



# Technical Package Cover Page

## **This file contains the following documents:**

1. Summary of application (in plain language)
2. First notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
3. Second notice (NAPD-Notice of Preliminary Decision)
4. Application materials (**NOTE:** This application was declared Administratively Complete before June 1, 2024. Application materials are available for review at the Public Viewing Location provided in the NORI.)
5. Draft permit
6. Technical summary or fact sheet

ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS  
INDUSTRIAL WASTEWATER/STORMWATER

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

Jack A. Fusco Energy Center, LLC (CN603517848) and Calpine Operating Services Company, Inc. (CN602680076) operates Jack A. Fusco Energy Center (RN100216092), a power generating facility. The facility is located at 3440 Lockwood Road, in Richmond, Fort Bend County, Texas 77469. The facility has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004258000, to authorize the discharge of treated wastewater. The discharge is not to exceed a daily average flow volume of 3,000,000 gallons per day.

Discharges from the facility is expected to contain temperature, total dissolved solids, sulfates, chlorides, chemical oxygen demand, total residual chlorine, chromium, and zinc. The types of wastewater discharged from the facility include cooling tower blowdown, previously monitored effluents from utilities, and low volume wastes. Treatment is not required to meet permitted effluent limits except for dechlorination of cooling tower blowdown.

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT RENEWAL

PERMIT NO. WQ0004258000

**APPLICATION.** Jack A. Fusco Energy Center, LLC and Calpine Operating Services Company, Inc., 717 Texas Street, Suite 1000, Houston, Texas 77002, which owns an electric power generating facility, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004258000 (EPA I.D. No. TX0123510) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 3,000,000 gallons per day. The facility is located at 3440 Lockwood Road, near the city of Richmond, in Font Bend County, Texas 77469. The discharge route is from the plant site via pipe directly to the Brazos River Below the Navasota River. TCEQ received this application on April 5, 2024. The permit application will be available for viewing and copying at George Memorial Library, 1001 Golfview Drive, Richmond, Texas prior to the date this notice is published in the newspaper. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.623055,29.4725&level=18>

**ADDITIONAL NOTICE.** TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.**

**PUBLIC COMMENT / PUBLIC MEETING.** You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

**OPPORTUNITY FOR A CONTESTED CASE HEARING.** After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments, and the Executive Director's decision on the application, will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this**

**application. If comments are received, the mailing will also provide instructions for requesting reconsideration of the Executive Director's decision and for requesting a contested case hearing.** A contested case hearing is a legal proceeding similar to a civil trial in state district court.

**TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.**

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

**TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met./**

**MAILING LIST.** If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

**INFORMATION AVAILABLE ONLINE.** For details about the status of the application, visit the Commissioners' Integrated Database at [www.tceq.texas.gov/goto/cid](http://www.tceq.texas.gov/goto/cid). Search the database using the permit number for this application, which is provided at the top of this notice.

**AGENCY CONTACTS AND INFORMATION.** All public comments and requests must be submitted either electronically at <https://www14.tceq.texas.gov/epic/eComment/>, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit

application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at [www.tceq.texas.gov/goto/pep](http://www.tceq.texas.gov/goto/pep). Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Jack A. Fusco Energy Center, LLC and Calpine Operating Services Company, Inc. at the address stated above or by calling Mr. Ray Dube, EHS Director, at 830-305-8429.

Issuance Date: May 22, 2024

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



## NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR TPDES PERMIT FOR INDUSTRIAL WASTEWATER

### RENEWAL

### PERMIT NO. WQ0004258000

**APPLICATION AND PRELIMINARY DECISION.** Jack A. Fusco Energy Center, LLC and Calpine Operating Services Company, Inc., 717 Texas Avenue, Suite 1000, Houston, Texas 77002, which operates Jack A. Fusco Energy Center, a combined cycle natural gas-fired combustion turbines and steam turbines electric generating facility, has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004258000, which authorizes the discharge of cooling tower blowdown and previously monitored effluents (PMEs) (water treatment wastes, wastewater from the internal cooling coils of the inlet air chiller, heat recovery steam generator (HRSG) blowdown, and low volume waste sources) at a daily average flow not to exceed 1,500,000 gallons per day (gpd) via Outfall 001 (Phase I), and cooling tower blowdown and PMEs (water treatment wastes, wastewater from the internal cooling coils of the inlet air chiller, HRSG blowdown, and low volume waste sources) at a daily average flow not to exceed 3,000,000 gpd via Outfall 001 (Phase II). The TCEQ received this application on April 5, 2024.

The facility is located at 3440 Lockwood Road, near the City of Richmond, Fort Bend County, Texas 77469. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.623055,29.4725&level=18>

The effluent is discharged via pipe directly to Brazos River Below Navasota River in Segment No. 1202 of the Brazos River Basin. The designated uses for Segment No. 1202 are primary contact recreation, public water supply, and high aquatic life use.

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at George Memorial Library, 1001 Golfview Drive, Richmond, Texas. The application and associated notices are available electronically at the following webpage:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>

**PUBLIC COMMENT / PUBLIC MEETING.** You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit written or oral comment or to ask questions about the application. Generally, the TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

**OPPORTUNITY FOR A CONTESTED CASE HEARING.** After the deadline for public comments, the Executive Director will consider the comments and prepare a response to all relevant and material, or significant public comments. **The response to comments, along with the Executive Director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the Executive Director's decision.** A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

**TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST:** your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period; and the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period. TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met.**

**EXECUTIVE DIRECTOR ACTION.** The Executive Director may issue final approval of the application unless a timely contested case hearing request or a timely request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and requests to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

**MAILING LIST.** If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be added to: (1) the permanent list for a specific applicant name and permit number; and (2) the mailing list for a specific county. If you wish to be placed on the permanent and the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

**All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at <https://www.tceq.texas.gov/goto/comment/> within 30 days from the date of newspaper publication of this notice.**

**INFORMATION AVAILABLE ONLINE.** For details about the status of the application, visit the Commissioners' Integrated Database at <https://www.tceq.texas.gov/goto/cid/>. Search the database using the permit number for this application, which is provided at the top of this notice.

**AGENCY CONTACTS AND INFORMATION.** Public comments and requests must be submitted either electronically at <https://www.tceq.texas.gov/goto/comment/> or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address, and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, toll free, at 1-800-687-4040 or visit their website at <https://www.tceq.texas.gov/agency/decisions/participation/permitting-participation>. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Jack A. Fusco Energy Center, LLC and Calpine Operating Services Company, Inc. at the address stated above or by calling Ms. Jan Stavinoha, EHS Director, at 713-570-4814.

Issued: February 3, 2026



TEXAS COMMISSION ON ENVIRONMENTAL  
QUALITY

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

PERMIT TO DISCHARGE WASTES

under provisions of  
Section 402 of the Clean Water Act  
and Chapter 26 of the Texas Water Code  
and 40 CFR Part 423

Jack A. Fusco Energy Center, LLC and Calpine Operating Services Company, Inc.

whose mailing address is

717 Texas Avenue, Suite 1000  
Houston, Texas 77002

is authorized to treat and discharge wastes from Jack A. Fusco Energy Center, a combined cycle natural gas-fired combustion turbines and steam turbines electric generating facility (SIC 4911)

located at 3440 Lockwood Road, near the City of Richmond, in Fort Bend County, Texas 77469

via pipe directly to Brazos River Below Navasota River in Segment No. 1202 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:

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For the Commission

TPDES PERMIT NO.  
WQ0004258000  
*[For TCEQ office use only -  
EPA I.D. No. TX0123510]*

This renewal replaces TPDES Permit  
No. WQ0004258000, issued on  
November 28, 2022.

1. During the period beginning upon the date of permit issuance and lasting until startup of plant expansion (Phase II), the permittee is authorized to discharge cooling tower blowdown and previously monitored effluents (PMEs) (water treatment wastes <sup>1</sup>, wastewater from the internal cooling coils of the inlet air chiller, heat recovery steam generator (HRSG) blowdown, and low volume waste sources <sup>2</sup>) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1.5 million gallons per day (MGD). The daily maximum flow shall not exceed 3.0 MGD.

| Effluent Characteristics             | Discharge Limitations |        |               | Minimum Self-Monitoring Requirements |             |  |                       |             |
|--------------------------------------|-----------------------|--------|---------------|--------------------------------------|-------------|--|-----------------------|-------------|
|                                      | Daily Average         |        | Daily Maximum |                                      | Single Grab | Report Daily Average and Daily Maximum | Measurement Frequency | Sample Type |
|                                      | lbs/day               | mg/L   | lbs/day       | mg/L                                 | mg/L        |  |                       |             |
| Flow                                 | 1.5 MGD               |        | 3.0 MGD       |                                      | N/A         |  | Continuous            | Totalizer   |
| Temperature                          | Report, °F            |        | Report, °F    |                                      | N/A         |  | 1/day                 | In Situ     |
| Total Dissolved Solids               | N/A                   | Report | N/A           | Report                               | N/A         |  | 1/week                | Grab        |
| Sulfates                             | N/A                   | Report | N/A           | Report                               | N/A         |  | 1/week                | Grab        |
| Chlorides                            | N/A                   | Report | N/A           | Report                               | N/A         |  | 1/week                | Grab        |
| Chemical Oxygen Demand               | 1,878                 | 150    | 2,504         | 200                                  | 200         |  | 1/week                | Grab        |
| Total Residual Chlorine <sup>3</sup> | N/A                   | N/A    | N/A           | 0.1                                  | 0.1         |  | 1/week <sup>4</sup>   | Grab        |
| Total Chromium                       | 1.55                  | 0.18   | 1.55          | 0.18                                 | 0.18        |  | 1/week                | Grab        |
| Total Zinc                           | 7.74                  | 0.90   | 7.74          | 0.90                                 | 0.90        |  | 1/week                | Grab        |

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 001, at the wastewater collection sump before pumping to the pipeline.

<sup>1</sup> See Other Requirement No. 11.

<sup>2</sup> See Other Requirement No. 10.

<sup>3</sup> See Other Requirement No. 12.

<sup>4</sup> Samples shall be representative of periods of chlorination.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – PHASE II

Outfall Number 001

1. During the period beginning upon the date of startup of plant expansion (Phase II) and lasting through the date of permit expiration, the permittee is authorized to discharge cooling tower blowdown and PME's (water treatment wastes <sup>1</sup>, wastewater from the internal cooling coils of the inlet air chiller, heat recovery steam generator (HRSG) blowdown, and low volume waste sources <sup>2</sup>) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 3.0 million gallons per day (MGD). The daily maximum flow shall not exceed 6.0 MGD.

| Effluent Characteristics             | Discharge Limitations |        |               | Minimum Self-Monitoring Requirements |             |  |                       |             |
|--------------------------------------|-----------------------|--------|---------------|--------------------------------------|-------------|--|-----------------------|-------------|
|                                      | Daily Average         |        | Daily Maximum |                                      | Single Grab | Report Daily Average and Daily Maximum | Measurement Frequency | Sample Type |
|                                      | lbs/day               | mg/L   | lbs/day       | mg/L                                 | mg/L        |  |                       |             |
| Flow                                 | 3.0 MGD               |        | 6.0 MGD       |                                      | N/A         |  | Continuous            | Totalizer   |
| Temperature                          | Report, °F            |        | Report, °F    |                                      | N/A         |  | 1/day                 | In Situ     |
| Total Dissolved Solids               | N/A                   | Report | N/A           | Report                               | N/A         |  | 1/week                | Grab        |
| Sulfates                             | N/A                   | Report | N/A           | Report                               | N/A         |  | 1/week                | Grab        |
| Chlorides                            | N/A                   | Report | N/A           | Report                               | N/A         |  | 1/week                | Grab        |
| Chemical Oxygen Demand               | 3,755                 | 150    | 5,007         | 200                                  | 200         |  | 1/week                | Grab        |
| Total Residual Chlorine <sup>3</sup> | N/A                   | N/A    | N/A           | 0.1                                  | 0.1         |  | 1/week <sup>4</sup>   | Grab        |
| Total Chromium                       | 4.51                  | 0.18   | 4.51          | 0.18                                 | 0.18        |  | 1/week                | Grab        |
| Total Zinc                           | 23.5                  | 0.90   | 23.5          | 0.90                                 | 0.90        |  | 1/week                | Grab        |

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 001, at the wastewater collection sump before pumping to the pipeline.

<sup>1</sup> See Other Requirement No. 11.

<sup>2</sup> See Other Requirement No. 10.

<sup>3</sup> See Other Requirement No. 12.

<sup>4</sup> Samples shall be representative of periods of chlorination.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 201

- 1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge low volume waste sources <sup>1</sup> including water treatment waste <sup>2</sup> and wastewater from the internal cooling coils of the inlet air chiller subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

| Effluent Characteristics | Discharge Limitations |                       |                     | Minimum Self-Monitoring Requirements                            |             |
|--------------------------|-----------------------|-----------------------|---------------------|---|-------------|
|                          | Daily Average<br>mg/L | Daily Maximum<br>mg/L | Single Grab<br>mg/L | Report Daily Average and Daily Maximum<br>Measurement Frequency | Sample Type |
| Flow                     | Report, MGD           | Report, MGD           | N/A                 | 1/day <sup>3</sup>  | Estimate    |
| Total Suspended Solids   | 30                    | 100                   | 100                 | 1/week <sup>3</sup>   | Grab        |
| Oil and Grease           | 10                    | 15                    | 15                  | 1/week <sup>3</sup>   | Grab        |

- 2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day <sup>3</sup> by grab sample.
- 3. Effluent monitoring samples shall be taken at the following location: At Outfall 201, where effluent from the plant and equipment drains from the oil/water separator, at the point of discharge from the internal cooling coils of the chiller, where demineralizer wastewater discharges from the neutralization tank, and where water treatment wastes discharges from the reverse osmosis unit prior to mixing with any other waters.

<sup>1</sup> See Other Requirement No. 10.  
<sup>2</sup> See Other Requirement No. 11.  
<sup>3</sup> When discharging.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 301

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge low volume waste sources <sup>1</sup> including HRSG blowdown subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

| Effluent Characteristics | Discharge Limitations |                       |                     | Minimum Self-Monitoring Requirements                            |             |
|--------------------------|-----------------------|-----------------------|---------------------|---|-------------|
|                          | Daily Average<br>mg/L | Daily Maximum<br>mg/L | Single Grab<br>mg/L | Report Daily Average and Daily Maximum<br>Measurement Frequency | Sample Type |
| Flow                     | Report, MGD           | Report, MGD           | N/A                 | 1/day <sup>2</sup>  | Estimate    |
| Total Suspended Solids   | 30                    | 100                   | 100                 | 1/week <sup>2</sup>   | Grab        |
| Oil and Grease           | 10                    | 15                    | 15                  | 1/week <sup>2</sup>   | Grab        |

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/day <sup>2</sup> by grab sample.
3. Effluent monitoring samples shall be taken at the following location: At Outfall 201, where effluent from the plant and equipment drains from the oil/water separator, at the point of discharge from the internal cooling coils of the chiller, where demineralizer wastewater discharges from the neutralization tank, and where water treatment wastes discharges from the reverse osmosis unit prior to mixing with any other waters.

<sup>1</sup> See Other Requirement No. 10.

<sup>2</sup> When discharging.

## 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, Industrial Wastewater 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, Industrial Wastewater 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.

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## **OTHER REQUIREMENTS**

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 12 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 12 and Enforcement Division (MC 224):

| <b>Pollutant</b> | <b>MAL<sup>1</sup> (mg/L)</b> |
|------------------|-------------------------------|
| Chromium (Total) | 0.003                         |
| Zinc (Total)     | 0.005                         |

Test methods used must be sensitive enough to demonstrate compliance with the permit effluent limitations. If an effluent limit for a pollutant is less than the MAL, then the test method for that pollutant must be sensitive enough to demonstrate compliance at the MAL. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit, with consideration given to the MAL for the pollutants specified above.

When an analysis of an effluent sample for a pollutant listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero shall be used for that measurement when making calculations for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form:

“The reported value(s) of zero for     [list pollutant(s)]     on the self-reporting form for [monitoring period date range] is based on the following conditions: (1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and (2) the analytical results contained no detectable levels above the specified MAL.”

When an analysis of an effluent sample for a pollutant indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that pollutant, the level of detection achieved shall be used for that measurement when making calculations for the self-reporting form. A zero may not be used.

2. Reporting requirements according to 30 TAC §§ 319.1-319.12 for Phase II of Outfall 001 and any additional effluent reporting requirements contained in the permit are suspended from the effective date of the permit until plant expansion start-up or discharge, whichever occurs first, from the facility described by this permit. The permittee shall provide written notice to the TCEQ Region 12 Office, Applications Review and Processing Team (MC 148) of the Water Quality Division, and Compliance Monitoring Team (MC 224) at least forty-five days prior to plant expansion start-up or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.

The Phase II plant expansion will double the capacity of the facility and will include two additional boilers and two additional cooling towers.

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<sup>1</sup> Minimum analytical level.

3. COOLING WATER INTAKE STRUCTURE REQUIREMENTS

The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC 148) and Region 12 Office of any changes in the method by which the facility obtains water for cooling purposes. This notification must be submitted 30 days prior to any such change and must include a description of the planned changes. The TCEQ may, upon review of the notification, reopen the permit to include additional terms and conditions as necessary.

4. This provision supersedes and replaces Provision 1, Paragraph 1 of Monitoring and Reporting Requirements found on Page 4 of this permit.

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 TCEQ Compliance Monitoring Team (MC 224), by the 25th 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.

5. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge. Chronic toxic criteria apply at the edge of the mixing zone.
6. 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.
7. There must be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.
8. The 126 priority pollutants (Appendix A of Part 423) contained in chemicals added for cooling tower maintenance, except chromium and zinc, must be limited in the discharge to “no detectable amount.” The use of other chemical additives, other than the list of chemicals (or their equivalents) submitted in the most recent permit application, is not authorized unless approval is obtained and limitations are established on a case-by-case basis in accordance with 40 CFR Part 122.62(a).
9. The term *metal cleaning waste* means any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

The term chemical metal cleaning waste means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.

For the purpose of this permit, metal cleaning waste includes combustion turbine generator (CTG) off-line wash water. This permit does not authorize the discharge of metal cleaning wastes or chemical metal cleaning wastes.

10. The term *low volume waste sources* means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in 40 CFR Part 423. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition.
11. The term *water treatment wastes* include but is not limited to: cold lime water treatment wastes, demineralizer backwash, filter backwash, ion exchange water treatment system wastes, membrane regeneration wastes, and reverse osmosis reject water.
12. The term *total residual chlorine* (or total residual oxidants for intake water with bromides) means the value obtained using any of the “chlorine—total residual” methods in Table IB in 40 CFR §136.3(a), or other methods approved by the permitting authority.

Simultaneous multi-unit chlorination and continuous chlorination is permitted, because the facility dechlorinates effluent during periods of continuous chlorination. The permittee shall dechlorinate the chlorinated effluent to a non-detectable level defined as 0.1 mg/L of total residual chlorine in a single grab sample.

13. The term *blowdown* means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices.
14. Where more than one source is associated with a particular waste category, these sources may be analyzed and reported individually or combined into a single flow-weighted sample for analysis and reporting. Monitoring and reporting requirements are to be performed at the frequencies described in this permit following discharge through any of the specified locations. Grab samples obtained from each low volume waste source may either be individually analyzed for reporting the arithmetic average and maximum values or physically combined into a single flow-weighted sample for analysis and reporting of total suspended solids. Grab samples obtained from each low volume waste source must be individually analyzed for oil and grease and the highest value obtained must be used for reporting purposes.
15. The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC-148) and the Region 12 Office once the relocation of Outfall 001 occurs. This notification must be submitted within 30 days of new outfall location.
16. 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. Results of the analytical testing must be submitted within 90 days of initial discharge to the TCEQ Industrial Permits Team (MC 148) and Region 12 Office. 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 in Table 1. Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of four sampling events that are each at least one week apart.

Table 2: Analysis is required for all external Outfalls that discharge any wastewater other than 1) stormwater runoff only or 2) stormwater commingled with any allowable non-stormwater wastestreams. Sampling and analysis must be conducted for a minimum of four sampling events that are each at least one week apart.

Table 3: For all pollutants listed in Table 3, 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.

Table 4: For all pollutants listed in Table 4, the permittee shall indicate whether each pollutant is believed to be present or absent in the discharge via the respective outfall. 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 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 – Conventionals and Non-conventionals**

| Outfall No.:                                  | <input type="checkbox"/> C <input type="checkbox"/> G | Effluent Concentration (mg/L) |       |       |       |         |
|---|---|-------------------------------|-------|-------|-------|---------|
|   |   | 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                                      |   |                               |       |       |       |         |
| Total Alkalinity (mg/L as CaCO <sub>3</sub> ) |   |                               |       |       |       |         |
| Temperature (°F)                              |   |                               |       |       |       |         |
| pH (Standard Units; min/max)                  |   |                               |       |       |       |         |

**Table 2 – Metals**

| Pollutant            | Effluent Concentration (µg/L) <sup>1</sup> |       |       |       |         | MAL <sup>2</sup> (µg/L) |
|----------------------|--|-------|-------|-------|---------|-------------------------|
|                      | Samp.                                      | Samp. | Samp. | Samp. | Average |                         |
| Aluminum, Total      |  |       |       |       |         | 2.5                     |
| Antimony, Total      |  |       |       |       |         | 5                       |
| Arsenic, Total       |  |       |       |       |         | 0.5                     |
| Barium, Total        |  |       |       |       |         | 3                       |
| Beryllium, Total     |  |       |       |       |         | 0.5                     |
| Cadmium, Total       |  |       |       |       |         | 1                       |
| Chromium, Total      |  |       |       |       |         | 3                       |
| Chromium, Hexavalent |  |       |       |       |         | 3                       |
| Chromium, Trivalent  |  |       |       |       |         | N/A                     |
| Copper, Total        |  |       |       |       |         | 2                       |
| Cyanide, Free        |  |       |       |       |         | 10                      |
| Lead, Total          |  |       |       |       |         | 0.5                     |

<sup>1</sup> Indicate units if different than µg/L.

<sup>2</sup> Minimum Analytical Level

| Pollutant       | Effluent Concentration (µg/L) <sup>1</sup> |       |       |       |         | MAL <sup>2</sup><br>(µg/L) |
|-----------------|--|-------|-------|-------|---------|----------------------------|
|                 | Samp.                                      | Samp. | Samp. | Samp. | Average |                            |
| Mercury, Total  |  |       |       |       |         | 0.005                      |
| Nickel, Total   |  |       |       |       |         | 2                          |
| Selenium, Total |  |       |       |       |         | 5                          |
| Silver, Total   |  |       |       |       |         | 0.5                        |
| Thallium, Total |  |       |       |       |         | 0.5                        |
| Zinc, Total     |  |       |       |       |         | 5.0                        |

**Table 3 – Toxic Pollutants with Water Quality Criteria**

| Outfall No.:                  | <input type="checkbox"/> C <input type="checkbox"/> G | Samp. 1<br>(µg/L) | Samp. 2<br>(µg/L) | Samp. 3<br>(µg/L) | Samp. 4<br>(µg/L) | Avg.<br>(µg/L) | MAL<br>(µg/L) |
|-------------------------------|---|-------------------|-------------------|-------------------|-------------------|----------------|---------------|
| Pollutant                     |   |                   |                   |                   |                   |                |               |
| Acrolein                      |   |                   |                   |                   |                   |                | 0.7           |
| Acrylonitrile                 |   |                   |                   |                   |                   |                | 50            |
| Anthracene                    |   |                   |                   |                   |                   |                | 10            |
| Benzene                       |   |                   |                   |                   |                   |                | 10            |
| Benzidine                     |   |                   |                   |                   |                   |                | 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            |
| 1,3-Dichloropropylene         |   |                   |                   |                   |                   |                | 10            |
| 2,4-Dimethylphenol            |   |                   |                   |                   |                   |                | 10            |
| Di- <i>n</i> -Butyl Phthalate |   |                   |                   |                   |                   |                | 10            |
| Epichlorohydrin               |   |                   |                   |                   |                   |                | 1,000         |
| Ethylbenzene                  |   |                   |                   |                   |                   |                | 10            |
| Ethylene Glycol               |   |                   |                   |                   |                   |                | —             |

| Outfall No.:                                     | <input type="checkbox"/> C <input type="checkbox"/> G | Samp. 1<br>(µg/L) | Samp. 2<br>(µg/L) | Samp. 3<br>(µg/L) | Samp. 4<br>(µg/L) | Avg.<br>(µg/L) | MAL<br>(µg/L) |
|--|---|-------------------|-------------------|-------------------|-------------------|----------------|---------------|
| Pollutant  |   |                   |                   |                   |                   |                |               |
| Fluoride   |   |                   |                   |                   |                   |                | 500           |
| Hexachlorobenzene                                |   |                   |                   |                   |                   |                | 5             |
| Hexachlorobutadiene                              |   |                   |                   |                   |                   |                | 10            |
| Hexachlorocyclopentadiene                        |   |                   |                   |                   |                   |                | 10            |
| Hexachloroethane                                 |   |                   |                   |                   |                   |                | 20            |
| 4,4'-Isopropylidenediphenol<br>[bisphenol A]     |   |                   |                   |                   |                   |                | —             |
| Methyl Ethyl Ketone                              |   |                   |                   |                   |                   |                | 50            |
| Methyl <i>tert</i> -butyl ether<br>[MTBE]        |   |                   |                   |                   |                   |                | —             |
| 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<br>(PCBs) <sup>1</sup> |   |                   |                   |                   |                   |                | 0.2           |
| Pyridine   |   |                   |                   |                   |                   |                | 20            |
| 1,2,4,5-Tetrachlorobenzene                       |   |                   |                   |                   |                   |                | 20            |
| 1,1,2,2-Tetrachloroethane                        |   |                   |                   |                   |                   |                | 10            |
| Tetrachloroethylene                              |   |                   |                   |                   |                   |                | 10            |
| Toluene  |   |                   |                   |                   |                   |                | 10            |
| 1,1,1-Trichloroethane                            |   |                   |                   |                   |                   |                | 10            |
| 1,1,2-Trichloroethane                            |   |                   |                   |                   |                   |                | 10            |
| Trichloroethylene                                |   |                   |                   |                   |                   |                | 10            |
| 2,4,5-Trichlorophenol                            |   |                   |                   |                   |                   |                | 50            |
| TTHM (Total<br>Trihalomethanes)                  |   |                   |                   |                   |                   |                | 10            |
| Vinyl Chloride                                   |   |                   |                   |                   |                   |                | 10            |

<sup>1</sup> Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016. If all values are non-detects, enter the highest non-detect preceded by a “<” symbol.

**Table 4**

| <b>Outfall No.</b>            | <input type="checkbox"/> C <input type="checkbox"/> G | <b>Believed Present</b> | <b>Believed Absent</b> | <b>Average Conc. (mg/L)</b> | <b>Maximum Conc. (mg/L)</b> | <b>No. of Samples</b> | <b>MAL (mg/L)</b> |
|-------------------------------|---|-------------------------|------------------------|-----------------------------|-----------------------------|-----------------------|-------------------|
| <b>Pollutant</b>              |   |                         |                        |                             |                             |                       |                   |
| Bromide                       |   |                         |                        |                             |                             |                       | 0.400             |
| Color (PCU)                   |   |                         |                        |                             |                             |                       | —                 |
| Nitrate-Nitrite (as N)        |   |                         |                        |                             |                             |                       | —                 |
| Sulfide (as S)                |   |                         |                        |                             |                             |                       | —                 |
| Sulfite (as SO <sub>3</sub> ) |   |                         |                        |                             |                             |                       | —                 |
| Surfactants                   |   |                         |                        |                             |                             |                       | —                 |
| Boron, total                  |   |                         |                        |                             |                             |                       | 0.020             |
| Cobalt, total                 |   |                         |                        |                             |                             |                       | 0.0003            |
| Iron, total                   |   |                         |                        |                             |                             |                       | 0.007             |
| Magnesium, total              |   |                         |                        |                             |                             |                       | 0.020             |
| Manganese, total              |   |                         |                        |                             |                             |                       | 0.0005            |
| Molybdenum, total             |   |                         |                        |                             |                             |                       | 0.001             |
| Tin, total                    |   |                         |                        |                             |                             |                       | 0.005             |
| Titanium, total               |   |                         |                        |                             |                             |                       | 0.030             |

48-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival of the test organisms.
- b. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this part of this permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update
  - 1) Acute static renewal 48-hour definitive toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.
  - 2) Acute static renewal 48-hour definitive toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and submit a valid test for each test species during the required reporting period for that species. A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution. A repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 0.8%, 1.1%, 1.4%, 1.9%, and 2.5% effluent. The critical dilution, defined as 1.9% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.
- d. This permit may be amended to require a WET limit, a chemical-specific limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.
- e. Testing Frequency Reduction
  - 1) If none of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.

- 2) If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee shall continue quarterly testing for that species until this permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant lethal effects, the permittee shall resume a quarterly testing frequency for that species until this permit is reissued.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:
  - 1) a control mean survival of 90% or greater; and
  - 2) a coefficient of variation percent (CV%) of 40 or less for both the control and critical dilution. However, if significant lethality is demonstrated, a CV% greater than 40 shall not invalidate the test. The CV% requirement does not apply when significant lethality occurs.
- b. Statistical Interpretation
  - 1) For the water flea and fathead minnow tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced in Part 1.b.
  - 2) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The document entitled "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.
  - 3) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the survival in the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 90% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.
  - 4) The NOEC is defined as the greatest effluent dilution at which no significant lethality is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which significant lethality is demonstrated. Significant lethality is defined as a statistically significant difference between the survival of the test organism in a specified effluent dilution when compared to the survival of the test organism in the control.
  - 5) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 2.

- 6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The guidance manual referenced in Item 2 will be used when making a determination of test acceptability.
  - 7) TCEQ staff will review test results for consistency with rules, procedures, and permit requirements.
- c. Dilution Water
- 1) Dilution water used in the toxicity tests must be the receiving water collected at a point upstream of the discharge point as close as possible to the discharge point but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall:
    - a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge; or
    - b) use the closest downstream perennial water unaffected by the discharge.
  - 2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria of Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
    - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;
    - b) the test indicating receiving water toxicity was carried out to completion; and
    - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.
  - 3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.
- d. Samples and Composites
- 1) The permittee shall collect a minimum of two composite samples from Outfall 001. The second composite sample will be used for the renewal of the dilution concentrations for each toxicity test.

- 2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for the subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.
- 5) The effluent samples shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

- a. The permittee shall prepare a full report of the results of all tests conducted in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated whether carried to completion or not.
- b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.
  - 1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12-month period.
  - 2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.
  - 3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.
  - 4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

- c. Enter the following codes for the appropriate parameters for valid tests only:
- 1) For the water flea, Parameter TEM3D, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 2) For the water flea, Parameter TOM3D, report the NOEC for survival.
  - 3) For the water flea, Parameter TXM3D, report the LOEC for survival.
  - 4) For the fathead minnow, Parameter TEM6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 5) For the fathead minnow, Parameter TOM6C, report the NOEC for survival.
  - 6) For the fathead minnow, Parameter TXM6C, report the LOEC for survival.
- d. Enter the following codes for retests only:
- 1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
  - 2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this part apply only when a toxicity test demonstrates significant lethality. Significant lethality was defined in Part 2.b.

- a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates significant lethality. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test.
- b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.
- c. The provisions of Part 4.a. are suspended upon completion of the two retests and submittal of the TRE action plan and schedule defined in Part 5.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to

determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall describe an approach for the reduction or elimination of lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

- 1) **Specific Activities** - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;
  - 2) **Sampling Plan** - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;
  - 3) **Quality Assurance Plan** - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and
  - 4) **Project Organization** - The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.
- d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical specific analyses for the identified and suspected pollutant performed during the quarter;
  - 2) results and interpretation of any characterization, identification, and

confirmation tests performed during the quarter;

- 3) any data and substantiating documentation which identifies the pollutant(s) and source of effluent toxicity;
  - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
  - 5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and
  - 6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.
- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.
- f. If the effluent ceases to effect significant lethality. i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are herein defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

- g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond their control stalled the toxicity identification evaluation/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.
- h. Based on the results of the TRE and proposed corrective actions, this permit may be

amended to modify the biomonitoring requirements, where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

- i. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

Dates and Times                      No. 1 FROM: \_\_\_\_\_ Date    Time                      TO: \_\_\_\_\_ Date    Time  
Composites  
Collected                              No. 2 FROM: \_\_\_\_\_ TO: \_\_\_\_\_

Test initiated: \_\_\_\_\_ am/pm \_\_\_\_\_ date  
Dilution water used: \_\_\_\_\_ Receiving water \_\_\_\_\_ Synthetic Dilution water

PERCENT SURVIVAL

| Time             | Rep | Percent effluent (%) |      |      |      |      |      |
|------------------|-----|----------------------|------|------|------|------|------|
|                  |     | 0%                   | 0.8% | 1.1% | 1.4% | 1.9% | 2.5% |
| 24h              | A   |                      |      |      |      |      |      |
|                  | B   |                      |      |      |      |      |      |
|                  | C   |                      |      |      |      |      |      |
|                  | D   |                      |      |      |      |      |      |
|                  | E   |                      |      |      |      |      |      |
| 48h              | A   |                      |      |      |      |      |      |
|                  | B   |                      |      |      |      |      |      |
|                  | C   |                      |      |      |      |      |      |
|                  | D   |                      |      |      |      |      |      |
|                  | E   |                      |      |      |      |      |      |
| Mean at test end |     |                      |      |      |      |      |      |
| CV%*             |     |                      |      |      |      |      |      |

\*Coefficient of Variation = Standard Deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less than the control survival?

CRITICAL DILUTION (1.9%): \_\_\_\_\_ YES \_\_\_\_\_ NO

Enter percent effluent corresponding to the NOEC below:

- 1) NOEC survival = \_\_\_\_\_% effluent
- 2) LOEC survival = \_\_\_\_\_% effluent

TABLE 1 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

Dates and Times                      No. 1 FROM: \_\_\_\_\_ Date    Time                      Date    Time  
Composites  
Collected                              No. 2 FROM: \_\_\_\_\_ TO: \_\_\_\_\_

Test initiated: \_\_\_\_\_ am/pm \_\_\_\_\_ date

Dilution water used: \_\_\_\_\_ Receiving water    \_\_\_\_\_ Synthetic Dilution water

PERCENT SURVIVAL

| Time             | Rep | Percent effluent (%) |      |      |      |      |      |
|------------------|-----|----------------------|------|------|------|------|------|
|                  |     | 0%                   | 0.8% | 1.1% | 1.4% | 1.9% | 2.5% |
| 24h              | A   |                      |      |      |      |      |      |
|                  | B   |                      |      |      |      |      |      |
|                  | C   |                      |      |      |      |      |      |
|                  | D   |                      |      |      |      |      |      |
|                  | E   |                      |      |      |      |      |      |
| 48h              | A   |                      |      |      |      |      |      |
|                  | B   |                      |      |      |      |      |      |
|                  | C   |                      |      |      |      |      |      |
|                  | D   |                      |      |      |      |      |      |
|                  | E   |                      |      |      |      |      |      |
| Mean at test end |     |                      |      |      |      |      |      |
| CV%*             |     |                      |      |      |      |      |      |

\* Coefficient of Variation = standard deviation x 100/mean

Dunnnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less than the control survival?

CRITICAL DILUTION (1.9%): \_\_\_\_\_ YES    \_\_\_\_\_ NO

Enter percent effluent corresponding to the NOEC below:

- 1) NOEC survival = \_\_\_\_\_% effluent
- 2) LOEC survival = \_\_\_\_\_% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

- a. The permittee shall test the effluent for lethality in accordance with the provisions in this section. Such testing will determine compliance with Texas Surface Water Quality Standard 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.
- b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,” fifth edition (EPA-821-R-02-012) or its most recent update:
  - 1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.
  - 2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

- c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.
- d. This permit may be amended to require a WET limit, a best management practice, a chemical-specific limit, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

2. Required Toxicity Testing Conditions

- a. Test Acceptance – The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.
- b. Dilution Water - In accordance with Part 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

c. Samples and Composites

- 1) The permittee shall collect one composite sample from Outfall 001.
- 2) The permittee shall collect the composite samples such that the sample is representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. The samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.
- 5) The effluent sample shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated.
- b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.
  - 1) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.
  - 2) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.
- c. Enter the following codes for the appropriate parameters for valid tests only:
  - 1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."
  - 2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

- d. Enter the following codes for retests only:
- 1) For retest number 1, Parameter 22415, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”
  - 2) For retest number 2, Parameter 22416, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, which is defined as a mean mortality of 50% or greater of organisms exposed to the 100% effluent concentration for 24 hours.

- a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.
- b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall lead to the successful elimination of significant lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:
  - 1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled “Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures” (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents

entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

- 2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;
  - 3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and
  - 4) Project Organization - The TRE action plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.
- d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly TRE activities reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;
  - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
  - 3) any data and substantiating documentation that identifies the pollutant and source of effluent toxicity;
  - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
  - 5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and
  - 6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.
- f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

- g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in item 5.h. The report will also specify a corrective action schedule for implementing the selected control mechanism.
- h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, this permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

- i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.
- j. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

|                            | Time | Date |
|----------------------------|------|------|
| Composite Sample Collected |      |      |
| Test Initiated             |      |      |

PERCENT SURVIVAL

| Time | Rep   | Percent effluent |    |     |     |     |      |
|------|-------|------------------|----|-----|-----|-----|------|
|      |       | 0%               | 6% | 13% | 25% | 50% | 100% |
| 24h  | A     |                  |    |     |     |     |      |
|      | B     |                  |    |     |     |     |      |
|      | C     |                  |    |     |     |     |      |
|      | D     |                  |    |     |     |     |      |
|      | E     |                  |    |     |     |     |      |
|      | MEAN* |                  |    |     |     |     |      |

Enter percent effluent corresponding to the LC50 below:

24-hour LC50 = \_\_\_\_\_% effluent

TABLE 2 (SHEET 2 OF 2)  
 FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

|                            | Time | Date |
|----------------------------|------|------|
| Composite Sample Collected |      |      |
| Test Initiated             |      |      |

PERCENT SURVIVAL

| Time | Rep  | Percent effluent |    |     |     |     |      |
|------|------|------------------|----|-----|-----|-----|------|
|      |      | 0%               | 6% | 13% | 25% | 50% | 100% |
| 24h  | A    |                  |    |     |     |     |      |
|      | B    |                  |    |     |     |     |      |
|      | C    |                  |    |     |     |     |      |
|      | D    |                  |    |     |     |     |      |
|      | E    |                  |    |     |     |     |      |
|      | MEAN |                  |    |     |     |     |      |

Enter percent effluent corresponding to the LC50 below:

24-hour LC50 = \_\_\_\_\_% effluent

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004258000, U.S. Environmental Protection Agency (EPA) ID No. TX0123510, to discharge to water in the state

Issuing Office: Texas Commission on Environmental Quality (TCEQ)  
P.O. Box 13087  
Austin, Texas 78711-3087

Applicant: Jack A. Fusco Energy Center, LLC and Calpine Operating Services Company, Inc.  
717 Texas Avenue, Suite 1000  
Houston, Texas 77002

Prepared By: Thomas E. Starr  
Industrial Wastewater Section  
Water Quality Division  
(512) 239-4570

Date: December 11, 2025

Permit Action: Renewal

### I. 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 Texas Administrative Code (TAC) §305.127(1)(C)(i).

### II. APPLICANT ACTIVITY

The applicant currently operates Jack A. Fusco Energy Center, a combined cycle natural gas-fired combustion turbines and steam turbines electric generating facility.

### III. DISCHARGE LOCATION

As described in the application, the facility is located at 3440 Lockwood Road, near the City of Richmond, Fort Bend County, Texas 77469. Discharge is via pipe directly to Brazos River Below Navasota River in Segment No. 1202 of the Brazos River Basin.

### IV. RECEIVING STREAM USES

The designated uses for Segment No. 1202 are primary contact recreation, public water supply, and high aquatic life use.

### V. STREAM STANDARDS

The general criteria and numerical criteria that make up the stream standards are provided in 30 TAC §§ 307.1 - 307.10.

### VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the monthly effluent report data for the period December 2022 through September 2025. The "average of daily

**FACT SHEET AND EXECUTIVE DIRECTOR’S PRELIMINARY DECISION**

average” values presented in the following table are the average of all daily average values for the reporting period for each pollutant. The “maximum of daily maximum” values presented in the following table are the individual maximum values for the reporting period for each pollutant. Flows are expressed in million gallons per day (MGD). All pH values are expressed in standard units (SU).

**A. Flow**

| Outfall | Frequency    | Average of Daily Average, MGD | Maximum of Daily Maximum, MGD |
|---------|--------------|-------------------------------|-------------------------------|
| 001     | Continuous   | 0.504                         | 0.961                         |
| 201     | Intermittent | 0.102                         | 0.160                         |
| 301     | Intermittent | 0.209                         | 10.3                          |

**B. Temperature**

| Outfall | Average of Daily Average, °F | Maximum of Daily Maximum, °F |
|---------|------------------------------|------------------------------|
| 001     | 90.3                         | 113                          |

**C. Effluent Characteristics**

| Outfall | Pollutant                     | Average of Daily Average |       | Maximum of Daily Maximum |       |
|---------|-------------------------------|--------------------------|-------|--------------------------|-------|
|         |                               | lbs/day                  | mg/L  | lbs/day                  | mg/L  |
| 001     | Total Dissolved Solids (TDS)  | -                        | 1,882 | -                        | 6,610 |
|         | Sulfate                       | -                        | 712   | -                        | 2,600 |
|         | Chloride                      | -                        | 558   | -                        | 6,940 |
|         | Chemical Oxygen Demand (COD)  | 257                      | 64.3  | 1,741                    | 160   |
|         | Total Residual Chlorine (TAC) | -                        | -     | -                        | 0.09  |
|         | Total Chromium                | 0.044                    | 0.011 | 0.550                    | 0.090 |
|         | Total Zinc                    | 0.137                    | 0.037 | 2.21                     | 0.680 |
|         | pH                            | 6.64 SU, minimum         |       | 8.73 SU                  |       |
| 201     | Total Suspended Solids (TSS)  | -                        | 5.2   | -                        | 21.0  |
|         | Oil and Grease                | -                        | 5.0   | -                        | 5.0   |
|         | pH                            | 5.39 SU, minimum         |       | 7.98 SU                  |       |
| 301     | Total Suspended Solids (TSS)  | -                        | 14.4  | -                        | 47.0  |
|         | Oil and Grease                | -                        | 4.97  | -                        | 5.0   |
|         | pH                            | 6.57 SU, minimum         |       | 8.74 SU                  |       |

Effluent limit violations documented in the monthly effluent reports are summarized in the following table.

**D. Effluent Limitation Violations**

| Outfall | Pollutant (units) | Month/Year | Daily Average |          | Daily Maximum |          |
|---------|-------------------|------------|---------------|----------|---------------|----------|
|         |                   |            | Limit         | Reported | Limit         | Reported |
| 201     | pH (SU)           | 10/2024    | 6.0           | 5.39     | -             | -        |

The draft permit was not changed to address this effluent limit violations because of its infrequent nature.

**VII. DRAFT EFFLUENT LIMITATIONS**

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Effluent limitations are established in the draft permit as listed in Appendix D:

OUTFALL LOCATIONS

| Outfall | Latitude    | Longitude   |
|---------|-------------|-------------|
| 001     | 29.481111 N | 95.547777 W |

VIII. SUMMARY OF CHANGES FROM APPLICATION

48-hour biomonitoring testing was added to the draft permit.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

The following changes have been made to the draft permit:

1. Included steam turbines in the facility description.
2. Other Requirement No. 3 was carried forward to the draft permit to address cooling water intake structure requirements under CWA §316(b). Although CWA §316(b) does not currently apply to this facility, the applicant would be required to notify the TCEQ if there is a change in how the facility obtains cooling water.
3. Other Requirement No. 15 from the existing permit was not carried forward as the conditions for the thermal bloom were met. Other Requirement No. 16 from the existing permit was renumbered No. 15.
4. Other Requirement No. 16 has been added to the draft permit to require testing of the effluent from Outfall 001.

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant applied to the TCEQ for a renewal of Permit No. WQ0004258000, which authorizes the discharge of cooling tower blowdown and previously monitored effluents (PMEs) (water treatment wastes, wastewater from the internal cooling coils of the inlet air chiller, heat recovery steam generator (HRSG) blowdown, and low volume waste sources) at a daily average flow not to exceed 1,500,000 gallons per day (gpd) via Outfall 001 (Phase I), and cooling tower blowdown and PMEs (water treatment wastes, wastewater from the internal cooling coils of the inlet air chiller, HRSG blowdown, and low volume waste sources) at a daily average flow not to exceed 3,000,000 gpd via Outfall 001 (Phase II).

B. WATER QUALITY SUMMARY

**Discharge Route**

The discharge route is via pipe directly to Brazos River Below Navasota River in Segment No. 1202 of the Brazos River Basin. The designated uses for Segment No. 1202 are

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primary contact recreation, public water supply, and high aquatic life use. Effluent limitations and conditions established in the draft permit comply with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit can be found at Section X.D. of this fact sheet.

### **Endangered Species Review**

The Houston Toad (*Bufo houstonensis* Sanders), an endangered aquatic-dependent species of critical concern, occurs within the Segment 1202 watershed as well as the 12070104 United States Geological Survey hydrologic unit code. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998, October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only consider aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. Species distribution information for the Segment 1202 watershed is provided by the USFWS and documents the toad's presence solely in the vicinity of Deep Creek in Austin County, which is farther up the watershed from the facility associated with this permit action. Based upon this information, it is determined that the facility's discharge is not expected to impact the Houston Toad. The permit does not require EPA review with respect to the presence of endangered or threatened species.

### **Impaired Water Bodies**

Segment No. 1202 is not currently listed on the state's inventory of impaired and threatened waters, the 2024 Clean Water Act Section 303(d) list.

### **Completed Total Maximum Daily Loads (TMDLs)**

There are no completed TMDLs for Segment No. 1202.

## C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

### 1. GENERAL COMMENTS

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 draft permit authorizes the discharge of cooling tower blowdown, water treatment wastes, wastewater from the internal cooling coils of the inlet air chiller, heat recovery steam generator (HRSG) blowdown, and low volume wastewater at a daily average flow not to exceed 1.5 MGD via Outfall 001 (Phase I), and the discharge of cooling tower blowdown, water treatment wastes, wastewater from the internal cooling coils of the inlet air chiller, HRSG, blowdown, and low volume wastewater at a daily average flow not to exceed 3.0 MGD via Outfall 001 (Phase II).

The discharge of cooling tower blowdown, HRSG blowdown, inlet air chiller

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blowdown, and low volume wastewater via Outfall 001 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. A new source determination was performed, and the discharge of cooling tower blowdown, HRSG blowdown, inlet air chiller blowdown, and low volume wastewater is a new source as defined at 40 CFR §122.2. Therefore, new source performance standards (NSPS) are required for this discharge.

The facility can generate up to 670 megawatts (MW) with combined-cycle, natural gas-fired combustion turbines at 350 MW and a steam turbine at 320 MW. There will be two phases of operation: Phase II will be double the capacity of Phase I. The facility will install two additional boilers and cooling towers for Phase II operation.

Raw water is obtained from the Brazos River and treated for use in the system. Treatment consists of flocculation in a basin to remove suspended solids. If necessary, lime softening may also be used to reduce dissolved solids. Solids are precipitated in a clarifier as sludge. Excess sludge is removed and dewatered in a plate filter press for disposal off-site. The filtrate is re-circulated to the wastewater treatment process. Water steam cycle make up water is treated to remove additional minerals via additional filters and activated carbon filters. The water is then transferred to a reverse osmosis (RO) unit and ion exchange unit demineralization plant. Makeup water for the cooling tower includes HRSG boiler blowdown, and make up water from the Brazos River.

The HRSG and boilers are blown down and spray cooled. Inlet air chiller blowdown is discharged via internal Outfall 201 prior to Outfall 001 without treatment. Wastewater from the reverse osmosis system (wastewater generated by the system has been renamed to "water treatment wastes" in the draft permit) is discharged via internal Outfall 201 prior to discharge via Outfall 001 without treatment. HRSG blowdown is monitored via internal Outfall 301 prior to routing to the cooling tower as makeup water. Wastewater from the internal cooling coils of the inlet air chiller is discharged via internal Outfall 201 prior to discharge via Outfall 001. Wastewater from the demineralizer system is discharged via internal Outfall 201 to the neutralization tank prior to discharge via Outfall 001. Resins from the ion exchange unit are periodically regenerated. Wastewater from the regeneration is then neutralized chemically before discharging via internal Outfall 201. Service water that is potentially contaminated with oil is treated in an oil/water separator and routed off-site for disposal.

The discharge of metal cleaning wastes is not authorized. Metal cleaning wastes, when generated, are transported to an authorized facility for treatment and disposal. Domestic wastewater is disposed of by an on-site package treatment plant and disposed of via on-site irrigation under separate authorization from this permit.

### 2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

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Technology-based effluent limitations for chemical oxygen demand, total residual chlorine, and pH at Outfall 001; total suspended solids, oil and grease, and pH at Outfall 201; and total suspended solids, oil and grease, and pH at Outfall 301 are continued from the existing permit.

### 3. 316(B) COOLING WATER INTAKE STRUCTURES

#### a. SCREENING

The facility obtains cooling water from a third party that currently holds TPDES Permit No. WQ0001038000. The facility itself does not own or operate a cooling water intake structure as defined in 40 CFR Part 125, Subpart I or J. Applicable statutes and regulations for cooling water intake structures are to be addressed in TPDES Permit No.

WQ0001038000. This determination is subject to change in the event TPDES Permit No. WQ0001038000 is cancelled for any reason or the facility changes the method by which cooling water is obtained.

#### b. PERMIT ACTION

The Other Requirement No. 3 has been carried forward to the draft permit and requires the permittee to notify the TCEQ of any changes in the method by which cooling water is obtained. Upon receipt of such notification, the TCEQ may reopen the permit to include additional terms and conditions as necessary.

## D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

### 1. GENERAL COMMENTS

The *Texas Surface Water Quality Standards* found at 30 TAC Chapter 307 state that surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life. The methodology outlined in the TCEQ guidance document *Procedures to Implement the Texas Surface Water Quality Standards* (IPs) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater that (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation that threatens human health. Calculated water quality-based effluent limits can be found in Appendix B of this fact sheet.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity databases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls. A comparison of technology-

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based effluent limits and calculated water quality-based effluent limits can be found in Appendix D of this fact sheet.

### 2. AQUATIC LIFE CRITERIA

#### a. SCREENING

Water quality-based effluent limitations are calculated from freshwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

Acute freshwater criteria are applied at the edge of the zone of initial dilution (ZID), and chronic freshwater criteria are applied at the edge of the aquatic life mixing zone. The ZID for this discharge is defined as 20 feet upstream and 60 feet downstream from the point where the discharge enters Brazos River Below Navasota River. The aquatic life mixing zone for this discharge is defined as 100 feet upstream and 300 feet downstream from the point where the discharge enters Brazos River Below Navasota River.

TCEQ uses the mass balance equation to estimate dilutions at the edges of the ZID and aquatic life mixing zone during critical conditions. The estimated dilution at the edge of the aquatic life mixing zone is calculated using the two-year maximum monthly average flow of 0.961 MGD for Phase 1 and 3.0 MGD for Phase 2 and the seven-day, two-year low-flow (7Q2) of 689.88 cfs for Brazos River Below Navasota River. The estimated dilution at the edge of the ZID is calculated using the two-year maximum monthly average flow of 0.961 MGD and 25% of the 7Q2. The following critical effluent percentages are being used:

|                  |       |                    |       |
|------------------|-------|--------------------|-------|
| Acute Effluent % | 0.85% | Chronic Effluent % | 0.22% |
|------------------|-------|--------------------|-------|

#### **General Screening Procedures**

Wasteload allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the *Texas Surface Water Quality Standards*, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration that can be discharged when, after mixing in the receiving stream, the instream numerical criteria will not be exceeded.

From the WLA, a long-term average (LTA) is calculated using a lognormal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level. The LTA is the long-term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level.

The LTA is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

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Assumptions used in deriving the effluent limitations include segment-specific values for TSS, pH, hardness, and chloride according to the *IPs*. The segment values are 32 mg/L for TSS, 7.7 standard units for pH, 160 mg/L for hardness (as calcium carbonate, CaCO<sub>3</sub>), and 86 mg/L for chloride. For additional details on the calculation of water quality-based effluent limitations, refer to the *IPs*.

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application equals or 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 equals or exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

No analytical data was reported in the application so screening against water quality-based effluent limitations could not be conducted. Other Requirement No. 16 has been placed in the draft permit requiring submission of effluent data.

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective and they are still protective.

3. WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA (48-HOUR ACUTE)

a. SCREENING AND REASONABLE POTENTIAL ANALYSIS

The existing permit only included 24-hour acute freshwater biomonitoring requirements at Outfall 001.

A reasonable potential determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. This determination was performed in accordance with the methodology outlined in the TCEQ letter to the EPA dated December 28, 2015, and approved by the EPA in a letter dated December 28, 2015. With no previous testing history, and therefore zero failures, a determination of no RP was made. WET limits are not required and both test species may be eligible for the testing frequency reduction after one year of quarterly testing.

b. PERMIT ACTION

The provisions of this section apply to Outfall 001.

Based on information contained in the permit application, the TCEQ has

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determined that there may be pollutants present in the effluent(s) that may have the potential to cause toxic conditions in the receiving stream.

Whole effluent toxicity testing (biomonitoring) is the most direct measure of potential toxicity, which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute static renewal 48-hour definitive toxicity tests using the water flea (*Ceriodaphnia dubia* or *Daphnia pulex*). The frequency of the testing shall be once per quarter.
- ii) Acute static renewal 48-hour definitive toxicity tests using fathead minnow (*Pimephales promelas*). The frequency of the testing shall be once per quarter.

Toxicity tests shall be performed in accordance with protocols described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition (EPA-821-R-02-012) or the latest revision. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

This permit may be reopened to require effluent limits, additional testing, or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

If none of the first four consecutive quarterly tests demonstrates significant lethal or sublethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species. If one or more of the first four consecutive quarterly tests demonstrates significant sublethal effects, the permittee is required by the permit to continue quarterly testing for that species until four consecutive quarterly tests demonstrate no significant sublethal effects. At that time, the permittee may apply for the appropriate testing frequency reduction for that species. If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee is required by the permit to continue quarterly testing for that species until the permit is reissued.

### c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent

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concentrations shall be 0.8%, 1.1%, 1.4%, 1.9%, and 2.5%. The low-flow effluent concentration (critical dilution) is defined as 1.9% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone, which is discussed in Section X.D.2.a. of this fact sheet.

### 4. AQUATIC ORGANISM TOXICITY CRITERIA (24-HOUR ACUTE)

#### a. SCREENING

The existing permit includes 24-hour acute freshwater biomonitoring requirements for Outfall 001. In the past three years, the permittee has performed ten 24-hour acute tests, with zero demonstrations of significant mortality (i.e., zero failures). Minimum 24-hour acute freshwater biomonitoring requirements are proposed in the draft permit as outlined below.

#### b. PERMIT ACTION

Twenty-four-hour 100% acute biomonitoring tests are required at Outfall 001 at a frequency of once per six months for the life of the permit.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute 24-hour static toxicity test using the water flea (*Ceriodaphnia dubia* or *Daphnia pulex*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.
- ii) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

Toxicity tests shall be performed in accordance with protocols described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition (EPA-821-R-02-012) or the latest revision.

### 5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

#### a. SCREENING

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of fish tissue found in Table 2 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

Fish tissue bioaccumulation criteria are applied at the edge of the human

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health mixing zone. The human health mixing zone for this discharge is identical to the aquatic life mixing zone. TCEQ uses the mass balance equation to estimate dilution at the edge of the human health mixing zone during average flow conditions. The estimated dilution at the edge of the human health mixing zone is calculated using the two-year average monthly average flow of 0.961 MGD for Phase 1 and 3.0 MGD for Phase 2 and the harmonic mean flow of 1,633.69 cfs for Brazos River Below Navasota River. The following critical effluent percentage is being used:

Human Health Effluent %: 0.09%

Water quality-based effluent limitations for human health protection against the consumption of fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection. A 99th percentile confidence level in the long-term average calculation is used, with only one long-term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70 percent and 85 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

No analytical data was reported in the application so screening against water quality-based effluent limitations could not be conducted. Other Requirement No. 16 has been placed in the draft permit requiring submission of effluent data.

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Segment No. 1202, which receives the discharge from this facility, is not designated as a public water supply. Screening reported analytical data of the effluent against water quality-based effluent limitations calculated for the protection of a drinking water supply is not applicable.

b. PERMIT ACTION

None.

7. TOTAL DISSOLVED SOLIDS, CHLORIDE, AND SULFATE STANDARDS PROTECTION

a. SCREENING

The average concentration of TDS, chloride, and sulfate in the effluent is greater than the segment criterion. Screening procedures and effluent limitations for TDS, chloride, and sulfate are calculated using the methodology in the *IPs* and criteria in the *Texas Surface Water Quality*

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*Standards* (30 TAC Chapter 307). Detailed calculations are presented in Appendix C.

b. PERMIT ACTION

Based on the screening, no effluent limitations are needed for TDS, chloride, or sulfate.

8. PROTECTION OF pH STANDARDS

a. SCREENING

The existing permit includes pH limits of 6.0 – 9.0 SU at Outfall 001, which discharges directly into Brazos River Below Navasota River, Segment No. 1202. Screening was performed to ensure that these existing pH limits would not cause a violation of the 6.5 – 9.0 SU pH criteria for Brazos River Below Navasota River (see Appendix C).

b. PERMIT ACTION

The existing effluent limits of 6.0 – 9.0 SU are adequate to ensure that the discharge will not violate the pH criteria in Brazos River Below Navasota River.

9. DISSOLVED OXYGEN PROTECTION

a. SCREENING

Due to the low concentrations of oxygen-demanding constituents expected in this type of wastewater, no significant impacts on dissolved oxygen are expected in the receiving waters as a result of this discharge

b. PERMIT ACTION

None.

11. THERMAL STANDARDS PROTECTION

a. SCREENING

The daily average temperature reported in the Discharge Monitoring Report data for Outfall 001 has been under the segment criteria of 95 °F.

b. PERMIT ACTION

Temperature monitoring requirements are not carried forward in the draft permit. Other Requirement No. 15 from the existing permit has not been carried forward in the draft permit for Outfall 001.

XI. PRETREATMENT REQUIREMENTS

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This facility is not defined as a publicly owned treatment works. Pretreatment requirements are not proposed in the draft permit.

### XII. VARIANCE REQUESTS

No variance requests have been received.

### XIII. 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, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. 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 proceeding.

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.

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.

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For additional information about this application, contact Thomas E. Starr at (512) 239-4570.

XIV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT(S)

TPDES Permit No. WQ0004258000 issued on November 28, 2022.

B. APPLICATION

TPDES wastewater permit application received on April 5, 2024 and additional information received on April 12, 2025.

C. 40 CFR CITATION(S)

40 CFR Part 423 (NSPS).

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

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).

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).

Letter dated December 28, 2015, from L'Oreal Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).

Letter dated December 28, 2015, 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 procedures to determine reasonable potential for whole effluent toxicity limitations).

TCEQ Interoffice Memorandum dated May 30, 2024, from Jenna R. Lueg of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Industrial Wastewater Section (Standards Memo).

TCEQ Interoffice Memorandum dated June 28, 2024, from Josi Robertson of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Industrial Wastewater Section (Critical Conditions Memo).

TCEQ Interoffice Memorandum dated November 25, 2025, from Alan D. Sanmiguel of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Industrial Wastewater Section (Modeling Memo).

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TCEQ Interoffice Memorandum dated June 28, 2024, from Michael B. Pfeil of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Industrial Wastewater Section (Biomonitoring Memo).

E. MISCELLANEOUS

*The State of Texas 2022 Integrated Report – Texas 303(d) List (Category 5)*, TCEQ, July 7, 2022.

*Texas Surface Water Quality Standards*, 30 TAC §§307.1 - 307.10, TCEQ, effective March 1, 2018, as approved by EPA Region 6.

*Texas Surface Water Quality Standards*, 30 TAC §§307.1 - 307.10, TCEQ, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not approved by EPA Region 6.

*Texas Surface Water Quality Standards*, 30 TAC §§307.1 - 307.10, TCEQ, effective July 22, 2010, as approved by EPA Region 6, for portions of the 2014 standards not yet approved by EPA Region 6.

*Texas Surface Water Quality Standards*, 30 TAC §§307.1 - 307.10, TCEQ, effective August 17, 2000, and Appendix E, effective February 27, 2002, for portions of the 2010 standards not yet approved by EPA Region 6.

*Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition (EPA-821-R-02-012).

*Procedures to Implement the Texas Surface Water Quality Standards*, TCEQ, June 2010, as approved by EPA Region 6.

*Procedures to Implement the Texas Surface Water Quality Standards*, TCEQ, January 2003, for portions of the 2010 IPs not approved by EPA Region 6.

*Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

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**Appendix A**  
**Calculated Technology-Based Effluent Limits**

Construction of the facility began in 2001; therefore, the discharge is subject to new source performance standards at 40 CFR Part 423.15.

**Outfall 001**

The Outfall 001 discharge consists of cooling tower blowdown (including HRSG blowdown), inlet air chiller blowdown, and low volume waste streams.

For new sources, cooling tower blowdown is regulated at 40 CFR §423.15(a)(10). New source performance standards (NSPS) specify effluent limitation guidelines (ELGs) for free available chlorine (FAC) of a daily average of 0.2 mg/L and a daily maximum of 0.5 mg/L. The NSPS also specify that neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and that not more than one unit in any plant may discharge free available chlorine at any one time unless the facility can demonstrate that the units in a particular location cannot operate at or below this level of chlorination. In order to meet the ELG for FAC, the facility elected to dechlorinate its effluent, which is not required by the ELGs. Accordingly, a more stringent daily maximum of 0.1 mg/L for Total Residual Chlorine superseded and replaced the prior effluent limitation for free available chlorine. This effluent limitation is more restrictive than the and is continued from the existing permit, and is consistent with the EPA anti-backsliding requirement of 40 CFR 122.44(l).

Because technology-based effluent limitations apply to specific wastestreams prior to commingling with other wastestreams or stormwater, it is necessary to calculate the proportionate contributions of each wastestream for outfall 001. According to the application's technical report, the cooling tower blowdown, the HRSG blowdown, and inlet air chiller blowdown comprise 98% of the effluent flow via Outfall 001. Thus, the effluent limitation applies to 98% of the total effluent flow for Outfall 001. For the 2% of the discharge which comes from low volume waste streams, pollutant contribution is assumed to be zero.

The NSPS specifies ELGs for total chromium and total zinc as follows:

**Total chromium:**

Daily average = 0.2 mg/L  
Daily maximum = 0.2 mg/L

**Total zinc:**

Daily average = 1.0 mg/L  
Daily maximum = 1.0 mg/L

Using the building block approach as discussed above, concentration limits are calculated as follows:

Total chromium Daily Average Limit =  $(0.98)(0.2 \text{ mg/L}) = 0.196 \text{ mg/L}$   
Total chromium Daily Max Limit =  $(0.98)(0.2 \text{ mg/L}) = 0.196 \text{ mg/L}$

Total zinc Daily Average Limit =  $(0.98)(1.0 \text{ mg/L}) = 0.98 \text{ mg/L}$   
Total zinc Daily Max Limit =  $(0.98)(1.0 \text{ mg/L}) = 0.98 \text{ mg/L}$

These limits are also applied on a mass basis using the following conversion:

Mass Limit (lbs/day) = Building Block ELG (mg/L) × Flow (MGD) × 8.345

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**Phase I:** Using the permitted daily average flow of 1.50 MGD and the ELGs from 40 CFR Part 423.15(a)(10), the following mass limits are included in the draft permit:

Total chromium:

$$\begin{aligned}\text{Daily average} &= (0.196 \text{ mg/L}) \times (1.5 \text{ MGD}) \times 8.345 = 2.45 \text{ lbs/day} \\ \text{Daily maximum} &= (0.196 \text{ mg/L}) \times (1.50 \text{ MGD}) \times 8.345 = 2.45 \text{ lbs/day}\end{aligned}$$

Total zinc:

$$\begin{aligned}\text{Daily average} &= (0.98 \text{ mg/L}) \times (1.5 \text{ MGD}) \times 8.345 = 12.3 \text{ lbs/day} \\ \text{Daily maximum} &= (0.98 \text{ mg/L}) \times (1.5 \text{ MGD}) \times 8.345 = 12.3 \text{ lbs/day}\end{aligned}$$

**Phase II:** Using the average permitted flow for phase II, the resulting limits are:

Total chromium:

$$\begin{aligned}\text{Daily average} &= (0.196 \text{ mg/L}) \times (3.0 \text{ MGD}) \times 8.345 = 4.90 \text{ lbs/day} \\ \text{Daily maximum} &= (0.196 \text{ mg/L}) \times (3.0 \text{ MGD}) \times 8.345 = 4.90 \text{ lbs/day}\end{aligned}$$

Total zinc:

$$\begin{aligned}\text{Daily average} &= (0.98 \text{ mg/L}) \times (3.0 \text{ MGD}) \times 8.345 = 24.5 \text{ lbs/day} \\ \text{Daily maximum} &= (0.98 \text{ mg/L}) \times (3.0 \text{ MGD}) \times 8.345 = 24.5 \text{ lbs/day}\end{aligned}$$

**Outfall 201**

Low volume waste, including water treatment wastes, discharges via Outfall 201.

The term *low volume waste sources* means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in this part. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition

Low volume wastes are subject to NSPS at 40 CFR §423.15. The existing limitations for total suspended solids are consistent with the ELGs and are continued from the existing permit. The existing limitations for oil and grease are more stringent than the ELGs and are continued from the existing permit the EPA anti-backsliding requirement of 40 CFR 122.44(l). Effluent limitations for pH (minimum of 6.0 standard units, maximum of 9.0 standard units) are added based on 40 CFR Part 423.15(a).

**Outfall 301**

Low volume waste, including HRSG blowdown, discharges via Outfall 301.

The term *low volume waste sources* means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in this part. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition.

Low volume wastes are subject to the NSPS at 40 CFR §423.15. The existing limitations for total suspended solids are consistent with the ELGs and are continued from the existing permit. The existing limitations for oil and grease are more stringent than the ELGs and are continued from the existing permit the EPA anti-backsliding requirement of 40 CFR 122.44(l). Effluent limitations for pH (minimum of 6.0 standard units, maximum of 9.0 standard units) are added based on 40 CFR Part 423.15(a).

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**Appendix B**  
**Calculated Water Quality-Based Effluent Limits**

**TEXTOX MENU #3 - PERENNIAL STREAM OR RIVER**

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:   | Jack A. Fusco Energy Center, LLC & Calpine Operating Service Company, Inc. |
| TPDES Permit No.: | WQ0004258000   |
| Outfall No.:      | 001  |
| Prepared by:      | Thomas Starr   |
| Date:             | December 11, 2025  |

**DISCHARGE INFORMATION**

|  |                                   |
|--|-----------------------------------|
| Receiving Waterbody:                               | Brazos River Below Navasota River |
| Segment No.:                                       | 1202                              |
| TSS (mg/L):  | 32                                |
| pH (Standard Units):                               | 7.7                               |
| Hardness (mg/L as CaCO <sub>3</sub> ):             | 160                               |
| Chloride (mg/L):                                   | 86                                |
| Effluent Flow for Aquatic Life (MGD):              | 0.961                             |
| Critical Low Flow [7Q2] (cfs):                     | 689.88                            |
| % Effluent for Chronic Aquatic Life (Mixing Zone): | 0.22                              |
| % Effluent for Acute Aquatic Life (ZID):           | 0.85                              |
| Effluent Flow for Human Health (MGD):              | 0.961                             |
| Harmonic Mean Flow (cfs):                          | 1633.69                           |
| % Effluent for Human Health:                       | 0.09                              |
| Human Health Criterion (select: PWS, FISH, or INC) | <b>PWS</b>                        |

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

| <i>Stream/River Metal</i> | <i>Intercept<br/>(b)</i> | <i>Slope<br/>(m)</i> | <i>Partition<br/>Coefficient<br/>(Kp)</i> | <i>Dissolved<br/>Fraction<br/>(Cd/Ct)</i> | <i>Source</i> | <i>Water<br/>Effect Ratio<br/>(WER)</i> | <i>Source</i> |
|---------------------------|--------------------------|----------------------|---|---|---------------|---|---------------|
| Aluminum                  | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Arsenic                   | 5.68                     | -0.73                | 38127.69                                  | 0.450                                     |               | 1.00                                    | Assumed       |
| Cadmium                   | 6.60                     | -1.13                | 79283.08                                  | 0.283                                     |               | 1.00                                    | Assumed       |
| Chromium (total)          | 6.52                     | -0.93                | 131889.59                                 | 0.192                                     |               | 1.00                                    | Assumed       |
| Chromium (trivalent)      | 6.52                     | -0.93                | 131889.59                                 | 0.192                                     |               | 1.00                                    | Assumed       |
| Chromium (hexavalent)     | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Copper                    | 6.02                     | -0.74                | 80572.90                                  | 0.279                                     |               | 1.00                                    | Assumed       |
| Lead                      | 6.45                     | -0.80                | 176148.93                                 | 0.151                                     |               | 1.00                                    | Assumed       |
| Mercury                   | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Nickel                    | 5.69                     | -0.57                | 67930.45                                  | 0.315                                     |               | 1.00                                    | Assumed       |
| Selenium                  | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Silver                    | 6.38                     | -1.03                | 67560.91                                  | 0.316                                     |               | 1.00                                    | Assumed       |
| Zinc                      | 6.10                     | -0.70                | 111274.34                                 | 0.219                                     |               | 1.00                                    | Assumed       |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

| <i>Parameter</i>                                 | <i>FW Acute<br/>Criterion<br/>(µg/L)</i> | <i>Chronic<br/>Criterion<br/>(µg/L)</i> | <i>WLAa<br/>(µg/L)</i> | <i>WLAc<br/>(µg/L)</i> | <i>LTAa<br/>(µg/L)</i> | <i>LTAc<br/>(µg/L)</i> | <i>Daily Avg.<br/>(µg/L)</i> | <i>Daily Max.<br/>(µg/L)</i> |
|--|--|---|------------------------|------------------------|------------------------|------------------------|------------------------------|------------------------------|
| Aldrin   | 3.0                                      | N/A                                     | 351                    | N/A                    | 201                    | N/A                    | 295                          | 625                          |
| Aluminum   | 991                                      | N/A                                     | 115942                 | N/A                    | 66435                  | N/A                    | 97658                        | 206611                       |
| Arsenic  | 340                                      | 150                                     | 88311                  | 154844                 | 50602                  | 119230                 | 74385                        | 157372                       |
| Cadmium  | 13.6                                     | 0.341                                   | 5608                   | 561                    | 3213                   | 432                    | 634                          | 1342                         |
| Carbaryl   | 2.0                                      | N/A                                     | 234                    | N/A                    | 134                    | N/A                    | 197                          | 416                          |
| Chlordane  | 2.4                                      | 0.004                                   | 281                    | 1.86                   | 161                    | 1.43                   | 2.10                         | 4.45                         |
| Chlorpyrifos                                     | 0.083                                    | 0.041                                   | 9.71                   | 19.1                   | 5.56                   | 14.7                   | 8.17                         | 17.3                         |
| Chromium (trivalent)                             | 837                                      | 109                                     | 511380                 | 264375                 | 293021                 | 203568                 | 299245                       | 633097                       |
| Chromium (hexavalent)                            | 15.7                                     | 10.6                                    | 1837                   | 4929                   | 1052                   | 3795                   | 1547                         | 3273                         |
| Copper   | 22.1                                     | 14.1                                    | 9258                   | 23541                  | 5305                   | 18127                  | 7798                         | 16497                        |
| Cyanide (free)                                   | 45.8                                     | 10.7                                    | 5358                   | 4975                   | 3070                   | 3831                   | 4513                         | 9548                         |
| 4,4'-DDT   | 1.1                                      | 0.001                                   | 129                    | 0.465                  | 73.7                   | 0.358                  | 0.526                        | 1.11                         |
| Demeton  | N/A                                      | 0.1                                     | N/A                    | 46.5                   | N/A                    | 35.8                   | 52.6                         | 111                          |
| Diazinon   | 0.17                                     | 0.17                                    | 19.9                   | 79.0                   | 11.4                   | 60.9                   | 16.7                         | 35.4                         |
| Dicofol [Kelthane]                               | 59.3                                     | 19.8                                    | 6938                   | 9207                   | 3975                   | 7089                   | 5843                         | 12363                        |
| Dieldrin   | 0.24                                     | 0.002                                   | 28.1                   | 0.930                  | 16.1                   | 0.716                  | 1.05                         | 2.22                         |
| Diuron   | 210                                      | 70                                      | 24569                  | 32548                  | 14078                  | 25062                  | 20694                        | 43782                        |
| Endosulfan I ( <i>alpha</i> )                    | 0.22                                     | 0.056                                   | 25.7                   | 26.0                   | 14.7                   | 20.0                   | 21.6                         | 45.8                         |
| Endosulfan II ( <i>beta</i> )                    | 0.22                                     | 0.056                                   | 25.7                   | 26.0                   | 14.7                   | 20.0                   | 21.6                         | 45.8                         |
| Endosulfan sulfate                               | 0.22                                     | 0.056                                   | 25.7                   | 26.0                   | 14.7                   | 20.0                   | 21.6                         | 45.8                         |
| Endrin   | 0.086                                    | 0.002                                   | 10.1                   | 0.930                  | 5.77                   | 0.716                  | 1.05                         | 2.22                         |
| Guthion [Azinphos Methyl]                        | N/A                                      | 0.01                                    | N/A                    | 4.65                   | N/A                    | 3.58                   | 5.26                         | 11.1                         |
| Heptachlor                                       | 0.52                                     | 0.004                                   | 60.8                   | 1.86                   | 34.9                   | 1.43                   | 2.10                         | 4.45                         |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 1.126                                    | 0.08                                    | 132                    | 37.2                   | 75.5                   | 28.6                   | 42.1                         | 89.0                         |
| Lead   | 107                                      | 4.18                                    | 83319                  | 12904                  | 47742                  | 9936                   | 14606                        | 30901                        |
| Malathion  | N/A                                      | 0.01                                    | N/A                    | 4.65                   | N/A                    | 3.58                   | 5.26                         | 11.1                         |
| Mercury  | 2.4                                      | 1.3                                     | 281                    | 604                    | 161                    | 465                    | 236                          | 500                          |
| Methoxychlor                                     | N/A                                      | 0.03                                    | N/A                    | 13.9                   | N/A                    | 10.7                   | 15.7                         | 33.4                         |
| Mirex  | N/A                                      | 0.001                                   | N/A                    | 0.465                  | N/A                    | 0.358                  | 0.526                        | 1.11                         |
| Nickel   | 697                                      | 77.4                                    | 258757                 | 114223                 | 148268                 | 87951                  | 129288                       | 273529                       |
| Nonylphenol                                      | 28                                       | 6.6                                     | 3276                   | 3069                   | 1877                   | 2363                   | 2759                         | 5837                         |
| Parathion (ethyl)                                | 0.065                                    | 0.013                                   | 7.60                   | 6.04                   | 4.36                   | 4.65                   | 6.40                         | 13.5                         |
| Pentachlorophenol                                | 17.6                                     | 13.5                                    | 2062                   | 6289                   | 1182                   | 4842                   | 1737                         | 3675                         |
| Phenanthrene                                     | 30                                       | 30                                      | 3510                   | 13949                  | 2011                   | 10741                  | 2956                         | 6254                         |
| Polychlorinated Biphenyls [PCBs]                 | 2.0                                      | 0.014                                   | 234                    | 6.51                   | 134                    | 5.01                   | 7.36                         | 15.5                         |
| Selenium   | 20                                       | 5                                       | 2340                   | 2325                   | 1341                   | 1790                   | 1970                         | 4169                         |
| Silver   | 0.8                                      | N/A                                     | 2134                   | N/A                    | 1223                   | N/A                    | 1797                         | 3802                         |
| Toxaphene  | 0.78                                     | 0.0002                                  | 91.3                   | 0.0930                 | 52.3                   | 0.0716                 | 0.105                        | 0.222                        |
| Tributyltin [TBT]                                | 0.13                                     | 0.024                                   | 15.2                   | 11.2                   | 8.71                   | 8.59                   | 12.6                         | 26.7                         |
| 2,4,5 Trichlorophenol                            | 136                                      | 64                                      | 15911                  | 29759                  | 9117                   | 22914                  | 13402                        | 28354                        |
| Zinc   | 175                                      | 176                                     | 93113                  | 373092                 | 53354                  | 287281                 | 78430                        | 165930                       |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

| <i>Parameter</i>   | <i>Water and Fish Criterion</i> | <i>Fish Only Criterion (µg/L)</i> | <i>Incidental Fish Criterion</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                             | 1100               | 1023               | 1503                     | 3180                     |
| Aldrin   | 1.146E-05                       | 1.147E-05                         | 1.147E-04                        | 0.0126             | 0.0117             | 0.0172                   | 0.0364                   |
| Anthracene   | 1109                            | 1317                              | 13170                            | 1219609            | 1134236            | 1667326                  | 3527474                  |
| Antimony   | 6                               | 1071                              | 10710                            | 6598               | 6137               | 9020                     | 19084                    |
| Arsenic  | 10                              | N/A                               | N/A                              | 24415              | 22706              | 33377                    | 70615                    |
| Barium   | 2000                            | N/A                               | N/A                              | 2199475            | 2045511            | 3006901                  | 6361540                  |
| Benzene  | 5                               | 581                               | 5810                             | 5499               | 5114               | 7517                     | 15903                    |
| Benzydine  | 0.0015                          | 0.107                             | 1.07                             | 1.65               | 1.53               | 2.25                     | 4.77                     |
| Benzo(a)anthracene                                       | 0.024                           | 0.025                             | 0.25                             | 26.4               | 24.5               | 36.0                     | 76.3                     |
| Benzo(a)pyrene   | 0.0025                          | 0.0025                            | 0.025                            | 2.75               | 2.56               | 3.75                     | 7.95                     |
| Bis(chloromethyl)ether                                   | 0.0024                          | 0.2745                            | 2.745                            | 2.64               | 2.45               | 3.60                     | 7.63                     |
| Bis(2-chloroethyl)ether                                  | 0.60                            | 42.83                             | 428.3                            | 660                | 614                | 902                      | 1908                     |
| Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate] | 6                               | 7.55                              | 75.5                             | 6598               | 6137               | 9020                     | 19084                    |
| Bromodichloromethane [Dichlorobromomethane]              | 10.2                            | 275                               | 2750                             | 11217              | 10432              | 15335                    | 32443                    |
| Bromoform [Tribromomethane]                              | 66.9                            | 1060                              | 10600                            | 73572              | 68422              | 100580                   | 212793                   |
| Cadmium  | 5                               | N/A                               | N/A                              | 19449              | 18088              | 26588                    | 56252                    |
| Carbon Tetrachloride                                     | 4.5                             | 46                                | 460                              | 4949               | 4602               | 6765                     | 14313                    |
| Chlordane  | 0.0025                          | 0.0025                            | 0.025                            | 2.75               | 2.56               | 3.75                     | 7.95                     |
| Chlorobenzene  | 100                             | 2737                              | 27370                            | 109974             | 102276             | 150345                   | 318077                   |
| Chlorodibromomethane [Dibromochloromethane]              | 7.5                             | 183                               | 1830                             | 8248               | 7671               | 11275                    | 23855                    |
| Chloroform [Trichloromethane]                            | 70                              | 7697                              | 76970                            | 76982              | 71593              | 105241                   | 222653                   |
| Chromium (hexavalent)                                    | 62                              | 502                               | 5020                             | 68184              | 63411              | 93213                    | 197207                   |
| Chrysene   | 2.45                            | 2.52                              | 25.2                             | 2694               | 2506               | 3683                     | 7792                     |
| Cresols [Methylphenols]                                  | 1041                            | 9301                              | 93010                            | 1144827            | 1064689            | 1565092                  | 3311181                  |
| Cyanide (free)   | 200                             | N/A                               | N/A                              | 219947             | 204551             | 300690                   | 636154                   |
| 4,4'-DDD   | 0.002                           | 0.002                             | 0.02                             | 2.20               | 2.05               | 3.00                     | 6.36                     |
| 4,4'-DDE   | 0.00013                         | 0.00013                           | 0.0013                           | 0.143              | 0.133              | 0.195                    | 0.413                    |
| 4,4'-DDT   | 0.0004                          | 0.0004                            | 0.004                            | 0.440              | 0.409              | 0.601                    | 1.27                     |
| 2,4'-D   | 70                              | N/A                               | N/A                              | 76982              | 71593              | 105241                   | 222653                   |
| Danitol [Fenpropathrin]                                  | 262                             | 473                               | 4730                             | 288131             | 267962             | 393904                   | 833361                   |
| 1,2-Dibromoethane [Ethylene Dibromide]                   | 0.17                            | 4.24                              | 42.4                             | 187                | 174                | 255                      | 540                      |
| m-Dichlorobenzene [1,3-Dichlorobenzene]                  | 322                             | 595                               | 5950                             | 354115             | 329327             | 484111                   | 1024207                  |
| o-Dichlorobenzene [1,2-Dichlorobenzene]                  | 600                             | 3299                              | 32990                            | 659842             | 613653             | 902070                   | 1908462                  |
| p-Dichlorobenzene [1,4-Dichlorobenzene]                  | 75                              | N/A                               | N/A                              | 82480              | 76707              | 112758                   | 238557                   |
| 3,3'-Dichlorobenzidine                                   | 0.79                            | 2.24                              | 22.4                             | 869                | 808                | 1187                     | 2512                     |
| 1,2-Dichloroethane                                       | 5                               | 364                               | 3640                             | 5499               | 5114               | 7517                     | 15903                    |
| 1,1-Dichloroethylene [1,1-Dichloroethene]                | 7                               | 55114                             | 551140                           | 7698               | 7159               | 10524                    | 22265                    |
| Dichloromethane [Methylene Chloride]                     | 5                               | 13333                             | 133330                           | 5499               | 5114               | 7517                     | 15903                    |
| 1,2-Dichloropropane                                      | 5                               | 259                               | 2590                             | 5499               | 5114               | 7517                     | 15903                    |
| 1,3-Dichloropropene [1,3-Dichloropropylene]              | 2.8                             | 119                               | 1190                             | 3079               | 2864               | 4209                     | 8906                     |
| Dicofol [Kelthane]                                       | 0.30                            | 0.30                              | 3                                | 330                | 307                | 451                      | 954                      |
| Dieldrin   | 2.0E-05                         | 2.0E-05                           | 2.0E-04                          | 0.0220             | 0.0205             | 0.0300                   | 0.0636                   |
| 2,4-Dimethylphenol                                       | 444                             | 8436                              | 84360                            | 488283             | 454104             | 667532                   | 1412261                  |
| Di-n-Butyl Phthalate                                     | 88.9                            | 92.4                              | 924                              | 97767              | 90923              | 133656                   | 282770                   |
| Dioxins/Furans [TCDD Equivalents]                        | 7.80E-08                        | 7.97E-08                          | 7.97E-07                         | 0.0000858          | 0.0000798          | 0.000117                 | 0.000248                 |
| Endrin   | 0.02                            | 0.02                              | 0.2                              | 22.0               | 20.5               | 30.0                     | 63.6                     |
| Epichlorohydrin  | 53.5                            | 2013                              | 20130                            | 58836              | 54717              | 80434                    | 170171                   |
| Ethylbenzene   | 700                             | 1867                              | 18670                            | 769816             | 715929             | 1052415                  | 2226539                  |
| Ethylene Glycol  | 46744                           | 1.68E+07                          | 1.68E+08                         | 51406119           | 47807691           | 70277305                 | 148681918                |
| Fluoride   | 4000                            | N/A                               | N/A                              | 4398949            | 4091023            | 6013803                  | 12723080                 |
| Heptachlor   | 8.0E-05                         | 0.0001                            | 0.001                            | 0.0880             | 0.0818             | 0.120                    | 0.254                    |
| Heptachlor Epoxide                                       | 0.00029                         | 0.00029                           | 0.0029                           | 0.319              | 0.297              | 0.436                    | 0.922                    |
| Hexachlorobenzene  | 0.00068                         | 0.00068                           | 0.0068                           | 0.748              | 0.695              | 1.02                     | 2.16                     |
| Hexachlorobutadiene                                      | 0.21                            | 0.22                              | 2.2                              | 231                | 215                | 315                      | 667                      |

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| <i>Parameter</i>                                 | <i>Water and Fish Criterion</i> | <i>Fish Only Criterion (µg/L)</i> | <i>Incidental Fish Criterion</i> | <i>WLAh (µg/L)</i> | <i>LTAh (µg/L)</i> | <i>Daily Avg. (µg/L)</i> | <i>Daily Max. (µg/L)</i> |
|--|---------------------------------|-----------------------------------|----------------------------------|--------------------|--------------------|--------------------------|--------------------------|
| Hexachlorocyclohexane ( <i>alpha</i> )           | 0.0078                          | 0.0084                            | 0.084                            | 8.58               | 7.98               | 11.7                     | 24.8                     |
| Hexachlorocyclohexane ( <i>beta</i> )            | 0.15                            | 0.26                              | 2.6                              | 165                | 153                | 225                      | 477                      |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 0.2                             | 0.341                             | 3.41                             | 220                | 205                | 300                      | 636                      |
| Hexachlorocyclopentadiene                        | 10.7                            | 11.6                              | 116                              | 11767              | 10943              | 16086                    | 34034                    |
| Hexachloroethane                                 | 1.84                            | 2.33                              | 23.3                             | 2024               | 1882               | 2766                     | 5852                     |
| Hexachlorophene                                  | 2.05                            | 2.90                              | 29                               | 2254               | 2097               | 3082                     | 6520                     |
| 4,4'-Isopropylidenediphenol                      | 1092                            | 15982                             | 159820                           | 1200913            | 1116849            | 1641768                  | 3473400                  |
| Lead   | 1.15                            | 3.83                              | 38.3                             | 8394               | 7806               | 11474                    | 24276                    |
| Mercury  | 0.0122                          | 0.0122                            | 0.122                            | 13.4               | 12.5               | 18.3                     | 38.8                     |
| Methoxychlor                                     | 2.92                            | 3.0                               | 30                               | 3211               | 2986               | 4390                     | 9287                     |
| Methyl Ethyl Ketone                              | 13865                           | 9.92E+05                          | 9.92E+06                         | 15247857           | 14180507           | 20845345                 | 44101377                 |
| Methyl <i>tert</i> -butyl ether [MTBE]           | 15                              | 10482                             | 104820                           | 16496              | 15341              | 22551                    | 47711                    |
| Nickel   | 332                             | 1140                              | 11400                            | 1158786            | 1077671            | 1584175                  | 3351555                  |
| Nitrate-Nitrogen (as Total Nitrogen)             | 10000                           | N/A                               | N/A                              | 10997373           | 10227557           | 15034508                 | 31807701                 |
| Nitrobenzene                                     | 45.7                            | 1873                              | 18730                            | 50258              | 46740              | 68707                    | 145361                   |
| N-Nitrosodiethylamine                            | 0.0037                          | 2.1                               | 21                               | 4.07               | 3.78               | 5.56                     | 11.7                     |
| N-Nitroso-di- <i>n</i> -Butylamine               | 0.119                           | 4.2                               | 42                               | 131                | 122                | 178                      | 378                      |
| Pentachlorobenzene                               | 0.348                           | 0.355                             | 3.55                             | 383                | 356                | 523                      | 1106                     |
| Pentachlorophenol                                | 0.22                            | 0.29                              | 2.9                              | 242                | 225                | 330                      | 699                      |
| Polychlorinated Biphenyls [PCBs]                 | 6.4E-04                         | 6.4E-04                           | 6.40E-03                         | 0.704              | 0.655              | 0.962                    | 2.03                     |
| Pyridine   | 23                              | 947                               | 9470                             | 25294              | 23523              | 34579                    | 73157                    |
| Selenium   | 50                              | N/A                               | N/A                              | 54987              | 51138              | 75172                    | 159038                   |
| 1,2,4,5-Tetrachlorobenzene                       | 0.23                            | 0.24                              | 2.4                              | 253                | 235                | 345                      | 731                      |
| 1,1,2,2-Tetrachloroethane                        | 1.64                            | 26.35                             | 263.5                            | 1804               | 1677               | 2465                     | 5216                     |
| Tetrachloroethylene [Tetrachloroethylene]        | 5                               | 280                               | 2800                             | 5499               | 5114               | 7517                     | 15903                    |
| Thallium   | 0.12                            | 0.23                              | 2.3                              | 132                | 123                | 180                      | 381                      |
| Toluene  | 1000                            | N/A                               | N/A                              | 1099737            | 1022756            | 1503450                  | 3180770                  |
| Toxaphene  | 0.011                           | 0.011                             | 0.11                             | 12.1               | 11.3               | 16.5                     | 34.9                     |
| 2,4,5-TP [Silvex]                                | 50                              | 369                               | 3690                             | 54987              | 51138              | 75172                    | 159038                   |
| 1,1,1-Trichloroethane                            | 200                             | 784354                            | 7843540                          | 219947             | 204551             | 300690                   | 636154                   |
| 1,1,2-Trichloroethane                            | 5                               | 166                               | 1660                             | 5499               | 5114               | 7517                     | 15903                    |
| Trichloroethylene [Trichloroethene]              | 5                               | 71.9                              | 719                              | 5499               | 5114               | 7517                     | 15903                    |
| 2,4,5-Trichlorophenol                            | 1039                            | 1867                              | 18670                            | 1142627            | 1062643            | 1562085                  | 3304820                  |
| TTHM [Sum of Total Trihalomethanes]              | 80                              | N/A                               | N/A                              | 87979              | 81820              | 120276                   | 254461                   |
| Vinyl Chloride                                   | 0.23                            | 16.5                              | 165                              | 253                | 235                | 345                      | 731                      |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <b>Aquatic Life</b>                              | <b>70% of</b>     | <b>85% of</b>     |
|--|-------------------|-------------------|
| <b>Parameter</b>                                 | <b>Daily Avg.</b> | <b>Daily Avg.</b> |
|  | <b>(µg/L)</b>     | <b>(µg/L)</b>     |
| Aldrin   | 206               | 251               |
| Aluminum   | 68361             | 83009             |
| Arsenic  | 52069             | 63227             |
| Cadmium  | 444               | 539               |
| Carbaryl   | 137               | 167               |
| Chlordane  | 1.47              | 1.78              |
| Chlorpyrifos                                     | 5.72              | 6.95              |
| Chromium (trivalent)                             | 209471            | 254358            |
| Chromium (hexavalent)                            | 1083              | 1315              |
| Copper   | 5458              | 6628              |
| Cyanide (free)                                   | 3159              | 3836              |
| 4,4'-DDT   | 0.368             | 0.447             |
| Demeton  | 36.8              | 44.7              |
| Diazinon   | 11.7              | 14.2              |
| Dicofol [Kelthane]                               | 4090              | 4967              |
| Dieldrin   | 0.736             | 0.894             |
| Diuron   | 14486             | 17590             |
| Endosulfan I ( <i>alpha</i> )                    | 15.1              | 18.4              |
| Endosulfan II ( <i>beta</i> )                    | 15.1              | 18.4              |
| Endosulfan sulfate                               | 15.1              | 18.4              |
| Endrin   | 0.736             | 0.894             |
| Guthion [Azinphos Methyl]                        | 3.68              | 4.47              |
| Heptachlor                                       | 1.47              | 1.78              |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 29.4              | 35.7              |
| Lead   | 10224             | 12415             |
| Malathion  | 3.68              | 4.47              |
| Mercury  | 165               | 201               |
| Methoxychlor                                     | 11.0              | 13.4              |
| Mirex  | 0.368             | 0.447             |
| Nickel   | 90502             | 109895            |
| Nonylphenol                                      | 1931              | 2345              |
| Parathion (ethyl)                                | 4.48              | 5.44              |
| Pentachlorophenol                                | 1216              | 1476              |
| Phenanthrene                                     | 2069              | 2512              |
| Polychlorinated Biphenyls [PCBs]                 | 5.15              | 6.26              |
| Selenium   | 1379              | 1675              |
| Silver   | 1258              | 1527              |
| Toxaphene  | 0.0736            | 0.0894            |
| Tributyltin [TBT]                                | 8.84              | 10.7              |
| 2,4,5 Trichlorophenol                            | 9381              | 11391             |
| Zinc   | 54901             | 66665             |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <b>Human Health</b>                                      | <b>70% of</b>     | <b>85% of</b>     |
|--|-------------------|-------------------|
| <b>Parameter</b>   | <b>Daily Avg.</b> | <b>Daily Avg.</b> |
|  | <b>(µg/L)</b>     | <b>(µg/L)</b>     |
| Acrylonitrile  | 1052              | 1277              |
| Aldrin   | 0.0120            | 0.0146            |
| Anthracene   | 1167128           | 1417227           |
| Antimony   | 6314              | 7667              |
| Arsenic  | 23364             | 28371             |
| Barium   | 2104831           | 2555866           |
| Benzene  | 5262              | 6389              |
| Benzidine  | 1.57              | 1.91              |
| Benzo(a)anthracene                                       | 25.2              | 30.6              |
| Benzo(a)pyrene   | 2.63              | 3.19              |
| Bis(chloromethyl)ether                                   | 2.52              | 3.06              |
| Bis(2-chloroethyl)ether                                  | 631               | 766               |
| Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate] | 6314              | 7667              |
| Bromodichloromethane [Dichlorobromomethane]              | 10734             | 13034             |
| Bromoform [Tribromomethane]                              | 70406             | 85493             |
| Cadmium  | 18612             | 22600             |
| Carbon Tetrachloride                                     | 4735              | 5750              |
| Chlordane  | 2.63              | 3.19              |
| Chlorobenzene  | 105241            | 127793            |
| Chlorodibromomethane [Dibromochloromethane]              | 7893              | 9584              |
| Chloroform [Trichloromethane]                            | 73669             | 89455             |
| Chromium (hexavalent)                                    | 65249             | 79231             |
| Chrysene   | 2578              | 3130              |
| Cresols [Methylphenols]                                  | 1095564           | 1330328           |
| Cyanide (free)   | 210483            | 255586            |
| 4,4'-DDD   | 2.10              | 2.55              |
| 4,4'-DDE   | 0.136             | 0.166             |
| 4,4'-DDT   | 0.420             | 0.511             |
| 2,4'-D   | 73669             | 89455             |
| Danitol [Fenpropathrin]                                  | 275732            | 334818            |
| 1,2-Dibromoethane [Ethylene Dibromide]                   | 178               | 217               |
| m-Dichlorobenzene [1,3-Dichlorobenzene]                  | 338877            | 411494            |
| o-Dichlorobenzene [1,2-Dichlorobenzene]                  | 631449            | 766759            |
| p-Dichlorobenzene [1,4-Dichlorobenzene]                  | 78931             | 95844             |
| 3,3'-Dichlorobenzidine                                   | 831               | 1009              |
| 1,2-Dichloroethane                                       | 5262              | 6389              |
| 1,1-Dichloroethylene [1,1-Dichloroethene]                | 7366              | 8945              |
| Dichloromethane [Methylene Chloride]                     | 5262              | 6389              |
| 1,2-Dichloropropane                                      | 5262              | 6389              |
| 1,3-Dichloropropene [1,3-Dichloropropylene]              | 2946              | 3578              |
| Dicofol [Kelthane]                                       | 315               | 383               |
| Dieldrin   | 0.0210            | 0.0255            |
| 2,4-Dimethylphenol                                       | 467272            | 567402            |
| Di-n-Butyl Phthalate                                     | 93559             | 113608            |
| Dioxins/Furans [TCDD Equivalents]                        | 0.0000820         | 0.0000996         |
| Endrin   | 21.0              | 25.5              |
| Epichlorohydrin  | 56304             | 68369             |
| Ethylbenzene   | 736690            | 894553            |
| Ethylene Glycol  | 49194113          | 59735709          |
| Fluoride   | 4209662           | 5111732           |
| Heptachlor   | 0.0841            | 0.102             |
| Heptachlor Epoxide                                       | 0.305             | 0.370             |
| Hexachlorobenzene  | 0.715             | 0.868             |
| Hexachlorobutadiene                                      | 221               | 268               |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <b>Human Health</b>                              | <b>70% of</b>     | <b>85% of</b>     |
|--|-------------------|-------------------|
| <b>Parameter</b>                                 | <b>Daily Avg.</b> | <b>Daily Avg.</b> |
|  | <b>(µg/L)</b>     | <b>(µg/L)</b>     |
| Hexachlorocyclohexane ( <i>alpha</i> )           | 8.20              | 9.96              |
| Hexachlorocyclohexane ( <i>beta</i> )            | 157               | 191               |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 210               | 255               |
| Hexachlorocyclopentadiene                        | 11260             | 13673             |
| Hexachloroethane                                 | 1936              | 2351              |
| Hexachlorophene                                  | 2157              | 2619              |
| 4,4'-Isopropylidenediphenol                      | 1149237           | 1395503           |
| Lead   | 8032              | 9753              |
| Mercury  | 12.8              | 15.5              |
| Methoxychlor                                     | 3073              | 3731              |
| Methyl Ethyl Ketone                              | 14591742          | 17718543          |
| Methyl <i>tert</i> -butyl ether [MTBE]           | 15786             | 19168             |
| Nickel   | 1108923           | 1346549           |
| Nitrate-Nitrogen (as Total Nitrogen)             | 10524155          | 12779332          |
| Nitrobenzene                                     | 48095             | 58401             |
| N-Nitrosodiethylamine                            | 3.89              | 4.72              |
| N-Nitroso-di- <i>n</i> -Butylamine               | 125               | 152               |
| Pentachlorobenzene                               | 366               | 444               |
| Pentachlorophenol                                | 231               | 281               |
| Polychlorinated Biphenyls [PCBs]                 | 0.673             | 0.817             |
| Pyridine   | 24205             | 29392             |
| Selenium   | 52620             | 63896             |
| 1,2,4,5-Tetrachlorobenzene                       | 242               | 293               |
| 1,1,2,2-Tetrachloroethane                        | 1725              | 2095              |
| Tetrachloroethylene [Tetrachloroethylene]        | 5262              | 6389              |
| Thallium   | 126               | 153               |
| Toluene  | 1052415           | 1277933           |
| Toxaphene  | 11.5              | 14.0              |
| 2,4,5-TP [Silvex]                                | 52620             | 63896             |
| 1,1,1-Trichloroethane                            | 210483            | 255586            |
| 1,1,2-Trichloroethane                            | 5262              | 6389              |
| Trichloroethylene [Trichloroethene]              | 5262              | 6389              |
| 2,4,5-Trichlorophenol                            | 1093459           | 1327772           |
| TTHM [Sum of Total Trihalomethanes]              | 84193             | 102234            |
| Vinyl Chloride                                   | 242               | 293               |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU #3 - PERENNIAL STREAM OR RIVER

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:   | Jack A. Fusco Energy Center, LLC & Calpine Operating Service Company, Inc. |
| TPDES Permit No.: | WQ0004258000   |
| Outfall No.:      | 001 Phase 2  |
| Prepared by:      | Thomas Starr   |
| Date:             | December 11, 2025  |

DISCHARGE INFORMATION

|  |                                   |
|--|-----------------------------------|
| Receiving Waterbody:                               | Brazos River Below Navasota River |
| Segment No.:                                       | 1202                              |
| TSS (mg/L):  | 32                                |
| pH (Standard Units):                               | 7.7                               |
| Hardness (mg/L as CaCO <sub>3</sub> ):             | 160                               |
| Chloride (mg/L):                                   | 86                                |
| Effluent Flow for Aquatic Life (MGD):              | 3                                 |
| Critical Low Flow [7Q2] (cfs):                     | 689.88                            |
| % Effluent for Chronic Aquatic Life (Mixing Zone): | 0.67                              |
| % Effluent for Acute Aquatic Life (ZID):           | 2.62                              |
| Effluent Flow for Human Health (MGD):              | 0.961                             |
| Harmonic Mean Flow (cfs):                          | 1633.69                           |
| % Effluent for Human Health:                       | 0.09                              |
| Human Health Criterion (select: PWS, FISH, or INC) | PWS                               |

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

| <i>Stream/River Metal</i> | <i>Intercept<br/>(b)</i> | <i>Slope<br/>(m)</i> | <i>Partition<br/>Coefficient<br/>(Kp)</i> | <i>Dissolved<br/>Fraction<br/>(Cd/Ct)</i> | <i>Source</i> | <i>Water<br/>Effect Ratio<br/>(WER)</i> | <i>Source</i> |
|---------------------------|--------------------------|----------------------|---|---|---------------|---|---------------|
| Aluminum                  | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Arsenic                   | 5.68                     | -0.73                | 38127.69                                  | 0.450                                     |               | 1.00                                    | Assumed       |
| Cadmium                   | 6.60                     | -1.13                | 79283.08                                  | 0.283                                     |               | 1.00                                    | Assumed       |
| Chromium (total)          | 6.52                     | -0.93                | 131889.59                                 | 0.192                                     |               | 1.00                                    | Assumed       |
| Chromium (trivalent)      | 6.52                     | -0.93                | 131889.59                                 | 0.192                                     |               | 1.00                                    | Assumed       |
| Chromium (hexavalent)     | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Copper                    | 6.02                     | -0.74                | 80572.90                                  | 0.279                                     |               | 1.00                                    | Assumed       |
| Lead                      | 6.45                     | -0.80                | 176148.93                                 | 0.151                                     |               | 1.00                                    | Assumed       |
| Mercury                   | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Nickel                    | 5.69                     | -0.57                | 67930.45                                  | 0.315                                     |               | 1.00                                    | Assumed       |
| Selenium                  | N/A                      | N/A                  | N/A                                       | 1.00                                      | Assumed       | 1.00                                    | Assumed       |
| Silver                    | 6.38                     | -1.03                | 67560.91                                  | 0.316                                     |               | 1.00                                    | Assumed       |
| Zinc                      | 6.10                     | -0.70                | 111274.34                                 | 0.219                                     |               | 1.00                                    | Assumed       |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

| Parameter                               | FW Acute            | Chronic             | WLAa<br>(µg/L) | WLAc<br>(µg/L) | LTAa<br>(µg/L) | LTAc<br>(µg/L) | Daily Avg.<br>(µg/L) | Daily Max.<br>(µg/L) |
|---|---------------------|---------------------|----------------|----------------|----------------|----------------|----------------------|----------------------|
|   | Criterion<br>(µg/L) | Criterion<br>(µg/L) |                |                |                |                |                      |                      |
| Aldrin                                  | 3.0                 | N/A                 | 114            | N/A            | 65.6           | N/A            | 96.4                 | 203                  |
| Aluminum                                | 991                 | N/A                 | 37814          | N/A            | 21667          | N/A            | 31850                | 67384                |
| Arsenic                                 | 340                 | 150                 | 28802          | 49828          | 16504          | 38368          | 24260                | 51325                |
| Cadmium                                 | 13.6                | 0.341               | 1829           | 180            | 1048           | 139            | 204                  | 432                  |
| Carbaryl                                | 2.0                 | N/A                 | 76.3           | N/A            | 43.7           | N/A            | 64.2                 | 135                  |
| Chlordane                               | 2.4                 | 0.004               | 91.6           | 0.599          | 52.5           | 0.461          | 0.677                | 1.43                 |
| Chlorpyrifos                            | 0.083               | 0.041               | 3.17           | 6.13           | 1.81           | 4.72           | 2.66                 | 5.64                 |
| Chromium (trivalent)                    | 837                 | 109                 | 166783         | 85074          | 95567          | 65507          | 96295                | 203727               |
| Chromium (hexavalent)                   | 15.7                | 10.6                | 599            | 1586           | 343            | 1221           | 504                  | 1067                 |
| Copper                                  | 22.1                | 14.1                | 3019           | 7575           | 1730           | 5833           | 2543                 | 5380                 |
| Cyanide (free)                          | 45.8                | 10.7                | 1748           | 1601           | 1001           | 1233           | 1472                 | 3114                 |
| 4,4'-DDT                                | 1.1                 | 0.001               | 42.0           | 0.150          | 24.1           | 0.115          | 0.169                | 0.358                |
| Demeton                                 | N/A                 | 0.1                 | N/A            | 15.0           | N/A            | 11.5           | 16.9                 | 35.8                 |
| Diazinon                                | 0.17                | 0.17                | 6.49           | 25.4           | 3.72           | 19.6           | 5.46                 | 11.5                 |
| Dicofol [Kelthane]                      | 59.3                | 19.8                | 2263           | 2963           | 1297           | 2281           | 1905                 | 4032                 |
| Dieldrin                                | 0.24                | 0.002               | 9.16           | 0.299          | 5.25           | 0.230          | 0.338                | 0.716                |
| Diuron                                  | 210                 | 70                  | 8013           | 10474          | 4591           | 8065           | 6749                 | 14279                |
| Endosulfan I (alpha)                    | 0.22                | 0.056               | 8.39           | 8.38           | 4.81           | 6.45           | 7.07                 | 14.9                 |
| Endosulfan II (beta)                    | 0.22                | 0.056               | 8.39           | 8.38           | 4.81           | 6.45           | 7.07                 | 14.9                 |
| Endosulfan sulfate                      | 0.22                | 0.056               | 8.39           | 8.38           | 4.81           | 6.45           | 7.07                 | 14.9                 |
| Endrin                                  | 0.086               | 0.002               | 3.28           | 0.299          | 1.88           | 0.230          | 0.338                | 0.716                |
| Guthion [Azinphos Methyl]               | N/A                 | 0.01                | N/A            | 1.50           | N/A            | 1.15           | 1.69                 | 3.58                 |
| Heptachlor                              | 0.52                | 0.004               | 19.8           | 0.599          | 11.4           | 0.461          | 0.677                | 1.43                 |
| Hexachlorocyclohexane (gamma) [Lindane] | 1.126               | 0.08                | 43.0           | 12.0           | 24.6           | 9.22           | 13.5                 | 28.6                 |
| Lead                                    | 107                 | 4.18                | 27174          | 4152           | 15571          | 3197           | 4700                 | 9943                 |
| Malathion                               | N/A                 | 0.01                | N/A            | 1.50           | N/A            | 1.15           | 1.69                 | 3.58                 |
| Mercury                                 | 2.4                 | 1.3                 | 91.6           | 195            | 52.5           | 150            | 77.1                 | 163                  |
| Methoxychlor                            | N/A                 | 0.03                | N/A            | 4.49           | N/A            | 3.46           | 5.08                 | 10.7                 |
| Mirex                                   | N/A                 | 0.001               | N/A            | 0.150          | N/A            | 0.115          | 0.169                | 0.358                |
| Nickel                                  | 697                 | 77.4                | 84392          | 36756          | 48356          | 28302          | 41604                | 88020                |
| Nonylphenol                             | 28                  | 6.6                 | 1068           | 988            | 612            | 760            | 899                  | 1903                 |
| Parathion (ethyl)                       | 0.065               | 0.013               | 2.48           | 1.95           | 1.42           | 1.50           | 2.08                 | 4.41                 |
| Pentachlorophenol                       | 17.6                | 13.5                | 673            | 2024           | 385            | 1558           | 566                  | 1198                 |
| Phenanthrene                            | 30                  | 30                  | 1145           | 4489           | 656            | 3456           | 964                  | 2039                 |
| Polychlorinated Biphenyls [PCBs]        | 2.0                 | 0.014               | 76.3           | 2.09           | 43.7           | 1.61           | 2.37                 | 5.01                 |
| Selenium                                | 20                  | 5                   | 763            | 748            | 437            | 576            | 642                  | 1359                 |
| Silver                                  | 0.8                 | N/A                 | 696            | N/A            | 399            | N/A            | 586                  | 1240                 |
| Toxaphene                               | 0.78                | 0.0002              | 29.8           | 0.0299         | 17.1           | 0.0230         | 0.0338               | 0.0716               |
| Tributyltin [TBT]                       | 0.13                | 0.024               | 4.96           | 3.59           | 2.84           | 2.77           | 4.06                 | 8.59                 |
| 2,4,5 Trichlorophenol                   | 136                 | 64                  | 5189           | 9576           | 2973           | 7374           | 4371                 | 9247                 |
| Zinc                                    | 175                 | 176                 | 30368          | 120059         | 17401          | 92446          | 25579                | 54116                |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

| <i>Parameter</i>   | <i>Water and Fish Criterion</i> | <i>Fish Only Criterion (µg/L)</i> | <i>Incidental Fish Criterion</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                             | 1100               | 1023               | 1503                     | 3180                     |
| Aldrin   | 1.146E-05                       | 1.147E-05                         | 1.147E-04                        | 0.0126             | 0.0117             | 0.0172                   | 0.0364                   |
| Anthracene   | 1109                            | 1317                              | 13170                            | 1219609            | 1134236            | 1667326                  | 3527474                  |
| Antimony   | 6                               | 1071                              | 10710                            | 6598               | 6137               | 9020                     | 19084                    |
| Arsenic  | 10                              | N/A                               | N/A                              | 24415              | 22706              | 33377                    | 70615                    |
| Barium   | 2000                            | N/A                               | N/A                              | 2199475            | 2045511            | 3006901                  | 6361540                  |
| Benzene  | 5                               | 581                               | 5810                             | 5499               | 5114               | 7517                     | 15903                    |
| Benzidine  | 0.0015                          | 0.107                             | 1.07                             | 1.65               | 1.53               | 2.25                     | 4.77                     |
| Benzo(a)anthracene                                       | 0.024                           | 0.025                             | 0.25                             | 26.4               | 24.5               | 36.0                     | 76.3                     |
| Benzo(a)pyrene   | 0.0025                          | 0.0025                            | 0.025                            | 2.75               | 2.56               | 3.75                     | 7.95                     |
| Bis(chloromethyl)ether                                   | 0.0024                          | 0.2745                            | 2.745                            | 2.64               | 2.45               | 3.60                     | 7.63                     |
| Bis(2-chloroethyl)ether                                  | 0.60                            | 42.83                             | 428.3                            | 660                | 614                | 902                      | 1908                     |
| Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate] | 6                               | 7.55                              | 75.5                             | 6598               | 6137               | 9020                     | 19084                    |
| Bromodichloromethane [Dichlorobromomethane]              | 10.2                            | 275                               | 2750                             | 11217              | 10432              | 15335                    | 32443                    |
| Bromoform [Tribromomethane]                              | 66.9                            | 1060                              | 10600                            | 73572              | 68422              | 100580                   | 212793                   |
| Cadmium  | 5                               | N/A                               | N/A                              | 19449              | 18088              | 26588                    | 56252                    |
| Carbon Tetrachloride                                     | 4.5                             | 46                                | 460                              | 4949               | 4602               | 6765                     | 14313                    |
| Chlordane  | 0.0025                          | 0.0025                            | 0.025                            | 2.75               | 2.56               | 3.75                     | 7.95                     |
| Chlorobenzene  | 100                             | 2737                              | 27370                            | 109974             | 102276             | 150345                   | 318077                   |
| Chlorodibromomethane [Dibromochloromethane]              | 7.5                             | 183                               | 1830                             | 8248               | 7671               | 11275                    | 23855                    |
| Chloroform [Trichloromethane]                            | 70                              | 7697                              | 76970                            | 76982              | 71593              | 105241                   | 222653                   |
| Chromium (hexavalent)                                    | 62                              | 502                               | 5020                             | 68184              | 63411              | 93213                    | 197207                   |
| Chrysene   | 2.45                            | 2.52                              | 25.2                             | 2694               | 2506               | 3683                     | 7792                     |
| Cresols [Methylphenols]                                  | 1041                            | 9301                              | 93010                            | 1144827            | 1064689            | 1565092                  | 3311181                  |
| Cyanide (free)   | 200                             | N/A                               | N/A                              | 219947             | 204551             | 300690                   | 636154                   |
| 4,4'-DDD   | 0.002                           | 0.002                             | 0.02                             | 2.20               | 2.05               | 3.00                     | 6.36                     |
| 4,4'-DDE   | 0.00013                         | 0.00013                           | 0.0013                           | 0.143              | 0.133              | 0.195                    | 0.413                    |
| 4,4'-DDT   | 0.0004                          | 0.0004                            | 0.004                            | 0.440              | 0.409              | 0.601                    | 1.27                     |
| 2,4'-D   | 70                              | N/A                               | N/A                              | 76982              | 71593              | 105241                   | 222653                   |
| Danitol [Fenpropathrin]                                  | 262                             | 473                               | 4730                             | 288131             | 267962             | 393904                   | 833361                   |
| 1,2-Dibromoethane [Ethylene Dibromide]                   | 0.17                            | 4.24                              | 42.4                             | 187                | 174                | 255                      | 540                      |
| m-Dichlorobenzene [1,3-Dichlorobenzene]                  | 322                             | 595                               | 5950                             | 354115             | 329327             | 484111                   | 1024207                  |
| o-Dichlorobenzene [1,2-Dichlorobenzene]                  | 600                             | 3299                              | 32990                            | 659842             | 613653             | 902070                   | 1908462                  |
| p-Dichlorobenzene [1,4-Dichlorobenzene]                  | 75                              | N/A                               | N/A                              | 82480              | 76707              | 112758                   | 238557                   |
| 3,3'-Dichlorobenzidine                                   | 0.79                            | 2.24                              | 22.4                             | 869                | 808                | 1187                     | 2512                     |
| 1,2-Dichloroethane                                       | 5                               | 364                               | 3640                             | 5499               | 5114               | 7517                     | 15903                    |
| 1,1-Dichloroethylene [1,1-Dichloroethene]                | 7                               | 55114                             | 551140                           | 7698               | 7159               | 10524                    | 22265                    |
| Dichloromethane [Methylene Chloride]                     | 5                               | 13333                             | 133330                           | 5499               | 5114               | 7517                     | 15903                    |
| 1,2-Dichloropropane                                      | 5                               | 259                               | 2590                             | 5499               | 5114               | 7517                     | 15903                    |
| 1,3-Dichloropropene [1,3-Dichloropropylene]              | 2.8                             | 119                               | 1190                             | 3079               | 2864               | 4209                     | 8906                     |
| Dicofol [Kelthane]                                       | 0.30                            | 0.30                              | 3                                | 330                | 307                | 451                      | 954                      |
| Dieldrin   | 2.0E-05                         | 2.0E-05                           | 2.0E-04                          | 0.0220             | 0.0205             | 0.0300                   | 0.0636                   |
| 2,4-Dimethylphenol                                       | 444                             | 8436                              | 84360                            | 488283             | 454104             | 667532                   | 1412261                  |
| Di-n-Butyl Phthalate                                     | 88.9                            | 92.4                              | 924                              | 97767              | 90923              | 133656                   | 282770                   |
| Dioxins/Furans [TCDD Equivalents]                        | 7.80E-08                        | 7.97E-08                          | 7.97E-07                         | 0.0000858          | 0.0000798          | 0.000117                 | 0.000248                 |
| Endrin   | 0.02                            | 0.02                              | 0.2                              | 22.0               | 20.5               | 30.0                     | 63.6                     |
| Epichlorohydrin  | 53.5                            | 2013                              | 20130                            | 58836              | 54717              | 80434                    | 170171                   |
| Ethylbenzene   | 700                             | 1867                              | 18670                            | 769816             | 715929             | 1052415                  | 2226539                  |
| Ethylene Glycol  | 46744                           | 1.68E+07                          | 1.68E+08                         | 51406119           | 47807691           | 70277305                 | 148681918                |
| Fluoride   | 4000                            | N/A                               | N/A                              | 4398949            | 4091023            | 6013803                  | 12723080                 |
| Heptachlor   | 8.0E-05                         | 0.0001                            | 0.001                            | 0.0880             | 0.0818             | 0.120                    | 0.254                    |
| Heptachlor Epoxide                                       | 0.00029                         | 0.00029                           | 0.0029                           | 0.319              | 0.297              | 0.436                    | 0.922                    |
| Hexachlorobenzene  | 0.00068                         | 0.00068                           | 0.0068                           | 0.748              | 0.695              | 1.02                     | 2.16                     |
| Hexachlorobutadiene                                      | 0.21                            | 0.22                              | 2.2                              | 231                | 215                | 315                      | 667                      |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <i>Parameter</i>                                 | <i>Water and Fish Criterion</i> | <i>Fish Only Criterion (µg/L)</i> | <i>Incidental Fish Criterion</i> | <i>WLAh (µg/L)</i> | <i>LTAh (µg/L)</i> | <i>Daily Avg. (µg/L)</i> | <i>Daily Max. (µg/L)</i> |
|--|---------------------------------|-----------------------------------|----------------------------------|--------------------|--------------------|--------------------------|--------------------------|
| Hexachlorocyclohexane ( <i>alpha</i> )           | 0.0078                          | 0.0084                            | 0.084                            | 8.58               | 7.98               | 11.7                     | 24.8                     |
| Hexachlorocyclohexane ( <i>beta</i> )            | 0.15                            | 0.26                              | 2.6                              | 165                | 153                | 225                      | 477                      |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 0.2                             | 0.341                             | 3.41                             | 220                | 205                | 300                      | 636                      |
| Hexachlorocyclopentadiene                        | 10.7                            | 11.6                              | 116                              | 11767              | 10943              | 16086                    | 34034                    |
| Hexachloroethane                                 | 1.84                            | 2.33                              | 23.3                             | 2024               | 1882               | 2766                     | 5852                     |
| Hexachlorophene                                  | 2.05                            | 2.90                              | 29                               | 2254               | 2097               | 3082                     | 6520                     |
| 4,4'-Isopropylidenediphenol                      | 1092                            | 15982                             | 159820                           | 1200913            | 1116849            | 1641768                  | 3473400                  |
| Lead   | 1.15                            | 3.83                              | 38.3                             | 8394               | 7806               | 11474                    | 24276                    |
| Mercury  | 0.0122                          | 0.0122                            | 0.122                            | 13.4               | 12.5               | 18.3                     | 38.8                     |
| Methoxychlor                                     | 2.92                            | 3.0                               | 30                               | 3211               | 2986               | 4390                     | 9287                     |
| Methyl Ethyl Ketone                              | 13865                           | 9.92E+05                          | 9.92E+06                         | 15247857           | 14180507           | 20845345                 | 44101377                 |
| Methyl <i>tert</i> -butyl ether [MTBE]           | 15                              | 10482                             | 104820                           | 16496              | 15341              | 22551                    | 47711                    |
| Nickel   | 332                             | 1140                              | 11400                            | 1158786            | 1077671            | 1584175                  | 3351555                  |
| Nitrate-Nitrogen (as Total Nitrogen)             | 10000                           | N/A                               | N/A                              | 10997373           | 10227557           | 15034508                 | 31807701                 |
| Nitrobenzene                                     | 45.7                            | 1873                              | 18730                            | 50258              | 46740              | 68707                    | 145361                   |
| N-Nitrosodiethylamine                            | 0.0037                          | 2.1                               | 21                               | 4.07               | 3.78               | 5.56                     | 11.7                     |
| N-Nitroso-di- <i>n</i> -Butylamine               | 0.119                           | 4.2                               | 42                               | 131                | 122                | 178                      | 378                      |
| Pentachlorobenzene                               | 0.348                           | 0.355                             | 3.55                             | 383                | 356                | 523                      | 1106                     |
| Pentachlorophenol                                | 0.22                            | 0.29                              | 2.9                              | 242                | 225                | 330                      | 699                      |
| Polychlorinated Biphenyls [PCBs]                 | 6.4E-04                         | 6.4E-04                           | 6.40E-03                         | 0.704              | 0.655              | 0.962                    | 2.03                     |
| Pyridine   | 23                              | 947                               | 9470                             | 25294              | 23523              | 34579                    | 73157                    |
| Selenium   | 50                              | N/A                               | N/A                              | 54987              | 51138              | 75172                    | 159038                   |
| 1,2,4,5-Tetrachlorobenzene                       | 0.23                            | 0.24                              | 2.4                              | 253                | 235                | 345                      | 731                      |
| 1,1,2,2-Tetrachloroethane                        | 1.64                            | 26.35                             | 263.5                            | 1804               | 1677               | 2465                     | 5216                     |
| Tetrachloroethylene [Tetrachloroethylene]        | 5                               | 280                               | 2800                             | 5499               | 5114               | 7517                     | 15903                    |
| Thallium   | 0.12                            | 0.23                              | 2.3                              | 132                | 123                | 180                      | 381                      |
| Toluene  | 1000                            | N/A                               | N/A                              | 1099737            | 1022756            | 1503450                  | 3180770                  |
| Toxaphene  | 0.011                           | 0.011                             | 0.11                             | 12.1               | 11.3               | 16.5                     | 34.9                     |
| 2,4,5-TP [Silvex]                                | 50                              | 369                               | 3690                             | 54987              | 51138              | 75172                    | 159038                   |
| 1,1,1-Trichloroethane                            | 200                             | 784354                            | 7843540                          | 219947             | 204551             | 300690                   | 636154                   |
| 1,1,2-Trichloroethane                            | 5                               | 166                               | 1660                             | 5499               | 5114               | 7517                     | 15903                    |
| Trichloroethylene [Trichloroethene]              | 5                               | 71.9                              | 719                              | 5499               | 5114               | 7517                     | 15903                    |
| 2,4,5-Trichlorophenol                            | 1039                            | 1867                              | 18670                            | 1142627            | 1062643            | 1562085                  | 3304820                  |
| TTHM [Sum of Total Trihalomethanes]              | 80                              | N/A                               | N/A                              | 87979              | 81820              | 120276                   | 254461                   |
| Vinyl Chloride                                   | 0.23                            | 16.5                              | 165                              | 253                | 235                | 345                      | 731                      |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <b>Aquatic Life<br/>Parameter</b>                | <b>70% of<br/>Daily Avg.<br/>(µg/L)</b> | <b>85% of<br/>Daily Avg.<br/>(µg/L)</b> |
|--|---|---|
| Aldrin   | 67.4                                    | 81.9                                    |
| Aluminum   | 22295                                   | 27073                                   |
| Arsenic  | 16982                                   | 20621                                   |
| Cadmium  | 142                                     | 173                                     |
| Carbaryl   | 44.9                                    | 54.6                                    |
| Chlordane  | 0.474                                   | 0.575                                   |
| Chlorpyrifos                                     | 1.86                                    | 2.26                                    |
| Chromium (trivalent)                             | 67407                                   | 81851                                   |
| Chromium (hexavalent)                            | 353                                     | 428                                     |
| Copper   | 1780                                    | 2161                                    |
| Cyanide (free)                                   | 1030                                    | 1251                                    |
| 4,4'-DDT   | 0.118                                   | 0.143                                   |
| Demeton  | 11.8                                    | 14.3                                    |
| Diazinon   | 3.82                                    | 4.64                                    |
| Dicofol [Kelthane]                               | 1334                                    | 1620                                    |
| Dieldrin   | 0.237                                   | 0.287                                   |
| Diuron   | 4724                                    | 5736                                    |
| Endosulfan I ( <i>alpha</i> )                    | 4.94                                    | 6.01                                    |
| Endosulfan II ( <i>beta</i> )                    | 4.94                                    | 6.01                                    |
| Endosulfan sulfate                               | 4.94                                    | 6.01                                    |
| Endrin   | 0.237                                   | 0.287                                   |
| Guthion [Azinphos Methyl]                        | 1.18                                    | 1.43                                    |
| Heptachlor                                       | 0.474                                   | 0.575                                   |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 9.48                                    | 11.5                                    |
| Lead   | 3290                                    | 3995                                    |
| Malathion  | 1.18                                    | 1.43                                    |
| Mercury  | 53.9                                    | 65.5                                    |
| Methoxychlor                                     | 3.55                                    | 4.31                                    |
| Mirex  | 0.118                                   | 0.143                                   |
| Nickel   | 29123                                   | 35363                                   |
| Nonylphenol                                      | 629                                     | 764                                     |
| Parathion (ethyl)                                | 1.46                                    | 1.77                                    |
| Pentachlorophenol                                | 396                                     | 481                                     |
| Phenanthrene                                     | 674                                     | 819                                     |
| Polychlorinated Biphenyls [PCBs]                 | 1.65                                    | 2.01                                    |
| Selenium   | 449                                     | 546                                     |
| Silver   | 410                                     | 498                                     |
| Toxaphene  | 0.0237                                  | 0.0287                                  |
| Tributyltin [TBT]                                | 2.84                                    | 3.45                                    |
| 2,4,5 Trichlorophenol                            | 3059                                    | 3715                                    |
| Zinc   | 17905                                   | 21742                                   |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <b>Human Health</b>                                      | <b>70% of</b>     | <b>85% of</b>     |
|--|-------------------|-------------------|
| <b>Parameter</b>   | <b>Daily Avg.</b> | <b>Daily Avg.</b> |
|  | <b>(µg/L)</b>     | <b>(µg/L)</b>     |
| Acrylonitrile  | 1052              | 1277              |
| Aldrin   | 0.0120            | 0.0146            |
| Anthracene   | 1167128           | 1417227           |
| Antimony   | 6314              | 7667              |
| Arsenic  | 23364             | 28371             |
| Barium   | 2104831           | 2555866           |
| Benzene  | 5262              | 6389              |
| Benzidine  | 1.57              | 1.91              |
| Benzo(a)anthracene                                       | 25.2              | 30.6              |
| Benzo(a)pyrene   | 2.63              | 3.19              |
| Bis(chloromethyl)ether                                   | 2.52              | 3.06              |
| Bis(2-chloroethyl)ether                                  | 631               | 766               |
| Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate] | 6314              | 7667              |
| Bromodichloromethane [Dichlorobromomethane]              | 10734             | 13034             |
| Bromoform [Tribromomethane]                              | 70406             | 85493             |
| Cadmium  | 18612             | 22600             |
| Carbon Tetrachloride                                     | 4735              | 5750              |
| Chlordane  | 2.63              | 3.19              |
| Chlorobenzene  | 105241            | 127793            |
| Chlorodibromomethane [Dibromochloromethane]              | 7893              | 9584              |
| Chloroform [Trichloromethane]                            | 73669             | 89455             |
| Chromium (hexavalent)                                    | 65249             | 79231             |
| Chrysene   | 2578              | 3130              |
| Cresols [Methylphenols]                                  | 1095564           | 1330328           |
| Cyanide (free)   | 210483            | 255586            |
| 4,4'-DDD   | 2.10              | 2.55              |
| 4,4'-DDE   | 0.136             | 0.166             |
| 4,4'-DDT   | 0.420             | 0.511             |
| 2,4'-D   | 73669             | 89455             |
| Danitol [Fenpropathrin]                                  | 275732            | 334818            |
| 1,2-Dibromoethane [Ethylene Dibromide]                   | 178               | 217               |
| <i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]          | 338877            | 411494            |
| <i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]          | 631449            | 766759            |
| <i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]          | 78931             | 95844             |
| 3,3'-Dichlorobenzidine                                   | 831               | 1009              |
| 1,2-Dichloroethane                                       | 5262              | 6389              |
| 1,1-Dichloroethylene [1,1-Dichloroethene]                | 7366              | 8945              |
| Dichloromethane [Methylene Chloride]                     | 5262              | 6389              |
| 1,2-Dichloropropane                                      | 5262              | 6389              |
| 1,3-Dichloropropene [1,3-Dichloropropylene]              | 2946              | 3578              |
| Dicofol [Kelthane]                                       | 315               | 383               |
| Dieldrin   | 0.0210            | 0.0255            |
| 2,4-Dimethylphenol                                       | 467272            | 567402            |
| Di- <i>n</i> -Butyl Phthalate                            | 93559             | 113608            |
| Dioxins/Furans [TCDD Equivalents]                        | 0.0000820         | 0.0000996         |
| Endrin   | 21.0              | 25.5              |
| Epichlorohydrin  | 56304             | 68369             |
| Ethylbenzene   | 736690            | 894553            |
| Ethylene Glycol  | 49194113          | 59735709          |
| Fluoride   | 4209662           | 5111732           |
| Heptachlor   | 0.0841            | 0.102             |
| Heptachlor Epoxide                                       | 0.305             | 0.370             |
| Hexachlorobenzene  | 0.715             | 0.868             |
| Hexachlorobutadiene                                      | 221               | 268               |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

| <b>Human Health</b>                              | <b>70% of</b>     | <b>85% of</b>     |
|--|-------------------|-------------------|
| <b>Parameter</b>                                 | <b>Daily Avg.</b> | <b>Daily Avg.</b> |
|  | <b>(µg/L)</b>     | <b>(µg/L)</b>     |
| Hexachlorocyclohexane ( <i>alpha</i> )           | 8.20              | 9.96              |
| Hexachlorocyclohexane ( <i>beta</i> )            | 157               | 191               |
| Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane] | 210               | 255               |
| Hexachlorocyclopentadiene                        | 11260             | 13673             |
| Hexachloroethane                                 | 1936              | 2351              |
| Hexachlorophene                                  | 2157              | 2619              |
| 4,4'-Isopropylidenediphenol                      | 1149237           | 1395503           |
| Lead   | 8032              | 9753              |
| Mercury  | 12.8              | 15.5              |
| Methoxychlor                                     | 3073              | 3731              |
| Methyl Ethyl Ketone                              | 14591742          | 17718543          |
| Methyl <i>tert</i> -butyl ether [MTBE]           | 15786             | 19168             |
| Nickel   | 1108923           | 1346549           |
| Nitrate-Nitrogen (as Total Nitrogen)             | 10524155          | 12779332          |
| Nitrobenzene                                     | 48095             | 58401             |
| N-Nitrosodiethylamine                            | 3.89              | 4.72              |
| N-Nitroso-di- <i>n</i> -Butylamine               | 125               | 152               |
| Pentachlorobenzene                               | 366               | 444               |
| Pentachlorophenol                                | 231               | 281               |
| Polychlorinated Biphenyls [PCBs]                 | 0.673             | 0.817             |
| Pyridine   | 24205             | 29392             |
| Selenium   | 52620             | 63896             |
| 1,2,4,5-Tetrachlorobenzene                       | 242               | 293               |
| 1,1,2,2-Tetrachloroethane                        | 1725              | 2095              |
| Tetrachloroethylene [Tetrachloroethylene]        | 5262              | 6389              |
| Thallium   | 126               | 153               |
| Toluene  | 1052415           | 1277933           |
| Toxaphene  | 11.5              | 14.0              |
| 2,4,5-TP [Silvex]                                | 52620             | 63896             |
| 1,1,1-Trichloroethane                            | 210483            | 255586            |
| 1,1,2-Trichloroethane                            | 5262              | 6389              |
| Trichloroethylene [Trichloroethene]              | 5262              | 6389              |
| 2,4,5-Trichlorophenol                            | 1093459           | 1327772           |
| TTHM [Sum of Total Trihalomethanes]              | 84193             | 102234            |
| Vinyl Chloride                                   | 242               | 293               |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**Appendix C**  
**TDS, Chloride, and Sulfate Screening Calculations**

**Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate**

**Menu 3 - Discharge to a Perennial Stream or River**

|                                |                                 |
|--------------------------------|---------------------------------|
| <b>Applicant Name:</b>         | J. A. Fusco Energy...Calpine... |
| <b>Permit Number, Outfall:</b> | WQ0004258000                    |
| <b>Segment Number:</b>         | 1202                            |

| Enter values needed for screening:             |             | Data Source (edit if different) |
|--|-------------|---------------------------------|
| QE - Average effluent flow                     | 0.87 MGD    |                                 |
| QS - Perennial stream harmonic mean flow       | 1633.69 cfs | Critical conditions memo        |
| QE - Average effluent flow                     | 1.3461 cfs  | Calculated                      |
| CA - TDS - ambient segment concentration       | 438 mg/L    | 2010 IP, Appendix D             |
| CA - chloride - ambient segment concentration  | 88 mg/L     | 2010 IP, Appendix D             |
| CA - sulfate - ambient segment concentration   | 60 mg/L     | 2010 IP, Appendix D             |
| CC - TDS - segment criterion                   | 750 mg/L    | 2018 TSWQS, Appendix A          |
| CC - chloride - segment criterion              | 300 mg/L    | 2018 TSWQS, Appendix A          |
| CC - sulfate - segment criterion               | 200 mg/L    | 2018 TSWQS, Appendix A          |
| CE - TDS - average effluent concentration      | 1792 mg/L   | Permit application              |
| CE - chloride - average effluent concentration | 425.25 mg/L | Permit application              |
| CE - sulfate - average effluent concentration  | 570 mg/L    | Permit application              |

**Screening Equation**

$$CC \geq [(QS)(CA) + (QE)(CE)]/[QE + QS]$$

**Permit Limit Calculations**

**TDS**

|                                    |                                 |            |
|------------------------------------|---------------------------------|------------|
| Calculate the WLA                  | WLA = [CC(QE+QS) - (QS)(CA)]/QE | 379410.60  |
| Calculate the LTA                  | LTA = WLA * 0.93                | 352851.85  |
| Calculate the daily average        | Daily Avg. = LTA * 1.47         | 518692.23  |
| Calculate the daily maximum        | Daily Max. = LTA * 3.11         | 1097369.27 |
| Calculate 70% of the daily average | 70% of Daily Avg. =             | 363084.56  |
| Calculate 85% of the daily average | 85% of Daily Avg. =             | 440888.39  |

|   |      |   |           |                 |
|---|------|---|-----------|-----------------|
| <b>No permit limitations needed if:</b> | 1792 | ≤ | 363084.56 |                 |
| <b>Reporting needed if:</b>             | 1792 | > | 363084.56 | but ≤ 440888.39 |
| <b>Permit limits may be needed if:</b>  | 1792 | > | 440888.39 |                 |

**No permit limitations needed for TDS**

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**Chloride**

|   |                                   |   |
|---|-----------------------------------|---|
| Calculate the WLA                       | $WLA = [CC(QE+QS) - (QS)(CA)]/QE$ | 257595.02                               |
| Calculate the LTA                       | $LTA = WLA * 0.93$                | 239563.37                               |
| Calculate the daily average             | $Daily\ Avg. = LTA * 1.47$        | <b>352158.15</b>                        |
| Calculate the daily maximum             | $Daily\ Max. = LTA * 3.11$        | <b>745042.08</b>                        |
| Calculate 70% of the daily average      | 70% of Daily Avg. =               | 246510.71                               |
| Calculate 85% of the daily average      | 85% of Daily Avg. =               | 299334.43                               |
| <b>No permit limitations needed if:</b> | <b>425.25</b> ≤                   | <b>246510.71</b>                        |
| <b>Reporting needed if:</b>             | <b>425.25</b> >                   | <b>246510.71</b> but ≤ <b>299334.43</b> |
| <b>Permit limits may be needed if:</b>  | <b>425.25</b> >                   | <b>299334.43</b>                        |

**No permit limitations needed for chloride**

**Sulfate**

|   |                                   |   |
|---|-----------------------------------|---|
| Calculate the WLA                       | $WLA = [CC(QE+QS) - (QS)(CA)]/QE$ | 170111.81                               |
| Calculate the LTA                       | $LTA = WLA * 0.93$                | 158203.98                               |
| Calculate the daily average             | $Daily\ Avg. = LTA * 1.47$        | <b>232559.85</b>                        |
| Calculate the daily maximum             | $Daily\ Max. = LTA * 3.11$        | <b>492014.38</b>                        |
| Calculate 70% of the daily average      | 70% of Daily Avg. =               | 162791.90                               |
| Calculate 85% of the daily average      | 85% of Daily Avg. =               | 197675.87                               |
| <b>No permit limitations needed if:</b> | <b>570</b> ≤                      | <b>162791.90</b>                        |
| <b>Reporting needed if:</b>             | <b>570</b> >                      | <b>162791.90</b> but ≤ <b>197675.87</b> |
| <b>Permit limits may be needed if:</b>  | <b>570</b> >                      | <b>197675.87</b>                        |

**No permit limitations needed for sulfate**

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate**  
**Menu 3 - Discharge to a Perennial Stream or River**

|                                |                                  |
|--------------------------------|----------------------------------|
| <b>Applicant Name:</b>         | J. A. Fusco Energy... Calpine... |
| <b>Permit Number, Outfall:</b> | WQ0004258000, 001 Phase 2        |
| <b>Segment Number:</b>         | 1202                             |

| Enter values needed for screening:             |             | Data Source (edit if different) |
|--|-------------|---------------------------------|
| QE - Average effluent flow                     | 3 MGD       |                                 |
| QS - Perennial stream harmonic mean flow       | 1633.69 cfs | Critical conditions memo        |
| QE - Average effluent flow                     | 4.6417 cfs  | Calculated                      |
| CA - TDS - ambient segment concentration       | 438 mg/L    | 2010 IP, Appendix D             |
| CA - chloride - ambient segment concentration  | 88 mg/L     | 2010 IP, Appendix D             |
| CA - sulfate - ambient segment concentration   | 60 mg/L     | 2010 IP, Appendix D             |
| CC - TDS - segment criterion                   | 750 mg/L    | 2018 TSWQS, Appendix A          |
| CC - chloride - segment criterion              | 300 mg/L    | 2018 TSWQS, Appendix A          |
| CC - sulfate - segment criterion               | 200 mg/L    | 2018 TSWQS, Appendix A          |
| CE - TDS - average effluent concentration      | 1792 mg/L   | Permit application              |
| CE - chloride - average effluent concentration | 425.25 mg/L | Permit application              |
| CE - sulfate - average effluent concentration  | 570 mg/L    | Permit application              |

**Screening Equation**

$$CC \geq [(QS)(CA) + (QE)(CE)] / [QE + QS]$$

**Permit Limit Calculations**

**TDS**

|   |                                 |                           |
|---|---------------------------------|---------------------------|
| Calculate the WLA                       | WLA = [CC(QE+QS) - (QS)(CA)]/QE | 110561.57                 |
| Calculate the LTA                       | LTA = WLA * 0.93                | 102822.26                 |
| Calculate the daily average             | Daily Avg. = LTA * 1.47         | 151148.73                 |
| Calculate the daily maximum             | Daily Max. = LTA * 3.11         | 319777.24                 |
| Calculate 70% of the daily average      | 70% of Daily Avg. =             | 105804.11                 |
| Calculate 85% of the daily average      | 85% of Daily Avg. =             | 128476.42                 |
| <b>No permit limitations needed if:</b> | 1792 ≤                          | 105804.11                 |
| <b>Reporting needed if:</b>             | 1792 >                          | 105804.11 but ≤ 128476.42 |
| <b>Permit limits may be needed if:</b>  | 1792 >                          | 128476.42                 |

**No permit limitations needed for TDS**

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**Chloride**

|   |                                   |             |                                       |
|---|-----------------------------------|-------------|---------------------------------------|
| Calculate the WLA                       | $WLA = [CC(QE+QS) - (QS)(CA)]/QE$ |             | 74915.56                              |
| Calculate the LTA                       | $LTA = WLA * 0.93$                |             | 69671.47                              |
| Calculate the daily average             | $Daily\ Avg. = LTA * 1.47$        |             | <b>102417.06</b>                      |
| Calculate the daily maximum             | $Daily\ Max. = LTA * 3.11$        |             | <b>216678.26</b>                      |
| Calculate 70% of the daily average      | $70\% \text{ of Daily Avg.} =$    |             | 71691.94                              |
| Calculate 85% of the daily average      | $85\% \text{ of Daily Avg.} =$    |             | 87054.50                              |
| <b>No permit limitations needed if:</b> | <b>425.25</b>                     | <b>≤</b>    | <b>71691.94</b>                       |
| <b>Reporting needed if:</b>             | <b>425.25</b>                     | <b>&gt;</b> | <b>71691.94</b> but ≤ <b>87054.50</b> |
| <b>Permit limits may be needed if:</b>  | <b>425.25</b>                     | <b>&gt;</b> | <b>87054.50</b>                       |

**No permit limitations needed for chloride**

**Sulfate**

|   |                                   |             |                                       |
|---|-----------------------------------|-------------|---------------------------------------|
| Calculate the WLA                       | $WLA = [CC(QE+QS) - (QS)(CA)]/QE$ |             | 49474.42                              |
| Calculate the LTA                       | $LTA = WLA * 0.93$                |             | 46011.21                              |
| Calculate the daily average             | $Daily\ Avg. = LTA * 1.47$        |             | <b>67636.48</b>                       |
| Calculate the daily maximum             | $Daily\ Max. = LTA * 3.11$        |             | <b>143094.88</b>                      |
| Calculate 70% of the daily average      | $70\% \text{ of Daily Avg.} =$    |             | 47345.54                              |
| Calculate 85% of the daily average      | $85\% \text{ of Daily Avg.} =$    |             | 57491.01                              |
| <b>No permit limitations needed if:</b> | <b>570</b>                        | <b>≤</b>    | <b>47345.54</b>                       |
| <b>Reporting needed if:</b>             | <b>570</b>                        | <b>&gt;</b> | <b>47345.54</b> but ≤ <b>57491.01</b> |
| <b>Permit limits may be needed if:</b>  | <b>570</b>                        | <b>&gt;</b> | <b>57491.01</b>                       |

**No permit limitations needed for sulfate**

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**pH Screening**

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

J. A. Fusco Energy...WQ0004258000

| <b>INPUT</b>   |             |  |             |
|--|-------------|--|-------------|
| QE (effluent flow)                                       | 0.87        |  | 0.87        |
| 7Q2  | 689.88      |  | 689.88      |
| Effluent flow conversion to CFS                          | 1.34608244  |  | 1.34608     |
| Percent effluent at edge of MZ boundary                  | 0.19473837  |  | 0.19474     |
| 1. DILUTION FACTOR AT MIXING ZONE BOUNDARY               | 513.509     |  | 513.509     |
| <b>RECEIVING WATER CHARACTERISTICS</b>                   |             |  |             |
| 2. Temperature (deg C):                                  | 25.00       |  | 35.00       |
| 3. pH:   | 7.60        |  | 7.60        |
| 4. Alkalinity (mg CaCO3/L):                              | 1.00        |  | 10.00       |
| <b>EFFLUENT CHARACTERISTICS</b>                          |             |  |             |
| 5. Temperature (deg C):                                  | 30.00       |  | 30.00       |
| 6. pH:   | 6.00        |  | 9.00        |
| 7. Alkalinity (mg CaCO3/L):                              | 0.42        |  | 0.42        |
| <b>OUTPUT</b>  |             |  |             |
| <b>1. IONIZATION CONSTANTS</b>                           |             |  |             |
| Upstream/Background pKa:                                 | 6.35        |  | 6.30        |
| Effluent pKa:  | 6.32        |  | 6.32        |
| <b>2. IONIZATION FRACTIONS</b>                           |             |  |             |
| Upstream/Background Ionization Fraction:                 | 0.95        |  | 0.95        |
| Effluent Ionization Fraction:                            | 0.32        |  | 1.00        |
| <b>3. TOTAL INORGANIC CARBON</b>                         |             |  |             |
| Upstream/Background Total Inorganic Carbon (mg CaCO3/L): | 1.06        |  | 10.51       |
| Effluent Total Inorganic Carbon (mg CaCO3/L):            | 1.29        |  | 0.42        |
| <b>4. CONDITIONS AT MIXING ZONE BOUNDARY</b>             |             |  |             |
| Temperature (deg C):                                     | 25.01       |  | 34.99       |
| Alkalinity (mg CaCO3/L):                                 | 1.00        |  | 9.98        |
| Total Inorganic Carbon (mg CaCO3/L):                     | 1.06        |  | 10.49       |
| pKa:   | 6.35        |  | 6.30        |
| <b>pH at Mixing Zone Boundary:</b>                       | <b>7.59</b> |  | <b>7.60</b> |

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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

J. A. Fusco Energy...WQ0004258000 Phase 2

| <b>INPUT</b>   |             |  |             |
|--|-------------|--|-------------|
| QE (effluent flow)                                       | 3           |  | 3           |
| 7Q2  | 689.88      |  | 689.88      |
| Effluent flow conversion to CFS                          | 4.64166357  |  | 4.64166     |
| Percent effluent at edge of MZ boundary                  | 0.66832524  |  | 0.66833     |
| 1. DILUTION FACTOR AT MIXING ZONE BOUNDARY               | 149.628     |  | 149.628     |
| <b>RECEIVING WATER CHARACTERISTICS</b>                   |             |  |             |
| 2. Temperature (deg C):                                  | 25.00       |  | 35.00       |
| 3. pH:   | 7.60        |  | 7.60        |
| 4. Alkalinity (mg CaCO3/L):                              | 1.00        |  | 10.00       |
| <b>EFFLUENT CHARACTERISTICS</b>                          |             |  |             |
| 5. Temperature (deg C):                                  | 30.00       |  | 30.00       |
| 6. pH:   | 6.00        |  | 9.00        |
| 7. Alkalinity (mg CaCO3/L):                              | 0.42        |  | 0.42        |
| <b>OUTPUT</b>  |             |  |             |
| <b>1. IONIZATION CONSTANTS</b>                           |             |  |             |
| Upstream/Background pKa:                                 | 6.35        |  | 6.30        |
| Effluent pKa:  | 6.32        |  | 6.32        |
| <b>2. IONIZATION FRACTIONS</b>                           |             |  |             |
| Upstream/Background Ionization Fraction:                 | 0.95        |  | 0.95        |
| Effluent Ionization Fraction:                            | 0.32        |  | 1.00        |
| <b>3. TOTAL INORGANIC CARBON</b>                         |             |  |             |
| Upstream/Background Total Inorganic Carbon (mg CaCO3/L): | 1.06        |  | 10.51       |
| Effluent Total Inorganic Carbon (mg CaCO3/L):            | 1.29        |  | 0.42        |
| <b>4. CONDITIONS AT MIXING ZONE BOUNDARY</b>             |             |  |             |
| Temperature (deg C):                                     | 25.03       |  | 34.97       |
| Alkalinity (mg CaCO3/L):                                 | 1.00        |  | 9.94        |
| Total Inorganic Carbon (mg CaCO3/L):                     | 1.06        |  | 10.44       |
| pKa:   | 6.35        |  | 6.30        |
| <b>pH at Mixing Zone Boundary:</b>                       | <b>7.56</b> |  | <b>7.60</b> |

FACT SHEET AND EXECUTIVE DIRECTOR’S PRELIMINARY DECISION

**Appendix D  
Comparison of Effluent Limits**

The following table is a summary of technology-based effluent limitations calculated/assessed in the draft permit (Technology-Based), calculated/assessed water quality-based effluent limitations (Water Quality-Based), and effluent limitations in the existing permit (Existing Permit). Effluent limitations appearing in bold are the most stringent of the three and are included in the draft permit.

| Outfall             | Pollutant               | Technology-Based |        |            |       | Water Quality-Based |        |           |                       | Existing Permit       |               |                   |               |
|---------------------|-------------------------|------------------|--------|------------|-------|---------------------|--------|-----------|-----------------------|-----------------------|---------------|-------------------|---------------|
|                     |                         | Daily Avg        |        | Daily Max  |       | Daily Avg           |        | Daily Max |                       | Daily Avg             |               | Daily Max         |               |
|                     |                         | lbs/day          | mg/L   | lbs/day    | mg/L  | lbs/day             | mg/L   | lbs/day   | mg/L                  | lbs/day               | mg/L          | lbs/day           | mg/L          |
| 001<br>Phase I      | Flow                    | 1.5 MGD          |        | 3.0 MGD    |       | N/A                 |        | N/A       |                       | <b>1.5 MGD</b>        |               | <b>3.0 MGD</b>    |               |
|                     | Temperature             | Report °F        |        | Report °F  |       | N/A                 |        | N/A       |                       | <b>Report</b>         |               | <b>Report</b>     |               |
|                     | TDS                     | N/A              | N/A    | N/A        | N/A   | N/A                 | Report | N/A       | Report                | N/A                   | <b>Report</b> | N/A               | <b>Report</b> |
|                     | Sulfate                 | N/A              | N/A    | N/A        | N/A   | N/A                 | Report | N/A       | Report                | N/A                   | <b>Report</b> | N/A               | <b>Report</b> |
|                     | Chloride                | N/A              | N/A    | N/A        | N/A   | N/A                 | Report | N/A       | Report                | N/A                   | <b>Report</b> | N/A               | <b>Report</b> |
|                     | COD                     | 1,878            | 150    | 2,504      | 200   | N/A                 | N/A    | N/A       | N/A                   | <b>1,878</b>          | <b>150</b>    | <b>2,504</b>      | <b>200</b>    |
|                     | Total Residual Chlorine | N/A              | N/A    | N/A        | 0.1   | N/A                 | N/A    | N/A       | N/A                   | N/A                   | N/A           | N/A               | <b>0.1</b>    |
|                     | Total Chromium          | 2.45             | 0.196  | 2.45       | 0.196 | N/A                 | N/A    | N/A       | N/A                   | <b>1.55</b>           | <b>0.18</b>   | <b>1.55</b>       | <b>0.18</b>   |
|                     | Total Zinc              | 12.3             | 0.98   | 12.3       | 0.98  | N/A                 | 78.4   | N/A       | 166                   | <b>7.74</b>           | <b>0.90</b>   | <b>7.74</b>       | <b>0.90</b>   |
| pH (standard units) | 6.0 SU minimum          |                  | 9.0 SU |            | N/A   |                     | N/A    |           | <b>6.0 SU minimum</b> |                       | <b>9.0 SU</b> |                   |               |
| 001<br>Phase II     | Flow                    | 3.0 MGD          |        | 6.0 MGD    |       | N/A                 |        | N/A       |                       | <b>3.0 MGD</b>        |               | <b>6.0 MGD</b>    |               |
|                     | Temperature             | Report °F        |        | Report °F  |       | N/A                 |        | N/A       |                       | <b>Report °F</b>      |               | <b>Report °F</b>  |               |
|                     | TDS                     | N/A              | N/A    | N/A        | N/A   | N/A                 | Report | N/A       | Report                | N/A                   | <b>Report</b> | N/A               | <b>Report</b> |
|                     | Sulfate                 | N/A              | N/A    | N/A        | N/A   | N/A                 | Report | N/A       | Report                | N/A                   | <b>Report</b> | N/A               | <b>Report</b> |
|                     | Chloride                | N/A              | N/A    | N/A        | N/A   | N/A                 | Report | N/A       | Report                | N/A                   | <b>Report</b> | N/A               | <b>Report</b> |
|                     | COD                     | 3,755            | 150    | 5,007      | 200   | N/A                 | N/A    | N/A       | N/A                   | <b>3,755</b>          | <b>150</b>    | <b>5,007</b>      | <b>200</b>    |
|                     | Total Residual Chlorine | N/A              | N/A    | N/A        | 0.1   | N/A                 | N/A    | N/A       | N/A                   | N/A                   | N/A           | N/A               | <b>0.1</b>    |
|                     | Total Chromium          | 4.90             | 0.196  | 4.90       | 0.196 | N/A                 | N/A    | N/A       | N/A                   | <b>4.51</b>           | <b>0.18</b>   | <b>4.51</b>       | <b>0.18</b>   |
|                     | Total Zinc              | 24.5             | 0.98   | 24.5       | 0.98  | N/A                 | 25.6   | N/A       | 54.1                  | <b>23.5</b>           | <b>0.90</b>   | <b>23.5</b>       | <b>0.90</b>   |
| pH (standard units) | 6.0 SU minimum          |                  | 9.0 SU |            | N/A   |                     | N/A    |           | <b>6.0 SU minimum</b> |                       | <b>9.0 SU</b> |                   |               |
| 201                 | Flow (MGD)              | Report MGD       |        | Report MGD |       | N/A                 |        | N/A       |                       | <b>Report MGD</b>     |               | <b>Report MGD</b> |               |
|                     | Total Suspended Solids  | N/A              | 30     | N/A        | 100   | N/A                 | N/A    | N/A       | N/A                   | N/A                   | <b>30</b>     | N/A               | <b>100</b>    |
|                     | Oil and Grease          | N/A              | 10     | N/A        | 15    | N/A                 | N/A    | N/A       | N/A                   | N/A                   | <b>10</b>     | N/A               | <b>15</b>     |
|                     | pH (standard units)     | 6.0 SU minimum   |        | 9.0 SU     |       | N/A                 |        | N/A       |                       | <b>6.0 SU minimum</b> |               | <b>9.0 SU</b>     |               |
| 301                 | Flow (MGD)              | Report MGD       |        | Report MGD |       | N/A                 |        | N/A       |                       | <b>Report MGD</b>     |               | <b>Report MGD</b> |               |
|                     | Total Suspended Solids  | N/A              | 30     | N/A        | 100   | N/A                 | N/A    | N/A       | N/A                   | N/A                   | <b>30</b>     | N/A               | <b>100</b>    |
| 301                 | Oil and Grease          | N/A              | 10     | N/A        | 15    | N/A                 | N/A    | N/A       | N/A                   | N/A                   | <b>10</b>     | N/A               | <b>15</b>     |
|                     | pH (standard units)     | 6.0 SU minimum   |        | 9.0 SU     |       | N/A                 |        | N/A       |                       | <b>6.0 SU minimum</b> |               | <b>9.0 SU</b>     |               |