

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 Camden Point
101 3rd Street
Camden Point, MO 64018

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.

July 16, 2020
Effective Date

May 16, 2022
Modification Date

July 15, 2025
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

This is a **DEMONSTRATION** project and additional monitoring requirements are included in the operating permit in accordance with the Approval Process for Innovative Technology Factsheet and 10 CSR 20-6.010(5).

The proposed system will serve a design flow of 80,000 gpd.

A new low pressure sewer with grinder pumps will be installed with approximately 201 simplex grinder pump units, 12 duplex grinder pump units, and one quadplex grinder pump. Project is located west of the intersection of Woodson Ave. and Interurban Rd., Camden, Platte County and will discharge to the new Camden Point WWTF, MO-0139505. Grinder pumps will be owned and maintained by the City of Camden Point.

Raw wastewater will flow to a mechanically-cleaned fine screen, followed by an influent electromagnetic 6-inch flow meter. Wastewater will flow from the flow meter vault by gravity to two fiberglass primary treatment septic tanks in series. The septic tanks provide approximately one day of detention at design average flow. Settled solids in the septic tank shall be removed by a contract hauler. Wastewater will flow by gravity into a flow splitter and to the recirculation tanks. The flow splitter discharges 20-percent of the flow to the downstream treatment units and recycles 80-percent of the flow back through the plant.

Quanics by Anua Biofilter Treatment System – Series ATS-AC, AeroCell. The ATS-AC is a packed bed filter and consists of a proprietary open cell urethane foam media. The treatment system includes three recirculation dosing tanks, advanced media treatment modules, recirculation pumps, recirculation valves, and blowers. Treatment modules will consist of three treatment trains in parallel with each train having nine treatment media modules. Each recirculation tank has three submersible transfer pumps operating in parallel to transfer wastewater to three of the treatment media modules. Flow is distributed in each treatment module through helical spray nozzles that provide uniform distribution of the effluent over the surface area. Once sprayed, the effluent moves via gravity down through the media. Aeration will be provided by means of nine blowers.

Or as an alternate to the Quanics system an Orenco AdvanTex Treatment System using Orenco AX-Max Treatment Equipment. AdvanTex technology employs a dosing system that spray doses a packed bed filter; flow trickles by gravity through the packed bed then collects in the chamber beneath the bed, flow is then split with approximately 80% of flow being redistributed onto the filter with the remainder routed to the next treatment stage. The AX Max300-42 has a surface area of 315 sq. ft. and holds a nominal liquid volume of 8640 gallons, the packed bed is approximately 20 inches thick located near the top of the pod. First stage treatment to have a 7,500 gallon dosing tank, fourteen AX Max300-42 treatment pods arranged in parallel, each pod dosed with a dedicated pump (PF14520) out of the dosing tank. Second stage treatment to have a 5000 gallon dosing tank followed by five AX Max300-42 treatment pods also arranged in parallel and dosed with a dedicated pump. There is no supplemental aeration but forced ventilation is provided. For this option 360,000

gallons of primary treatment volume and 120,000 gallons of anoxic volume will be provided prior to the first stage treatment. Design allows a portion of the flow to be returned to the anoxic tanks for advanced treatment processes.

An open channel, gravity flow UV disinfection system capable of treating up to a peak flow of 320,000 gpd will be installed, with spare parts also provided. The disinfected effluent will flow by gravity to post aeration.

To increase dissolved oxygen in the effluent, step cascade aeration will be provided prior to the outfall. The step aeration will use thirteen 12-inch high steps.

A 45 kW standby propane generator and automatic transfer switch will be provided to operate the treatment facility in event of power failure.

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 not required to determine Cost Analysis for Compliance because the wastewater treatment facility is a new facility with a new operating permit. Therefore, there is no previous version of the permit for there to be changes to that impose new conditions or requirements that convey a new cost to the facility. The City of Camden Point has elected to construct the proposed new wastewater treatment facility.

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 Jon Shellhorn with Lamp Rynearson and as described in this permit. Approval is based on the revised specifications included in Addendum No. 1 dated June 21, 2021.
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 Kansas City Regional Office per 10 CSR 20-7.015(9)(G).
5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment.
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred- (100-) year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300') per 10 CSR 20-8.140(2)(C)1.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 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 dnr.mo.gov/env/wpp/epermit/help.htm. See dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See dnr.mo.gov/env/wpp/401/ for more information.
10. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

10 CSR 20-8.125 Alternative Sewer Systems

- Rain water from roofs, streets, and other areas and groundwater from foundation drains shall be excluded from all new sewers. 10 CSR 20-8.120 (2)
- Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140 (2) (D)
- There shall be no physical connections between a public or private potable water supply system and a sewer or appurtenance that would permit the passage of any wastewater or polluted water into the potable supply. Sewers shall be laid at least fifty feet (50') in a horizontal direction from any existing or proposed public water supply well or other water supply sources or structures. Sewers must also comply with 10 CSR 23-3.010. 10 CSR 20-8.120 (5)
- Service connections to the sewer main shall be watertight and cannot protrude into the sewer. 10 CSR 20-8.120 (3) (C) 1.
- Locator wire must be utilized when sewer lines are installed within the public right-of-way in accordance with 319.033, RSMo. 10 CSR 20-8.125 (5) (A) 5.
- Appurtenances shall be compatible with the piping system and full bore with smooth interior surfaces to eliminate obstruction and keep friction loss to a minimum. 10 CSR 20-8.125 (5) (B)
 - Isolation valves shall be—
 - Comprised of resilient seated gate valve or ball valve with a position indicator;
 - Constructed from corrosion resistant materials; and
 - Enclosed in a watertight and lockable valve box.
 - Isolation valves shall be installed on—
 - The upstream side of major pipe intersections;
 - Both sides of stream, bridge, and railroad crossings, and unstable soil; and
 - The terminal end of the system to facilitate future extensions.
 - Proper support (e.g., crushed stone, concrete pads, or a well compacted trench bottom) shall be provided for valves so the weight of the valve not carried by the pipe.
- The minimum diameter service line pipe shall be one and one quarter inches (1.25"). 10 CSR 20-8.125 (5) (C)
- Simplex grinder pump station shall—
 - Not serve multiple equivalent dwelling units (EDU) if owned, operated, and maintained by individual homeowners; and
 - Not serve commercial facilities. 10 CSR 20-8.125 (5) (D) 1. A.

- Multiple unit grinder pump stations must be owned, operated, and maintained by an approved continuing authority. See subsection (4)(A) of this rule for more continuing authority information. 10 CSR 20-8.125 (5) (D) 1. B.
- Grinder pump vaults shall be watertight. 10 CSR 20-8.125 (5) (D) 2.
- A grinder pump vault shall have a storage volume of at least seventy (70) gallons. 10 CSR 20-8.125 (5) (D) 3.
- The following valves must be provided in the grinder pump vaults: 10 CSR 20-8.125 (5) (D) 4.
 - A shutoff valve accessible from the ground surface;
 - A check valve to prevent backflow; and
 - An anti-siphon valve, where siphoning could occur.
- Grinder pump stations shall meet the applicable requirements under section 10 CSR 20-8.130 (3) of this rule, except as modified in this section. 10 CSR 20-8.130 (5)
 - Submersible pumps shall be readily removable and replaceable without personnel entering, dewatering, or disconnecting any piping in the wet well.
 - Valves shall be located in a separate valve chamber.
 - A minimum access hatch dimensions of twenty-four inches by thirty-six inches (24" x 36") shall be provided.
 - A portable pump connection on the discharge line with rapid connection capabilities shall be provided.
- Water level controls must be accessible without entering the wet well. 10 CSR 20-8.130 (3) (C)
- When the continuing authority operates and maintains the grinder pump stations, provisions must be made for periods of mechanical or power failure. 10 CSR 20-8.125 (5) (D) 8.

10 CSR 20-8.140 Wastewater Treatment Facilities

- 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 one hundred- (100-) year flood elevation. 10 CSR 20-8.140 (2) (B)
- 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 three hundred feet (300'). 10 CSR 20-8.140 (2) (C) 1.
- Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140 (2) (D)

- 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 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.
- 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)
- 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)
- 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)

10 CSR 20-8.150 Preliminary Treatment.

- 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.
- 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)
- Where two (2) or more mechanically cleaned bar screens are used, the design shall provide for taking the largest unit out-of-service without sacrificing the capability to handle the average design flow. Where only one mechanically cleaned screen is used, it shall be sized to handle the design peak instantaneous flow. 10 CSR 20-8.150 (4) (B)

10 CSR 20-8.190 Disinfection.

- Emergency Power. Disinfection 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.
- 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.

11. Upon completion of construction:

- A. The City of Camden Point will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications;
- C. Submit the eDMR permit Holder and Certifier Registration, Form--MO 780-2204 to comply with your operating permit; and
- D. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N) and request that the new operating permit be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The City of Camden Point currently does not have a municipal sewage collection or treatment system. The residents are served by individual septic tanks, some with, and some without, lateral adsorption fields. The City presently experiences public health hazards and odor problems as the result of untreated sewage and septic tank effluents seeping into the ground and to the surface in the open drainage ditches in the City.

2. FACILITY DESCRIPTION

The existing service area is served by individual septic tanks. The proposed system includes a new low pressure sewer system with grinder pumps, influent screen, flow meter, primary treatment septic tanks, secondary treatment with Quanics by Anua recirculating media treatment tanks equipped with recirculation pumps and blowers, ultraviolet disinfection, and cascade reaeration. This will be a demonstration project.

The Camden Point WWTF is located west of the Intersection of Woodson Ave. and Interurban Rd, Camden Point, in Platte County, Missouri. The facility has a design average flow of 80,000 gpd and serves a hydraulic population equivalent of approximately 800 people.

3. COMPLIANCE PARAMETERS

The proposed facility is designed to meet final effluent limits as established in the Antidegradation review dated February 27, 2017 and the Operating Permit MO-0139505.

As this is a demonstration project, for the first year of operation following construction, additional monitoring and a final report will be required.

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

PARAMETER	UNITS	MONTHLY AVERAGE LIMIT
Biochemical Oxygen Demand ₅	mg/L	10
Total Suspended Solids	mg/L	10
Ammonia as N-summer	mg/L	0.6
Ammonia as N-winter	mg/L	2.1
pH	SU	6.5-9.0
<i>E. coli</i>	#/100mL	206

4. ANTIDEGRADATION

The Department has reviewed the antidegradation report for this facility and issued the Water Quality and Antidegradation Review dated February 27, 2017, due to construction of a new facility.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction will cover the following items:

- Components are designed for a design flow of 80,000 gpd a Population Equivalent of 800 based on organic loading to the system.
- Construction of a low pressure sewer with grinder pumps and approximately 951 lf of 1.25-inch (plus more for lateral connections), 13,089 lf of 2-inch, 8,382 lf of 3-inch, and 6,388 lf of 4-inch PVC SDR-21 force main to serve 800 PE and a design average flow of 80,000 gpd. Installation of 11 air/vacuum release valves and 42 cleanouts.
- Cleanout valves should be installed at intervals of approximately 1,000 feet and at branch ends and junctions; isolation valves at branch junctions; and air release valves at peaks of 25 ft or more and/or at intervals of 2,000 to 2,500 ft.

- Installation of approximately 201 simplex grinder pump units with a minimum 70 gallon fiberglass storage tank, 12 duplex grinder pump units with approximately 575 gallon capacity (8 feet deep, 42-inch diameter), and one quadplex grinder pump unit 8 feet deep and diameter per manufacturer recommendations. The pumps will have a waterproof alarm light assembly and alarm buzzer, and shall deliver a capacity of 8 gpm at a total dynamic head of 185 feet. At zero head the output shall be 15 gpm minimum. Project is located west of the intersection of Woodson Ave. and Interurban Rd., Camden, Platte County and will discharge to the new Camden Point WWTF, MO-0139505. Grinder pump will be owned and maintained by the City of Camden Point.
- Screening – Installation of screening devices removes nuisance inorganic materials from raw wastewater.
 - Installation of one (1) Blue Whale Micro Bar Screen Mechanically Cleaned Bar Screen as manufactured by OrTec Inc, or pre-approved equal, Maximum screen openings are 3 mm. Screen bars shall be readily replaceable individually from the front of the screen without the need to remove the screen from the wastewater channel. The screening device shall be capable of treating a flow of 222 gpm. The screening structure is followed by influent flow measurement.
- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
 - Electromagnetic Meter – An influent electromagnetic 6-inch flow meter shall measure the screened influent wastewater.
- Primary Treatment - Wastewater will flow by gravity from the flow measurement vault to two fiberglass septic tanks in series. Each primary treatment septic tank is 10 feet in diameter and 40,000 gallon with a max water level depth of approximately 8 feet 10 inches. Each tank has two compartments with tee-drop transfer pipes with cleanouts. The septic tanks provide approximately one day of detention at design average flow. Settled solids in the septic tank shall be removed by a contract hauler. A recycle manhole will be located between primary tank No. 1 and No. 2 and will receive flow from the recirculation tanks. Wastewater will flow by gravity from the second compartment of each septic tank into a flow splitter and to the recirculation tanks. The flow splitter will consist of a 6-foot manhole with three, four-inch tall PVC risers, each with three rows of twelve 1-inch diameter holes. The flow splitter discharges 20-percent of the flow to the downstream treatment units and recycles 80-percent of the flow back through the plant.
- Quanics by Anua Biofilter Treatment System – Series ATS-AC, AeroCell. The treatment system includes three 30,000 gallon recirculation dosing tanks, advanced media treatment modules, recirculation pumps, recirculation valves, and blowers. Treatment modules will consist of three treatment trains in parallel with each 16 foot long train having nine treatment media modules.

- Construction of three 10 foot, 30,000 gallon recirculation tanks in parallel to pump primary treated wastewater to the media treatment modules. Water depth in the tanks is approximately 9.75 ft. Each recirculation tank has three - 1 HP submersible transfer pumps operating in parallel – each capable of 50 gpm at 40 ft. TDH. Each pump transfers wastewater to three of the treatment media modules. Flow is distributed in each treatment module through six spray nozzles. The dosing occurs in short frequent doses over a 24-hour period utilizing a timed dosed control panel. Effluent is sprayed over the media through the use of specially designed helical spray nozzles that provide uniform distribution of the effluent over the entire surface area. Once sprayed, the effluent moves via gravity down through the media
- The ATS-AC is a packed bed filter and consists of a proprietary open cell urethane foam media. Each of the three treatment trains has nine treatment media modules, Aerocell model# QATS-16. Each of the twenty seven individual treatment modules contains 400 cubic feet of synthetic media for a total of 10,800 cubic feet of media in the treatment system. Media shall be nominal size 2-inch cubes and packed inside the module. Media shall contain a minimum of 80% void space.
- At the design average day flow of 80,000 gpd, the filter loading rate is 7.4 gpd/cf. At a recycle rate of 80% (4:1) during average day, total flow to each filter is 5,333 gpd.
- Aeration will be provided by means of nine blowers each capable of supplying 270 scfm of heated air to the aeration modules, for a total of 2,430 cfm.
- Or in lieu of the Quanics system an Orenco AdvanTex Treatment System using Orenco AX-Max Treatment Equipment.
 - Primary treatment required is 360,000 gallons to be provided in multiple tanks. In addition 120,000 gallons of anoxic volume is also to be provided.
 - First stage pumping basin unit to be Orenco T-MAX21. Fourteen pumps, Orenco PF 14520 to be located in pump basin.
 - First stage treatment to be fourteen Orenco AX-MAX300-42 Treatment Units arranged to be dosed in parallel. Treatment units have a packed bed media filter located near the top of the module. The surface area of the packed bed is approximately 300 sq. ft. and approximately 20 inches thick. Water is sprayed in small frequent doses on the top of the bed where it trickles through the media. Water drips into a chamber of approximately 8,640 gallons beneath the filter. Water then is collected in series through the units and returned to the pump basin. 80% of water to be redistributed onto the packed bed filters. Three pumps, Orenco Model PF3005, located in pump basin available to return a portion of flow to the anoxic tanks as a treatment option. Stage one hydraulic loading rate is 25 gpd/sq. ft. for a surface area of 3,200 sq. ft.; but the maximum TSS load is 0.04 lbs. /sq. ft. requiring a minimum surface area of 4,006 sq. ft.
 - Second stage pumping basin unit to be Orenco T-MAX14. Five pumps, Orenco PF 14520 to be located in pump basin.
 - Second stage treatment to be five Orenco AX-MAX300-42 Treatment Units arranged to be dosed in parallel. Stage two hydraulic loading rate is 75 gpd/sq. ft. for a minimum required surface area of 1,067 sq. ft.

- Disinfection –
 - Open Channel Ultraviolet (UV) – An open channel, gravity flow, low pressure high intensity UV disinfection system capable of treating up to a peak flow of 320,000 gpd while delivering a minimum UV intensity of 30 mJ/cm² with an expected ultraviolet transmissivity of 65% or greater. The system will be a Glasco Ultraviolet Glow-5000-4-2 or equivalent. The single open channel UV system consists of one bank with four modules per bank and two lamps per module. Spare parts will include: two spare lamps, two quartz sleeves, eight o-rings, eight wiper rings, and one spare module complete with sleeves and lamps. The disinfected effluent will flow by gravity to post aeration.
- Post Aeration –
 - Cascade Step Aeration – To increase dissolved oxygen in the effluent, step cascade aeration will be provided prior to the outfall. The step aeration will use thirteen 12-inch high steps.
- Emergency Power – A 45 kW standby propane generator and automatic transfer switch will be provided to operate the treatment facility in event of power failure.

6. OPERATING PERMIT

A new operating permit MO-0139505 will be required to reflect the construction activities. The new Camden Point WWTF, MO-0139505, was successfully public noticed from May 15, 2020 to June 15, 2020 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.

This facility does not meet the requirements of the MOGD, issued on July 1, 2019 for the following reason: publicly owned facility and has site-specific limits developed in a Water Quality and Antidegradation Review dated February 27, 2017.

7. CONSTRUCTION PERMIT MODIFICATION

This construction permit is being modified upon the request to extend the construction permit schedule. The construction permit will now expire on July 15, 2025.

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>

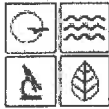
Review completed by:
Cailie Carlile, P.E.
Engineering Section

2022 Modification Routed by:
Leasue Meyers, EI
Engineering Section
leasue.meyers@dnr.mo.gov

John Rustige, P.E.
Engineering Section
john.rustige@dnr.mo.gov

RECEIVED

FEB 24 2020



MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM APPLICATION FOR CONSTRUCTION PERMIT - WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY
APP NO. AP34524 CP NO. 00002133
FEE RECEIVED \$1000.00 CHECK NO. 2863
DATE RECEIVED 2-24-20

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? [X] YES [] N/A Funding Agency: USDA Project #: N/A
1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review? [X] YES Date of Approval: 2/27/17 [] N/A
1.3 Has the department approved the proposed project's facility plan*? [X] YES Date of Approval: 2/6/2020 [] 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? [X] YES Denote which form is submitted: [X] Hard copy [X] Electronic copy (See instructions.) [] NO
1.6 Is a summary of design* included with this application? [X] 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: [X] 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 [X] NO
1.9 Is the appropriate fee or JetPay confirmation included with this application? [X] 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 Camden Point, MO - Wastewater Treatment Facility and Collection System
2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 4,790,400

2.3 PROJECT DESCRIPTION
This project includes the addition of a new recirculating media filter WWTP with UV disinfection and the addition of a low pressure grinder pump station network to serve all sewer users within the City of Camden Point, MO.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Sludge will be stored in a primary septic tank and will be pumped out by a vacuum truck and transported to a nearby WWTP that can further treat the sludge.

2.5 DESIGN INFORMATION
A. Current population: 546 ; Design population: 800
B. Actual Flow: .06M gpd; Design Average Flow: 0.08M gpd; Actual Peak Daily Flow: 0.24M gpd; Design Maximum Daily Flow: 0.32M gpd; Design Wet Weather Event: 100y

2.6 ADDITIONAL INFORMATION
A. Is a topographic map attached? [X] YES [] NO
B. Is a process flow diagram attached? [X] YES [] NO

3.0 WASTEWATER TREATMENT FACILITY				
NAME Camden Point WWTP		TELEPHONE NUMBER WITH AREA CODE 816-445-3331		E-MAIL ADDRESS cityclerk@camdenpointmo.com
ADDRESS (PHYSICAL) TBD	CITY Camden Point	STATE MO	ZIP CODE 64018	COUNTY Platte
Wastewater Treatment Facility: Mo- (Outfall Of)				
3.1 Legal Description: <u>NE 1/4, NW 1/4, NE 1/4, Sec. 31, T 54N, R 34W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>94.756</u> Northing (Y): <u>39.456</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Jowler Creek</u>				
4.0 PROJECT OWNER				
NAME City of Camden Point, MO		TELEPHONE NUMBER WITH AREA CODE 816-445-3331		E-MAIL ADDRESS cityclerk@camdenpointmo.com
ADDRESS 101 3rd Street	CITY Camden Point	STATE MO	ZIP CODE 64018	
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 People Service		TELEPHONE NUMBER WITH AREA CODE 402-344-4800		E-MAIL ADDRESS cgutschow@peopleservice.com
ADDRESS 209 S 19th St	CITY Omaha	STATE NE	ZIP CODE 68102	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Jon Shellhorn / Lamp Rynearson		TELEPHONE NUMBER WITH AREA CODE 816-823-7324		E-MAIL ADDRESS jon.shellhorn@lamprynearson.com
ADDRESS 9001 State Line Rd	CITY Kansas City	STATE MO	ZIP CODE 64114	
7.0 APPLICATION FEE				
<input checked="" type="checkbox"/> CHECK NUMBER <u>2863</u> <input type="checkbox"/> 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 <i>Mark Wagner</i>				
PRINTED NAME <u>Mark Wagner</u>			DATE <u>2-20-2020</u>	
TITLE OR CORPORATE POSITION <u>Mayor</u>		TELEPHONE NUMBER WITH AREA CODE <u>816-445-3516</u>		E-MAIL ADDRESS
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.				