

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**  
MISSOURI CLEAN WATER COMMISSION



# CONSTRUCTION PERMIT

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

KDC Properties LLC 15181 Pike 313 Bowling Green, MO 63334
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for the construction of (described facilities):

See attached.
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Permit Conditions:

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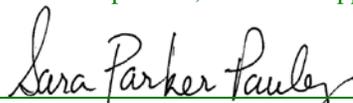
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

June 1, 2016  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

May 31, 2018  
Expiration Date

  
John Madras, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

This project includes the installation of five Advantex AX-100 filter pods, one soda ash feed system, and one duplex flow tower with one 10,000 gallon recirculation tank. This construction is planned to convert an existing facility to a two stage system and for the purpose reducing ammonia. The existing facility has an Advantex AX-100 treatment system containing three filter pods and a 15,000 gallon recirculation tank. Disinfection and dechlorination system will be accomplished with a Norweco Bio-Dynamic tablet feed unit.

### **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 Four Points Land Surveying Inc. on March 30, 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. Upon completion of construction;
  - A. KDC Properties LLC 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) ;
  - C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and  

When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.
  - D. Submit a Form J - Request for Termination of a State Operating Permit, Form--MO 780-1576

#### **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> .

The information was provided to the owner and the engineer regarding the issue by a letter on November 6, 2013. The owner responded to this letter with a construction permit application and plans to upgrade the facility. A construction permit was issued on February 21, 2014 although construction never took place.

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

This facility did not meet the final effluent ammonia limits as prescribed in their 2010 operating permit. This facility is now in enforcement and is planning this expansion to meet these limits. There is no change to the design flow of 10,000 gallons per day with this modification.

**3. FACILITY DESCRIPTION**

This facility currently has an AdvanTex AX-100 system with three filter pods. Due to new ammonia as N limits, the facility is being upgraded to a two-stage treatment system. The first stage will have six filter pods and the second stage will have two filter pods for additional ammonia removal. Chlorination will be used for disinfection. This system serves a population equivalent of 100 with a design flow of 10,000 gallons per day.

**4. COMPLIANCE PARAMETERS**

After construction, this facility will be capable of meeting a monthly average limit for ammonia as N of 4.6 mg/L and a daily maximum for Ammonia as N of 12.1 mg/L.

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

The first stage loading rate is 16.7 GPD per square feet and the recirculation rates for Stage 1 and Stage 2 will be approximately 4:1. According to the manufacturer, the upgraded treatment plant will be able to meet the required effluent limits.

**6. OPERATING PERMIT MODIFICATION**

It is expected that the facility owner will include a new facility description in their next operating permit renewal application to reflect the installation of five Advantex AX-100 filter pods, one soda ash feed system, and one duplex flow tower with one 10,000 gallon recirculation tank.

Diane Reinhardt  
Engineering Section  
[diane.reinhardt@dnr.mo.gov](mailto:diane.reinhardt@dnr.mo.gov)

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RECEIVED  
MAR 30 2016

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
PER RECEIVED \$1000.00	CHECK NO. 1956
DATE RECEIVED 3/30/16	SB



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
APPLICATION FOR CONSTRUCTION PERMIT Protection Program  
WASTEWATER FACILITY

**APPLICATION OVERVIEW**

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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: \_\_\_\_\_ Project #: \_\_\_\_\_
  - 1.2 Is this an application for an agrichemical?  YES (See instructions.)  N/A
  - 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?  
 YES Date of Approval: \_\_\_\_\_
  - 1.4 Has the department approved the proposed project's facility plan\*?  
 YES Date of Approval: \_\_\_\_\_  NO  N/A (If Not Applicable, complete No. 1.5.)
  - 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report\* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?  
 YES  NO
  - 1.6 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
  - 1.7 Is a summary of design\* included with this application?  YES  NO
  - 1.8 Is a general operating permit applicable?  
 YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.  
 NO Enclose the appropriate operating permit application and fee submittal. Denote which form:  B  B2
  - 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency?  YES  NO
  - 1.10 Is the appropriate fee included with this application?  YES  NO (See instructions for appropriate fee.)
- \* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

**2.0 PROJECT INFORMATION**

2.1 NAME OF PROJECT

Lazy Acres Wastewater Treatment Plant Improvements

2.2 PROJECT DESCRIPTION

Expansion of the existing wastewater treatment plant to provide additional treatment in order to meet the ammonia limits on the NPDES Permit.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge is primarily stored in the individual residential septic tanks (STEP/STEG Collection System) and in the recirculating tank. The sludge is periodically removed by a licensed contract hauler.

2.4 DESIGN INFORMATION

- A. Current population: 74; Design population: 99.9
- B. Actual Flow: 3,500 gpd; Design Average Flow: 10,000 gpd;  
Actual Peak Daily Flow: \_\_\_\_\_ gpd; Design Maximum Daily Flow: 15,000 gpd;  
Design Wet Weather Event: \_\_\_\_\_

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached?  YES  NO
- B. Is a process flow diagram attached?  YES  NO

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$

**3.0 WASTEWATER TREATMENT FACILITY**

NAME Lazy Acres Subdivision WWTP		TELEPHONE NUMBER WITH AREA CODE (573) 324-3552		EMAIL ADDRESS	
ADDRESS (PHYSICAL) 1/3 mile NE of CR 314 & Hwy 161		CITY Bowling Green		STATE MO	ZIP CODE 63334
COUNTY Pike					
Wastewater Treatment Facility: Mo- 0129984 (Outfall 001 Of 001 )					
3.1 Legal Description: ¼, ¼, NE ¼, Sec. 11, T 52, R 3 Landgrant 01759, Pike Co. (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): 655188.606 Northing (Y): 4351239.634 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: Unnamed Tributary to West Sulphur Creek					

**4.0 PROJECT OWNER**

NAME KDC Properties, LLC		TELEPHONE NUMBER WITH AREA CODE (573) 324-3552		EMAIL ADDRESS	
ADDRESS 15181 Pike 313		CITY Bowling Green		STATE MO	ZIP CODE 63334

**5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.**

NAME KDC Properties, LLC		TELEPHONE NUMBER WITH AREA CODE (573) 324-3225		EMAIL ADDRESS	
ADDRESS 15181 Pike 313		CITY Bowling Green		STATE MO	ZIP CODE 63334

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 Kyle Pociask, P.E. / Four Points Land Surveying, Inc.		TELEPHONE NUMBER WITH AREA CODE (573) 406-5533		EMAIL ADDRESS kyle@fourpointssurvey.com	
ADDRESS 4950 County Road 403		CITY Palmyra		STATE MO	ZIP CODE 63461

**7.0 PROJECT OWNER:** I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.

PROJECT OWNER SIGNATURE

KDC Prop. LLC *Leslie R Orf* 3/28/16

PRINTED NAME <i>Leslie R Orf</i>	DATE 3/28/16
TITLE OR CORPORATE POSITION MANAGER	TELEPHONE NUMBER WITH AREA CODE 573-324-3552
EMAIL 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.**

**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  Subsurface  
 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 two 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 \_\_\_\_\_

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

9.5 Design depth of sludge in storage basins.  
Basin #1: \_\_\_\_\_ ft Basin #2: \_\_\_\_\_ ft

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

9.7 Total design sludge storage: \_\_\_\_\_ dry tons and \_\_\_\_\_ cubic feet

**10.0 LAND APPLICATION SYSTEM**

10.1 Type of land application:  Fixed Head Sprinklers  Center Pivot  Traveling Gun  Drip Dispersal  
 Subsurface Low Pressure Pipe  Other (describe) \_\_\_\_\_

10.2 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.)

10.3 Type of vegetation:  Grass hay  Pasture  Timber  Row crops  
 Other (describe)

10.4 Wastewater flow (dry weather) gallons per day: Average annual \_\_\_\_\_  
Seasonal \_\_\_\_\_ Off-season \_\_\_\_\_

10.5 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

10.6 Total irrigation per year (gallons): Design: \_\_\_\_\_ gal Actual: \_\_\_\_\_ gal

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

10.8 Land application rate is based on:  
 Hydraulic Loading  Other (describe) \_\_\_\_\_  
 Nutrient Management Plan (N and P) If N and P is selected, is the plan included?  YES  NO