Technical Package Cover Page

This file contains the following documents:

1. Summary of application (in plain language)
   - English
   - Alternative Language (Spanish)
2. First notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
   - English
   - Alternative Language (Spanish)
3. Second notice (NAPD-Notice of Preliminary Decision)
   - English
   - Alternative Language (Spanish)
4. Application materials *
5. Draft permit *
6. Technical summary or fact sheet *

* **NOTE:** This application was declared Administratively Complete before June 1, 2024. The application materials, draft permit, and technical summary or fact sheet are available for review at the Public Viewing Location provided in the NAPD.

Section 15. Plain Language Summary (Instructions Page 40)

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS

DOMESTIC WASTEWATER

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.
Rainbow's End Park, Inc. (CN 603340373) proposes to operate Rainbow's End Wastewater Treatment Plant (RN TBD). a wastewater treatment plant. The facility will be located the intersection of E Peterson Loop and Quail, in Livingston, Polk County, Texas 77351.

The wastewater treatment plant will be for the Rainbow's End Park, Inc. for 60,000 gallons per day
<<For TLAP applications include the following sentence, otherwise delete:>>

Discharges from the facility are expected to contain TSS and BOD. Domestic wastewater will be treated by *an activated sludge wastewater treatment plant*.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS TPDES o TLAP

AGUAS RESIDUALES DOMÉSTICAS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

PROPOSED PERMIT NO. WQ0016513001

APPLICATION. Rainbow's End Park, Inc., 100 Rainbow Drive, Livingston, Texas, 77351, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016513001 (EPA I.D. No. TX0145858) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 30,000 gallons per day. The domestic wastewater facility will be located at approximately 0.33 miles southwest of the intersection of Care Center Drive and Highway 146, in the city of Livingston, in Polk County, Texas 77351. The discharge route will be from the plant site to a roadside ditch, thence to an unnamed tributary of Copeland Creek, thence to Copeland Creek, thence to the Trinity River. TCEQ received this application on March 29, 2024. The permit application will be available for viewing and copying at Livingston Municipal Library, Front Desk, 707 North Tyler Avenue, Livingston, Texas prior to the date this notice is published in the newspaper. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-94.87206,30.63917&level=18

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

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

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

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

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

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

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

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

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

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

Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Rainbow's End Park, Inc. at the address stated above or by calling Mr. Travis Carr, Co-CEO, at 888-580-8444.

Issuance Date: May 3, 2024

Texas Commission on Environmental Quality

COMBINED

NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT (NORI)

AND

NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR TPDES PERMIT FOR MUNICIPAL WASTEWATER

NEW

PERMIT NO. WQ0016513001

APPLICATION AND PRELIMINARY DECISION. Rainbow's End Park, Inc., 100 Rainbow Drive, Livingston, Texas 77351, has applied to the Texas Commission on Environmental Quality (TCEQ) for new Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016513001, to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 60,000 gallons per day. TCEQ received this application on March 29, 2024.

This combined notice is being issued to correct the proposed flow that was provided in the original NORI.

The facility will be located at approximately 0.33 miles southwest of the intersection of Care Center Drive and Highway 146, in the City of Livingston, Polk County, Texas 77351. The treated effluent will be discharged to a roadside ditch, thence to an unnamed tributary, thence to Copeland Creek, thence to Trinity River Below Lake Livingston in Segment No. 0802 of the Trinity River Basin. The unclassified receiving water uses are minimal aquatic life for the Roadside ditch, the unnamed tributary and Copeland Creek. The designated uses for Segment No. 0802 are primary contact recreation, public water supply, and high aquatic life use.

In accordance with 30 Texas Administrative Code §307.5 and the TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. This review has preliminarily determined that no water bodies with exceptional, high, or intermediate aquatic life uses are present within the stream reach assessed; therefore, no Tier 2 degradation determination is required. No significant degradation of water quality is expected in water bodies with exceptional, high, or intermediate aquatic life uses downstream, and existing uses will be maintained and protected. The preliminary determination can be reexamined and may Texas Commission on Environmental Quality be modified if new information is received. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-94.87206,30.63917&level=18

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at Livingston Municipal Library, Front Desk, 707 North Tyler Avenue, Livingston, Texas. The application, including any updates, and associated notices are available electronically at the following webpage: https://www.tceq.texas.gov/permitting/wastewater/tpdes-applications.

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

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

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

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

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

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

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

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

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

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www.tceq.texas.gov/goto/comment, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC 105, P.O. Box 13087, Austin, Texas 78711-3087. Any personal information you submit to the TCEQ will become part of the agency's record; this includes email addresses. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Rainbow's End Park, Inc. at the address stated above or by calling Mr. Travis Carr, Co-CEO, at 888-580-8444.

Issuance Date: August 30, 2024

TPDES PERMIT NO. WQ0016513001
[For TCEQ office use only - EPA I.D. No. TX0145858]

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

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

Rainbow's End Park, Inc.

whose mailing address is

100 Rainbow Drive
Livingston, Texas 77351

is authorized to treat and discharge wastes from the Rainbow's End Wastewater Treatment Facility, SIC Code 7033

located at approximately 0.33 miles southwest of the intersection of Care Center Drive and Highway 146, in the City of Livingston, Polk County, Texas 77351

to a roadside ditch, thence to an unnamed tributary, thence to Copeland Creek, thence to Trinity River Below Lake Livingston in Segment No. 0802 of the Trinity River Basin

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

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

ISSUED DATE:

For the Commission

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the completion of expansion to the 0.06 million gallons per day (MGD) facility, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.03 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 83 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (2.5)	15	25	35	One/week	Grab
Total Suspended Solids	15 (3.8)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (0.8)	6	10	15	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/quarter	Grab

2. The effluent shall contain a total chlorine residual of at least 1.0 mg/l and shall not exceed a total chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored five times per week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month 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(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the completion of expansion to the 0.06 million gallons per day (MGD) facility and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.06 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 167 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Max. Single Grab Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (5.0)	15	25	35	One/week	Grab
Total Suspended Solids	15 (7.5)	25	40	60	One/week	Grab
Ammonia Nitrogen	3 (1.5)	6	10	15	One/week	Grab
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	N/A	399	One/quarter	Grab

2. The effluent shall contain a total chlorine residual of at least 1.0 mg/l and shall not exceed a total chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow), and shall be monitored five times per week by grab sample at each chlorine contact chamber. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per month 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(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per week by grab sample.

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 TWC § 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 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 (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) 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 nth 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 substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 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 (b).

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 and/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. The term “biosolids” is defined as sewage sludge that has been tested or processed to meet Class A, Class AB, or Class B pathogen standards in 30 TAC Chapter 312 for beneficial use.

7. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

   Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Compliance Monitoring Team of the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

   As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 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 § 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 or biosolids 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 and/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 Compliance Monitoring Team of the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, 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 Compliance Monitoring Team of the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective December 21, 2025, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Compliance Monitoring Team of 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 Compliance Monitoring Team of 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 Compliance Monitoring Team of 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 which 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) which 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 which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

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

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

    a. Any new introduction of pollutants into the POTW from an indirect discharger which 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 which 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 TWC §§ 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 § 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 and/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 which are not described in the permit application or which 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 which 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 TWC 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(14)) 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 or biosolids 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 and/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, and/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 and/or upgrading of the domestic wastewater treatment and/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 and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

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

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

    d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Registration 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 § 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 § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge or biosolids only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge or biosolids by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Biosolids. This provision does not authorize the permittee to land apply biosolids on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge or biosolids.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The land application of processed or unprocessed chemical toilet waste, grease trap waste, grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes, or any of the wastes listed in this provision combined with biosolids, WTP residuals or domestic septage is prohibited unless the grease trap waste is added at a fats, oil and grease (FOG) receiving facility as part of an anaerobic digestion process.

B. Testing Requirements

1. Sewage sludge or biosolids shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 10) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 10) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Biosolids shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B biosolids pathogen requirements.

a. For sewage sludge to be classified as Class A biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

   Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

   The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

   At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

   Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

   Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB biosolids may be classified a Class A biosolids if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B biosolids

criteria.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B biosolids are land applied:

i. Food crops with harvested parts that touch the biosolids /soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.

v. Domestic livestock shall not be allowed to graze on the land for 30 days after application of biosolids.

vi. Turf grown on land where biosolids are applied shall not be harvested for 1 year after application of the biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of biosolids.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.

ix. Land application of biosolids shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Biosolids shall be injected below the surface of the land.

ii. No significant amount of the biosolids shall be present on the land surface within one hour after the biosolids are injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the biosolids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When biosolids that is incorporated into the soil is Class A or Class AB with respect to pathogens, the biosolids shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of biosolids (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk biosolids applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge or biosolids for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B BIOSOLIDS PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B biosolids pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk biosolids enters a wetland or other waters in the State.

2. Bulk biosolids not meeting Class A biosolids requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk biosolids shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk Class A or AB biosolids sold or given away. The information sheet shall contain the following information:

    a. The name and address of the person who prepared the Class A or AB biosolids that are sold or given away in a bag or other container for application to the land.

    b. A statement that application of the biosolids to the land is prohibited except in accordance with the instruction on the label or information sheet.

    c. The annual whole sludge application rate for the biosolids application rate for the biosolids that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk biosolids are applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk biosolids are proposed to be applied. The notice shall include:

    a. The location, by street address, and specific latitude and longitude, of each land application site.

    b. The approximate time period bulk biosolids will be applied to the site.

    c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk biosolids.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the biosolids disposal practice.

E. Record Keeping Requirements

The documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a biosolids material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a period

of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B biosolids, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk biosolids are applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk biosolids shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which biosolids is applied.

   c. The number of acres in each site on which bulk biosolids are applied.

   d. The date and time biosolids are applied to each site.

   e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

   f. The total amount of biosolids applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 10) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge or biosolids in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge or biosolids disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B biosolids, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge or biosolids transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge or biosolids treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk biosolids are applied.

    c. The date and time bulk biosolids are applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk biosolids applied to each site.

    e. The amount of biosolids (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge or biosolids meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge or biosolids and supplies that sewage sludge or biosolids to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge or biosolids disposal practice.

D. Sewage sludge or biosolids shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 10) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 10) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge or biosolids shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record Keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 10) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge or biosolids production in dry tons/year.

4. Amount of sludge or biosolids disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge or biosolids transported interstate in dry tons/year.

6. A certification that the sewage sludge or biosolids meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE OR BIOSOLIDS TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge or biosolids that is transported to another wastewater treatment facility or facility that further processes sludge or biosolids. These provisions are intended to allow transport of sludge or biosolids to facilities that have been authorized to accept sludge or biosolids. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge or biosolids, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge or biosolids may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge or biosolids transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge or biosolids transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge or biosolids.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge or biosolids transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 10) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge or biosolids production;

3. the amount of sludge or biosolids transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Class C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. The permittee shall provide nuisance odor prevention for H_2S and VOC gases in accordance with 30 TAC § 309.13(e)(2). Prior to construction of the Interim and Final phases, the permittee shall submit a nuisance odor prevention request for approval by the Executive Director in care of the TCEQ Wastewater Permitting Section (MC 148). The request for nuisance odor prevention shall be in the form of an engineering report, prepared and sealed by a licensed professional engineer, in support of the request according to the requirements of 30 TAC § 309.13(e)(2). The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). (See Attachment A.)

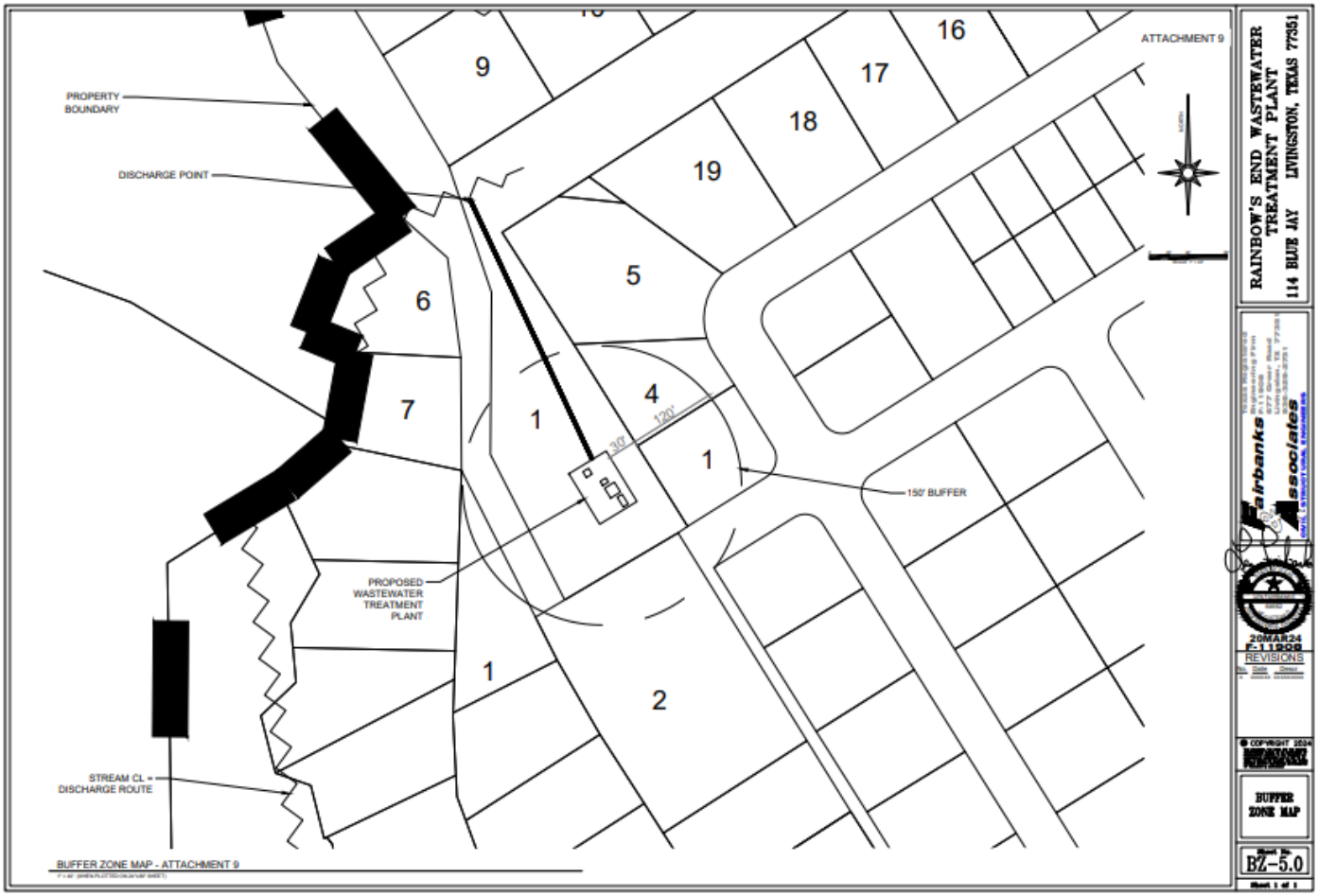
4. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/quarter may be reduced to 1/6 months in both the Interim and Final phases. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

6. Prior to construction of the 0.03 MGD and 0.06 MGD treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) a summary transmittal letter in accordance with the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans and specifications and a final engineering design report which comply with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system will meet the permitted effluent limitations required on Pages 2 and 2a of this permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

7. Reporting requirements according to 30 TAC §§ 319.1-319.11 and any additional effluent reporting requirements contained in this permit are suspended from the effective date of the permit until plant startup or discharge from the facility described by this permit, whichever occurs first. The permittee shall provide written notice to the TCEQ Regional Office (MC Region 10) and the Applications Review and Processing Team (MC 148) of the Water Quality Division, in writing at least forty-five days prior to plant startup or anticipated discharge, whichever occurs first, and prior to completion of each additional phase on Notification of Completion Form 20007.

Attachment A



STATEMENT OF BASIS/TECHNICAL SUMMARY
AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant:	Rainbow's End Park, Inc.; Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016513001, EPA I.D. No. TX0145858
Regulated Activity:	Domestic Wastewater Permit
Type of Application:	New Permit
Request:	New Permit
Authority:	Federal Clean Water Act (CWA) § 402; Texas Water Code § 26.027; 30 Texas Administrative Code (TAC) Chapters 30, 305, 307, 309, 312, and 319; Commission policies; and United States Environmental Protection Agency (EPA) guidelines.

EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit includes an expiration date of **five years from the date of issuance**.

REASON FOR PROJECT PROPOSED

The applicant has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 0.03 million gallons per day (MGD) in the Interim phase and a daily average flow not to exceed 0.06 MGD in the Final phase. The proposed wastewater treatment facility will serve Escapees RV Club/RV Park.

PROJECT DESCRIPTION AND LOCATION

The Rainbow's End Wastewater Treatment Facility is a submerged fixed bed biofilm reactor (SFBBR) packaged plant. Treatment units in the Interim phase will include an influent fine screen, an influent pump, an aeration tank, a tube settler final settling tank, a sludge holding tank, and a chlorine contact tank. Treatement units in the Final phase will include two influent fine screens, two influent pumps, two aeration tanks, two tube settler final settling tanks, two sludge holding tanks, and two chlorine contact tanks. The facility has not been constructed.

The draft permit authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

The plant site will be located at approximately 0.33 miles southwest of the intersection of Care Center Drive and Highway 146, in the City of Livingston, Polk County, Texas 77351.

Outfall Location:

Outfall Number	Latitude	Longitude
001	30.639910 N	94.872410 W

The treated effluent will be discharged to a roadside ditch, thence to an unnamed tributary, thence to Copeland Creek, thence to Trinity River Below Lake Livingston in Segment No. 0802 of the Trinity River Basin. The unclassified receiving water uses are minimal aquatic life for the Roadside ditch, the unnamed tributary and Copeland Creek. The designated uses for Segment No. 0802 are primary contact recreation, public water supply, and high aquatic life use. The effluent limitations in the draft permit will maintain and protect the existing instream uses. In accordance with 30 Texas Administrative Code §307.5 and the TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. This review has preliminarily determined that no water bodies with exceptional, high, or intermediate aquatic life uses are present within the stream reach assessed; therefore, no Tier 2 degradation determination is required. No significant degradation of water quality is expected in water bodies with exceptional, high, or intermediate aquatic life uses downstream, and existing uses will be maintained and protected. The preliminary determination can be reexamined and may Texas Commission on Environmental Quality be modified if new information is received.

Effluent limitations for the conventional effluent parameters (i.e., Five-Day Biochemical Oxygen Demand or Five-Day Carbonaceous Biochemical Oxygen Demand, Ammonia Nitrogen, etc.) are based on stream standards and waste load allocations for water-quality limited streams as established in the Texas Surface Water Quality Standards (TSWQS) and the State of Texas Water Quality Management Plan (WQMP).

In a case such as this, end-of-pipe compliance with pH limits between 6.0 and 9.0 standard units reasonably assures instream compliance with the TSWQS for pH when the discharge authorized is from a minor facility. This technology-based approach reasonably assures instream compliance with TSWQS criteria due to the relatively smaller discharge volumes authorized by these permits. This conservative assumption is based on TCEQ sampling conducted throughout the state which indicates that instream buffering quickly restores pH levels to ambient conditions. Similarly, this approach has been historically applied within EPA issued NPDES general permits where technology-based pH limits were established to be protective of water quality criteria.

The effluent limits recommended above have been reviewed for consistency with the WQMP. The proposed limits are not contained in the approved WQMP. However, these limits will be included in the next WQMP update. This discharge is less than 0.2 MGD and has been evaluated consistent with the modeling MOA between the TCEQ and the EPA.

The discharge from this permit action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) 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 considered 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. The permit does not require EPA review with respect to the presence of endangered or threatened species

Segment No. 0802 is currently listed on the state's inventory of impaired and threatened waters (the 2022 CWA § 303(d) list). The listing is for dioxin in edible tissue, and PCBs in edible tissue from lower 17 mi to upper 6 mi of segment (Assement Units 0802_01 through 0802_05). The facility does not

receive industrial wastewater contributions, therefore the effluent from this facility should not contribute to the dioxin, PCBs in edible tissue impairment of this segment.

SUMMARY OF EFFLUENT DATA

Self-reporting data is not available since the facility is not in operation.

DRAFT PERMIT CONDITIONS

The draft permit authorizes a discharge of treated domestic wastewater at an Interim volume not to exceed a daily average flow of 0.03 MGD and a Final volume not to exceed a daily average flow of 0.06 MGD.

The effluent limitations in both the Interim and Final phases of the draft permit, based on a 30-day average, are 10 mg/l five-day carbonaceous biochemical oxygen demand ($CBOD_5$), 15 mg/l total suspended solids (TSS), 3.0 mg/l ammonia-nitrogen (NH_3-N), 126 colony forming units (CFU) or most probable number (MPN) of *E. coli* per 100 ml, and 4.0 mg/l minimum dissolved oxygen (DO). The effluent shall contain a total chlorine residual of at least 1.0 mg/l and shall not exceed a total chlorine residual of 4.0 mg/l after a detention time of at least 20 minutes based on peak flow.

The draft permit includes a requirement for the permittee to provide nuisance odor prevention for H2S and VOC gases according to 30 TAC § 309.13(e)(2).

The draft permit includes Sludge Provisions according to the requirements of 30 TAC Chapter 312, Sludge Use, Disposal, and Transportation. The draft permit also authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

SUMMARY OF CHANGES FROM APPLICATION

None.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on March 29, 2024, and additional information received on June 26, 2024.

2. The effluent limitations and conditions in the draft permit comply with EPA-approved portions of the 2018 Texas Surface Water Quality Standards (TSWQS), 30 TAC §§ 307.1 - 307.10, effective March 1, 2018; 2014 TSWQS, effective March 6, 2014; 2010 TSWQS, effective July 22, 2010; and 2000 TSWQS, effective July 26, 2000.

3. The effluent limitations in the draft permit meet the requirements for secondary treatment and the requirements for disinfection according to 30 TAC Chapter 309, Subchapter A: Effluent Limitations.

4. Interoffice Memoranda from the Water Quality Assessment Section of the TCEQ Water Quality Division.

5. Consistency with the Coastal Management Plan: The facility is not located in the Coastal Management Program boundary.

6. *Procedures to Implement the Texas Surface Water Quality Standards* (IP), Texas Commission on Environmental Quality, June 2010, as approved by EPA, and the IP, January 2003, for portions of the 2010 IP not approved by EPA.

7. Texas 2022 Clean Water Act Section 303(d) List, Texas Commission on Environmental Quality, June 1, 2022; approved by the U.S. Environmental Protection Agency on July 7, 2022.

8. Texas Natural Resource Conservation Commission, Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits, Document No. 98-001.000-OWR-WQ, May 1998.

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 review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

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

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

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

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

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

comments or prepare its own response.

For additional information about this application, contact Garrison Layne at (512) 239-0849.

Garrison Layne August 28,2024

Garrison Layne Date
Municipal Permits Team
Wastewater Permitting Section (MC 148)

MUNICIPAL WASTEWATER TPDES PERMIT APPLICATION
RAINBOW'S END WWTP
114 BLUE JAY, LIVINGSTON
POLK COUNTY, TEXAS

SUBMITTED TO:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION

MARCH 2024

PREPARED BY:

Fairbanks & Associates
CIVIL - STRUCTURAL ENGINEERS
Texas Registered Engineering Firm F-11908
677 Greer Rd Livingston, TX 77351
936-329-2731

TPDES Municipal Wastewater Permit Application
Rainbow's End Wastewater Treatment Plant

TABLE OF CONTENTS

LIST OF ATTACHMENTS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT: Rainbow's End Park, Inc.

PERMIT NUMBER: Click here to enter text

Indicate if each of the following items is included in your application.

	Y	N		Y	N
Administrative Report 1.0	☒	☐	Original USGS Map	☒	☐
Administrative Report 1.1	☒	☐	Affected Landowners Map	☒	☐
SPIF	☒	☐	Landowner Disk or Labels	☒	☐
Core Data Form	☒	☐	Buffer Zone Map	☒	☐
Public Involvement Plan Form	☒	☐	Flow Diagram	☒	☐
Technical Report 1.0	☒	☐	Site Drawing	☒	☐
Technical Report 1.1	☒	☐	Original Photographs	☒	☐
Worksheet 2.0	☒	☐	Design Calculations	☒	☐
Worksheet 2.1	☐	☒	Solids Management Plan	☒	☐
Worksheet 3.0	☐	☒	Water Balance	☐	☐
Worksheet 3.1	☐	☒			
Worksheet 3.2	☐	☒			
Worksheet 3.3	☐	☒			
Worksheet 4.0	☐	☒			
Worksheet 5.0	☐	☒			
Worksheet 6.0	☐	☒			
Worksheet 7.0	☐	☒			

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

APPLICATION FOR A DOMESTIC WASTEWATER PERMIT ADMINISTRATIVE REPORT 1.0

If you have questions about completing this form please contact the Applications Review and Processing Team at 512-239-4671.

Section 1. Application Fees (Instructions Page 29)

Indicate the amount submitted for the application fee (check only one).

Flow	New/Major Amendment	Renewal
<0.05 MGD	$350.00 ☐	$315.00 ☐
≥0.05 but <0.10 MGD	$550.00 ☒	$515.00 ☐
≥0.10 but <0.25 MGD	$850.00 ☐	$815.00 ☐
≥0.25 but <0.50 MGD	$1,250.00 ☐	$1,215.00 ☐
≥0.50 but <1.0 MGD	$1,650.00 ☐	$1,615.00 ☐
≥1.0 MGD	$2,050.00 ☐	$2,015.00 ☐

Minor Amendment (for any flow) $150.00 ☐

Payment Information:

Mailed Check/Money Order Number: 1526

Check/Money Order Amount: $550.00

Name Printed on Check: Fairbanks & Associates

EPAY Voucher Number: Click here to enter text.

Copy of Payment Voucher enclosed? Yes ☐

Section 2. Type of Application (Instructions Page 29)

☒ New TPDES

☐ New TLAP

☐ Major Amendment *with* Renewal

☐ Minor Amendment *with* Renewal

☐ Major Amendment *without* Renewal

☐ Minor Amendment *without* Renewal

☐ Renewal without changes

☐ Minor Modification of permit

For amendments or modifications, describe the proposed changes: Click here to enter text.

For existing permits:

Permit Number: WQ00 Click here to enter text.

EPA I.D. (TPDES only): TX Click here to enter text.

Expiration Date: Click here to enter text.

Section 3. Facility Owner (Applicant) and Co-Applicant Information (Instructions Page 29)

A. The owner of the facility must apply for the permit.

What is the Legal Name of the entity (applicant) applying for this permit?

Rainbow's End Park, Inc.

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/

CN: 603340373

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Travis Carr

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text

Title: co-CEO

B. Co-applicant information. Complete this section only if another person or entity is required to apply as a co-permittee.

What is the Legal Name of the co-applicant applying for this permit?

Click here to enter text

(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)

If the co-applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at: http://www15.tceq.texas.gov/crpub/

CN: Click here to enter text

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix (Mr., Ms., Miss): Click here to enter text

First and Last Name: Click here to enter text

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text

Title: Click here to enter text

Provide a brief description of the need for a co-permittee: Click here to enter text

C. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0.

Attachment: 2

Section 4. Application Contact Information (Instructions Page 30)

This is the person(s) TCEQ will contact if additional information is needed about this application. Provide a contact for administrative questions and technical questions.

A. Prefix (Mr., Ms., Miss): Mr

First and Last Name: Len Fairbanks

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Owner

Organization Name: Fairbanks & Associates

Mailing Address: 677 Greer Rd

City, State, Zip Code: Livingston, TX 77351

Phone No.: 936-329-2731 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: len@fairbanksandassociates.net

Check one or both: ☒ Administrative Contact ☒ Technical Contact

B. Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Click here to enter text.

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: Click here to enter text.

Organization Name: Click here to enter text.

Mailing Address: Click here to enter text.

City, State, Zip Code: Click here to enter text.

Phone No.: Click here to enter text. Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: Click here to enter text.

Check one or both: ☐ Administrative Contact ☐ Technical Contact

Section 5. Permit Contact Information (Instructions Page 30)

Provide two names of individuals that can be contacted throughout the permit term.

A. Prefix (Mr., Ms., Miss): Ms.

First and Last Name: Cynthia Neilsen

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: CAO

Organization Name: Rainbow's End Park Inc

Mailing Address: 100 Rainbow Dr.

City, State, Zip Code: Livingston, TX 77351

Phone No.: 888-580-8444 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: parks@escapees.com

B. Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Travis Carr

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: co-CEO

Organization Name: Rainbow's End Park Inc

Mailing Address: 100 Rainbow Dr.

City, State, Zip Code: Livingston, TX 77351

Phone No.: 888-580-8444 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: traviscarr@escapees.com

Section 6. Billing Information (Instructions Page 30)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits ***in effect on September 1 of each year***. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (using form TCEQ-20029).

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Travis Carr

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: co-CEO

Organization Name: Rainbow's End Park Inc.

Mailing Address: 100 Rainbow Dr.

City, State, Zip Code: Livingston, TX 77351

Phone No.: 888-580-8444 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: traviscarr@escapees.com

Section 7. DMR/MER Contact Information (Instructions Page 31)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (EPA 3320-1) or maintain Monthly Effluent Reports.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Travis Carr

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: co-CEO

Organization Name: Rainbow's End Park Inc.

Mailing Address: 100 Rainbow Dr.

City, State, Zip Code: Livingston, TX 77351

Phone No.: 888-580-8444 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: traviscarr@escapees.com

DMR data is required to be submitted electronically. Create an account at: https://www.tceq.texas.gov/permitting/netdmr/netdmr.html.

Section 8. Public Notice Information (Instructions Page 31)

A. Individual Publishing the Notices

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Len Fairbanks

Credential (P.E, P.G., Ph.D., etc.): P.E.

Title: Owner

Organization Name: Fairbanks & Associates

Mailing Address: 677 Greer Rd

City, State, Zip Code: Livingston, TX 77351

Phone No.: 936-329-2731 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: len.fairbanks@fairbanksandassociates.net

B. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address

☐ Fax

☐ Regular Mail

C. Contact person to be listed in the Notices

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Travis Carr

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: co-CEO

Organization Name: Rainbow's End Park, Inc

Phone No.: 888-580-8444 Ext.: Click here to enter text.

E-mail: traviscarr@escapees.com

D. Public Viewing Information

If the facility or outfall is located in more than one county, a public viewing place for each county must be provided.

Public building name: Livingston Municipal Library

Location within the building: Front Desk

Physical Address of Building: 707 N Tyler Ave; Livingston, TX 77351

City: Livingston County: Polk

Contact Name: Christina

Phone No.: 936-327-4352 Ext.: Click here to enter text.

E. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, minor amendment or minor modification, and renewal applications**.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☐ Yes ☒ No

   If **no**, publication of an alternative language notice is not required; **skip to** Section 9 below.

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☐ Yes ☐ No

3. Do the students at these schools attend a bilingual education program at another location?

   ☐ Yes ☐ No

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☐ No

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Click here to enter text.

F. Public Involvement Plan Form

Complete the Public Involvement Plan Form (TCEQ Form 20960) for each application for a **new permit or major amendment to a permit** and include as an attachment.

Attachment: 21

Section 9. Regulated Entity and Permitted Site Information (Instructions Page 33)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. **RN** Click here to enter text.

Search the TCEQ's Central Registry at http://www15.tceq.texas.gov/crpub/ to determine if the site is currently regulated by TCEQ.

B. Name of project or site (the name known by the community where located):

Rainbow's End Wastewater Treatment Plant

C. Owner of treatment facility: Rainbow's End Park, Inc.

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

D. Owner of land where treatment facility is or will be:

Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Rainbows End Park, Inc

Mailing Address: 100 Rainbow Drive

City, State, Zip Code: Livingston, TX 77351

Phone No.: 800-580-8444 E-mail Address: parks@escapees.com

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Click here to enter text.

E. Owner of effluent disposal site:

Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Click here to enter text.

Mailing Address: Click here to enter text.

City, State, Zip Code: Click here to enter text.

Phone No.: Click here to enter text. E-mail Address: Click here to enter text.

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Click here to enter text.

F. Owner of sewage sludge disposal site (if authorization is requested for sludge disposal on property owned or controlled by the applicant):

Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Click here to enter text.

Mailing Address: Click here to enter text.

City, State, Zip Code: Click here to enter text.

Phone No.: Click here to enter text. E-mail Address: Click here to enter text.

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

Attachment: Click here to enter text.

Section 10. TPDES Discharge Information (Instructions Page 34)

A. Is the wastewater treatment facility location in the existing permit accurate?

☐ Yes ☒ No

If **no**, **or a new permit application**, please give an accurate description:

The wastewater treatment facility is located 0.3 miles Southwest of the intersection of Hwy 146 and Care Center Dr.

B. Are the point(s) of discharge and the discharge route(s) in the existing permit correct?

☐ Yes ☒ No

If **no**, **or a new or amendment permit application**, provide an accurate description of the point of discharge and the discharge route to the nearest classified segment as defined in 30 TAC Chapter 307:

From the plant site to a roadside ditch, thence to an unnamed tributary of Copeland Creek, thence to Copeland Creek, thence for several miles to the Trinity River, Segment 0802

City nearest the outfall(s): Livingston

County in which the outfalls(s) is/are located: Polk

Outfall Latitude: 30.56025 Longitude: -94.90401

C. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☒ No

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: Click here to enter text.

D. For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge.

Click here to enter text.

Section 11. TLAP Disposal Information (Instructions Page 36)

A. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the disposal site location:

Click here to enter text.

B. City nearest the disposal site: Click here to enter text.

C. County in which the disposal site is located: Click here to enter text.

D. Disposal Site Latitude: Click here to enter text. Longitude: Click here to enter text.

E. For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

Click here to enter text.

F. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained:

Click here to enter text.

Section 12. Miscellaneous Information (Instructions Page 37)

A. Is the facility located on or does the treated effluent cross American Indian Land?

☐ Yes ☒ No

B. If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

Click here to enter text

C. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☐ Yes ☒ No

If yes, list each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application:

Click here to enter text

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If **yes**, provide the following information:

Account number: Click here to enter text Amount past due: Click here to enter text

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If **yes**, please provide the following information:

Enforcement order number: Click here to enter text Amount past due: Click here to enter text

Section 13. Attachments (Instructions Page 38)

Indicate which attachments are included with the Administrative Report. Check all that apply:

☐ Lease agreement or deed recorded easement, if the land where the treatment facility is located or the effluent disposal site are not owned by the applicant or co-applicant.

☒ Original full-size USGS Topographic Map with the following information:

- Applicant's property boundary

- Treatment facility boundary
- Labeled point of discharge for each discharge point (TPDES only)
- Highlighted discharge route for each discharge point (TPDES only)
- Onsite sewage sludge disposal site (if applicable)
- Effluent disposal site boundaries (TLAP only)
- New and future construction (if applicable)
- 1 mile radius information
- 3 miles downstream information (TPDES only)
- All ponds.

☐ Attachment 1 for Individuals as co-applicants

☒ Other Attachments. Please specify: See Table of Contents

Section 14. Signature Page (Instructions Page 39)

If co-applicants are necessary, each entity must submit an original, separate signature page.

Permit Number:

Applicant: Rainbow's End Park, Inc.

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code § 305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Travis Carr

Signatory title: President & co-CEO

Signature: _____ Date: 2-20-2024

(Use blue ink)

Subscribed and Sworn to before me by the said Travis Carr

on this 20th day of February, 20 24.

My commission expires on the 12th day of October, 20 25.

_____

Notary Public

[SEAL]

DIEGO TREJO
Notary Public, State of Texas
Comm. Expires 10-12-2025
Notary ID 133385273

Kendall

County, Texas

Section 15. Plain Language Summary (Instructions Page 40)

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS

DOMESTIC WASTEWATER

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.
Rainbow's End Park, Inc. (CN 603340373) proposes to operate Rainbow's End Wastewater Treatment Plant (RN TBD). a wastewater treatment plant. The facility will be located the intersection of E Peterson Loop and Quail, in Livingston, Polk County, Texas 77351.

The wastewater treatment plant will be for the Rainbow's End Park, Inc. for 60,000 gallons per day
<<For TLAP applications include the following sentence, otherwise delete:>>

Discharges from the facility are expected to contain TSS and BOD. Domestic wastewater will be treated by *an activated sludge wastewater treatment plant*.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS TPDES o TLAP

AGUAS RESIDUALES DOMÉSTICAS

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales exigibles de la solicitud de permiso.

1. Introduzca el nombre del solicitante aquí. (2. Introduzca el número de cliente aquí (es decir, CN6 #########).) 3. Elija del menú desplegable. 4. Introduzca el nombre de la instalación aquí. 5. Introduzca el número de entidad regulada aquí (es decir, RN1 #########). 6. Elija del menú desplegable. 7. Introduzca la descripción de la instalación aquí. . La instalación 8. Elija del menú desplegable. ubicado 9. Introduzca la ubicación aquí. , en 10. Introduzca el nombre de la ciudad aquí. , Condado de 11. Introduzca el nombre del condado aquí. , Texas 12. Introduzca el código postal aquí. . 13. Introduzca el resumen de la solicitud de solicitud aquí. *<<Para las aplicaciones de TLAP incluya la siguiente oración, de lo contrario, elimine:>>* Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan14. Liste todos los contaminantes esperados aquí. . 15. Introduzca los tipos de aguas residuales descargadas aquí. 16. Elija del menú desplegable. tratado por 17. Introduzca una descripción del tratamiento de aguas residuales utilizado en la instalación aquí.

DOMESTIC ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Section 1. Affected Landowner Information (Instructions Page 41)

A. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:

- ☒ The applicant's property boundaries
- ☒ The facility site boundaries within the applicant's property boundaries
- ☒ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
- ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☒ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
- ☒ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
- ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
- ☐ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- ☐ The property boundaries of all landowners surrounding the effluent disposal site
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

B. ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.

C. Indicate by a check mark in which format the landowners list is submitted:

☐ USB Drive ☒ Four sets of labels

D. Provide the source of the landowners' names and mailing addresses: Polk County Appraisal District

E. As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?

☐ Yes ☒ No

If **yes**, provide the location and foreseeable impacts and effects this application has on the land(s):

Click here to enter text.

Section 2. Original Photographs (Instructions Page 44)

Provide original ground level photographs. Indicate with checkmarks that the following information is provided.

☒ At least one original photograph of the new or expanded treatment unit location

☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☐ At least one photograph of the existing/proposed effluent disposal site

☒ A plot plan or map showing the location and direction of each photograph

Section 3. Buffer Zone Map (Instructions Page 44)

A. Buffer zone map. Provide a buffer zone map on 8.5 x 11-inch paper with all of the following information. The applicant's property line and the buffer zone line may be distinguished by using dashes or symbols and appropriate labels.

- The applicant's property boundary;
- The required buffer zone; and
- Each treatment unit; and
- The distance from each treatment unit to the property boundaries.

B. Buffer zone compliance method. Indicate how the buffer zone requirements will be met. Check all that apply.

☐ Ownership

☐ Restrictive easement

☒ Nuisance odor control

☐ Variance

C. Unsuitable site characteristics. Does the facility comply with the requirements regarding unsuitable site characteristic found in 30 TAC § 309.13(a) through (d)?

☒ Yes ☐ No

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING DOMESTIC TPDES WASTEWATER PERMIT APPLICATIONS

TCEQ USE ONLY:

Application type: _____Renewal _____Major Amendment ____Minor Amendment _____New

County: _____ Segment Number: _____

Admin Complete Date: _____

Agency Receiving SPIF:

_____ Texas Historical Commission _____ U.S. Fish and Wildlife

_____ Texas Parks and Wildlife Department _____ U.S. Army Corps of Engineers

This form applies to TPDES permit applications only. (Instructions, Page 53)

The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

Do not refer to a response of any item in the permit application form. Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee: Rainbow's End Park, Inc.

   Permit No. WQ00 Click here to enter text EPA ID No. TX Click here to enter text

   Address of the project (or a location description that includes street/highway, city/vicinity, and county):

   The wastewater treatment plant is located 0.3 miles Southwest of the intersection of Hwy 146 and Care Center Dr. in Livingston TX 77351

Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

Prefix (Mr., Ms., Miss): Ms

First and Last Name: Cynthia Neilsen

Credential (P.E, P.G., Ph.D., etc.): Click here to enter text.

Title: CAO

Mailing Address: 100 Rainbow Dr.

City, State, Zip Code: Livingston, TX 77351

Phone No.: 888-580-8444 Ext.: Click here to enter text. Fax No.: Click here to enter text.

E-mail Address: parks@escapees.com

2. List the county in which the facility is located: Polk
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

Click here to enter text.

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

From the site to an unnamed tributary of Copeland Creek, thence to Copeland Creek, thence to the Trinity River (Segment 0802).

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

Provide original photographs of any structures 50 years or older on the property.

Does your project involve any of the following? Check all that apply.

☐ Proposed access roads, utility lines, construction easements

☐ Visual effects that could damage or detract from a historic property's integrity

☐ Vibration effects during construction or as a result of project design

☒ Additional phases of development that are planned for the future

☐ Sealing caves, fractures, sinkholes, other karst features

☐ Disturbance of vegetation or wetlands

6. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

Approx 0.6 ac.

7. Describe existing disturbances, vegetation, and land use:

Grading for site development.

THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

8. List construction dates of all buildings and structures on the property:

N/A

9. Provide a brief history of the property, and name of the architect/builder, if known.

Vacant land owned by Rainbow's End Park, Inc.

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if the mailing the payment.

- Complete items 1 through 5 below.
- Staple the check or money order in the space provided at the bottom of this document.
- **Do not mail this form with the application form.**
- Do not mail this form to the same address as the application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

Mail this form and the check or money order to:

BY REGULAR U.S. MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, Texas 78711-3088

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, Texas 78753

Fee Code: WQP **Waste Permit No:** Click here to enter text

1. Check or Money Order Number: 1526
2. Check or Money Order Amount: $550.00
3. Date of Check or Money Order: 02/05/24
4. Name on Check or Money Order: Fairbanks & Associates
5. APPLICATION INFORMATION

   Name of Project or Site: Rainbow's End Wastewater Treatment Plant

   Physical Address of Project or Site: 114 Blue Jay Livingston, TX 77351

   If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application.

Staple Check or Money Order in This Space

THIS PAGE INTENTIONALLY LEFT BLANK

Section 1. Individual Information (Instructions Page 50)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., Miss): Click here to enter text.

Full legal name (first, middle, last): Click here to enter text.

Driver's License or State Identification Number: Click here to enter text.

Date of Birth: Click here to enter text.

Mailing Address: Click here to enter text.

City, State, and Zip Code: Click here to enter text.

Phone Number: Click here to enter text. Fax Number: Click here to enter text.

E-mail Address: Click here to enter text.

CN: Click here to enter text.

For Commission Use Only:
Customer Number:
Regulated Entity Number:
Permit Number:

CHECKLIST OF COMMON DEFICIENCIES

Below is a list of common deficiencies found during the administrative review of domestic wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate by checking Yes that each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until the items below have been addressed.

Core Data Form (TCEQ Form No. 10400) ☒ Yes
(Required for all applications types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)

Correct and Current Industrial Wastewater Permit Application Forms ☒ Yes
(TCEQ Form Nos. 10053 and 10054. Version dated 6/25/2018 or later.)

Water Quality Permit Payment Submittal Form (Page 19) ☒ Yes
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)

7.5 Minute USGS Quadrangle Topographic Map Attached ☒ Yes
(Full-size map if seeking "New" permit. 8 ½ x 11 acceptable for Renewals and Amendments)

Current/Non-Expired, Executed Lease Agreement or Easement Attached ☒ N/A ☐ Yes

Landowners Map ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Things to Know:

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

Landowners Cross Reference List ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Landowners Labels or USB Drive attached ☐ N/A ☒ Yes
(See instructions for landowner requirements)

Original signature per 30 TAC § 305.44 – Blue Ink Preferred ☒ Yes
(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION

DOMESTIC TECHNICAL REPORT 1.0

The Following Is Required For All Applications

Renewal, New, And Amendment

Section 1. Permitted or Proposed Flows (Instructions Page 51)

A. Existing/Interim I Phase

Design Flow (MGD): 0.03 MGD

2-Hr Peak Flow (MGD): 0.12 MGD

Estimated construction start date: 3/2024

Estimated waste disposal start date: 10/2024

B. Interim II Phase

Design Flow (MGD): Click here to enter text.

2-Hr Peak Flow (MGD): Click here to enter text.

Estimated construction start date: Click here to enter text.

Estimated waste disposal start date: Click here to enter text.

C. Final Phase

Design Flow (MGD): 0.03 MGD

2-Hr Peak Flow (MGD): 0.12 MGD

Estimated construction start date: 3/2028

Estimated waste disposal start date: 10/2028

D. Current operating phase: n/a

Provide the startup date of the facility: Click here to enter text.

Section 2. Treatment Process (Instructions Page 51)

A. Treatment process description

Provide a detailed description of the treatment process. **Include the type of**

treatment plant, mode of operation, and all treatment units. Start with the plant's head works and finish with the point of discharge. Include all sludge processing and drying units. **If more than one phase exists or is proposed in the permit, a description of *each phase* must be provided**. Process description:

See attachments 11, 12

Port or pipe diameter at the discharge point, in inches: 6

B. Treatment Units

In Table 1.0(1), provide the treatment unit type, the number of units, and dimensions (length, width, depth) **of each treatment unit, accounting for *all* phases of operation**.

Table 1.0(1) – Treatment Units

Treatment Unit Type	Number of Units	Dimensions (L x W x D)
See attachment 13		

C. Process flow diagrams

Provide flow diagrams for the existing facilities and **each** proposed phase of construction.

Attachment: 14, 15

Section 3. Site Drawing (Instructions Page 52)

Provide a site drawing for the facility that shows the following:

- The boundaries of the treatment facility;
- The boundaries of the area served by the treatment facility;
- If land disposal of effluent, the boundaries of the disposal site and all storage/holding ponds; and
- If sludge disposal is authorized in the permit, the boundaries of the land application or disposal site.

Attachment: 4

Provide the name and a description of the area served by the treatment facility.

Escapees RV Club / RV Park

Section 4. Unbuilt Phases (Instructions Page 52)

Is the application for a renewal of a permit that contains an unbuilt phase or phases?

Yes ☐ No ☒

If yes, does the existing permit contain a phase that has not been constructed within five years of being authorized by the TCEQ?

Yes ☐ No ☐

If yes, provide a detailed discussion regarding the continued need for the unbuilt phase. Failure to provide sufficient justification may result in the Executive Director recommending denial of the unbuilt phase or phases.

Click here to enter text

Section 5. Closure Plans (Instructions Page 53)

Have any treatment units been taken out of service permanently, or will any units be taken out of service in the next five years?

Yes ☐ No ☒

If yes, was a closure plan submitted to the TCEQ?

Yes ☐ No ☐

If yes, provide a brief description of the closure and the date of plan approval.

Click here to enter text.

Section 6. Permit Specific Requirements (Instructions Page 53)

For applicants with an existing permit, check the *Other Requirements* or *Special Provisions* of the permit.

A. Summary transmittal

Have plans and specifications been approved for the existing facilities and each proposed phase?

Yes ☐ No ☒

If yes, provide the date(s) of approval for each phase: Click here to enter text.

Provide information, including dates, on any actions taken to meet a requirement or provision pertaining to the submission of a summary transmittal letter. Provide a copy of an approval letter from the TCEQ, if applicable.

Click here to enter text.

B. Buffer zones

Have the buffer zone requirements been met?

Yes ☒ No ☐

Provide information below, including dates, on any actions taken to meet the conditions of the buffer zone. If available, provide any new documentation

relevant to maintaining the buffer zones.

Nuisance odor prevention plan (attachment 10), wind rose diagram (attachment 20)

C. Other actions required by the current permit

Does the *Other Requirements* or *Special Provisions* section in the existing permit require submission of any other information or other required actions? Examples include Notification of Completion, progress reports, soil monitoring data, etc.

Yes ☐ No ☒

If yes, provide information below on the status of any actions taken to meet the conditions of an *Other Requirement* or *Special Provision*.

Click here to enter text.

D. Grit and grease treatment

1. Acceptance of grit and grease waste

Does the facility have a grit and/or grease processing facility onsite that treats and decants or accepts transported loads of grit and grease waste that are discharged directly to the wastewater treatment plant prior to any treatment?

Yes ☐ No ☒

If No, stop here and continue with Subsection E. Stormwater Management.

2. Grit and grease processing

Describe below how the grit and grease waste is treated at the facility. In your description, include how and where the grit and grease is introduced to the treatment works and how it is separated or processed. Provide a flow diagram showing how grit and grease is processed at the facility.

Click here to enter text.

3. Grit disposal

Does the facility have a Municipal Solid Waste (MSW) registration or permit for grit disposal?

Yes ☐ No ☐

If No, contact the TCEQ Municipal Solid Waste team at 512-239-0000. Note: A registration or permit is required for grit disposal. Grit shall not be combined with treatment plant sludge. See the instruction booklet for additional information on grit disposal requirements and restrictions.

Describe the method of grit disposal.

Click here to enter text.

4. Grease and decanted liquid disposal

Note: A registration or permit is required for grease disposal. Grease shall not be combined with treatment plant sludge. For more information, contact the TCEQ Municipal Solid Waste team at 512-239-0000.

Describe how the decant and grease are treated and disposed of after grit separation.

Click here to enter text.

E. Stormwater management

1. Applicability

Does the facility have a design flow of 1.0 MGD or greater in any phase?

Yes ☐ No ☒

Does the facility have an approved pretreatment program, under 40 CFR Part 403?

Yes ☐ No ☒

If no to both of the above, then skip to Subsection F, Other Wastes Received.

2. MSGP coverage

Is the stormwater runoff from the WWTP and dedicated lands for sewage disposal currently permitted under the TPDES Multi-Sector General Permit (MSGP), TXR050000?

Yes ☐ No ☐

If yes, please provide MSGP Authorization Number and skip to Subsection F, Other Wastes Received:

TXR05 Click here to enter text or TXRNE Click here to enter text

If no, do you intend to seek coverage under TXR050000?

Yes ☐ No ☐

3. Conditional exclusion

Alternatively, do you intend to apply for a conditional exclusion from permitting based TXR050000 (Multi Sector General Permit) Part II B.2 or TXR050000 (Multi Sector General Permit) Part V, Sector T 3(b)?

Yes ☐ No ☐

If yes, please explain below then proceed to Subsection F, Other Wastes Received:

Click here to enter text

4. Existing coverage in individual permit

Is your stormwater discharge currently permitted through this individual TPDES or TLAP permit?

Yes ☐ No ☐

If yes, provide a description of stormwater runoff management practices at the site that are authorized in the wastewater permit then skip to Subsection F, Other Wastes Received.

Click here to enter text.

5. Zero stormwater discharge

Do you intend to have no discharge of stormwater via use of evaporation or other means?

Yes ☐ No ☐

If yes, explain below then skip to Subsection F. Other Wastes Received.

Click here to enter text.

Note: If there is a potential to discharge any stormwater to surface water in the state as the result of any storm event, then permit coverage is required under the MSGP or an individual discharge permit. This requirement applies to all areas of facilities with treatment plants or systems that treat, store, recycle, or reclaim domestic sewage, wastewater or sewage sludge (including dedicated lands for sewage sludge disposal located within the onsite property boundaries) that meet the applicability criteria of above. You have the option of obtaining coverage under the MSGP for direct discharges, (recommended), or obtaining coverage under this individual permit.

6. Request for coverage in individual permit

Are you requesting coverage of stormwater discharges associated with your treatment plant under this individual permit?

Yes ☐ No ☐

If yes, provide a description of stormwater runoff management practices at the site for which you are requesting authorization in this individual wastewater permit and describe whether you intend to comingle this discharge with your treated effluent or discharge it via a separate dedicated stormwater outfall. Please also indicate if you intend to divert stormwater to the treatment plant headworks and indirectly discharge it to water in the state.

Click here to enter text.

Note: Direct stormwater discharges to waters in the state authorized through this individual permit will require the development and implementation of a stormwater pollution prevention plan (SWPPP) and will be subject to additional monitoring and reporting requirements. Indirect discharges of stormwater via headworks recycling will require compliance with all individual permit requirements including 2-hour peak flow limitations. All stormwater discharge authorization requests will require additional information during the technical review of your application.

F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?
Yes ☐ No ☒

If yes, a Sewage Sludge Solids Management Plan is required. See Example 5 in the instructions.

G. Other wastes received including sludge from other WWTPs and septic waste

1. Acceptance of sludge from other WWTPs

Does the facility accept or will it accept sludge from other treatment plants at the facility site?
Yes ☐ No ☒

If yes, attach sewage sludge solids management plan. See Example 5 of the instructions.

In addition, provide the date that the plant started accepting sludge or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD_5 concentration of the sludge, and the design BOD_5 concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click here to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

Yes ☐ No ☒

If yes, does the facility have a Type V processing unit?

Yes ☐ No ☐

If yes, does the unit have a Municipal Solid Waste permit?

Yes ☐ No ☐

If yes to any of the above, provide a the date that the plant started accepting septic waste, or is anticipated to start accepting septic waste, an estimate of monthly septic waste acceptance (gallons or millions of gallons), an estimate of the BOD_5 concentration of the septic waste, and the design BOD_5 concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click here to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

3. Acceptance of other wastes (not including septic, grease, grit, or RCRA, CERCLA or as discharged by IUs listed in Worksheet 6)

Is the facility accepting or will it accept wastes that are not domestic in nature excluding the categories listed above?

Yes ☐ No ☒

If yes, provide the date that the plant started accepting the waste, an estimate how much waste is accepted on a monthly basis (gallons or millions of gallons), a description of the entities generating the waste, and any distinguishing chemical or other physical characteristic of the waste. Also note if this information has or has not changed since the last permit action.

Click here to enter text.

Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 58)

Is the facility in operation?

Yes ☐ No ☒

If no, this section is not applicable. Proceed to Section 8.

If yes, provide effluent analysis data for the listed pollutants. ***Wastewater treatment facilities*** complete Table 1.0(2). **W*ater treatment facilities*** discharging filter backwash water, complete Table 1.0(3).

Note: The sample date must be within 1 year of application submission.

Table 1.0(2) - Pollutant Analysis for Wastewater Treatment Facilities

Pollutant	**Average Conc.**	**Max Conc.**	**No. of Samples**	**Sample Type**	**Sample Date/Time**
$CBOD_5$, mg/l					
Total Suspended Solids, mg/l					
Ammonia Nitrogen, mg/l					
Nitrate Nitrogen, mg/l					
Total Kjeldahl Nitrogen, mg/l					
Sulfate, mg/l					
Chloride, mg/l					
Total Phosphorus, mg/l					
pH, standard units					
Dissolved Oxygen*, mg/l					
Chlorine Residual, mg/l					
E.coli (CFU/100ml) freshwater					
Entercocci (CFU/100ml)					

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
saltwater					
Total Dissolved Solids, mg/l					
Electrical Conductivity, µmohs/cm, †					
Oil & Grease, mg/l					
Alkalinity ($CaCO_3$)*, mg/l					

*TPDES permits only

†TLAP permits only

Table 1.0(3) - Pollutant Analysis for Water Treatment Facilities

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Total Suspended Solids, mg/l					
Total Dissolved Solids, mg/l					
pH, standard units					
Fluoride, mg/l					
Aluminum, mg/l					
Alkalinity ($CaCO_3$), mg/l					

Section 8. Facility Operator (Instructions Page 60)

Facility Operator Name: TBD

Facility Operator's License Classification and Level: Click here to enter text.

Facility Operator's License Number: Click here to enter text.

Section 9. Sewage Sludge Management and Disposal (Instructions Page 60)

A. Sludge disposal method

Identify the current or anticipated sludge disposal method or methods from the

following list. Check all that apply.

☐ Permitted landfill

☐ Permitted or Registered land application site for beneficial use

☐ Land application for beneficial use authorized in the wastewater permit

☐ Permitted sludge processing facility

☐ Marketing and distribution as authorized in the wastewater permit

☐ Composting as authorized in the wastewater permit

☐ Permitted surface disposal site (sludge monofill)

☐ Surface disposal site (sludge monofill) authorized in the wastewater permit

☒ Transported to another permitted wastewater treatment plant or permitted sludge processing facility. If you selected this method, a written statement or contractual agreement from the wastewater treatment plant or permitted sludge processing facility accepting the sludge must be included with this application.

☐ Other: Click here to enter text.

B. Sludge disposal site

Disposal site name: tbd

TCEQ permit or registration number: Click here to enter text.

County where disposal site is located: Click here to enter text.

C. Sludge transportation method

Method of transportation (truck, train, pipe, other): truck

Name of the hauler: tbd

Hauler registration number: Click here to enter text.

Sludge is transported as a:

Liquid ☐ semi-liquid ☐ semi-solid ☐ solid ☐

Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

A. Beneficial use authorization

Does the existing permit include authorization for land application of sewage sludge for beneficial use?

Yes ☐ No ☒

If yes, are you requesting to continue this authorization to land apply sewage sludge for beneficial use?

Yes ☐ No ☐

If yes, is the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)** attached to this permit application (see the instructions for details)?

Yes ☐ No ☐

B. Sludge processing authorization

Does the existing permit include authorization for any of the following sludge processing, storage or disposal options?

Sludge Composting	Yes ☐	No ☒
Marketing and Distribution of sludge	Yes ☐	No ☒
Sludge Surface Disposal or Sludge Monofill	Yes ☐	No ☒
Temporary storage in sludge lagoons	Yes ☐	No ☒

If yes to any of the above sludge options and the applicant is requesting to continue this authorization, is the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)** attached to this permit application?

Yes ☐ No ☐

Section 11. Sewage Sludge Lagoons (Instructions Page 61)

Does this facility include sewage sludge lagoons?

Yes ☐ No ☒

If yes, complete the remainder of this section. If no, proceed to Section 12.

A. Location information

The following maps are required to be submitted as part of the application. For each map, provide the Attachment Number.

- Original General Highway (County) Map:

  Attachment: Click here to enter text.
- USDA Natural Resources Conservation Service Soil Map:

  Attachment: Click here to enter text.
- Federal Emergency Management Map:

  Attachment: Click here to enter text.
- Site map:

  Attachment: Click here to enter text.

Discuss in a description if any of the following exist within the lagoon area. Check all that apply.

- ☐ Overlap a designated 100-year frequency flood plain
- ☐ Soils with flooding classification
- ☐ Overlap an unstable area
- ☐ Wetlands
- ☐ Located less than 60 meters from a fault
- ☐ None of the above

Attachment: Click here to enter text.

If a portion of the lagoon(s) is located within the 100-year frequency flood plain, provide the protective measures to be utilized including type and size of protective structures:

Click here to enter text.

B. Temporary storage information

Provide the results for the pollutant screening of sludge lagoons. These results are in addition to pollutant results in Section 7 of Technical Report 1.0.

Nitrate Nitrogen, mg/kg: Click here to enter text.

Total Kjeldahl Nitrogen, mg/kg: Click here to enter text.

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg: Click here to enter text.

Phosphorus, mg/kg: Click here to enter text.

Potassium, mg/kg: Click here to enter text.

pH, standard units: Click here to enter text.

Ammonia Nitrogen mg/kg: Click here to enter text.

Arsenic: Click here to enter text.

Cadmium: Click here to enter text.

Chromium: Click here to enter text.

Copper: Click here to enter text.

Lead: Click here to enter text.

Mercury: Click here to enter text.

Molybdenum: Click here to enter text.

Nickel: Click here to enter text.

Selenium: Click here to enter text.

Zinc: Click here to enter text.

Total PCBs: Click here to enter text.

Provide the following information:

Volume and frequency of sludge to the lagoon(s): Click here to enter text.

Total dry tons stored in the lagoons(s) per 365-day period: Click here to enter text.

Total dry tons stored in the lagoons(s) over the life of the unit: Click here to enter text.

C. Liner information

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of $1x10^{-7}$ cm/sec?

Yes ☐ No ☐

If yes, describe the liner below. Please note that a liner is required.

Click here to enter text.

D. Site development plan

Provide a detailed description of the methods used to deposit sludge in the

lagoon(s):

Click here to enter text.

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)

  Attachment: Click here to enter text.

- Copy of the closure plan

  Attachment: Click here to enter text.

- Copy of deed recordation for the site

  Attachment: Click here to enter text.

- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons

  Attachment: Click here to enter text.

- Description of the method of controlling infiltration of groundwater and surface water from entering the site

  Attachment: Click here to enter text.

- Procedures to prevent the occurrence of nuisance conditions

  Attachment: Click here to enter text.

E. Groundwater monitoring

Is groundwater monitoring currently conducted at this site, or are any wells available for groundwater monitoring, or are groundwater monitoring data otherwise available for the sludge lagoon(s)?

Yes ☐ No ☐

If groundwater monitoring data are available, provide a copy. Provide a profile of soil types encountered down to the groundwater table and the depth to the shallowest groundwater as a separate attachment.

Attachment: Click here to enter text.

Section 12. Authorizations/Compliance/Enforcement

(Instructions Page 63)

A. Additional authorizations

Does the permittee have additional authorizations for this facility, such as reuse authorization, sludge permit, etc?

Yes ☐ No ☒

If yes, provide the TCEQ authorization number and description of the authorization:

Click here to enter text.

B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

Yes ☐ No ☒

Is the permittee required to meet an implementation schedule for compliance or enforcement?

Yes ☐ No ☒

If yes to either question, provide a brief summary of the enforcement, the implementation schedule, and the current status:

Click here to enter text.

Section 13. RCRA/CERCLA Wastes (Instructions Page 63)

A. RCRA hazardous wastes

Has the facility received in the past three years, does it currently receive, or will it receive RCRA hazardous waste?

Yes ☐ No ☒

B. Remediation activity wastewater

Has the facility received in the past three years, does it currently receive, or will it receive CERCLA wastewater, RCRA remediation/corrective action wastewater or other remediation activity wastewater?

Yes ☐ No ☒

C. Details about wastes received

If yes to either Subsection A or B above, provide detailed information concerning these wastes with the application.

Attachment: Click here to enter text.

Section 14. Laboratory Accreditation (Instructions Page 64)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
  - periodically inspected by the TCEQ; or
  - located in another state and is accredited or inspected by that state; or
  - performing work for another company with a unit located in the same site; or
  - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements.

The following certification statement shall be signed and submitted with every application. See the *Signature Page* section in the Instructions, for a list of designated representatives who may sign the certification.

CERTIFICATION:

I certify that all laboratory tests submitted with this application meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.*

Printed Name: Click here to enter text.

Title: Click here to enter text.

Signature: _____

Date: _____

DOMESTIC TECHNICAL REPORT 1.1

The following is required for new and amendment applications

Section 1. Justification for Permit (Instructions Page 66)

A. Justification of permit need

Provide a detailed discussion regarding the need for any phase(s) not currently permitted. Failure to provide sufficient justification may result in the Executive Director recommending denial of the proposed phase(s) or permit.

The current sewer system isn't performing as desired and won't handle any future expansion. The owner has elected to construct a privately owned wastewater treatment plant to process 60,000 gallons per day at completion of 2 phases, with 30,000 gallons per day in each phase. Discharge from the plant will be an unnamed tributary of Copeland Creek.

B. Regionalization of facilities

Provide the following information concerning the potential for regionalization of domestic wastewater treatment facilities:

1. Municipally incorporated areas

If the applicant is a city, then Item 1 is not applicable. Proceed to Item 2 Utility CCN areas.

Is any portion of the proposed service area located in an incorporated city?

Yes ☐ No ☒ Not Applicable ☐

If yes, within the city limits of: Click here to enter text.

If yes, attach correspondence from the city.

Attachment: Click here to enter text.

If consent to provide service is available from the city, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the city versus the cost of the proposed facility or expansion attached.

Attachment: Click here to enter text.

2. Utility CCN areas

Is any portion of the proposed service area located inside another utility's CCN area?

Yes ☒ No ☐

If yes, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the CCN facilities versus the cost of the proposed facility or expansion.

Attachment: 17

3. Nearby WWTPs or collection systems

Are there any domestic permitted wastewater treatment facilities or collection systems located within a three-mile radius of the proposed facility?

Yes ☐ No ☒

If yes, attach a list of these facilities that includes the permittee's name and permit number, and an area map showing the location of these facilities.

Attachment: Click here to enter text.

If yes, attach copies of your certified letters to these facilities **and** their response letters concerning connection with their system.

Attachment: Click here to enter text.

Does a permitted domestic wastewater treatment facility or a collection system located within three (3) miles of the proposed facility currently have the capacity to accept or is willing to expand to accept the volume of wastewater proposed in this application?

Yes ☐ No ☐

If yes, attach an analysis of expenditures required to connect to a permitted wastewater treatment facility or collection system located within 3 miles versus the cost of the proposed facility or expansion.

Attachment: Click here to enter text.

Section 2. Organic Loading (Instructions Page 67)

Is this facility in operation?

Yes ☐ No ☒

If no, proceed to Item B, Proposed Organic Loading.

If yes, provide organic loading information in Item A, Current Organic Loading

A. Current organic loading

Facility Design Flow (flow being requested in application): Click here to enter text.

Average Influent Organic Strength or BOD_5 Concentration in mg/l: Click here to enter text.

Average Influent Loading (lbs/day = total average flow X average BOD_5 conc. X 8.34): Click here to enter text.

Provide the source of the average organic strength or BOD_5 concentration.

Click here to enter text.

B. Proposed organic loading

This table must be completed if this application is for a facility that is not in operation or if this application is to request an increased flow that will impact organic loading.

Table 1.1(1) – Design Organic Loading

Source	Total Average Flow (MGD)	Influent BOD_5 Concentration (mg/l)
Municipality		
Subdivision		
Trailer park – transient	0.06 MGD	300
Mobile home park		
School with cafeteria and showers		
School with cafeteria,		

Source	Total Average Flow (MGD)	Influent BOD_5 Concentration (mg/l)
no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory		
Motel		
Restaurant		
Hospital		
Nursing home		
Other		
TOTAL FLOW from all sources	0.06 MGD	
AVERAGE BOD_5 from all sources		300

Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 68)

A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: Click here to enter text.

Total Suspended Solids, mg/l: Click here to enter text.

Ammonia Nitrogen, mg/l: Click here to enter text.

Total Phosphorus, mg/l: Click here to enter text.

Dissolved Oxygen, mg/l: Click here to enter text.

Other: Click here to enter text.

B. Interim II Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: Click here to enter text.

Total Suspended Solids, mg/l: Click here to enter text.

Ammonia Nitrogen, mg/l: Click here to enter text.

Total Phosphorus, mg/l: Click here to enter text.

Dissolved Oxygen, mg/l: Click here to enter text.

Other: Click here to enter text.

C. Final Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: Click here to enter text.

Total Suspended Solids, mg/l: Click here to enter text.

Ammonia Nitrogen, mg/l: Click here to enter text.

Total Phosphorus, mg/l: Click here to enter text.

Dissolved Oxygen, mg/l: Click here to enter text.

Other: Click here to enter text.

D. Disinfection Method

Identify the proposed method of disinfection.

☒ Chlorine: 1 mg/l after 2.0 minutes detention time at peak flow

Dechlorination process: n/a

☐ Ultraviolet Light: Click here to enter text. seconds contact time at peak flow

☐ Other: Click here to enter text.

Section 4. Design Calculations (Instructions Page 68)

Attach design calculations and plant features for each proposed phase. Example 4 of the instructions includes sample design calculations and plant features.

Attachment: 18, 19

Section 5. Facility Site (Instructions Page 68)

A. 100-year floodplain

Will the proposed facilities be located above the 100-year frequency flood level?

Yes ☒ No ☐

If no, describe measures used to protect the facility during a flood event. Include a site map showing the location of the treatment plant within the 100-year frequency flood level. If applicable, provide the size and types of protective structures.

Click here to enter text.

Provide the source(s) used to determine 100-year frequency flood plain.

FEMA FIRM map 48373C0500C

For a new or expansion of a facility, will a wetland or part of a wetland be filled?

Yes ☐ No ☒

If yes, has the applicant applied for a US Corps of Engineers 404 Dredge and Fill Permit?

Yes ☐ No ☐

If yes, provide the permit number: Click here to enter text.

If no, provide the approximate date you anticipate submitting your application to the Corps: Click here to enter text.

B. Wind rose

Attach a wind rose. **Attachment**: 20

Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 69)

A. Beneficial use authorization

Are you requesting to include authorization to land apply sewage sludge for beneficial use on property located adjacent to the wastewater treatment facility under the wastewater permit?

Yes ☐ No ☒

If yes, attach the completed Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)

Attachment: Click here to enter text.

B. Sludge processing authorization

Identify the sludge processing, storage or disposal options that will be conducted at the wastewater treatment facility:

☐ Sludge Composting

☐ Marketing and Distribution of sludge

☐ Sludge Surface Disposal or Sludge Monofill

If any of the above sludge options are selected, attach a completed DOMESTIC WASTEWATER PERMIT APPLICATION: SEWAGE SLUDGE TECHNICAL REPORT (TCEQ Form No. 10056).

Attachment: Click here to enter text.

Section 7. Sewage Sludge Solids Management Plan (Instructions Page 69)

Attach a solids management plan to the application.

Attachment: 21

The sewage sludge solids management plan must contain the following information:

- Treatment units and processes dimensions and capacities
- Solids generated at 100, 75, 50, and 25 percent of design flow
- Mixed liquor suspended solids operating range at design and projected actual flow
- Quantity of solids to be removed and a schedule for solids removal
- Identification and ownership of the ultimate sludge disposal site
- For facultative lagoons, design life calculations, monitoring well locations and depths, and the ultimate disposal method for the sludge from the facultative lagoon

An example of a sewage sludge solids management plan has been included as Example 5 of the instructions.

DOMESTIC TECHNICAL REPORT WORKSHEET 2.0

RECEIVING WATERS

The following is required for all TPDES permit applications

Section 1. Domestic Drinking Water Supply (Instructions Page 73)

Is there a surface water intake for domestic drinking water supply located within 5 miles downstream from the point or proposed point of discharge?

Yes ☐ No ☒

If yes, provide the following:
Owner of the drinking water supply: Click here to enter text.

Distance and direction to the intake: Click here to enter text.

Attach a USGS map that identifies the location of the intake.

Attachment: Click here to enter text.

Section 2. Discharge into Tidally Affected Waters (Instructions Page 73)

Does the facility discharge into tidally affected waters?

Yes ☐ No ☒

If yes, complete the remainder of this section. If no, proceed to Section 3.

A. Receiving water outfall

Width of the receiving water at the outfall, in feet: Click here to enter text.

B. Oyster waters

Are there oyster waters in the vicinity of the discharge?

Yes ☐ No ☐

If yes, provide the distance and direction from outfall(s).

Click here to enter text.

C. Sea grasses

Are there any sea grasses within the vicinity of the point of discharge?

Yes ☐ No ☐

If yes, provide the distance and direction from the outfall(s).

Click here to enter text.

Section 3. Classified Segments (Instructions Page 73)

Is the discharge directly into (or within 300 feet of) a classified segment?

Yes ☐ No ☒

If yes, this Worksheet is complete.

If no, complete Sections 4 and 5 of this Worksheet.

Section 4. Description of Immediate Receiving Waters (Instructions Page 75)

Name of the immediate receiving waters: un-named intermittent stream

A. Receiving water type

Identify the appropriate description of the receiving waters.

☒ Stream

☐ Freshwater Swamp or Marsh

☐ Lake or Pond

Surface area, in acres: Click here to enter text.

Average depth of the entire water body, in feet: Click here to enter text.

Average depth of water body within a 500-foot radius of discharge point, in feet: Click here to enter text.

☐ Man-made Channel or Ditch

☐ Open Bay

☐ Tidal Stream, Bayou, or Marsh

☐ Other, specify: Click here to enter text.

B. Flow characteristics

If a stream, man-made channel or ditch was checked above, provide the following. For existing discharges, check one of the following that best characterizes the area *upstream* of the discharge. For new discharges, characterize the area *downstream* of the discharge (check one).

☒ Intermittent - dry for at least one week during most years

☐ Intermittent with Perennial Pools - enduring pools with sufficient habitat to maintain significant aquatic life uses

☐ Perennial - normally flowing

Check the method used to characterize the area upstream (or downstream for new dischargers).

☐ USGS flow records

☐ Historical observation by adjacent landowners

☒ Personal observation

☐ Other, specify: Click here to enter text.

C. Downstream perennial confluences

List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point.

Copeland Creek

D. Downstream characteristics

Do the receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.)?

Yes ☐ No ☒

If yes, discuss how.

Click here to enter text.

E. Normal dry weather characteristics

Provide general observations of the water body during normal dry weather conditions.

flowing

Date and time of observation: 02/05/24

Was the water body influenced by stormwater runoff during observations?

Yes ☒ No ☐

Section 5. General Characteristics of the Waterbody (Instructions Page 74)

A. Upstream influences

Is the immediate receiving water upstream of the discharge or proposed discharge site influenced by any of the following? Check all that apply.

- ☐ Oil field activities
- ☐ Upstream discharges
- ☐ Septic tanks
- ☐ Urban runoff
- ☐ Agricultural runoff
- ☐ Other(s), specify Click here to enter text.

B. Waterbody uses

Observed or evidences of the following uses. Check all that apply.

- ☐ Livestock watering
- ☐ Irrigation withdrawal
- ☐ Fishing
- ☐ Contact recreation
- ☐ Non-contact recreation
- ☐ Navigation

☐ Domestic water supply ☐ Industrial water supply

☐ Park activities ☐ Other(s), specify Click here to enter text.

C. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the receiving water and the surrounding area.

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional

☒ Natural Area: trees and/or native vegetation; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid

☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

ATTACHMENT 1

PERMIT JUSTIFICATION

Fairbanks & Associates

The current sewer system isn't performing as desired and won't handle any future expansion. The owner has elected to construct a privately owned wastewater treatment plant to process 60,000 gallons per day at completion of 2 phases, with 30,000 gallons per day in each phase. Discharge from the plant will be an unnamed intermittent stream.

ATTACHMENT 2

CORE DATA FORM

Fairbanks & Associates

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 603340373		**RN**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* — *If new Customer, enter previous Customer below:*

Rainbow's End Park, Inc.

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0803070267	32067825748	83-1382621	

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:	100 Rainbow Dr.						
	City	Livingston	**State**	TX	**ZIP**	77351	**ZIP + 4**

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	parks@escapees.com

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

(800) 580-8444		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Rainbow's End Wastewater Treatment Plant

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	114 Blue Jay							
	City	Livingston	**State**	TX	**ZIP**	77351	**ZIP + 4**	
24. County								

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**	**Nearest ZIP Code**	
Livingston			TX	77351	

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	30.63917		**28. Longitude (W) In Decimal:**	-94.87206	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
7033		721211	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

RV campsite

34. Mailing Address:	**100 Rainbow Dr.**							
	City	**Livingston**	**State**	**TX**	**ZIP**	**77351**	**ZIP + 4**	
35. E-Mail Address:	**parks@escapees.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(888) 580-8444		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	TPDES Permit			

SECTION IV: Preparer Information

40. Name:	Len Fairbanks	**41. Title:**	Owner, Fairbanks & Associates

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(936 **) 329-2731**		**( ) -**	Len@FairbanksAndAssociates.net

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Fairbanks & Associates	**Job Title:**	Owner
Name *(In Print):*	Len Fairbanks	**Phone:**	**(** 936 **)** 329- **2731**
Signature:	Len Fairbanks	**Date:**	05FEB24

ATTACHMENT 3

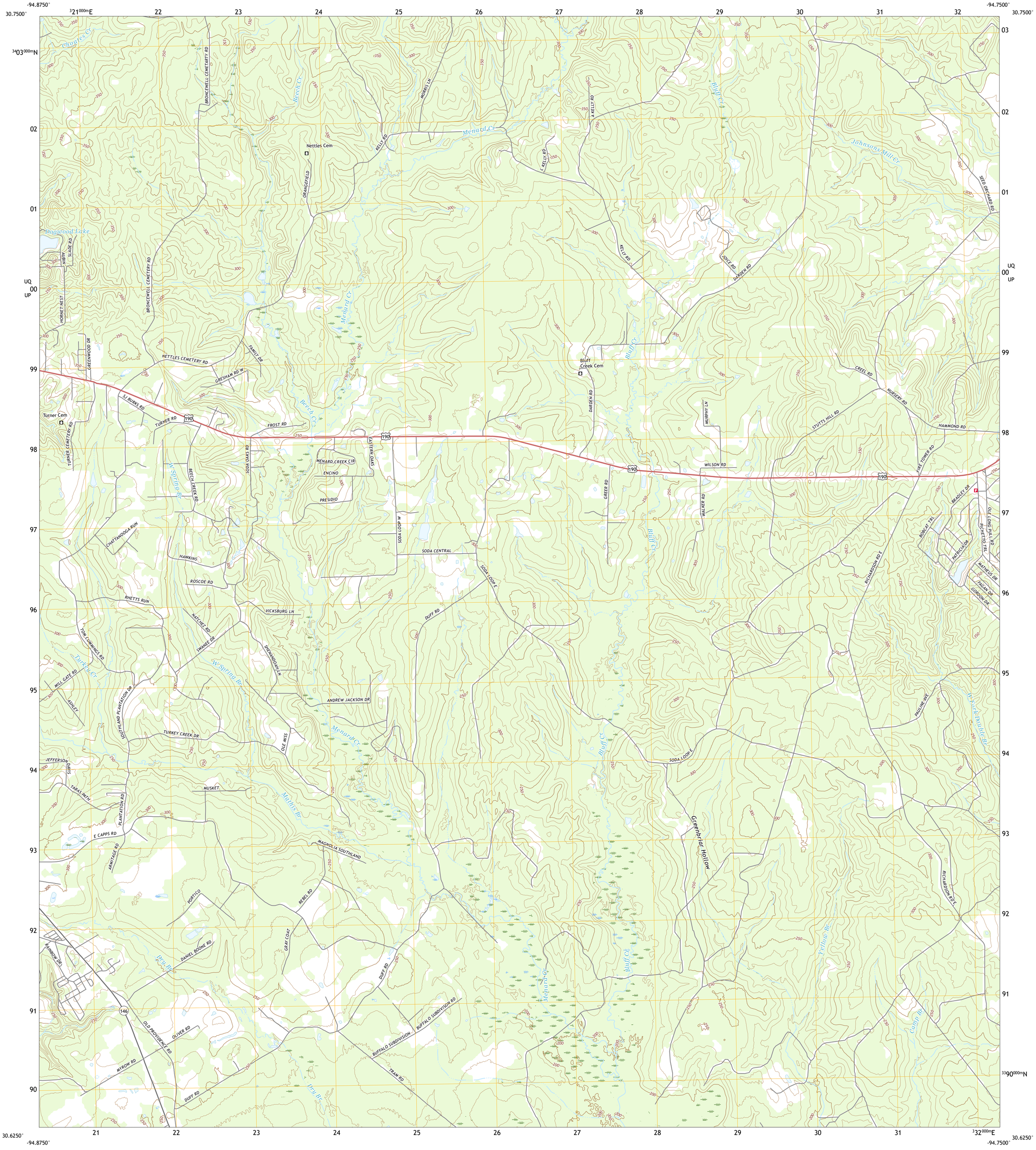
ORIGINAL USGS MAPS

Fairbanks & Associates

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

SODA QUADRANGLE
TEXAS - POLK COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 15R

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, September 2016 - November 2016
Roads.....U.S. Census Bureau, 2015
Names.....GNIS, 2000 - 2015
Hydrography.....National Hydrography Dataset, 2003 - 2018
Contours.....National Elevation Dataset, 2018 - 2018
Boundaries.....Multiple sources; see metadata file 2019 - 2021

Wetlands.....FWS National Wetlands Inventory Not Available

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MN
GN
2°0´ 36 MILS
0°56´ 17 MILS

U.S. National Grid
100,000 - m Square ID
UQ
00
UP
Grid Zone Designation 15R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

TEXAS
QUADRANGLE LOCATION

ADJOINING QUADRANGLES
1 New Willard
2 Leggett
3 Hortense
4 Livingston
5 Dallardsville
6 Goodrich
7 Schwab City
8 Segno

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

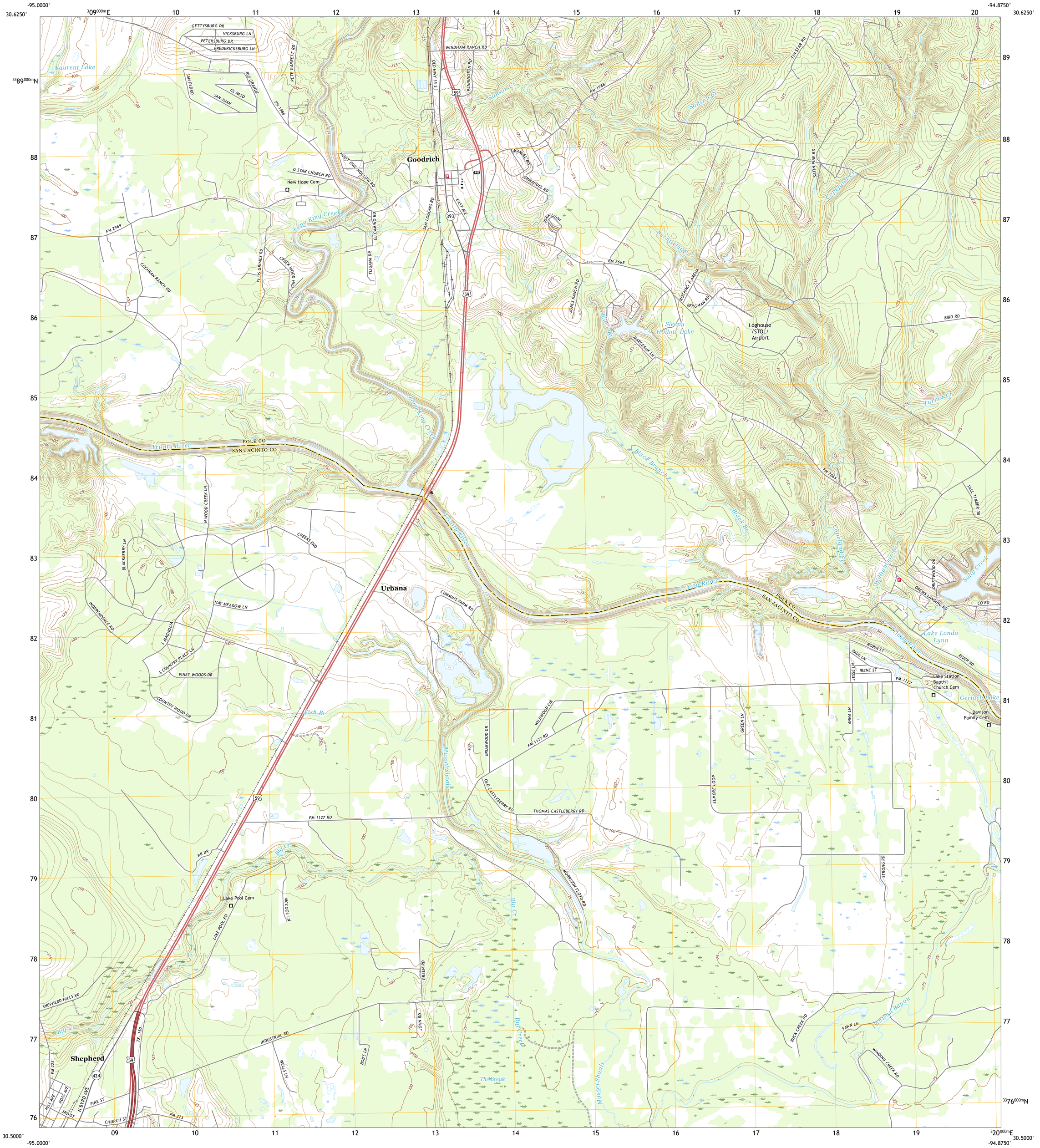
SODA, TX
2022

NSN, 7643016398344
NGA REF NO. USGSX24K41970

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

GOODRICH QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 15R

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Imagery.....NAIP, September 2016 - November 2016
Roads..... U.S. Census Bureau, 2015
Names.....GNIS, 1979 - 2022
Hydrography.....National Hydrography Dataset, 2003 - 2018
Contours.....National Elevation Dataset, 2018
Boundaries.....Multiple sources; see metadata file 2019 - 2021

Wetlands.....FWS National Wetlands Inventory Not Available

MN
GN
2°5′ 37 MILS
0°59′ 17 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
UP
Grid Zone Designation 15R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 5 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Blanchard
2 Livingston
3 Soda
4 Camilla
5 Schwab City
6 Westcott
7 Rayburn
8 Romayor
ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

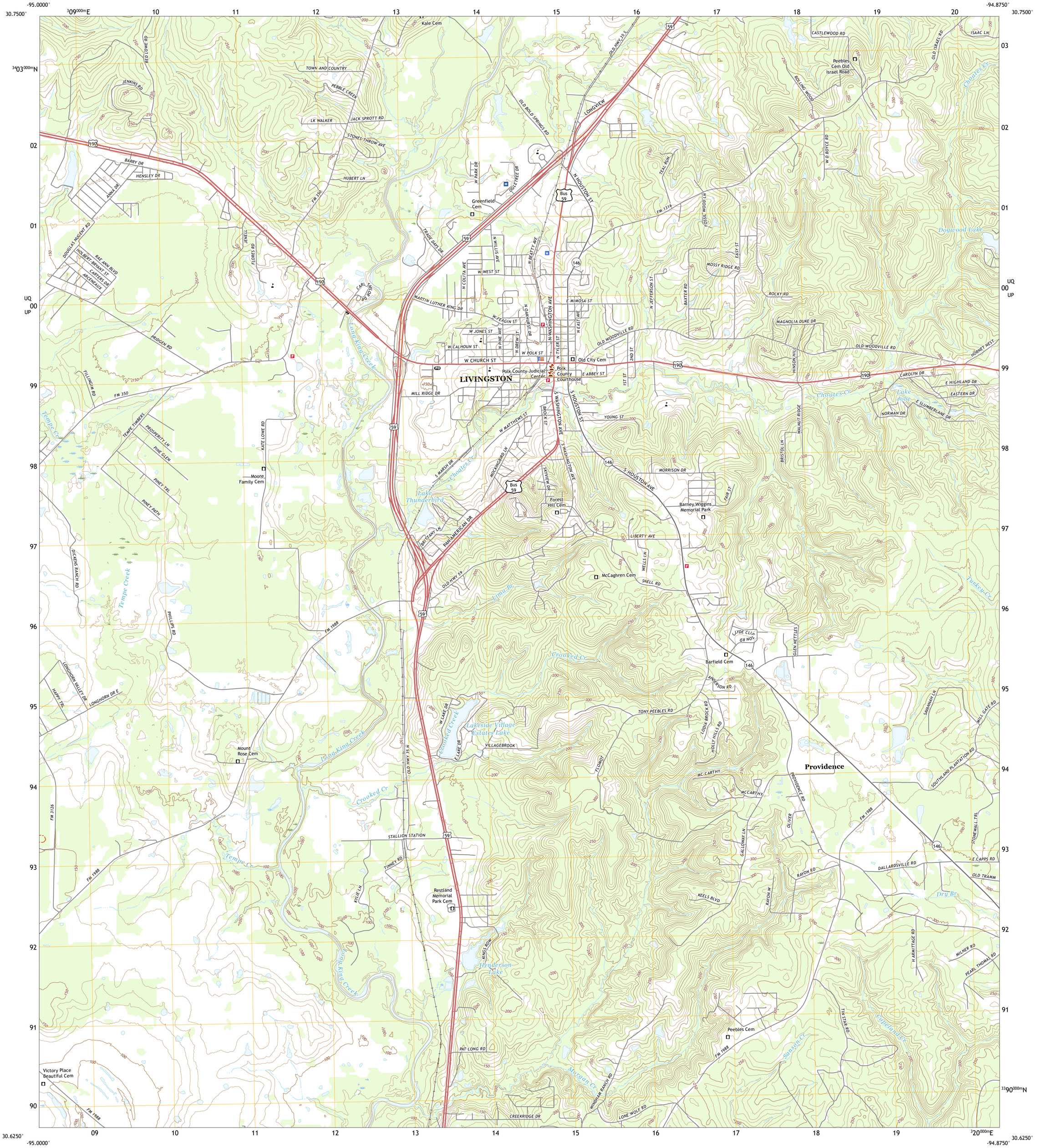
GOODRICH, TX
2022

NSN 7643016396338
NGA REF NO. USGSX24K17725

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

LIVINGSTON QUADRANGLE
TEXAS - POLK COUNTY
7.5-MINUTE SERIES



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Boundaries.....Multiple sources; see metadata file 2019 - 2021

Wetlands.....FWS National Wetlands Inventory Not Available

MN
GN
2°5′ 37 MILS
0°59′ 17 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
UQ
00
UP
Grid Zone Designation 15R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Onalaska
2 New Willard
3 Leggett
4 Blanchard
5 Soda
6 Camilla
7 Goodrich
8 Schwab City

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LIVINGSTON, TX
2022

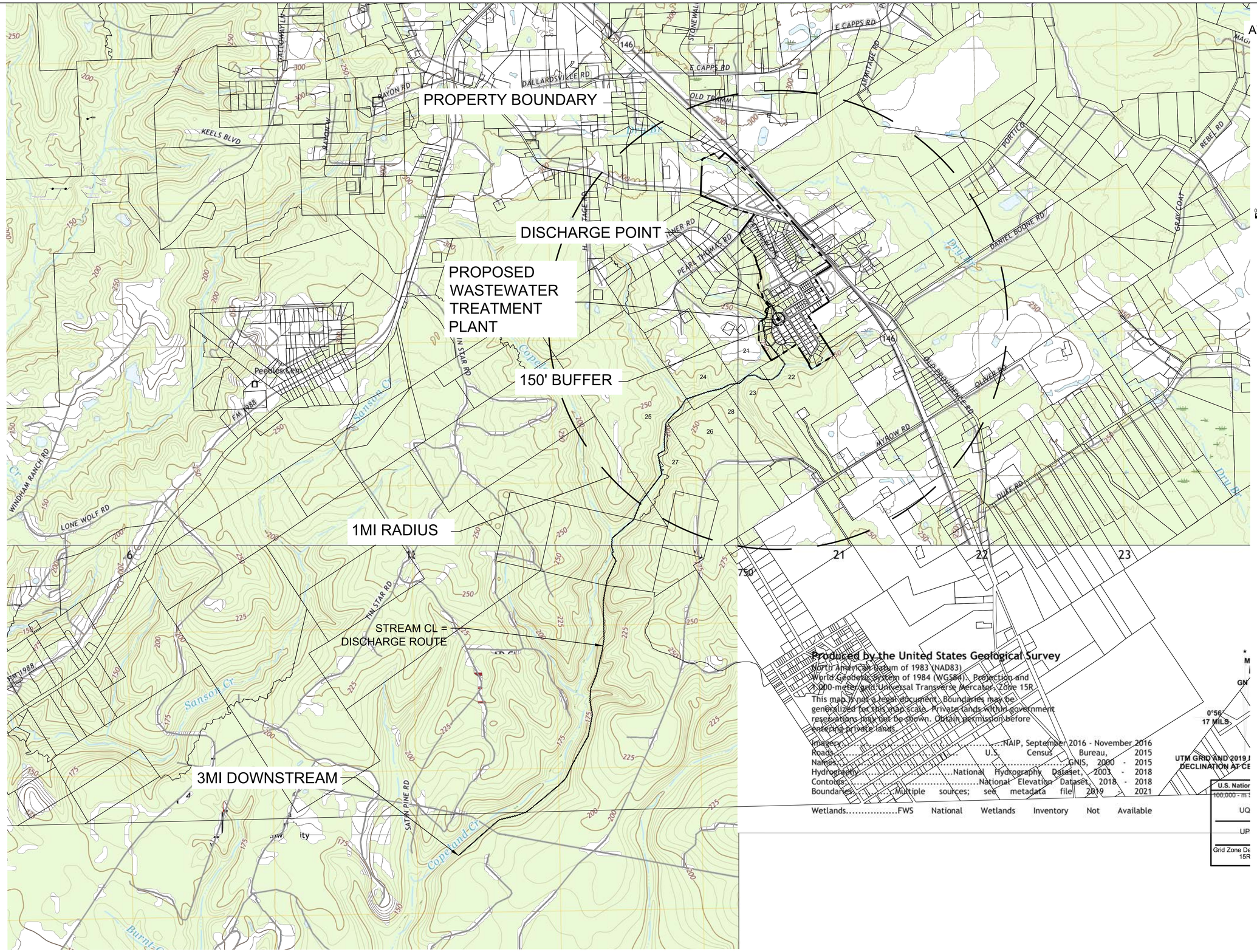
NSN, 7643016397046
NGA REF NO. USGSX24K26123

ATTACHMENT 4

SITE PLAN

Fairbanks & Associates

ATTACHMENT 4



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Contours	National Elevation Dataset, 2018 - 2018
Boundaries	Multiple sources; see metadata file 2019 - 2021
Wetlands	FWS National Wetlands Inventory Not Available

0°56'
17 MILS

UTM GRID AND 2019 M
DECLINATION AT CE

U.S. Natior
100,000 - m s
UQ
UP
Grid Zone De
15R

SITE PLAN - ATTACHMENT 4
1" = 1000' (WHEN PLOTTED ON 24"x36" SHEET)

NORTH

0 500' 1000' 2000'
SCALE: 1" = 1000'

RAINBOW'S END WASTEWATER TREATMENT PLANT

114 BLUE JAY LIVINGSTON, TEXAS 77351

Texas Registered Engineering Firm F-11908
677 Greer Road
Livingston, TX 77351
936-329-2731
Fairbanks & Associates
CIVIL - STRUCTURAL ENGINEERS

STATE OF TEXAS
LEN FAIRBANKS
64662
REGISTERED PROFESSIONAL ENGINEER
20MAR24
F-11908

REVISIONS

No.	Date	Descr
x	xxxxxx	xxxxxxxxx

SITE PLAN

Sheet No.
SP-1.0

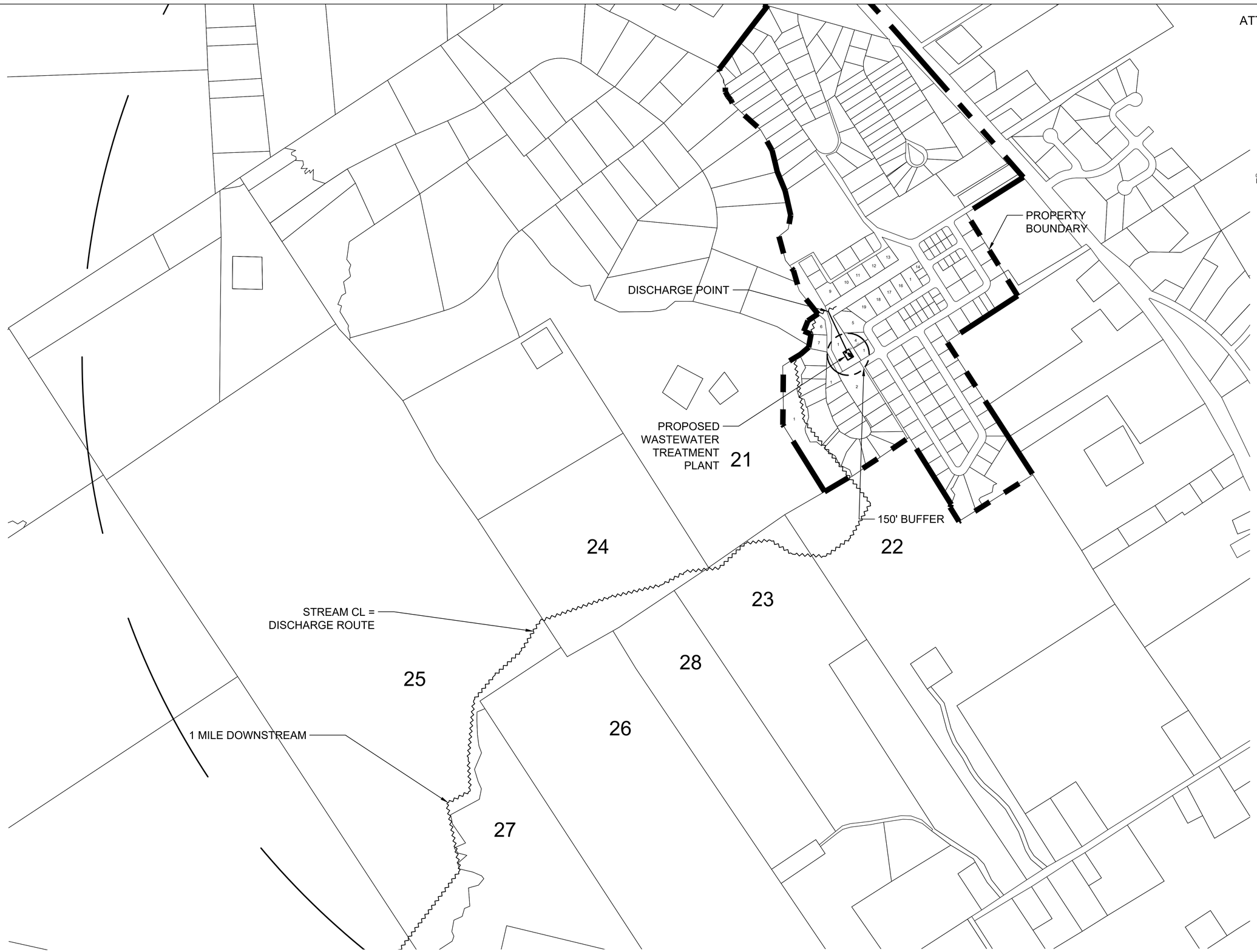
Sheet 1 of 1

ATTACHMENT 5A

ADJACENT LANDOWNERS

Fairbanks & Associates

ATTACHMENT 5A



SITE PLAN - AFFECTED LANDOWNERS MAP W/ NUMBERS - ATTACHMENT 5A

1" = 300' (WHEN PLOTTED ON 24"x36" SHEET)

RAINBOW'S END WASTEWATER TREATMENT PLANT

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936-329-2731
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20MAR24

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No.	Date	Descr
X	XXXXXX	XXXXXXXXX

SITE PLAN

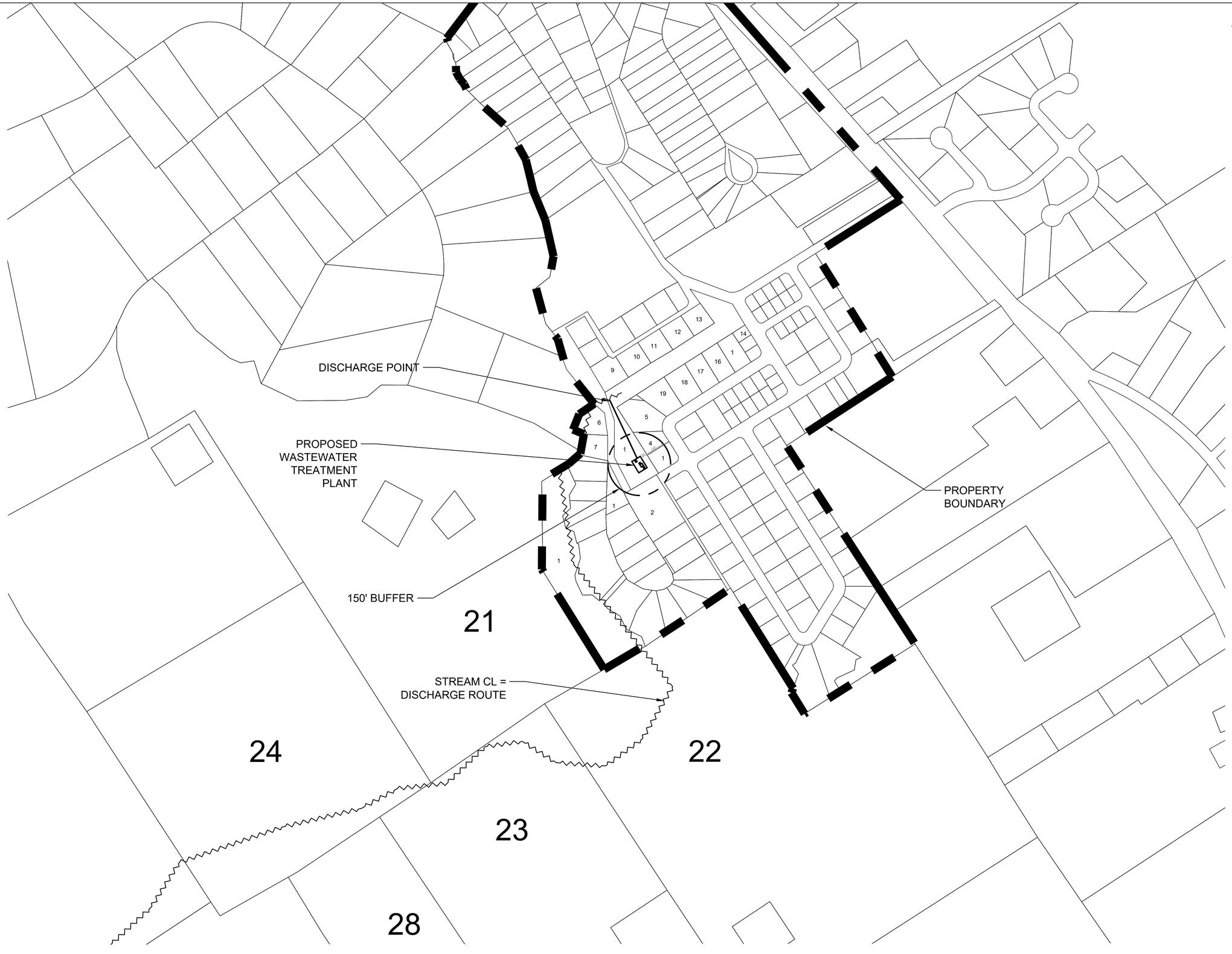
Sheet No.
AL-2.0

ATTACHMENT 5B

ADJACENT LANDOWNERS - ZOOMED

Fairbanks & Associates

ATTACHMENT 5B



SITE PLAN - AFFECTED LANDOWNERS MAP W/ NUMBERS - ATTACHMENT 5B

1" = 200' (WHEN PLOTTED ON 24"x36" SHEET)

RAINBOW'S END WASTEWATER TREATMENT PLANT

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936-329-2731
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STATE OF TEXAS
LEN FAIRBANKS
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REVISIONS

No.	Date	Descr
x	xxxxxx	xxxxxxxxx

SITE PLAN

Sheet No.
AL-2.1

ATTACHMENT 6

ADJACENT LANDOWNERS LIST AND LABELS

Fairbanks & Associates

Rainbow's End Park Inc
100 Rainbow Dr
Livingston, TX 77351

Escapees Inc
100 Rainbow Dr
Livingston, TX 77351

Joy E. Sharbutt
PO BOX 541
San Antonio, FL 33576

George Sanzenbacher
3012 East Perkins Ave.
Sandusky, OH 44870

Bruce & Anne Carlson
255 Rainbow Dr #15592
Livingston, TX 77399

Robert L Hobbs
209 Rainbow DR PMB 10960
Livingston, TX 77399

Jennifer Guerra Prats
PO Box 723
Goodrich, TX 77335

Harry & Lois Bussie
107 Rainbow DR PMB 771
Livingston, TX 77339

Rosemarie Newbould
205 Rainbow Dr #10545
Livingston, TX 77351

Mortgage Assets Management LLC
1 Mortgage Way
Mount Laurel, NJ 08054

Phillip J & Mary Summy co trustee revo trust
125 Culbertson Lp
Livingston, TX 77351

Paul A Schmid
144 Rainbow DR PMB #4433
Livingston, TX 77351

Clennis & Cathryn Life Estate
134 Woodpecker
Livingston, TX 77351

Dan & Carolee Day
255 Rainbow Dr #12511
Livingston, TX 77351

Frederick & Barbara Myers
202 Rainbow Dr #10219
Livingston, TX 77351

David R Bradshaw
193 Rainbow Dr #9364
Livingston, TX 77399

Nelva Jo Davis Trust
595 Pearl Thomas Rd
Livingston, TX 77351

Larry B & Tracy Redden
546 Myrow Rd
Livingston, TX 77351

Cheryl Teel Life Estate
618 Myrow Rd
Livingston, TX 77351

Josh & Katherine Smith
790 Pearl Thomas Rd
Livingston, TX 77351

Tamarack Timberco TX LP
31 Inverness Center Pkwy STE 200
Birmingham, AL 35242

Reuter Timberlands LLC
126 Whippoorwill Dr
Livingston, TX 77351

Michael & Jessica Ainsworth
4171 US Hwy 190 West
Livingston, TX 77351

Steve Denham
614 Myrow Rd
Livingston, TX 77351

ATTACHMENT 7

PHOTOGRAPHS

Fairbanks & Associates

PHOTO 1 - Discharge Point Looking Upstream

PHOTO 2 - Discharge Point Looking Downstream

PHOTO 3 – WWTP Site Looking North

PHOTO 4 – WWTP Site Looking West

PHOTO 5 – WWTP Site Looking South

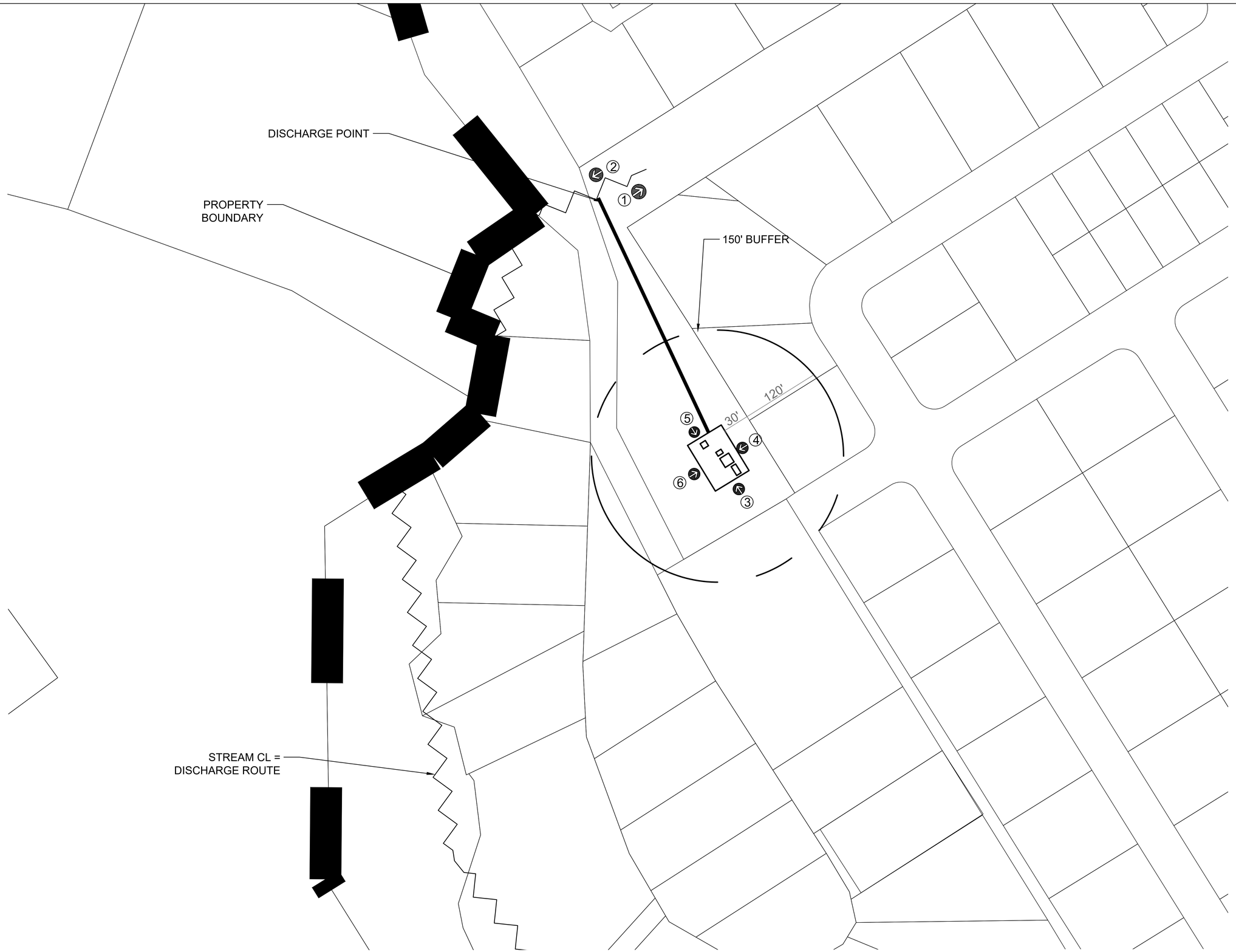
PHOTO 6 – WWTP Site Looking East

ATTACHMENT 8

PHOTOGRAPH LOCATION MAP

Fairbanks & Associates

ATTACHMENT 8



ORIGINAL PHOTOGRAPHS LOCATION MAP - ATTACHMENT 8

1" = 50' (WHEN PLOTTED ON 24"x36" SHEET)

RAINBOW'S END WASTEWATER TREATMENT PLANT

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Texas Registered Engineering Firm F-11908
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Livingston, TX 77351
936-329-2731

Fairbanks & Associates
CIVIL - STRUCTURAL ENGINEERS

STATE OF TEXAS
LEN FAIRBANKS
64662
REGISTERED PROFESSIONAL ENGINEER

20MAR24

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No.	Date	Descr
x	xxxxxx	xxxxxxxxx

SITE PLAN PHOTOS

Sheet No.
PL-4.0

ATTACHMENT 9

BUFFER ZONE MAP

Fairbanks & Associates

ATTACHMENT 9

PROPERTY BOUNDARY

DISCHARGE POINT

9

16

17

18

19

5

6

7

4

1

120'

30'

1

150' BUFFER

NORTH

0 20' 40' 80'

SCALE: 1" = 40'

PROPOSED WASTEWATER TREATMENT PLANT

1

2

STREAM CL = DISCHARGE ROUTE

BUFFER ZONE MAP - ATTACHMENT 9

1" = 40' (WHEN PLOTTED ON 24"x36" SHEET)

RAINBOW'S END WASTEWATER TREATMENT PLANT

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Livingston, TX 77351
936-329-2731

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20MAR24
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No.	Date	Descr
x	XXXXXX	XXXXXXXXX

BUFFER ZONE MAP

Sheet No.
BZ-5.0

Sheet 1 of 1

ATTACHMENT 10

NUISANCE ODOR PREVENTION REQUEST

Fairbanks & Associates

Nuisance odor prevention will be provided by a carbtrol unit, model G-1B90, placed between the influent bar screen and lift station which will filter out any H2S or VOC gases. Prevailing winds are out of the south, as seen in the Wind Rose (attachment 19), which will further alleviate any potential odor from reaching the eastern landowner that lies within the 150' buffer.

Len Fairbanks, P.E.

ATTACHMENT 11

TREATMENT PROCESS DESCRIPTION – PHASE I

Fairbanks & Associates

Treatment Process description – Phase 1

The treatment unit is a submerged fixed bed biofilm reactor (SFBBR) operated as an attached biological system configured as a packaged plant. The treatment unit is self-contained and consists of the following process units: influent pumps, influent fine screen, one aerated fixed-bed biofilm tank (BRT-oxidation) equipped with diffusers and blowers, one Tube settler Final settling tank (TS-FST) with sludge and scum removal, one chlorine contact tank (CCT) and one Sludge tank (SHT). The treatment system also includes sludge transfer piping, control panel, and disinfection apparatus. The effluent discharge pipe from the treatment unit is 6".

ATTACHMENT 12

TREATMENT PROCESS DESCRIPTION – PHASE II

Fairbanks & Associates

Treatment Process description – Phase 2

The treatment unit is a submerged fixed bed biofilm reactor (SFBBR) operated as an attached biological system configured as a packaged plant. The treatment unit is self-contained and consists of the following process units: influent pumps, influent fine screen, one aerated fixed-bed biofilm tank (BRT-oxidation) equipped with diffusers and blowers, one Tube settler Final settling tank (TS-FST) with sludge and scum removal, one chlorine contact tank (CCT) and one Sludge tank (SHT). The treatment system also includes sludge transfer piping, control panel, and disinfection apparatus. The effluent discharge pipe from the treatment unit is 6".

ATTACHMENT 13

TREATMENT UNIT SIZING

Fairbanks & Associates

Rainbow's End Wastewater Treatment Plant

Unit Descriptions and Dimensions

Phase 1 – 30,000 gpd

WWTP Dimensions - Phase 1		
Units	**Number of Units**	**Dimensions (LxWxH)**
1. Aeration Tank (BRT)	**1**	**6'x 12' x 12'**
2. Tube Settler Final Settling Tank (TS-FST)	**1**	**11'x 12' x 12'**
3. Chlorine contact tank (CCT)	**1**	**7' x 5'x 12'**
4. Sludge Holding tank (SHT)	**1**	**7' x 7'x 12'**

Phase 2 – 30,000 gpd

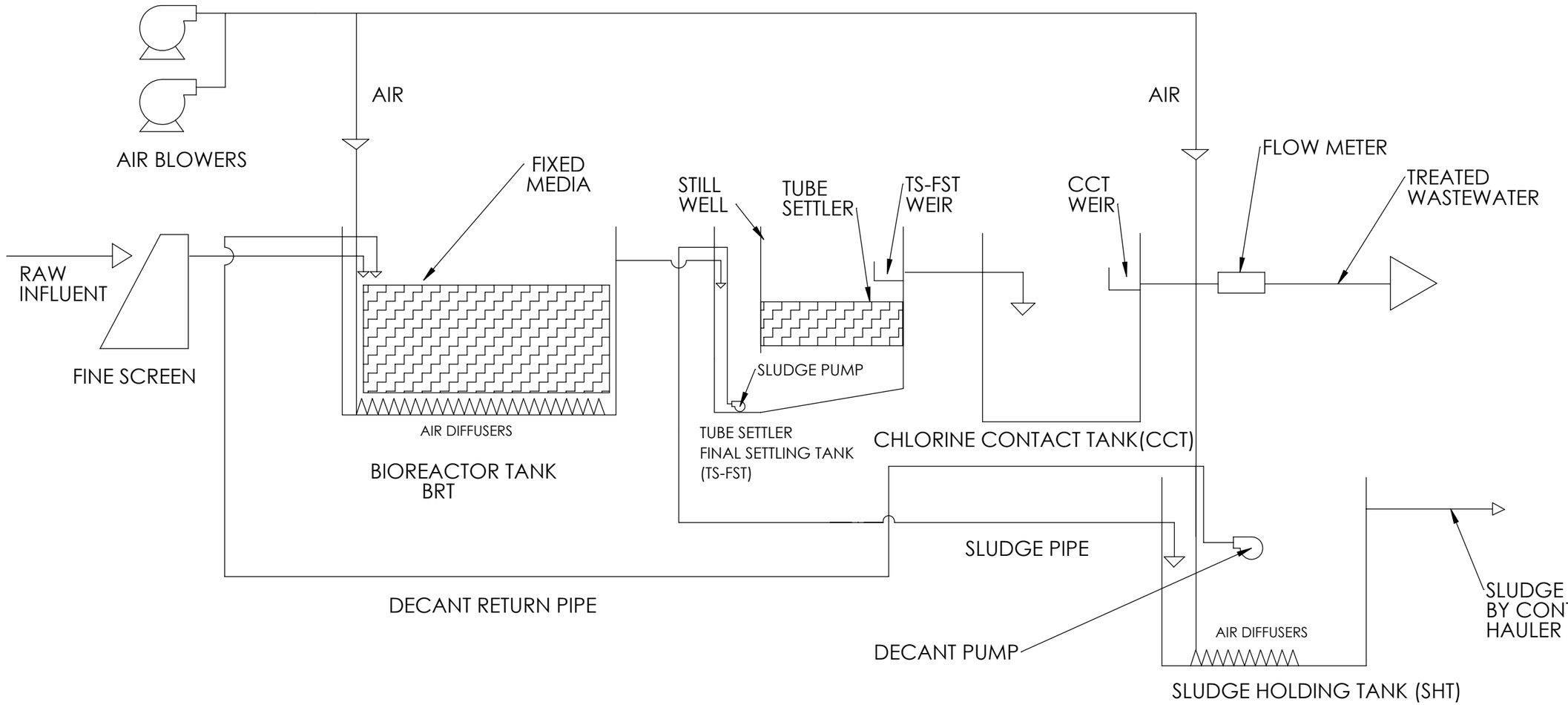
WWTP Dimensions - Phase 1		
Units	**Number of Units**	**Dimensions (LxWxH)**
1. Aeration Tank (BRT)	**1**	**6'x 12' x 12'**
2. Tube Settler Final Settling Tank (TS-FST)	**1**	**11'x 12' x 12'**
3. Chlorine contact tank (CCT)	**1**	**7' x 5'x 12'**
4. Sludge Holding tank (SHT)	**1**	**7' x 7'x 12'**

ATTACHMENT 14

TREATMENT PROCESS FLOW DIAGRAM – PHASE I

Fairbanks & Associates

Phase 1



	NAME	DATE
DRAWN	YH	05/13/21
CHECKED	YH	05/13/21
ENG APPR.	YH	05/13/21
MFG APPR.		
Q.A.		
COMMENTS:		

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

TITLE:
RAINBOW'S END
30KGPD WWTP
PROCESS FLOW DIAGRAM

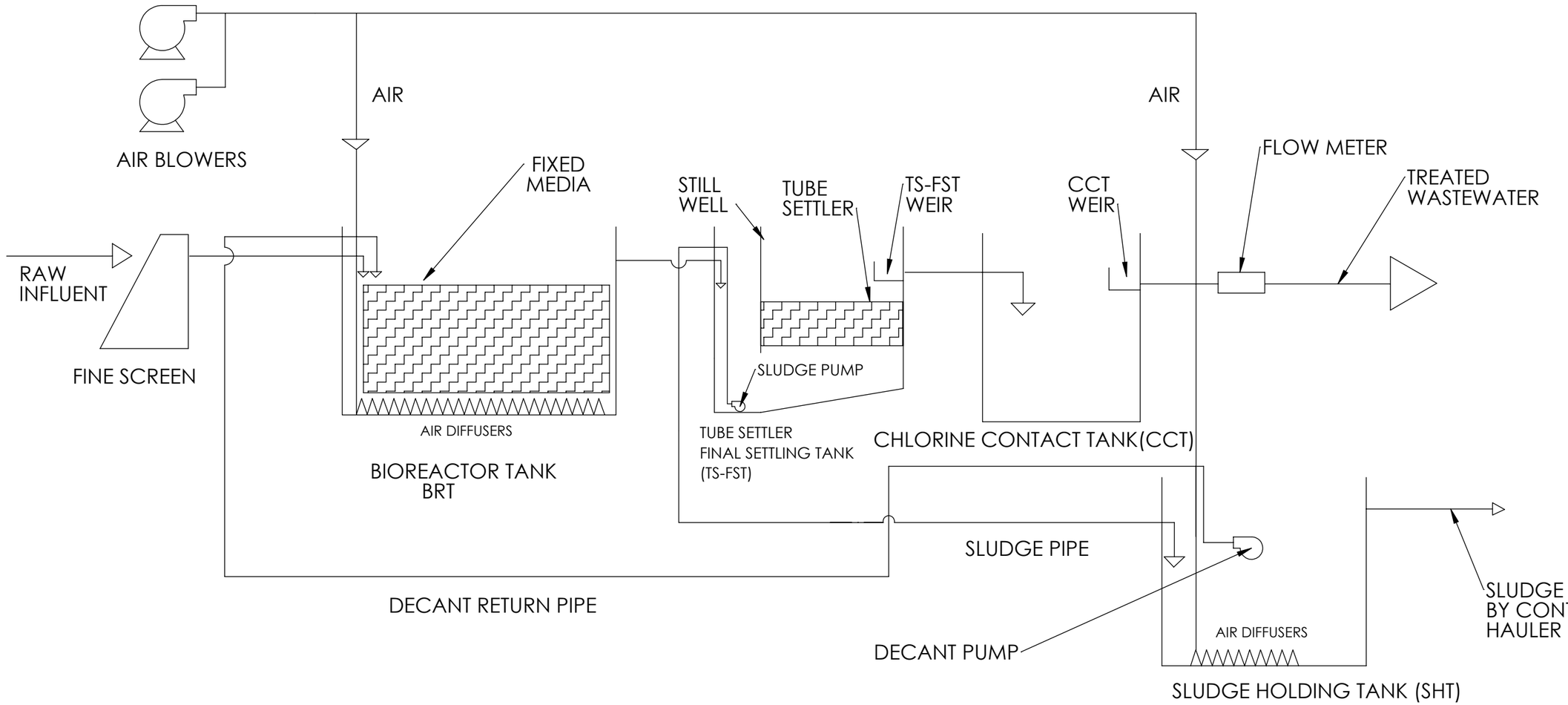
SIZE		REV
B		
SCALE: NTS		SHEET 1 OF 1

ATTACHMENT 15

TREATMENT PROCESS FLOW DIAGRAM – PHASE II

Fairbanks & Associates

Phase 2



	NAME	DATE
DRAWN	YH	05/13/21
CHECKED	YH	05/13/21
ENG APPR.	YH	05/13/21
MFG APPR.		
Q.A.		
COMMENTS:		

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

TITLE:
RAINBOW'S END
30KGPD WWTP
PROCESS FLOW DIAGRAM

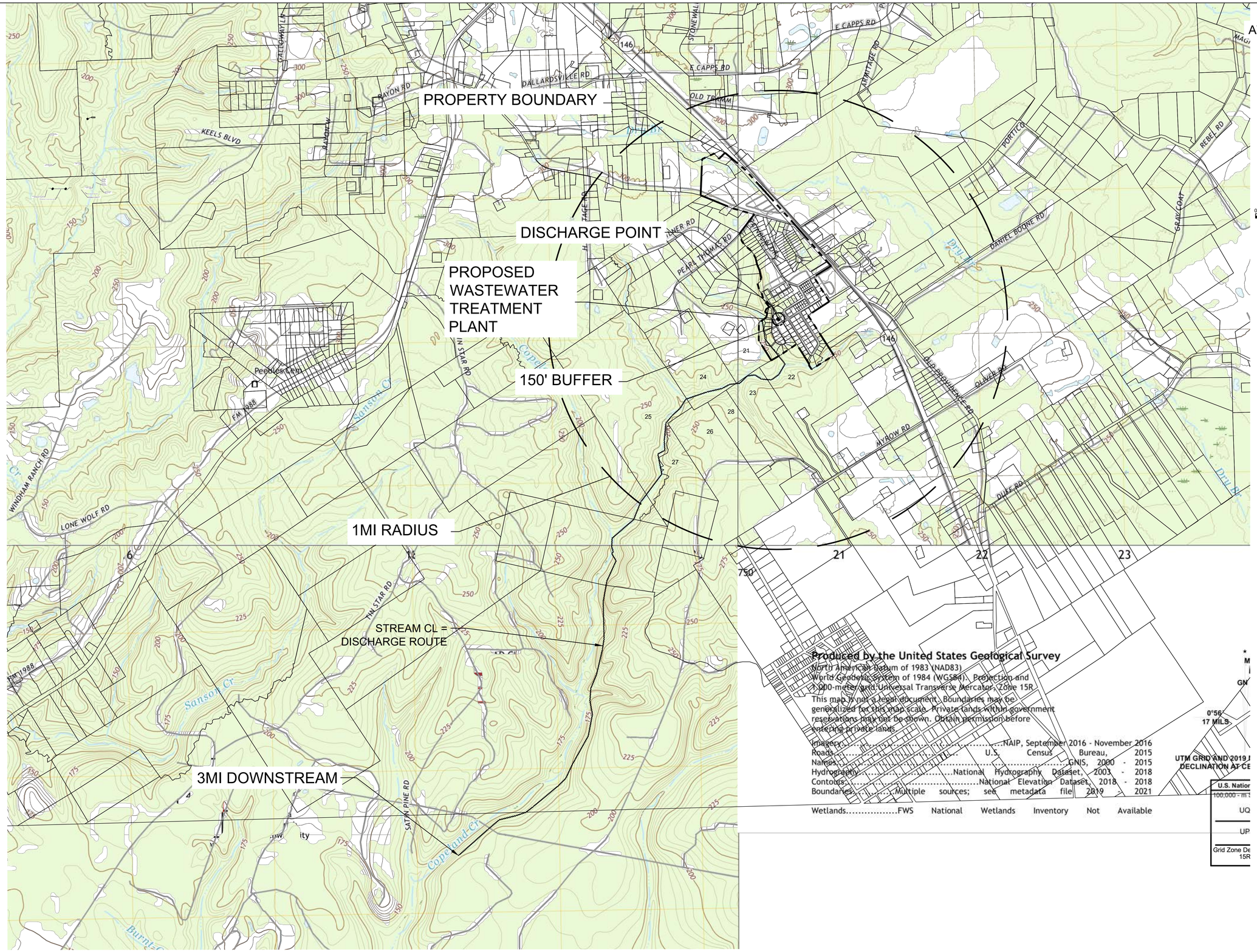
SIZE		REV
B		
SCALE: NTS		SHEET 1 OF 1

ATTACHMENT 4

SITE DRAWING

Fairbanks & Associates

ATTACHMENT 4



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Contours	National Elevation Dataset, 2018 - 2018
Boundaries	Multiple sources; see metadata file 2019 - 2021
Wetlands	FWS National Wetlands Inventory Not Available

0°56'
17 MILS

UTM GRID AND 2019 M
DECLINATION AT CE

U.S. Natior
100,000 - m s
UQ
UP
Grid Zone De
15R

SITE PLAN - ATTACHMENT 4
1" = 1000' (WHEN PLOTTED ON 24"x36" SHEET)

NORTH

0 500' 1000' 2000'
SCALE: 1" = 1000'

RAINBOW'S END WASTEWATER TREATMENT PLANT

114 BLUE JAY LIVINGSTON, TEXAS 77351

Texas Registered Engineering Firm F-11908
677 Greer Road
Livingston, TX 77351
936-329-2731
Fairbanks & Associates
CIVIL - STRUCTURAL ENGINEERS

STATE OF TEXAS
LEN FAIRBANKS
64662
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20MAR24
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REVISIONS

No.	Date	Descr
x	xxxxxx	xxxxxxxxx

SITE PLAN

Sheet No.
SP-1.0

Sheet 1 of 1

ATTACHMENT 17

JUSTIFICATION FOR PROPOSED FACILITY

Fairbanks & Associates

The current sewer system isn't performing as desired and won't handle any future expansion. The owner has elected to construct a privately owned wastewater treatment plant to process 60,000 gallons per day at completion of 2 phases, with 30,000 gallons per day in each phase. Discharge from the plant will be an unnamed intermittent stream.

ATTACHMENT 18

DESIGN CALCULATIONS – PHASE I

Fairbanks & Associates

AWS SFBBR UNIT DESIGN DOCUMENT 30000 gpd 12 by 12 Unit

(with Standard Inffluent and Effluent levels ; 300/300/ 20/20)

Unit Sizing for Submerged Fixed Biofilm Reactor

Unit Daily Rate	kgpd	gpm	cfs	Notes
Average Output (Q_{av})	30.00	20.83	0.046	
Peak Output (Q_{pk})	120.00	83.33	0.185	

	BOD5	TSS	NH3-N	Notes
Effluent Concentration (mg/l)	20	20	0.0	
Influent Concentration (mg/l)	300	300	0	
Influent Concentration (lb/d))	75.13	75.13	0.00	
Influent Concentration (gr/d))	34110.0	34110.0	0.0	

DESIGN CRITERION:

BRT1-CBOD Oxidation	**gr/m2/d**	**lb/sf/d**	**Value**	**Notes**
CBOD loading rate	8	0.001616619	1.23*10^-3	from Schlegel
for effluent at 10 mg/l	5.62	0.00115	1.15*10^-3	from MT Garrett
for effluent at 20 mg/l		0.00229	2.29*10^-3	from MT Garrett
for effluent at 25 mg/l		0.00286	2.86*10^-3	from MT Garrett
for Effluent at 30 mg/l		0.0035	3.50*10^-3	from MT Garrett
for Effluent at 5 mg/l		0.0009	0.90*10^-3	from MT Garrett
for Effluent at 50 mg/l		0.006	6.00*10^-3	from MT Garrett

Media	**m2/m3**	**sf/cf**	**Notes**
Brentwood (VF - 19 plus)	154	47	
Rashig VF 190 +	154	47	

The CBOD loading rate is a function of the effluent concentration See Garrett paper
for 10 mg/l =1.15 lb BOD/1000 sf/d
for 20 mg/l =2.29 lb BOD/1000 sf/d
for 25 mg/l = 2.86 lb BOD/1000 sf/d
for 30 mg/l = 3.50 lb BOD/ 1000 sf/d
for 5 mg/l = 0.90 lb BOD/1000 sf/d

BRT2 - Nitrification	**g/m2/d**	**lb/sf/d**	**Value**	**Notes**
NH3-N loading rate	2	0.000410	0.41*10^-3	

Media	**m2/m3**	**sf/cf**	**Notes**
Brentwood (CF-1900)	157	48	
Rashig XF 48	157	48	
PVA			

See PVA brochure for media info

FST	**gpd/sf**	**Notes**
Loading Rate @ Qav	400	

The loading rate is a function of the effluent concentration level see Garrett paper, pg 6

TSS Eff	mg/l	15	20	30	10	5	50
loading rate	gpd/sq. ft	300	400	600	200	175	1000

12 by 12 Design

Fixed Tank Dimensions

Note: These are selected values

	Dimension(internal)	*Units*	*Notes*
width	11.5	ft	
height	11.5	ft	
max water height (mwd)	10	ft	
Peak Flow Factor	4		MWD must be 1.5 ft less than tank height (or more)

Calculated Tank Lengths and Media Volumes Provided

Note: These are calculated values based on fixed dimensions and effluent criteria

	Length	*Units*	*Notes*	*Media Vol,cf*	*Media Type*
BRT1	6	ft		420	BW (VF-19 plus)
BRT2	0	ft		0	BW (VF-19 plus)
FST	11	ft	Tube Settler	170	FS -41- 50-2
Chlorine Contact	7	ft	width is 5 ft		
Sludge Holding	7	ft	width is 7 ft		
		ft			
TOTAL LENGTH	24	ft			

Note: THIS DESIGN REQUIRES

Quantity	Description	
1	1 at 24FT	FRP Tank
2	Blowers at 7Psi	70 ACFM

PROCESS:

BRT1 & BRT2

Total Media surface area	**16404**	sf	

NOTE: COD loading rate (same as BOD)

BRT2 - Nitrification Tank Media Surface Area Required

NOTE: Use design Influent NH3-N concentration divided by Nitrification loading rate

Nitrification Media Surface Area Required =	**0**	sf	
Media Volume with Brentwood Media at 48 sf/cf	0	cf	
Media Width	0	ft	equal to unit fixed width minus 0.6 ft
Media Height	0	ft	equal to unit fixed height minus 1.5 ft for freeboard allowance, 0.8 ft beneath media and 0.5 ft over media
Media Length Required	0.0	ft	
Use Media Length	0	ft	This is a Selected Value
Media Surface Area Provided	**0**	sf	
Media Volume Provided	0	cf	
BRT 2 Tank Length	0	ft	
BRT 2 Tank Fluid Volume	0	cf	use MWD for height

BRT1 - CBOD OxidationTank Media Surface Area Required

Total Media Surface Area - Nitrification Surface Area	**16404**	sf	
Media Volume with Brentwood Media at 47 sf/cf	349	cf	
Media Width	10.5	ft	
Media Height	8	ft	
Media Length Required	4.2	ft	
Use Media Length	5	ft	This length is selected not calculated
Media Surface Area Provided	**19740**	sf	
Media Volume Provided	420	cf	
BRT 1 Tank Length	6	ft	
BRT 1 Tank Fluid Volume	690	cf	use MWD for height

Safety factor provided due to variability of Influent concentration, temperature changes etc.

Total Media Surface Area provided	**19740**	sf	
Safety Factor=	20%	%	

BRT1 & BRT2

Total Tank Lengths (sum of both)	6	ft	
Media volume BRT 1	420	cf	Note: Liquid Volume of Each BRT is based on Gross Unit Dimensions (L x W) X Max Water Height,(MWD)
Media Volume BRT 2	0	cf	
Total Media Volume	420	cf	Note: Total Media volume provided for both BRTs
Total Fluid Volume for Both BRTs	690	cf	

FINAL SETTLING TANK

Surface Area Reqd @ Qav	75	sf	
Surface Area Reqd @ 1.5 x Qav	113	sf	
Width	11.5	ft	
Required Length	9.8	ft	
Tube settler	10.6		This value selected not calculated
Use	11.0	ft	
Surface area Provided	126.5	sf	
Tank Volume (cf)	1012	cf	
Tank Volume (gal)	**7590**	gal	
Use SWD	**8**	ft	

Detention Time	**Rate (gpd)**	**Time (hrs)**	
@ Qav	30000	6.1	
@ Qav x 4 (Peak)	120000	1.5	
	949	1200.0	gpd/sf

CHLORINE CONTACT TANK

This value is selected as trial

Use L	7	ft	This value is Tank width (H11) divided by 2
W	5	ft	
MWD	9.5	ft	
Volume	333	cf	
	2494	gallons	
Flow PF	4		See Unit Daily Rate for source of flow information
	83	gpm	
Qpk	120000		OK > than TCEQ minimum value of 20 minutes
Detention Time	30	minutes	

SLUDGE HOLDING TANK

This is a selected value as trial

Note: Value of L for SHT does not need to equal L for CCT but may effect final design configuration

Use L	7	ft	CCT & SHT are 1/2 full tank width
W	7	ft	
MWD	9.5	ft	
Volume	466	cf	
	3491	gallons	

Solids Production			
Schlegel;	0.5 sludge/lb BOD		
AWS Tests;	0.45 sludge/lb BOD		
use	0.45	sludge/lb BOD	
Dry Solids =	3%	% of lb/day	
Solids Production	33.8	lb/day	
sludge weight / day	1127	lb/day	
sludge unit weight	63.2	lb/cf	
sludge volume / day	17.8	cf/d	
Holding time	26	days	

AERATION SYSTEM

Note: BRT1 and BRT2 each have different surface area

This width is width of media, not tank

Media Width (both)	10.5	ft	
BRT1 Media Length	5	ft	
BRT2 Media Length	0	sf	
BRT1 Media Plan Area	52.5	sf	
BRT2 Media Plan Area	0	sf	
Total Media Plan Area	52.5	sf of both BRT Media Stacks	

Blower size

Schlegel; flushing air flow (Metric)	20	m3/m2/hr	$1m^3$=35.3ft3
Schlegel; flushing air flow (Standard)	65.6	ft3/ft2/hr	$1m^2$ = 10.9 ft2
for 10 minutes/day at base of media	1.09	cfm/ft2	

ACFM Model 47U (HP=7.4)	cfm/sf	cfm @ 7 psi	See ACFM blower pressure/ air flow chart for scfm at 1750 rpm =	70	ACFM
Maximum (1800 rpm)	1.33	70	Note: Airflow to maintain DO (>4 mg/l) for both tanks < flushing airflow for 1 tank		
Midrange (1750 rpm) (Schlegel value)	1.09	57	Use minimum required airflow value for pipe design.		
			Select range of airflow as function of rpm from blower pressure curve and divide by area of both BRTs		

Minimum Required Airflow for BRT1 =	53	cfm
Minimum Required Airflow for BRT2 =	0	cfm
Maximum Flushing Airflow for Both BRTs =	70	cfm
Minimum Required Air Flow for Both BRTs=	52.5	cfm
Minimum Required Air Flow for Both BRTs x 150%=	79	cfm

Diffusers

Note: For Design of Diffusers & Piping Use: 150% Required Air

EDI MaxAir 24 inch Tube (SS) Coarse Bubble Diffusers

Operating Range:	0 - 40	scfm for 24 inch SS diffuser
Minimum	0	scfm
Design	6	scfm
Diffuser Spacing	24	inches

EDI PermaFlex Disc Coarse Bubble Diffusers (5 inch diameter)

Operating Range:	0 to 20	scfm for 5 inch diameter disc diffuser
Minimum	0	scfm
Design	4	scfm
Diffuser Spacing	12	inches

Minimum Required Air in largest BRT @1800 RPM =	53	cfm	
Min Required Air in largest BRT @ 150% =	79	cfm	
			See calculation of actual number below
Minimum Required # of Diffusers in largest BRT =	13	#	
Minimum Required # of Diffusers in smallest BRT =	13	#	
Minimum Required # of Diffusers in SHT =	10	#	

Diffuser Layout: (for EDI MaxAir 24 inch SS Coarse bubble diffuser model) **ACFM Model 47U (HP=7.4)** or equivalent will work

Note: Air Scouring and Mixing governs the diffuser layout under media

BRT 2				
Air Drop Length for BRT2	10.5	ft	Note: Air Drop length is tank width minus 1 ft	
Media Width	10.5	ft		
Media Length	0	ft		
Air Drops (per BRT2)	0	#	use	0
Diffuser Spacing	2	ft		Lay out is 2 ft on each side plus 1 ft spacing in between =5 ft
# Sets/ Drop	5.3	#	use	0
# Diffusers/Set	2	#		
# Diffusers provided for BRT 2	0	#		
BRT 1			Note: Air drop length is tank width minus 1 ft	
Air drop length for BRT 1	10.5	ft		
Media Width	10.5	ft		
Media Length	5	ft		
Air Drops (per BRT1)	1	#	Use	2
Diffuser Spacing	2	ft		
# Clusters/ Drop	5.3	#	use	6
# Diffusers/ Cluster	2	#		
Diffusers provided for BRT 1	24	#	Note: Total for both BRTs	
Total Diffusers For both tanks	24	#		
Sludge Holding Tank and CCT				
Air Drop length for SHT	6.0	ft		
Width	7.0	ft		
Air drops (per SHT)	2	#		
Diffuser Spacing	1	ft		
# Sets / Drop	1	#		
# Diffusers/ Set	5	#		
Diffusers provided for SHT	10	#		

Air Pipe Sizing :

Use Diebold/Lamson Nomograph (attached)

Velocity from 1300 to 2000 ft/min (fpm)

For Header Pipe us minimum required air flow values for both BRT tanks times 150%

Determine Header Pipe Diameter Use		2000 fpm to start		value selected as trial from nomograph based on pipe diameter
Air Flow (cfm)	79	79	79	
Velocity (fpm)	1604	401	226	
Area(sf)	0.05	0.20	0.35	
Diameter (in)	3	6	8	Diameters are trial values

St Header Pipe Dia (in)	3				
St Header Pipe Area (sf)	0.05	sf			
Tubing 3 x 3 area	0.06	sf	velocity =	1260	4 X 3 Tubing OK for Header

Air Drop/Cluster Pipe

For Air Drop Pipe use minimum required air flow value for single BRT times 150% , see C196

Flow/Cluster	39	cfm			Select pipe dia such that air velocity is not greater or less than acceptable air flow velocity
Pipe Dia	2	in	area =	0.022	sf
Velocity	1805	fpm		OK	

Blower Pressure

Maximum Water Height	10	ft	
BRTs SWD	4.33	psi	
Diffuser Head Loss	0.75	psi	(range 0.50 - 0.75psi)
Piping Head Loss	0.5	psi	
Total, Required	5.58	psi	

HYDRAULICS

	kgpd	**gpm**	**cfs**
Q av	30.0	20.8	0.0463
Q pk (PF = 4)	120.0	83.3	0.1852
Qav x 1.5	45.0	31.3	0.0694
Qpk (PF = 4)	180.0	125.0	0.2778

Pipe Size

Qav = 30,000 gpd

Pipe Diameter (inches)	**Area (sf)**	**V @ Qav (fps)**	**V @ Qpk (fps)**	**V2/2g (ft)**
3	0.049	0.94	3.77	0.22094
6	0.196	0.24	0.94	0.0138
8	0.349	0.13	0.53	0.00437

Qav x 1.5 = 45,000 gpd

Pipe Diameter (inches)	**Area (sf)**	**V @ Qav (fps)**	**V @ Qpk (fps)**	**V2/2g (ft)**
4	0.196	0.35	1.41	0.0311
5.5	0.349	0.20	0.80	0.0098

Use Pipe = 6 inch

Keep velocity less than 2 fps

BRT s Circular Weir (if installed) Francis Formula Q=3.33(L-0.2H)H^1.5

Q= flow rate in cfs

Note: L= circumference of weir in ft

H= Head on weir in ft

Use 6 inch Pipe

L=	1.571	ft	
Qav =	30000	0.0463	cfs
Qpk =	120,000	0.1852	cfs

solve for H by trial and error; select a trial value for H and solve for Q, then compare Q to known Qav or Qpk

Nape Over Weir

					actual flow	formula	trial H,ft
at Qav H =	0.013	ft	0.16	in	0.0463	0.007741339	0.013
at Qpk H =	0.033	ft	0.39	in	0.1852	0.030805646	0.033
Qav x 1.5 =	45,000	gpd	0.069	cfs			
Qpk =	180,000	gpd	0.278	cfs			

Nape Over Weir

					actual flow	formula	trial H,ft
at Qav H =	0.018	ft	0.22	in	0.069	0.012604709	0.018
at Qpk H =	0.043	ft	0.52	in	0.278	0.046391578	0.043

FST Weir formula Q = 0.497xH^2.5 where "Q" is in cfs and "H" is in ft

TCEQ Weir Loading 20,000 gpd/Lft

			Qav =	30000	0.0463	cfs						
			Qpk =	120000	0.1852	cfs						
Weir Length at Qpk =		6.00	ft	Use	9	ft		108		actual flow	calc. flow	trial H,ft
				6	inch		No. of Weirs	18	#	Note: actual flow per weir is total flow devided by # of weirs		
22.5 degree"V" notch weir		Spacing O/C		0.12	ft		1.44	in		0.0026	0.002479188	0.12
	Nape	at Qav=		0.209	ft		2.51	in		0.0103	0.009924808	0.209
	Nape	at Qpk=										
		Qav x 1.5 =		45000	0.069	cfs						
		Qpk =		135000	0.278	cfs						
Weir Length at Qpk =		9	ft	Use	9	ft						
				6	in		No. of Weirs	18	#	actual flow	calc. flow	trial H,ft
22.5 degree "V" notch weir		Spacing O/C					1.692	in		0.0039	0.003710259	0.141
	Nape	at Qav =		0.141	ft		2.95	in		0.0154	0.014917435	0.246
	Nape	at Qpk =		0.246	ft							

STILLING WELL

TCEQ Velocity	0.15	fps	TCEQ limit value	gpd		0.046	cfs	
	Qav =		30,000	Area Required =		0.309	sf	
				Pipe Diam, inch =		12.00	in	trial
				Use		8	in	
				Area Provided =		0.349	sf	OK
				Actual Velocity =		0.13	fps	OK

CCT Effluent Box 90 Deg "V" Weir Formula Q = 2.5 H^2.5 where Q is in cfs and H in ft

			0.046	cfs	0.046	0.04472136	0.2	
Qav =	30.0	gpd	0.185	cfs	0.185	0.181179943	0.35	
Qpk =	120.0	gpd	0.2	ft				
Nape, H at Qav =	2.4	in	0.35	ft				
Nape, H at Qpk =	4.2	in						
					0.069	0.052558131	0.303	
Qav x 1.5=	45.0	gpd	0.069	cfs	0.278	0.208192529	0.5255	
Qpk =	180.0	gpd	0.278	cfs				
Nape, H at Qav =	3.636	in	0.303	ft				
Nape, H at Qpk =	6.31	in	0.5255	ft				

DESIGN CALCULATIONS FOR TUBE SETTLER INSTALLATION

Unit sizing for Settlement Tank With Tube Settlers

Project is **30000 GPD**

Unit Daily flow	kgpd	gpm	cfs	cf/h
Average Daily Flow (Q av)	30	20.83	0.046	167.1
Peak Daily Flow (Q pk)	120	83.3	0.185	668.4

		TSS
Effluent Concentration (mg/L)		20
Inffluent Concentration (mg/L)		400
Inffluent Concentration (lb/d)		100.2
Inffluent Concentration (gr/d)		45480

Tube Settler Media	m2/m3	sf/cf
Enexio (FS 41-50-2)	11.2	3.3

Settlement Tank	gpd/sf
Loading Rate at Qav	400

Surface Area Required @ Qav	75.0	sf
Surface Area Required @ Qav x 1.5	112.5	sf
Settlement Tank Width	11.5	ft
Tube Module Height	2	ft
Required Module Volume	34.1	cf
Module Volume/ ft of length	23	cf/ft
Required Length (Le)	1.5	ft
Effective Length provided	7.4	ft
Module Volume provided	170.5	cf
Effective Surface Area Provided (P)	562.5	sf
Base Length (Lb)	8.6	ft
Total Base Area	98.5	sf
Effective Base Area (Le*W)	85.2	sf
Hazen Velocity (Q/P)	0.30	ft/hr
Base (mirror) Velocity (Q/Aeff)	1.96	ft/hr

Settlement Tank Dimensions

Fixed Dimensions	Dimension	Units	
Width	11.5	ft	
Tank Height	11.5	ft	
Module Height	2	ft	
Max Water Depth	10	ft	
Weir Length	9	ft	From design spreadsheet
Peak Flow Factor	4		
Calculated Dimensions	**Length**	**Units**	
Effective Length (Le)	7.4	ft	
Base Length (Lb)	8.6	ft	
Total tank length (A)	11	ft	equal to weir length plus 2 ft
Total tank length (B)	10.6	ft	equal to Base length plus 2ft

Note: this is base length of Tube Settler Module. Need to provide sufficient length for Weir (see design spreadsheet plus stilling well dimensions)

ATTACHMENT 19

DESIGN CALCULATIONS – PHASE II

Fairbanks & Associates

AWS SFBBR UNIT DESIGN DOCUMENT 30000 gpd 12 by 12 Unit

(with Standard Inffluent and Effluent levels ; 300/300/ 20/20)

Unit Sizing for Submerged Fixed Biofilm Reactor

Unit Daily Rate	kgpd	gpm	cfs	Notes
Average Output (Q_{av})	30.00	20.83	0.046	
Peak Output (Q_{pk})	120.00	83.33	0.185	

	BOD5	TSS	NH3-N	Notes
Effluent Concentration (mg/l)	20	20	0.0	
Influent Concentration (mg/l)	300	300	0	
Influent Concentration (lb/d))	75.13	75.13	0.00	
Influent Concentration (gr/d))	34110.0	34110.0	0.0	

DESIGN CRITERION:

BRT1-CBOD Oxidation	**gr/m2/d**	**lb/sf/d**	**Value**	**Notes**
CBOD loading rate	8	0.001616619	1.23*10^-3	from Schlegel
for effluent at 10 mg/l	5.62	0.00115	1.15*10^-3	from MT Garrett
for effluent at 20 mg/l		0.00229	2.29*10^-3	from MT Garrett
for effluent at 25 mg/l		0.00286	2.86*10^-3	from MT Garrett
for Effluent at 30 mg/l		0.0035	3.50*10^-3	from MT Garrett
for Effluent at 5 mg/l		0.0009	0.90*10^-3	from MT Garrett
for Effluent at 50 mg/l		0.006	6.00*10^-3	from MT Garrett

Media	**m2/m3**	**sf/cf**	**Notes**
Brentwood (VF - 19 plus)	154	47	
Rashig VF 190 +	154	47	

The CBOD loading rate is a function of the effluent concentration See Garrett paper
for 10 mg/l =1.15 lb BOD/1000 sf/d
for 20 mg/l =2.29 lb BOD/1000 sf/d
for 25 mg/l = 2.86 lb BOD/1000 sf/d
for 30 mg/l = 3.50 lb BOD/ 1000 sf/d
for 5 mg/l = 0.90 lb BOD/1000 sf/d

BRT2 - Nitrification	**g/m2/d**	**lb/sf/d**	**Value**	**Notes**
NH3-N loading rate	2	0.000410	0.41*10^-3	

Media	**m2/m3**	**sf/cf**	**Notes**
Brentwood (CF-1900)	157	48	
Rashig XF 48	157	48	
PVA			

See PVA brochure for media info

FST	**gpd/sf**	**Notes**
Loading Rate @ Qav	400	

The loading rate is a function of the effluent concentration level see Garrett paper, pg 6

TSS Eff	mg/l	15	20	30	10	5	50
loading rate	gpd/sq. ft	300	400	600	200	175	1000

12 by 12 Design

Fixed Tank Dimensions

Note: These are selected values

	Dimension(internal)	*Units*	*Notes*
width	11.5	ft	
height	11.5	ft	
max water height (mwd)	10	ft	
Peak Flow Factor	4		MWD must be 1.5 ft less than tank height (or more)

Calculated Tank Lengths and Media Volumes Provided

Note: These are calculated values based on fixed dimensions and effluent criteria

	Length	*Units*	*Notes*	*Media Vol,cf*	*Media Type*
BRT1	6	ft		420	BW (VF-19 plus)
BRT2	0	ft		0	BW (VF-19 plus)
FST	11	ft	Tube Settler	170	FS -41- 50-2
Chlorine Contact	7	ft	width is 5 ft		
Sludge Holding	7	ft	width is 7 ft		
		ft			
TOTAL LENGTH	24	ft			

Note: THIS DESIGN REQUIRES

Quantity	Description	
1	1 at 24FT	FRP Tank
2	Blowers at 7Psi	70 ACFM

PROCESS:

BRT1 & BRT2

Total Media surface area	**16404**	sf	

NOTE: COD loading rate (same as BOD)

BRT2 - Nitrification Tank Media Surface Area Required

NOTE: Use design Influent NH3-N concentration divided by Nitrification loading rate

Nitrification Media Surface Area Required =	**0**	sf	
Media Volume with Brentwood Media at 48 sf/cf	0	cf	
Media Width	0	ft	equal to unit fixed width minus 0.6 ft
Media Height	0	ft	equal to unit fixed height minus 1.5 ft for freeboard allowance, 0.8 ft beneath media and 0.5 ft over media
Media Length Required	0.0	ft	
Use Media Length	0	ft	This is a Selected Value
Media Surface Area Provided	**0**	sf	
Media Volume Provided	0	cf	
BRT 2 Tank Length	0	ft	
BRT 2 Tank Fluid Volume	0	cf	use MWD for height

BRT1 - CBOD OxidationTank Media Surface Area Required

Total Media Surface Area - Nitrification Surface Area	**16404**	sf	
Media Volume with Brentwood Media at 47 sf/cf	349	cf	
Media Width	10.5	ft	
Media Height	8	ft	
Media Length Required	4.2	ft	
Use Media Length	5	ft	This length is selected not calculated
Media Surface Area Provided	**19740**	sf	
Media Volume Provided	420	cf	
BRT 1 Tank Length	6	ft	
BRT 1 Tank Fluid Volume	690	cf	use MWD for height

Safety factor provided due to variability of Influent concentration, temperature changes etc.

Total Media Surface Area provided	**19740**	sf	
Safety Factor=	20%	%	

BRT1 & BRT2

Total Tank Lengths (sum of both)	6	ft	
Media volume BRT 1	420	cf	Note: Liquid Volume of Each BRT is based on Gross Unit Dimensions (L x W) X Max Water Height,(MWD)
Media Volume BRT 2	0	cf	
Total Media Volume	420	cf	Note: Total Media volume provided for both BRTs
Total Fluid Volume for Both BRTs	690	cf	

FINAL SETTLING TANK

Surface Area Reqd @ Qav	75	sf	
Surface Area Reqd @ 1.5 x Qav	113	sf	
Width	11.5	ft	
Required Length	9.8	ft	
Tube settler	10.6		This value selected not calculated
Use	11.0	ft	
Surface area Provided	126.5	sf	
Tank Volume (cf)	1012	cf	
Tank Volume (gal)	**7590**	gal	
Use SWD	**8**	ft	

Detention Time	**Rate (gpd)**	**Time (hrs)**	
@ Qav	30000	6.1	
@ Qav x 4 (Peak)	120000	1.5	
	949	1200.0	gpd/sf

CHLORINE CONTACT TANK

This value is selected as trial

Use L	7	ft	This value is Tank width (H11) divided by 2
W	5	ft	
MWD	9.5	ft	
Volume	333	cf	
	2494	gallons	
Flow PF	4		See Unit Daily Rate for source of flow information
	83	gpm	
Qpk	120000		OK > than TCEQ minimum value of 20 minutes
Detention Time	30	minutes	

SLUDGE HOLDING TANK

This is a selected value as trial

Note: Value of L for SHT does not need to equal L for CCT but may effect final design configuration

Use L	7	ft	CCT & SHT are 1/2 full tank width
W	7	ft	
MWD	9.5	ft	
Volume	466	cf	
	3491	gallons	

Solids Production			
Schlegel;	0.5 sludge/lb BOD		
AWS Tests;	0.45 sludge/lb BOD		
use	0.45	sludge/lb BOD	
Dry Solids =	3%	% of lb/day	
Solids Production	33.8	lb/day	
sludge weight / day	1127	lb/day	
sludge unit weight	63.2	lb/cf	
sludge volume / day	17.8	cf/d	
Holding time	26	days	

AERATION SYSTEM

Note: BRT1 and BRT2 each have different surface area

This width is width of media, not tank

Media Width (both)	10.5	ft	
BRT1 Media Length	5	ft	
BRT2 Media Length	0	sf	
BRT1 Media Plan Area	52.5	sf	
BRT2 Media Plan Area	0	sf	
Total Media Plan Area	52.5	sf of both BRT Media Stacks	

Blower size

Schlegel; flushing air flow (Metric)	20	m3/m2/hr	$1m^3$=35.3ft3
Schlegel; flushing air flow (Standard)	65.6	ft3/ft2/hr	$1m^2$ = 10.9 ft2
for 10 minutes/day at base of media	1.09	cfm/ft2	

ACFM Model 47U (HP=7.4)	cfm/sf	cfm @ 7 psi	See ACFM blower pressure/ air flow chart for scfm at 1750 rpm =	70	ACFM
Maximum (1800 rpm)	1.33	70	Note: Airflow to maintain DO (>4 mg/l) for both tanks < flushing airflow for 1 tank		
Midrange (1750 rpm) (Schlegel value)	1.09	57	Use minimum required airflow value for pipe design.		
			Select range of airflow as function of rpm from blower pressure curve and divide by area of both BRTs		

Minimum Required Airflow for BRT1 =	53	cfm
Minimum Required Airflow for BRT2 =	0	cfm
Maximum Flushing Airflow for Both BRTs =	70	cfm
Minimum Required Air Flow for Both BRTs=	52.5	cfm
Minimum Required Air Flow for Both BRTs x 150%=	79	cfm

Diffusers

Note: For Design of Diffusers & Piping Use: 150% Required Air

EDI MaxAir 24 inch Tube (SS) Coarse Bubble Diffusers

Operating Range:	0 - 40	scfm for 24 inch SS diffuser
Minimum	0	scfm
Design	6	scfm
Diffuser Spacing	24	inches

EDI PermaFlex Disc Coarse Bubble Diffusers (5 inch diameter)

Operating Range:	0 to 20	scfm for 5 inch diameter disc diffuser
Minimum	0	scfm
Design	4	scfm
Diffuser Spacing	12	inches

Minimum Required Air in largest BRT @1800 RPM =	53	cfm	
Min Required Air in largest BRT @ 150% =	79	cfm	
			See calculation of actual number below
Minimum Required # of Diffusers in largest BRT =	13	#	
Minimum Required # of Diffusers in smallest BRT =	13	#	
Minimum Required # of Diffusers in SHT =	10	#	

Diffuser Layout: (for EDI MaxAir 24 inch SS Coarse bubble diffuser model) **ACFM Model 47U (HP=7.4)** or equivalent will work

Note: Air Scouring and Mixing governs the diffuser layout under media

BRT 2				
Air Drop Length for BRT2	10.5	ft	Note: Air Drop length is tank width minus 1 ft	
Media Width	10.5	ft		
Media Length	0	ft		
Air Drops (per BRT2)	0	#	use	0
Diffuser Spacing	2	ft		Lay out is 2 ft on each side plus 1 ft spacing in between =5 ft
# Sets/ Drop	5.3	#	use	0
# Diffusers/Set	2	#		
# Diffusers provided for BRT 2	0	#		
BRT 1			Note: Air drop length is tank width minus 1 ft	
Air drop length for BRT 1	10.5	ft		
Media Width	10.5	ft		
Media Length	5	ft		
Air Drops (per BRT1)	1	#	Use	2
Diffuser Spacing	2	ft		
# Clusters/ Drop	5.3	#	use	6
# Diffusers/ Cluster	2	#		
Diffusers provided for BRT 1	24	#	Note: Total for both BRTs	
Total Diffusers For both tanks	24	#		
Sludge Holding Tank and CCT				
Air Drop length for SHT	6.0	ft		
Width	7.0	ft		
Air drops (per SHT)	2	#		
Diffuser Spacing	1	ft		
# Sets / Drop	1	#		
# Diffusers/ Set	5	#		
Diffusers provided for SHT	10	#		

Air Pipe Sizing :

Use Diebold/Lamson Nomograph (attached)

Velocity from 1300 to 2000 ft/min (fpm)

For Header Pipe us minimum required air flow values for both BRT tanks times 150%

Determine Header Pipe Diameter Use		2000 fpm to start		value selected as trial from nomograph based on pipe diameter
Air Flow (cfm)	79	79	79	
Velocity (fpm)	1604	401	226	
Area(sf)	0.05	0.20	0.35	
Diameter (in)	3	6	8	Diameters are trial values

St Header Pipe Dia (in)	3				
St Header Pipe Area (sf)	0.05	sf			
Tubing 3 x 3 area	0.06	sf	velocity =	1260	4 X 3 Tubing OK for Header

Air Drop/Cluster Pipe

For Air Drop Pipe use minimum required air flow value for single BRT times 150% , see C196

Flow/Cluster	39	cfm			Select pipe dia such that air velocity is not greater or less than acceptable air flow velocity
Pipe Dia	2	in	area =	0.022	sf
Velocity	1805	fpm		OK	

Blower Pressure

Maximum Water Height	10	ft	
BRTs SWD	4.33	psi	
Diffuser Head Loss	0.75	psi	(range 0.50 - 0.75psi)
Piping Head Loss	0.5	psi	
Total, Required	5.58	psi	

HYDRAULICS

	kgpd	**gpm**	**cfs**
Q av	30.0	20.8	0.0463
Q pk (PF = 4)	120.0	83.3	0.1852
Qav x 1.5	45.0	31.3	0.0694
Qpk (PF = 4)	180.0	125.0	0.2778

Pipe Size

Qav = 30,000 gpd

Pipe Diameter (inches)	**Area (sf)**	**V @ Qav (fps)**	**V @ Qpk (fps)**	**V2/2g (ft)**
3	0.049	0.94	3.77	0.22094
6	0.196	0.24	0.94	0.0138
8	0.349	0.13	0.53	0.00437

Qav x 1.5 = 45,000 gpd

Pipe Diameter (inches)	**Area (sf)**	**V @ Qav (fps)**	**V @ Qpk (fps)**	**V2/2g (ft)**
4	0.196	0.35	1.41	0.0311
5.5	0.349	0.20	0.80	0.0098

Use Pipe = 6 inch

Keep velocity less than 2 fps

BRT s Circular Weir (if installed) Francis Formula Q=3.33(L-0.2H)H^1.5

Q= flow rate in cfs

Note: L= circumference of weir in ft

H= Head on weir in ft

Use 6 inch Pipe

L=	1.571	ft	
Qav =	30000	0.0463	cfs
Qpk =	120,000	0.1852	cfs

solve for H by trial and error; select a trial value for H and solve for Q, then compare Q to known Qav or Qpk

Nape Over Weir

					actual flow	formula	trial H,ft
at Qav H =	0.013	ft	0.16	in	0.0463	0.007741339	0.013
at Qpk H =	0.033	ft	0.39	in	0.1852	0.030805646	0.033
Qav x 1.5 =	45,000	gpd	0.069	cfs			
Qpk =	180,000	gpd	0.278	cfs			

Nape Over Weir

					actual flow	formula	trial H,ft
at Qav H =	0.018	ft	0.22	in	0.069	0.012604709	0.018
at Qpk H =	0.043	ft	0.52	in	0.278	0.046391578	0.043

FST Weir formula Q = 0.497xH^2.5 where "Q" is in cfs and "H" is in ft

TCEQ Weir Loading 20,000 gpd/Lft

			Qav =	30000	0.0463	cfs						
			Qpk =	120000	0.1852	cfs						
Weir Length at Qpk =		6.00	ft	Use	9	ft		108		actual flow	calc. flow	trial H,ft
				6	inch		No. of Weirs	18	#	Note: actual flow per weir is total flow devided by # of weirs		
22.5 degree"V" notch weir		Spacing O/C		0.12	ft		1.44	in		0.0026	0.002479188	0.12
	Nape	at Qav=		0.209	ft		2.51	in		0.0103	0.009924808	0.209
	Nape	at Qpk=										
		Qav x 1.5 =		45000	0.069	cfs						
		Qpk =		135000	0.278	cfs						
Weir Length at Qpk =		9	ft	Use	9	ft						
				6	in		No. of Weirs	18	#	actual flow	calc. flow	trial H,ft
22.5 degree "V" notch weir		Spacing O/C					1.692	in		0.0039	0.003710259	0.141
	Nape	at Qav =		0.141	ft		2.95	in		0.0154	0.014917435	0.246
	Nape	at Qpk =		0.246	ft							

STILLING WELL

TCEQ Velocity	0.15	fps	TCEQ limit value	gpd		0.046	cfs	
	Qav =		30,000	Area Required =		0.309	sf	
				Pipe Diam, inch =		12.00	in	trial
				Use		8	in	
				Area Provided =		0.349	sf	OK
				Actual Velocity =		0.13	fps	OK

CCT Effluent Box 90 Deg "V" Weir Formula Q = 2.5 H^2.5 where Q is in cfs and H in ft

			0.046	cfs	0.046	0.04472136	0.2	
Qav =	30.0	gpd	0.185	cfs	0.185	0.181179943	0.35	
Qpk =	120.0	gpd	0.2	ft				
Nape, H at Qav =	2.4	in	0.35	ft				
Nape, H at Qpk =	4.2	in						
					0.069	0.052558131	0.303	
Qav x 1.5=	45.0	gpd	0.069	cfs	0.278	0.208192529	0.5255	
Qpk =	180.0	gpd	0.278	cfs				
Nape, H at Qav =	3.636	in	0.303	ft				
Nape, H at Qpk =	6.31	in	0.5255	ft				

DESIGN CALCULATIONS FOR TUBE SETTLER INSTALLATION

Unit sizing for Settlement Tank With Tube Settlers

Project is **30000 GPD**

Unit Daily flow	kgpd	gpm	cfs	cf/h
Average Daily Flow (Q av)	30	20.83	0.046	167.1
Peak Daily Flow (Q pk)	120	83.3	0.185	668.4

		TSS
Effluent Concentration (mg/L)		20
Inffluent Concentration (mg/L)		400
Inffluent Concentration (lb/d)		100.2
Inffluent Concentration (gr/d)		45480

Tube Settler Media	m2/m3	sf/cf
Enexio (FS 41-50-2)	11.2	3.3

Settlement Tank	gpd/sf
Loading Rate at Qav	400

Surface Area Required @ Qav	75.0	sf
Surface Area Required @ Qav x 1.5	112.5	sf
Settlement Tank Width	11.5	ft
Tube Module Height	2	ft
Required Module Volume	34.1	cf
Module Volume/ ft of length	23	cf/ft
Required Length (Le)	1.5	ft
Effective Length provided	7.4	ft
Module Volume provided	170.5	cf
Effective Surface Area Provided (P)	562.5	sf
Base Length (Lb)	8.6	ft
Total Base Area	98.5	sf
Effective Base Area (Le*W)	85.2	sf
Hazen Velocity (Q/P)	0.30	ft/hr
Base (mirror) Velocity (Q/Aeff)	1.96	ft/hr

Settlement Tank Dimensions

Fixed Dimensions	Dimension	Units	
Width	11.5	ft	
Tank Height	11.5	ft	
Module Height	2	ft	
Max Water Depth	10	ft	
Weir Length	9	ft	From design spreadsheet
Peak Flow Factor	4		
Calculated Dimensions	**Length**	**Units**	
Effective Length (Le)	7.4	ft	
Base Length (Lb)	8.6	ft	
Total tank length (A)	11	ft	equal to weir length plus 2 ft
Total tank length (B)	10.6	ft	equal to Base length plus 2ft

Note: this is base length of Tube Settler Module. Need to provide sufficient length for Weir (see design spreadsheet plus stilling well dimensions)

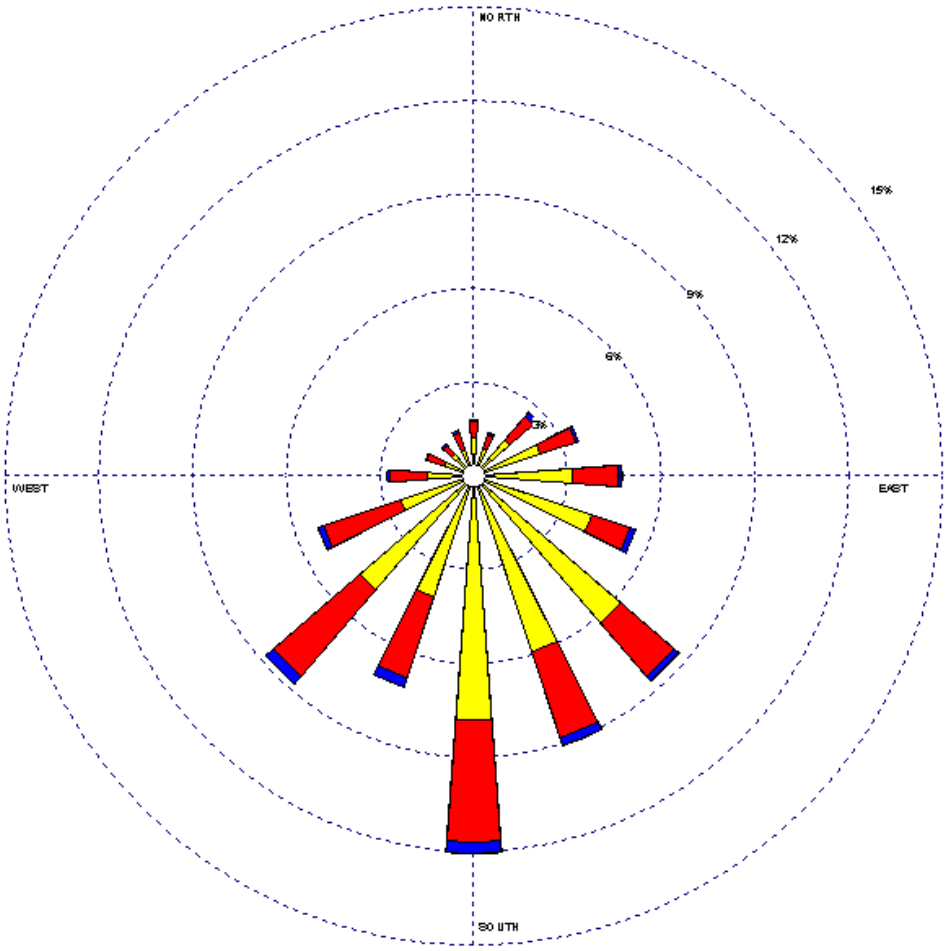
ATTACHMENT 20

WIND ROSE DIAGRAM

Fairbanks & Associates

WIND ROSE PLOT

Station #93987 - LUFKIN/FAA AIRPORT, TX



Wind Speed (m/s) > 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	MODELER Sara West	DATE 8/29/2002	COMPANY NAME USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 3.23 m/s	CALM WINDS 22.00%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Jul 1 - Jul 31 Midnight - 11 PM	

ATTACHMENT 21

SEWAGE SLUDGE SOLIDS MANAGEMENT PLAN

Fairbanks & Associates

SLUDGE MANAGEMENT PLAN

Influent Design Flow = 0.03MGD
2 – Hr. Peak Flow = 0.12 MGD
Influent BOD Concentration = 300 mg/l
Bio Reactor Tank Volumes (BOD Oxidation) = 5,161 gallons
Sludge Holding Tank Volume = 3,486 gallons

Solids Generated	100%	75%	50%	25%
Pounds of Influent BOD5	75	56	38	19
Pounds of digested dry sludge produced*	34	25	17	8
Pounds of wet sludge produced**	1127	845	563	282
Gallons of wet sludge produced***	135	101	68	64

*based on 0.45sludge/pound of BOD_5
**Based on dry solids at 3%
***based on the weight of 8.34 ppg

Effluent discharges from Bio-Reactor (BRT) to a final settling tank (FST) to allow sludge to settle. Sludge is conveyed from FST to sludge holding tank (SHT) by gravity where supernatant is periodically decanted and returned to BRT.

Removal Schedule (days)	100%	75%	50%	25%
Days between sludge removal	26	34.4	52	103

Accumulated sludge will be removed from the SHT for disposal regularly as required based on the accumulation rate in the SHT. The estimated sludge production based on an average daily flow rate of 0.03 MGD is 18 cf/d. A registered hauler will transport the wet sludge to a TCEQ authorized disposal location.

ATTACHMENT 22

PIP FORM

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application

☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☒ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

Rainbow's End Park, Inc. proposes to operate Rainbow's End wastewater treatment plant. The facility will be located the intersection of E Peterson Loop and Quail, in Livingston, Polk County, Texas 77351.
The wastewater treatment plant will be for the Rainbow's End Park, Inc. for 60,000 gallons per day.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Livingston

(City)

Polk

(County)

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☐ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

(b) Per capita income for population near the specified location

(c) Percent of minority population and percent of population by race within the specified location

(d) Percent of Linguistically Isolated Households by language within the specified location

(e) Languages commonly spoken in area by percentage

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☒ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☒ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office

☐ Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☒ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)