



TPDES PERMIT NO. WQ0002105000
*[For TCEQ office use only -
EPA I.D. No. TX0073121]*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P. O. Box 13087
Austin, Texas 78711-3087

This is a renewal of TPDES
Permit No. WQ0002105000,
issued on March 25, 2014.

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

Lower Colorado River Authority

whose mailing address is

P.O. Box 220
Austin, Texas 78767

is authorized to treat and discharge wastes from Sam Seymour (Fayette Power Plant), a steam electric station (SIC 4911)

located at 6549 Power Plant Road, adjacent to the south shore of Cedar Creek Reservoir, approximately two miles north of State Highway 71, and seven miles east of the City of La Grange, Fayette County, Texas 78945-3714

via Outfall 001 to Cedar Creek Reservoir; thence to Cedar Creek; thence to the Colorado River Below La Grange in Segment No. 1402 of the Colorado River Basin, and via Outfalls 002, 003, and 004 to unnamed tributaries; thence to Cedar Creek; thence to the Colorado River Below La Grange in Segment 1402 of the Colorado 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 on December 1, 2019.

ISSUED DATE:

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - PHASE I

Outfall Number 001

1. During the period beginning upon date of permit issuance and lasting until Unit 4 start-up, the permittee is authorized to discharge once-through cooling water and previously monitored effluent (PME) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1,165 million gallons per day (MGD). The daily maximum flow shall not exceed 1,165 MGD.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum lbs/day	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow	1,165 MGD	1,165 MGD	N/A	1/day Calculated
Temperature (*1)	Report, °F	112 °F	N/A	Continuous Record
Total Residual Chlorine (*2)	N/A	162	N/A	1/week (*3) Grab
Total Dissolved Solids	Report	N/A	Report	1/month Grab
Chloride	Report	N/A	Report	1/month Grab
Sulfate	Report	N/A	Report	1/month Grab

(*1) See Other Requirement No. 3.A and 14.

(*2) See Other Requirement No. 3.B.

(*3) Samples shall be representative of periods of chlorination.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

3. Effluent monitoring samples shall be taken at the following location: At Outfall 001, where once-through cooling water discharges into the canal which discharges into Cedar Creek Reservoir.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – PHASE II

Outfall Number 001

1. During the period beginning upon date of Unit 4 start-up and lasting through the date of permit expiration, the permittee is authorized to discharge once-through cooling water and previously monitored effluent (PME) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1,509 million gallons per day (MGD). The daily maximum flow shall not exceed 1,509 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum lbs/day	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	1,509 MGD	1,509 MGD	N/A	N/A	1/day	Calculated
Temperature (*1)	Report, °F	112 °F	N/A	N/A	Continuous	Record
Total Residual Chlorine (*2)	N/A	210	0.2	N/A	1/week (*3)	Grab
Total Dissolved Solids	Report	N/A	Report	N/A	1/month	Grab
Chloride	Report	N/A	Report	N/A	1/month	Grab
Sulfate	Report	N/A	Report	N/A	1/month	Grab

(*1) See Other Requirement No. 3.A and 14.

(*2) See Other Requirement No. 3.B.

(*3) Samples shall be representative of periods of chlorination.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

3. Effluent monitoring samples shall be taken at the following location: At Outfall 001, where once-through cooling water discharges into the canal which discharges into Cedar Creek Reservoir.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1) subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*2) Estimate
Total Suspended Solids	30	100	100	1/week (*2) Grab
Oil and Grease	15	20	20	1/week (*2) Grab

(*1) See Other Requirement No. 3.D.
 (*2) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2) 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 201, where low volume waste sources are discharged from the waste treatment facility prior to mixing with once-through cooling water.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 301

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1), coal pile runoff (*2), truck wash water, and stormwater from the Coal Pile Runoff Pond subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*3)	Estimate
Total Suspended Solids	30	50	50	1/week (*3)	Grab
Oil and Grease	15	20	20	1/week (*3)	Grab
Selenium, Total	0.007	0.015	0.015	1/week (*3)	Grab

- (*1) See Other Requirement No. 3.D.
- (*2) See Other Requirement No. 3.G.
- (*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3) 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 301, where wastewater is discharged from the Coal Pile Runoff Pond prior to mixing with once-through cooling water.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning upon date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge cooling water drained from the condensers and other cooling equipment during maintenance periods subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 2.5 million gallons per day (MGD).

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	2.5 MGD				
Temperature (*1) (*4)	N/A	Report, MGD	N/A	1/day (*2)	Calculated
Total Residual Chlorine (*3)	N/A	100 °F	N/A	1/day (*2)	In-situ
		0.2	N/A	1/week (*2)	Grab

- (*1) See Other Requirement No. 3.A and 14.
 - (*2) When discharge occurs. Since more than one source is associated with this waste category, flow-weighted grab samples shall be combined into one sample for analysis and reporting purposes.
 - (*3) See Other Requirement No. 3.B.
 - (*4) When discharging non-contact cooling water from condensers or from circulating water pipelines, the permittee shall monitor temperature where the effluent discharges from the west plant ditch and prior to entering the unnamed tributary of Cedar Creek.
2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week by grab sample when discharge occurs. The highest and lowest pH values shall be reported for pH.
 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 002, where cooling water drained from the condensers and other equipment discharges prior to entering the west plant drainage ditch flowing into Cedar Creek (*4).

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 003

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1), coal pile runoff (*2), truck wash water, previously monitored effluent (PME), and stormwater from the Coal Pile Runoff Pond subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*3)	Estimate
Total Suspended Solids	30	50	50	1/week (*3)	Grab
Oil and Grease	15	20	20	1/week (*3)	Grab
Selenium, Total	0.007	0.015	0.015	1/week (*3)	Grab

- (*1) See Other Requirement No. 3.D.
- (*2) See Other Requirement No. 3.G.
- (*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3) 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 003, at the coal run-off spillway or pumped to main reservoir prior to mixing with any other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 103

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge treated domestic wastewater subject to the following effluent limitations:

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day Estimate (*1)
Biochemical Oxygen Demand (5-day)	N/A	65	65	1/week Grab (*2)
Total Suspended Solids	N/A	65	65	1/week Grab (*2)
<i>E. coli</i>	Report (*4)(*5)	Report (*4)(*5)	N/A	1/week Grab (*2)
<i>E. coli</i>	126 (*4)(*6)	399 (*4)(*6)	N/A	1/week Grab (*2)

- (*1) The estimate of flow shall be an estimate of the combined flows from both domestic wastewater treatment plants.
- (*2) Grab samples from each of the domestic wastewater treatment plants shall be combined into a single flow-weighted sample for analysis and reporting.
- (*3) Grab samples from each of the domestic wastewater treatment plants shall be collected, analyzed, and reported separately.
- (*4) Units for *E. coli* are most probable number (MPN) per 100 mL.
- (*5) Beginning from date of permit issuance and lasting 364 days from date of permit issuance.
- (*6) Beginning 365 days from date of permit issuance.

2. The effluent shall contain a chlorine residual of at least 1.0 mg/L after a detention time of at least 20 minutes (based on peak flow) and shall be monitored 1/week by grab sample (*3)
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3) by grab sample.
4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
5. Effluent monitoring samples shall be taken at the following location: At Outfall 103, where treated effluent is discharged from each domestic wastewater treatment plant, prior to mixing with any other water.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 004

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1), truck wash water, and stormwater from the Combustion Byproducts Landfill Pond subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*2) Estimate
Total Suspended Solids	30	100	100	1/week (*2) Grab
Oil and Grease	15	20	20	1/week (*2) Grab
Selenium, Total	0.007	0.015	0.015	1/week (*2) Grab

(*1) See Other Requirement No. 3.D.
 (*2) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2) 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 004, where wastes from the Combustion Byproducts Landfill are discharged from the solid waste landfill settling pond prior to mixing with any other waters.

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 $(\text{Flow, MGD} \times \text{Concentration, mg/L} \times 8.34)$.
- 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, a monthly effluent report 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 reported on an approved self-report form that is 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. 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 Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:
- a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;
 - b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
 - c. for the purpose of this paragraph, adequate notice shall include information on:
 - i. the quality and quantity of effluent introduced into the POTW; and
 - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

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

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

2. Compliance

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

3. Inspections and Entry

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

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

4. Permit Amendment or Renewal

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

with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

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

6. Relationship to Hazardous Waste Activities

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

7. Relationship to Water Rights

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

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

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

11. Notice of Bankruptcy.

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

OPERATIONAL REQUIREMENTS

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

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

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
- a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion or upgrading of the domestic wastewater treatment or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.
If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) 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.

TCEQ Revision 08/2008

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 11, 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 11 and the Enforcement Division (MC 224):

Pollutant	MAL* (mg/L)
Selenium (Total)	0.005

*Minimum Analytical Level

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the MAL for the parameters specified above.

When an analysis of an effluent sample for any of the parameters 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 (o) shall be used for that measurement when determining calculations and reporting requirements 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 (o) 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 (o) for [list parameter(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 parameter 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 parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (o) may not be used.

2. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

3. **DEFINITIONS**

- A. The flow weighted average temperature (FWAT) shall be computed and recorded on a daily basis. FWAT shall be computed at equal time intervals not greater than two hours. The method of calculating FWAT is as follows:

$$FWAT = \frac{\text{SUMMATION (INSTANTANEOUS FLOW} \times \text{INSTANTANEOUS TEMPERATURE)}}{\text{SUMMATION (INSTANTANEOUS FLOW)}}$$

The “daily average temperature” shall be the arithmetic average of all FWATs calculated during the calendar month.

The "daily maximum temperature" shall be the highest FWAT calculated during the calendar month.

- B. 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 any other methods approved by the permitting authority.

Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control.

Simultaneous multi-unit chlorination is permitted.

- C. The term "metal cleaning waste" means any wastewater resulting from cleaning (with or without chemical 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.

There shall be no discharge of metal cleaning wastes to the Coal Pile Runoff Pond, Combustion Byproduct Landfill Pond, Fly Ash Silo Runoff Pond, nor to any other site where wastewater is discharged directly or indirectly to water in the state.

- D. The term "low volume waste sources" means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established in this part. Low volume waste sources includes, but are not limited to: wastewaters from wet scrubber air pollution control systems, ion exchange water treatment system, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Sanitary and air conditioning wastes are not included.

- E. The term "once through cooling water" means water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat.

- F. The term "ash transport water" shall mean water used in the transport of either fly ash or bottom ash.

There shall be no discharge of "ash transport water" to water in the state.

- G. The term "coal pile runoff" means the rainfall runoff from or through any coal, ash, or other material storage pile.

Any untreated overflow from facilities designed, constructed, and operated to treat the volume of "coal pile runoff" which is associated with a 10-year, 24-hour rainfall event shall not be subject to the total suspended solids limitations specified in page 2e of this permit.

4. This requirement is applicable to the treatment and disposal of domestic wastewater at treatment units only.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC

Chapter 335. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

- a. volume (dry weight basis) of sludge disposed;
- b. date of disposal;
- c. identity and registration number of hauler;
- d. location and registration or permit number of disposal site; and
- e. method of final disposal.

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

5. PONDS

A. All new wastewater ponds must be lined in compliance with one of the following requirements:

1. Soil Liner: The soil liner must contain clay-rich soil material (at least 30% of the liner material passing through a #200 mesh sieve, liquid limit greater than or equal to 30, and plasticity index greater than or equal to 15) along the sides and bottom of the pond. The liner material must be compacted in lifts of no more than 8 inches to 95% standard proctor density at the optimum moisture content in accordance with ASTM D 698 to achieve a permeability equal to or less than 1×10^{-7} cm/sec. The liner must be a minimum thickness of 3.0 feet.
2. Synthetic/Plastic/Rubber Liner: The liner must be either a plastic or rubber membrane liner at least 40 mils in thickness which completely covers the sides and the bottom of the pond and which is not subject to degradation due to reaction with wastewater with which it will come into contact. If this lining material is vulnerable to ozone or ultraviolet deterioration it must be covered with a protective layer of soil of at least six inches. A wastewater pond with a membrane liner must include an underdrain with a leak detection and collection system.
3. Alternate Liner: The permittee shall submit plans for any other pond lining method. Pond liner plans must be approved in writing by the Executive Director of the TCEQ prior to pond construction.

The permittee shall provide certification, signed and sealed by a Texas licensed professional engineer, that the completed pond lining and any required underdrain with leak detection and collection system for the pond meet the above requirements prior to utilization of the facilities. The certification must be provided to the TCEQ Water Quality Assessment Team (MC-150), Compliance Monitoring Section (MC-224), and Region 11 Office. A copy of the liner certification must be kept on-site for future reference. Also, liner and any underdrain construction details (i.e., as-built drawings) for the storage pond must be provided to the TCEQ Water Quality Assessment Team (MC-150), Enforcement Division (MC-224), and Region 11 Office upon construction completion.

- B. The permittee shall notify the TCEQ Region 11 Office upon completion of construction of any pond and at least a week prior to its use.
- C. The permittee shall maintain a minimum two-foot freeboard for all wastewater ponds.
- D. At least once per month, the permittee shall inspect any pond leak detection systems that are in service. Leaking ponds shall be removed from service either until repairs are made or replacement ponds are constructed.

- E. Any liner originally constructed to meet the requirements in 5.A above must be recertified by a Texas-licensed professional engineer ensuring that the liner meets the above requirements:
1. each time the liner undergoes repair, and
 2. each time sediments are cleaned from the pond if the integrity of the liner could be degraded.

Within 45 days of completion of repair or cleaning, liner certifications must be provided to the TCEQ Water Quality Assessment Team (MC-150), Enforcement Division (MC-224), and Regional Office (Region 11). A copy of the liner certification must be kept on-site for future reference.

- F. The following table lists all on-site ponds, their associated outfalls, and a description of all wastes discharged to the ponds.

Pond	Wastes Discharged to Pond	Associated Outfall
Coal Pile Runoff Pond	Coal pile runoff; low volume wastes (wash down water, reverse osmosis reject, demineralizer regenerant, boiler blowdown, plant/floor drains); stormwater (diked fuel storage, lube oil, transformer, and plant areas); truck wash water; dust suppression water from the coal pile and plant areas; and coal handling equipment washdown	003; 301 Reclaim Pond, dust suppression
Combustion Byproducts Landfill Pond	Combustion Byproducts Landfill runoff; low volume wastes; truck wash water; and stormwater	004 Dust suppression, Reclaim Pond
Ash Silo/Fly Ash Loading Area Pond	Truck wash water and stormwater	None Irrigation of landfill cover, dust suppression, Reclaim Pond
Ash Pond (closed and capped)	Historically, bottom ash and fly ash transport water and wastewater from the Coal Pile Runoff Pond entered this pond. The pond is closed and capped; therefore, no future wastewater will be added to this pond.	None Reclaim Pond
Reclaim Pond	Once-through cooling water; plant/floor drains; wash down water; treated domestic wastewater; reverse osmosis reject; demineralizer regenerant; boiler blowdown; wet scrubber air pollution control systems; stormwater; wastewater from the Ash Silo/Fly Ash Loading Area Pond; wastewater from the closed and capped Ash Pond; metal cleaning waste; coal pile runoff; and wastewater from the Combustion Byproducts Landfill Pond.	None Dust suppression,

- G. There must be no direct discharge of wastewater from the Ash Silo/Fly Ash Loading Area Pond, closed and capped Ash Pond, or Reclaim Pond to waters of the State. The Ash Pond is closed and capped; however, minimal transfers may continue to occur from the closed and capped Ash Pond to the Reclaim Pond via the lateral drain sump.

- H. The permittee shall maintain a facility map showing the following:
- (1) The location of each wastewater pond and its contributing drainage area clearly delineated.
 - (2) Production areas, maintenance areas, materials handling areas, material storage areas and waste disposal areas.

The facility map shall be updated periodically and maintained onsite for review by Commission personnel.

- I. Proposed contact water retention pond for Subcell 2D of the existing Combustion Byproduct Landfill must be constructed in compliance with pond requirements detailed in Other Requirement No. 5A of this document, or as approved by the TCEQ Water Quality division in an interoffice memorandum dated March 10, 2014. Specific alternate pond liner information is detailed in a TCEQ Water Quality division interoffice memorandum dated February 5, 2014.

6. GROUNDWATER MONITORING

The permittee shall keep a copy of the current groundwater monitoring plan onsite for review by Commission personnel and on file with the TCEQ Water Quality Assessment Team (MC-150). The groundwater monitoring plan shall be reviewed and updated semi-annually, with a report submitted to the Water Quality Assessment Team within 60 days of each review. Reports shall address all parameters included in the current monitoring program and proposed changes to the plan.

7. DUST SUPPRESSION AND IRRIGATION

The permittee is authorized to utilize effluent from Coal Pile Runoff, Combustion Byproducts Landfill, Ash Silo/Fly Ash Loading Area, Reclaim Pond, and Ash Pond for dust suppression at the Fayette Power Project. The permittee is authorized to utilize effluent from the Ash Silo/Fly Ash Loading Area Pond for irrigation of the landfill cover. With respect to utilization of effluent for dust suppression and irrigation, the permittee shall comply with the following requirements.

- A. Dust suppression and irrigation practices shall be designed and managed so as to prevent runoff, ponding of effluent, or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area.
 - B. Application of effluent for dust suppression and irrigation shall be accomplished only when the area specified is not in use. Dust suppression with effluent shall not occur during times when the ground has standing water, the ground is saturated, or within 24 hours of a rainfall event of 0.5 inches or greater during a 24-hour duration.
 - C. Spray fixtures for the dust suppression and irrigation systems and shall be of such design that they cannot be operated by unauthorized personnel.
 - D. The permittee shall keep records of volumes, times, and areas where effluent is used for dust suppression and irrigation. These records shall be updated daily and maintained onsite for review by Commission personnel for a minimum of three years.
 - E. Adequate signs shall be erected stating that the dust suppression and irrigation water are from a non-potable water supply. Said signs shall consist of a red slash superimposed over the international symbol for drinking water accompanied by the message "Do not drink the water" in both English and Spanish.
8. Monitoring results shall be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports shall be submitted in September of each year. For pollutants which are monitored twice per year, the first effluent report shall be submitted six months after the

date of permit issuance and subsequent reports every six months thereafter. For pollutants which are monitored four times per year, the first effluent report shall be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

9. MIXING ZONE DEFINITIONS:

Outfall 001: The mixing zone for Outfall 001 is defined as a volume of water within a radius of 100 feet extending into the receiving water from the point of discharge into Cedar Creek Reservoir. Chronic toxic criteria apply at the edge of the mixing zone.

Outfalls 002,

003, & 004: There is no mixing zone established for these discharges to intermittent streams. Acute toxic criteria apply at the points of discharge.

10. COOLING WATER INTAKE STRUCTURE REQUIREMENTS: 316(b) of the CWA

The permittee shall continue to operate and maintain the cooling water intake structure (CWIS) configuration consistent with the documents, titled *Fayette Power Project Impingement Monitoring Plan* submitted on April 2005; *Proposal for Information Collection and Supplementary Information for 316(b) BTA Determination* on August 2005; *Supplemental Information for 316(b) BTA Determination* submitted as part of the major amendment application received on June 1, 2009, in which is included a description of how the facility meets Best Technology Available (BTA) for minimizing Adverse Environmental Impact (AEI).

Specifically, the permittee shall adhere to the following conditions related to the operation, maintenance, and monitoring of the CWIS:

- a. bar grates shall be cleaned as needed but no less frequently than every three years;
- b. screen condition shall be visually checked daily;
- c. the screens must initiate a cleaning cycle whenever the water level differential (before and after the screens) exceeds eight inches;
- d. screens shall be in proper operating condition whenever the circulating water pumps are withdrawing water; if a screen must be taken out of service for maintenance the differential across the screens must maintain compliance with item c above;
- e. screens shall be rotated through a cleaning cycle a minimum of once per week;
- f. water and impinged material resulting from the cleaning process shall enter a concrete trench from which water and material returns to the reservoir; if any material is removed it shall be properly disposed in accordance with TCEQ regulations;
- g. routine preventive maintenance shall be conducted to ensure proper operating condition of the screen(s) on an as needed basis, but at a minimum of once each three months;
- h. sediment shall be cleaned from the bottom of the intake structure periodically, but no less frequently than every five years; periodic inspections of the bottom of the intake structure, occurring at a frequency of no less than every five years, may satisfy this requirement if it is documented that sediment has not accumulated and cleaning is not needed; and
- i. records documenting the operation and maintenance described above shall be kept on site for a minimum of three years, and made available to TCEQ personnel upon request.

In addition, the permittee submitted the *Impingement Monitoring Data Report Sam K. Seymour Generating Station (PBS&J, June 2009)* for review to the Water Quality Standards Team (MC 150) of the Water Quality Assessment Section of the Water Quality Division.

If, based upon further review of existing, new, or updated CWIS information, and the 316(b) Phase II regulation, it is later determined that the current CWIS configuration is not representative of BTA

for minimizing AEI, this permit may be reopened to incorporate additional requirements. Any CWIS information required by 40 CFR § 122.21(r) and 40 CFR Part 125, Subpart J must be submitted with any subsequent application for permit renewal or major amendment to modify the existing CWIS configuration.

11. Attachment A shall be initiated or completed with the analytical results from the first discharge from Outfalls 002, 003, and 004 and sent to the TCEQ Wastewater Permitting Section (MC 148), Industrial Team within 30 days of the final sampling event. Samples shall be taking upon the first discharge via Outfalls 002, 003, and 004. The TCEQ will perform a technical review of the submitted analytical results. If the data indicates concentrations with the potential to exceed 70% or 85% of the concentrations at which the TCEQ has determined the discharge could cause toxicity in the receiving waters, the permittee will request a permit amendment to add any additional effluent limitations, monitoring requirements, or other conditions.

Table 1: Analysis is required for all pollutants. Wastewater shall be sampled and analyzed upon the first discharge via Outfalls 002, 003, and 004 for those parameters listed in Table 1 for a minimum of four (4) separate sampling events which are a minimum of one (1) week apart.

Table 2: Analysis is required for those pollutants used as a feedstock, intermediate, product, byproduct, coproduct, maintenance chemical, or that could in any way contribute to contamination in the discharge. Sampling and analysis shall be conducted upon the first discharge via Outfalls 002, 003, and 004 for a minimum of one sampling event.

Table 3: Completion of this table is required for Outfalls 002, 003, and 004. To complete this table, review the list of constituents and determine whether a specific constituent is believed to be present or absent in the discharge. Base your determination on your knowledge of raw materials, maintenance chemicals, intermediates, and products handled at your facility or on previous analyses of your wastewater. Also, base your decisions on materials which may be exposed to precipitation or stormwater runoff, if stormwater runoff contributions are commingled with other wastestreams. You must provide the results of at least one analysis for each constituent believed present. Report an average and maximum value if more than one analytical result is available.

Table 4: Analysis is required for at least one sampling event for Outfalls 002, 003, and 004.

The permittee shall report the flow at Outfalls 003 and 004 in million gallons per day.

12. Permit Expiration and Application for Renewal

Except as provided in item B below, the expiration of this permit occurs at midnight at the end of the day on the expiration date.

- a. In accordance with 30 TAC Section 305.65, the permittee shall submit an application for permit renewal a minimum of 180 days before the expiration date specified on the cover page of this permit, except when written permission for a later date has been granted by the Executive Director. Under no circumstances will an initial application for renewal be accepted after December 1, 2019.
- b. In accordance with 30 TAC Section 305.65, if renewal procedures have been initiated before the permit expiration date (i.e. on or before December 1, 2019), the existing permit will remain in

full force and effect and will not expire until Commission action on the application for renewal is final.

13. ONCE-THROUGH COOLING WATER EXEMPTION

In accordance with 30 TAC §307.8(d) and based upon statistical analysis and source investigation, a once-through cooling water exemption for TDS, chloride, and sulfate has been approved by the Water Quality Standards Implementation Team at Outfall 001. As a result of this analysis, the permit will be issued without effluent limitations based on water quality criteria for TDS, chloride, and sulfate at Outfall 001; however, long-term monitoring and reporting requirements for these exempted pollutants are included in the draft permit at Outfall 001.

Based on a technical review of the submitted monitoring results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.

14. The permittee shall develop and submit to the TCEQ, within one year of the permit effective date, a plan to characterize the thermal plume in the receiving water through either the use of a model, mass balance, or via collected or existing in-stream temperature data. The permittee would then be required to implement the plan following its approval by the TCEQ.

The permittee is hereby placed on notice that the Executive Director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility.

15. Reporting requirements pursuant to 30 TAC Sections 319.1-319.11 at Outfall 001 – Phase II (Page 2a) and any additional effluent reporting requirements pertaining to Outfall 001 – Phase II (Page 2a) contained in this permit are suspended from the effective date of this permit until Outfall 001 – Phase II (Page 2a) startup described by this permit. The permittee shall provide written notice to the TCEQ Region 11 Office and the Applications Review and Processing Team (MC 148) of the Water Quality Division at least forty-five (45) days prior to plant startup or anticipated discharge, whichever occurs first on Notification of Completion Form 20007.

ATTACHMENT A

Table 1

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration (mg/L)				
		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average
Pollutants						
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 ₃)						
Temperature (°F)						
pH (Standard Units; min/max)						

Pollutants	Effluent Concentration (µg/L)					MAL (µg/ L)
	Samp. 1	Samp. 2	Samp. 3	Samp. 4	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, available						10
Lead, total						0.5
Mercury, total						0.005/0.0005
Nickel, total						2
Selenium, total						5
Silver, total						0.5
Thallium, total						0.5
Zinc, total						5

Table 2

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)
Pollutant							
Acrylonitrile							
Anthracene							50
Benzene							10
Benzidine							10
Benzo(a)anthracene							50
Benzo(a)pyrene							5
Bis(2-chloroethyl)ether							5
Bis(2-ethylhexyl)phthalate							10
Bromodichloromethane [Dibromochloromethane]							10
Bromoform							10
Carbon Tetrachloride							2
Chlorobenzene							10
Chlorodibromomethane							10
Chloroform							10
Chrysene							10
m-Cresol [3-Methylphenol]							5
o-Cresol [2-Methylphenol]							10
p-Cresol [4-Methylphenol]							10
1,2-Dibromoethane							10
m-Dichlorobenzene [1,3-Dichlorobenzene]							10
o-Dichlorobenzene [1,2-Dichlorobenzene]							10
p-Dichlorobenzene [1,4-Dichlorobenzene]							10
3,3'-Dichlorobenzidine							5
1,2-Dichloroethane							10
1,1-Dichloroethylene							10
Dichloromethane [Methylene chloride]							20
1,2-Dichloropropane							10
1,3-Dichloropropene [1,3-Dichloropropylene]							10
2,4-Dimethylphenol							10
Di-n-Butyl Phthalate							10
Ethylbenzene							10
Fluoride							500
Hexachlorobenzene							5
Hexachlorobutadiene							10
Hexachlorocyclopentadiene							10
Hexachloroethane							20

Table 2 Continued

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)
Pollutant							
Methyl Ethyl Ketone							50
Nitrobenzene							10
N-Nitrosodiethylamine							20
N-Nitroso-di-n-Butylamine							20
Nonylphenol							333
Pentachlorobenzene							20
Pentachlorophenol							5
Phenanthrene							10
Polychlorinated Biphenyls (PCBs) (**)							0.2
Pyridine							20
1,2,4,5-Tetrachlorobenzene							20
1,1,2,2-Tetrachloroethane							10
Tetrachloroethene [Tetrachloroethylene]							10
Toluene							10
1,1,1-Trichloroethane							10
1,1,2-Trichloroethane							10
Trichloroethene [Trichloroethylene]							10
2,4,5-Trichlorophenol							50
THM (Total Trihalomethanes)							10
Vinyl Chloride							10

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

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

Table 3

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Pollutants							
Bromide							400
Color (PCU)							—
Nitrate-Nitrite (as N)							—
Sulfide (as S)							—
Sulfite (as SO ₃)							—
Surfactants							—
Boron, total							20
Cobalt, total							0.3
Iron, total							7
Magnesium, total							20
Manganese, total							0.5
Molybdenum, total							1
Tin, total							5
Titanium, total							30

* Indicate units if different from µg/L.

Table 4

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Average ($\mu\text{g/L}$)*	Maximum ($\mu\text{g/L}$)*	No. of Samples	MAL ($\mu\text{g/L}$)
Pollutants – Volatile Compounds					
Acrolein					50
Acrylonitrile					50
Benzene					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane					10
Chloroethane					50
2-Chloroethylvinyl ether					10
Chloroform					10
Dichlorobromomethane [Bromodichloromethane]					10
1,1-Dichloroethane					10
1,2-Dichloroethane					10
1,1-Dichloroethylene [1,1-Dichloroethene]					10
1,2-Dichloropropane					10
1,3-Dichloropropylene [1,3- Dichloropropene]					10
Ethylbenzene					10
Methyl bromide [Bromomethane]					50
Methyl chloride [Chloromethane]					50
Methylene chloride [Dichloromethane]					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethylene [Tetrachloroethene]					10
Toluene					10
1,2-Trans-dichloroethylene [1,2-Trans- dichloroethene]					10
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethylene [Trichloroethene]					10
Vinyl chloride					10

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Average ($\mu\text{g/L}$)*	Maximum ($\mu\text{g/L}$)*	No. of Samples	MAL ($\mu\text{g/L}$)
Pollutants – Acid Compounds					
2-Chlorophenol					10
2,4-Dichlorophenol					10
2,4-Dimethylphenol					10
4,6-Dinitro-o-cresol					50
2,4-Dinitrophenol					50
2-Nitrophenol					20
4-Nitrophenol					50
p-Chloro-m-cresol					10
Pentachlorophenol					5
Phenol					10
2,4,6-Trichlorophenol					10

CHRONIC 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, reproduction, or growth of the test organisms.
- b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures and quality assurance requirements specified in this Part of the permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or its most recent update:
 - 1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever comes first. This test shall be conducted once per quarter.
 - 2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0). 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 report a valid test for each test species during the prescribed reporting period, if possible. 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. All test results, valid or invalid, must be submitted.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, defined as 100% 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, Chemical-Specific (CS) effluent limits, a Best Management Practice (BMP), or other appropriate actions to address toxicity. The permittee may be required to conduct a Toxicity Reduction Evaluation after multiple toxic events.
- e. Testing Frequency Reduction

If a test demonstrates significant toxicity (i.e., fails for lethality or sublethality), the permittee will resume a quarterly testing frequency for that species until the permit is reissued.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test (except as noted above in item 1.b.), including the control and all effluent dilutions, which fail to meet the following criteria:
- 1) a control mean survival of 80% or greater;
 - 2) a control mean number of water flea neonates per surviving adult of 15 or greater;
 - 3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;
 - 4) a control Coefficient of Variation percent (CV%) of 40 or less between replicates for the young of surviving females in the water flea test; and the growth and survival endpoints in the fathead minnow test.
 - 5) a critical dilution CV% of 40 or less for young of surviving females in the water flea test; and the growth and survival endpoints for the fathead minnow test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test.
 - 6) a Percent Minimum Significant Difference of 47 or less for water flea reproduction; and
 - 7) a Percent Minimum Significant Difference of 30 or less for fathead minnow growth.
- b. Statistical Interpretation
- 1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be Fisher's Exact Test as described in the manual referenced above, or its most recent update.
 - 2) For the water flea reproduction test and the fathead minnow larval survival and growth 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 above, or its most recent update.
 - 3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The EPA manual, "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.
 - 4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% 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.

- 5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is herein defined as a statistically significant between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).
- 6) 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 above.
- 7) Pursuant to the responsibility assigned to the permittee in Part 2.b.(3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability.
- 8) Staff will review test results for consistency with rules, procedures, and permit requirements.

c. Dilution Water

- 1) Dilution water used in the toxicity tests shall be the lake water collected as close to the point of intake as possible and concurrently with the effluent sample.
- 2) Total dissolved solids (TDS) shall be measured and reported for each sample collected for the testing, both intake water and effluent.

d. Samples and Composites

- 1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples 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 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 any 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

numbers 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 sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of 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 above, or its most recent update, 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 TLP_{3B}, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For the water flea, Parameter TOP_{3B}, report the NOEC for survival.
 - 3) For the water flea, Parameter TXP_{3B}, report the LOEC for survival.
 - 4) For the water flea, Parameter TWP_{3B}, enter a "1" if the NOEC for reproduction is less than the critical dilution; otherwise, enter a "0."
 - 5) For the water flea, Parameter TPP_{3B}, report the NOEC for reproduction.
 - 6) For the water flea, Parameter TYP_{3B}, report the LOEC for reproduction.

- 7) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
- 8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.
- 9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.
- 10) For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
- 11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.
- 12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth.

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 test demonstrates a significant effect at the critical dilution. A significant effect is defined as a statistically significant difference between a specified endpoint (survival, growth, or reproduction) of the test organism in a specified effluent dilution when compared to the specified endpoint of the test organism in the control. Significant lethality is defined as a statistically significant difference in survival at the critical dilution when compared to the survival of the test organism in the control. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction of the test organism in the control.

- a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. 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 the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

- c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in item 4.a.
- d. If the two retests are performed due to a demonstration of significant sublethality, and neither test demonstrates significant lethality, the permittee shall continue testing at the quarterly frequency.
- e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, or within 45 days of being so instructed due to multiple toxic events, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (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, or within 90 days of being so instructed due to multiple toxic events, 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 item 1.b. As 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, "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F), 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 specific pollutant(s) and source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant(s) and source(s) 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, as well as 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(s) 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(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which 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.
- Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.
- 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 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. The permittee may only apply the "cessation of lethality" provision once.

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 which 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 their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and to specify CS limits.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times Composites Collected

No. 1 FROM: _____ Date Time _____ TO: _____ Date Time _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

REP	Percent effluent					
	0%	32%	42%	56%	75%	100%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Survival Mean						
Total Mean						
CV%*						
PMSD						

*Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults)
 Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean number of young produced per adult significantly less than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (100%): _____ YES _____ NO

PERCENT SURVIVAL

Time of Reading	Percent effluent					
	0%	32%	42%	56%	75%	100%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

Is the mean survival at test end significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a.) NOEC survival = _____% effluent

b.) LOEC survival = _____% effluent

c.) NOEC reproduction = _____% effluent

d.) LOEC reproduction = _____% effluent

TABLE 1 (SHEET 3 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

Dates and Times Composites Collected

No. 1 FROM: _____ Date Time _____ TO: _____ Date Time _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration	Average Dry Weight in Replicate Chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
32%							
42%							
56%							
75%							
100%							
PMSD							

* Coefficient of Variation = standard deviation x 100/mean

- Dunnnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate;

Is the mean dry weight (growth) at 7 days significantly less than the control's dry weight (growth) for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (100%): _____ YES _____ NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING
FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration	Percent Survival in Replicate Chambers					Mean Percent Survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
32%									
42%									
56%									
75%									
100%									

* Coefficient of Variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a.) NOEC survival = _____ % effluent

b.) LOEC survival = _____ % effluent

c.) NOEC growth = _____ % effluent

d.) LOEC growth = _____ % effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

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

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 the Surface Water Quality Standard, 30TAC §307.6(e)(2)(B), of 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 utilizing 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 in 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 in 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 herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit. All test results, valid or invalid, must be submitted as described below.
- 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 (BMP), Chemical-Specific (CS) limits, or other appropriate actions to address toxicity. The permittee may be required to conduct a Toxicity Reduction Evaluation after multiple toxic events.
- e. As the dilution series specified in the Chronic Biomonitoring Requirements includes a 100% effluent concentration, the results from those tests may fulfill the requirements of this Section; any tests performed in the proper time interval may be substituted. Compliance will be evaluated as specified in item a. The 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% effluent dilution, regardless of whether the results are submitted to comply with the minimum testing frequency defined in item b.

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 item 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 samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
 - 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. 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 required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of 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 above, or its most recent update, 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 January 20th and July 20th for biomonitoring conducted during the previous 6 month period.
 - 2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 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 "o" 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 "o" 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 "o" 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, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 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 additional 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 item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

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 Toxicity Reduction Evaluation (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 item 1.b. As 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 specific pollutant(s) and source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant(s) and source(s) 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, as well as 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(s) 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(s) of effluent toxicity;
- 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
- 5) any data which 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.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- 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 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. The permittee may only apply the "cessation of lethality" provision once.

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 which 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 their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

- 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 their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The requirement to comply with 307.6(e)(2)(B) may be exempted upon proof 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, the 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, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and to specify a CS limit.

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. WQ0002105000, EPA ID No. TX0073121 to discharge to water in the state.

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

Applicant: Lower Colorado River Authority
P.O. Box 220
Austin, Texas 78767

Prepared By: Timothy Janke
Wastewater Permitting Section
Water Quality Division
(512) 239-4685

Date: January 12, 2015

Permit Action: Renewal; TPDES Permit No. WQ0002105000

I. EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. It is proposed the permit be issued to expire on December 1, 2019, following the requirements of 30 Texas Administrative Code (TAC) §305.71.

II. APPLICANT ACTIVITY

The applicant currently operates the Lower Colorado River Authority (LCRA) Fayette Power Plant, a steam electric generating station with a total generating capacity of 1,760 megawatts (MW). The facility has three units fired by western coal.

III. DISCHARGE LOCATION

The plant site is located at 6549 Power Plant Road, adjacent to the south shore of Cedar Creek Reservoir, approximately two miles north of State Highway 71, and seven miles east of the City of La Grange, Fayette County, Texas. Discharge via Outfall 001 is to Cedar Creek Reservoir; thence to Cedar Creek; thence to the Colorado River Below La Grange in Segment No. 1402 of the Colorado River Basin, and via Outfalls 002, 003, and 004 to unnamed tributaries; thence to Cedar Creek; thence to the Colorado River Below La Grange in Segment No. 1402 of the Colorado River Basin.

IV. RECEIVING STREAM USES

The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries and high aquatic life use for both Cedar Creek Reservoir and Cedar Creek. The designated uses for Segment No. 1402 are high aquatic life use, primary contact recreation, and public water supply.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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 June 2009 through May 2014. The "Average of Daily Avg." values presented in the following table are the average of all daily average values for the reporting period for each parameter. The "Maximum of Daily Max." values presented in the following table are the individual maximum values for the reporting period for each parameter.

A. Flow

Outfall	Frequency	Average of Daily Avg, MGD	Maximum of Daily Max, MGD
001	Continuous	882.418	1157
201	Intermittent	0.1397	0.79
301	Intermittent	125.243	1440
002	Intermittent	0.0983	0.51
003	Intermittent	2.13	3.01
103	Intermittent	0.0159	0.04
004	Intermittent	0.70333	1.73

B. Temperature

Outfall	Average of Daily Avg, °F	Maximum of Daily Max, °F
001	93.017	112
002	(N/A)	99.6

C. Effluent Characteristics

Outfall	Parameter	Average of Daily Avg, mg/L	Maximum of Daily Max, mg/L
001	Total Residual Chlorine	N/A	0.0012; 1 lbs./day
002	Total Residual Chlorine	N/A	0.0012
	pH (Standard Units, S.U.)	8.21 S.U. (min)	8.96 S.U.
003	Oil and Grease	2.414	2.46
	Total Suspended Solids	10.02	21.3
	Total Selenium	N/A	0.004
	pH	7.84 S.U. (min)	8.36
004	Oil and Grease	2.51	2.59
	Total Suspended Solids	5.2	6.4
	Total Selenium	N/A	0.07
	pH	7.37 S.U. (min)	8.15 S.U.
201	Oil and Grease	2.478	2.78
	Total Suspended Solids	1.582	7.6
	pH	7.02 S.U. (min)	8.58 S.U. (max)

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

C. Effluent Characteristics Continued

Outfall	Parameter	Average of Daily Avg., mg/L	Maximum of Daily Max, mg/L
301	Oil and Grease	2.442	2.56
	Total Suspended Solids	9.115	31.6
	Total Selenium	0.004	0.01
	pH	7.85 S.U. (min)	8.86 S.U. (max)
103	Biochemical Oxygen Demand (5-day)	3.655	8.52
	Total Residual Chlorine	N/A	0.96 (min)
	Total Suspended Solids	N/A	48.6
	pH	6.25 S.U. (min)	8.85 S.U. (max)

A review of the self-reported data summarized above indicates that the permittee has been in compliance during the time period evaluated. No additional permit requirements were determined to be necessary based upon this review.

VII. DRAFT EFFLUENT LIMITATIONS

Draft effluent limitations are presented in Appendix D of this document.

VIII. SUMMARY OF CHANGES FROM APPLICATION

The following changes have been made from the application which makes the draft permit more stringent.

1. The facility has been approved for a once-through cooling water exemption for total dissolved solids (TDS), chloride, and sulfate by the water quality assessment team based on submitted monitoring data and statistical analysis on Cedar Creek Reservoir, in accordance with 30 TAC §307.8(d).
2. Monitoring and reporting requirements for TDS, chloride, and sulfate have been added to the draft permit at Outfall 001 based on TDS, chloride, and sulfate screening and qualification for a once-through cooling water exemption, in accordance with 30 TAC §307.8(d).
3. Effluent limitations for *E. Coli* have been included in the draft permit at Outfall 103 in accordance with 30 TAC Chapter 309, Domestic Wastewater Effluent Limitation and Plant Siting. 30 TAC Chapter 309 requires discharges of domestic wastewater to achieve concentrations of bacteria at a level equivalent to the most stringent primary contact recreation standard for the receiving water per 30 TAC Chapter 307, the Texas Surface Water Quality Standards.

An interim one-year compliance period is included in the draft permit for *E. Coli* in accordance with 30 TAC §307.2(f).

4. New pond language in Other Requirement No. 5 has been updated. Specifically, the minimum thickness of the liner is required to be 3.0 feet in the draft permit for any depth of water. In the existing permit, a minimum thickness of 2.0 feet was acceptable for water depths less than or equal to 8.0 feet.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

5. Other Requirement No. 11 has been updated to reflect sampling requirements in the updated TCEQ Industrial Wastewater Permit Application. This requirement pertains to retesting at Outfalls 002, 003, and 004. Additionally, Tables associated with Other Requirement No. 11 have been updated to reflect sampling requirements in the updated TCEQ Industrial Wastewater Permit Application.
6. Other Requirement No. 13 has been added to the draft permit to reference the once-through cooling water exemption associated with Outfall 001.
7. Existing temperature limits have been continued in the draft permit. However, Other Requirement No. 14 has been added to the draft permit in accordance with the agreement reached by the TCEQ and the EPA in their April 29, 2014 and May 12, 2014 letters, respectively. Temperature limits may be revised at a future date.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

The following additional change has been made to the draft permit.

1. Other Requirement No. 5 has been updated to include language addressing the alternate pond-liner proposal previously submitted by the permittee for the contact water retention pond for Subcell 2D of the existing Combustion Byproduct Landfill. Specifically, this update is found in part I of Other Requirement No. 5.
2. Other Requirement No. 12 has been added to provide guidance on permit renewal and expiration.
3. Other Requirement No. 14 has been added to request that the permittee develop and submit to TCEQ a plan to characterize the thermal plume in the receiving water.

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 has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of Permit No. WQ0002105000, which authorizes the discharge of once-through cooling water and previously monitored effluent (low volume waste, coal pile runoff, truck wash water, and stormwater from the Coal Pile Runoff Pond) at a daily average flow not to exceed 1,165,000,000 gallons per day (Phase I) and 1,509,000,000 gallons per day (Phase II) via Outfall 001; cooling water drained from condensers and other cooling equipment during maintenance periods at a daily average flow not to exceed 2,500,000 gallons per day via Outfall 002; low volume waste, coal pile runoff, truck wash water, previously monitored effluent (treated domestic wastewater), and stormwater on an intermittent and flow-variable basis via Outfall 003; and low volume waste, truck wash water, and stormwater from the Combustion Byproducts Landfill Pond on an intermittent and flow-variable basis via Outfall 004.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

B. WATER QUALITY SUMMARY

The discharge route for the above referenced permit is via Outfall 001 to Cedar Creek Reservoir; thence to Cedar Creek; thence to the Colorado River Below La Grange in Segment No. 1402 of the Colorado River Basin, and via Outfalls 002, 003, and 004 to unnamed tributaries; thence to Cedar Creek; thence to the Colorado River Below La Grange in Segment No. 1402 of the Colorado River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries and high aquatic life use for both Cedar Creek and Cedar Creek Reservoir. The designated uses for Segment 1402 are primary contact recreation, public water supply, and high aquatic life use. Effluent limitations and conditions established in the draft permit are in compliance 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 are found in Section X.D. of this fact sheet.

The Houston toad (*Bufo houstonensis Sanders*), an endangered aquatic-dependent species of critical concern, occurs within the Segment No. 1402's watershed. 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 No. 1402 watershed is provided by the USFWS and documents the toad's presence solely in the vicinity of Redgate Creek in Colorado County, which is lower down in 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.

Segment No. 1402 is not currently listed on the State's inventory of impaired and threatened waters, the Texas 2012 Clean Water Act Section 303(d) list.

A Waste Load Evaluation (WLE) has not been prepared for Segment No. 1402.

Due to the low concentration of oxygen-demanding constituents expected in the effluents, no significant dissolved oxygen depletion is anticipated in the receiving waters as a result of these discharges.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

Regulations promulgated in Title 40 of the Code of Federal Regulations (40 CFR) require technology-based limitations to be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, or on best professional judgment (BPJ) in the absence of guidelines.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The proposed draft permit authorizes the discharge of once-through cooling water and previously monitored effluent at a daily average flow not to exceed 1,165 MGD for Phase I and 1,509 MGD for Phase II via Outfall 001; cooling water drained from condensers and other cooling equipment during maintenance at a daily average flow not to exceed 2.5 MGD via Outfall 002; low volume waste, coal pile runoff, truck wash water, stormwater from the Coal Pile Runoff Pond, and previously monitored effluent on an intermittent and flow-variable basis via Outfall 003; and low volume waste, truck wash water, and stormwater from the Combustion Byproducts Landfill Pond on an intermittent and flow-variable basis via Outfall 004.

The discharge of once-through cooling water via Outfall 001; low volume waste via Outfalls 201, 301, 003, and 004; coal pile runoff via Outfalls 301 and 003; and cooling water drained from condensers and other cooling equipment during maintenance via Outfall 002 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 once-through cooling water, low volume waste, coal pile runoff, and cooling water drained from condensers and other cooling equipment during maintenance are not a new source as defined at 40 CFR §122.2. Therefore new source performance standards (NSPS) are not required for this discharge.

The discharge of treated domestic wastewater via Outfall 103 from this facility is subject to federal effluent limitations guidelines at 40 CFR Part 133-Secondary Treatment Regulation and 30 TAC 309.4-Domestic Wastewater Treatment Limitations. A new source determination was performed and the above listed discharge is not a new source as defined at 40 CFR §122.2. Therefore NSPS are not required for this discharge.

The discharge of truck wash water via Outfalls 003 and 301; and truck wash water and stormwater from the Combustion Byproducts Landfill Pond via Outfall 004 are not subject to federal effluent limitation guidelines and any technology-based effluent limitations were originally based on BPJ and are continued based on anti-backsliding requirements in 40 CFR Part 122.44(l).

Existing temperature limits at Outfalls 001 and 002 have been continued in the draft permit but may be revised at a future date. Other Requirement No. 14, which requires that the permittee develop and submit a plan to characterize the thermal plume, has been added to the draft permit.

The wastewater system at this facility consists of:

Outfall 001 – Once-through cooling water is treated to control biological growth and scale in the plant main surface condensers and auxiliary heat exchanger, the once-through cooling water receives no further treatment prior to discharge at Outfall 001. The facility has a cooling reservoir of 2,400 acres, built to provide cooling water to the plant's generating units. Make-up water is pumped from the Colorado River to maintain the reservoir level.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 201 – Reverse osmosis (RO) reject water from the water treatment plant and wastewater from the neutralization basin (demineralizer regeneration waste, RO reject, and boiler blowdown) are authorized for discharge via Outfall 201. Demineralizer regeneration, RO reject wastewater, and boiler blowdown are routed to the neutralization basin for pH adjustment prior to discharge at Outfall 201. Effluent can also be routed to the Coal Pile Runoff Pond and discharged via Outfall 003, or to the main cooling water channel via Outfall 001.

Outfall 301 – Wastewater authorized for discharge via Outfall 003 may also be routed to an internal monitoring point prior to mixing with the once-through cooling water canal which discharges prior to Outfall 001.

Outfall 002 – Cooling water that is drained from the condensers and other cooling equipment during maintenance or during outages is discharged via Outfall 002. The cooling water is drained to the surface drainage system within the plant. Unit 3 can also be drained to the Coal Pile Runoff Pond.

Outfall 003 – Coal is stored outdoors. The facility has one stormwater collection pond for coal runoff. The Coal Pile Runoff Pond collects water from this area as well as an additional 32 acres from within the facility. The Coal Pile Runoff Pond includes low volume waste, stormwater, truck wash water, dust suppression water from the coal pile and plant area, and coal handling equipment wash down. Low volume waste discharged via Outfall 003 includes: plant/floor drains, RO reject, wastes from the neutralization basin (See Outfall 201), boiler blowdown, and other low volume wastes. Low volume wastes monitored at Outfall 201 may be discharged via Outfall 001 or routed to the Coal Pile Runoff Pond and discharged via Outfall 003.

Stormwater discharged to the Coal Pile Runoff Pond includes stormwater from: coal pile runoff, diked fuel storage areas, diked lube oil storage and transformer areas, and plant area. Plant/floor drains and stormwater from the diked fuel oil storage areas, diked lube oil storage areas, and transformer areas are all routed through an oil/water separator prior to discharge to the Coal Pile Runoff Pond. The pond is designed with a settling chamber to allow solids to settle before entering the main body of the pond, and flocculent can be added to the runoff prior to entering the settling chamber. A floating oil boom has been installed in the settling chamber to protect the main pond in the event of a spill. The Coal Pile Runoff Pond can be discharged via Outfall 003, recycled to the main cooling water reservoir via Outfall 301, routed to the Reclaim Pond to maintain the water balance for the plant, or used for dust suppression.

Outfall 103 – Domestic wastewater from Units 1, 2, and 3 is treated in two domestic wastewater package plants and is discharged via Outfall 103 or routed to the Reclaim Pond.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 004 – The Combustion Byproducts Landfill Pond (Outfall 004) collects rainfall from the Combustion Byproducts Landfill area. Discharges to the Combustion Byproducts Landfill Pond include: low volume waste, stormwater runoff from the Combustion Byproducts Landfill, and truck wash water. Wastewater retained in the Combustion Byproducts Landfill Pond may also be reused for on-site dust suppression or routed to the Reclaim Pond.

Any additional runoff is discharged to stormwater Outfalls SW-1, SW-2, and SW-6. Discharges from these outfalls are regulated by the EPA Multisector General Permit (Authorization No. TXR05M603) for discharges of stormwater in accordance with the requirements of the general permit and the stormwater pollution prevention plan.

2. CALCULATIONS

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

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

The Texas Surface Water Quality Standards found at 30 TAC Chapter 307 states 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 (IP)* is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure 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.

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).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 001

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 a volume within a radius of 25 feet from the point of discharge. The aquatic life mixing zone for this discharge is defined as a radius of 100 feet from the point of discharge.

TCEQ uses the EPA horizontal jet plume model to estimate dilution at the edges of the ZID and aquatic life mixing zone for discharges greater than 10 MGD into lakes or reservoirs. General assumptions used in the horizontal jet plume model are: a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis, the following critical effluent percentages are calculated based on a flow greater than 10 MGD:

Acute Effluent %	100%	Chronic Effluent %	100%
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Outfalls 002, 003, and 004

There is no mixing zone or zone of initial dilution (ZID) for this discharge directly to an intermittent stream; acute freshwater criteria apply at the point of discharge. Chronic freshwater criteria are applied in the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% since the 7Q2 of the intermittent stream is 0.0 cfs. This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the two year maximum monthly average flow for Outfall 002 of 0.296 MGD; five year maximum monthly average flow for Outfall 003 of 2.68 MGD; five-year maximum daily average flow for Outfall 004 of 0.88 MGD, and the 7-day, 2-year (7Q2) flow of 0.50 cfs for Cedar Creek, the perennial stream. Please note that the five-year maximum daily average flow for Outfalls 003 and 004 are based on the Monthly Effluent Report data for the period June 2009 through May 2014 instead of the two-year maximum daily average flow from the period June 2012 through May 2014. There was no discharge during June 2012 through May 2014, so the period June 2009 through May 2014 was used. The following critical effluent percentages are being used:

Outfall 002

Acute Effluent %	100%	Chronic Effluent %	47.87%
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FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 003

Acute Effluent %	100%	Chronic Effluent %	89.24%
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Outfall 004

Acute Effluent %	100%	Chronic Effluent %	73.14%
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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 99th (Outfall 001) or 90th (Outfalls 002, 003, and 004) 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 lower of the two LTAs (acute and chronic) 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).

Assumptions used in deriving the effluent limitations include segment values for hardness, chloride, pH, and total suspended solids (TSS) according to the segment-specific values contained in the IP. The segment values are 200 mg/L CaCO₃ for hardness, 51 mg/L for chloride, 7.8 standard units for pH, and 12 mg/L for TSS. For additional details on the calculation of water quality-based effluent limitations, refer to the IP.

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 exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Analytical data for Outfall 001 and 002 reported in the application were screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data did not exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

No analytical data were provided for Outfalls 003 and 004 for screening against water quality-based effluent limitations. Other Requirement No. 11 has been added in the Other Requirements section of the draft permit which requires the submittal of analytical data within 30 days of the final sampling event.

Effluent limitations for total selenium for the protection of aquatic life are continued in the draft permit from the existing permit at Outfalls 003, 004, and 301, based on anti-backsliding requirements in 40 CFR Part 122.44(l).

Outfall	Parameter	Daily Average, mg/L	Daily Maximum, mg/L
003	Total Selenium	0.007	0.015
004	Total Selenium	0.007	0.015
301	Total Selenium	0.007	0.015

3. AQUATIC ORGANISM TOXICITY CRITERIA (7-DAY CHRONIC)a. SCREENING

The existing permit includes chronic freshwater biomonitoring requirements at Outfall 001. In the past five years, the permittee performed twenty-nine chronic tests, with zero demonstrations of significant toxicity (i.e., zero failures) by either the water flea *Ceriodaphnia dubia* or *Daphnia pulex* and the fathead minnow *Pimephales promelas* test species. Analytical data submitted with the application does not indicate violation of any numerical water quality-based effluent limitation for aquatic life protection, therefore minimum chronic freshwater biomonitoring conditions required for EPA classified major facilities are proposed in the draft permit as outlined below.

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. The RP determination is based on representative data from the previous five years of chronic WET testing. The table below identifies the number of test failures required to necessitate that a WET limit be placed in the permit or the consideration of additional Best Professional Judgment (BPJ) factors, such as the duration and magnitude of the failures.

WET REASONABLE POTENTIAL DETERMINATION THRESHOLDS
More than 3 failures in the past five years = WET limit
3 failures with 2 or 3 occurring in the past 3 years = WET limit
1 to 3 failures in the past five years but 1 or less in last 3 years = BPJ
0 failures = No limit

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

With zero failures by either test species, a determination of no RP was made. With no RP, WET limits are not required.

All test data results were used for this determination.

b. PERMIT ACTION

The provisions of this section apply to Outfall 001.

Based on information contained in the permit application, the TCEQ has 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 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) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). The frequency of the testing is once per quarter.
- ii) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*). The frequency of testing shall be once per quarter.

Toxicity tests shall be performed in accordance with protocols described in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition* (EPA-821-R-02-013) 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 sub-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. If one or more of the first four consecutive quarterly tests demonstrates significant sub-lethal effects, the permittee

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

shall continue quarterly testing for that species until four consecutive quarterly tests demonstrate no significant sub-lethal 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 shall 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 concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 100% 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 calculated 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 language for Outfall 001. Minimum 24-hour acute freshwater biomonitoring requirements are proposed in the draft permit as outlined below.

b. PERMIT ACTION

24-hour 100% acute biomonitoring tests are required at Outfall 001 at a frequency of once per six months for the life of the permit. This toxicity testing requirement is derived from the information submitted with the application.

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

- i) Acute 24-hour static toxicity test using the water flea (*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.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIAa. SCREENINGOutfall 001

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 health mixing zone for discharges into lakes and reservoirs. The human health mixing zone for this discharge is defined as a 200-foot radius from the point where the discharge enters Cedar Creek Reservoir. TCEQ uses the EPA horizontal jet plume model to estimate dilution at the edge of the human health mixing zone for discharges greater than 10 MGD into lakes or reservoirs. General assumptions used in the horizontal jet plume model are: a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis, the following critical effluent percentage is calculated based on flow greater than 100 MGD:

Human health Effluent %: 100%

Outfalls 002, 003, and 004

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 for human health protection in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during average flow conditions. The estimated dilution for human health protection is calculated using the two-year daily average flow for Outfall 002 of 0.07 MGD; five-year daily average flow for Outfall 003 of 2.13 MGD; five-year daily average flow for Outfall 004 of 0.703 MGD; and the harmonic mean flow of 0.50 cfs for Cedar Creek Reservoir. Please note that the five year daily average flow for Outfalls 003 and 004 are based on the Monthly Effluent Report data for the period June 2009 through May 2014 instead of the two year daily average flow. There was no discharge from both outfalls from June 2012 through May 2014 to calculate a daily average flow, so five years of data was used instead. The following critical effluent percentage is being used:

Outfall 002

Human Health Effluent %: 17.804%

Outfall 003

Human Health Effluent %: 86.827%

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 004

Human Health Effluent %: 68.518%

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

Analytical data for Outfall 001 and Outfall 002 reported in the application were screened against calculated water quality-based effluent limitations for human health protection. Reported analytical data did not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection.

No analytical data were provided for Outfalls 003 and 004 for screening against water quality-based effluent limitations. A provision has been added in the Other Requirements of the draft permit which requires the submittal of analytical data within 30 days after the first discharge from these outfalls.

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Water Quality Segment No. 1402, which receives the discharge from this facility, is designated as a public water supply source. An identical screening procedure is used to calculate water quality-based effluent limitations and determine the need for effluent limitations or monitoring requirements as outlined in section X.D.5.a of this fact sheet. Criteria used in the calculation of water quality-based effluent limitations for the protection of a drinking water supply are outlined in Table 2 (Water and Fish) of the Texas Surface Water Quality Standards (30 TAC Chapter 307). These criteria are developed from either drinking water maximum contaminant level (MCL) criteria outlined in 30 TAC Chapter 290, or from the combined human health effects of exposure to consumption of fish tissue and ingestion of drinking water.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

b. PERMIT ACTION

Criteria in the "Water and Fish" section of Table 2 do not distinguish if the criteria are based on drinking water standard or the combined effects of ingestion of drinking water and fish tissue. Effluent limitations or monitoring requirements to protect the drinking water supply (and other human health effects) were previously calculated and outlined in section X.D.5.b of this fact sheet.

7. TOTAL DISSOLVED SOLIDS, CHLORIDE, AND SULFATE STANDARDS PROTECTIONa. SCREENING

The average concentration of TDS, chloride, and sulfate in the effluent discharged from Outfall 001 are greater than the segment criterion. Screening procedures and effluent limitations for TDS, chloride, and sulfate are calculated using the methodology in the *Procedures to Implement the Texas Surface Water Quality Standards*, June 2010, and criteria in the Texas Surface Water Quality Standards (30 TAC Chapter 307). Detailed calculations are presented in Appendix C.

Since the source water for the discharge is from the same water body, Cedar Creek Reservoir, the Lower Colorado River Authority has demonstrated (through the use of statistical analysis) that the TDS, chloride, and sulfate of the receiving water body will not be statistically elevated; therefore, it meets the requirements for a once-through cooling water exemption, in accordance with 30 TAC §307.8(d).

The average concentration of TDS, chloride, and sulfate in the effluent discharged from Outfall 002 is greater than the segment criterion. Screening procedures and effluent limitations for TDS, chloride, and sulfate are calculated using the methodology in the *Procedures to Implement the Texas Surface Water Quality Standards*, June 2010, and criteria in the Texas Surface Water Quality Standards (30 TAC Chapter 307). Detailed calculations are presented in Appendix C.

Analytical results for Outfall 003 and Outfall 004 were not submitted with the application for permit renewal.

b. PERMIT ACTION

Based on the above-mentioned TDS, chloride, and sulfate screening and the approved once-through cooling water exemption, monitoring and reporting requirements for TDS, chloride, and sulfate have been added to the draft permit at Outfall 001.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The following requirements are proposed in the draft permit for the protection of water quality at Outfall 001:

Parameter	Daily Average mg/L	Daily Maximum mg/L
Total Dissolved Solids	Report	Report
Chloride	Report	Report
Sulfate	Report	Report

Based on the screening, no effluent limitations are needed for TDS, chloride, or sulfate for the effluent discharged from Outfall 002.

Other Requirement No. 11 in the draft permit requires that samples be taken upon the first discharge via Outfalls 003 and 004 and submitted to the TCEQ for review.

8. TEMPERATURE

- a. The daily average and daily maximum effluent limitations for temperature were originally based on BPJ. Existing temperature limits have been continued in the draft permit. However, Other Requirement No. 14 has been added to the draft permit in accordance with the agreement reached by the TCEQ and the EPA in their April 29, 2014 and May 12, 2014 letters, respectively. Temperature limits may be revised at a future date.

9. BACTERIA STANDARDS PROTECTION

a. SCREENING

Chapter 309 of 30 TAC requires that TPDES permits that authorize the discharge of domestic wastewater contain bacteria effluent limitations equal to the applicable single grab sample for the primary contact recreation standard.

b. PERMIT ACTION

The indicator bacteria for Segment No. 1402 is *E. coli*. Daily average and daily maximum concentrations have been added to the draft permit based on segment criteria in the Texas Surface Water Quality Standards, 30 TAC §§307.1. An interim one-year compliance period has also been established for *E. coli* in accordance with 30 TAC §307.2(f).

XI. PRETREATMENT REQUIREMENTS

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

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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 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 is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

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

For additional information about this application contact Timothy Janke at (512) 239-4685.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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)

TCEQ Permit No. WQ0002105000 issued on March 25, 2014.

B. APPLICATION

TPDES wastewater permit application received on June 4, 2014.

C. 40 CFR CITATION(S)

40 CFR Part 122 – EPA Administered Permit Programs: National Pollutant Discharge Elimination System

40 CFR Part 133 – Secondary Treatment Regulation

40 CFR Part 423 – Steam Electric Power Generating

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

Interoffice Memorandum dated July 24, 2014 from the Water Quality Standards Implementation Team (Jenna R. Lueg)

Interoffice Memorandum dated October 16, 2014 from the Water Quality Assessment Team (Jeff Borski)

Interoffice Memorandum dated July 30, 2014 from the Water Quality Assessment Team (Tom Y. Harrigan, P.E.)

Interoffice Memorandum dated November 7, 2014 from the Water Quality Standards Implementation Team (Jenna R. Lueg)

Interoffice Memorandum dated March 10, 2014 from the Water Quality Team (Louis C. Herrin III, P.E.)

Interoffice Memorandum dated February 5, 2014 from the Water Quality Assessment Team (David W. Hastings, P.G.)

Letter dated April 29, 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 thermal evaluation procedures)

Letter dated May 12, 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 thermal evaluation procedures)

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

E. MISCELLANEOUS

Quality Criteria for Water (1986), EPA 440/5-86-001, 5/1/86

The State of Texas 2012 Integrated Report – Texas 303(d) List (Category 5), TCEQ, May 9, 2013.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective July 22, 2010, as 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

Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013)

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 IP 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

EPA Draft Fact Sheet for Development of BPJ-Based Section 316(b) NPDES Permit Conditions (Draft Fact Sheet, 12/07 EPA FS)

Fayette Power Project Impingement Monitoring Plan submitted on April 2005;

Proposal for Information Collection and Supplementary Information for 316(b) BTA Determination on August 2005;

Supplemental Information for 316(b) BTA Determination

Impingement Monitoring Data Report Sam K. Seymour Generating Station (PBS&J, June 2009)

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix A
Calculated Technology-Based Effluent Limits

NEW SOURCE DETERMINATION

The Fayette Power Project is a steam electric generating station with a total generating capacity of 1,760 megawatts (MW). The facility has three units fired by western coal. Effluent limitations are based on 40 CFR Part 423-Steam Electric Power Generating Point Source Category. The facility is not subject to New Source Performance Standards (NSPS).

Phase I Effluent Limitations

Outfall 001 - once-through cooling water and previously monitored effluent (low volume waste via internal Outfall 201, low volume waste, coal pile runoff, truck wash water, and stormwater from the Coal Pile Runoff Pond via internal Outfall 301).

Best Available Technology Economically Achievable (BAT) Total Residual Chlorine (TRC) effluent limitations according to 40 CFR §423.13(b)(1):

Daily Average TRC = N/A
 Daily Maximum TRC = 0.2 mg/L

The permitted flow is used in the calculation of once-through cooling water mass (lbs/day) limitations. Mass limitations for TRC are calculated according to 40 CFR §423.13(b)(2) as follows:

$$\text{Daily Average (lbs/day)} = [(\text{daily average limit, mg/L}) \times (\text{permitted daily average flow, MGD}) \times (8.345) \times (2 \text{ hrs}/24 \text{ hrs})] \times (3 \text{ units})$$

$$\text{Daily Average (lbs/day)} = [(0.2 \text{ mg/L}) \times (1,165 \text{ MGD}) \times (8.345)/12] \times (3) = 486 \text{ lbs/day}$$

Note that the pH of all discharges, except once-through cooling water, shall be within the range of 6.0 to 9.0 SU in accordance with 40 CFR §423.12(b)(1) (BPT). Therefore, pH effluent limitations are not required at Outfall 001.

The effluent limitations calculated for TRC are less stringent than in the current permit, therefore, TRC effluent limits are continued from the current permit.

Technology-based effluent limitations included in the draft permit at Outfall 001 are as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/L
	N/A	162 lbs/day

Phase II Effluent Limitations

Outfall 001 - once-through cooling water and previously monitored effluent (low volume waste via internal Outfall 201, low volume waste, coal pile runoff, truck wash water, and stormwater from the Coal Pile Runoff Pond via internal Outfall 301).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Best Available Technology Economically Achievable (BAT) Total Residual Chloride (TRC) effluent limitations according to 40 CFR §423.13(b)(1):

Daily Average TRC = N/A
 Daily Maximum TRC = 0.2 mg/L

The permitted flow is used in the calculation of once through cooling water loading (lbs/day) effluent limitations. Mass limitations for TRC are calculated according to 40 CFR §423.13(b)(2) in the following way:

$$\text{Daily Average (lbs/day)} = [(\text{daily average limit, mg/L}) \times (\text{permitted daily average flow, MGD}) \times (8.345) \times (2 \text{ hrs}/24 \text{ hrs})] \times (3 \text{ units})$$

$$\text{Daily Average (lbs/day)} = [(0.2 \text{ mg/L}) \times (1,509 \text{ MGD}) \times (8.345)/12] \times (3) = 629 \text{ lbs/day}$$

Note that the pH of all discharges, except once through cooling water, shall be within the range of 6.0 to 9.0 SU in accordance with 40 CFR §423.12(b)(1) (BPT). Therefore, pH effluent limitations are not required at Outfall 001.

The effluent limitations calculated for TRC are less stringent than in the current permit, therefore, TRC effluent limits are continued from the current permit based on anti-backsliding requirements in 40 CFR Part 122.44(l).

Technology-based effluent limitations included in the draft permit at Outfall 001 are as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/L
	N/A	210 lbs/day

OUTFALL 201 (low volume waste sources).

Limits for total suspended solids (TSS) and oil and grease are based on BPT, 40 CFR §423.12(b)(3) for the discharge of low volume waste sources and are included in the permit in mg/L.

Limits for pH are based on BPT, 40 CFR §423.12(b)(1).

Technology-based limitations included in the permit at Outfall 201 are as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units.	

OUTFALL 301 (low volume waste, coal pile runoff, truck wash water, and stormwater from the Coal Pile Runoff Pond) Limitations for low volume waste commingled with coal pile runoff are based on 40 CFR §423.12(b)(3) and 40 CFR §423.12(b)(9). The discharge of coal pile runoff water commingled with low volume waste, truck wash water, and stormwater from the Coal Pile Runoff Pond are intermittent and low in volume; therefore, concentration limitations are proposed to be continued from the existing permits.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Daily Average TSS = 30 mg/L
 Daily Maximum TSS = 50 mg/L

Daily Average Oil and Grease = 15 mg/L
 Daily Maximum Oil and Grease = 20 mg/L

OUTFALL 002 (cooling water drained from condensers and other cooling equipment during maintenance periods).

Limits for Total Residual Chlorine are based on 40 CFR §423.13(b)(1) (BAT).

Limits for pH are included in the current permit based upon best professional judgment and are continued in the draft permit based on anti-backsliding requirements in 40 CFR Part 122.44(l).

Technology-based limitations included in the permit at Outfall 002:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/L
pH	Between 6.0 and 9.0 standard units	

OUTFALL 003 (low volume waste, coal pile runoff, truck wash water, and stormwater from the Coal Pile Runoff Pond).

Limits for TSS in 40 CFR §423.12(b)(9) for the discharge of coal pile runoff are 50 mg/L daily maximum. Limits for TSS and oil and grease are based on 40 CFR §423.12(b)(3) for the discharge of low volume waste sources are 30 mg/L daily average and 100 mg/L daily maximum for TSS and 15 mg/L daily average and 20 mg/L daily maximum for oil and grease.

Limits for pH are based on 40 CFR §423.12(b)(1).

Technology-based limitations included in the permit at Outfall 003 are as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	50 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units	

Technology-based effluent limitations for coal pile runoff require a total suspended solids daily maximum limit of 50 mg/L. Therefore, the daily maximum is set at 50 mg/L TSS to comply with 40 CFR Part 423.

OUTFALL 004 (wastes from the Combustion Byproducts Landfill Pond).

Discharges from this outfall include combustion byproducts landfill runoff (from material storage piles including bottom ash, fly ash, and gypsum), truck wash water, and stormwater.

Limits for TSS and oil and grease in 40 CFR §423.12(b)(4) apply to the discharge of combustion byproducts landfill runoff. All limits established for truck wash water and stormwater were originally based upon BPJ and are continued based on anti-backsliding requirements in 40 CFR Part 122.44(l).

Limits for pH are based on 40 CFR §423.12(b)(1).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Technology-based limitations included in the permit at Outfall 004 are as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units	

316(b) - Historical Background

On July 6, 2004, EPA promulgated Phase II regulations in accordance with section 316(b) of the CWA. On January 25, 2007, the Second U.S. Circuit Court of Appeals remanded most provisions of the Phase II rule. On March 29, 2007, EPA issued a memo stating that the rule should be considered suspended. On July 9, 2007, EPA published a Federal Register notice suspending all parts of the Phase II regulations except 40 CFR 125.90 (b) which provided for regulating existing cooling water intake structures on a case-by-case basis using BPJ.

A TPDES permit for any new or existing facility operating a cooling water intake structure (CWIS) must contain permit conditions meeting the requirements applicable to CWISs under section 316(b) of the Clean Water Act (CWA). Section 316(b) of the CWA requires that the location, design, construction, and capacity of CWISs reflect the Best Technology Available (BTA) for minimizing Adverse Environmental Impact (AEI). In accordance with the *EPA Draft Fact Sheet for Development of BPJ-Based Section 316(b) NPDES Permit Conditions* (Draft Fact Sheet), existing facilities are subject to section 316(b) conditions that reflect BTA for minimizing AEI on a case-by-case, Best Professional Judgment (BPJ) basis.

Therefore, in accordance with the *EPA Draft Fact Sheet for Development of BPJ-Based Section 316(b) NPDES Permit Conditions* (Draft Fact Sheet, 12/07 EPA FS), this existing facility was determined to be subject to section 316(b) conditions.

The permittee has submitted the following documents, titled *Fayette Power Project Impingement Monitoring Plan* on April 2005; *Proposal for Information Collection and Supplementary Information for 316(b) BTA Determination* on August 2005; and the *Impingement Monitoring Data Report Sam K. Seymour Generating Station* submitted on June 2009.

Based upon a review of the information submitted and the inclusion of CWIS operation and maintenance requirements in the draft permit, the facility was determined to meet BTA for minimizing AEI on the basis of BPJ.

CWIS Information:

Fayette Power Project (FPP) consists of three generating units: Unit 1, Unit 2 and Unit 3. The three coal-fired boilers have a total gross generation capacity of approximately 1,760 megawatts (MW). All three units share a common intake embayment.

The Cedar Creek Reservoir is a man-made lake, built in 1978 to provide cooling water for the FPP generating units. The reservoir is a 2,400 acre impoundment of Cedar Creek, an intermittent tributary of the Colorado River in east-central Fayette County. During periods of low rainfall, water is periodically pumped from the Colorado River to maintain the reservoir level. Normal operating elevation of Fayette County Reservoir is 390 ft. mean sea level (msl).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Units 1 & 2 share a common CWIS and Unit 3 is adjacent to Unit 1 & 2. The CWIS consist of the following: 1) an intake embayment, which is an intake canal that is approximately 300 yards in length and maintains a depth of about 25 feet into the reservoir 2) bar screens, 3) three-cement lined water-withdrawal bays for each unit, 4) 3/8 inch square mesh traveling water screens, 5) sluiceways (wash-water return through), sumps and debris collection baskets, and 6) cooling water, circulating and wash water (firewater) pumps. Each unit is equipped with three cooling-water pumps and three circulating pumps. Each unit has three bays all the water withdrawn from a single bay passes through a single screen. Units 1 and 2 have three screen-wash pumps that withdraw water from the bays. Unit 3 has a firewater/service-water pump in each bay.

High-pressure wash water is used to periodically wash (backwash) debris and fish from each of the screens. The screen wash operation is automated, but operation can also triggered by the loss of head pressure due to debris accumulation. Manual operation of the screens is also possible.

Units 1 & 2 share a common wash-water sluice way, collection baskets, and sump. Upon entering the sump, the wash water is designed to flow to two separate collection baskets located in a single sump. Wash water for the screens that serve Unit 3 is carried through a different sluiceway to a separate collection basket and sump.

Interim BTA Determination and Application Requirements:

Based up on the revised Phase II rules, published in the Federal Register on August 15, 2014, the existing permit requirements to operate and maintain the cooling water intake structure are continued in the draft permit in accordance with 40 CFR § 125.98(g), *Ongoing permit proceedings*. The draft permit does not exempt the permittee from any application requirements in either 40 CFR § 122.21(r) or 40 CFR Part 125, Subpart J. A final BTA determination will be performed once all application requirements, as they apply to the facility, have been submitted to the TCEQ, and any additional CWIS requirements determined to be necessary will be included in a subsequent permit reissuance.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix B
Calculated Water Quality-Based Effluent Limits

TEXTTOX MENU #4 - LAKE OR RESERVOIR

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

- Table 1, 2010 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life
- Table 2, 2010 Texas Surface Water Quality Standards for Human Health (except Mercury)
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health (Mercury)
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, June 2010

PERMIT INFORMATION

Permittee Name:	Lower Colorado River Authority
TPDES Permit No:	WQ0002105000
Outfall No:	001
Prepared by:	Timothy Janke
Date:	August 5, 2014

DISCHARGE INFORMATION

Receiving Waterbody:	Cedar Creek Reservoir
Segment No.:	1402
TSS (mg/L):	12
pH (Standard Units):	7.8
Hardness (mg/L as CaCO ₃):	200
Chloride (mg/L):	51
Effluent Flow for Aquatic Life (MGD):	> 100
Percent Effluent for Mixing Zone:	100
Percent Effluent for Zone of Initial Dilution:	100
Effluent Flow for Human Health (MGD):	> 100
Percent Effluent for Human Health:	100
Public Water Supply Use?:	no

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

<i>Lake Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>		<i>Water Effect Ratio (WER)</i>	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.52		1.00	Assumed
Cadmium	6.55	-0.92	360705.91	0.19		1.00	Assumed
Chromium (Total)	6.34	-0.27	1118462	0.07		1.00	Assumed
Chromium (+3)	6.34	-0.27	1118462	0.07		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.45	-0.90	301118.11	0.22		1.00	Assumed
Lead	6.31	-0.53	547058.71	0.13		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	6.34	-0.76	330995.62	0.20		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.31		1.00	Assumed
Zinc	6.52	-0.68	611162.58	0.12		1.00	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CONVERT TISSUE-BASED CRITERIA TO WATER COLUMN CRITERIA:

<i>Parameter</i>	<i>Water and Fish Criterion (ug/kg)</i>	<i>Fish Only Criterion (ug/kg)</i>	<i>BCF (l/kg)</i>	<i>Water and Fish Criterion (ug/L)</i>	<i>Fish Only Criterion (ug/L)</i>
4,4'-DDD	166.16	166.16	53600	0.0031	0.0031
4,4'-DDE	214.4	214.4	53600	0.004	0.004
4,4'-DDT	209.04	209.04	53600	0.0039	0.0039
Dioxins/Furans	0.0004	0.0004	5000	8.00E-08	8.00E-08
Mercury					
Polychlorinated Biphenyls (PCBs)	19.96	19.96	31200	6.40E-04	6.40E-04

AQUATIC LIFE**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:**

<i>Parameter</i>	<i>FW Acute Criterion (ug/L)</i>	<i>FW Chronic Criterion (ug/L)</i>	<i>WLAa</i>	<i>WLAc</i>	<i>LTAa</i>	<i>LTAc</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Aldrin	3	N/A	3.00	N/A	0.96	N/A	1.41	2.99
Aluminum	991	N/A	991.00	N/A	317.12	N/A	466.17	986.24
Arsenic	340	150	658.32	290.43	210.66	177.16	260.43	550.98
Cadmium	16.8296012	0.397997761	89.68	2.12	28.70	1.29	1.90	4.02
Carbaryl	2	N/A	2.00	N/A	0.64	N/A	0.94	1.99
Chlordane	2.4	0.004	2.40	0.00	0.77	0.00	0.00	0.01
Chlorpyrifos	0.083	0.041	0.08	0.04	0.03	0.03	0.04	0.08
Chromium (+3)	1005.166881	130.7515599	14496.05	1885.64	4638.74	1150.24	1690.85	3577.25
Chromium (+6)	15.7	10.6	15.70	10.60	5.02	6.47	7.39	15.62
Copper	27.28815235	17.12073317	125.89	78.99	40.29	48.18	59.22	125.29
Cyanide (free)	45.8	10.7	45.80	10.70	14.66	6.53	9.59	20.30
4,4'-DDT	1.1	0.001	1.10	0.00	0.35	0.00	0.00	0.00
Demeton	N/A	0.1	N/A	0.10	N/A	0.06	0.09	0.19
Diazinon	0.17	0.17	0.17	0.17	0.05	0.10	0.08	0.17
Dicofol	59.3	19.8	59.30	19.80	18.98	12.08	17.75	37.56
Dieldrin	0.24	0.002	0.24	0.00	0.08	0.00	0.00	0.00
Diuron	210	70	210.00	70.00	67.20	42.70	62.77	132.80
Endosulfan I (alpha)	0.22	0.056	0.22	0.06	0.07	0.03	0.05	0.11
Endosulfan II (beta)	0.22	0.056	0.22	0.06	0.07	0.03	0.05	0.11
Endosulfan sulfate	0.22	0.056	0.22	0.06	0.07	0.03	0.05	0.11
Endrin	0.086	0.002	0.09	0.00	0.03	0.00	0.00	0.00
Guthion	N/A	0.01	N/A	0.01	N/A	0.01	0.01	0.02
Heptachlor	0.52	0.004	0.52	0.00	0.17	0.00	0.00	0.01
Hexachlorocyclohexane (Lindane)	1.126	0.08	1.13	0.08	0.36	0.05	0.07	0.15
Lead	136.1417491	5.305248512	1029.87	40.13	329.56	24.48	35.99	76.14
Malathion	N/A	0.01	N/A	0.01	N/A	0.01	0.01	0.02
Mercury	2.4	1.3	2.40	1.30	0.77	0.79	1.13	2.39
Methoxychlor	N/A	0.03	N/A	0.03	N/A	0.02	0.03	0.06
Mirex	N/A	0.001	N/A	0.00	N/A	0.00	0.00	0.00
Nickel	841.6586173	93.4822878	4184.68	464.79	1339.10	283.52	416.78	881.75
Nonylphenol	28	6.6	28.00	6.60	8.96	4.03	5.92	12.52
Parathion (ethyl)	0.065	0.013	0.07	0.01	0.02	0.01	0.01	0.02
Pentachlorophenol	19.492	14.954	19.49	14.95	6.24	9.12	9.17	19.40
Phenanthrene	30	30	30.00	30.00	9.60	18.30	14.11	29.86

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE CONTINUED

<i>Parameter</i>	<i>FW Acute Criterion (ug/L)</i>	<i>FW Chronic Criterion (ug/L)</i>	<i>WLAa</i>	<i>WLAc</i>	<i>LTAa</i>	<i>LTAc</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Polychlorinated Biphenyls (PCBs)	2	0.014	2.00	0.01	0.64	0.01	0.01	0.03
Selenium	20	5	20.00	5.00	6.40	3.05	4.48	9.49
Silver	0.8	N/A	11.46	N/A	3.67	N/A	5.39	11.41
Toxaphene	0.78	0.0002	0.78	0.00	0.25	0.00	0.00	0.00
Tributyltin (TBT)	0.13	0.024	0.13	0.02	0.04	0.01	0.02	0.05
2,4,5 Trichlorophenol	136	64	136.00	64.00	43.52	39.04	57.39	121.41
Zinc	210.822953	212.5474761	1756.99	1771.36	562.24	1080.53	826.49	1748.55

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Water and Fish Criterion (ug/L)</i>	<i>Fish Only Criterion (ug/L)</i>	<i>WLAh</i>	<i>LTAh</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Acrylonitrile	0.8	3.8	3.80	3.53	5.19	10.99
Aldrin	0.00094	0.001	0.00	0.00	0.00	0.00
Anthracene	5569	N/A	N/A	N/A	N/A	N/A
Antimony	6	1071	1071.00	996.03	1464.16	3097.65
Arsenic	10	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A
Benzene	5	513	513.00	477.09	701.32	1483.75
Benzidine	0.00086	0.002	0.00	0.00	0.00	0.01
Benzo(a)anthracene	0.068	0.33	0.33	0.31	0.45	0.95
Benzo(a)pyrene	0.068	0.33	0.33	0.31	0.45	0.95
Bis(chloromethyl)ether	0.0024	0.44	0.44	0.41	0.60	1.27
Bis(2-chloroethyl)ether	0.3	5.27	5.27	4.90	7.20	15.24
Bis(2-ethylhexyl)phthalate	6	41	41.00	38.13	56.05	118.58
Bromodichloromethane	10.2	322	322.00	299.46	440.21	931.32
Bromoform	69.1	2175	2175.00	2022.75	2973.44	6290.75
Cadmium	5	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.1	29	29.00	26.97	39.65	83.88
Chlordane	0.008	0.0081	0.01	0.01	0.01	0.02
Chlorobenzene	100	5201	5201.00	4836.93	7110.29	15042.85
Chlorodibromomethane (Dibromochloromethane)	7.6	239	239.00	222.27	326.74	691.26
Chloroform	70	7143	7143.00	6642.99	9765.20	20659.70
Chromium (+6)	62	502	502.00	466.86	686.28	1452
Chrysene	68.13	327	327.00	304.11	447.04	945.78
Cresols	736	1981	1981.00	1842.33	2708.23	5729.65
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0031	0.0031	0.00	0.00	0.00	0.01
4,4'-DDE	0.004	0.004	0.00	0.00	0.01	0.01
4,4'-DDT	0.0039	0.0039	0.00	0.00	0.01	0.01
2,4'-D	70	N/A	N/A	N/A	N/A	N/A
Danitrol	5.39	5.44	5.44	5.06	7.44	15.73
1,2-Dibromoethane	0.16	2.13	2.13	1.98	2.91	6.16
m-Dichlorobenzene	473	1445	1445.00	1343.85	1975.46	4179.37
o-Dichlorobenzene	600	4336	4336.00	4032.48	5927.75	12541.01
p-Dichlorobenzene	75	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.32	0.44	0.44	0.41	0.60	1.27
1,2-Dichloroethane	5	553	553.00	514.29	756.01	1599.44

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH CONTINUED

<i>Parameter</i>	<i>Water and Fish Criterion (ug/L)</i>	<i>Fish Only Criterion (ug/L)</i>	<i>WLAh</i>	<i>LTAh</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
1,1-Dichloroethylene	7	23916	23916.00	22241.88	32695.56	69172.25
Dichloromethane	5	5926	5926.00	5511.18	8101.43	17139.77
1,2-Dichloropropane	5	226	226.00	210.18	308.96	653.66
1,3-Dichloropropene (1,3- Dichloropropylene)	3.4	211	211.00	196.23	288.46	610.28
Dicofol	0.076	0.076	0.08	0.07	0.10	0.22
Dieldrin	0.0005	0.0005	0.00	0.00	0.00	0.00
2,4-Dimethylphenol	257	571	571.00	531.03	780.61	1651.50
Di-n-Butyl Phthalate	1318	3010	3010.00	2799.30	4114.97	8705.82
Dioxins/Furans (TCDD Equivalents)	8.00E-08	8.00E-08	8.00E-08	7.44E-08	1.09E-07	2.31E-07
Endrin	0.2	0.2	0.20	0.19	0.27	0.58
Ethylbenzene	700	7143	7143.00	6642.99	9765.20	20659.70
Fluoride	4000	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0015	0.00	0.00	0.00	0.00
Heptachlor Epoxide	0.00074	0.00075	0.00	0.00	0.00	0.00
Hexachlorobenzene	0.0044	0.0045	0.00	0.00	0.01	0.01
Hexachlorobutadiene	6.5	274	274.00	254.82	374.59	792.49
Hexachlorocyclohexane (alpha)	0.05	0.093	0.09	0.09	0.13	0.27
Hexachlorocyclohexane (beta)	0.17	0.33	0.33	0.31	0.45	0.95
Hexachlorocyclohexane (gamma) (Lindane)	0.2	6.2	6.20	5.77	8.48	17.93
Hexachlorocyclopentadiene	50	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	27	62	62.00	57.66	84.76	179.32
Hexachlorophene	0.008	0.008	0.01	0.01	0.01	0.02
Lead	1.15	3.83	28.97	26.94	39.61	83.80
Mercury	0.0122	0.0122	0.01	0.01	0.02	0.04
Methoxychlor	0.33	0.33	0.33	0.31	0.45	0.95
Methyl Ethyl Ketone	13932	1500000	1,50E+06	1,40E+06	2,05E+06	4,34E+06
Nickel	332	1140	5668.02	5271.26	7748.75	16393.61
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	11	463	463.00	430.59	632.97	1339.13
N-Nitrosodiethylamine	0.0037	2.1	2.10	1.95	2.87	6.07
N-Nitroso-di-n-Butylamine	0.119	4.2	4.20	3.91	5.74	12.15
Pentachlorobenzene	1	1	1.00	0.93	1.37	2.89
Pentachlorophenol	1	57	57.00	53.01	77.92	164.86
Polychlorinated Biphenyls (PCBs)	6.40E-04	6.40E-04	0.00	0.00	0.00	0.00
Pyridine	23	2014	2014.00	1873.02	2753.34	5825.09
Selenium	50	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.65	0.71	0.71	0.66	0.97	2.05
1,1,2,2-Tetrachloroethane	3.2	76	76.00	70.68	103.90	219.81
Tetrachloroethylene	5	49	49.00	45.57	66.99	141.72
Thallium	0.75	1.5	1.50	1.40	2.05	4.34
Toluene	1000	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0053	0.01	0.00	0.01	0.02
2,4,5-TP (Silvex)	7.3	7.6	7.60	7.07	10.39	21.98
1,1,1-Trichloroethane	200	956663	956663.00	889696.59	1307853.99	2766956.39
1,1,2-Trichloroethane	5	295	295.00	274.35	403.29	853.23
Trichloroethylene	5	649	649.00	603.57	887.25	1877.10
2,4,5-Trichlorophenol	1194	2435	2435.00	2264.55	3328.89	7042.75
TTHM (Sum of Total Trihalomethanes)	80	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	0.25	24	24.00	22.32	32.81	69.42

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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

AQUATIC LIFE		
<i>Parameter</i>	<i>70%</i>	<i>85%</i>
Aldrin	0.988	1.200
Aluminum	326.316	396.241
Arsenic	182.302	221.367
Cadmium	1.331	1.616
Carbaryl	0.659	0.800
Chlordane	0.003	0.003
Chlorpyrifos	0.026	0.031
Chromium (+3)	1183.60	1437.22
Chromium (+6)	5.170	6.277
Copper	41.454	50.337
Cyanide (free)	6.716	8.155
4,4'-DDT	0.001	0.001
Demeton	0.063	0.076
Diazinon	0.056	0.068
Dicofol	12.428	15.091
Dieldrin	0.001	0.002
Diuron	43.938	53.354
Endosulfan (alpha)	0.035	0.043
Endosulfan (beta)	0.035	0.043
Endosulfan sulfate	0.035	0.043
Endrin	0.001	0.002
Guthion	0.006	0.008
Heptachlor	0.003	0.003
Hexachlorocyclohexane (Lindane)	0.050	0.061
Lead	25.191	30.589
Malathion	0.006	0.008
Mercury	0.790	0.960
Methoxychlor	0.019	0.023
Mirex	0.001	0.001
Nickel	291.743	354.260
Nonylphenol	4.143	5.030
Parathion (ethyl)	0.008	0.010
Pentachlorophenol	6.418	7.794
Phenanthrene	9.878	11.995
Polychlorinated Biphenyls (PCBs)	0.009	0.011
Selenium	3.138	3.811
Silver	3.775	4.584
Toxaphene	0.000	0.000
Tributyltin (TBT)	0.015	0.018
2,4,5 Trichlorophenol	40.172	48.780
Zinc	578.541	702.514

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH

Parameter	70%	85%
Acrylonitrile	3.636	4.416
Aldrin	0.001	0.001
Anthracene	N/A	N/A
Antimony	1024.915	1244.539
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	490.926	596.124
Benzidine	0.002	0.002
Benzo(a)anthracene	0.316	0.383
Benzo(a)pyrene	0.316	0.383
Bis(chloromethyl)ether	0.421	0.511
Bis(2-chloroethyl)ether	5.043	6.124
Bis(2-ethylhexyl)phthalate	39.236	47.643
Bromodichloromethane	308.144	374.175
Bromoform	2081.410	2527.426
Cadmium	N/A	N/A
Carbon Tetrachloride	27.752	33.699
Chlordane	0.008	0.009
Chlorobenzene	4977.201	6043.744
Chlorodibromomethane (Dibromochloromethane)	228.716	277.726
Chloroform	6835.637	8300.416
Chromium (+6)	480.40	583.34
Chrysene	312.929	379.985
Cresols	1896	2302
Cyanide (free)	N/A	N/A
4,4'-DDD	0.003	0.004
4,4'-DDE	0.004	0.005
4,4'-DDT	0.004	0.005
2,4'-D	N/A	N/A
Danitol	5.206	6.321
1,2-Dibromoethane	2.038	2.475
m-Dichlorobenzene	1382.822	1679.141
o-Dichlorobenzene	4149.422	5038.584
p-Dichlorobenzene	N/A	N/A
3,3'-Dichlorobenzidine	0.421	0.511
1,2-Dichloroethane	529.204	642.605
1,1-Dichloroethylene	22886.895	27791.229
Dichloromethane	5671.004	6886.219
1,2-Dichloropropane	216.275	262.620
1,3-Dichloropropene (1,3- Dichloropropylene)	201.921	245.189
Dicofol	0.073	0.088
Dieldrin	0.000	0.001
2,4-Dimethylphenol	546.430	663.522
Di-n-Butyl Phthalate	2880.480	3497.725
Dioxins/Furans (TCDD Equivalents)	7.66E-08	9.30E-08
Endrin	0.191	0.232
Ethylbenzene	6835.637	8300.416
Fluoride	N/A	N/A
Heptachlor	0.001	0.002
Heptachlor Epoxide	0.001	0.001
Hexachlorobenzene	0.004	0.005
Hexachlorobutadiene	262.210	318.398

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH CONTINUED

Parameter	70%	85%
Hexachlorocyclohexane (alpha)	0.089	0.108
Hexachlorocyclohexane (beta)	0.316	0.383
Hexachlorocyclohexane (gamma) (Lindane)	5.933	7.205
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	59.332	72.046
Hexachlorophene	0.008	0.009
Lead	27.726	33.667
Mercury	0.012	0.014
Methoxychlor	0.316	0.383
Methyl Ethyl Ketone	1.44E+06	1.74E+06
Nickel	5424.125	6586.438
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	443.077	538.022
N-Nitrosodiethylamine	2.010	2.440
N-Nitroso-di-n-Butylamine	4.019	4.881
Pentachlorobenzene	0.957	1.162
Pentachlorophenol	54.547	66.236
Polychlorinated Biphenyls (PCBs)	0.0006	0.001
Pyridine	1927	2340
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.679	0.825
1,1,2,2-Tetrachloroethane	72.730	88.315
Tetrachloroethylene	46.892	56.940
Thallium	1.435	1.743
Toluene	N/A	N/A
Toxaphene	0.005	0.006
2,4,5-TP (Silvex)	7.273	8.831
1,1,1-Trichloroethane	915498	1111676
1,1,2-Trichloroethane	282.306	342.800
Trichloroethylene	621.074	754.161
2,4,5-Trichlorophenol	2330.222	2829.555
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	22.967	27.889

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

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

Table 1, 2010 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life

Table 2, 2010 Texas Surface Water Quality Standards for Human Health (except Mercury)

Table 3, 2000 Texas Surface Water Quality Standards for Human Health (Mercury)

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, June 2010

PERMIT INFORMATION

Permittee Name:	Lower Colorado River Authority
TPDES Permit No.:	WQ0002105000
Outfall No.:	002
Prepared by:	Timothy Janke
Date:	August 5, 2014

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	an unnamed tributary
Perennial Stream/River within 3 Miles:	Cedar Creek
Segment No.:	1402
TSS (mg/L):	12
pH (Standard Units):	7.8
Hardness (mg/L as CaCO ₃):	200
Chloride (mg/L):	51
Effluent Flow for Aquatic Life (MGD):	0.2967
Critical Low Flow [7Q2] (cfs) for Intermittent:	0
Critical Low Flow [7Q2] (cfs) for perennial:	0.5
Percent Effluent for Mixing Zone:	47.87
Percent Effluent for Zone of Initial Dilution:	100
Effluent Flow for Human Health (MGD):	0.07
Harmonic Mean Flow (cfs) for perennial:	0.5
Percent Effluent for Human Health:	17.804
Public Water Supply Use?:	no

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

Stream/River Metal	Intercept (b)	Slope (m)	Partition Coefficient (Kp)	Dissolved Fraction (Cd/Ct)		Water Effect Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Arsenic	5.68	-0.73	78018.52	0.52		1	Assumed
Cadmium	6.60	-1.13	240173.56	0.26		1	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.20		1	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.20		1	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Copper	6.02	-0.74	166496.80	0.33		1	Assumed
Lead	6.45	-0.80	386060.17	0.18		1	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Nickel	5.69	-0.57	118813.75	0.41		1	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Silver	6.38	-1.03	185542.46	0.31		1	Assumed
Zinc	6.10	-0.70	221092.05	0.27		1	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CONVERT TISSUE-BASED CRITERIA TO WATER COLUMN CRITERIA:

Parameter	Water and Fish	Fish Only	BCF (l/kg)	Water and	Fish Only
	Criterion (ug/kg)	Criterion (ug/kg)		Fish Criterion (ug/L)	Criterion (ug/L)
4,4'-DDD	166.16	166.16	53600	0.0031	0.0031
4,4'-DDE	214.4	214.4	53600	0.004	0.004
4,4'-DDT	209.04	209.04	53600	0.0039	0.0039
Dioxins/Furans	0.0004	0.0004	5000	8.00E-08	8.00E-08
Mercury					
Polychlorinated Biphenyls (PCBs)	19.96	19.96	31200	6.40E-04	6.40E-04

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	FW Acute	FW Chronic	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
	Criterion (ug/L)	Criterion (ug/L)						
Aldrin	3	N/A	3.00	N/A	1.72	N/A	2.53	5.35
Aluminum	991	N/A	991	N/A	568	N/A	835	1766
Arsenic	340	150	658.316	606.768	377.215	467.211	554.506	1173.138
Cadmium	16.830	0.398	65.334	3.228	37.436	2.485	3.654	7.730
Carbaryl	2	N/A	2.00	N/A	1.15	N/A	1.68	3.56
Chlordane	2.4	0.004	2.40	0.008	1.38	0.006	0.009	0.020
Chlorpyrifos	0.083	0.041	0.083	0.086	0.048	0.066	0.070	0.148
Chromium (+3)	1005.167	130.752	4965.948	1349.544	2845.488	1039.149	1527.549	3231.752
Chromium (+6)	15.7	10.6	15.7	22.145	9.00	17.052	13.224	27.978
Copper	27.288	17.121	81.809	107.232	46.876	82.569	68.908	145.786
Cyanide (free)	45.8	10.7	45.8	22.354	26.2	17.213	25.303	53.532
4,4'-DDT	1.1	0.001	1.10	0.002	0.630	0.002	0.002	0.005
Demeton	N/A	0.1	N/A	0.209	N/A	0.161	0.236	0.500
Diazinon	0.17	0.17	0.170	0.355	0.097	0.273	0.143	0.303
Dicofol	59.3	19.8	59.3	41.366	34.0	31.852	46.822	99.059
Dieldrin	0.24	0.002	0.240	0.004	0.138	0.003	0.005	0.010
Diuron	210	70	210	146.243	120	112.607	165.532	350.207
Endosulfan I (alpha)	0.22	0.056	0.220	0.117	0.126	0.090	0.132	0.280
Endosulfan II (beta)	0.22	0.056	0.220	0.117	0.126	0.090	0.132	0.280
Endosulfan sulfate	0.22	0.056	0.220	0.117	0.126	0.090	0.132	0.280
Endrin	0.086	0.002	0.086	0.004	0.049	0.003	0.005	0.010
Guthion	N/A	0.01	N/A	0.021	N/A	0.016	0.024	0.050
Heptachlor	0.52	0.004	0.520	0.008	0.298	0.006	0.009	0.020
Hexachlorocyclohexane (Lindane)	1.126	0.08	1.13	0.167	0.645	0.129	0.189	0.400
Lead	136.142	5.305	766.849	62.431	439.404	48.072	70.666	149.503
Malathion	N/A	0.01	N/A	0.021	N/A	0.016	0.024	0.050
Mercury	2.4	1.3	2.40	2.716	1.38	2.091	2.022	4.277
Methoxychlor	N/A	0.03	N/A	0.063	N/A	0.048	0.071	0.150
Mirex	N/A	0.001	N/A	0.002	N/A	0.002	0.002	0.005
Nickel	841.659	93.482	2041.666	473.755	1169.875	364.792	536.244	1134.502
Nonylphenol	28	6.6	28.0	13.789	16.0	10.617	15.607	33.020
Parathion (ethyl)	0.065	0.013	0.065	0.027	0.037	0.021	0.031	0.065
Pentachlorophenol	19.492	14.954	19.492	31.242	11.169	24.057	16.418	34.735
Phenanthrene	30	30	30.0	62.675	17.2	48.260	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2	0.014	2.00	0.029	1.15	0.023	0.033	0.070
Selenium	20	5	20.0	10.446	11.5	8.043	11.824	25.015
Silver	0.8	N/A	11.4640364	N/A	6.569	N/A	9.656	20.429
Toxaphene	0.78	0.0002	0.780	0.000	0.447	0.000	0.000	0.001

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE CONT.

Parameter	FW Acute Criterion (ug/L)	FW Chronic Criterion (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Tributyltin (TBT)	0.13	0.024	0.130	0.050	0.074	0.039	0.057	0.120
2,4,5 Trichlorophenol	136	64	136	133.708	77.9	102.955	114.554	242.356
Zinc	210.823	212.547	770.158	1622.162	441.301	1249.064	648.712	1372.445

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	Water and Fish Criterion (ug/L)	Fish Only Criterion (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	0.8	3.8	21.343	19.849	29.178	61.730
Aldrin	0.00094	0.001	0.006	0.005	0.008	0.016
Anthracene	5569	N/A	N/A	N/A	N/A	N/A
Antimony	6	1071	6015.348	5594.274	8223.582	17398.191
Arsenic	10	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A
Benzene	5	513	2881.301	2679.610	3939.027	8333.587
Benzidine	0.00086	0.002	0.011	0.010	0.015	0.032
Benzo(a)anthracene	0.068	0.33	1.853	1.724	2.534	5.361
Benzo(a)pyrene	0.068	0.33	1.853	1.724	2.534	5.361
Bis(chloromethyl)ether	0.0024	0.44	2.471	2.298	3.379	7.148
Bis(2-chloroethyl)ether	0.3	5.27	29.599	27.527	40.465	85.610
Bis(2-ethylhexyl)phthalate	6	41	230.279	214.160	314.815	666.037
Bromodichloromethane	10.2	322	1808.536	1681.938	2472.450	5230.829
Bromoform	69.1	2175	12216.043	11360.920	16700.552	35332.461
Cadmium	5	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.1	29	162.881	151.479	222.674	471.099
Chlordane	0.008	0.0081	0.045	0.042	0.062	0.132
Chlorobenzene	100	5201	29211.788	27166.963	39935.435	84489.254
Chlorodibromomethane (Dibromochloromethane)	7.6	239	1342.361	1248.395	1835.141	3882.509
Chloroform	70	7143	40119.170	37310.828	54846.917	116036.675
Chromium (+6)	62	502	2819.519	2622.153	3854.564	8154.894
Chrysene	68.13	327	1836.619	1708.056	2510.842	5312.053
Cresols	736	1981	11126.428	10347.578	15210.940	32180.968
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0031	0.0031	0.017	0.016	0.024	0.050
4,4'-DDE	0.004	0.004	0.022	0.021	0.031	0.065
4,4'-DDT	0.0039	0.0039	0.022	0.020	0.030	0.063
2,4'-D	70	N/A	N/A	N/A	N/A	N/A
Dantrol	5.39	5.44	30.554	28.415	41.771	88.372
1,2-Dibromoethane	0.16	2.13	11.963	11.126	16.355	34.601
m-Dichlorobenzene	473	1445	8115.946	7547.830	11095.309	23473.750
o-Dichlorobenzene	600	4336	24353.454	22648.712	33293.607	70437.494
p-Dichlorobenzene	75	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.32	0.44	2.471	2.298	3.379	7.148
1,2-Dichloroethane	5	553	3105.964	2888.547	4246.163	8983.380
1,1-Dichloroethylene	7	23916	134325.922	124923.108	183636.968	388510.865
Dichloromethane	5	5926	33283.802	30953.936	45502.286	96266.741
1,2-Dichloropropane	5	226	1269.345	1180.491	1735.322	3671.327
1,3-Dichloropropene (1,3- Dichloropropylene)	3.4	211	1185.097	1102.140	1620.146	3427.655
Dicofol	0.076	0.076	0.427	0.397	0.584	1.235

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH CONT.

<i>Parameter</i>	<i>Water and Fish Criterion (ug/L)</i>	<i>Fish Only Criterion (ug/L)</i>	<i>WLAh</i>	<i>LTAh</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Dieldrin	0.0005	0.0005	0.003	0.003	0.004	0.008
2,4-Dimethylphenol	257	571	3207.062	2982.568	4384.375	9275.786
Di-n-Butyl Phthalate	1318	3010	16905.880	15722.468	23112.029	48896.877
Dioxins/Furans (TCDD Equivalents)	8.00E-08	8.00E-08	0.000	4.18E-07	6.14E-07	1.30E-06
Endrin	0.2	0.2	1.123	1.045	1.536	3.249
Ethylbenzene	700	7143	40119.170	37310.828	54846.917	116036.675
Fluoride	4000	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0015	0.008	0.008	0.012	0.024
Heptachlor Epoxide	0.00074	0.00075	0.004	0.004	0.006	0.012
Hexachlorobenzene	0.0044	0.0045	0.025	0.024	0.035	0.073
Hexachlorobutadiene	6.5	274	1538.941	1431.215	2103.886	4451.078
Hexachlorocyclohexane (alpha)	0.05	0.093	0.522	0.486	0.714	1.511
Hexachlorocyclohexane (beta)	0.17	0.33	1.853	1.724	2.534	5.361
Hexachlorocyclohexane (gamma) (Lindane)	0.2	6.2	34.823	32.385	47.606	100.718
Hexachlorocyclopentadiene	50	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	27	62	348.227	323.852	476.062	1007.178
Hexachlorophene	0.008	0.008	0.045	0.042	0.061	0.130
Lead	1.15	3.83	121.168	112.686	165.649	350.455
Mercury	0.0122	0.0122	0.069	0.064	0.094	0.198
Methoxychlor	0.33	0.33	1.853	1.724	2.534	5.361
Methyl Ethyl Ketone	13932	1500000	8424857.143	7.84E+06	1.15E+07	2.44E+07
Nickel	332	1140	15531.910	14444.676	21233.674	44922.942
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	11	463	2600.473	2418.439	3555.106	7521.347
N-Nitrosodiethylamine	0.0037	2.1	11.795	10.969	16.125	34.114
N-Nitroso-di-n-Butylamine	0.119	4.2	23.590	21.938	32.249	68.228
Pentachlorobenzene	1	1	5.617	5.223	7.678	16.245
Pentachlorophenol	1	57	320.145	297.734	437.670	925.954
Polychlorinated Biphenyls (PCBs)	6.40E-04	6.40E-04	0.004	0.003	0.005	0.010
Pyridine	23	2014	11311.775	10519.951	15464.327	32717.046
Selenium	50	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.65	0.71	3.988	3.709	5.452	11.534
1,1,2,2-Tetrachloroethane	3.2	76	426.859	396.979	583.560	1234.606
Tetrachloroethylene	5	49	275.212	255.947	376.242	795.996
Thallium	0.75	1.5	8.425	7.835	11.518	24.367
Toluene	1000	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0053	0.030	0.028	0.041	0.086
2,4,5-TP (Silvex)	7.3	7.6	42.686	39.698	58.356	123.461
1,1,1-Trichloroethane	200	956663	5373166.073	4997044.447	7345655.338	15540808.232
1,1,2-Trichloroethane	5	295	1656.889	1540.906	2265.132	4792.219
Trichloroethylene	5	649	3645.155	3389.994	4983.291	10542.881
2,4,5-Trichlorophenol	1194	2435	13676.351	12719.007	18696.940	39556.111
TTHM (Sum of Total Trihalomethanes)	80	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	0.25	24	134.798	125.362	184.282	389.875

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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

Aquatic Life		
Parameter	70%	85%
Aldrin	1.77	2.15
Aluminum	584	710
Arsenic	388.154	471.330
Cadmium	2.558	3.106
Carbaryl	1.18	1.43
Chlordane	0.007	0.008
Chlorpyrifos	0.049	0.059
Chromium (+3)	1069.284	1298.416
Chromium (+6)	9.257	11.241
Copper	48.236	58.572
Cyanide (free)	17.712	21.507
4,4'-DDT	0.002	0.002
Demeton	0.166	0.201
Diazinon	0.100	0.122
Dicofol	32.775	39.799
Dieldrin	0.003	0.004
Diuron	115.872	140.702
Endosulfan (alpha)	0.093	0.113
Endosulfan (beta)	0.093	0.113
Endosulfan sulfate	0.093	0.113
Endrin	0.003	0.004
Guthion	0.017	0.020
Heptachlor	0.007	0.008
Hexachlorocyclohexane (Lindane)	0.132	0.161
Lead	49.466	60.066
Malathion	0.017	0.020
Mercury	1.415	1.718
Methoxychlor	0.050	0.060
Mirex	0.002	0.002
Nickel	375.371	455.807
Nonylphenol	10.925	13.266
Parathion (ethyl)	0.022	0.026
Pentachlorophenol	1.15E+01	1.40E+01
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	0.023	0.028
Selenium	8.277	10.050
Silver	6.759	8.208
Toxaphene	0.000	0.000
Tributyltin (TBT)	0.040	0.048
2,4,5 Trichlorophenol	80.188	97.371
Zinc	454.098	551.405

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

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

Table 1, 2010 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life

Table 2, 2010 Texas Surface Water Quality Standards for Human Health (except Mercury)

Table 3, 2000 Texas Surface Water Quality Standards for Human Health (Mercury)

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, June 2010

PERMIT INFORMATION

Permittee Name: Lower Colorado River Authority
 TPDES Permit No.: WQ0002105000
 Outfall No.: 003
 Prepared by: Timothy Janke
 Date: August 5, 2014

DISCHARGE INFORMATION

Intermittent Receiving Waterbody: an unnamed tributary
 Perennial Stream/River within 3 Miles: Cedar Creek
 Segment No.: 1402
 TSS (mg/L): 12
 pH (Standard Units): 7.8
 Hardness (mg/L as CaCO₃): 200
 Chloride (mg/L): 51
 Effluent Flow for Aquatic Life (MGD): 2.68
 Critical Low Flow [7Q2] (cfs) for intermittent: 0
 Critical Low Flow [7Q2] (cfs) for perennial: 0.5
 Percent Effluent for Mixing Zone: 89.24
 Percent Effluent for Zone of Initial Dilution: 100
 Effluent Flow for Human Health (MGD): 2.13
 Harmonic Mean Flow (cfs) for perennial: 0.5
 Percent Effluent for Human Health: 86.827
 Public Water Supply Use?: no

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

<i>Stream/River Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Water Effect Ratio (WER)</i>	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1 Assumed
Arsenic	5.68	-0.73	78018.52	0.52		1 Assumed
Cadmium	6.60	-1.13	240173.56	0.26		1 Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.20		1 Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.20		1 Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1 Assumed
Copper	6.02	-0.74	166496.80	0.33		1 Assumed
Lead	6.45	-0.80	386060.17	0.18		1 Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1 Assumed
Nickel	5.69	-0.57	118813.75	0.41		1 Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1 Assumed
Silver	6.38	-1.03	185542.46	0.31		1 Assumed
Zinc	6.10	-0.70	221092.05	0.27		1 Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CONVERT TISSUE-BASED CRITERIA TO WATER COLUMN CRITERIA:

Parameter	Water and Fish Criterion (ug/kg)	Fish Only Criterion (ug/kg)	BCF (l/kg)	Water and Fish Criterion (ug/L)	Fish Only Criterion (ug/L)
4,4'-DDD	166.16	166.16	53600	0.0031	0.0031
4,4'-DDE	214.4	214.4	53600	0.004	0.004
4,4'-DDT	209.04	209.04	53600	0.0039	0.0039
Dioxins/Furans	0.0004	0.0004	5000	8.00E-08	8.00E-08
Mercury					
Polychlorinated Biphenyls (PCBs)	19.96	19.96	31200	6.40E-04	6.40E-04

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	FW Acute Criterion (ug/L)	FW Chronic Criterion (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3	N/A	3.00	N/A	1.72	N/A	2.53	5.35
Aluminum	991	N/A	991	N/A	568	N/A	835	1766
Arsenic	340	150	658.316	325.454	377.215	250.600	368.382	779.366
Cadmium	16.830	0.398	65.334	1.731	37.436	1.333	1.960	4.146
Carbaryl	2	N/A	2.00	N/A	1.15	N/A	1.68	3.56
Chlordane	2.4	0.004	2.40	0.004	1.38	0.003	0.005	0.011
Chlorpyrifos	0.083	0.041	0.083	0.046	0.048	0.035	0.052	0.110
Chromium (+3)	1005.167	130.752	4965.948	723.860	2845.488	557.372	819.337	1733.427
Chromium (+6)	15.7	10.6	15.7	11.878	9.00	9.146	13.224	27.978
Copper	27.288	17.121	81.809	57.516	46.876	44.288	65.103	137.735
Cyanide (free)	45.8	10.7	45.8	11.990	26.2	9.232	13.572	28.713
4,4'-DDT	1.1	0.001	1.10	0.001	0.630	0.001	0.001	0.003
Demeton	N/A	0.1	N/A	0.112	N/A	0.086	0.127	0.268
Diazinon	0.17	0.17	0.170	0.190	0.097	0.147	0.143	0.303
Dicofol	59.3	19.8	59.3	22.188	34.0	17.084	25.114	53.132
Dieldrin	0.24	0.002	0.240	0.002	0.138	0.002	0.003	0.005
Diuron	210	70	210	78.441	120	60.399	88.787	187.842
Endosulfan I (alpha)	0.22	0.056	0.220	0.063	0.126	0.048	0.071	0.150
Endosulfan II (beta)	0.22	0.056	0.220	0.063	0.126	0.048	0.071	0.150
Endosulfan sulfate	0.22	0.056	0.220	0.063	0.126	0.048	0.071	0.150
Endrin	0.086	0.002	0.086	0.002	0.049	0.002	0.003	0.005
Guthion	N/A	0.01	N/A	0.011	N/A	0.009	0.013	0.027
Heptachlor	0.52	0.004	0.520	0.004	0.298	0.003	0.005	0.011
Hexachlorocyclohexane (Lindane)	1.126	0.08	1.13	0.090	0.645	0.069	0.101	0.215
Lead	136.142	5.305	766.849	33.486	439.404	25.784	37.903	80.190
Malathion	N/A	0.01	N/A	0.011	N/A	0.009	0.013	0.027
Mercury	2.4	1.3	2.40	1.457	1.38	1.122	1.649	3.488
Methoxychlor	N/A	0.03	N/A	0.034	N/A	0.026	0.038	0.081
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.001	0.003
Nickel	841.659	93.482	2041.666	254.110	1169.875	195.665	287.627	608.517
Nonylphenol	28	6.6	28.0	7.396	16.0	5.695	8.371	17.711
Parathion (ethyl)	0.065	0.013	0.065	0.015	0.037	0.011	0.016	0.035
Pentachlorophenol	19.492	14.954	19.492	16.758	11.169	12.903	16.418	34.735
Phenanthrene	30	30	30.0	33.617	17.2	25.885	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2	0.014	2.00	0.016	1.15	0.012	0.018	0.038
Selenium	20	5	20.0	5.603	11.5	4.314	6.342	13.417
Silver	0.8	N/A	11.464036	N/A	6.569	N/A	9.656	20.429

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE CONT.

Parameter	FW Acute Criterion (ug/L)	FW Chronic Criterion (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Toxaphene	0.78	0.0002	0.780	0.000	0.447	0.000	0.000	0.001
Tributyltin (TBT)	0.13	0.024	0.130	0.027	0.074	0.021	0.030	0.064
2,4,5 Trichlorophenol	136	64	136	71.717	77.9	55.222	81.177	171.741
Zinc	210.823	212.547	770.158	870.085	441.301	669.966	648.712	1372.445

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	Water and Fish Criterion (ug/L)	Fish Only Criterion (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile		3.8	4.377	4.070	5.983	12.658
Aldrin	0.00094	0.001	0.001	0.001	0.002	0.003
Anthracene	5569	N/A	N/A	N/A	N/A	N/A
Antimony	6	1071	1233.490	1147.146	1686.305	3567.624
Arsenic	10	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A
Benzene	5	513	590.831	549.473	807.726	1708.862
Benzidine	0.00086	0.002	0.002	0.002	0.003	0.007
Benzo(a)anthracene	0.068	0.33	0.380	0.353	0.520	1.099
Benzo(a)pyrene	0.068	0.33	0.380	0.353	0.520	1.099
Bis(chloromethyl)ether	0.0024	0.44	0.507	0.471	0.693	1.466
Bis(2-chloroethyl)ether	0.3	5.27	6.070	5.645	8.298	17.555
Bis(2-ethylhexyl)phthalate	6	41	47.220	43.915	64.555	136.576
Bromodichloromethane	10.2	322	370.853	344.894	506.994	1072.619
Bromoform	69.1	2175	2504.987	2329.638	3424.568	7245.175
Cadmium	5	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.1	29	33.400	31.062	45.661	96.602
Chlordane	0.008	0.0081	0.009	0.009	0.013	0.027
Chlorobenzene	100	5201	5990.087	5570.781	8189.048	17325.128
Chlorodibromomethane (Dibromochloromethane)	7.6	239	275.261	255.992	376.309	796.136
Chloroform	70	7143	8226.724	7650.853	11246.754	23794.153
Chromium (+6)	62	502	578.163	537.691	790.406	1672.220
Chrysene	68.13	327	376.612	350.249	514.866	1089.275
Cresols	736	1981	2281.554	2121.845	3119.112	6598.939
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0031	0.0031	0.004	0.003	0.005	0.010
4,4'-DDE	0.004	0.004	0.005	0.004	0.006	0.013
4,4'-DDT	0.0039	0.0039	0.004	0.004	0.006	0.013
2,4'-D	70	N/A	N/A	N/A	N/A	N/A
Danitrol	5.39	5.44	6.265	5.827	8.565	18.121
1,2-Dibromoethane	0.16	2.13	2.453	2.281	3.354	7.095
m-Dichlorobenzene	473	1445	1664.233	1547.737	2275.173	4813.461
o-Dichlorobenzene	600	4336	4993.851	4644.281	6827.093	14443.714
p-Dichlorobenzene	75	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.32	0.44	0.507	0.471	0.693	1.466
1,2-Dichloroethane	5	553	636.900	592.317	870.706	1842.107
1,1-Dichloroethylene	7	23916	27544.495	25616.380	37656.079	79666.943
Dichloromethane	5	5926	6825.083	6347.327	9330.571	19740.187
1,2-Dichloropropane	5	226	260.288	242.068	355.840	752.832

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH CONT.

Parameter	Water and Fish Criterion (ug/L)	Fish Only Criterion (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
1,3-Dichloropropene (1,3- Dichloropropylene)	3.4	211	243.013	226.002	332.222	702.865
Dicofol	0.076	0.076	0.088	0.081	0.120	0.253
Dieldrin	0.0005	0.0005	0.001	0.001	0.001	0.002
2,4-Dimethylphenol	257	571	657.631	611.597	899.048	1902.067
Di-n-Butyl Phthalate	1318	3010	3466.672	3224.005	4739.287	10026.656
Dioxins/Furans (TCDD Equivalents)	8.00E-08	8.00E-08	0.000	8.57E-08	1.26E-07	2.66E-07
Endrin	0.2	0.2	0.230	0.214	0.315	0.666
Ethylbenzene	700	7143	8226.724	7650.853	11246.754	23794.153
Fluoride	4000	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0015	0.002	0.002	0.002	0.005
Heptachlor Epoxide	0.00074	0.00075	0.001	0.001	0.001	0.002
Hexachlorobenzene	0.0044	0.0045	0.005	0.005	0.007	0.015
Hexachlorobutadiene	6.5	274	315.571	293.481	431.417	912.725
Hexachlorocyclohexane (alpha)	0.05	0.093	0.107	0.100	0.146	0.310
Hexachlorocyclohexane (beta)	0.17	0.33	0.380	0.353	0.520	1.099
Hexachlorocyclohexane (gamma) (Lindane)	0.2	6.2	7.141	6.641	9.762	20.653
Hexachlorocyclopentadiene	50	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	27	62	71.407	66.408	97.620	206.529
Hexachlorophene	0.008	0.008	0.009	0.009	0.013	0.027
Lead	1.15	3.83	24.846	23.107	33.968	71.863
Mercury	0.0122	0.0122	0.014	0.013	0.019	0.041
Methoxychlor	0.33	0.33	0.380	0.353	0.520	1.099
Methyl Ethyl Ketone	13932	1500000	1727577.465	1.61E+06	2.36E+06	5.00E+06
Nickel	332	1140	3184.930	2961.985	4354.117	9211.772
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	11	463	533.246	495.918	729.000	1542.306
N-Nitrosodiethylamine	0.0037	2.1	2.419	2.249	3.306	6.995
N-Nitroso-di-n-Butylamine	0.119	4.2	4.837	4.499	6.613	13.991
Pentachlorobenzene	1	1	1.152	1.071	1.575	3.331
Pentachlorophenol	1	57	65.648	61.053	89.747	189.874
Polychlorinated Biphenyls (PCBs)	6.40E-04	6.40E-04	0.001	0.001	0.001	0.002
Pyridine	23	2014	2319.561	2157.191	3171.071	6708.865
Selenium	50	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.65	0.71	0.818	0.760	1.118	2.365
1,1,2,2-Tetrachloroethane	3.2	76	87.531	81.403	119.663	253.165
Tetrachloroethylene	5	49	56.434	52.484	77.151	163.225
Thallium	0.75	1.5	1.728	1.607	2.362	4.997
Toluene	1000	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0053	0.006	0.006	0.008	0.018
2,4,5-TP (Silvex)	7.3	7.6	8.753	8.140	11.966	25.316
1,1,1-Trichloroethane	200	956663	1101806.293	1024679.853	1506279.384	3186754.343
1,1,2-Trichloroethane	5	295	339.757	315.974	464.482	982.679
Trichloroethylene	5	649	747.465	695.143	1021.860	2161.894
2,4,5-Trichlorophenol	1194	2435	2804.434	2608.124	3833.942	8111.265
TTHM (Sum of Total Trihalomethanes)	80	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	0.25	24	27.641	25.706	37.788	79.947

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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

Aquatic Life		
Parameter	70%	85%
Aldrin	1.77	2.15
Aluminum	584	710
Arsenic	257.867	313.125
Cadmium	1.372	1.666
Carbaryl	1.18	1.43
Chlordane	0.004	0.004
Chlorpyrifos	0.036	0.044
Chromium (+3)	573.536	696.437
Chromium (+6)	9.257	11.241
Copper	45.572	55.337
Cyanide (free)	9.500	11.536
4,4'-DDT	0.001	0.001
Demeton	0.089	0.108
Diazinon	0.100	0.122
Dicofol	17.580	21.347
Dieldrin	0.002	0.002
Diuron	62.151	75.469
Endosulfan (alpha)	0.050	0.060
Endosulfan (beta)	0.050	0.060
Endosulfan sulfate	0.050	0.060
Endrin	0.002	0.002
Guthion	0.009	0.011
Heptachlor	0.004	0.004
Hexachlorocyclohexane (Lindane)	0.071	0.086
Lead	26.532	32.218
Malathion	0.009	0.011
Mercury	1.154	1.402
Methoxychlor	0.027	0.032
Mirex	0.001	0.001
Nickel	201.339	244.483
Nonylphenol	5.860	7.116
Parathion (ethyl)	0.012	0.014
Pentachlorophenol	1.15E+01	1.40E+01
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	0.012	0.015
Selenium	4.439	5.391
Silver	6.759	8.208
Toxaphene	0.000	0.000
Tributyltin (TBT)	0.021	0.026
2,4,5 Trichlorophenol	56.824	69.000
Zinc	454.098	551.405

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Human Health		
<i>Parameter</i>	<i>70%</i>	<i>85%</i>
Acrylonitrile	4.188	5.086
Aldrin	0.001	0.001
Anthracene	N/A	N/A
Antimony	1180.413	1433.359
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	565.408	686.567
Benzidine	0.002	0.003
Benzo(a)anthracene	0.364	0.442
Benzo(a)pyrene	0.364	0.442
Bis(chloromethyl)ether	0.485	0.589
Bis(2-chloroethyl)ether	5.808	7.053
Bis(2-ethylhexyl)phthalate	45.189	54.872
Bromodichloromethane	354.895	430.945
Bromoform	2397.198	2910.883
Cadmium	N/A	N/A
Carbon Tetrachloride	31.963	38.812
Chlordane	0.009	0.011
Chlorobenzene	5732.333	6960.691
Chlorodibromomethane (Dibromochloromethane)	263.416	319.863
Chloroform	7872.728	9559.741
Chromium (+6)	553.284	671.845
Chrysene	360.406	437.636
Cresols	2183.379	2651.246
Cyanide (free)	N/A	N/A
4,4'-DDD	0.003	0.004
4,4'-DDE	0.004	0.005
4,4'-DDT	0.004	0.005
2,4'-D	N/A	N/A
Danitol	5.996	7.281
1,2-Dibromoethane	2.348	2.851
m-Dichlorobenzene	1592.621	1933.897
o-Dichlorobenzene	4778.965	5803.029
p-Dichlorobenzene	N/A	N/A
3,3'-Dichlorobenzidine	0.485	0.589
1,2-Dichloroethane	609.494	740.100
1,1-Dichloroethylene	26359.255	32007.667
Dichloromethane	6531.399	7930.985
1,2-Dichloropropane	249.088	302.464
1,3-Dichloropropene (1,3-Dichloropropylene)	232.556	282.389
Dicofol	0.084	0.102
Dieldrin	0.001	0.001
2,4-Dimethylphenol	629.333	764.190
Di-n-Butyl Phthalate	3317.501	4028.394
Dioxins/Furans (TCDD Equivalents)	8.82E-08	1.07E-07
Endrin	0.220	0.268
Ethylbenzene	7872.728	9559.741
Fluoride	N/A	N/A
Heptachlor	0.002	0.002
Heptachlor Epoxide	0.001	0.001

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Human Health cont.

<i>Parameter</i>	<i>70%</i>	<i>85%</i>
Hexachlorobenzene	0.005	0.006
Hexachlorobutadiene	301.992	366.704
Hexachlorocyclohexane (alpha)	0.103	0.124
Hexachlorocyclohexane (beta)	0.364	0.442
Hexachlorocyclohexane (gamma) (Lindane)	6.833	8.298
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	68.334	82.977
Hexachlorophene	0.009	0.011
Lead	23.777	28.872
Mercury	0.013	0.016
Methoxychlor	0.364	0.442
Methyl Ethyl Ketone	1.65E+06	2.01E+06
Nickel	3047.882	3701.000
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	510.300	619.650
N-Nitrosodiethylamine	2.315	2.811
N-Nitroso-di-n-Butylamine	4.629	5.621
Pentachlorobenzene	1.102	1.338
Pentachlorophenol	62.823	76.285
Polychlorinated Biphenyls (PCBs)	7.05E-04	8.56E-04
Pyridine	2219.750	2695.411
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.783	0.950
1,1,2,2-Tetrachloroethane	83.764	101.714
Tetrachloroethylene	54.006	65.579
Thallium	1.653	2.008
Toluene	N/A	N/A
Toxaphene	0.006	0.007
2,4,5-TP (Silvex)	8.376	10.171
1,1,1-Trichloroethane	1054395.569	1280337.476
1,1,2-Trichloroethane	325.137	394.809
Trichloroethylene	715.302	868.581
2,4,5-Trichlorophenol	2683.759	3258.851
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	26.452	32.120

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

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

Table 1, 2010 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life

Table 2, 2010 Texas Surface Water Quality Standards for Human Health (except Mercury)

Table 3, 2000 Texas Surface Water Quality Standards for Human Health (Mercury)

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, June 2010

PERMIT INFORMATION

Permittee Name:	Lower Colorado River Authority
TPDES Permit No.:	WQ0002105000
Outfall No.:	004
Prepared by:	Timothy Janke
Date:	August 5, 2014

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	an unnamed tributary
Perennial Stream/River within 3 Miles:	Cedar Creek
Segment No.:	1402
TSS (mg/L):	12
pH (Standard Units):	7.8
Hardness (mg/L as CaCO ₃):	200
Chloride (mg/L):	51
Effluent Flow for Aquatic Life (MGD):	0.88
Critical Low Flow [7Q2] (cfs) for Intermittent:	0
Critical Low Flow [7Q2] (cfs) for perennial:	0.5
Percent Effluent for Mixing Zone:	73.14
Percent Effluent for Zone of Initial Dilution:	100
Effluent Flow for Human Health (MGD):	0.70333
Harmonic Mean Flow (cfs) for perennial:	0.5
Percent Effluent for Human Health:	68.518
Public Water Supply Use?:	no

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

<i>Stream/River Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>		<i>Water Effect Ratio (WER)</i>	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Arsenic	5.68	-0.73	78018.52	0.52		1	Assumed
Cadmium	6.60	-1.13	240173.56	0.26		1	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.20		1	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.20		1	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Copper	6.02	-0.74	166496.80	0.33		1	Assumed
Lead	6.45	-0.80	386060.17	0.18		1	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Nickel	5.69	-0.57	118813.75	0.41		1	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Silver	6.38	-1.03	185542.46	0.31		1	Assumed
Zinc	6.10	-0.70	221092.05	0.27		1	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

CONVERT TISSUE-BASED CRITERIA TO WATER COLUMN CRITERIA:

Parameter	Water and Fish Criterion (ug/kg)	Fish Only Criterion (ug/kg)	BCF (l/kg)	Water and Fish Criterion (ug/L)	Fish Only Criterion (ug/L)
4,4'-DDD	166.16	166.16	53600	0.0031	0.0031
4,4'-DDE	214.4	214.4	53600	0.004	0.004
4,4'-DDT	209.04	209.04	53600	0.0039	0.0039
Dioxins/Furans	0.0004	0.0004	5000	8.00E-08	8.00E-08
Mercury					
Polychlorinated Biphenyls (PCBs)	19.96	19.96	31200	6.40E-04	6.40E-04

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	FW Acute Criterion (ug/L)	FW Chronic Criterion (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3	N/A	3.00	N/A	1.72	N/A	2.53	5.35
Aluminum	991	N/A	991	N/A	568	N/A	835	1766
Arsenic	340	150	658.316	397.088	377.215	305.758	449.464	950.908
Cadmium	16.830	0.398	65.334	2.112	37.436	1.627	2.391	5.059
Carbaryl	2	N/A	2.00	N/A	1.15	N/A	1.68	3.56
Chlordane	2.4	0.004	2.40	0.005	1.38	0.004	0.006	0.013
Chlorpyrifos	0.083	0.041	0.083	0.056	0.048	0.043	0.063	0.134
Chromium (+3)	1005.167	130.752	4965.948	883.185	2845.488	680.052	999.677	2114.963
Chromium (+6)	15.7	10.6	15.7	14.493	9.00	11.159	13.224	27.978
Copper	27.288	17.121	81.809	70.176	46.876	54.036	68.908	145.786
Cyanide (free)	45.8	10.7	45.8	14.629	26.2	11.265	16.559	35.033
4,4'-DDT	1.1	0.001	1.10	0.001	0.630	0.001	0.002	0.003
Demeton	N/A	0.1	N/A	0.137	N/A	0.105	0.155	0.327
Diazinon	0.17	0.17	0.170	0.232	0.097	0.179	0.143	0.303
Dicofol	59.3	19.8	59.3	27.071	34.0	20.845	30.642	64.827
Dieldrin	0.24	0.002	0.240	0.003	0.138	0.002	0.003	0.007
Diuron	210	70	210	95.706	120	73.694	108.330	229.187
Endosulfan I (alpha)	0.22	0.056	0.220	0.077	0.126	0.059	0.087	0.183
Endosulfan II (beta)	0.22	0.056	0.220	0.077	0.126	0.059	0.087	0.183
Endosulfan sulfate	0.22	0.056	0.220	0.077	0.126	0.059	0.087	0.183
Endrin	0.086	0.002	0.086	0.003	0.049	0.002	0.003	0.007
Guthion	N/A	0.01	N/A	0.014	N/A	0.011	0.015	0.033
Heptachlor	0.52	0.004	0.520	0.005	0.298	0.004	0.006	0.013
Hexachlorocyclohexane (Lindane)	1.126	0.08	1.13	0.109	0.645	0.084	0.124	0.262
Lead	136.142	5.305	766.849	40.857	439.404	31.460	46.246	97.840
Malathion	N/A	0.01	N/A	0.014	N/A	0.011	0.015	0.033
Mercury	2.4	1.3	2.40	1.777	1.38	1.369	2.012	4.256
Methoxychlor	N/A	0.03	N/A	0.041	N/A	0.032	0.046	0.098
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.002	0.003
Nickel	841.659	93.482	2041.666	310.041	1169.875	238.731	350.935	742.455
Nonylphenol	28	6.6	28.0	9.024	16.0	6.948	10.214	21.609
Parathion (ethyl)	0.065	0.013	0.065	0.018	0.037	0.014	0.020	0.043
Pentachlorophenol	19.492	14.954	19.492	20.446	11.169	15.743	16.418	34.735
Phenanthrene	30	30	30.0	41.017	17.2	31.583	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2	0.014	2.00	0.019	1.15	0.015	0.022	0.046
Selenium	20	5	20.0	6.836	11.5	5.264	7.738	16.370
Silver	0.8	N/A	11.4640364	N/A	6.569	N/A	9.656	20.429

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE CONT.

<i>Parameter</i>	<i>FW Acute Criterion (ug/L)</i>	<i>FW Chronic Criterion (ug/L)</i>	<i>WLAa</i>	<i>WLAc</i>	<i>LTAa</i>	<i>LTAc</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Toxaphene	0.78	0.0002	0.780	0.000	0.447	0.000	0.000	0.001
Tributyltin (TBT)	0.13	0.024	0.130	0.033	0.074	0.025	0.037	0.079
2,4,5 Trichlorophenol	136	64	136	87.503	77.9	67.377	99.044	209.542
Zinc	210.823	212.547	770.158	1061.595	441.301	817.428	648.712	1372.445

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Water and Fish Criterion (ug/L)</i>	<i>Fish Only Criterion (ug/L)</i>	<i>WLAh</i>	<i>LTAh</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Acrylonitrile	0.8	3.8	5.546	5.158	7.582	16.041
Aldrin	0.00094	0.001	0.001	0.001	0.002	0.004
Anthracene	5569	N/A	N/A	N/A	N/A	N/A
Antimony	6	1071	1563.094	1453.677	2136.906	4520.936
Arsenic	10	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A
Benzene	5	513	748.709	696.299	1023.560	2165.491
Benzidine	0.00086	0.002	0.003	0.003	0.004	0.008
Benzo(a)anthracene	0.068	0.33	0.482	0.448	0.658	1.393
Benzo(a)pyrene	0.068	0.33	0.482	0.448	0.658	1.393
Bis(chloromethyl)ether	0.0024	0.44	0.642	0.597	0.878	1.857
Bis(2-chloroethyl)ether	0.3	5.27	7.691	7.153	10.515	22.246
Bis(2-ethylhexyl)phthalate	6	41	59.838	55.650	81.805	173.070
Bromodichloromethane	10.2	322	469.950	437.053	642.468	1359.236
Bromoform	69.1	2175	3174.350	2952.146	4339.654	9181.173
Cadmium	5	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.1	29	42.325	39.362	57.862	122.416
Chlordane	0.008	0.0081	0.012	0.011	0.016	0.034
Chlorobenzene	100	5201	7590.711	7059.361	10377.260	21954.612
Chlorodibromomethane (Dibromochloromethane)	7.6	239	348.814	324.397	476.863	1008.874
Chloroform	70	7143	10425.004	9695.254	14252.023	30152.239
Chromium (+6)	62	502	732.655	681.369	1001.612	2119.057
Chrysene	68.13	327	477.247	443.840	652.445	1380.342
Cresols	736	1981	2891.213	2688.828	3952.577	8362.255
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0031	0.0031	0.005	0.004	0.006	0.013
4,4'-DDE	0.004	0.004	0.006	0.005	0.008	0.017
4,4'-DDT	0.0039	0.0039	0.006	0.005	0.008	0.016
2,4'-D	70	N/A	N/A	N/A	N/A	N/A
Danitrol	5.39	5.44	7.940	7.384	10.854	22.963
1,2-Dibromoethane	0.16	2.13	3.109	2.891	4.250	8.991
m-Dichlorobenzene	473	1445	2108.936	1961.311	2883.127	6099.676
o-Dichlorobenzene	600	4336	6328.268	5885.289	8651.375	18303.249
p-Dichlorobenzene	75	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.32	0.44	0.642	0.597	0.878	1.857
1,2-Dichloroethane	5	553	807.088	750.592	1103.370	2334.340
1,1-Dichloroethylene	7	23916	34904.717	32461.387	47718.239	100954.914
Dichloromethane	5	5926	8648.827	8043.409	11823.812	25015.003
1,2-Dichloropropane	5	226	329.841	306.752	450.925	953.998
1,3-Dichloropropene (1,3-Dichloropropylene)	3.4	211	307.948	286.392	420.996	890.679

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

HUMAN HEALTH CONT.

<i>Parameter</i>	<i>Water and Fish Criterion (ug/L)</i>	<i>Fish Only Criterion (ug/L)</i>	<i>WLAh</i>	<i>LTAh</i>	<i>Daily Avg. (ug/L)</i>	<i>Daily Max. (ug/L)</i>
Dicofol	0.076	0.076	0.111	0.103	0.152	0.321
Dieldrin	0.0005	0.0005	0.001	0.001	0.001	0.002
2,4-Dimethylphenol	257	571	833.358	775.023	1139.284	2410.322
Di-n-Butyl Phthalate	1318	3010	4393.009	4085.498	6005.682	12705.899
Dioxins/Furans (TCDD Equivalents)	8.00E-08	8.00E-08	0.000	1.09E-07	1.60E-07	3.38E-07
Endrin	0.2	0.2	0.292	0.271	0.399	0.844
Ethylbenzene	700	7143	10425.004	9695.254	14252.023	30152.239
Fluoride	4000	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0015	0.002	0.002	0.003	0.006
Heptachlor Epoxide	0.00074	0.00075	0.001	0.001	0.001	0.003
Hexachlorobenzene	0.0044	0.0045	0.007	0.006	0.009	0.019
Hexachlorobutadiene	6.5	274	399.895	371.902	546.697	1156.617
Hexachlorocyclohexane (alpha)	0.05	0.093	0.136	0.126	0.186	0.393
Hexachlorocyclohexane (beta)	0.17	0.33	0.482	0.448	0.658	1.393
Hexachlorocyclohexane (gamma) (Lindane)	0.2	6.2	9.049	8.415	12.371	26.172
Hexachlorocyclopentadiene	50	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	27	62	90.487	84.153	123.705	261.716
Hexachlorophene	0.008	0.008	0.012	0.011	0.016	0.034
Lead	1.15	3.83	31.486	29.282	43.044	91.066
Mercury	0.0122	0.0122	0.018	0.017	0.024	0.051
Methoxychlor	0.33	0.33	0.482	0.448	0.658	1.393
Methyl Ethyl Ketone	13932	1500000	2189207.058	2.04E+06	2.99E+06	6.33E+06
Nickel	332	1140	4035.981	3753.463	5517.590	11673.269
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	11	463	675.735	628.434	923.798	1954.429
N-Nitrosodiethylamine	0.0037	2.1	3.065	2.850	4.190	8.865
N-Nitroso-di-n-Butylamine	0.119	4.2	6.130	5.701	8.380	17.729
Pentachlorobenzene	1	1	1.459	1.357	1.995	4.221
Pentachlorophenol	1	57	83.190	77.367	113.729	240.610
Polychlorinated Biphenyls (PCBs)	6.40E-04	6.40E-04	0.001	0.001	0.001	0.003
Pyridine	23	2014	2939.375	2733.619	4018.420	8501.555
Selenium	50	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.65	0.71	1.036	0.964	1.417	2.997
1,1,2,2-Tetrachloroethane	3.2	76	110.920	103.155	151.638	320.813
Tetrachloroethylene	5	49	71.514	66.508	97.767	206.840
Thallium	0.75	1.5	2.189	2.036	2.993	6.332
Toluene	1000	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0053	0.008	0.007	0.011	0.022
2,4,5-TP (Silvex)	7.3	7.6	11.092	10.316	15.164	32.081
1,1,1-Trichloroethane	200	956663	1396222.261	1298486.703	1908775.453	4038293.646
1,1,2-Trichloroethane	5	295	430.544	400.406	588.597	1245.263
Trichloroethylene	5	649	947.197	880.893	1294.913	2739.578
2,4,5-Trichlorophenol	1194	2435	3553.813	3305.046	4858.417	10278.693
TTHM (Sum of Total Trihalomethanes)	80	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	0.25	24	35.027	32.575	47.886	101.309

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

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

Aquatic Life		
Parameter	70%	85%
Aldrin	1.77	2.15
Aluminum	584	710
Arsenic	314.625	382.045
Cadmium	1.674	2.032
Carbaryl	1.18	1.43
Chlordane	0.004	0.005
Chlorpyrifos	0.044	0.054
Chromium (+3)	699.774	849.725
Chromium (+6)	9.257	11.241
Copper	48.236	58.572
Cyanide (free)	11.591	14.075
4,4'-DDT	0.001	0.001
Demeton	0.108	0.132
Diazinon	0.100	0.122
Dicofol	21.449	26.046
Dieldrin	0.002	0.003
Diuron	75.831	92.080
Endosulfan (alpha)	0.061	0.074
Endosulfan (beta)	0.061	0.074
Endosulfan sulfate	0.061	0.074
Endrin	0.002	0.003
Guthion	0.011	0.013
Heptachlor	0.004	0.005
Hexachlorocyclohexane (Lindane)	0.087	0.105
Lead	32.372	39.309
Malathion	0.011	0.013
Mercury	1.408	1.710
Methoxychlor	0.032	0.039
Mirex	0.001	0.001
Nickel	245.655	298.295
Nonylphenol	7.150	8.682
Parathion (ethyl)	0.014	0.017
Pentachlorophenol	1.15E+01	1.40E+01
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	0.015	0.018
Selenium	5.416	6.577
Silver	6.759	8.208
Toxaphene	0.000	0.000
Tributyltin (TBT)	0.026	0.032
2,4,5 Trichlorophenol	69.331	84.188
Zinc	454.098	551.405

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Human Health		
<i>Parameter</i>	<i>70%</i>	<i>85%</i>
Acrylonitrile	5.307	6.445
Aldrin	0.001	0.002
Anthracene	N/A	N/A
Antimony	1495.834	1816.370
Arsenic	N/A	N/A
Barlum	N/A	N/A
Benzene	716.492	870.026
Benzidine	0.003	0.003
Benzo(a)anthracene	0.461	0.560
Benzo(a)pyrene	0.461	0.560
Bis(chloromethyl)ether	0.615	0.746
Bis(2-chloroethyl)ether	7.360	8.938
Bis(2-ethylhexyl)phthalate	57.263	69.534
Bromodichloromethane	449.728	546.098
Bromoform	3037.758	3688.706
Cadmium	N/A	N/A
Carbon Tetrachloride	40.503	49.183
Chlordane	0.011	0.014
Chlorobenzene	7264.082	8820.671
Chlorodibromomethane (Dibromochloromethane)	333.804	405.334
Chloroform	9976.416	12114.220
Chromium (+6)	701.129	851.370
Chrysene	456.711	554.578
Cresols	2766.804	3359.690
Cyanide (free)	N/A	N/A
4,4'-DDD	0.004	0.005
4,4'-DDE	0.006	0.007
4,4'-DDT	0.005	0.007
2,4'-D	N/A	N/A
Danitol	7.598	9.226
1,2-Dibromoethane	2.975	3.612
m-Dichlorobenzene	2018.189	2450.658
o-Dichlorobenzene	6055.963	7353.669
p-Dichlorobenzene	N/A	N/A
3,3'-Dichlorobenzidine	0.615	0.746
1,2-Dichloroethane	772.359	937.864
1,1-Dichloroethylene	33402.767	40560.503
Dichloromethane	8276.668	10050.240
1,2-Dichloropropane	315.647	383.286
1,3-Dichloropropene (1,3- Dichloropropylene)	294.697	357.847
Dicofol	0.106	0.129
Dieldrin	0.001	0.001
2,4-Dimethylphenol	797.499	968.391
Di-n-Butyl Phthalate	4203.978	5104.830
Dioxins/Furans (TCDD Equivalents)	1.12E-07	1.36E-07
Endrin	0.279	0.339
Ethylbenzene	9976.416	12114.220
Fluoride	N/A	N/A
Heptachlor	0.002	0.003
Heptachlor Epoxide	0.001	0.001
Hexachlorobenzene	0.006	0.008
Hexachlorobutadiene	382.688	464.692
Hexachlorocyclohexane (alpha)	0.130	0.158

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Human Health cont.

<i>Parameter</i>	<i>70%</i>	<i>85%</i>
Hexachlorocyclohexane (beta)	0.461	0.560
Hexachlorocyclohexane (gamma) (Lindane)	8.659	10.515
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	86.594	105.149
Hexachlorophene	0.011	0.014
Lead	30.131	36.587
Mercury	0.017	0.021
Methoxychlor	0.461	0.560
Methyl Ethyl Ketone	2.10E+06	2.54E+06
Nickel	3862.313	4689.952
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	646.658	785.228
N-Nitrosodiethylamine	2.933	3.562
N-Nitroso-di-n-Butylamine	5.866	7.123
Pentachlorobenzene	1.397	1.696
Pentachlorophenol	79.610	96.670
Polychlorinated Biphenyls (PCBs)	8.94E-04	1.08E-03
Pyridine	2812.894	3415.657
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.992	1.204
1,1,2,2-Tetrachloroethane	106.147	128.893
Tetrachloroethylene	68.437	83.102
Thallium	2.095	2.544
Toluene	N/A	N/A
Toxaphene	0.007	0.009
2,4,5-TP (Silvex)	10.615	12.889
1,1,1-Trichloroethane	1336142.817	1622459.135
1,1,2-Trichloroethane	412.018	500.307
Trichloroethylene	906.439	1100.676
2,4,5-Trichlorophenol	3400.892	4129.655
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	33.520	40.703

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix C
TDS, Chloride, and Sulfate Screening Calculations

Menu 4 - Discharge to a Lake

Applicant Name: Lower Colorado River Authority
Permit Number, Outfall: WQ0002105000, Outfall 001
Segment Number: 1402

Enter values needed for screening:		Data Source	
EF - Effluent <u>fraction</u> at edge of human health MZ	<u>1</u> decimal fraction		Critical conditions memo
CA - TDS - ambient segment concentration	<u>336</u> mg/L		2010 IP, Appendix D
CA - chloride - ambient segment concentration	<u>51</u> mg/L		2010 IP, Appendix D
CA - sulfate - ambient segment concentration	<u>41</u> mg/L		2010 IP, Appendix D
CC - TDS - segment criterion	<u>500</u> mg/L		2010 TSWQS, Appendix A
CC - chloride - segment criterion	<u>100</u> mg/L		2010 TSWQS, Appendix A
CC - sulfate - segment criterion	<u>100</u> mg/L		2010 TSWQS, Appendix A
CE - TDS - average effluent concentration	<u>846.25</u> mg/L		Permit application
CE - chloride - average effluent concentration	<u>230.75</u> mg/L		Permit application
CE - sulfate - average effluent concentration	<u>116.5</u> mg/L		Permit application

Screening Equation

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

Permit Limit Calculations

TDS			
Calculate the WLA	WLA = [CC - (1-EF)(CA)]/EF		500.00
Calculate the LTA	LTA = WLA * 0.93		465.00
Calculate the daily average	Daily Avg. = LTA * 1.47		683.55
Calculate the daily maximum	Daily Max. = LTA * 3.11		1446.15
Calculate 70% of the daily average	70% of Daily Avg. =		478.49
Calculate 85% of the daily average	85% of Daily Avg. =		581.02
No permit limitations needed if:	846.25	≤	478.49
Reporting needed if:	846.25	>	478.49 but ≤ 581.02
Permit limits may be needed if:	846.25	>	581.02

Permit limits may be needed for TDS

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Chloride

Calculate the WLA	$WLA = [CC - (1-EF)(CA)]/EF$		100.00	
Calculate the LTA	$LTA = WLA * 0.93$		93.00	
Calculate the daily average	$Daily\ Avg. = LTA * 1.47$		136.71	
Calculate the daily maximum	$Daily\ Max. = LTA * 3.11$		289.23	
Calculate 70% of the daily average	70% of Daily Avg. =		95.70	
Calculate 85% of the daily average	85% of Daily Avg. =		116.20	
No permit limitations needed if:	230.75	≤	95.70	
Reporting needed if:	230.75	>	95.70	but ≤ 116.20
Permit limits may be needed if:	230.75	>	116.20	

Permit limits may be needed for chloride

Sulfate

Calculate the WLA	$WLA = [CC - (1-EF)(CA)]/EF$		100.00	
Calculate the LTA	$LTA = WLA * 0.93$		93.00	
Calculate the daily average	$Daily\ Avg. = LTA * 1.47$		136.71	
Calculate the daily maximum	$Daily\ Max. = LTA * 3.11$		289.23	
Calculate 70% of the daily average	70% of Daily Avg. =		95.70	
Calculate 85% of the daily average	85% of Daily Avg. =		116.20	
No permit limitations needed if:	116.5	≤	95.70	
Reporting needed if:	116.5	>	95.70	but ≤ 116.20
Permit limits may be needed if:	116.5	>	116.20	

Permit limits may be needed for sulfate

Based on the results of this screening, the LCRA has requested a once-through cooling water exemption for this discharge into Cedar Creek Reservoir and submitted data and statistical analysis to support the request. Below are the results of this statistical analysis which demonstrate that no measureable increase in TDS, chloride, or sulfate occurs through the once-through cooling water discharged via Outfall 001 into Cedar Creek Reservoir:

<i>Chloride</i>	<i>Intake</i>	<i>Discharge</i>
Mean	213.258	213.688
Variance	141.321	962.722
Observations	90	90
Hypothesized Mean Difference	0	
df	115	
t Stat	-0.123	
P(T<=t) two-tail	0.903	
t Critical two-tail	1.981	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .903 indicates no difference between the intake and discharge.

<i>Sulfate</i>	<i>Intake</i>	<i>Discharge</i>
Mean	90.023	88.715
Variance	167.680	46.129
Observations	90	90
Hypothesized Mean Difference	0	
df	135	
t Stat	0.849	
P(T<=t) two-tail	0.398	
t Critical two-tail	1.978	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .398 indicates no difference between the intake and discharge.

t-Test: Two-Sample Assuming Unequal Variances

<i>TDS</i>	<i>Intake</i>	<i>Discharge</i>
Mean	694.198	695.961
Variance	740.141	1007.291
Observations	54	54
Hypothesized Mean Difference	0	
df	104	
t Stat	-0.310	
P(T<=t) two-tail	0.757	
t Critical two-tail	1.983	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .757 indicates no difference between the intake and discharge.

Midpoint comparisons

t-Test: Two-Sample Assuming Unequal Variances

<i>Chloride</i>	<i>Intake</i>	<i>Midpoint</i>
Mean	213.258	212.645
Variance	141.321	134.519
Observations	90	90

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<i>Chloride (Continued)</i>	<i>Intake</i>	<i>Midpoint</i>
Hypothesized Mean Difference	0	
df	178	
t Stat	0.350	
P(T<=t) two-tail	0.727	
t Critical two-tail	1.973	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .727 indicates no difference between the intake and discharge.

t-Test: Two-Sample Assuming Unequal Variances

<i>Chloride</i>	<i>Discharge</i>	<i>Midpoint</i>
Mean	213.688	212.645
Variance	962.722	134.519
Observations	90	90
Hypothesized Mean Difference	0	
df	113	
t Stat	0.299	
P(T<=t) two-tail	0.766	
t Critical two-tail	1.981	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .766 indicates no difference between the intake and discharge.

t-Test: Two-Sample Assuming Unequal Variances

<i>Sulfate</i>	<i>Intake</i>	<i>Midpoint</i>
Mean	90.023	88.860
Variance	167.680	39.729
Observations	90	90
Hypothesized Mean Difference	0	
df	129	
t Stat	0.767	
P(T<=t) two-tail	0.445	
t Critical two-tail	1.979	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .445 indicates no difference between the intake and discharge.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

t-Test: Two-Sample Assuming Unequal Variances

<i>Sulfate</i>	<i>Discharge</i>	<i>Midpoint</i>
Mean	88.715	88.860
Variance	46.129	39.729
Observations	90	90
Hypothesized Mean Difference	0	
df	177	
t Stat	-0.148	
P(T<=t) two-tail	0.883	
t Critical two-tail	1.973	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .883 indicates no difference between the intake and discharge.

t-Test: Two-Sample Assuming Unequal Variances

<i>TDS</i>	<i>Intake</i>	<i>Midpoint</i>
Mean	694.198	692.754
Variance	740.141	742.335
Observations	54	54
Hypothesized Mean Difference	0	
df	106	
t Stat	0.276	
P(T<=t) two-tail	0.783	
t Critical two-tail	1.983	

A p value of < .05 is necessary to determine a significant difference between the data.

The p value of .783 indicates no difference between the intake and discharge.

t-Test: Two-Sample Assuming Unequal Variances

<i>TDS</i>	<i>Discharge</i>	<i>Midpoint</i>
Mean	695.961	692.754
Variance	1007.291	742.335
Observations	54	54
Hypothesized Mean Difference	0	
df	104	
t Stat	0.563	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<i>TDS (Continued)</i>	<i>Discharge</i>	<i>Midpoint</i>
P(T<=t) two-tail	0.574	
t Critical two-tail	1.983	

A p value of < .05 is necessary to determine a significant difference between the data. The p value of .574 indicates no difference between the intake and discharge.

Since the source water for the discharge is from the same water body, Cedar Creek Reservoir, the Lower Colorado River Authority has demonstrated (through the use of statistical analysis) that the TDS, chloride, and sulfate of the receiving water body will not be statistically elevated; therefore, it meets the requirements for a once-through cooling water exemption, in accordance with 30 TAC §307.8(d).

Based on the above TDS, chloride and sulfate screening and approval for the once-through cooling water exemption, monitoring and reporting requirements for TDS, chloride, and sulfate have been included in the draft permit at Outfall 001, in accordance with 30 TAC §307.8(d).

The following reporting requirements at Outfall 001 are proposed in the draft permit for the protection of water quality:

Parameter	Daily Average mg/L	Daily Maximum mg/L
Total Dissolved Solids	Report	Report
Chloride	Report	Report
Sulfate	Report	Report

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Menu 2 - Discharge to an Intermittent Stream within 3 Miles of a Perennial Stream

Applicant Name: Lower Colorado River Authority
Permit Number, Outfall: WQ0002105000, Outfall 002
Segment Number: 1402

Enter values needed for screening:	Data Source		
TDS CC - segment criterion - TDS	<u>500</u>	mg/L	2010 TSWQS, Appendix A
Cl CC - segment criterion - chloride	<u>100</u>	mg/L	2010 TSWQS, Appendix A
SO ₄ CC - segment criterion - sulfate	<u>100</u>	mg/L	2010 TSWQS, Appendix A
TDS CE - average effluent concentration - TDS	<u>786.75</u>	mg/L	Permit application
Cl CE - average effluent concentration - chloride	<u>218</u>	mg/L	Permit application
SO ₄ CE - average effluent concentration - sulfate	<u>110.88</u>	mg/L	Permit application

TDS Screening

The TDS screening value is determined by first calculating an initial TDS concentration, C_{TDS}, as follows:

$$C_{TDS} = 2500 \text{ mg/L}$$

The next step is to use the initial C_{TDS} to set the actual TDS screening value, TDS C_{sv}, using the following table:

If C _{TDS}	=	Then TDS C _{sv}
≤ 2,500 mg/L	=	2,500 mg/L
> 2,500 mg/L	=	C _{TDS}
> 6,000 mg/L	=	6,000 mg/L

Some specific types of intermittent streams have alternative screening values (C_{sv}):

Specific Type of Intermittent Stream	If C _{TDS} is	Default C _{sv} =
Dry except for short-term flow in immediate response to rainfall.	< 4,000 mg/L	4,000 mg/L
	≥ 4,000 mg/L	C _{TDS}
Constructed ditch conveying stormwater and wastewater, considered water in the state.	< 4,000 mg/L	4,000 mg/L
	≥ 4,000 mg/L	C _{TDS}
Within 3 miles of tidal waters.	—	6,000 mg/L

Once TDS C_{sv} is established, the next step is to compare the effluent TDS concentration, TDS CE, to the screening value. Control measures, which may include effluent limitations, are considered for TDS if the effluent TDS is greater than the screening value.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Values needed for Screening		Data Source
TDS CE - average effluent TDS concentration	786.75 mg/L	Permit application
TDS Csv - TDS screening value	2500 mg/L	Determined above

No control measures needed if: 786.75 ≤ 2500
 Consider control measures if: 786.75 > 2500

No control measures needed for TDS

When effluent limitations are established in the permit, the daily average TDS limit is typically set equal to the TDS screening value. The daily maximum TDS limit is calculated as 2.12 times the daily average limit.

Total Dissolved Solids	
Daily Average	= N/A mg/L
Daily Maximum	= N/A mg/L

Chloride Screening

If TDS limits are necessary or there are concerns about chloride, additional screening can be performed for chloride. First calculate the screening value for chloride, Cl Csv, as follows:

$$Cl\ Csv = (TDS\ Csv / TDS\ CC) * Cl\ CC$$

Where:	Cl Csv = chloride screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	Cl CC - chloride criterion at the first downstream segment

Cl Csv = 500 mg/L

Once the Cl Csv is established, the next step is to compare the effluent chloride concentration, Cl CE, to the screening value. Control measures, which may include effluent limitations, are considered for chloride if the effluent chloride is greater than the screening value.

Values needed for Screening		Data Source
Cl CE - average effluent chloride concentration	218 mg/L	Permit application
Cl Csv - chloride screening value	500 mg/L	Determined above

No control measures needed if: 218 ≤ 500
 Consider control measures if: 218 > 500

No control measures needed for chloride

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

When effluent limitations are established in the permit, the daily average chloride limit is typically set equal to the chloride screening value. The daily maximum chloride limit is calculated as 2.12 times the daily average limit.

Chloride			
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Sulfate Screening

If TDS limits are necessary or there are concerns about sulfate, additional screening can be performed for sulfate. First calculate the screening value for sulfate, SO₄ C_{sv}, as follows:

$$SO_4 C_{sv} = (TDS C_{sv} / TDS CC) * SO_4 CC$$

Where:	SO ₄ C _{sv} = sulfate screening value
	TDS C _{sv} = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	SO ₄ CC - sulfate criterion at the first downstream segment

SO₄ C_{sv} = **500** mg/L

Once the SO₄ C_{sv} is established, the next step is to compare the effluent sulfate concentration, SO₄ CE, to the screening value. Control measures, which may include effluent limitations, are considered for sulfate if the effluent sulfate is greater than the screening value.

Values needed for Screening		Data Source
SO ₄ CE - average effluent sulfate concentration	110.88 mg/L	Permit application
SO ₄ C _{sv} - sulfate screening value	500 mg/L	Determined above

No control measures needed if: 110.88 ≤ 500
 Consider control measures if: 110.88 > 500

No control measures needed for sulfate

When effluent limitations are established in the permit, the daily average sulfate limit is typically set equal to the sulfate screening value. The daily maximum sulfate limit is calculated as 2.12 times the daily average limit.

Sulfate			
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Menu 2 - Discharge to an Intermittent Stream within 3 Miles of a Perennial Stream

Screen the Perennial Stream

Applicant Name:	Lower Colorado River Authority
Permit Number, Outfall:	WQ0002105000, Outfall 002
Segment Number:	1402

Enter values needed for screening:			Data Source (edit if different)
QE - Average effluent flow	<u>0.0758</u>	MGD	2-year average of daily average
QS - Perennial stream harmonic mean flow	<u>0.50</u>	cfs	Critical conditions memo
QE - Average effluent flow	<u>0.1173</u>	cfs	Calculated
CA - TDS - ambient segment concentration	<u>336</u>	mg/L	2010 IP, Appendix D
CA - chloride - ambient segment concentration	<u>51</u>	mg/L	2010 IP, Appendix D
CA - sulfate - ambient segment concentration	<u>41</u>	mg/L	2010 IP, Appendix D
CC - TDS - segment criterion	<u>500</u>	mg/L	2010 TSWQS, Appendix A
CC - chloride - segment criterion	<u>100</u>	mg/L	2010 TSWQS, Appendix A
CC - sulfate - segment criterion	<u>100</u>	mg/L	2010 TSWQS, Appendix A
CE - TDS - average effluent concentration	<u>786.75</u>	mg/L	Permit application
CE - chloride - average effluent concentration	<u>218</u>	mg/L	Permit application
CE - sulfate - average effluent concentration	<u>110.88</u>	mg/L	Permit application

Screening Equation

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

Permit Limit Calculations

TDS

Calculate the WLA	WLA = $[(CC)(QE+QS) - (QS)(CA)]/QE$	1199.18
Calculate the LTA	LTA = WLA * 0.93	1115.24
Calculate the daily average	Daily Avg. = LTA * 1.47	1639.40
Calculate the daily maximum	Daily Max. = LTA * 3.11	3468.39
Calculate 70% of the daily average	70% of Daily Avg. =	1147.58
Calculate 85% of the daily average	85% of Daily Avg. =	1393.49
No permit limitations needed if:	786.75 ≤	1147.58
Reporting needed if:	786.75 >	1147.58 but ≤ 1393.49
Permit limits may be needed if:	786.75 >	1393.49

No permit limitations needed for TDS

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Chloride

Calculate the WLA	$WLA = [CC(QE+QS) - (QS)(CA)]/QE$				308.90
Calculate the LTA	$LTA = WLA * 0.93$				287.28
Calculate the daily average	$Daily\ Avg. = LTA * 1.47$				422.30
Calculate the daily maximum	$Daily\ Max. = LTA * 3.11$				893.44
Calculate 70% of the daily average	70% of Daily Avg. =				295.61
Calculate 85% of the daily average	85% of Daily Avg. =				358.95
No permit limitations needed if:	218	≤	295.61		
Reporting needed if:	218	>	295.61	but ≤	358.95
Permit limits may be needed if:	218	>	358.95		

No permit limitations needed for chloride

Sulfate

Calculate the WLA	$WLA = [CC(QE+QS) - (QS)(CA)]/QE$				351.53
Calculate the LTA	$LTA = WLA * 0.93$				326.93
Calculate the daily average	$Daily\ Avg. = LTA * 1.47$				480.58
Calculate the daily maximum	$Daily\ Max. = LTA * 3.11$				1016.74
Calculate 70% of the daily average	70% of Daily Avg. =				336.41
Calculate 85% of the daily average	85% of Daily Avg. =				408.50
No permit limitations needed if:	110.88	≤	336.41		
Reporting needed if:	110.88	>	336.41	but ≤	408.50
Permit limits may be needed if:	110.88	>	408.50		

No permit limitations needed for sulfate

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix D
SUMMARY OF FINAL EFFLUENT LIMITATIONS

Outfall Number 001

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – PHASE I

1. During the period beginning upon date of permit issuance and lasting until Unit 4 start-up, the permittee is authorized to discharge once-through cooling water and previously monitored effluent (PME) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1,165 million gallons per day (MGD). The daily maximum flow shall not exceed 1,165 MGD.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum lbs/day	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	1,165 MGD	1,165 MGD	N/A	1/day	Calculated
Temperature (*1)	Report, °F	112 °F	N/A	Continuous	Record
Total Residual Chlorine (*2)	N/A	162	N/A	1/week (*3)	Grab
Total Dissolved Solids	Report	N/A	Report	1/month	Grab
Chloride	Report	N/A	Report	1/month	Grab
Sulfate	Report	N/A	Report	1/month	Grab

- (*1) See Other Requirement No. 3.A and 14.
- (*2) See Other Requirement No. 3.B.
- (*3) Samples shall be representative of periods of chlorination.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
3. Effluent monitoring samples shall be taken at the following location: At Outfall 001, where once-through cooling water discharges into the canal which discharges into Cedar Creek Reservoir.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS – PHASE II

Outfall Number 001

1. During the period beginning upon date of Unit 4 start-up and lasting through the date of permit expiration, the permittee is authorized to discharge once-through cooling water and previously monitored effluent (PME) subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1,509 million gallons per day (MGD). The daily maximum flow shall not exceed 1,509 MGD.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum lbs/day	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	1,509 MGD	1,509 MGD	N/A	1/day	Calculated
Temperature (*1)	Report, °F	112 °F	N/A	Continuous	Record
Total Residual Chlorine (*2)	N/A	210	N/A	1/week (*3)	Grab
Total Dissolved Solids	Report	N/A	N/A	1/month	Grab
Chloride	Report	N/A	N/A	1/month	Grab
Sulfate	Report	N/A	N/A	1/month	Grab

(*1) See Other Requirement No. 3.A and 14.

(*2) See Other Requirement No. 3.B.

(*3) Samples shall be representative of periods of chlorination.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
3. Effluent monitoring samples shall be taken at the following location: At Outfall 001, where once-through cooling water discharges into the canal which discharges into Cedar Creek Reservoir.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 201

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1) subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*2) Estimate
Total Suspended Solids	30	100	100	1/week (*2) Grab
Oil and Grease	15	20	20	1/week (*2) Grab

(*1) See Other Requirement No. 3.D.
 (*2) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2) 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 201, where low volume waste sources are discharged from the waste treatment facility prior to mixing with once-through cooling water.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 301

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1), coal pile runoff (*2), truck wash water, and stormwater from the Coal Pile Runoff Pond subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*3)	Estimate
Total Suspended Solids	30	50	50	1/week (*3)	Grab
Oil and Grease	15	20	20	1/week (*3)	Grab
Selenium, Total	0.007	0.015	0.015	1/week (*3)	Grab

- (*1) See Other Requirement No. 3.D.
- (*2) See Other Requirement No. 3.G.
- (*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3) 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 301, where wastewater is discharged from the Coal Pile Runoff Pond prior to mixing with once-through cooling water.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 002

1. During the period beginning upon date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge cooling water drained from the condensers and other cooling equipment during maintenance periods subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 2.5 million gallons per day (MGD).

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	2.5 MGD	Report, MGD	N/A	1/day (*2)	Calculated
Temperature (*1) (*4)	N/A	100 °F	N/A	1/day (*2)	In-situ
Total Residual Chlorine (*3)	N/A	0.2	N/A	1/week (*2)	Grab

- (*1) See Other Requirement No. 3-A and 14.
 - (*2) When discharge occurs. Since more than one source is associated with this waste category, flow-weighted grab samples shall be combined into one sample for analysis and reporting purposes.
 - (*3) See Other Requirement No. 3-B.
 - (*4) When discharging non-contact cooling water from condensers or from circulating water pipelines, the permittee shall monitor temperature where the effluent discharges from the west plant ditch and prior to entering the unnamed tributary of Cedar Creek.
2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week by grab sample when discharge occurs. The highest and lowest pH values shall be reported for pH.
 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 002, where cooling water drained from the condensers and other equipment discharges prior to entering the west plant drainage ditch flowing into Cedar Creek (*4).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 003

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1), coal pile runoff (*2), truck wash water, previously monitored effluent (PME), and stormwater from the Coal Pile Runoff Pond subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*3) Estimate
Total Suspended Solids	30	50	50	1/week (*3) Grab
Oil and Grease	15	20	20	1/week (*3) Grab
Selenium, Total	0.007	0.015	0.015	1/week (*3) Grab

- (*1) See Other Requirement No. 3.D.
- (*2) See Other Requirement No. 3.G.
- (*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3) 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 003, at the coal run-off spillway or pumped to main reservoir prior to mixing with any other waters.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 103

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge treated domestic wastewater subject to the following effluent limitations:

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day	Estimate (*1)
Biochemical Oxygen Demand (5-day)	N/A	65	65	1/week	Grab (*2)
Total Suspended Solids	N/A	65	65	1/week	Grab (*2)
<i>E. coli</i>	Report (*4)(*5)	Report (*4)(*5)	N/A	1/week	Grab (*2)
<i>E. coli</i>	126 (*4)(*6)	399 (*4)(*6)	N/A	1/week	Grab (*2)

- (*1) The estimate of flow shall be an estimate of the combined flows from both domestic wastewater treatment plants.
 - (*2) Grab samples from each of the domestic wastewater treatment plants shall be combined into a single flow-weighted sample for analysis and reporting.
 - (*3) Grab samples from each of the domestic wastewater treatment plants shall be collected, analyzed, and reported separately.
 - (*4) Units for *E. coli* are most probable number (MPN) per 100 mL.
 - (*5) Beginning from date of permit issuance and lasting 364 days from date of permit issuance.
 - (*6) Beginning 365 days from date of permit issuance.
2. The effluent shall contain a chlorine residual of at least 1.0 mg/L after a detention time of at least 20 minutes (based on peak flow) and shall be monitored 1/week by grab sample (*3)
 3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3) by grab sample.
 4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
 5. Effluent monitoring samples shall be taken at the following location: At Outfall 103, where treated effluent is discharged from each domestic wastewater treatment plant, prior to mixing with any other water.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 004

1. During the period beginning upon date of permit issuance and lasting through date of permit expiration, the permittee is authorized to discharge low volume waste (*1), truck wash water, and stormwater from the Combustion Byproducts Landfill Pond subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations		Minimum Self-Monitoring Requirements		
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day (*2)	Estimate
Total Suspended Solids	30	100	100	1/week (*2)	Grab
Oil and Grease	15	20	20	1/week (*2)	Grab
Selenium, Total	0.007	0.015	0.015	1/week (*2)	Grab

- (*1) See Other Requirement No. 3.D.
- (*2) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2) 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 004, where wastes from the Combustion Byproducts Landfill are discharged from the solid waste landfill settling pond prior to mixing with any other waters.

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Compliance History Report

PUBLISHED Compliance History Report for CN600253637, RN100226844, Rating Year 2014 which includes Compliance History (CH) components from September 1, 2009, through August 31, 2014.

Customer, Respondent, or Owner/Operator:	CN600253637, Lower Colorado River Authority	Classification: SATISFACTORY	Rating: 0.17
Regulated Entity:	RN100226844, LCRA SAM SEYMOUR FAYETTE POWER PROJECT	Classification: SATISFACTORY	Rating: 0.10
Complexity Points:	27	Repeat Violator: NO	
CH Group:	06 - Electric Power Generation		
Location:	6549 POWER PLANT RD LA GRANGE, TX 78945-3714, FAYETTE COUNTY		
TCEQ Region:	REGION 11 - AUSTIN		

ID Number(s):

AIR OPERATING PERMITS ACCOUNT NUMBER FC0018G
WASTEWATER PERMIT WQ0002105000
AIR NEW SOURCE PERMITS REGISTRATION 19208
AIR NEW SOURCE PERMITS REGISTRATION 33928
AIR NEW SOURCE PERMITS AFS NUM 4814900005
AIR NEW SOURCE PERMITS REGISTRATION 52373
AIR NEW SOURCE PERMITS REGISTRATION 80845
AIR NEW SOURCE PERMITS REGISTRATION 88122
AIR NEW SOURCE PERMITS REGISTRATION 115662
IHW CORRECTIVE ACTION SOLID WASTE REGISTRATION # (SWR) 31575
STORMWATER PERMIT TXR15ZR83
INDUSTRIAL AND HAZARDOUS WASTE EPA ID TXD083566547
POLLUTION PREVENTION PLANNING ID NUMBER P01613

AIR OPERATING PERMITS PERMIT 21
WASTEWATER EPA ID TX0073121
AIR NEW SOURCE PERMITS REGISTRATION 29852
AIR NEW SOURCE PERMITS ACCOUNT NUMBER FC0018G
AIR NEW SOURCE PERMITS PERMIT 51770
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX486M3
AIR NEW SOURCE PERMITS EPA PERMIT PAL2
AIR NEW SOURCE PERMITS REGISTRATION 97985
USED OIL REGISTRATION C81690
STORMWATER PERMIT TXR05M603
AIR EMISSIONS INVENTORY ACCOUNT NUMBER FC0018G
INDUSTRIAL AND HAZARDOUS WASTE SOLID WASTE REGISTRATION # (SWR) 31575

Compliance History Period:	September 01, 2009 to August 31, 2014	Rating Year:	2014	Rating Date:	09/01/2014
Date Compliance History Report Prepared:	August 19, 2015				
Agency Decision Requiring Compliance History:	Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.				
Component Period Selected:	June 04, 2009 to August 19, 2015				

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: TCEQ Staff Member **Phone:** (512) 239-1000

Site and Owner/Operator History:

- 1) Has the site been in existence and/or operation for the full five year compliance period? YES
- 2) Has there been a (known) change in ownership/operator of the site during the compliance period? NO
- 3) If YES for #2, who is the current owner/operator? N/A
- 4) If YES for #2, who was/were the prior owner(s)/operator(s)? N/A
- 5) If YES, when did the change(s) in owner or operator occur? N/A

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

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

B. Criminal convictions:

N/A

C. Chronic excessive emissions events:

N/A

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

Item 1	June 09, 2009	(770891)
Item 2	June 18, 2009	(749786)
Item 3	August 19, 2009	(812469)
Item 4	August 20, 2009	(765769)
Item 5	August 28, 2009	(766906)
Item 6	September 15, 2009	(776067)
Item 7	September 17, 2009	(812470)
Item 8	September 24, 2009	(776645)
Item 9	October 02, 2009	(776549)
Item 10	October 07, 2009	(778357)
Item 11	October 09, 2009	(778733)
Item 12	October 13, 2009	(778838)
Item 13	October 19, 2009	(812471)
Item 14	October 20, 2009	(779849)
Item 15	October 21, 2009	(779968)
Item 16	November 05, 2009	(781596)
Item 17	November 12, 2009	(781764)
Item 18	November 17, 2009	(782353)
Item 19	November 18, 2009	(812472)
Item 20	December 02, 2009	(784055)
Item 21	December 10, 2009	(812473)
Item 22	December 22, 2009	(786424)
Item 23	February 18, 2010	(812468)
Item 24	March 10, 2010	(793932)
Item 25	March 11, 2010	(795284)
Item 26	March 15, 2010	(795743)
Item 27	March 19, 2010	(833599)
Item 28	March 23, 2010	(794102)
Item 29	March 24, 2010	(796516)
Item 30	April 19, 2010	(833600)
Item 31	May 04, 2010	(801274)
Item 32	May 17, 2010	(833601)
Item 33	June 08, 2010	(825591)
Item 34	June 16, 2010	(847107)
Item 35	July 14, 2010	(841261)
Item 36	July 19, 2010	(861573)
Item 37	August 13, 2010	(867903)
Item 38	August 31, 2010	(849226)
Item 39	September 02, 2010	(850541)
Item 40	September 17, 2010	(874845)
Item 41	October 05, 2010	(866372)
Item 42	October 18, 2010	(882438)
Item 43	October 28, 2010	(872356)
Item 44	November 18, 2010	(878319)
Item 45	November 19, 2010	(864796)
Item 46	December 07, 2010	(872811)
Item 47	December 10, 2010	(897243)
Item 48	January 19, 2011	(903147)
Item 49	February 16, 2011	(910067)
Item 50	February 28, 2011	(900651)
Item 51	March 11, 2011	(902076)
Item 52	March 17, 2011	(917266)
Item 53	March 24, 2011	(907451)
Item 54	April 01, 2011	(908323)

Item 55	April 15, 2011	(912611)
Item 56	May 02, 2011	(914457)
Item 57	May 16, 2011	(920666)
Item 58	May 18, 2011	(921319)
Item 59	June 16, 2011	(933636)
Item 60	June 20, 2011	(919772)
Item 61	August 02, 2011	(944395)
Item 62	August 18, 2011	(960236)
Item 63	September 07, 2011	(952104)
Item 64	September 15, 2011	(966288)
Item 65	October 06, 2011	(958738)
Item 66	October 20, 2011	(972304)
Item 67	November 17, 2011	(978462)
Item 68	November 18, 2011	(965105)
Item 69	December 08, 2011	(971200)
Item 70	December 09, 2011	(970898)
Item 71	December 15, 2011	(985274)
Item 72	January 10, 2012	(991555)
Item 73	January 17, 2012	(980956)
Item 74	February 13, 2012	(1010999)
Item 75	February 15, 2012	(987640)
Item 76	March 09, 2012	(993765)
Item 77	March 13, 2012	(990369)
Item 78	March 19, 2012	(1004428)
Item 79	May 01, 2012	(1002084)
Item 80	May 11, 2012	(1017362)
Item 81	June 12, 2012	(1025164)
Item 82	July 10, 2012	(1032501)
Item 83	August 03, 2012	(1022750)
Item 84	August 08, 2012	(1023419)
Item 85	August 14, 2012	(1038923)
Item 86	August 31, 2012	(1028393)
Item 87	September 19, 2012	(1047838)
Item 88	September 24, 2012	(1034672)
Item 89	October 04, 2012	(1035582)
Item 90	October 16, 2012	(1065844)
Item 91	October 19, 2012	(1037285)
Item 92	November 13, 2012	(1043692)
Item 93	November 16, 2012	(1065845)
Item 94	December 04, 2012	(1043699)
Item 95	December 14, 2012	(1065846)
Item 96	January 14, 2013	(1081043)
Item 97	February 07, 2013	(1056548)
Item 98	February 18, 2013	(1081042)
Item 99	February 20, 2013	(1058996)
Item 100	March 18, 2013	(1090301)
Item 101	March 27, 2013	(1076543)
Item 102	April 04, 2013	(1077263)
Item 103	April 09, 2013	(1077396)
Item 104	April 17, 2013	(1096666)
Item 105	May 14, 2013	(1088944)
Item 106	May 17, 2013	(1107628)
Item 107	June 04, 2013	(1093299)
Item 108	June 20, 2013	(1111267)
Item 109	July 16, 2013	(1118165)
Item 110	August 08, 2013	(1154192)
Item 111	August 19, 2013	(1125958)
Item 112	September 03, 2013	(1104650)
Item 113	September 16, 2013	(1130510)
Item 114	October 18, 2013	(1136278)

Item 115	November 18, 2013	(1141659)
Item 116	December 16, 2013	(1148114)
Item 117	December 30, 2013	(1123501)
Item 118	January 15, 2014	(1138556)
Item 119	January 29, 2014	(1106085)
Item 120	February 04, 2014	(1145754)
Item 121	February 14, 2014	(1161513)
Item 122	March 17, 2014	(1168151)
Item 123	March 31, 2014	(1153020)
Item 124	April 15, 2014	(1175310)
Item 125	April 16, 2014	(1160331)
Item 126	May 29, 2014	(1170192)
Item 127	June 20, 2014	(1188396)
Item 128	July 15, 2014	(1200105)
Item 129	August 14, 2014	(1184657)
Item 130	August 20, 2014	(1200106)
Item 131	September 12, 2014	(1206770)
Item 132	September 18, 2014	(1193415)
Item 133	September 29, 2014	(1191412)
Item 134	October 17, 2014	(1213180)
Item 135	November 19, 2014	(1219436)
Item 136	November 21, 2014	(1209434)
Item 137	December 19, 2014	(1225221)
Item 138	January 20, 2015	(1232113)
Item 139	January 26, 2015	(1221662)
Item 140	February 16, 2015	(1243233)
Item 141	March 20, 2015	(1249597)
Item 142	March 26, 2015	(1230145)
Item 143	April 20, 2015	(1256480)
Item 144	May 20, 2015	(1247543)
Item 145	June 19, 2015	(1270358)

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):

A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

- 1 Date: 05/04/2015 (1245469) CN600253637
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 305, SubChapter F 305.125(1)
30 TAC Chapter 305, SubChapter F 305.125(4)
Permit Conditions PERMIT
TWC Chapter 26 26.121
Description: Failure to prevent an unauthorized discharge of delonized (DI) water and tracer dye. Specifically, during maintenance on the unit 3 condenser, two valves were drained containing DI water and tracer dye. The engineering drawing did not identify that one of the valves discharged to the storm drain instead of through the wastewater system. DI water and tracer dye discharged to storm water outfall 6.

- 2 Date: 07/14/2015 (1224086) CN600253637
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
5C THSC Chapter 382 382.085(b)
NSR Permit 51770, Special Condition 7 PERMIT
Description: LCRA Sam Seymour Fayette Power Project (FPP) failed to comply with Special Condition 7 of New Source Review Permit No. 51770 which requires the facilities opacity emissions not to exceed 20% averaged over a six minute period from the Unit 1 and Unit 2 boiler stacks, Emission Point Nos. (EPN) FPP-1 and FPP-2.

F. Environmental audits:

N/A

G. Type of environmental management systems (EMSs):

- 1 ENVIRONMENTAL MANAGEMENT SYSTEM 30 TAC CERTIFIED

Published Compliance History Report for CN600253637, RN100226844, Rating Year 2014 which Includes Compliance History (CH) components from June 04, 2009, through August 19, 2015.

H. Voluntary on-site compliance assessment dates:
N/A

I. Participation in a voluntary pollution reduction program:

J. Early compliance:
N/A

Sites Outside of Texas:
N/A

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Compliance History Report

PUBLISHED Compliance History Report for CN600253637, RN100226844, Rating Year 2013 which includes Compliance History (CH) components from September 1, 2008, through August 31, 2013.

Customer, Respondent, or Owner/Operator:	CN600253637, Lower Colorado River Authority	Classification:	SATISFACTORY	Rating:	0.99
Regulated Entity:	RN100226844, LCRA SAM SEYMOUR FAYETTE POWER PROJECT	Classification:	SATISFACTORY	Rating:	0.19
Complexity Points:	27	Repeat Violator:	NO		
CH Group:	06 - Electric Power Generation				
Location:	6549 POWER PLANT RD LA GRANGE, TX 78945-3714, FAYETTE COUNTY				
TCEQ Region:	REGION 11 - AUSTIN				

ID Number(s):

- | | |
|--|---|
| AIR OPERATING PERMITS ACCOUNT NUMBER FC0018G | AIR OPERATING PERMITS PERMIT 21 |
| WASTEWATER PERMIT WQ0002105000 | WASTEWATER EPA ID TX0073121 |
| AIR NEW SOURCE PERMITS REGISTRATION 19208 | AIR NEW SOURCE PERMITS REGISTRATION 29852 |
| AIR NEW SOURCE PERMITS REGISTRATION 33928 | AIR NEW SOURCE PERMITS ACCOUNT NUMBER FC0018G |
| AIR NEW SOURCE PERMITS AFS NUM 4814900005 | AIR NEW SOURCE PERMITS PERMIT 51770 |
| AIR NEW SOURCE PERMITS REGISTRATION 52373 | AIR NEW SOURCE PERMITS EPA PERMIT PSDTX486M3 |
| AIR NEW SOURCE PERMITS REGISTRATION 80845 | AIR NEW SOURCE PERMITS EPA PERMIT PAL2 |
| AIR NEW SOURCE PERMITS REGISTRATION 88122 | AIR NEW SOURCE PERMITS REGISTRATION 97985 |
| AIR NEW SOURCE PERMITS REGISTRATION 115662 | USED OIL REGISTRATION C81690 |
| IHW CORRECTIVE ACTION SOLID WASTE REGISTRATION # (SWR) 31575 | STORMWATER PERMIT TXR05M603 |
| STORMWATER PERMIT TXR15ZR83 | AIR EMISSIONS INVENTORY ACCOUNT NUMBER FC0018G |
| INDUSTRIAL AND HAZARDOUS WASTE EPA ID TXD083566547 | INDUSTRIAL AND HAZARDOUS WASTE SOLID WASTE REGISTRATION # (SWR) 31575 |
| POLLUTION PREVENTION PLANNING ID NUMBER P01613 | |

Compliance History Period: September 01, 2008 to August 31, 2013 **Rating Year:** 2013 **Rating Date:** 09/01/2013

Date Compliance History Report Prepared: August 04, 2014

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Component Period Selected: June 04, 2009 to June 03, 2014

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: Audrey Eljuri **Phone:** (512) 239-4653

Site and Owner/Operator History:

- 1) Has the site been in existence and/or operation for the full five year compliance period? YES
- 2) Has there been a (known) change in ownership/operator of the site during the compliance period? NO
- 3) If YES for #2, who is the current owner/operator? N/A
- 4) If YES for #2, who was/were the prior owner(s)/operator(s)? N/A
- 5) If YES, when did the change(s) in owner or operator occur? N/A

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

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

B. Criminal convictions:

C. Chronic excessive emissions events:

N/A

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

Item 1	June 09, 2009	(770891)
Item 2	June 18, 2009	(749786)
Item 3	August 19, 2009	(812469)
Item 4	August 20, 2009	(765769)
Item 5	August 28, 2009	(766906)
Item 6	September 15, 2009	(776067)
Item 7	September 17, 2009	(812470)
Item 8	September 24, 2009	(776645)
Item 9	October 02, 2009	(776549)
Item 10	October 07, 2009	(778357)
Item 11	October 09, 2009	(778733)
Item 12	October 13, 2009	(778838)
Item 13	October 19, 2009	(812471)
Item 14	October 20, 2009	(779849)
Item 15	October 21, 2009	(779968)
Item 16	November 05, 2009	(781596)
Item 17	November 12, 2009	(781764)
Item 18	November 17, 2009	(782353)
Item 19	November 18, 2009	(812472)
Item 20	December 02, 2009	(784055)
Item 21	December 10, 2009	(812473)
Item 22	December 22, 2009	(786424)
Item 23	February 18, 2010	(812468)
Item 24	March 10, 2010	(793932)
Item 25	March 11, 2010	(795284)
Item 26	March 15, 2010	(795743)
Item 27	March 19, 2010	(833599)
Item 28	March 23, 2010	(794102)
Item 29	March 24, 2010	(796516)
Item 30	April 19, 2010	(833600)
Item 31	May 04, 2010	(801274)
Item 32	May 17, 2010	(833601)
Item 33	June 08, 2010	(825591)
Item 34	June 16, 2010	(847107)
Item 35	July 14, 2010	(841261)
Item 36	July 19, 2010	(861573)
Item 37	August 13, 2010	(867903)
Item 38	August 31, 2010	(849226)
Item 39	September 02, 2010	(850541)
Item 40	September 17, 2010	(874845)
Item 41	October 05, 2010	(866372)
Item 42	October 18, 2010	(882438)
Item 43	October 28, 2010	(872356)
Item 44	November 18, 2010	(878319)
Item 45	November 19, 2010	(864796)
Item 46	December 07, 2010	(872811)
Item 47	December 10, 2010	(897243)
Item 48	January 19, 2011	(903147)
Item 49	February 16, 2011	(910067)
Item 50	February 28, 2011	(900651)
Item 51	March 11, 2011	(902076)
Item 52	March 17, 2011	(917266)
Item 53	March 24, 2011	(907451)
Item 54	April 01, 2011	(908323)

Item 55	April 15, 2011	(912611)
Item 56	May 02, 2011	(914457)
Item 57	May 16, 2011	(920666)
Item 58	May 18, 2011	(921319)
Item 59	June 16, 2011	(933636)
Item 60	June 20, 2011	(919772)
Item 61	August 02, 2011	(944395)
Item 62	August 18, 2011	(960236)
Item 63	September 07, 2011	(952104)
Item 64	September 15, 2011	(966288)
Item 65	October 06, 2011	(958738)
Item 66	October 20, 2011	(972304)
Item 67	November 17, 2011	(978462)
Item 68	November 18, 2011	(965105)
Item 69	December 08, 2011	(971200)
Item 70	December 09, 2011	(970898)
Item 71	December 15, 2011	(985274)
Item 72	January 10, 2012	(991555)
Item 73	January 17, 2012	(980956)
Item 74	February 13, 2012	(1010999)
Item 75	February 15, 2012	(987640)
Item 76	March 09, 2012	(993765)
Item 77	March 13, 2012	(990369)
Item 78	March 19, 2012	(1004428)
Item 79	May 01, 2012	(1002084)
Item 80	May 11, 2012	(1017362)
Item 81	June 12, 2012	(1025164)
Item 82	July 10, 2012	(1032501)
Item 83	August 03, 2012	(1022750)
Item 84	August 08, 2012	(1023419)
Item 85	August 14, 2012	(1038923)
Item 86	August 31, 2012	(1028393)
Item 87	September 19, 2012	(1047838)
Item 88	September 24, 2012	(1034672)
Item 89	October 04, 2012	(1035582)
Item 90	October 16, 2012	(1065844)
Item 91	October 19, 2012	(1037285)
Item 92	November 13, 2012	(1043692)
Item 93	November 16, 2012	(1065845)
Item 94	December 04, 2012	(1043699)
Item 95	December 14, 2012	(1065846)
Item 96	January 14, 2013	(1081043)
Item 97	February 07, 2013	(1056548)
Item 98	February 18, 2013	(1081042)
Item 99	February 20, 2013	(1058996)
Item 100	March 18, 2013	(1090301)
Item 101	March 27, 2013	(1076543)
Item 102	April 04, 2013	(1077263)
Item 103	April 09, 2013	(1077396)
Item 104	April 17, 2013	(1096666)
Item 105	May 14, 2013	(1088944)
Item 106	May 17, 2013	(1107628)
Item 107	June 04, 2013	(1093299)
Item 108	June 20, 2013	(1111267)
Item 109	July 16, 2013	(1118165)
Item 110	August 08, 2013	(1154192)
Item 111	August 19, 2013	(1125958)
Item 112	September 03, 2013	(1104650)
Item 113	September 16, 2013	(1130510)
Item 114	October 18, 2013	(1136278)

Published Compliance History Report for CN600253637, RN100226844, Rating Year 2013 which includes Compliance History (CH) components from June 04, 2009, through June 03, 2014.

Item 115	November 18, 2013	(1141659)
Item 116	December 16, 2013	(1148114)
Item 117	December 30, 2013	(1123501)
Item 118	January 15, 2014	(1138556)
Item 119	January 29, 2014	(1106085)
Item 120	February 04, 2014	(1145754)
Item 121	February 14, 2014	(1161513)
Item 122	March 17, 2014	(1168151)
Item 123	March 31, 2014	(1153020)
Item 124	April 15, 2014	(1175310)
Item 125	April 16, 2014	(1160331)
Item 126	May 29, 2014	(1170192)

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):

A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

- 1 Date: 08/23/2013 (1100328) CN600253637
 Self Report? NO Classification: Moderate
 Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
 5C THSC Chapter 382 382.085(b)
 Title V Permit No. O-0021 SC 3 PERMIT
 Description: Failure to comply with Federal Operating Permit No. O-0021 Special Condition No. 3, which requires quarterly visible emission observations (VEOs) be conducted at least once during each calendar quarter for applicable sources unless the air emission source is not operating for the entire quarter.
- 2 Date: 04/30/2014 (1181503) CN600253637
 Self Report? YES Classification: Moderate
 Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
 30 TAC Chapter 305, SubChapter F 305.125(1)
 Description: Failure to meet the limit for one or more permit parameter

F. Environmental audits:

N/A

G. Type of environmental management systems (EMSs):

- 1 ENVIRONMENTAL MANAGEMENT SYSTEM 30 TAC CERTIFIED

H. Voluntary on-site compliance assessment dates:

N/A

I. Participation in a voluntary pollution reduction program:

J. Early compliance:

N/A

Sites Outside of Texas:

N/A