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 Appleton City
Appleton City Wastewater Treatment Facility
114 East 4th Street
Appleton City, MO 64724

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.

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.

March 17, 2025
Effective Date

March 16, 2027
Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The proposed upgrades include surface aerators in Lagoon Cell No.1, baffling in Lagoon Cell No.1, valve replacement in transfer structure between lagoon cells, and ultraviolet (UV) disinfection system. The project will also involve the rehabilitation of the collection system to reduce inflow and infiltration and better handle peak flows.

The Appleton City Wastewater Treatment Facility (WWTF) project is located at NW 1301 and MO-52 intersection, Appleton City, Missouri, in St. Clair County. The facility has a design average flow of 780,000 gpd and serves a population equivalent of approximately 1,825 people. The city has approximately 541 residential connections, 44 commercial connections, and 2 industrial connections. The collection system has approximately 12 miles of sewer mains.

This project will also include general site work appropriate to the scope and purpose of the project, removal and disposal of debris, and all other appurtenant work to make a complete and usable wastewater treatment plant.

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 permit contains no new conditions or requirements that convey a new cost to the 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 in accordance with the plans and specifications submitted by Great River Engineering on July 30, 2024, and October 10, 2024, respectively and signed and sealed by Connie Walden, Ph.D., P.E. on July 30, 2024, and approved by the department on March 17, 2025.

3. Regulation 10 CSR 20-4.040(18)(B)1 requires that projects be publicly advertised, allowing sufficient time for bids to be prepared and submitted. Projects should be advertised at least 30 days prior to bid opening.

4. The department must be contacted in writing prior to making any changes to the approved 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).

5. As per 10 CSR 20-4.040, all changes in contract price or time within the approved scope of work must be by change order in accordance with Section 19 of this rule.

6. 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 electronic Sanitary Sewer Overflow/Facility Bypass Reporting system at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem, the Southwest Regional Office during normal business hours, or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours per 10 CSR 20-7.015(9)(G).

7. 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 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.

8. A United States Army Corps of Engineers (USACE) Section 404 Department of Army permit (§404) along with the department's Section 401 Water Quality Certification or waiver (§401) 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 likely be required. Since the USACE makes determinations on what is jurisdictional, you must contact the USACE to determine permitting requirements. See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality for more information or you may contact the department's Water Protection Program at 573-522-4502 or wpsc401cert@dnr.mo.gov.

9. Upon completion of construction:

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

   B. Submit an electronic copy of the as-builts if the project was not constructed in accordance with previously submitted plans and specifications;

   C. Submit the Statement of Work Completed form (https://dnr.mo.gov/document-search/wastewaterconstruction-statement-work-completed-mo-780-2155) to the department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued. When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The Appleton City WWTF has had difficulties meeting their current effluent limits. The proposed upgrades to the Appleton City WWTF will allow the facility to meet *E. coli* effluent limits that recently became effective on September 1, 2024, as well as aid ammonia reduction. The proposed construction will improve flow control and increase retention time while aeration will increase the dissolved oxygen in Lagoon Cell No. 1. Additionally, the city is required per Notice of Violation No. SW21175 issued by the department to evaluate options to resolve sanitary sewer overflows at the second manhole from the lagoon system. Collection system rehabilitation will be completed during construction along with treatment plant upgrades.

2. FACILITY DESCRIPTION

The existing Appleton City WWTF provides treatment through a three-cell lagoon with sludge being retained in the lagoon. The proposed upgrades include surface aerators in Lagoon Cell No.1, baffling in Lagoon Cell No.1, valve replacement in transfer structure between lagoon cells, and UV disinfection system. The project will also involve the rehabilitation of the collection system to reduce inflow and infiltration and better handle peak flows.

The Appleton City WWTF is located at NW 1301 and MO-52 intersection, Appleton City, Missouri, in St. Clair County. The facility has a design average flow of 780,000 gpd and serves a hydraulic population equivalent of approximately 1,825.

3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Existing Components:

- Lagoon Cell No. 1 is non-aerated and has a surface area of 405,516 square feet and a wastewater volume of 6 million gallons. This cell has 2 ft of freeboard, 3 ft of operating depth, and 2 ft of sludge depth.

- Lagoon Cell Nos. 2 and 3 are non-aerated. Cell No. 2 has a surface area of 126,495 square feet and a wastewater volume of 1.8 million gallons. Cell No. 3 has a surface area of 49,927 square feet and a wastewater volume of 746,908 gallons. These two cells have 2 ft of freeboard, 3 ft of operating depth, and 2 ft of sludge depth.

New Components:

- Open Channel UV – An open channel, gravity flow, low pressure, high intensity UV disinfection system capable of treating a peak flow of 800,000 gpd while delivering a minimum UV intensity of 30 mJ/cm^2 with an expected ultraviolet transmissivity of 65 percent or greater. The single open channel UV system consists of 2 banks in series with 10 modules per bank and 4 lamps per module. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.

- Lagoon Baffle and Aeration – Lagoon Cell No. 1 will be baffled by a curtain to create three cells. Aeration will be performed by three 15 hp floating surface mechanical aerators and three 10 hp floating surface mechanical aerators. The aeration system is designed to apply 1.25 lb O_2/lb BOD and 4.6 lb O_2/lb TKN.

4. OPERATING PERMIT

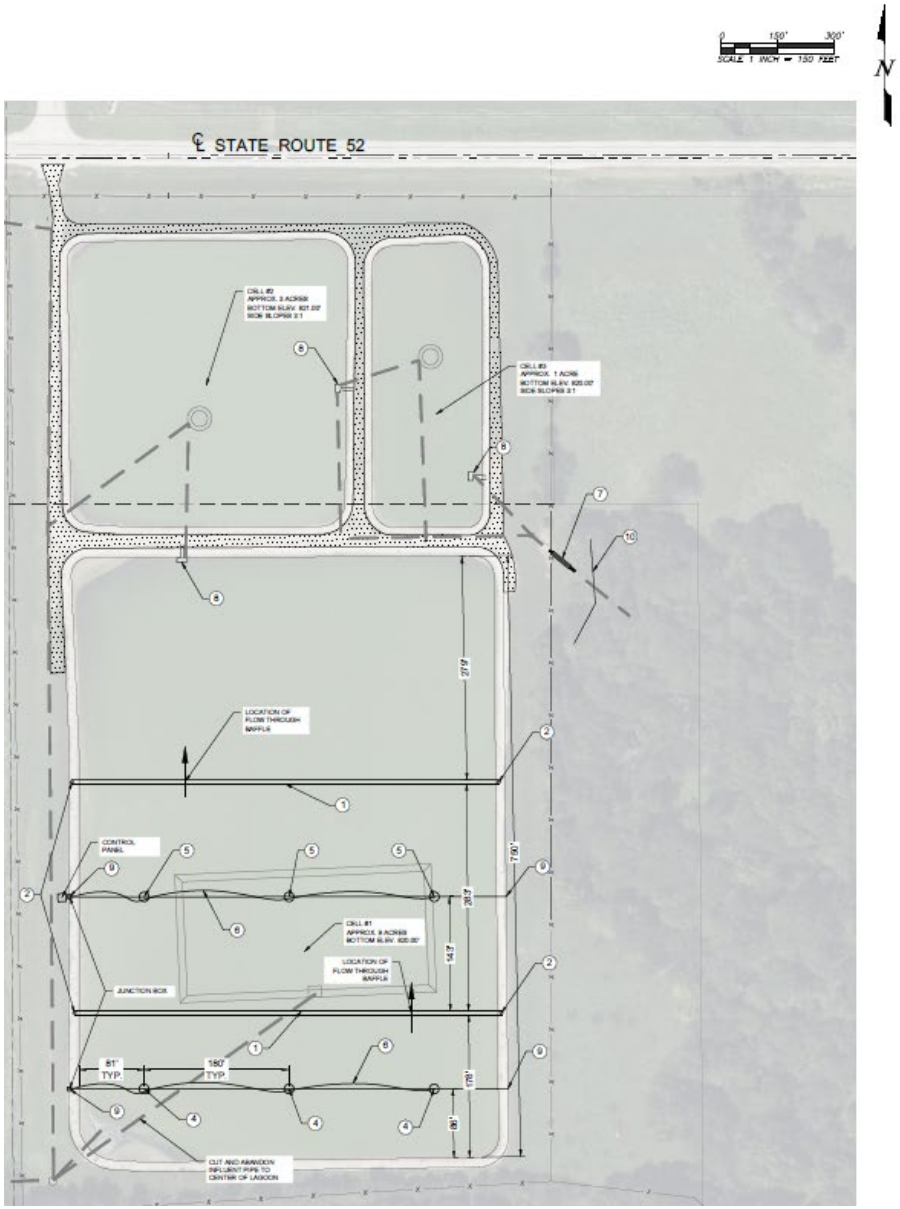
Operating permit MO-0021105 will require a modification to reflect the construction activities. The modified Appleton City WWTF, MO-0021105, was successfully public noticed from January 10, 2025, to February 10, 2025, with no comments received. Submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

Angie Garcia, E.I.
Financial Assistance Center
angie.garcia@dnr.mo.gov

APPENDICES

- Process Flow Diagram
- Summary of Design

APPENDIX – PROCESS FLOW DIAGRAM



GENERAL NOTES:

1. SEE SHEET 02 FOR NOTES AND SHEETS 15 AND 16 FOR DETAILS
2. FIELD VERIFY ALL DIMENSIONS BEFORE CONSTRUCTION
3. HIGH WATER LEVEL IS 9' FROM LAGOON BOTTOM
4. LOW WATER LEVEL IS 7' FROM LAGOON BOTTOM.
5. FREEBOARD ASSUMED TO BE 2'.
6. AERATOR FLOAT ASSEMBLY WILL BE OF STAINLESS STEEL CONSTRUCTION, WITH AN INTERNAL VOID FILLED WITH POLYURETHANE FOAM.

KEY NOTES:

1. INSTALL TWO (2) BAFFLE CURTAINS AS SHOWN, APPROXIMATELY 550' DISTANCE IN LENGTH. MAINTAIN 10' OFFSET FROM EXISTING STRUCTURE AT BOTTOM OF CELL 1.
2. INSTALL TWO (2) SUPPORT POSTS PER BAFFLE CURTAIN. SEE DETAIL.
3. INSTALL WATER LEVEL GAUGE PER DETAIL.
4. INSTALL 10 HP AERATOR. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND DESIGN CRITERIA.
5. INSTALL 10 HP AERATOR. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND DESIGN CRITERIA.
6. EACH SPAN MOORING LINE SHOULD HAVE (64) CABLE FLOATS.
7. INSTALL UV DISINFECTION PROCESS DOWNSTREAM OF VENTURI FLUME. SEE SHEET 11 FOR PLAN AND PROFILE OF CHANNEL. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS. REPLACE 10" DUCTILE IRON PIPING UP AND DOWNSTREAM OF NEW UV SYSTEM.
8. REMOVE EXISTING FAILING VALVES ON THE FIVE (5) TRANSFER PIPES. INSTALL FIVE (5) SLIDE GATES AS SHOWN ON SHEETS 12 AND 13.
9. INSTALL SHORE MOORING CABLE AND POST TO SECURE AERATORS AND ELECTRICAL.
10. INSTALL SILT FENCING, AS SHOWN ON SHEET 14.

APPENDIX – SUMMARY OF DESIGN

March 21, 2023
Missouri Department of Natural Resources
Financial Assistance Center
Jefferson City, MO 65102
ATTN: Angie Garcia and Kara Simon

City of Appleton City
Facility Plan – **Memorandum**

Great River Engineering has received the Department's comments from the review of the City of Appleton City's Facility Plan. The comments and associated GRE responses are outlined below.

Comment 1: We have some concerns about the chosen alternative not meeting ammonia limits and the ultraviolet transmittance (UVT) of the lagoon effluent being adequate for UV disinfection. Please provide preliminary design information that the system will be able to meet the ammonia limits listed in permit MO-0021105 Table-A1. Refer to 10 CSR 20-8.200 (3)(A) for air requirements for aerated lagoons based on the BOD and the ammonia to be removed.

Comment 1 Response:

Ammonia Removal Basis of Design: Nitrogen removal is related to detention time, *p*H, dissolved oxygen, and temperature.

- Detention Time: Per 10 CSR 20-8.200(3)(A), lagoon design for BOD_5 loadings shall not exceed thirty-four pounds per day per acre (34 bs/day/acre) at the three-foot (3') operating depth in the primary cells. The lagoon meets the required detention time from Equation 11-1 (Missouri Wastewater Guidelines and Standards), which specifies a required detention time of 13.5 days. The lagoon currently has a detention time of 46 days before sludge removal which will increase detention time.

Name	Area (SF)	Volume (CF)	Volume (CY)	Capacity (Gal)
Lagoon #1	405,515.68	811,031.36	30,038.20	6,066,514.57
Lagoon #2	126,495.33	252,990.66	9,370.02	1,892,370.14
Lagoon #3	49,927.03	99,854.06	3,698.30	746,908.37
Total	**581,938.04**	**1,163,876.08**	**43,106.52**	**8,705,793.08**

5 ft Lagoon Depth	
	FEET
Freeboard	1
Sludge Storage	2
Usable Depth	**2**
Average Daily Flow (GPD)	188,000.00
Storage Capacity	
Days of Storage	**46**

- pH: By repairing the lagoon valving, the operator would have the ability to use the multiple level draw off options to adjust the pH.
- Dissolved Oxygen: To maintain a minimum dissolved oxygen level of 2 mg/L in the lagoon at all times, the dissolved oxygen requirement for BOD and ammonia removal, based on design loadings is 493 pounds of oxygen required daily.
    - ✓ *Deliver one and four tenths pounds of oxygen per pound of biochemical oxygen demand removed (1.4 lbs O_2/1 lb BOD); and*
    - ✓ *Deliver an additional four and sixth tenths pounds of oxygen per pound of ammonia nitrogen removal (4.6 lbs O_2/1 lb NH_3).*

BOD Loading		
BOD in	319.60	lb/day
Percent Removal Req.	65	%
BOD Removal (req)	207.74	lb/day
BOD out	12.02	lb BOD/day/acre

Ammonia Loading		
Influent Ammonia	29.1	mg/L
Effluent Ammonia (allowable)	1.1	mg/L
Ammonia Removed	28	mg/L
Ammonia Removed	43.9	lb/day

Oxygen Requirements		
Aeration Req. (BOD)	1.4	lb O2/1lb BOD removed
Aeration Req. (BOD)	290.84	lb O2 req/day
Aeration Req. (NH3)	4.6	lb O2/1lb NH3 removed
Aeration Req. (NH3)	201.94	lb O2 req/day
Total O2 req	492.78	lb O2/day

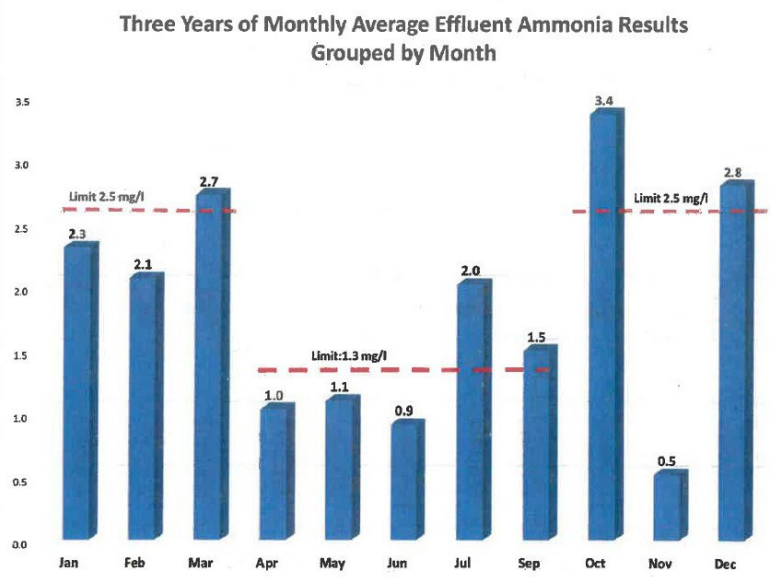
- Temperature: According to the DMR analysis of 2018 – 2021 ammonia effluent concentrations, the Appleton Lagoon System violates ammonia limits 34% of the time. The accumulation of sludge during that time correlates with an upward trend in effluent ammonia concentrations. The most cost-effective approach is for the city to wait to see the effects of a sludgeless lagoon system before implementing an expensive heated tertiary reactor.

Comment 2: Also, has there been an UVT test done yet? If not, that will need to be conducted during design to ensure that the UV system proposed will be able to treat effluent at that UVT.

Comment 2 Response: UVT tests have not been done yet. UVT tests will be conducted with the design of the UV system.

Comment 3: Additionally, how will the low temperatures in winter as well other water characteristics (such as alkalinity) be addressed that can have an impact on the ability to remove ammonia? Provide this information as an addendum to the facility plan.

Comment 3 Response: Low temperatures, as shown in the DMR data from 2018 – 2021 below, do slow the ammonia removal efficiency. However, the lagoon system shows that meeting ammonia limits during the winter months is achievable with the current system. The removal of the excess sludge is expected to improve the lagoon efficiency overall. The EPA conducted a study and reported that at 20 degrees Celsius (68 degrees Fahrenheit), there is a 90 to 95% ammonia removal efficiency, while at 10 degrees Celsius (50 degrees Fahrenheit), efficiency decreases to 75 percent removal (EPA 832-F-00-019). DMR data for the City of Appleton City available for one winter sampling event, December 31, 2022 is examined here. Influent ammonia concentration was measured at 42.6 mg/L. 75% removal of that concentration is 10.65 mg/L; effluent concentration for the same sampling event was 10.69 mg/L. The current system, without improvements, achieves this projected removal. This is over the daily maximum effluent limit of 10.1 mg/L, but with the removal of sludge in the lagoon, effluent ammonia concentrations are expected to decrease.



Comment 4: We received word from the Water Quality Section that upgrading the facility will result in final limit for chloride plus sulfate of 1,000 mg/L. Based off review of the discharge monitoring reports from the city that have been submitted the city has been discharging at 38.4 to 170 mg/L so this should not be an issue. There will likely be a total nitrogen limit coming as the Harry S. Truman Reservoir is on Missouri's 2020 303d for exceedance of Missouri's statewide numeric nutrient criteria for lakes, but there is no time frame for when this limit will be implemented at this time. We encourage the city to consider future limits in the design of upgrades so that it can be incorporated now or easily incorporated in the future.

Comment 4 Response: Noted.

Feel free to reach out to further discuss as needed.

Sincerely,

Connie Walden

Connie
Walden,
P.E.
Project
Engineer

AP46147 CP0002502

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: SRF Project #: C295916-01

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: 6-28-24 ☐ 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
Appleton City Wastewater Improvements

2.2 ESTIMATED PROJECT CONSTRUCTION COST
$ 3,047,846.50

2.3 PROJECT DESCRIPTION
Project: CIPP-lining of failing collection piping. The lagoon treatment facility will be upgraded with a UV disinfection process, aeration, baffling, and repairs to transfer structures.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Volatile solids are to be removed through biological degradation inside the lagoon. The permit requires sludge to be stored in the lagoon.

2.5 DESIGN INFORMATION

A. Current population: 1032 ; Design population: 1825

B. Actual Flow: 243,000 gpd; Design Average Flow: 780,000 gpd;
Actual Peak Daily Flow: 325,000 gpd; Design Maximum Daily Flow: 800,000 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
Appleton City Wastewater Treatment Facility	660-476-2631	clerkapplecity@gmail.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
114 E. 4th Street	Appleton City	MO	64724	St. Clair

Wastewater Treatment Facility: Mo- 0021105 (Outfall 1 Of 1)

3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. 4, T 39, R 28
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 411409 Northing (Y): 4227174
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Monegaw Creek

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
City of Appleton City	660-476-2631	clerkappletoncity@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
114 E. 4th Street	Appleton City	MO	64724

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
Appleton City WWTF	660-476-2631	clearkappletoncity@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
114 E. 4th Street	Appleton City	MO	64724

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
Connie Walden - Great River Engineering	816-499-2863	cwalden@greatriv.com

ADDRESS	CITY	STATE	ZIP CODE
908 Broadway Blvd. Suite 100	Kansas City	MO	64105

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 Matthew Smith

PRINTED NAME	DATE
Matthew Smith	7/31/2024

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Mayor	660-476-2631	acmayorsmith24@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