the Water Quality Assessment Team's memorandum dated October 16, 2023. TCEQ practice for determining significant potential is to compare the reported analytical data from the facility against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

No data was submitted with the application because the facility has not discharged; therefore, a retest requirement, stated in Other Requirement No. 7, has been continued in the draft permit. Based on submitted test results, the permit may be reopened to add additional limits or monitoring and reporting requirements.

Total Dissolved Solids (TDS), Chloride, and Sulfate Screening

Average concentrations of TDS, chloride, and sulfate are not available because the facility has not discharged. TDS, chloride, and sulfate modeling conducted by the facility project effluent concentrations greater than the segment criteria. Screening procedures and effluent limitations for TDS, chloride, and sulfate are calculated using the methodology in the *Procedures to Implement the Texas Surface Water Quality Standards*, June 2010, and criteria in the *Texas Surface Water Quality Standards* (30 TAC Chapter 307). Detailed calculations are presented in Appendix B. Based on the screening, monitoring and reporting requirements for TDS, chloride, and sulfate are not required.

¹ Annual average flow.

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However, TDS, chloride, and sulfate monitoring and reporting requirements have been continued in the draft permit based on requirements for other Reverse Osmosis facilities. In addition, this is an application for renewal and removal of such conditions requires a major amendment application to be submitted.

pH Screening

The existing permit includes pH limits of 6.0 – 9.0 SU at Outfall 001, which discharges directly into Possum Kingdom Lake, Segment No. 1207. Screening was performed to ensure that these existing pH limits would not cause a violation of the 6.0 – 9.0 SU pH criteria for Possum Kingdom Lake (see Appendix C). The existing effluent limits of 6.0 – 9.0 SU are adequate to ensure that the proposed discharge will not violate the pH criteria in Possum Kingdom Lake. These limits have been carried forward in the draft permit.

Whole Effluent Toxicity Testing (Biomonitoring)

Biomonitoring requirements are not included in the draft permit at Outfall 001. In accordance with TCEQ's implementation procedures (IP's), this proposed discharge does not meet the threshold to require biomonitoring.

SUMMARY OF CHANGES FROM APPLICATION

No changes were made from the application.

SUMMARY OF CHANGES FROM EXISTING PERMIT

The following additional changes have been made to the draft permit.

1. Pages 3-13 were updated (May 2021 version).
2. A new footnote was included on pages 2 and 2a of the draft permit referring to Other Requirement No. 3. The existing footnote on pages 2 and 2a has been renumbered.
3. Existing Other Requirement No. 6 has been removed in the draft permit because the requirement has been fulfilled.
4. Diffuser language has been included in the draft permit as new Other Requirement No. 5.
5. Mixing zone language is included in the draft permit as new Other Requirement No. 4.
6. The existing Other Requirements have been renumbered.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on March 7, 2023.
2. Existing permits: TPDES Permit No. WQ0005213000 issued on September 12, 2018.
3. TCEQ Rules.
4. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 1, 2018, as approved by EPA Region 6.
5. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not approved by EPA Region 6.
6. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective July 22, 2010, as approved by EPA Region 6, for portions of the 2014 standards not approved by EPA Region 6.

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7. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective August 17, 2000, and Appendix E, effective February 27, 2002, for portions of the 2010 standards not approved by EPA Region 6.
8. *Procedures to Implement the Texas Surface Water Quality Standards* (IPs), Texas Commission on Environmental Quality, June 2010, as approved by EPA Region 6.
9. *Procedures to Implement the Texas Surface Water Quality Standards*, Texas Commission on Environmental Quality, January 2003, for portions of the 2010 IPs not approved by EPA Region 6.
10. Memos from the Standards Implementation Team and Water Quality Assessment Team of the Water Quality Assessment Section of the TCEQ.
11. *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.
12. EPA Effluent Guidelines: N/A.
13. Consistency with the Coastal Management Plan: N/A
14. Letter dated May 28, 2014, from L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for pH evaluation procedures).
15. Letter dated June 2, 2014, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for pH evaluation procedures).

PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the chief clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for reviewing and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent to the Chief Clerk, along with the Executive Director's preliminary decision contained in the technical summary or fact sheet. At that time, the Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment and is not a contested case hearing.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's response to comments and final decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

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The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's response to comments and final decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ commissioners for their consideration at a scheduled commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the commission grants a contested case hearing as described above, the commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application, contact Alyssa Loveday at (512) 239-4524.

Alyssa Loveday
Alyssa Loveday

November 27, 2023
Date

STATEMENT OF BASIS / TECHNICAL SUMMARY AND
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Appendix A
Calculated Water Quality-Based Effluent Limits

TEXTTOX MENU #4 - LAKE OR RESERVOIR

The water quality-based effluent limitations developed below are calculated using:

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life

Table 2, 2018 Texas Surface Water Quality Standards for Human Health

"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	City of Abilene
TPDES Permit No:	WQ0005213000
Outfall No:	001 – Phase I
Prepared by:	Alyssa Loveday
Date:	November 17, 2023

DISCHARGE INFORMATION

Receiving Waterbody:	Possum Kingdom Lake
Segment No.:	1207
TSS (mg/L):	2
pH (Standard Units):	8
Hardness (mg/L as CaCO ₃):	219
Chloride (mg/L):	884
Effluent Flow for Aquatic Life (MGD):	N/A
% Effluent for Chronic Aquatic Life (Mixing Zone):	1.73
% Effluent for Acute Aquatic Life (ZID):	5.36
Effluent Flow for Human Health (MGD):	N/A
% Effluent for Human Health:	1.51
Human Health Criterion (select: PWS, FISH, or INC)	INC

CALCULATE DISSOLVED FRACTION (AND ENTER WATER EFFECT RATIO IF APPLICABLE):

<i>Lake/Reservoir Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio (WER)</i>	<i>Source</i>
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	288567.96	0.634		1.00	Assumed
Cadmium	6.55	-0.92	1875220.77	0.211		1.00	Assumed
Chromium (total)	6.34	-0.27	1814353.48	0.216		1.00	Assumed
Chromium (trivalent)	6.34	-0.27	1814353.48	0.216		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.45	-0.90	1510334.02	0.249		1.00	Assumed
Lead	6.31	-0.53	1414015.28	0.261		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	6.34	-0.76	1291865.21	0.279		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	1174732.83	0.299		1.00	Assumed
Zinc	6.52	-0.68	2066805.47	0.195		1.00	Assumed

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AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>FW Acute Criterion (µg/L)</i>	<i>FW Chronic Criterion (µg/L)</i>	<i>WLAa (µg/L)</i>	<i>WLAc (µg/L)</i>	<i>LTAa (µg/L)</i>	<i>LTAc (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Aldrin	3.0	N/A	56.0	N/A	17.9	N/A	26.3	55.7
Aluminum	991	N/A	18489	N/A	5916	N/A	8697	18400
Arsenic	340	150	10004	13675	3201	8341	4705	9956
Cadmium	18.38	0.424	1629	116	521	71.0	104	220
Carbaryl	2.0	N/A	37.3	N/A	11.9	N/A	17.5	37.1
Chlordane	2.4	0.004	44.8	0.231	14.3	0.141	0.207	0.438
Chlorpyrifos	0.083	0.041	1.55	2.37	0.496	1.45	0.728	1.54
Chromium (trivalent)	1083	140.8	93500	37683	29920	22986	33789	71487
Chromium (hexavalent)	15.7	10.6	293	613	93.7	374	137	291
Copper	29.72	18.50	2230	4300	713	2623	1048	2218
Cyanide (free)	45.8	10.7	854	618	273	377	401	850
4,4'-DDT	1.1	0.001	20.5	0.0578	6.57	0.0353	0.0518	0.109
Demeton	N/A	0.1	N/A	5.78	N/A	3.53	5.18	10.9
Diazinon	0.17	0.17	3.17	9.83	1.01	5.99	1.49	3.15
Dicofol [Kelthane]	59.3	19.8	1106	1145	354	698	520	1101
Dieldrin	0.24	0.002	4.48	0.116	1.43	0.0705	0.103	0.219
Diuron	210	70	3918	4046	1254	2468	1842	3899
Endosulfan I (<i>alpha</i>)	0.22	0.056	4.10	3.24	1.31	1.97	1.93	4.08
Endosulfan II (<i>beta</i>)	0.22	0.056	4.10	3.24	1.31	1.97	1.93	4.08
Endosulfan sulfate	0.22	0.056	4.10	3.24	1.31	1.97	1.93	4.08
Endrin	0.086	0.002	1.60	0.116	0.513	0.0705	0.103	0.219
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.578	N/A	0.353	0.518	1.09
Heptachlor	0.52	0.004	9.70	0.231	3.10	0.141	0.207	0.438
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	1.126	0.08	21.0	4.62	6.72	2.82	4.14	8.77
Lead	149.9	5.84	10705	1292	3425	788	1158	2451
Malathion	N/A	0.01	N/A	0.578	N/A	0.353	0.518	1.09
Mercury	2.4	1.3	44.8	75.1	14.3	45.8	21.0	44.5
Methoxychlor	N/A	0.03	N/A	1.73	N/A	1.06	1.55	3.28
Mirex	N/A	0.001	N/A	0.0578	N/A	0.0353	0.0518	0.109
Nickel	909	100.9	60765	20910	19445	12755	18750	39669
Nonylphenol	28	6.6	522	382	167	233	245	519
Parathion (ethyl)	0.065	0.013	1.21	0.751	0.388	0.458	0.570	1.20
Pentachlorophenol	23.8	18.28	445	1057	142	645	209	442
Phenanthrene	30	30	560	1734	179	1058	263	557
Polychlorinated Biphenyls [PCBs]	2.0	0.014	37.3	0.809	11.9	0.494	0.725	1.53
Selenium	20	5	373	289	119	176	175	371
Silver	0.8	N/A	557	N/A	178	N/A	261	553
Toxaphene	0.78	0.0002	14.6	0.0116	4.66	0.00705	0.0103	0.0219
Tributyltin [TBT]	0.13	0.024	2.43	1.39	0.776	0.846	1.14	2.41
2,4,5 Trichlorophenol	136	64	2537	3699	812	2257	1193	2525
Zinc	227.7	229.5	21806	68113	6978	41549	10257	21701

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HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Water and Fish Criterion (µg/L)</i>	<i>Fish Only Criterion (µg/L)</i>	<i>Incident al Fish Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	1.0	115	1150	76159	70828	104116	220274
Aldrin	1.146E-05	1.147E-05	1.147E-04	0.00760	0.00706	0.0103	0.0219
Anthracene	1109	1317	13170	872185	811132	1192364	2522621
Antimony	6	1071	10710	709272	659623	969645	2051426
Arsenic	10	N/A	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	5	581	5810	384768	357834	526016	1112865
Benzidine	0.0015	0.107	1.07	70.9	65.9	96.8	204
Benzo(a)anthracene	0.024	0.025	0.25	16.6	15.4	22.6	47.8
Benzo(a)pyrene	0.0025	0.0025	0.025	1.66	1.54	2.26	4.78
Bis(chloromethyl)ether	0.0024	0.2745	2.745	182	169	248	525
Bis(2-chloroethyl)ether	0.60	42.83	428.3	28364	26379	38776	82037
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	6	7.55	75.5	5000	4650	6835	14461
Bromodichloromethane [Dichlorobromomethane]	10.2	275	2750	182119	169371	248975	526743
Bromoform [Tribromomethane]	66.9	1060	10600	701987	652848	959686	2030356
Cadmium	5	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.5	46	460	30464	28331	41646	88109
Chlordane	0.0025	0.0025	0.025	1.66	1.54	2.26	4.78
Chlorobenzene	100	2737	27370	1812583	1685702	2477981	5242533
Chlorodibromomethane [Dibromochloromethane]	7.5	183	1830	121192	112709	165681	350523
Chloroform [Trichloromethane]	70	7697	76970	5097351	4740536	6968588	14743068
Chromium (hexavalent)	62	502	5020	332450	309179	454492	961546
Chrysene	2.45	2.52	25.2	1669	1552	2281	4826
Cresols [Methylphenols]	1041	9301	93010	6159603	5728430	8420792	17815418
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.002	0.02	1.32	1.23	1.81	3.83
4,4'-DDE	0.00013	0.00013	0.0013	0.0861	0.0801	0.117	0.249
4,4'-DDT	0.0004	0.0004	0.004	0.265	0.246	0.362	0.766
2,4'-D	70	N/A	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	262	473	4730	313245	291318	428237	905998
1,2-Dibromoethane [Ethylene Dibromide]	0.17	4.24	42.4	2808	2611	3838	8121
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	322	595	5950	394040	366457	538691	1139681
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	600	3299	32990	2184768	2031834	2986796	6319005
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	75	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.79	2.24	22.4	1483	1380	2028	4290
1,2-Dichloroethane	5	364	3640	241060	224185	329552	697216
1,1-Dichloroethylene [1,1-Dichloroethene]	7	55114	551140	36499338	33944384	49898244	105567034
Dichloromethane [Methylene Chloride]	5	13333	133330	8829801	8211715	12071221	25538434
1,2-Dichloropropane	5	259	2590	171523	159517	234489	496096
1,3-Dichloropropene [1,3-Dichloropropylene]	2.8	119	1190	78808	73291	107738	227936
Dicofol [Kelthane]	0.30	0.30	3	199	185	271	574
Dieldrin	2.0E-05	2.0E-05	2.0E-04	0.0132	0.0123	0.0181	0.0383
2,4-Dimethylphenol	444	8436	84360	5586755	5195682	7637652	16158571
Di- <i>n</i> -Butyl Phthalate	88.9	92.4	924	61192	56909	83655	176985
Dioxins/Furans [TCDD Equivalents]	7.80E-08	7.97E-08	7.97E-07	0.0000528	0.0000491	0.0000721	0.000152

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Endrin	0.02	0.02	0.2	13.2	12.3	18.1	38.3
Epichlorohydrin	53.5	2013	20130	1333113	1239795	1822498	3855761
Ethylbenzene	700	1867	18670	1236424	1149874	1690315	3576108
Ethylene Glycol	46744	1.68E+07	1.68E+08	1112582781	1034701986	1521011920	3217923178
Fluoride	4000	N/A	N/A	5	8	5	8
Heptachlor	8.0E-05	0.0001	0.001	N/A	N/A	N/A	N/A
Heptachlor Epoxide	0.00029	0.00029	0.0029	0.0662	0.0616	0.0905	0.191
Hexachlorobenzene	0.00068	0.00068	0.0068	0.192	0.179	0.262	0.555
Hexachlorobutadiene	0.00068	0.00068	0.0068	0.450	0.419	0.615	1.30
Hexachlorocyclohexane (<i>alpha</i>)	0.21	0.22	2.2	146	135	199	421
Hexachlorocyclohexane (<i>beta</i>)	0.0078	0.0084	0.084	5.56	5.17	7.60	16.0
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.15	0.26	2.6	172	160	235	498
Hexachlorocyclopentadiene	0.2	0.341	3.41	226	210	308	653
Hexachloroethane	10.7	11.6	116	7682	7144	10502	22218
Hexachlorophene	1.84	2.33	23.3	1543	1435	2109	4462
4,4'-Isopropylidenediphenol [Bisphenol A]	2.05	2.90	29	1921	1786	2625	5554
Lead	1092	15982	159820	10584106	9843219	14469531	30612409
Mercury	1.15	3.83	38.3	9710	9030	13273	28082
Methoxychlor	0.0122	0.0122	0.122	8.08	7.51	11.0	23.3
Methyl Ethyl Ketone	2.92	3.0	30	1987	1848	2716	5746
Methyl <i>tert</i> -butyl ether [MTBE]	13865	9.92E+05	9.92E+06	656953642	610966887	898121324	1900107019
Nickel	15	10482	104820	6941722	6455801	9490027	20077542
Nitrate-Nitrogen (as Total Nitrogen)	332	1140	11400	2705598	2516206	3698822	7825400
Nitrobenzene	10000	N/A	N/A	N/A	N/A	N/A	N/A
N-Nitrosodiethylamine	45.7	1873	18730	1240397	1153570	1695747	3587601
N-Nitroso-di- <i>n</i> -Butylamine	0.0037	2.1	21	1391	1293	1901	4022
Pentachlorobenzene	0.119	4.2	42	2781	2587	3802	8044
Pentachlorophenol	0.348	0.355	3.55	235	219	321	679
Polychlorinated Biphenyls [PCBs]	0.22	0.29	2.9	192	179	262	555
Pyridine	6.4E-04	6.4E-04	6.40E-03	0.424	0.394	0.579	1.22
Selenium	23	947	9470	627152	583252	857379	1813912
1,2,4,5-Tetrachlorobenzene	50	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	0.23	0.24	2.4	159	148	217	459
Tetrachloroethylene [Tetrachloroethylene]	1.64	26.35	263.5	17450	16229	23856	50471
Thallium	5	280	2800	185430	172450	253501	536320
Toluene	0.12	0.23	2.3	152	142	208	440
Toxaphene	1000	N/A	N/A	N/A	N/A	N/A	N/A
2,4,5-TP [Silvex]	0.011	0.011	0.11	7.28	6.77	9.95	21.0
1,1,1-Trichloroethane	50	369	3690	244371	227265	334079	706793
1,1,2-Trichloroethane	200	784354	7843540	519439735	483078954	710126061	1502375545
Trichloroethylene [Trichloroethene]	5	166	1660	109934	102238	150290	317961
2,4,5-Trichlorophenol	5	71.9	719	47616	44283	65095	137719
TTHM [Sum of Total Trihalomethanes]	1039	1867	18670	1236424	1149874	1690315	3576108
Vinyl Chloride	80	N/A	N/A	N/A	N/A	N/A	N/A
	0.23	16.5	165	10927	10162	14938	31604

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CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS:

Aquatic Life	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Aldrin	18.4	22.3
Aluminum	6087	7392
Arsenic	3294	4000
Cadmium	73.0	88.7
Carbaryl	12.2	14.9
Chlordane	0.145	0.176
Chlorpyrifos	0.509	0.619
Chromium (trivalent)	23652	28721
Chromium (hexavalent)	96.4	117
Copper	734	891
Cyanide (free)	281	341
4,4'-DDT	0.0362	0.0440
Demeton	3.62	4.40
Diazinon	1.04	1.26
Dicofol [Kelthane]	364	442
Dieldrin	0.0725	0.0881
Diuron	1290	1566
Endosulfan I (<i>alpha</i>)	1.35	1.64
Endosulfan II (<i>beta</i>)	1.35	1.64
Endosulfan sulfate	1.35	1.64
Endrin	0.0725	0.0881
Guthion [Azinphos Methyl]	0.362	0.440
Heptachlor	0.145	0.176
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	2.90	3.52
Lead	811	985
Malathion	0.362	0.440
Mercury	14.7	17.9
Methoxychlor	1.08	1.32
Mirex	0.0362	0.0440
Nickel	13125	15937
Nonylphenol	172	208
Parathion (ethyl)	0.399	0.484
Pentachlorophenol	146	177
Phenanthrene	184	223
Polychlorinated Biphenyls [PCBs]	0.507	0.616
Selenium	122	149
Silver	183	222
Toxaphene	0.00725	0.00881
Tributyltin [TBT]	0.798	0.969
2,4,5 Trichlorophenol	835	1014
Zinc	7180	8718

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Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	72881	88499
Aldrin	0.00726	0.00882
Anthracene	834655	1013509
Antimony	678751	824198
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	368211	447114
Benzidine	67.8	82.3
Benzo(a)anthracene	15.8	19.2
Benzo(a)pyrene	1.58	1.92
Bis(chloromethyl)ether	173	211
Bis(2-chloroethyl)ether	27143	32960
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	4784	5810
Bromodichloromethane [Dichlorobromomethane]	174282	211628
Bromoform [Tribromomethane]	671780	815733
Cadmium	N/A	N/A
Carbon Tetrachloride	29152	35399
Chlordane	1.58	1.92
Chlorobenzene	1734587	2106284
Chlorodibromomethane [Dibromochloromethane]	115977	140829
Chloroform [Trichloromethane]	4878011	5923300
Chromium (hexavalent)	318144	386318
Chrysene	1597	1939
Cresols [Methylphenols]	5894554	7157673
Cyanide (free)	N/A	N/A
4,4'-DDD	1.26	1.53
4,4'-DDE	0.0823	0.100
4,4'-DDT	0.253	0.307
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	299766	364001
1,2-Dibromoethane [Ethylene Dibromide]	2687	3262
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	377084	457887
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	2090757	2538777
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	1419	1723
1,2-Dichloroethane	230686	280119
1,1-Dichloroethylene [1,1-Dichloroethene]	34928771	42413507
Dichloromethane [Methylene Chloride]	8449854	10260538
1,2-Dichloropropane	164142	199315
1,3-Dichloropropene [1,3-Dichloropropylene]	75416	91577
Dicofol [Kelthane]	190	230
Dieldrin	0.0126	0.0153
2,4-Dimethylphenol	5346356	6492004
Di- <i>n</i> -Butyl Phthalate	58558	71107
Dioxins/Furans [TCDD Equivalents]	0.0000505	0.0000613
Endrin	12.6	15.3
Epichlorohydrin	1275748	1549123
Ethylbenzene	1183220	1436767

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	1064708344	1292860132
Ethylene Glycol	3	4
Fluoride	N/A	N/A
Heptachlor	0.0633	0.0769
Heptachlor Epoxide	0.183	0.223
Hexachlorobenzene	0.430	0.523
Hexachlorobutadiene	139	169
Hexachlorocyclohexane (<i>alpha</i>)	5.32	6.46
Hexachlorocyclohexane (<i>beta</i>)	164	200
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	216	262
Hexachlorocyclopentadiene	7351	8926
Hexachloroethane	1476	1793
Hexachlorophene	1837	2231
4,4'-Isopropylidenediphenol [Bisphenol A]	10128671	12299101
Lead	9291	11282
Mercury	7.73	9.38
Methoxychlor	1901	2308
Methyl Ethyl Ketone	628684927	763403125
Methyl <i>tert</i> -butyl ether [MTBE]	6643019	8066523
Nickel	2589175	3143999
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	1187023	1441385
N-Nitrosodiethylamine	1330	1616
N-Nitroso-di- <i>n</i> -Butylamine	2661	3232
Pentachlorobenzene	224	273
Pentachlorophenol	183	223
Polychlorinated Biphenyls [PCBs]	0.405	0.492
Pyridine	600165	728772
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	152	184
1,1,2,2-Tetrachloroethane	16699	20277
Tetrachloroethylene [Tetrachloroethylene]	177451	215476
Thallium	145	176
Toluene	N/A	N/A
Toxaphene	6.97	8.46
2,4,5-TP [Silvex]	233855	283967
1,1,1-Trichloroethane	497088243	603607152
1,1,2-Trichloroethane	105203	127746
Trichloroethylene [Trichloroethene]	45566	55331
2,4,5-Trichlorophenol	1183220	1436767
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	10456	12697

**STATEMENT OF BASIS / TECHNICAL SUMMARY AND
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TEXTTOX MENU #4 - LAKE OR RESERVOIR

The water quality-based effluent limitations developed below are calculated using:

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life

Table 2, 2018 Texas Surface Water Quality Standards for Human Health

"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	City of Abilene
TPDES Permit No:	WQ0005213000
Outfall No:	001 – Phase II
Prepared by:	Alyssa Loveday
Date:	November 17, 2023

DISCHARGE INFORMATION

Receiving Waterbody:	Possum Kingdom Lake
Segment No.:	1207
TSS (mg/L):	2
pH (Standard Units):	8
Hardness (mg/L as CaCO ₃):	219
Chloride (mg/L):	884
Effluent Flow for Aquatic Life (MGD):	N/A
% Effluent for Chronic Aquatic Life (Mixing Zone):	1.83
% Effluent for Acute Aquatic Life (ZID):	3.15
Effluent Flow for Human Health (MGD):	N/A
% Effluent for Human Health:	1.67
Human Health Criterion (select: PWS, FISH, or INC)	INC

CALCULATE DISSOLVED FRACTION (AND ENTER WATER EFFECT RATIO IF APPLICABLE):

<i>Lake/Reservoir Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio (WER)</i>	<i>Source</i>
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	288567.96	0.634		1.00	Assumed
Cadmium	6.55	-0.92	1875220.77	0.211		1.00	Assumed
Chromium (total)	6.34	-0.27	1814353.48	0.216		1.00	Assumed
Chromium (trivalent)	6.34	-0.27	1814353.48	0.216		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.45	-0.90	1510334.02	0.249		1.00	Assumed
Lead	6.31	-0.53	1414015.28	0.261		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	6.34	-0.76	1291865.21	0.279		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	1174732.83	0.299		1.00	Assumed
Zinc	6.52	-0.68	2066805.47	0.195		1.00	Assumed

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AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>FW Acute Criterion (µg/L)</i>	<i>FW Chronic Criterion (µg/L)</i>	<i>WLAa (µg/L)</i>	<i>WLAc (µg/L)</i>	<i>LTAa (µg/L)</i>	<i>LTAc (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Aldrin	3.0	N/A	95.2	N/A	30.5	N/A	44.8	94.7
Aluminum	991	N/A	31460	N/A	10067	N/A	14798	31309
Arsenic	340	150	17023	12927	5447	7886	8007	16941
Cadmium	18.38	0.424	2772	110	887	67.1	98.6	208
Carbaryl	2.0	N/A	63.5	N/A	20.3	N/A	29.8	63.1
Chlordane	2.4	0.004	76.2	0.219	24.4	0.133	0.196	0.414
Chlorpyrifos	0.083	0.041	2.63	2.24	0.843	1.37	1.23	2.62
Chromium (trivalent)	1083	140.8	159099	35623	50912	21730	31943	67581
Chromium (hexavalent)	15.7	10.6	498	579	159	353	234	496
Copper	29.72	18.50	3794	4065	1214	2480	1784	3775
Cyanide (free)	45.8	10.7	1454	585	465	357	524	1109
4,4'-DDT	1.1	0.001	34.9	0.0546	11.2	0.0333	0.0490	0.103
Demeton	N/A	0.1	N/A	5.46	N/A	3.33	4.90	10.3
Diazinon	0.17	0.17	5.40	9.29	1.73	5.67	2.53	5.37
Dicofol [Kelthane]	59.3	19.8	1883	1082	602	660	885	1873
Dieldrin	0.24	0.002	7.62	0.109	2.44	0.0667	0.0980	0.207
Diuron	210	70	6667	3825	2133	2333	3136	6634
Endosulfan I (<i>alpha</i>)	0.22	0.056	6.98	3.06	2.23	1.87	2.74	5.80
Endosulfan II (<i>beta</i>)	0.22	0.056	6.98	3.06	2.23	1.87	2.74	5.80
Endosulfan sulfate	0.22	0.056	6.98	3.06	2.23	1.87	2.74	5.80
Endrin	0.086	0.002	2.73	0.109	0.874	0.0667	0.0980	0.207
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.546	N/A	0.333	0.490	1.03
Heptachlor	0.52	0.004	16.5	0.219	5.28	0.133	0.196	0.414
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	1.126	0.08	35.7	4.37	11.4	2.67	3.92	8.29
Lead	149.9	5.84	18215	1222	5829	745	1095	2317
Malathion	N/A	0.01	N/A	0.546	N/A	0.333	0.490	1.03
Mercury	2.4	1.3	76.2	71.0	24.4	43.3	35.8	75.8
Methoxychlor	N/A	0.03	N/A	1.64	N/A	1.000	1.47	3.11
Mirex	N/A	0.001	N/A	0.0546	N/A	0.0333	0.0490	0.103
Nickel	909	100.9	103396	19768	33087	12058	17725	37501
Nonylphenol	28	6.6	889	361	284	220	323	684
Parathion (ethyl)	0.065	0.013	2.06	0.710	0.660	0.433	0.637	1.34
Pentachlorophenol	23.8	18.28	757	999	242	609	355	752
Phenanthrene	30	30	952	1639	305	1000	448	947
Polychlorinated Biphenyls [PCBs]	2.0	0.014	63.5	0.765	20.3	0.467	0.686	1.45
Selenium	20	5	635	273	203	167	245	518
Silver	0.8	N/A	947	N/A	303	N/A	445	942
Toxaphene	0.78	0.0002	24.8	0.0109	7.92	0.00667	0.00980	0.0207
Tributyltin [TBT]	0.13	0.024	4.13	1.31	1.32	0.800	1.17	2.48
2,4,5 Trichlorophenol	136	64	4317	3497	1382	2133	2030	4296
Zinc	227.7	229.5	37104	64391	11873	39278	17453	36926

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HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Water and Fish Criterion (µg/L)</i>	<i>Fish Only Criterion (µg/L)</i>	<i>Incident I Fish Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	1.0	115	1150	68862	64042	94141	199170
Aldrin	1.146E-05	1.147E-05	1.147E-04	0.00687	0.00639	0.00938	0.0198
Anthracene	1109	1317	13170	788623	733419	1078126	2280933
Antimony	6	1071	10710	641317	596425	876744	1854882
Arsenic	10	N/A	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	5	581	5810	347904	323551	475619	1006243
Benzidine	0.0015	0.107	1.07	64.1	59.6	87.5	185
Benzo(a)anthracene	0.024	0.025	0.25	15.0	13.9	20.4	43.2
Benzo(a)pyrene	0.0025	0.0025	0.025	1.50	1.39	2.04	4.32
Bis(chloromethyl)ether	0.0024	0.2745	2.745	164	153	224	475
Bis(2-chloroethyl)ether	0.60	42.83	428.3	25647	23851	35061	74177
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	6	7.55	75.5	4521	4204	6180	13075
Bromodichloromethane [Dichlorobromomethane]	10.2	275	2750	164671	153144	225121	476276
Bromoform [Tribromomethane]	66.9	1060	10600	634731	590299	867740	1835831
Cadmium	5	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.5	46	460	27545	25617	37656	79668
Chlordane	0.0025	0.0025	0.025	1.50	1.39	2.04	4.32
Chlorobenzene	100	2737	27370	1638922	1524198	2240570	4740254
Chlorodibromomethane [Dibromochloromethane]	7.5	183	1830	109581	101910	149807	316940
Chloroform [Trichloromethane]	70	7697	76970	4608982	4286353	6300939	13330558
Chromium (hexavalent)	62	502	5020	300599	279557	410948	869421
Chrysene	2.45	2.52	25.2	1509	1403	2062	4364
Cresols [Methylphenols]	1041	9301	93010	5569461	5179599	7614010	16108552
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.002	0.02	1.20	1.11	1.63	3.46
4,4'-DDE	0.00013	0.00013	0.0013	0.0778	0.0724	0.106	0.225
4,4'-DDT	0.0004	0.0004	0.004	0.240	0.223	0.327	0.692
2,4'-D	70	N/A	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	262	473	4730	283234	263407	387208	819196
1,2-Dibromoethane [Ethylene Dibromide]	0.17	4.24	42.4	2539	2361	3470	7343
m-Dichlorobenzene [1,3-Dichlorobenzene]	322	595	5950	356287	331347	487080	1030490
o-Dichlorobenzene [1,2-Dichlorobenzene]	600	3299	32990	1975449	1837168	2700636	5713591
p-Dichlorobenzene [1,4-Dichlorobenzene]	75	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.79	2.24	22.4	1341	1247	1833	3879
1,2-Dichloroethane	5	364	3640	217964	202707	297978	630417
1,1-Dichloroethylene [1,1-Dichloroethene]	7	55114	551140	33002395	30692228	45117574	95452827
Dichloromethane [Methylene Chloride]	5	13333	133330	7983832	7424964	10914697	23091638
1,2-Dichloropropane	5	259	2590	155090	144234	212023	448566
1,3-Dichloropropene [1,3-Dichloropropylene]	2.8	119	1190	71257	66269	97416	206098
Dicofol [Kelthane]	0.30	0.30	3	180	167	245	519
Dieldrin	2.0E-05	2.0E-05	2.0E-04	0.0120	0.0111	0.0163	0.0346

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2,4-Dimethylphenol	444	8436	84360	5051497	4697892	6905901	14610444
Di- <i>n</i> -Butyl Phthalate	88.9	92.4	924	55329	51456	75640	160029
Dioxins/Furans [TCDD Equivalents]	7.80E-08	7.97E-08	7.97E-07	0.0000477	0.0000444	0.0000652	0.000138
Endrin	0.02	0.02	0.2	12.0	11.1	16.3	34.6
Epichlorohydrin	53.5	2013	20130	1205389	1121012	1647887	3486347
Ethylbenzene	700	1867	18670	1117964	1039707	1528368	3233487
Ethylene Glycol	46744	1.68E+07	1.68E+08	1005988024	935568862	1375286227	2909619161
Fluoride	4000	N/A	N/A	0	3	5	6
Heptachlor	8.0E-05	0.0001	0.001	N/A	N/A	N/A	N/A
Heptachlor Epoxide	0.00029	0.00029	0.0029	0.0599	0.0557	0.0818	0.173
Hexachlorobenzene	0.00068	0.00068	0.0068	0.174	0.161	0.237	0.502
Hexachlorobutadiene	0.00068	0.00068	0.0068	0.407	0.379	0.556	1.17
Hexachlorocyclohexane (<i>alpha</i>)	0.21	0.22	2.2	132	123	180	381
Hexachlorocyclohexane (<i>beta</i>)	0.0078	0.0084	0.084	156	145	212	450
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.15	0.26	2.6	156	145	212	450
Hexachlorocyclopentadiene	0.2	0.341	3.41	204	190	279	590
Hexachloroethane	10.7	11.6	116	6946	6460	9496	20090
Hexachlorophene	1.84	2.33	23.3	1395	1298	1907	4035
4,4'-Isopropylidenediphenol [Bisphenol A]	2.05	2.90	29	1737	1615	2374	5022
Lead	1092	15982	159820	9570060	8900156	13083228	27679484
Mercury	1.15	3.83	38.3	8779	8165	12002	25392
Methoxychlor	0.0122	0.0122	0.122	7.31	6.79	9.98	21.1
Methyl Ethyl Ketone	2.92	3.0	30	1796	1671	2455	5195
Methyl <i>tert</i> -butyl ether [MTBE]	13865	9.92E+05	9.92E+06	594011976	552431138	812073772	1718060838
Nickel	15	10482	104820	6276647	5837281	8580803	18153945
Nitrate-Nitrogen (as Total Nitrogen)	332	1140	11400	2446379	2275132	3344444	7075661
Nitrobenzene	10000	N/A	N/A	N/A	N/A	N/A	N/A
N-Nitrosodiethylamine	45.7	1873	18730	1121557	1043048	1533280	3243878
N-Nitroso-di- <i>n</i> -Butylamine	0.0037	2.1	21	1257	1169	1719	3637
Pentachlorobenzene	0.119	4.2	42	2515	2339	3438	7274
Pentachlorophenol	0.348	0.355	3.55	213	198	290	614
Polychlorinated Biphenyls [PCBs]	0.22	0.29	2.9	174	161	237	502
Pyridine	6.4E-04	6.4E-04	6.40E-03	0.383	0.356	0.523	1.10
Selenium	23	947	9470	567066	527371	775235	1640124
1,2,4,5-Tetrachlorobenzene	50	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	0.23	0.24	2.4	144	134	196	415
Tetrachloroethylene [Tetrachloroethylene]	1.64	26.35	263.5	15778	14674	21570	45635
Thallium	5	280	2800	167665	155928	229214	484936
Toluene	0.12	0.23	2.3	138	128	188	398
Toxaphene	1000	N/A	N/A	N/A	N/A	N/A	N/A
2,4,5-TP [Silvex]	0.011	0.011	0.11	6.59	6.13	9.00	19.0
1,1,1-Trichloroethane	50	369	3690	220958	205491	302071	639077
1,1,2-Trichloroethane	200	784354	7843540	469673054	436795940	642090031	1358435373
Trichloroethylene [Trichloroethene]	5	166	1660	99401	92443	135891	287498
2,4,5-Trichlorophenol	5	71.9	719	43054	40040	58858	124524
TTHM [Sum of Total Trihalomethanes]	1039	1867	18670	1117964	1039707	1528368	3233487
Vinyl Chloride	80	N/A	N/A	N/A	N/A	N/A	N/A
	0.23	16.5	165	9880	9189	13507	28576

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CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS:

Aquatic Life	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Aldrin	31.3	38.0
Aluminum	10359	12579
Arsenic	5605	6806
Cadmium	69.0	83.8
Carbaryl	20.9	25.3
Chlordane	0.137	0.166
Chlorpyrifos	0.867	1.05
Chromium (trivalent)	22360	27151
Chromium (hexavalent)	164	199
Copper	1249	1516
Cyanide (free)	367	445
4,4'-DDT	0.0343	0.0416
Demeton	3.43	4.16
Diazinon	1.77	2.15
Dicofol [Kelthane]	619	752
Dieldrin	0.0686	0.0833
Diuron	2195	2665
Endosulfan I (<i>alpha</i>)	1.92	2.33
Endosulfan II (<i>beta</i>)	1.92	2.33
Endosulfan sulfate	1.92	2.33
Endrin	0.0686	0.0833
Guthion [Azinphos Methyl]	0.343	0.416
Heptachlor	0.137	0.166
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	2.74	3.33
Lead	766	931
Malathion	0.343	0.416
Mercury	25.0	30.4
Methoxychlor	1.02	1.24
Mirex	0.0343	0.0416
Nickel	12408	15066
Nonylphenol	226	274
Parathion (ethyl)	0.445	0.541
Pentachlorophenol	249	302
Phenanthrene	313	380
Polychlorinated Biphenyls [PCBs]	0.480	0.583
Selenium	171	208
Silver	311	378
Toxaphene	0.00686	0.00833
Tributyltin [TBT]	0.823	0.999
2,4,5 Trichlorophenol	1421	1726
Zinc	12217	14835

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Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	65899	80020
Aldrin	0.00657	0.00798
Anthracene	754688	916407
Antimony	613721	745233
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	332933	404276
Benzidine	61.3	74.4
Benzo(a)anthracene	14.3	17.3
Benzo(a)pyrene	1.43	1.73
Bis(chloromethyl)ether	157	191
Bis(2-chloroethyl)ether	24543	29802
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	4326	5253
Bromodichloromethane [Dichlorobromomethane]	157584	191353
Bromoform [Tribromomethane]	607418	737579
Cadmium	N/A	N/A
Carbon Tetrachloride	26359	32008
Chlordane	1.43	1.73
Chlorobenzene	1568399	1904484
Chlorodibromomethane [Dibromochloromethane]	104865	127336
Chloroform [Trichloromethane]	4410657	5355798
Chromium (hexavalent)	287664	349306
Chrysene	1444	1753
Cresols [Methylphenols]	5329807	6471908
Cyanide (free)	N/A	N/A
4,4'-DDD	1.14	1.39
4,4'-DDE	0.0744	0.0904
4,4'-DDT	0.229	0.278
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	271045	329127
1,2-Dibromoethane [Ethylene Dibromide]	2429	2950
m-Dichlorobenzene [1,3- Dichlorobenzene]	340956	414018
o-Dichlorobenzene [1,2- Dichlorobenzene]	1890445	2295540
p-Dichlorobenzene [1,4- Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	1283	1558
1,2-Dichloroethane	208585	253281
1,1-Dichloroethylene [1,1- Dichloroethene]	31582302	38349938
Dichloromethane [Methylene Chloride]	7640288	9277492
1,2-Dichloropropane	148416	180219
1,3-Dichloropropene [1,3- Dichloropropylene]	68191	82803
Dicofol [Kelthane]	171	208
Dieldrin	0.0114	0.0139
2,4-Dimethylphenol	4834131	5870016
Di-n-Butyl Phthalate	52948	64294
Dioxins/Furans [TCDD Equivalents]	0.0000456	0.0000554

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Endrin	11.4	13.9
Epichlorohydrin	1153521	1400704
Ethylbenzene	1069858	1299113
	962700359	1168993293
Ethylene Glycol	2	4
Fluoride	N/A	N/A
Heptachlor	0.0573	0.0695
Heptachlor Epoxide	0.166	0.201
Hexachlorobenzene	0.389	0.473
Hexachlorobutadiene	126	153
Hexachlorocyclohexane (<i>alpha</i>)	4.81	5.84
Hexachlorocyclohexane (<i>beta</i>)	148	180
Hexachlorocyclohexane (<i>gamma</i>)		
[Lindane]	195	237
Hexachlorocyclopentadiene	6647	8071
Hexachloroethane	1335	1621
Hexachlorophene	1661	2017
4,4'-Isopropylidenediphenol [Bisphenol A]	9158260	11120744
Lead	8401	10201
Mercury	6.99	8.48
Methoxychlor	1719	2087
Methyl Ethyl Ketone	568451640	690262706
Methyl <i>tert</i> -butyl ether [MTBE]	6006562	7293683
Nickel	2341111	2842777
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	1073296	1303288
N-Nitrosodiethylamine	1203	1461
N-Nitroso-di- <i>n</i> -Butylamine	2406	2922
Pentachlorobenzene	203	247
Pentachlorophenol	166	201
Polychlorinated Biphenyls [PCBs]	0.366	0.445
Pyridine	542665	658950
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	137	166
1,1,2,2-Tetrachloroethane	15099	18335
Tetrachloroethylene		
[Tetrachloroethylene]	160450	194832
Thallium	131	160
Toluene	N/A	N/A
Toxaphene	6.30	7.65
2,4,5-TP [Silvex]	211450	256761
1,1,1-Trichloroethane	449463022	545776527
1,1,2-Trichloroethane	95123	115507
Trichloroethylene [Trichloroethene]	41201	50030
2,4,5-Trichlorophenol	1069858	1299113
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	9455	11481

STATEMENT OF BASIS / TECHNICAL SUMMARY AND
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Appendix B
TDS, Chloride, and Sulfate Screening Calculations

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate

Menu 4 - Discharge to a Lake

Applicant Name:	City of Abilene
Permit Number, Outfall:	05213-000, Phase I
Segment Number:	1207

Enter values needed for screening:		Data Source (edit if different)	
EF - Effluent <u>fraction</u> at edge of human health MZ	0.0151	decimal fraction	Critical conditions memo
CA - TDS - ambient segment concentration	1870	mg/L	2010 IP, Appendix D
CA - chloride - ambient segment concentration	893	mg/L	2010 IP, Appendix D
CA - sulfate - ambient segment concentration	371	mg/L	2010 IP, Appendix D
CC - TDS - segment criterion	3500	mg/L	2022 TSWQS, Appendix A
CC - chloride - segment criterion	1200	mg/L	2022 TSWQS, Appendix A
CC - sulfate - segment criterion	500	mg/L	2022 TSWQS, Appendix A
CE - TDS - average effluent concentration	2928	mg/L	Permit application
CE - chloride - average effluent concentration	1071	mg/L	Permit application
CE - sulfate - average effluent concentration	437	mg/L	Permit application

Screening Equation

$$CC \geq (EF)(CE) + (1 - EF)(CA)$$

Preliminary Calculations	Effluent Load	Load in Lake (1- EF)(CA)	New Concentration Equation 3	% Change in Ambient	% Change in Assim. Capacity
Parameter	(EF)(CE)				
TDS	44.2128	1841.763	1885.98	0.9	1.0
Chloride	16.1721	879.5157	895.69	0.3	0.9
Sulfate	6.5987	365.3979	372.00	0.3	0.8

No further screening for TDS needed if:	1885.98	≤	3500
No further screening for chloride needed if:	895.69	≤	1200
No further screening for sulfate needed if:	372.00	≤	500

Permit Limit Calculations

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TDS

Calculate the WLA	WLA= [CC - (1-EF)(CA)]/EF	109817.02		
Calculate the LTA	LTA = WLA * 0.93	102129.83		
Calculate the daily average	Daily Avg. = LTA * 1.47	150130.85		
Calculate the daily maximum	Daily Max. = LTA * 3.11	317623.77		
Calculate 70% of the daily average	70% of Daily Avg. =	105091.59		
Calculate 85% of the daily average	85% of Daily Avg. =	127611.22		
No permit limitations needed if:	2928	≤	105091.59	
Reporting needed if:	2928	>	105091.59	but ≤ 127611.22
Permit limits may be needed if:	2928	>	127611.22	

No permit limitations needed for TDS

Chloride

Calculate the WLA	WLA= [CC - (1-EF)(CA)]/EF	21224.13		
Calculate the LTA	LTA = WLA * 0.93	19738.44		
Calculate the daily average	Daily Avg. = LTA * 1.47	29015.50		
Calculate the daily maximum	Daily Max. = LTA * 3.11	61386.54		
Calculate 70% of the daily average	70% of Daily Avg. =	20310.85		
Calculate 85% of the daily average	85% of Daily Avg. =	24663.18		
No permit limitations needed if:	1071	≤	20310.85	
Reporting needed if:	1071	>	20310.85	but ≤ 24663.18
Permit limits may be needed if:	1071	>	24663.18	

No permit limitations needed for chloride

Sulfate

Calculate the WLA	WLA= [CC - (1-EF)(CA)]/EF	8914.05		
Calculate the LTA	LTA = WLA * 0.93	8290.06		
Calculate the daily average	Daily Avg. = LTA * 1.47	12186.39		
Calculate the daily maximum	Daily Max. = LTA * 3.11	25782.10		
Calculate 70% of the daily average	70% of Daily Avg. =	8530.47		
Calculate 85% of the daily average	85% of Daily Avg. =	10358.43		
No permit limitations needed if:	437	≤	8530.47	
Reporting needed if:	437	>	8530.47	but ≤ 10358.43
Permit limits may be needed if:	437	>	10358.43	

No permit limitations needed for sulfate

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Appendix B
TDS, Chloride, and Sulfate Screening Calculations

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate

Menu 4 - Discharge to a Lake

Applicant Name:	City of Abilene
Permit Number, Outfall:	05213-000, Phase II
Segment Number:	1207

Enter values needed for screening:		Data Source (edit if different)	
EF - Effluent <u>fraction</u> at edge of human health MZ	0.0167	decimal fraction	Critical conditions memo
CA - TDS - ambient segment concentration	1870	mg/L	2010 IP, Appendix D
CA - chloride - ambient segment concentration	893	mg/L	2010 IP, Appendix D
CA - sulfate - ambient segment concentration	371	mg/L	2010 IP, Appendix D
CC - TDS - segment criterion	3500	mg/L	2022 TSWQS, Appendix A
CC - chloride - segment criterion	1200	mg/L	2022 TSWQS, Appendix A
CC - sulfate - segment criterion	500	mg/L	2022 TSWQS, Appendix A
CE - TDS - average effluent concentration	2928	mg/L	Permit application
CE - chloride - average effluent concentration	1071	mg/L	Permit application
CE - sulfate - average effluent concentration	437	mg/L	Permit application

Screening Equation

$$CC \geq (EF)(CE) + (1-EF)(CA)$$

Preliminary Calculations	Effluent Load (EF)(CE)	Load in Lake (1-EF)(CA)	New Concentration Equation 3	% Change in Ambient	% Change in Assim. Capacity
Parameter					
TDS	48.8976	1838.771	1887.67	0.9	1.1
Chloride	17.8857	878.0869	895.97	0.3	1.0
Sulfate	7.2979	364.8043	372.10	0.3	0.9

No further screening for TDS needed if:	1887.67	≤	3500
No further screening for chloride needed if:	895.97	≤	1200
No further screening for sulfate needed if:	372.10	≤	500

Permit Limit Calculations

STATEMENT OF BASIS / TECHNICAL SUMMARY AND
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TDS

Calculate the WLA	WLA= [CC - (1-EF)(CA)]/EF	99474.79		
Calculate the LTA	LTA = WLA * 0.93	92511.56		
Calculate the daily average	Daily Avg. = LTA * 1.47	135991.99		
Calculate the daily maximum	Daily Max. = LTA * 3.11	287710.94		
Calculate 70% of the daily average	70% of Daily Avg. =	95194.39		
Calculate 85% of the daily average	85% of Daily Avg. =	115593.19		
No permit limitations needed if:	2928	≤	95194.39	
Reporting needed if:	2928	>	95194.39	but ≤ 115593.19
Permit limits may be needed if:	2928	>	115593.19	

No permit limitations needed for TDS

Chloride

Calculate the WLA	WLA= [CC - (1-EF)(CA)]/EF	19276.23		
Calculate the LTA	LTA = WLA * 0.93	17926.90		
Calculate the daily average	Daily Avg. = LTA * 1.47	26352.54		
Calculate the daily maximum	Daily Max. = LTA * 3.11	55752.65		
Calculate 70% of the daily average	70% of Daily Avg. =	18446.78		
Calculate 85% of the daily average	85% of Daily Avg. =	22399.66		
No permit limitations needed if:	1071	≤	18446.78	
Reporting needed if:	1071	>	18446.78	but ≤ 22399.66
Permit limits may be needed if:	1071	>	22399.66	

No permit limitations needed for chloride

Sulfate

Calculate the WLA	WLA= [CC - (1-EF)(CA)]/EF	8095.55		
Calculate the LTA	LTA = WLA * 0.93	7528.86		
Calculate the daily average	Daily Avg. = LTA * 1.47	11067.43		
Calculate the daily maximum	Daily Max. = LTA * 3.11	23414.76		
Calculate 70% of the daily average	70% of Daily Avg. =	7747.20		
Calculate 85% of the daily average	85% of Daily Avg. =	9407.31		
No permit limitations needed if:	437	≤	7747.20	
Reporting needed if:	437	>	7747.20	but ≤ 9407.31
Permit limits may be needed if:	437	>	9407.31	

No permit limitations needed for sulfate

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Appendix C
pH Screening

Calculation of pH of a mixture of two flows. Based on the
procedure in EPA's DESCON program (EPA, 1988. Technical
Guidance on Supplementary Stream Design Conditions for Steady
State Modeling. USEPA Office of Water, Washington D.C.)

INPUT		
1. DILUTION FACTOR AT MIXING ZONE BOUNDARY	54.645	54.645
RECEIVING WATER CHARACTERISTICS		
2. Temperature (deg C):	25.00	25.00
3. pH:	8.10	8.10
4. Alkalinity (mg CaCO3/L):	230.00	230.00
EFFLUENT CHARACTERISTICS		
5. Temperature (deg C):	25.00	25.00
6. pH:	6.00	9.00
7. Alkalinity (mg CaCO3/L):	20.00 *	460.00
OUTPUT		
1. IONIZATION CONSTANTS		
Upstream/Background pKa:	6.35	6.35
Effluent pKa:	6.35	6.35
2. IONIZATION FRACTIONS		
Upstream/Background Ionization Fraction:	0.98	0.98
Effluent Ionization Fraction:	0.31	1.00
3. TOTAL INORGANIC CARBON		
Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	234.09	234.09
Effluent Total Inorganic Carbon (mg CaCO3/L):	64.77	461.03
4. CONDITIONS AT MIXING ZONE BOUNDARY		
Temperature (deg C):	25.00	25.00
Alkalinity (mg CaCO3/L):	226.16	234.21
Total Inorganic Carbon (mg CaCO3/L):	230.99	238.24
pKa:	6.35	6.35
pH at Mixing Zone Boundary:	8.02	8.11

* Assume minimal total alkalinity at low effluent pH based on carbonate equilibrium chemistry of natural and treated water



Compliance History Report

Compliance History Report for CN600242671, RN107958928, Rating Year 2022 which includes Compliance History (CH) components from September 1, 2017, through August 31, 2022.

Customer, Respondent, or Owner/Operator:	CN600242671, City of Abilene	Classification:	SATISFACTORY	Rating:	0.11
Regulated Entity:	RN107958928, POSSUM KINGDOM RAW WATER ROUGHING FACILITY	Classification:	UNCLASSIFIED	Rating:	-----
Complexity Points:	3	Repeat Violator:	NO		
CH Group:	09 - Construction				
Location:	105 E ELLIOTT ST BRECKENRIDGE, TX 76424-4515, STEPHENS COUNTY				
TCEQ Region:	REGION 03 - ABILENE				
ID Number(s):					
WASTEWATER PERMIT	WQ0005213000	WASTEWATER EPA ID	TX0137383		
Compliance History Period:	September 01, 2017 to August 31, 2022	Rating Year:	2022	Rating Date:	09/01/2022
Date Compliance History Report Prepared:	March 15, 2023				
Agency Decision Requiring Compliance History:	Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.				
Component Period Selected:	March 15, 2017 to March 15, 2023				
TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.					
Name:	Alyssa Loveday		Phone:	(512) 239-4524	

Site and Owner/Operator History:

- | | |
|--|-----|
| 1) Has the site been in existence and/or operation for the full five year compliance period? | YES |
| 2) Has there been a (known) change in ownership/operator of the site during the compliance period? | NO |

Components (Multimedia) for the Site Are Listed in Sections A - J

A. Final Orders, court judgments, and consent decrees:
N/A

B. Criminal convictions:
N/A

C. Chronic excessive emissions events:
N/A

D. The approval dates of investigations (CCEDS Inv. Track. No.):
N/A

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):
A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.
N/A

F. Environmental audits:
N/A

G. Type of environmental management systems (EMSs):
N/A

H. Voluntary on-site compliance assessment dates:

N/A

I. Participation in a voluntary pollution reduction program:

N/A

J. Early compliance:

N/A

Sites Outside of Texas:

N/A

Component Appendices

Appendix A

All NOV's Issued During Component Period 3/15/2017 and 3/15/2023

N/A

Appendix B

All Investigations Conducted During Component Period March 15, 2017 and March 15, 2023

N/A

For
Informational
Purposes
Only