

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



# CONSTRUCTION PERMIT

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

South St. Joseph Industrial Sewer District 1409 Lower Lake Road St. Joseph, MO 64504
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for the construction of (described facilities):

See attached.
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Permit Conditions:

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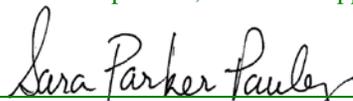
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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, 2015  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

May 31, 2017  
Expiration Date

  
John Madras, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

South St. Joseph Industrial Sewer District provides land application of industrial sludge and sends water to the St. Joseph Wastewater Treatment Plant (MO-0023043). South St. Joseph Industrial Sewer District is an industrial user and is subject to St. Joseph's pretreatment program limits, including limits on flows. This construction is to reuse an existing basin, which was previously used for grit, but has not been used in approximately 20 years, to handle excess peak flows.

The equalization basin will have the capacity of 3.1 million gallons. The project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make complete and usable sedimentation basins.

### **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 The Wells Resource LLC on April 08, 2014.
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 Kansas City 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. The South St. Joseph Industrial Sewer District 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
  - D. 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 construction and permitting of the original grit basin #1 as a flow equalization basin will provide additional capacity to hold flows from going to the St. Joseph WWTP. During normal dry weather flows, St. Joseph Industrial Sewer District sends 2 MGD to St. Joseph WWTP; however during wet weather flows can exceed 5 MGD. The conversion of the grit basin into the flow equalization basin will provide 3.1 million gallons of storage. Additional storage will be provided onsite by using existing clarifiers. This construction will be under Permitted Feature #001.

## **2. FACILITY DESCRIPTION**

South St. Joseph Industrial Sewer District provides sludge handling for industrial facilities in the St. Joseph area. Water discharges to the city of St. Joseph under the city's pretreatment program (permit #101012).

## **3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

The original grit basin #1 was constructed in the 1960s. This construction permit is to clean out the existing basin and to have it permitted to be a flow equalization basin handling excess flows at the site before sending on to the St. Joseph WWTP (MO-0023043).

The Wells Resource LLC modeled the flows on the 25 year-24 hour, the 50 year-24 hour, and the 100 year-24 hour. Based on the modeling, the equalization basin will be emptied 43 hours after the 25 year-24 hour storm. In the event of a 100 year-24 hour storm, the Sewer District will discharge the excess flows to the city of St. Joseph, as an emergency discharge is not allowed in the current operating permit.

The equalization basin was constructed with 3:1 slopes. Terracon conducted permeability test on the existing clay liner to ensure that it meets the  $1 \times 10^{-7}$  cm/sec coefficient of permeability and has a minimum of 2-foot thickness, which it does per 10 CSR 20-8.200(6)(C)1.

From the influent line to pump 11 (P-11), the piping will be 18" HDPE. From the influent line to pump 12 (P-12), the piping will be 12" HDPE. The discharge line from P-11 and P-12 to the equalization basin will be 18" HDPE and will discharge above grade. The discharge line from the equalization basin to the influent structure will be 30" PVC. P-11 and P-12 will be 12" Dri-Prime Skid Pumps.

From the influent line to the pump 13(P-13) and from P-13 to the diversion channel/wet well, the piping will be 8" PVC. Valving will include 3 check valves, one for each pump; 1 air vacuum vent, and 4 motorized vents from the basin.

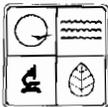
From the equalization basin, an engine driven pump will be installed to pump water from the equalization basin to the diversion channel and wet well for discharge to St. Joseph's sewer lines.

## **4. OPERATING PERMIT**

Operating permit MO-0118117 will be updated at renewal to include an updated facility description of the equalization basin. This basin discharges into St. Joseph's collection system for ultimate treatment at the St. Joseph WWTF. Sludge will continue to be land applied.

RECEIVED

APR 08 2015  
M201507  
AP 11/15



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	

11/8/15

**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: \_\_\_\_\_ Project #: \_\_\_\_\_
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?  
 YES Date of Approval: \_\_\_\_\_
- 1.3 Has the department approved the proposed project's facility plan\*?  
 YES Date of Approval: \_\_\_\_\_  NO  N/A (If Not Applicable, complete No. 1.4.)
- 1.4 [Complete only if answered Not Applicable on No. 1.3.] 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
- 1.5 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: 2014  
 Enclosed is the appropriate operating permit application submittal. Denote which form:  A  B  B2  
 N/A Please explain: \_\_\_\_\_
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency?  YES  NO
- 1.9 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**

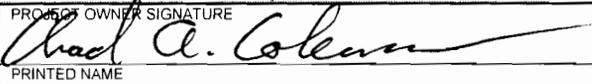
2.1 NAME OF PROJECT  
South St Joseph Industrial Sewer District- Flow Equalization

2.2 PROJECT DESCRIPTION  
Prevent peak flows that exceed the peak flow limits in the permit issues to SSJISD by the City of St Joseph MO

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION  
Current sludge handling operations have been approved. New land application sites will be added for approval with the application

2.4 DESIGN INFORMATION  
A. Current population: n/a; Design population: n/a  
B. Actual Flow: n/a gpd; Design Average Flow: n/a gpd;  
Actual Peak Daily Flow: n/a gpd; Design Maximum Daily Flow: n/a gpd; Design Wet Weather Event: n/a

2.5 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 South St Joesph Industrial Sewer District		TELEPHONE NUMBER WITH AREA CODE 816-238-3959		E-MAIL ADDRESS ssjisd@stjoewireless.net
ADDRESS (PHYSICAL) 1409 Lower Lake Road	CITY St. Joesph	STATE MO	ZIP CODE 64504	COUNTY Buchanan
Wastewater Treatment Facility: Mo- 0118117 (Outfall Of )				
3.1 Legal Description: <u>      </u> ¼, <u>SE</u> ¼, <u>SE</u> ¼, Sec. 25, T 57n, R 36w (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>2681753 450</u> Northing (Y): <u>1295162 532</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>n/a</u>				
4.0 PROJECT OWNER				
NAME South St Joesph Industrial Sewer District		TELEPHONE NUMBER WITH AREA CODE (816) 238-3959		E-MAIL ADDRESS ssjisd@stjoewireless.net
ADDRESS PO Box 4401	CITY St Joesph	STATE MO	ZIP CODE 64504	
<b>5.0 CONTINUING AUTHORITY:</b> Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.				
NAME Same as Project Owner		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS	CITY	STATE	ZIP CODE	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Willard J Wells/ The Wells Resource LLC		TELEPHONE NUMBER WITH AREA CODE (402) 556-4504		E-MAIL ADDRESS wjwells32@aol.com
ADDRESS 3919 Cuming Street	CITY Omaha	STATE NE	ZIP CODE 68131	
<b>7.0 PROJECT OWNER:</b> 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 				
PRINTED NAME Chad A. Coleman			DATE 3/31/15	
TITLE OR CORPORATE POSITION General Manager		TELEPHONE NUMBER WITH AREA CODE (816) 238-3959		E-MAIL ADDRESS ssjisd@stjoewireless.com
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
<b>END OF PART A.</b>				
<b>REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.</b>				

**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