

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 Brookfield  
116 West Brooks  
Brookfield, MO 64628

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.

February 26, 2016  
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

February 25, 2018  
Expiration Date

John Madras, Director, Water Protection Program

## CONSTRUCTION PERMIT

### I. CONSTRUCTION DESCRIPTION

This construction permit is a reissuance of CP0001578. Brookfield is building an Aeromod system.

The city of Brookfield has assessed the capabilities of its current wastewater management systems. Their assessment revealed that, with the anticipated more stringent regulatory requirements, the existing wastewater management systems will become inadequate in the future. This is particularly true if any growth of the community is realized. Therefore the city has elected to replace their SW lagoon system and NE lagoon system with a single new mechanical wastewater treatment facility. Modification to the collection system, which feeds the new facility, is also part of this project.

The new facility will include headworks (i.e., a mechanical bar screen and grit auger), an extended aeration system (either an Aeromod system or oxidation ditch system, depending on financing), sedimentation (two clarifiers in parallel), sludge handling (aerobic digestion, belt filter press), and disinfection (UV). The design average daily flow for the new facility will be 1.0 million gallons per day (1.0 MGD) to accommodate an estimated population equivalence of 10,000. The design peak flow is 4.0 MGD. Two new pump stations will be constructed, the southwest station will have a 900 gallon per minute (gpm) capacity and the northeast station will have a 1,877 gpm capacity. The project will also include general site work appropriate to the scope and purpose of the project.

### 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 publically-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 the draft operating permit and Antidegradation review for the Cost Analysis for Compliance.

### **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 Allstate Consultants on February 08, 2016.
3. 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(8).
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 Northeast Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
  - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
  - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
  - C. Manholes shall be located with the top access at or above grade level.

- D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
- a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
  - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.
8. 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 [www.dnr.mo.gov/env/wpp/epermit/help.htm](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://www.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 [www.dnr.mo.gov/env/wpp/401/](http://www.dnr.mo.gov/env/wpp/401/) for more information.
10. A full closure plan shall be submitted to the department's Northeast Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permits No. MO-0028738 and MO-0028746. Closure shall not commence until the submitted closure plan is approved by the department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.

11. Upon completion of construction;
  - A. The city of Brookfield will become the continuing authority for operation, maintenance, and modernization of these facilities;
  - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit be issued; and
  - C. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications.

#### **IV. REVIEW SUMMARY**

##### **1. AMMONIA**

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

Brookfield has been notified of EPA's published ammonia criteria previously. The department sent a letter to the city manager, Ms. Dana Tarpening, on October 21, 2013, providing information on the new ammonia criteria. Ammonia criteria were also discussed in email correspondence with the design engineer Cary Sayre of Allstate Consultants. Mr. Sayre contacted Aeromod and Siemens (oxidation ditch provider) to see if they believe the proposed systems could attain effluent limits defined by EPA's new ammonia criteria. Both firms stated that with proper operations, maintenance and planning the units should be able to meet the new ammonia objective.

##### **2. CONSTRUCTION PURPOSE**

The city of Brookfield has assessed the capabilities of its current wastewater management systems. Their assessment revealed that, with anticipated more stringent regulatory requirements; the existing wastewater management systems will become inadequate in the future. This is particularly true if any growth of the community is realized. Therefore the city has elected to replace their SW lagoon system and NE lagoon system with a new mechanical wastewater treatment facility. Modifications to the collections system to feed the new facility are also part of this project. Specifically, the NE facility has had three (3) ammonia exceedances in the past five years. The SW facility has not experience any exceedances in the past five years.

**3. FACILITY DESCRIPTION**

The new facility will include headworks (i.e., a mechanical bar screen and grit auger), an extended aeration system (either an Aeromod system or oxidation ditch system depending on financing), sedimentation (two clarifier in parallel), sludge handling (aerobic digestion, belt filter press), and disinfection (UV). The design average daily flow for the new facility will be 1-million gallons per day (1.0 MGD) to accommodate an estimated population equivalence of 10,000. The design peak flow is 4.0 MGD. Two new pump stations will be constructed, the southwest station will have a 900 gpm capacity and the northeast station will have a 1,877 gpm capacity. The project will also include general site work appropriate to the scope and purpose of the project.

This construction permit is a reissuance of CP0001578. Brookfield is building an Aeromod system.

**4. COMPLIANCE PARAMETERS**

The effluent limits were determined through the Antidegradation Review completed in 2012. This construction permit is a reissuance of CP0001578. Brookfield is building an Aeromod system. Below are the effluent limits this project is expected to meet.

Parameter	Units	Effluent Limit	
		Maximum Daily or Weekly Average	Monthly Average
Flow	mgd	*	*
BOD	mg/L	24	16
TSS	mg/L	24	16
Ammonia as N-summer	mg/L	3.7	1.4
Ammonia as N-winter	mg/L	7.5	2.9
<i>E. Coli</i>	#colonies/100 mL	1030	206
Oil & Grease	mg/L	15	10
pH	SU	6.5-9.0	6.5-9.0

\* Monitoring only

**5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

The facility design is consistent with 10 CSR 20-8 Design Guides. This construction permit is a reissuance of CP0001578. Brookfield is building an Aeromod system.

**6. OPERATING PERMIT**

Operating permit MO-0137553 will be issued to establish wastewater management criteria for the facility resulting from construction activities authorized herein. This facility will replace two lagoon systems that currently serve the wastewater treatment needs of the community. The operating permits to be terminated are MO-0028738 and MO-0028746 for the Brookfield SW WWTF and the Brookfield NE WWTF, respectively.



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY**

RECEIVED  
 FEB - 8 2010  
 Water Protection Program

FACILITY NAME City of Brookfield, Missouri - Wastewater System Improvements	
PERMIT NO. Existing Construction Permit #CP0001578 Reapplying	COUNTY Linn

**APPLICATION OVERVIEW**

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

**BASIC APPLICATION INFORMATION**

- A. Basic Application Information for all Applicants. All applicants must complete Part A.
- B. Additional Application Information for all Applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

**SUPPLEMENTAL APPLICATION INFORMATION**

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:
  - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
  - 2. Is required to have or currently has a pretreatment program.
  - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:
  - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
  - 2. Is required to have or currently has a pretreatment program.
  - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.  
  
 SIUs are defined as:
  - 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
  - 2. Any other industrial user that meets one or more of the following:
    - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
    - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
    - iii. Is designated as an SIU by the control authority.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

**ALL APPLICANTS MUST COMPLETE PARTS A, B and C**

110-012753

RECEIVED  
FEB - 8 2016

CP0001823  
AP 22846 15769



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY**

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
2/8/16	

**PART A – BASIC APPLICATION INFORMATION**

1. This application is for:

- An operating permit and antidegradation review public notice.
- A construction permit following an appropriate operating permit and antidegradation review public notice.
- A construction permit, a concurrent operating permit and antidegradation review public notice.
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- An operating permit for a new or unpermitted facility. Construction Permit # \_\_\_\_\_
- An operating permit renewal: Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_
- An operating permit modification: Permit #MO- \_\_\_\_\_ Reason: \_\_\_\_\_

1.1 Is this a Federal/State Funded Project?  Yes  No Funding Agency/Project #: USDA-RD

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)?  Yes  No

**2. FACILITY**

NAME City of Brookfield		TELEPHONE NUMBER WITH AREA CODE 660-258-3377	
ADDRESS (PHYSICAL) 116 West Brooks	CITY Brookfield	STATE Missouri	ZIP 64628
2.1 LEGAL DESCRIPTION (Plant Site): $\frac{1}{4}$ , SW $\frac{1}{4}$ , NW $\frac{1}{4}$ , Sec. , T , R 19 County Linn			
2.2 UTM Coordinates Easting (X): 494659 Northing (Y): 4404249 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)			

**3. OWNER** City of Brookfield

NAME Dana Tarpenting		TITLE City Manager		TELEPHONE NUMBER WITH AREA CODE 660-258-3377	
ADDRESS 116 West Brooks	CITY Brookfield	STATE Missouri	ZIP 64628		

3.1 Request review of draft permit prior to Public Notice?  Yes  No

**4. CONTINUING AUTHORITY:** Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME City of Brookfield		CITY Brookfield	
ADDRESS 116 West Brooks	CERTIFICATE NUMBER (IF APPLICABLE)	STATE Missouri	ZIP 64628

**5. OPERATOR**

NAME Justin Griffin		TITLE Operator		TELEPHONE NUMBER WITH AREA CODE 660-258-3377	
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**6. FACILITY CONTACT**

NAME Dana Tarpenting		TITLE City Manager	
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MO 780-1805 (09-08)

FACILITY NAME Brookfield Wastewater Treatment Facility	PERMIT NO. MO-	OUTFALL NO. 001
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**PART A - BASIC APPLICATION INFORMATION**

**7. ADDITIONAL FACILITY INFORMATION**

7.1 BRIEF DESCRIPTION OF FACILITIES

Wastewater Collection and Treatment Facility Improvements

7.2 TOPOGRAPHIC MAP. ATTACH TO THIS APPLICATION A TOPOGRAPHIC MAP OF THE AREA EXTENDING AT LEAST ONE MILE BEYOND FACILITY PROPERTY BOUNDARIES. THIS MAP MUST SHOW THE OUTLINE OF THE FACILITY AND THE FOLLOWING INFORMATION. (YOU MAY SUBMIT MORE THAN ONE MAP IF ONE MAP DOES NOT SHOW THE ENTIRE AREA.)

- The area surrounding the treatment plant, including all unit processes.
- The location of the downstream landowner(s). (See Item 10.)
- The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- The actual point of discharge.
- Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- Any areas where the sewage sludge produced by the treatment works is stored, treated or disposed.
- If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored or disposed.

7.3 PROCESS FLOW DIAGRAM OR SCHEMATIC. PROVIDE A DIAGRAM SHOWING THE PROCESSES OF THE TREATMENT PLANT. ALSO, PROVIDE A WATER BALANCE SHOWING ALL TREATMENT UNITS, INCLUDING DISINFECTION (E.G. CHLORINATION AND DECHLORINATION). THE WATER BALANCE MUST SHOW DAILY AVERAGE FLOW RATES AT INFLUENT AND DISCHARGE POINTS AND APPROXIMATE DAILY FLOW RATES BETWEEN TREATMENT UNITS. INCLUDE A BRIEF NARRATIVE DESCRIPTION OF THE DIAGRAM.

7.4 FACILITY SIC CODE 4952	DISCHARGE SIC CODE: 1600 4950	FACILITY NAICS CODE: 221320	DISCHARGE NAICS CODE: 221320
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7.5 NUMBER OF SEPARATE DISCHARGE POINTS  
1

7.6 NUMBER OF PEOPLE PRESENTLY CONNECTED OR POPULATION EQUIVALENT NE POTW 5900 PE SW POTW 4000 PE	DESIGN POPULATION EQUIVALENT 9900 PE
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NUMBER OF UNITS PRESENTLY CONNECTED  
 HOMES \_\_\_\_\_ APARTMENTS \_\_\_\_\_ TRAILERS \_\_\_\_\_ OTHER \_\_\_\_\_

TOTAL DESIGN FLOW (ALL OUTFALLS) NE 0.606 MGD SW 0.40 MGD Total 1.006 MGD	ACTUAL FLOW NE 0.6 MGD SW 0.25 MGD Total 0.85 MGD
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7.7 DOES ANY BYPASSING OCCUR ANYWHERE IN THE COLLECTION SYSTEM OR AT THE TREATMENT FACILITY?  
 Yes  No  (If Yes, attach an explanation.)

7.8 LENGTH OF THE SANITARY SEWER COLLECTION SYSTEM IN MILES  
50

7.9 IS INDUSTRIAL WASTE DISCHARGED TO THE FACILITY IDENTIFIED IN ITEM 2? Yes  No

7.10 WILL THE DISCHARGE BE CONTINUOUS THROUGH THE YEAR? Yes  No

A. DISCHARGE WILL OCCUR DURING THE FOLLOWING MONTHS January - December	B. HOW MANY DAYS OF THE WEEK WILL THE DISCHARGE OCCUR? 7
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7.11 IS WASTEWATER LAND APPLIED? (If Yes, Attach Form I) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	7.12 DOES THIS FACILITY DISCHARGE TO A LOSING STREAM OR SINKHOLE? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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7.13 HAS A WASTE LOAD ALLOCATION STUDY BEEN COMPLETED FOR THIS FACILITY?  
Yes  No

7.14 LIST ALL PERMIT VIOLATIONS, INCLUDING EFFLUENT LIMIT EXCEEDANCES IN THE LAST FIVE YEARS. ATTACH A SEPARATE SHEET IF NECESSARY. IF NONE, WRITE NONE. None

**8. LABORATORY CONTROL INFORMATION**

8.1 LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Push-button or visual methods for simple test such as pH, settleable solids.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

FACILITY NAME Brookfield Wastewater Treatment Facility	PERMIT NO. MO-	OUTFALL NO. 001
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**PART A - BASIC APPLICATION INFORMATION**

**9. SLUDGE HANDLING, USE AND DISPOSAL**

9.1 IS THE SLUDGE A HAZARDOUS WASTE AS DEFINED BY 10 CSR 25?  
Yes  No

9.2 SLUDGE PRODUCTION, INCLUDING SLUDGE RECEIVED FROM OTHERS  
Design Dry Tons/Year 88.5T NE + 60T SW Actual Dry Tons/Year 148.5

9.3 CAPACITY OF SLUDGE HOLDING STRUCTURES Aeromod 45,581.25 cu.ft.

9.4 SLUDGE STORAGE PROVIDED  
Cubic Feet Days of Storage 20 Estimated Average Percent Solids of Sludge 1%  No Sludge Storage is Provided

9.5 TYPE OF STORAGE  
 Holding Tank  Basin  Building  Concrete Pad  Other (Describe) \_\_\_\_\_

9.6 SLUDGE TREATMENT  
 Anaerobic Digester  Storage Tank  Lime Stabilization  Lagoon  
 Aerobic Digester  Air or Heat Drying  Composting  Other (Attach Description)

9.7 SLUDGE USE OR DISPOSAL  
 Land Application  Contract Hauler  Hauled to Another Treatment Facility  Solid Waste Landfill  
 Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years)  Incineration  
 Other (Attach Explanation Sheet) \_\_\_\_\_

**9.8 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY**

NAME  
City of Brookfield

ADDRESS 116 West Brooks	CITY Brookfield	STATE Missouri	ZIP 64628
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CONTACT PERSON Dana Tarpenting	TELEPHONE NUMBER WITH AREA CODE 660-258-3377	PERMIT NO. MO-
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**9.9 SLUDGE USE OR DISPOSAL FACILITY**

By Applicant  By Others (Complete Below)

NAME  
City of Brookfield

ADDRESS 116 West Brooks	CITY Brookfield	STATE Missouri	ZIP 64628
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CONTACT PERSON Dana Tarpenting	TELEPHONE NUMBER WITH AREA CODE 660-258-3377	PERMIT NO. MO-
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9.10 DO THE SLUDGE OR BIOSOLIDS DISPOSAL COMPLY WITH FEDERAL SLUDGE REGULATIONS UNDER 40 CFR 503?  
 Yes  No (Attach Explanation)

**10. DOWNSTREAM LANDOWNER(S). (ATTACH ADDITIONAL SHEETS AS NECESSARY.)**

NAME

ADDRESS	CITY	STATE	ZIP
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**11. DRINKING WATER SUPPLY INFORMATION**

**11.1 SOURCE OF YOUR DRINKING WATER SUPPLY**

A. PUBLIC SUPPLY (MUNICIPAL OR WATER DISTRICT WATER) (IF PUBLIC, PLEASE GIVE NAME OF PUBLIC SUPPLY)  
City of Brookfield

B. PRIVATE WELL  
N/A

C. SURFACE WATER (LAKE, POND OR STREAM)  
City of Brookfield - City Lake

11.2 DOES YOUR DRINKING WATER SOURCE SERVE AT LEAST 25 PEOPLE AT LEAST 60 DAYS PER YEAR (NOT NECESSARILY CONSECUTIVE DAYS)?  
Yes  No

11.3 DOES YOUR SPPLY SERVE HOUSING THAT IS OCCUPIED YEAR ROUND BY THE SAME PEOPLE? THIS DOES NOT INCLUDE HOUSING THAT IS OCCUPIED SEASONALLY?  
Yes  No

**END OF PART A**

**MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL**

FACILITY NAME Brookfield Wastewater Treatment Facility	PERMIT NO. MO-	OUTFALL NO. 001
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**PART B - ADDITIONAL APPLICATION INFORMATION**

**20. INFLOW AND INFILTRATION**

ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND INFILTRATION.  
333,000 Gallons Per Day Estimate 5000 PE @ 100 GPD = 500,000 GPD In 2010, Flow Average was Approximately 833,000 GPD

BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION.  
City has Smoke Tested, GPS Mapped, Replaced Sewers, replaced Manholes, and Prioritized other Improvements

**20.1 OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)**

ARE ANY OPERATIONAL OR MAINTENANCE ASPECTS (RELATED TO WASTEWATER TREATMENT AND EFFLUENT QUALITY) OF THE TREATMENT WORKS THE RESPONSIBILITY OF A CONTRACTOR?  
Yes  No  If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)

NAME

MAILING ADDRESS

TELEPHONE NUMBER WITH AREA CODE

RESPONSIBILITIES OF CONTRACTOR

**20.2 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ABOUT ANY UNCOMPLETED IMPLEMENTATION SCHEDULE OR UNCOMPLETED PLANS FOR IMPROVEMENTS THAT WILL AFFECT THE WASTEWATER TREATMENT, EFFLUENT QUALITY OR DESIGN CAPACITY OF THE TREATMENT WORKS. IF THE TREATMENT WORKS HAS SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES OR IS PLANNING SEVERAL IMPROVEMENTS, SUBMIT SEPARATE RESPONSES FOR EACH. (IF NONE, GO TO QUESTION B-20.3.)**

A. List the outfall number that is covered by this implementation schedule Outfall No. <b>NE 001</b>	B. Indicate whether the planned improvements or implementation schedule are required by local, state or federal agencies. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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**20.3 WASTEWATER DISCHARGES:**  
COMPLETE QUESTIONS 20.4 THROUGH 20.7 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.

**20.4 DESCRIPTION OF OUTFALL**

OUTFALL NUMBER **NE 001**

A. LOCATION  
1/4 SE 1/4 NW Section 51.200 Township 57N Range 19  E  W  
UTM Coordinates Easting (X): -- Northing (Y): -- (X): 495213 (Y): 4404291  
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

B. Distance from Shore (If Applicable) <u>N/A</u> ft.	C. Depth Below Surface (If Applicable) <u>N/A</u> ft.	D. Average Daily Flow Rate <u>1</u> mgd
--	--	--

E. Does this outfall have either an intermittent or periodic discharge?  
 Yes  No If Yes, Provide the following information:

Number of Days Per Year Discharge Occurs: <b>365</b>	Average Duration of Each Discharge: <b>Continual</b>	Average Flow Per Discharge: <b>Design 1 mgd</b>	Months in Which Discharge Occurs: <b>January - December</b>
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Is Outfall Equipped with a Diffuser?  Yes  No

**20.5 DESCRIPTION OF RECEIVING WATER**

B. Name of Receiving Water  
Unnamed Tributary of West Fork Yellow Creek

B. Name of Watershed (If Known)	U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)
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B. Name of State Management/River Basin (If Known) Central Plains/Grand/Chariton	U.S. Geological Survey 8-Digit Hydrologic Cataloging Unit Code (If Known) 10280103-1206
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B. Critical Flow of Receiving Stream (If Applicable) Acute <u>0</u> cfs Chronic <u>0</u> cfs	B. Total Hardness of Receiving Stream at Critical Low Flow (If Applicable) mg/L of CaCO <sub>3</sub>
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FACILITY NAME Brookfield Wastewater Treatment Facility	PERMIT NO. MO-	OUTFALL NO. 001
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**PART B - ADDITIONAL APPLICATION INFORMATION (CONTINUED)**

20.6 DESCRIPTION OF TREATMENT

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? Check All That Apply  
 Primary     Secondary     Advanced     Other (Describe)

B. INDICATE THE FOLLOWING REMOVAL RATES (AS APPLICABLE)  
 Design BOD<sub>5</sub> Removal Or Design CBOD<sub>5</sub> Removal    BOD<sub>5</sub> 85 %    Design SS Removal    85 %  
 Design P Removal    \_\_\_%    Design N Removal    \_\_\_%    Other    \_\_\_%

C. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:  
 Ultra Violet

If disinfection is by chlorination, is dechlorination used for this outfall?     Yes     No

Does the treatment plant have post aeration?     Yes Cascade     No

20.7 EFFLUENT TESTING DATA. ALL APPLICANTS THAT DISCHARGE TO WATERS OF THE U.S. MUST PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING PARAMETERS. PROVIDE THE INDICATED EFFLUENT DATA FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION OF COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136.

OUTFALL NUMBER

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	VALUE	UNITS	VALUE	UNITS	NO. OF SAMPLES
pH (Minimum)	6.5	S.U.	6.5	S.U.	Once/Week
pH (Maximum)	9	S.U.	9	S.U.	Once/Week
FLOW RATE		MGD		MGD	Monitoring
TEMPERATURE (Winter)		°C		°C	
TEMPERATURE (Summer)		°C		°C	

\*For pH report a minimum and a maximum daily value.

(See Attachment A) POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE Weekly/Daily			ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	CONC.	UNITS	NO. OF SAMPLES		

Conventional and Nonconventional Compounds

BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD <sub>5</sub>		mg/L	24 WK 16 MO	mg/L	Once/Week		
	CBOD <sub>5</sub>		mg/L		mg/L			
E.Coli	FECAL COLIFORM	1030	#/100 mL	206	#/100 mL	Once/Week		
	TOTAL SUSPENDED SOLIDS (TSS)		mg/L	24 WK 16 MO	mg/L			
	AMMONIA (AS N)	3.7/7.5	mg/L	1.4/2.9 MO	mg/L	Once/Week		
	CHLORINE (TOTAL RESIDUAL, TRC)		mg/L		mg/L			
	DISSOLVED OXYGEN		mg/L		mg/L			
	TOTAL KJELDAHL NITROGEN (TKN)		mg/L		mg/L			
	NITRATE PLUS NITRITE NITROGEN		mg/L		mg/L			
	OIL AND GREASE	15	mg/L	10 WK	mg/L			
	PHOSPHORUS (TOTAL)		mg/L		mg/L			
	TOTAL DISSOLVE SOLIDS (TDS)		mg/L		mg/L			
	OTHER		mg/L		mg/L			

**END OF PART B**

**PART C - CERTIFICATION**

**30. CERTIFICATION**

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information 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.

PRINTED NAME AND OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)

Dana Tarperring - City Manager

SIGNATURE



TELEPHONE NUMBER WITH AREA CODE

660-258-3377

DATE SIGNED

2-4-2016

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

For Design Flows Less than 1 Million Gallons Per Day,  
Send Completed Form to:

**Appropriate Regional Office**

Map of regional offices with addresses and phone numbers is available on the Web at [www.dnr.mo.gov/regions/ro-map.pdf](http://www.dnr.mo.gov/regions/ro-map.pdf).

For Design Flows of 1 Million Gallons Per Day or Greater,  
Send Completed Form to:

Department of Natural Resources  
Water Protection Program  
ATTN: NPDES Permits and Engineering Section  
P.O. Box 176  
Jefferson City, MO 65102

**END OF PART C.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.**

Do not complete the remainder of this application, unless:

1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
2. Your facility is a pretreatment treatment works.
3. Your facility is a combined sewer system.

Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.