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5128-22011 fcleo

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 18, 2022

Mr. D. Ray Young, P.E.
Water Engineers, Inc.
17230 Huffmeister Road, Suite A
Cypress, Texas 77429-1643

Re: The Trails Subdivision - Public Water System ID No. 1460199
Proposed Well No. 1, Well No. 2 and Water Plant
Engineer Contact Telephone: (281) 373-0500
Plan Review Log No. P-02162022-109
Liberty County, Texas

CN 602740706; RN 111456133

Dear Mr. Young:

On February 8, 2022, the Texas Commission of Environmental Quality (TCEQ) received planning material with your letter dated February 8, 2022 for the proposed Well No. 1, No. 2 and Water Plant for the above referenced public water system. Based on our review of the information submitted, the project generally meets the minimum requirements of Title 30 Texas Administrative Code (TAC) Chapter 290 - Rules and Regulations for Public Water Systems and is **conditionally approved for construction** if the project meets the following requirements:

1. Corrosive indices will be used to calculate corrosivity of the water from new source(s). Corrosive or aggressive water could result in aesthetic problems, increased levels of toxic metals, and deterioration of household plumbing and fixtures. **If the water appears to be corrosive**, the system will be required to conduct a study and submit an engineering report that addresses corrosivity issues or may choose to install corrosion control treatment **before use may be granted**. All changes in treatment require submittal of plans and specifications for approval by TCEQ.

2. As required in 30 TAC Section 290.41(c)(3)(C), the space between the casing and drill hole shall be sealed by using enough cement under pressure to completely fill and seal the annular space between the casing and the drill hole. The well casing shall be cemented in this manner from the top of the shallowest formation to be developed to the earth's surface. The driller shall utilize a pressure cementation method in accordance with the most current AWWA Standard for Water Wells (A100), Appendix C: Section C.2 (Positive Displacement Exterior Method); Section C.3 (Interior Method Without Plug); Section C.4 (Positive Placement, Interior Method, Drillable Plug); and Section C.5 (Placement Through Float Shoe Attached to Bottom of Casing). The grouting mixture used to pressure cement the annular space shall be neat cement as specified in the most current AWWA Standard for Water Wells and to which a maximum of 6%, by dry weight, bentonite and 2%, by dry weight, calcium chloride may be added.

3. The proposed double walled tank must be constructed in accordance with the attached conditions of "Double Wall Spill Tanks Containment Required Conditions."

Texas Water Code Section 36.0015 allows for the creation of groundwater conservation districts (GCDs) as the preferred method of groundwater management. GCDs manage groundwater in many counties and are authorized to regulate production and spacing of water wells. **Public water systems drilling wells within an existing GCD are responsible for meeting the GCD's requirements.** The authorization provided in this letter does not affect GCD authority to manage groundwater or issue permits.

The design engineer or water system representative is required to notify the Plan Review Team in writing by fax at (512) 239-6972 or by emailing pritesh.tripathi@tceq.texas.gov and cc: vera.poe@tceq.texas.gov at least 48 hours before the well casing pressure cementing begins. If pressure cementing is to begin on Monday, then they must give notification on the preceding Thursday. If pressure cementing is to begin on Tuesday, then they must give notification on the preceding Friday.

The TCEQ does not approve these wells for use as a public water supply at this time. We have enclosed a copy of the "Public Well Completion Data Checklist for Approval (Step 2)". We provide this checklist to help you in obtaining approval to use this well.

The submittal consisted of 22 sheets of engineering drawings, technical specifications and an engineering summary. The proposed project consists of:

Phase 1

- One (1) public water supply well No.1 drilled to 565 feet with 495 linear feet (lf) of 10½-inch outside diameter (od) pressure cemented steel casing;
- 70 lf of 10-inch od stainless steel screen, 10 lf of 10-inches od blank steel liner with gravel pack;
- The well is rated for 570 gallons per minute (gpm) yield with a 60-horsepower, submersible pump set at 315 feet below ground level. The design capacity of the pump is 570 gpm at 280 feet total dynamic head (tdh);
- One (1) public water supply well No. 2 drilled to 890 feet with 780 lf of 14½-inch od pressure cemented steel casing;
- 105 lf of 14-inch od stainless steel screen, 10 lf of 14-inches od blank steel liner, with gravel pack;
- The well is rated for 900 gpm yield with a 100-horsepower, submersible pump set at 399 feet below ground level. The design capacity of the pump is 900 gpm at 350 feet tdh;
- Pump house with four (4) 40 HP booster pumps, each rated at 1,200 gpm at 104 ft. tdh;
- One (1) 15,826-gallon American Society of Mechanical Engineers (ASME) Section VIII, Division 1, hydropneumatic tank;
- One (1) 245,217-gallon American Water Works Association Standard D103, epoxy coated, bolted steel ground storage tank;
- Hypochlorite feed system consisting of 2-275 gallons double walled tanks and 2-4.4 gallons per hour metering pumps;
- One 300-KW rated natural gas powered auxiliary generator with automatic transfer switch;
- Well sealing block;
- Intruder resistance fences;
- All weather access road;

- Associated valves, fittings, well discharge piping, yard piping, controls and related appurtenances.

Phase 2

- One (1) 15,826-gallon ASME Section VIII, Division 1, hydropneumatic tank;
- One (1) 245,217-gallon American Water Works Association Standard D103, epoxy coated, bolted steel ground storage tank; and
- Associated valves, fittings, yard piping, controls and related appurtenances.

This approval is for the construction of the above listed items only. Any wastewater components contained in this design were not considered. The authorization provided in this letter does not relieve a Public Water System from the need to comply with other applicable state and federal regulations.

The Trails Subdivision public water system provides water treatment.

The project is located approximately 3,060 ft. northeast of the intersection of Grand Parkway and Plum Grove Road in Liberty County, Texas.

An appointed engineer must notify the TCEQ's Region 12 Office in Houston at (713) 767-3500 when construction will start. Please keep in mind that upon completion of the water works project, the engineer or owner will notify the commission's Water Supply Division, in writing, as to its completion and attest to the fact that the completed work is substantially in accordance with the plans and change orders on file with the commission as required in 30 TAC §290.39(h)(3).

Please refer to the Plan Review Team's Log No. **P-02162022-109** in all correspondence for this project.

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittals to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on TCEQ's website at the address shown below. You can also download the most current plan submittal checklists and forms from the same address.

https://www.tceq.texas.gov/drinkingwater/udpubs.html

For future reference, you can review part of the Plan Review Team's database to see if we have received your project. This is available on TCEQ's website at the following address:

https://www.tceq.texas.gov/drinkingwater/planrev.html/#status

You can download the latest revision of 30 TAC Chapter 290 - Rules and Regulations for Public Water Systems from this site.

If you have any questions concerning this letter or need further assistance, please contact Pritesh Tripathi at (512)239-3794 or by email at pritesh.tripathi@tceq.texas.gov or by correspondence at the following address:

Plan Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,

Vera Poe, P.E., Team Leader
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

VP/CAS/PT/av

Enclosure: "Public Well Completion Data Checklist for Approval (Step 2)"
"Double Wall Spill Tanks Containment Required Conditions"

cc: The Trails Subdivision, Attn: Mr. Jeffrey McIntyre, President of Texas Utilities, 12535 Reed Road, Sugar Land, Texas 77478-2837

Double-wall Spill Containment Tanks Required Conditions

Double-wall spill containment tanks for chemical storage are an acceptable alternative provided the following are addressed:

A. The bulk chemical storage (inner) tank's volume must be adequate to store 15 days worth of chemicals. There must be a method for readily determining the level of liquid in the inner tank.

B. The construction material for all chemical tanks must be compatible with the chemical to be stored and resistant to ultraviolet radiation and other external environmental conditions. The tank shall be constructed in accordance with the appropriate American Society for Testing and Materials (ASTM) Standard.

C. All access openings into the inner tank shall be through a domed roof.

D. Access connections for the installation of adequate and proper venting must be constructed in the domed top of the inner tank. The opening of the vent shall be designed to prevent the entrance of rain water and covered with corrosive resistant screening.

E. The chemical transfer pumps must take suction through a hole in the domed top of the inner tank and an acceptable protection device must be installed on the piping to prevent siphonage through the pump when it is not in service.

F. There must be a method for readily determining if the inner tank is leaking into the outer shell.

G. The outer containment tank shall have only one appurtenance for the installation of a chemical resistant drain valve. The appurtenance shall be located as close to the vertical wall's bottom as feasible without compromising the integrity of the outer containment tank.

H. If the outer containment tank is open to the atmosphere, the plant Operations & Maintenance Manual will need to include provisions for periodically removing accumulated rain water as well as any chemicals that have leaked into the containment area between the outer containment shell and the inner tank's outer wall. The checking of the pH level should be considered in case the rain water contains a chemical residual to prevent a risk to the operators and an environmental impact.

I. An access ladder, or stairway, and a work landing must be provided adjacent to the chemical transfer pump. If the top height for the inner and containment tanks' walls are such that the pump location and associated piping can be accessed from the ground elevation, a ladder and work landing will not be required. The ladder and work landing shall be constructed and designed in accordance with applicable federal and state safety requirements.

Public Well Completion Data Checklist for Approval to Use (Step 2)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
P.O. Box 13087, Austin, Texas 78711-3087

Public Water System I.D. No._____
TCEQ Log No. P-_____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Completion. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website: http://www.tceq.texas.gov/rules/indxpdf.html

Any well proposed as a source of water for a public water supply must have plans approved for construction by TCEQ. Please include the well construction approval letter with your submittal of well completion data listed below for TCEQ evaluation. Based on review of this submitted data, approval may be given for use of the well.

1. ☐ Site map(s) at appropriate scales showing the following: [§290.41(c)(3)(A)]
   - ☐ (i) Final location of the well with coordinates;
   - ☐ (ii) Named roadways;
   - ☐ (iii) All property boundaries within 150 feet of the final well location and the property owners' names;
   - ☐ (iv) Concentric circles with the final well location as the center point with radii of 10 feet, 50 feet, 150 feet, and ¼ mile;
   - ☐ (v) Any site improvements and existing buildings;
   - ☐ (vi) Any existing or potential pollution hazards; and
   - ☐ (vii) Map must be scalable with a north arrow.
2. ☐ A copy of the recorded deed of the property on which the well is located showing the Public Water System (PWS) as the landowner, and/or any of the following: [§290.41(c)(1)(F)(iv)]
   - ☐ (i) Sanitary control easements (filed at the county courthouse and bearing the county clerk's stamp) covering all land within 150 feet of the well not owned by the PWS (for a sample easement see TCEQ Form 20698);
   - ☐ (ii) For a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement; and/or
   - ☐ (iii) A copy of a letter granting an exception to the sanitary control easement rule issued by TCEQ's Technical Review and Oversight Team.
3. ☐ Construction data on the completed well: [§290.41(c)(3)(A)]
   - ☐ (i) Final installed pump data including capacity in gallons per minute (gpm), total dynamic head (tdh) in feet, motor horsepower, and setting depth;
   - ☐ (ii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
   - ☐ (iii) Casing size, length, and material (e.g. 200 lf of 12" PVC ASTM F480 SDR-17);
   - ☐ (iv) Length and material of any screens, blanks, and/or gravel packs utilized;
   - ☐ (v) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods);
   - ☐ (vi) Driller's geologic log of strata penetrated during the drilling of the well;
   - ☐ (vii) Cementing certificate; and

Public Well Completion Data Checklist for Approval to Use (Step 2)

- ☐ (viii) Copy of the official State of Texas Well Report (some of the preceding data is included on the Well Report).

4. ☐ A U.S. Geological Survey 7.5-minute topographic quadrangle map (include quadrangle name and number) or a legible copy showing the location of the completed well; [§290.41(c)(3)(A)]
5. ☐ Record of a 36-hour continuous pump test on the well showing stable production at the well's rated capacity. Include the following: [§290.41(c)(3)(G)]
   - ☐ (i) Test pump capacity in gpm, tdh in feet, and horsepower of the pump motor;
   - ☐ (ii) Test pump setting depth;
   - ☐ (iii) Static water level (in feet); and
   - ☐ (iv) Draw down (in feet).
6. ☐ Three bacteriological analysis reports for samples collected on three successive days showing raw well water to be free of coliform organisms. Reports must be for samples of raw (untreated) water from the disinfected well and submitted to a laboratory accredited by TCEQ, accredited to perform these test; and [§290.41(c)(3)(F)(i)]
7. ☐ Chemical analysis reports for well water samples showing the water to be of acceptable quality for the most problematic contaminants listed below. Reports must come from a laboratory accredited by TCEQ; accredited to perform these tests. Maximum contaminant level (MCL) and secondary constituent level (SCL) units are in milligrams per liter (except arsenic which is in micrograms per liter). [§290.41(c)(3)(G) and§290.104 and §290.105]

Table 1: Primary Constituents with Maximum Contaminant Level (MCL)

PRIMARY	MCL
Nitrate	10 (as N)
Nitrite	1 (as N)
Arsenic	10
Fluoride	4.0

Table 2: Secondary Constituents with Secondary Contaminant Level (SCL)

SECONDARY	SCL
Aluminum	0.2
Copper	1.0
Iron	0.3
Manganese	0.05
Zinc	5.0
Total Dissolved Solids	1,000
Fluoride	2.0
Sulfate	300
Chloride	300
pH	> 7.0

Public Well Completion Data Checklist for Approval to Use (Step 2)

Table 3: Water Quality Parameters

PARAMETER	UNITS
Alkalinity as CaCO3	mg/L
Calcium as CaCO3	mg/L
Sodium	mg/L
Lead*	mg/L

Lead is regulated by the lead and copper rule. This analyte is to document the amount of lead in the source water. The level shall be less than 0.010 mg/L for approval to use.

All systems located in a high-risk county (see page 3) shall submit radiological analysis reports for water samples showing the water to be of acceptable quality for the contaminants listed below. Reports must come from a TCEQ accredited laboratory for approval to use of the well.

Table 4: Radionuclides with Maximum Contaminant Level (MCL)

CONTAMINANT	MCL
Gross alpha	15 pCi/L
Radium-226/228	5 pCi/L
Beta particle	50 pCi/L
Uranium	30 µg/L

WHERE: pCi/L = pico curies per liter, µg/L = micrograms per liter

Please be aware when you review your radiological data that if the report has gross alpha over 15 pCi/L and individual uranium isotopes are not reported, you will have to resample or reanalyze and resubmit radionuclide results. If you see gross alpha plus radium-228 over 5 pCi/L, and don't have radium-226, you will have to resample or reanalyze and resubmit complete results.

List of Counties Where Radionuclide Testing Is required

Please be aware that we have added the requirement for analysis for radionuclides for high risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required.

Table 5: List of Counties where Radionuclide Testing is required

COUNTY				
Atascosa	Bandera	Bexar	Bosque	Brazoria
Brewster	Burnet	Concho	Culberson	Dallam
Dawson	Erath	Fort Bend	Frio	Garza
Gillespie	Gray	Grayson	Harris	Hudspeth
Irion	Jeff Davis	Jim Wells	Kendall	Kent
Kerr	Kleberg	Liberty	Llano	Lubbock
McCulloch	Mason	Matagorda	Medina	Midland
Montgomery	Moore	Parker	Pecos	Polk
Presidio	Refugio	San Jacinto	San Saba	Tarrant
Travis	Tyler	Upton	Val Verde	Victoria
Walker	Washington	Wichita	Williamson	Zavala

5128-22012 files

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 6, 2022

D. Ray Young, P.E.
WATERENGINEERS, Inc.
17230 Huffmeister Road, Suite A
Cypress, Texas 77429-1643

Re: Plum Creek Fresh Water Supply District 1
The Trails Interim I Wastewater Treatmetn Plant
Permit No. WQ0015440-001
WWPR Log No. 0322/083
CN604521476, RN108922360
Harris County

Dear Mr. Young:

TCEQ received the project summary transmittal letter dated March 31, 2022, detailing the design and installation of the Trails Interim I wastewater treatment plant for Plum Creek Freshwater Supply District 1 in Harris County, Texas. The plant is designed to treat an average daily flow (ADF) of 0.06 MGD.

The rules which regulate the design, installation and testing of domestic wastewater projects are found in 30 TAC, Chapter 217, of the Texas Commission on Environmental Quality (TCEQ) rules titled, Design Criteria for Wastewater Systems.

Under the authority of §217.6(e) a technical review of complete plans and specifications is not required. **However, the project proposed in the summary transmittal letter is conditionally approved for construction. The condition of this approval is that the current minor amendment being processed for this permit be completed and issued and the updated permit contain the 0.060 MGD ADF phase.**

Please note, that this conditional approval does not relieve the applicant of any responsibilities to obtain all other necessary permits or authorizations, such as wastewater treatment permit or other authorization as required by Chapter 26 of the Texas Water Code. Below are provisions of the Chapter 217 regulations, which must be met as a condition of approval. These items are provided as a reminder. If you have already met these requirements, please disregard this additional notice.

You must keep certain materials on file for the life of the project and provide them to TCEQ upon request. These materials include an engineering report, test results, a summary transmittal letter, and the final version of the project plans and specifications. These materials shall be prepared and sealed by a Professional Engineer licensed in the State of Texas and must show substantial compliance with Chapter 217. All plans and specifications must conform to any waste discharge requirements authorized in a permit by the TCEQ. Certain specific items which

shall be addressed in the engineering report are discussed in §217.10. Additionally, the engineering report must include all constants, graphs, equations, and calculations needed to show substantial compliance with Chapter 217.

Any variance from a Chapter 217 requirement disclosed in your summary transmittal letter is approved. If in the future, additional variances from the Chapter 217 requirements are desired for the project, each variance must be requested in writing by the design engineer. Then, the TCEQ will consider granting a written approval to the variance from the rules for the specific project and the specific circumstances.

Within 60 days of the completion of construction, an appointed engineer shall notify both the Wastewater Permits Section of the TCEQ and the appropriate Region Office of the date of completion. The engineer shall also provide written certification that all construction, materials, and equipment were substantially in accordance with the approved project, the rules of the TCEQ, and any change orders filed with the TCEQ. All notifications, certifications, and change orders must include the signed and dated seal of a Professional Engineer licensed in the State of Texas.

This approval does not mean that future projects will be approved without a complete plans and specifications review. The TCEQ will provide a notification of intent to review whenever a project is to undergo a complete plans and specifications review. Please be reminded of 30 TAC §217.7(a) of the rules which states, "Approval given by the executive director or other authorized review authority does not relieve an owner of any liability or responsibility with respect to designing, constructing, or operating a collection system or treatment facility in accordance with applicable commission rules and the associated wastewater permit".

If you have any questions, or if we can be of any further assistance, please call me at (512) 239-1372.

Sincerely,

Paul A. Brochi, P.E.
Wastewater Permits Section (MC 148)
Water Quality Division
Texas Commission on Environmental Quality

PAB/tc