STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

City of Newburg
Newburg WWTP
P.O. Box K
Newburg, MO 65550

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

November 18, 2024
Effective Date

November 17. 2026
Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction will include improvements to the First Street Pump Station with the installation of a new dry well, new valves and quick connect system and replacement of pumps in the wet well. At the Newburg Wastewater Treatment Facility construction will include a new headworks facility, a new influent metering unit, implementation of a Moving Bed Bioreactor (MBBR) biological unit process, replacement of the existing secondary clarifier mechanism, replacement of the sludge pump station, replacement of the existing UV disinfection equipment, replacement of the existing peak flow clarifier mechanism, improvements to the aerobic digester, improvements to the electrical secondary and standby generation. The facility will maintain the ability to blend flows above 0.5 MGD prior to the UV disinfection system. The average design flow will remain at 100,000 gallons per day (gpd).

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a "finding of affordability" on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The department is required to determine "findings of affordability" because the permit applies to a combined or separate sanitary sewer system for a publicly owned treatment works.

Cost Analysis for Compliance - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects

that the department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **APPENDIX B – COST ANALYSIS FOR COMPLIANCE**.

Summary Table. Cost Analysis for Compliance Summary for the City of Newburg

New Permit Requirements			
Influent and effluent BOD and TSS sampling when blending, influent monitoring for BOD, TSS, Ammonia, Total Phosphorus, Nitrate+Nitrite, TKN			
Estimated Annual Cost	Annual Median Household Income (MHI)	Estimated Monthly User Rate	User Rate as a Percent of MHI
$2,148	$22,202	$35.16	1.90%

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.

2. All construction shall be consistent with plans and specifications signed and sealed by Kenneth A. Campbell, P.E., with Archer-Elgin Engineering & Surveying and as described in this permit.

3. The department must be contacted in writing prior to making any changes to the plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).

4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Central Field Office per 10 CSR 20-7.015(9)(G).

5. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. See https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting for more information.

6. A United States Army Corps of Engineers (USACE) Clean Water Act Section 404 Department of the Army permit and a Section 401 Water Quality Certification issued by the department may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied or notification is provided that no Section 404 permit is required by the USACE. You must contact your local USACE district since

they determine what waters are jurisdictional and which permitting requirements may apply. You may call the department's Water Protection Program, Operating Permits Section at 573-522-4502 for more information. See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality for more information.

7. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

- Electrical equipment. Electrical equipment shall be provided with the following requirements:
    - 10 CSR 20-8.130(3)(B)2. A. Electrical equipment must comply with 10 CSR 20-8.140(7)(B);
    - Utilize corrosive resistant equipment located in the wet well; 10 CSR 20-8.130(3)(B)2.B.
    - Provide a watertight seal and separate strain relief for all flexible cable; 10 CSR 20-8.130(3)(B)2.C.
    - Install a fused disconnect switch located above ground for the main power feed for all pumping stations. 10 CSR 20-8.130(3)(B)2.D.
    - When such equipment is exposed to weather, it shall comply with the requirements of weather proof equipment; enclosure NEMA 4; NEMA 4X where necessary; and *NEMA Standard 250-2014*, published December 15, 2014. 10 CSR 20-8.130(3)(B)2.E.
    - Install lightning and surge protection systems; 10 CSR 20-8.130(3)(B)2.F.
    - Install a 110 volt (V) power receptacle inside the control panel located outdoors to facilitate maintenance; 10 CSR 20-8.130(3)(B)2.G.
    - Provide Ground Fault Circuit Interruption (GFCI) protection for all outdoor receptacles. 10 CSR 20-8.130(3)(B)2.H.

- Flood protection shall apply to new construction and to existing facilities undergoing major modification. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100-year flood elevation. 10 CSR 20-8.140(2)(B). 10 CSR 20-8.130 (2) (A)

- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140 (2) (D). 10 CSR 20-8.130 (2) (B)

- The distance between wastewater pumping stations and all potable water sources shall be at least 50 feet in accordance with 10 CSR 23-3.010(1)(B). 10 CSR 20-8.130 (2) (D)

- Multiple pumps shall be provided except for design average flows of less than 1,500 gpd. 10 CSR 20-8.130 (3) (B) 1.

- Water level controls must be accessible without entering the wet well. 10 CSR 20-8.130 (3) (C)

- Valves shall not be located in the wet well unless integral to a pump or its housing. 10 CSR 20-8.130 (3) (D)

- Covered wet wells shall have provisions for air displacement to the atmosphere, such as an inverted and screened "j" tube or other means. 10 CSR 20-8.130 (3) (E)

- There shall be no physical connection between any potable water supply and a wastewater pumping station, which under any conditions, might cause contamination of the potable water supply. If a potable water supply is brought to the station, no piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.130 (3) (G)
    - Where a potable water supply is to be used for any purpose in a wastewater treatment facility other than direct connections, a break tank, pressure pump, and pressure tank or a reduced pressure backflow preventer consistent with the department's Public Drinking Water Branch shall be provided. 10 CSR 20-8.140 (7) (D) 3. A.
    - For indirect connections, a sign shall be permanently posted at every hose bib, faucet, hydrant, or sill cock located on the water system beyond the break tank or backflow preventer to indicate that the water is not safe for drinking. 10 CSR 20-8.140 (7) (D) 3. B.
    - Where a separate non-potable water supply is to be provided, a break tank will not be necessary, but all system outlets shall be posted with a permanent sign indicating the water is not safe for drinking. 10 CSR 20-8.140 (7) (D) 4.

- 10 CSR 20-8.130 (4) (C) Wet well access shall not be through the equipment compartment.

- Submersible pump stations shall meet the applicable requirements under section (3) of this rule, except as modified in this section. 10 CSR 20-8.130 (5)
    - Pump Removal. Submersible pumps shall be readily removable and replaceable without personnel entering, dewatering, or disconnecting any piping in the wet well. 10 CSR 20-8.130 (5) (A)
    - 10 CSR 20-8.130 (5) (B) Valve Chamber and Valves. Valves required under subsection (3)(D) of this rule shall be located in a separate valve chamber.
    - A minimum access hatch dimensions of 24 inches by 36 inches shall be provided. 10 CSR 20-8.130 (5) (B) 1.

- A portable pump connection on the discharge line with rapid connection capabilities shall be provided. 10 CSR 20-8.130 (5) (B) 2.

- Alarm systems with an uninterrupted power source shall be provided for pumping stations. 10 CSR 20-8.130 (6)

- Where independent substations are used for emergency power, each separate substation and its associated distribution lines shall be capable of starting and operating the pump station at its rated capacity. 10 CSR 20-8.130 (7) (B)

- Force main system shall be designed to withstand all pressures (including water hammer and associated cyclic reversal of stresses) and maintain a velocity of at least two feet per second. 10 CSR 20-8.130 (8) (A)

- Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 feet. 10 CSR 20-8.140 (2) (C) 1.

- No treatment unit with a capacity of twenty-two thousand 22,500 gpd or less shall be located closer than the minimum distance of 200 feet to a neighboring residence and 50 feet to property line for lagoons; 200 feet to a neighboring residence for open recirculating media filters following primary treatment; and 50 feet to a neighboring residence for all other discharging facilities. See 10 CSR 20-2.010(68) for the definition of a residence. 10 CSR 20-8.140 (2) (C) 2

- The outfall shall be so constructed and protected against the effects of flood water, ice, or other hazards as to reasonably ensure its structural stability and freedom from stoppage. 10 CSR 20-8.140 (6) (A)

- All sampling points shall be designed so that a representative and discrete 24-hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140 (6) (B)

- All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140 (6) (C)

- All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140 (7) (A) 1.

- Disinfection and dechlorination, when used, shall be provided during all power outages. 10 CSR 20-8.140 (7) (A) 2.

- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140 (7) (C)

- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140 (7) (D) 1.

- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140 (7) (E)

- Effluent 24-hour composite automatic sampling equipment shall be provided at all mechanical wastewater treatment facilities and at other facilities where necessary under provisions of the operating permit. 10 CSR 20-8.140 (7) (F).

- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
    - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140 (8) (A)
    - Gratings over appropriate areas of treatment units where access for maintenance is necessary; 10 CSR 20-8.140 (8) (B)
    - First aid equipment; 10 CSR 20-8.140 (8) (C)
    - Posted "No Smoking" signs in hazardous areas; 10 CSR 20-8.140 (8) (D)
    - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140 (8) (E)
    - Portable blower and hose sufficient to ventilate accessed confined spaces; 10 CSR 20-8.140 (8) (F)
    - 10 CSR 20-8.140 (8) (G) Portable lighting equipment complying with NEC requirements. See subsection (7)(B) of this rule;
    - 10 CSR 20-8.140 (8) (H) Gas detectors listed and labeled for use in NEC Class I, Division 1, Group D locations. See subsection (7)(B) of this rule;
    - Appropriately-placed warning signs for slippery areas, non-potable water fixtures (see subparagraph (7)(D)3.B. of this rule), low head clearance areas, open service manholes, hazardous chemical storage areas, flammable fuel storage areas, high noise areas, etc.; 10 CSR 20-8.140 (8) (I)
    - Ventilation shall include the following:
        - Force fresh air into enclosed screening device areas or open pits more than four feet deep. 10 CSR 20-8.140 (8) (J) 2.
        - Dampers are not to be used on exhaust or fresh air ducts. Avoid the use of fine screens or other obstructions on exhaust or fresh air ducts to prevent clogging; 10 CSR 20-8.140 (8) (J) 3.
        - Where continuous ventilation is needed (e.g., housed facilities), provide at least 12 complete air changes per hour. Where continuous ventilation would cause excessive heat loss, provide intermittent ventilation of at least 30 complete air changes per hour when facility personnel enter the area. Base air change demands on 100 percent fresh air; 10 CSR 20-8.140 (8) (J) 4.
        - Electrical controls. Mark and conveniently locate switches for operation of ventilation equipment outside of the wet well or building. Interconnect all intermittently operated ventilation equipment with the respective wet well, dry well, or building lighting system. The manual lighting/ventilation switch is expected to override the automatic controls. For a two-speed ventilation system with automatic switch over where gas detection equipment is installed, increase the ventilation rate automatically in response to the detection of hazardous concentrations of gases or vapors; 10 CSR 20-8.140 (8) (J) 5.
        - Fabricate the fan wheel from non-sparking material. Provide automatic heating and dehumidification equipment in all dry wells and buildings. 10 CSR 20-8.140 (8) (J) 6.

  - Explosion-proof electrical equipment, non-sparking tools, gas detectors, and similar devices, in work areas where hazardous conditions may exist, such as digester vaults and other locations where potentially explosive atmospheres of flammable gas or vapor with air may accumulate. 10 CSR 20-8.140 (8) (K)
  - Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140 (8) (L)
  - Provisions for an arc flash hazard analysis and determination of the flash protection boundary distance and type of PPE to reduce exposure to major electrical hazards shall be in accordance with NFPA 70E *Standard for Electrical Safety in the Workplace* (2018 Edition), as approved and published August 21, 2017. 10 CSR 20-8.140 (8) (M)

- All wastewater treatment facilities must have a screening device, comminutor, or septic tank for the purpose of removing debris and nuisance materials from the influent wastewater. 10 CSR 20-8.150 (2)

- All screening devices and screening storage areas shall be protected from freezing. 10 CSR 20-8.150 (4) (A) 1.

- Provisions shall be made for isolating or removing screening devices from their location for servicing. 10 CSR 20-8.150 (4) (A) 2.

- Manually cleaned screen channels shall be protected by guard railings and deck gratings with adequate provisions for removal or opening to facilitate raking. 10 CSR 20-8.150 (4) (A) 3. A. (I)

- Mechanically cleaned screen channels shall be protected by guard railings and deck gratings. 10 CSR 20-8.150 (4) (A) 3. A. (II)

- Mechanical screening equipment shall have adequate removal enclosures to protect facility personnel against accidental contact with moving parts and to prevent dripping in multi-level installations. 10 CSR 20-8.150 (4) (A) 3. B. (I)

- A positive means of locking out each mechanical screening device shall be provided. 10 CSR 20-8.150 (4) (A) 3. B. (II)

- An emergency stop button with an automatic reverse function shall be located in close proximity to the mechanical screening device. 10 CSR 20-8.150 (4) (A) 3. B. (III)

- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140 (7) (B)

- Effective flow splitting devices and control appurtenances (*e.g.* gates and splitter boxes) shall be provided to permit proper proportioning of flow and solids loading to each settling unit, throughout the expected range of flows. 10 CSR 20-8.160 (2) (B)

- Overflow weirs shall be readily adjustable over the life of the structure to correct for differential settlement of the tank. 10 CSR 20-8.160 (3) (C) 1.

- Walls of settling tanks shall extend at least 6 inches above the surrounding ground surface and shall provide not less than 12 inches of freeboard. 10 CSR 20-8.160 (3) (E)

- Safety features shall appropriately include machinery covers, life lines, handrails on all stairways and walkways, and slip resistant surfaces. For additional safety follow the provisions listed in 10 CSR 20-8.140(8). 10 CSR 20-8.160 (5) (A)

- The design shall provide for convenient and safe access to routine maintenance items such as gear boxes, scum removal mechanism, baffles, weirs, inlet stilling baffle areas, and effluent channels. 10 CSR 20-8.160 (5) (B)

- Alarm systems shall be provided in accordance with 10 CSR 20-8.140(7)(C) to warn of:
    - Any drop of the liquid level below minimum operating elevation; 10 CSR 20-8.170 (4) (A) 2. A. and
    - Low pressure in the space above the liquid level. 10 CSR 20-8.170 (4) (A) 2. B.

- For solids pumping systems, audio-visual alarms shall be provided in accordance with 10 CSR 20-8.140(7)(C) for:
    - Pump failure; 10 CSR 20-8.170 (6) (A)
    - Pressure loss; 10 CSR 20-8.170 (6) (B) and
    - High pressure. 10 CSR 20-8.170 (6) (C)

- Moving Bed Bioreactor (MBBR). A MBBR secondary treatment system shall provide upstream preliminary treatment units capable of—
    - Screening to reduce pass-through and suspended solids; 10 CSR 20-8.180 (8)(A)
    - Grit removal; 10 CSR 20-8.180 (8)(B) and
    - Oil and grease removal. 10 CSR 20-8.180 (8)(C)

- Emergency Power. Disinfection and dechlorination processes, when used, shall be provided during all power outages. 10 CSR 20-8.190 (2) (A)

- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190 (5) (A) 1.

- The UV system shall deliver the target dosage based on equipment derating factors and, if needed, have the UV equipment manufacturer verify that the scale up or scale down factor utilized in the design is appropriate for the specific application under consideration. 10 CSR 20-8.190 (5) (A) 3.

- The UV system shall deliver a minimum UV dosage of 30,000 microwatt seconds per centimeters squared ($\mu W \bullet s/cm^2$). 10 CSR 20-8.190 (5) (A) 4.

- Open channel UV systems. The combination of the total number of banks shall be capable of treating the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190 (5) (B) 1.

- The UV system must continuously monitor and display at the UV system control panel the following minimum conditions:
    - The relative intensity of each bank or closed vessel system; 10 CSR 20-8.190 (5) (C) 1. A.
    - The operational status and condition of each bank or closed vessel system; 10 CSR 20-8.190 (5) (C) 1. B.
    - The ON/OFF status of each lamp in the system; 10 CSR 20-8.190 (5) (C) 1. C. and
    - The total number of operating hours of each bank or each closed vessel system. 10 CSR 20-8.190 (5) (C) 1. D.

- The UV system shall include an alarm system. Alarm systems shall comply with 10 CSR 20-8.140(7)(C). 10 CSR 20-8.190 (5) (C) 2.

8. Upon completion of construction:

    A. The City on Newburg will become the continuing authority for operation and maintenance of these facilities;

    B. Submit an electronic copy of the as builts; and

    C. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155).

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Project involves improvement of the First Street Pump Station; construction of a new headworks facility; implementation of an MBBR biological unit process; replacement of the existing secondary clarifier mechanism; replacement of the existing UV disinfection equipment; replacement of the existing peak flow clarifier mechanism; improvements to the aerobic digester; miscellaneous site and process piping to afford a complete and functional facility.

2. FACILITY DESCRIPTION

The First Street pump station is approximately located at the intersection of First Street and Water Street, and the wastewater treatment facility at 300 W. First Street, separated by approximately 0.37 miles in the City of Newburg, Phelps County, Missouri. The average design flow will remain at 100,000 gpd. The design wet weather flow is 750,000 gpd. The peak flow clarifier can handle up to 250,000 gpd, and the MBBR and secondary clarifier up to 500,000 gpd. The facility is currently

capable of blending and will blend in the future when flow exceeds 500,000 gpd. Facility is expected to remain in compliance during a peak flow event.

This is an existing facility with a hydraulic population equivalent of approximately 1,000 people. The current main treatment components are: The First Street pump station, a headworks facility with a manual screen, an extended aeration basin, a secondary clarifier, and a UV disinfection system. The facility also comprises a peak flow clarifier and an aerobic digester/sludge storage unit. During the construction, the First Street pump station will be furnished with a new dry well to house new processing valves and the wet well will be furnished with new pumps to better handle peak flows. Several of the facility components will be replaced with new ones. A new headworks will be constructed with a manual screen, a new mechanical screen and a new 3 inch Parshall flume for influent flow measuring. The extended aeration basin will be converted to an MBBR treatment unit and its aeration mechanism will be replaced. The secondary and the peak flow clarifiers mechanism; scraper arm, drive shaft, feedwell, drive unit, and other parts will also be replaced. A new 3 inch Parshall flume will be installed after the peak flow clarifier unit. New blowers, air header system and diffuser drop assembly will be installed at the aerobic digester. The existing RAS/WAS pump station will be repurposed as the sludge pump station and two (one stand by) new 10 hp submersible, non-clog, centrifugal pumps will be installed. A new UV disinfection treatment unit designed for a peak flow of 750,000 gpd will be replacing the existing unit.

3. COMPLIANCE PARAMETERS

The limits following the completion of construction will be applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand$_5$	mg/L	30
Total Suspended Solids	mg/L	30
Ammonia as N-January	mg/L	2.3
Ammonia as N-February	mg/L	2.3
Ammonia as N- March	mg/L	2.3
Ammonia as N- April	mg/L	1.3
Ammonia as N -May	mg/L	1.3
Ammonia as N-June	mg/L	1.3
Ammonia as N-July	mg/L	1.1
Ammonia as N-August	mg/L	1.3
Ammonia as N- September	mg/L	1.3
Ammonia as N- October	mg/L	2.3
Ammonia as N-November	mg/L	2.3
Ammonia as N-December	mg/L	2.3
pH	SU	6.5-9.0
E. coli	#/100mL	126

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- Components are designed for a Population Equivalent of 1,000 based on hydraulic loading to the system.

- First Street Influent Pump Station – Duplex pump station, each 15 HP submersible pump is capable of operating at 370 GPM at 69 feet of TDH. Construction of a new well lid. Designed to convey the 2042 projected peak hour flow rate of 0.75 MGD which is anticipated to accommodate peak flows generated during a 10 percent annual exceedance probability, 1 HR storm event.

- Construction of a new concrete headworks with a peak flow design of 0.75 MGD consisting of two channels, one firm with a fine screen and one emergency bypass with a manual bar screen channel, and a new wet weather flow splitter. The fine screen shall lift and compress the removed material prior to reaching the discharge chute. The liquid portion will return to the liquid stream for further processing. The screen can be configured with heat tracing and insulating blanket to allow a full outdoor installation. For servicing of the fine screen, a manually raked bar screen is provided.

- Flow Measurement – Installation of two flow measurement devices giving the treatment facility a means of improved data analysis.

    - Influent Parshall Flume – A 3-inch throat Parshall flume with ultrasonic flow sensor for measuring raw influent wastewater installed following the mechanical and manual bar screens and before the MBBR unit.

    - Peak Flow Parshall Flume – A 3-inch throat Parshall flume for measuring the raw effluent diverted to the peak flow clarifier and located after it.

- Moving Bed Biofilm Reactor (MBBR) – Installation of one MBBR capable of treating a design average flow of 100,000 gpd and a maximum flow of 500,000 gpd. The MBBR will be constructed in the existing activated sludge biological process tank. The MBBR will consist of creating four different cells with total dimensions of approximately 35 ft outer and 12 ft inner diameters, 16 ft in height, a side water depth of 15.81 ft, a volume of approximately 63,665 gallons. The MBBR hydraulic retention time for the cells at design flow is 3.14, 3.14, 4.5 and 4.5 hours, for a total time of approximately 15.3 hours at the peak of 500,000 gpd. Cells 1 and 2 are designed for BOD removal and cells 3 and 4 for ammonia removal. Carrier media shall be added directly to individual reactor basins to afford biofilm growth within the reactor. The minimum design fill fraction of carrier media within each reactor shall be 30 percent. The required air flow is 295 scfm and the aeration will be provided by two (one stand by) positive displacement rotary lobe type blowers each 20 HP in size and capable of supplying 350 scfm at 7 PSI through coarse bubble diffusers. There will be media

retention screens between the different cells to hinder the movement of media between cells. Carrier media is slightly or neutral buoyant, with a specific gravity no less than 0.96, an outer diameter between 0.67 and 1 inch with a cut length of 0.35 inch minimum. The biological active surface area is 243 sq ft/cu foot minimum. The effluent from the MBBR will flow by gravity to the secondary clarifier.

- Secondary Clarifier – Will be reconstructed by replacing several of its parts having a total surface area of 314.2 sf and a 20 ft diameter. The sidewater depth is 14.83 ft. The 0.5 MGD peak weir loading rate is 9,803 gpd/sf and the solids loading rate is 4.6 lbs/day/sf.

- Peak Flow Clarifier – Routine maintenance to replacement the clarifier mechanism in the existing peak flow clarifier. The peak flow clarifier has a total surface area of 4,185 sf, a diameter of 73 ft and a side water depth of 12 ft. The weir loading rate is 7,143 gpd/lf. Clarified effluent can be blended with effluent from the secondary clarifier, sent to the UV treatment unit and to the outfall. Peak flow clarifier will have the capability to send its contents to the headworks when the unit is capable of accepting the flow. Scum from the peak flow clarifier will be sent to the aerobic digester for further treatment.

- Sludge Pump Station – The existent RAS/WAS pump station will be recycled as the Sludge Pump Station. This unit shall convey secondary clarifier and peak flow clarifier sludge and scum to the aerobic digester/ sludge storage basin for stabilization. Two new 10 HP pumps (one standby) with a capacity of 250 gpm at 22.5 TDH will be installed.

- Disinfection – A horizonal open channel UV system will be installed to treat in excess of 0.75 MGD of wastewater. The system consists of two banks (one duty) each having six modules, with four lamps, for a total of 48 lamps. A transmittance of 60 percent and a minimum dose 30,000 μW-sec/cm^2 based on MS2 is anticipated.

- Aerobic Digestion and Sludge Storage – Installation of a new aeration system, including headers, laterals, drop leg and diffuser grid piping. The aerobic digestor has an outer and inner diameter of 32.5 and 15 feet, a SWD of 13 feet and a volume of 8,486 cubic feet with a target solids retention time of 43 days. The design provides a 25 percent additional volume for emergency storage. Two (one standby) 10 HP new positive displacement blowers with a capacity of 270 SCFM at 6 PSI will be installed for aeration.

- As part of the proposed upgrades to the WWTF an emergency diesel engine driven, DOT approved trailer mounted standby generator will be installed with automatic transfer switch sized to accommodate the largest anticipated load generated by the WWTF should a power outage occur. A similarly sized manual

transfer switch and generator plug shall be installed at the First Street Pump Station to accommodate the use of the generator at that facility as well. Should a power outage occur at either facility, the generator shall be utilized for redundant power.

5. OPERATING PERMIT

Operating permit MO-0021784 will require a modification to reflect the construction activities. The modified Newburg WWTF, MO-0021784, was successfully public noticed from September 13 to October 14, 2024, with no comments received. Submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued with Outfall #01A becoming effective.

V. NOTICE OF RIGHT TO APPEAL

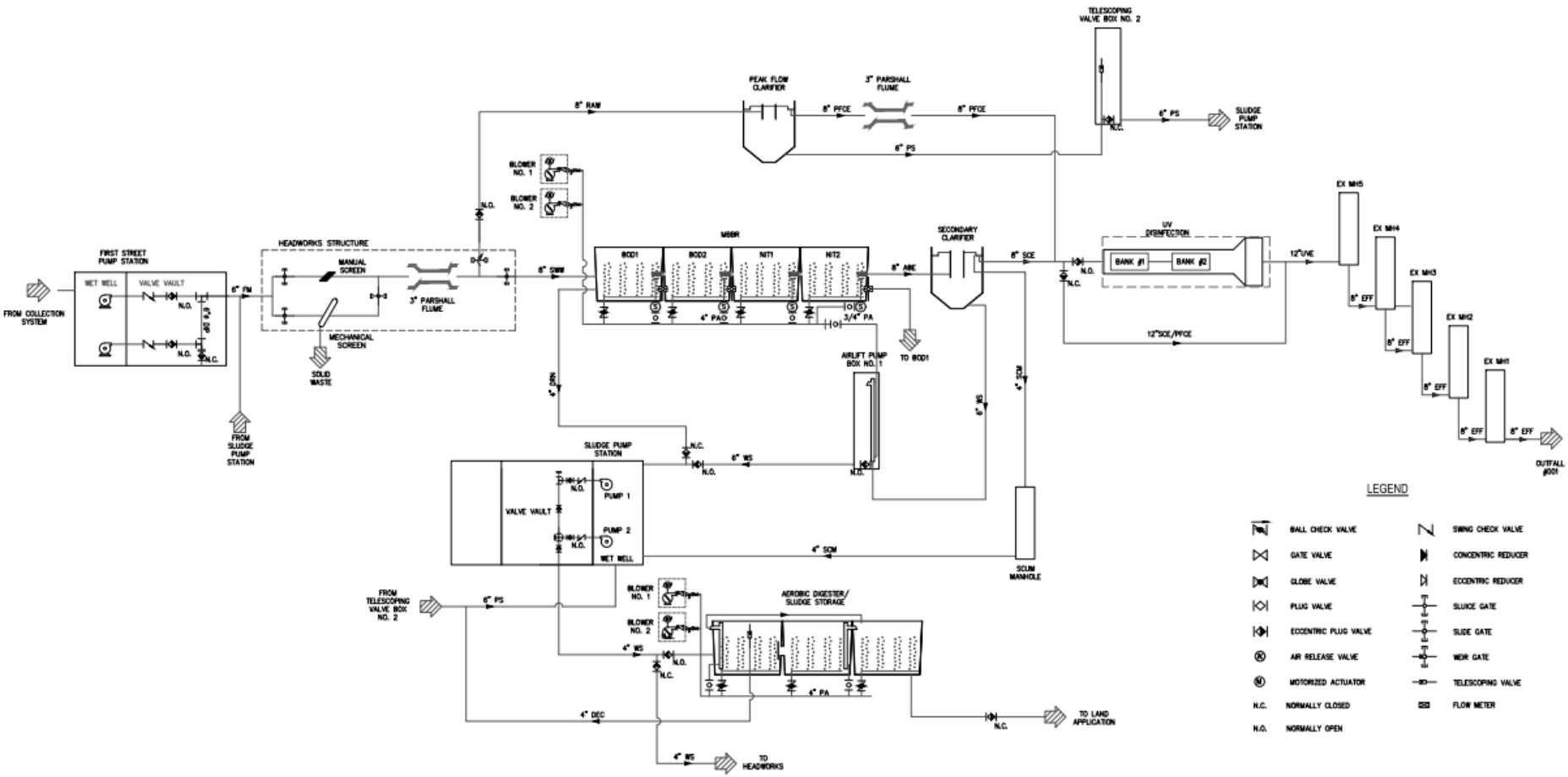
If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

Francisco Cortalezzi E.I.T.
Engineering Section
francisco.cortalezzi@dnr.mo.gov

Chia-Wei Young, P.E.
Engineering Section
chia-Wei.Young@dnr.mo.gov

APPENDIX A: PROCESS FLOW DIAGRAM



Appendix B: CAFCOM

Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)

Newburg WWTP, Permit Renewal+ Modification
City of Newburg
Missouri State Operating Permit #MO-0021784

Section 644.145 RSMo requires the Department of Natural Resources (department) to make a "finding of affordability" when "issuing permits under" or "enforcing provisions of" state or federal clean water laws "pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works." This cost analysis does not dictate how the permittee will comply with new permit requirements.

New Permit Requirements

The permit requires compliance with new monitoring requirements for Total Kjeldahl Nitrogen, Nitrate + Nitrite, and Total Phosphorus.

Connections
The number of connections was reported by the permittee on reported by the permittee on the permit renewal application.

Connection Type	Number
Residential	244
Commercial	2
Industrial	0
Total	**246**

Data Collection for this Analysis
This cost analysis is based on data available to the department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the department with current information about the City's financial and socioeconomic situation. The financial questionnaire available to permittees on the department's website (https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511) is a required attachment to the permit renewal application. If the financial questionnaire is not submitted with the renewal application, the department sends a request to complete the form with the welcome correspondence. Though the department has made attempts to gather financial information from the City of Newburg; no information has been provided. The department has relied heavily on readily available data to complete this analysis. If certain data was not provided by the permittee to the department and the data is not obtainable through readily available sources, this analysis will state that the information is "unknown".

Eight Criteria of 644.145 RSMo
The department must consider the eight criteria presented in subsection 644.145 RSMo to evaluate the cost associated with new permit requirements.

(1) A community's financial capability and ability to raise or secure necessary funding;

Criterion 1 Table. Current Financial Information for the City of Newburg	
Current Monthly User Rates per 5,000 gallons*	$34.43

Median Household Income (MHI)[1]	**$22,202**
Current Annual Operating Costs (excludes depreciation)	$161,797

*User Rates were reported by the permittee on the obtained from the 2024 Missouri Public Utility Alliance Water and Wastewater Rate Survey.

(2) Affordability of pollution control options for the individuals or households at or below the median household income level of the community;

The following tables outline the estimated costs of the new permit requirements:

Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements			
New Requirement	Frequency	Estimated Cost	Estimated Annual Cost
BOD influent	Monthly	$44	$ 528
TSS influent	Monthly	$17	$ 204
Total Phosphorus – Influent	Quarterly	$26	$104
Total Kjeldahl Nitrogen - Influent	Quarterly	$35	$140
Nitrate – Influent	Quarterly	$22	$88
Nitrite – Influent	Quarterly	$22	$88
Ammonia – Influent	Quarterly	$22	$88
Total Phosphorus – Effluent	Quarterly	$26	$104
Total Kjeldahl Nitrogen - Effluent	Quarterly	$35	$140
Nitrate – Effluent	Quarterly	$22	$88
Nitrite – Effluent	Quarterly	$22	$88
Blending BOD	unknown, assumed 4 per year for 8 samples (4 influent, 4 effluent)	$44	$ 352
Blending TSS	unknown, assumed 4 per year for 8 samples (4 influent, 4 effluent)	$17	$ 136
Total Estimated Annual Cost of New Permit Requirements			**$ 2,148**

Criterion 2B Table. Estimated Costs for New Permit Requirements		
(1)	Total Estimated Annual Cost of New Permit Requirements	$ 2,148
(2)	Estimated Monthly User Cost for New Requirements [2]	$ 0.73
	Estimated Monthly User Cost for New Requirements as a Percent of MHI [3]	0.039%
(3)	Total Monthly User Cost*	$35.16
	Total Monthly User Cost as a Percent of MHI [4]	1.90%

* Current User Rate + Estimated Monthly Costs of New Sampling Requirements

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

This analysis is being conducted based on new requirements in the permit, which will not require the addition of new control technologies at the facility. However, the new sampling requirements are being established in order to provide data regarding the health of the receiving stream's aquatic life and to ensure that the existing permit limits are providing adequate protection of aquatic life. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri's water quality standards fulfills the goal of restoring and maintaining the chemical, physical, and biological integrity of the receiving stream; and, where attainable, it achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The community reported that their outstanding debt for their current wastewater collection and treatment systems is $107,200. The community reported that each user pays $34.43 monthly.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

(a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
(b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

The following table characterizes the current overall socioeconomic condition of the community as compared to the overall socioeconomic condition of Missouri. The following information was compiled using the latest U.S. Census data.

Criterion 5 Table. Socioeconomic Data [1, 5-9] for the City of Newburg, MO

No.	Administrative Unit	Newburg City	Missouri State	United States
1	Population (2022)	329	6,154,422	331,097,593
2	Percent Change in Population (2000-2022)	-32.0%	10.0%	17.7%
3	2022 Median Household Income (in 2023 Dollars)	$22,202	$68,634	$78,242
4	Percent Change in Median Household Income (2000-2022)	-32.6%	-1.1%	1.9%
5	Median Age (2022)	35.3	38.8	38.8
6	Change in Median Age in Years (2000-2022)	-4.2	2.7	3.5
7	Unemployment Rate (2022)	12.5%	4.3%	5.3%
8	Percent of Population Below Poverty Level (2022)	44.5%	12.8%	12.5%
9	Percent of Household Received Food Stamps (2022)	43.8%	10.0%	11.5%
10	(Primary) County Where the Community Is Located	Phelps County		

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

The community did not report any other investments relating to environmental improvements.

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards*;*

The new requirements associated with this permit will not impose a financial burden on the community, nor will they require the City of Newburg to seek funding from an outside source.

(8) An assessment of any other relevant local community economic conditions.
The community did not report any other relevant local economic conditions.

The department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score. The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri.

Based on the assessment tool, the City of Newburg has been determined to be a category 5 community. This means that the City of Newburg is predicted to be stable over time.

Conclusion and Finding
As a result of new regulations, the department is proposing modifications to the current operating permit that may require the permittee to increase monitoring. The department has considered the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

This analysis examined whether the new sampling requirements affect the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. After reviewing the above criteria, the department finds that the new sampling requirements may result in a low burden with regard to the community's overall financial capability and a low financial impact for most individual customers/households; therefore, the new permit requirements are affordable.

References

1. (A) 2022 MHI in 2022 Dollar: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2022 Inflation-Adjusted Dollars). https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2022.B19013.
(B) 2000 MHI in 1999 Dollar: (1)For United States, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-1 Part 1. United States Summary, Table 5. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-27, Missouri, Table 10. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(C) 2023 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2023) Consumer Price Index - All Urban Consumers, U.S. City Average. All Items. 1982-84=100 (unadjusted) - CUUR0000SAO. https://data.bls.gov/cgi-bin/surveymost?bls.
(D) 2022 MHI in 2023 Dollar = 2022 MHI in 2022 Dollar x 2023 CPI /2023 CPI; 2000 MHI in 2023 Dollar = 2000 MHI in 1999 Dollar x 2023 CPI /1999 CPI.
(E) Percent Change in Median Household Income (2000-2022) = (2022 MHI in 2023 Dollar - 2000 MHI in 2023 Dollar) / (2000 MHI in 2023 Dollar).

2. ($2148/246)/12 = $0.73 (Estimated Monthly User Cost for New Requirements)
3. ($0.73/($22,202,/12))100% = 0.039% (New Sampling Only)
4. ($35.16/($22,202/12))100% = 1.90% (Total User Cost)
5. (A) Total Population in 2022: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2022.B01003.
(B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.

   (2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.

   (C) Percent Change in Population (2000-2022) = (Total Population in 2022 - Total Population in 2000) / (Total Population in 2000).

6. Median Age in 2022: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2022.B01002.
(B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC., Page 2. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.

   (2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC., Pages 64-92. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.

   (C) Change in Median Age in Years (2000-2022) = (Median Age in 2022 - Median Age in 2000).

7. United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, S2301: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. https://data.census.gov/cedsci/table?q=unemployment&tid=ACSST5Y2022.S2301.
8. United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2022.S1701.

9. United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table S2201: Food Stamps/Supplemental Nutrition Assistance Program (SNAP) - Universe: Households. https://data.census.gov/cedsci/table?q=S2201&tid=ACSST5Y2022.S2201.

Received 5/24/24

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

1.1 Is this a Federal/State funded project? ☑ YES ☐ N/A Funding Agency: MDNR Project #: 34AB220192C4

1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____ ☑ N/A

1.3 Has the department approved the proposed project's facility plan*?
☑ YES Date of Approval: 042023 ☐ NO (If No, complete No. 1.4.)

1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
☐ YES ☐ NO ☐ Exempt because _____

1.5 Is a copy of the appropriate plans* and specifications* included with this application?
☑ YES Denote which form is submitted: ☐ Hard copy ☑ Electronic copy (See instructions.) ☐ NO

1.6 Is a summary of design* included with this application? ☑ YES ☐ NO

1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
☐ YES Date of submittal: _____
☑ Enclosed is the appropriate operating permit application and fee submittal. Denote which form: ☐ A ☑ B ☐ B2
☐ N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? ☐ YES ☐ NO

1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☑ YES ☐ NO

1.9 Is the appropriate fee or JetPay confirmation included with this application? ☐ YES ☑ NO
See Section 7.0

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT: Newburg WWTF Improvements

2.2 ESTIMATED PROJECT CONSTRUCTION COST: $ 5,050,000

2.3 PROJECT DESCRIPTION
See attached supplemental documentation.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Waste sludge is pumped to an aerobic digester for stabilization and storage. The stabilized biosolids are land applied.

2.5 DESIGN INFORMATION
A. Current population: 390 ; Design population: 1000

B. Actual Flow: _____ gpd; Design Average Flow: _____ gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____

2.6 ADDITIONAL INFORMATION
A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Newburg WWTF	573-762-2315	newburg.city.hall@gmail.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
300 W. 1st St	Newburg	MO	65550	Phelps

Wastewater Treatment Facility: Mo- 0021784 (Outfall 1 Of 1)

3.1 Legal Description: ____ ¼, ____ ¼, ____ ¼, Sec. 22, T 37N, R 9W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 595892 Northing (Y): 4196914
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Unnamed tributary to Little Piney Creek

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
City of Newburg	573-762-2315	newburg.city.hall@cmarcher.com

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box K	Newburg	MO	65550

5.0 CONTINUING AUTHORITY: A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
City of Newburg	573-456-2002	newburg.city.hall@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
Drawer K	Newburg	MO	65550

5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☑ N/A

5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.

A. Is a copy of the certificate of convenience and necessity included with this application? ☐ YES ☐ NO

5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.

A. Is a copy of the as-filed restrictions and covenants included with this application? ☐ YES ☐ NO

B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? ☐ YES ☐ NO

C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? ☐ YES ☐ NO

D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☐ NO

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Ken Campbell / Archer-Elgin Engineering & Surveying	573-364-6362	kcampbell@cmarcher.com

ADDRESS	CITY	STATE	ZIP CODE
310 E 6th St	Rolla	MO	65401

7.0 APPLICATION FEE

☐ CHECK NUMBER ☐ JETPAY CONFIRMATION NUMBER

8.0 PROJECT OWNER: 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PROJECT OWNER SIGNATURE SIGN HERE Patti Baker Chism

PRINTED NAME	DATE
Patti Baker Chism	5/23/24

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Mayor	573-456-2002	newburg.city.hall@gmail.com

Mail completed copy to:
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
P.O. BOX 176
JEFFERSON CITY, MO 65102-0176

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.

PART B – LAND APPLICATION ONLY
(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☐ Domestic ☐ State/National Park ☐ Seasonal business
☐ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
☐ 12 months per year ☐ Part of the year (list months): _____

8.3 This system is designed for:
☐ No-discharge.
☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreational season, April – October, and discharge during November – March.
☐ Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
Basin #1: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #3: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):
☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.7 Land application rate is based on:
☐ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N&P) If N&P is selected, is the plan included? ☐ YES ☐ NO