



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

www.dnr.mo.gov

May 4, 2015

Mr. Brian Hess, P.E., Director of Utilities
City of Liberty
101 East Kansas Street
Liberty, MO 64068

RE: C295702-01 City of Liberty, MO – Liberty Wastewater Treatment Facility,
MO-0137111, Construction Permit No. CP0001724

Dear Mr. Hess:

The Department of Natural Resources' Water Protection Program has reviewed and approved the design build plans submitted by Crawford Murphy & Tilly for the city of Liberty. Please find enclosed Construction Permit No. CP0001724 and one set of approved plans. You must maintain these with your official project file for a minimum of four years following completion of the project.

This permit will terminate 32 months from the date of issuance. In accordance with 10 CSR 20-6.010(4)(G), the Department may grant an extension only one time. If you believe that an extension is necessary, you must submit a request and a justification in writing for the extension at least 30 days prior to the permit expiration date.

Nothing in this permit removes any obligations to comply with county or other local ordinances or restrictions.

If you were adversely affected by this decision, you may appeal to have the matter heard by the Administrative Hearing Commission. To appeal, you must file a petition with the Administrative Hearing Commission within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the Administrative Hearing Commission.

Mr. Brian Hess, P.E., Director of Utilities
May 4, 2015
Page 2

If you have any questions concerning this matter, please contact Ms. Cynthia M. Smith, P.E., of the Water Protection Program, at 573-522-9723 or Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176.

Thank you for your efforts to help ensure clean water in Missouri.

Sincerely,

WATER PROTECTION PROGRAM



Byron F. Shaw, Jr., P.E., SRF Engineering Unit Chief
Financial Assistance Center

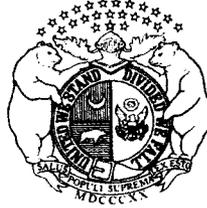
BFS:csc

Enclosures

c: Mr. Scott Knight, P.E., Crawford Murphy & Tilly, Inc.
Mr. Scott Honig, P.E., Kansas City Regional Office
Ms. Cynthia M. Smith, P.E., Water Protection Program, Financial Assistance Center
Mr. Doug Garrett, Water Protection Program, Financial Assistance Center

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 Liberty 101 East Kansas Street Liberty, MO 64068
--

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.

May 4, 2015
Effective Date

January 3, 2018
Expiration Date

Sara Parker Pauley, Director, Department of Natural Resources

Director, Water Protection Program

CONSTRUCTION PERMIT

WASTEWATER TREATMENT FACILITY:

The proposed wastewater treatment facility is a Biological Nutrient Removal Facility with a design average flow of 5.0 mgd and a design population equivalent of 39,600. The facility includes the following components:

- Headworks Building
- Influent screen with manual bypass
- Grit Removal
- Biological Nutrient Removal Activated Sludge – OVIVO Carrousel
- Clarifiers
- Ultraviolet (UV) Disinfection
- Approximately 1,000 lf of 45-inch outfall sewer to Shoal Creek
- Sludge Thickening
- Aerobic sludge digestion, sludge dewatering, sludge storage
- Laboratory and Office Space

The project also includes the construction and installation of all necessary appurtenances to make a complete and usable wastewater treatment facility. The project will also include general site work appropriate to the scope and purpose of the project.

FINDING OF AFFORDABILITY:

Pursuant to Section 644.145, RSMo, the department is required to determine whether a permit or decision is affordable and make a finding of affordability for each permit or decision.

An Affordability Determination and Finding was performed during the Water Quality and Antidegradation Review for the project, in accordance with RSMO §644.145 and is enclosed with this construction permit. The department finds the project is affordable to the community. See Appendix A.

PERMIT CONDITIONS:

This project is being constructed as a “Design-Build project. The permittee is authorized to construct subject to the following conditions:

1. All construction shall be in accordance with the Water Pollution Control components of the plans submitted by Crawford Murphy & Tilly, Inc. on January 22, 2015 and signed and sealed by Mr. Scott Knight, P.E. on January 21, 2015 and approved by the department on May 4, 2015.

2. The department must be contacted in writing prior to making any changes to the approved plans 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).
3. 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 20 of this rule.
4. This construction permit does not authorize discharge.
5. 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.
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."
 - A. 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.
 - B. Sewer mains shall be laid at least ten 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 ten 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.
 - C. Manholes should be located at least ten feet horizontally from any existing or proposed water main.
 - 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:

- 1) 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
- 2) Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends ten 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.

7. 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 may only be obtained by means of the department's ePermitting system available online at www.dnr.mo.gov/env/wpp/epermit/help.htm.

See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.

8. 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/ for more information.

9. Upon completion of construction:
 - A. The city of Liberty 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
 - C. Submit an electronic copy of the as-builts.

APPENDIX A: COST ANALYSIS FOR COMPLIANCE:

**Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)**

**Liberty Wastewater Treatment Facility (WWTF)
City of Liberty
Missouri State Operating Permit No. MO-0137111**

Section 644.145 RSMo requires the Department of Natural Resources to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works.”

This cost analysis is based on data available to the department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the department with current information about the city’s financial and socioeconomic situation. The financial questionnaire available to permittees on the department website (<http://dnr.mo.gov/forms/780-2511-f.pdf>) should have been submitted with the permit renewal application. The department is required to issue a permit with final effluent limits in accordance with 644.051.1.(1) RSMo, 644.051.1.(2) RSMo, and the Clean Water Act. The table below summarizes the results of this cost analysis for the city of Liberty. The practical result of this analysis is to incorporate a long compliance schedule into the permit in order to mitigate adverse impact to distressed populations resulting from the costs of upgrading the WWTF.

Cost Analysis for Compliance Summary Table

Estimated present worth of new facility	Median Household Income (MHI) for the City of Liberty**	Estimated monthly cost per user as a percent of MHI (\$67.03*12/\$47,333)
\$71,000,000	\$66,535	1.70%

** Due to the fact that the Median Household Income of the city of Liberty is higher than the state of Missouri’s Median Household income, the state of Missouri’s Median Household Income of \$47,333 has been used to complete this analysis.

Current Facility Description:

Residential Connections:	<u>9100</u>
Commercial Connections:	<u>744</u>
Industrial Connections:	<u>44</u>
Total Connections for this facility:	<u>9888</u>

Requirements Now Being Enforced:

As this is a new facility, all requirements in the permit are new requirements. The construction of the new Liberty WWTF is the decision of the city. Currently the city of Liberty is connected to the city of Kansas City’s Birmingham WWTF. By remaining connected to Kansas City, Liberty would continue to be subject to Kansas City’s rate structure as Kansas City continues working to meet the requirements of

(2) Affordability of pollution control options for the individuals or households at or below the median household income level of the community:

From the 2012 Affordability Analysis completed by HDR Engineers, Inc. and Geosyntec on the evaluation of pollution control technologies, the table below was created. This information was not submitted with the 2015 updates.

	2012	2016	2020	2025
Alternative-Liberty Treatment (BNR)				
Annual cost of additional (operating costs and debt service)	\$0	\$7,600,000	\$7,700,000	\$7,950,000
Estimated resulting user rate and/or cost per household per month	\$44.15	\$67.03	\$75.74	\$75.75
Median Household Income (based on 1% increase per year)	\$65,663	\$68,329	\$71,104	\$74,731
Rate and/or cost per household as % of MHI				
Alternative-KCMO treatment				
Annual cost of additional (operating costs and debt service)	\$0	\$8,200,000	\$9,950,000	\$11,400,000
Estimated resulting user rate and/or cost per household per month	\$44.15	\$74.39	\$102.69	\$114
Median Household Income (based on 1% increase per year)	\$65,663	\$68,329	\$71,104	\$74,731
Rate and/or cost per household as % of MHI				

A Current Costs

Current operating costs (exclude depreciation):	\$0; Connected to KC currently
Current user rate:	\$58.20

B-1 Estimated Costs for Mechanical Plant Pollution Control Option

Estimated total present worth of pollution control*:	\$71,500,000
Estimated capital cost of pollution control**:	\$63,500,000
Annual cost of operation and maintenance***:	\$7,600,000
Estimated resulting user cost per household per month****:	\$67.03

Estimated resulting user cost per household per month plus the amount within the current user rate used toward payments on outstanding debt:	\$
Median household income(MHI-state MHI)***** ² :	\$47,333
Cost per household as a percent of median household income ³ :	1.70%
Estimated cost per household per month plus the amount within the current user rate used toward payments on outstanding debt as a percent of median household income ⁴ :	%

The resulting cost per household as a percent of MHI (Estimated cost per household per month plus the amount within the current user rate used toward payments on outstanding debt as a percent of median household income) will be used as the residential indicator in Criteria 7 below.

- ** Capital Cost includes project costs from Liberty 2015 Antidegradation Report with design, inspection and contingency costs.
- *** Operation & Maintenance (O&M) cost shown in Tables B-1 and B-2 includes operations, maintenance, materials, chemical and electrical costs for the facility on an annual basis. It includes items that are expected to replace during operations, such as pumps. O&M is estimated between 15 percent and 45 percent of the user cost.
- **** The Estimated User Cost shown in Tables B-1 and B-2 is composed of two factors, O&M, and Debt Retirement Costs.
- ***** Due to the fact that the Median Household Income of the city of Liberty is higher than the state of Missouri's Median Household income, the state of Missouri's Median Household Income of \$47,333 has been used to complete this analysis. The resulting cost per household as a percent of MHI is X percent using the state's MHI. The resulting cost per household as a percent of MHI will be used as the residential indicator in Criteria 7 below.

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System. This permit renewal requires final effluent limitations for Ammonia as N based on Missouri Water Quality Standards (WQS) 10 CSR 20-7.031 and the Clean Water Act. Ammonia (NH₃) is toxic to early stages of aquatic life. NH₃ removal prevents damage to aquatic life and enables the receiving stream to support a healthier and diverse aquatic life community. Liberty's Antidegradation Report mentioned that the new treatment plant would be capable of meeting the proposed 2013 Ammonia effluent limits.

E. coli is an indicator of the presence of fecal contamination in water and possible disease-causing bacteria and viruses in water and wastewater. The receiving stream has a WBC (B) designated use to protect human health in accordance with Water Quality Standards (10 CSR 20-7.031) and the Clean Water Act. Disinfection benefits human health by reducing exposure to disease-causing bacteria and viruses. The city of Liberty will be installing UV disinfection with the construction of the new treatment plant to meet the final effluent limitations.

Nutrients are mineral compounds that are required for organisms to grow and thrive. Of the six elemental macronutrients, Nitrogen and Phosphorus are generally not readily available and limit growth of organisms. If excess Nitrogen and Phosphorus are introduced into a waterbody, some species' populations will dramatically increase, while other populations will not be able to sustain life. This causes a shift in the ecosystem's food web. Competition and productivity are two factors in which nutrients can alter aquatic ecosystems and the designated uses of a waterbody. For example, designated uses, like drinking water source or recreational uses, become impaired when algal blooms take over a waterbody. These blooms can cause foul tastes and odors in the drinking water, and also cause unsightly appearance, and fish mortality in the waterbody. Some algae also produce toxins that may cause serious adverse health conditions such as liver damage, tumor promotion, paralysis, and kidney damage. Increased productivity of aquatic life may also clog treatment equipment, cause an increase in organic matter, bacteria, and fungi, and die-off and decomposition of algal blooms can reduce dissolved oxygen and suffocate fish and other aquatic life in the waterbody. The monitoring requirements for Nitrogen and Phosphorus have been added to the permit to provide data to the department regarding the health of the receiving stream's aquatic life.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The community reported that each user pays \$6.88 each month, which is used toward payments on the current outstanding debt.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

Socioeconomic Data^{7-9:}

Potentially Distressed Populations – City of Liberty	
Unemployment	4.6%
Adjusted Median Household Income (MHI)	\$66,535
Percent Change in MHI (1990-2012)	+75.7%
Percent Population Growth/Decline (1990-2012)	+41.5%
Change in Median Age in Years (1990-2012)	+5.4
Percent of Households in Poverty	9.3%
Percent of Households Relying on Food Stamps	7.7%

Opportunity for cost savings or cost avoidance:

Based on the evaluation completed in the 2012 Antidegradation Review, 2013 Facility Plan, and 2015 Antidegradation Review, the construction of a new treatment plant owned and operated by the city of Liberty rather than continued connection to the Birmingham Treatment Facility will provide cost savings for Liberty's residents, as Kansas City is under a federal consent decree to make upgrades. The selected

treatment technology is a biological nutrient removal plant which should provide long-term compliance with the water quality standards.

Opportunity for changes to implementation/compliance schedule, new technology, site specific criteria, use attainability analysis:

If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, the permittee may use the Use Attainability Analysis (UAA) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. This process could potentially become expensive in itself.

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

Recent major capital asset expenditures include:

Expenditure	2012	2013	2014
Water Capital Fund Projects	\$1,058,000	\$1,499,000	\$1,219,000
Sanitary Capital Fund Projects	\$202,700	\$1,133,000	\$1,315,000

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards.

Secondary indicators for consideration:

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	3
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	2
Unemployment Rate	>1% below Missouri average of 5.3%	± 1% of Missouri average of 5.3%	>1% above Missouri average of 5.3%	2
Median Household Income	More than 25% above Missouri MHI (\$47,333)	± 25% of Missouri MHI (\$47,333)	More than 25% below Missouri MHI (\$47,333)	3
Percent of Households in Poverty*	>10% below Missouri average of 14.0%	± 10% of Missouri average of 14.0%	>10% above Missouri average of 14.0%	3
Percent of Households	>5% below Missouri	± 5% of Missouri	>5% above Missouri	3

Relying on Food Stamps*	average of 11.4%	average of 11.4%	average of 11.4%	
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	3
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	2

Financial Capability (FCI) Indicators Average Score: 2.625
 Mechanical Plant Residential Indicator (RI, from Criteria #2 above): 1.70

* Financial Capability Indicators are specific to the State of Missouri

Financial Capability Matrix:

Financial Capability Indicators Score from above ↓	Residential Indicator (User cost as a % of MHI)		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%)	High (Above 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (above 2.5)	Low Burden	Medium Burden	High Burden

Estimated Financial Burden for Mechanical Plant: Medium Burden

The resulting financial burden has been determined by comparing the Financial Capability Indicator score (FCI) with the Residential Indicator (RI) stated in Criteria No. 2. The cost associated with a mechanical plant could result in a medium financial burden placed on the community due to the Strong FCI paired with the Mid-range RI

(8) An assessment of any other relevant local community economic condition.

According to the Financial Questionnaire Survey completed by Liberty in February 2015, the city does not foresee any economic conditions that would negatively impact our capacity to afford the new wastewater treatment plan and collection system upgrades. Liberty’s economics are based on the tradeoff of current treatment costs paid to KCMO as compared to required debt services costs for the project, plus plant operating costs. Our analysis indicates owning and operating our own treatment plant will result in reduced long-term expenses.

Conclusion and Finding

The city of Liberty made the decision to construct their own WWTF, and in their analysis it was a more comprehensive and sustainable option for the community rather than remaining connected to the Kansas City Birmingham WWTF. This determination is based on readily available data and may overestimate the financial impact on the community. The community’s facility plan that is submitted as a part of the construction permit process includes a discussion of community details, what the community can afford, existing obligations, future growth potential, an evaluation of options available to the community with cost information, and a discussion on no-discharge alternatives. The cost information provided through the facility plan process, which is developed by the community and their engineer, is more comprehensive of the community’s individual factors in relation to selected treatment technology and costing information.

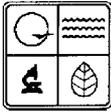
References:

1. <http://www.hydomantis.com/>
2. The Median Household Income was found using the American Community Survey by the U.S. Census Bureau
3. $(46.53/(28,625/12))100 = 1.95\%$ (mechanical)
4. Outstanding debt was not provided by the community
5. $(7.25/(28,625/12))100 = 0.30\%$ and $(115.75/(28,625/12))100 = 4.85\%$ (land application)
6. Outstanding debt was not provided by the community
7. $(48.77/(28,625/12))100 = 2.0\%$ (mechanical with I&I evaluations)
8. $(16.16/(28,625/12))100 = 0.68\%$ and $(117.99/(28,625/12))100 = 4.95\%$ (land application with I&I evaluations)
9. Unemployment data was obtained from Missouri Department of Economic Development (July 2014) – <http://www.missourieconomy.org/pdfs/urel1407.pdf>
10. Population trend data was obtained from online at: 2012 Census Bureau Population Data - http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table, 2000 Census Bureau Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls>, 1990 Census Bureau Population Data - <http://www.census.gov/prod/cen1990/cpl/cp-1-27.pdf>
11. Poverty data – American Community Survey- <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

C14381
(Field Tracking)

MO-0137-936
RECEIVED

AP 20516
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT 22 2014
WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$3000.00	CHECK NO. 7862
DATE RECEIVED 1/22/15	<i>SRB</i>

WATER PROTECTION PROGRAM

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 #: 702-1
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: TBD
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: TBD 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: _____
 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

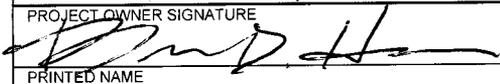
2.1 NAME OF PROJECT
Liberty Wastewater Treatment Facility

2.2 PROJECT DESCRIPTION
Construction of a new wastewater treatment facility to serve the City of Liberty. The facility will have a design average flow capacity of 5.01 MGD, a peak flow capacity of 20.0 MGD, and a design population equivalent of approximately 50,000. The facility will be capable of achieving biological nutrient removal.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Sludge generated by the facility will be aerobically digested to meet Class B biosolids criteria. The sludge will be thickened to approximately 4% in the digesters using membrane thickening equipment. The digested biosolids will be dewatered to approximately 20% and stored on site (180 day storage capacity). Ultimate disposal will be by land application to agricultural ground.

2.4 DESIGN INFORMATION
A. Current population: 29,811; Design population: 50,000
B. Actual Flow: 3,530,000 gpd; Design Average Flow: 5,000,000 gpd;
Actual Peak Daily Flow: 4,770,000 gpd; Design Maximum Daily Flow: 20,000,000 gpd; Design Wet Weather Event: 20,000,000

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 Liberty Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE (816) 439-4549		E-MAIL ADDRESS bhess@ci.liberty.mo.us
ADDRESS (PHYSICAL) Lindemann Rd. (north of Birmingham Rd.)		CITY Liberty	STATE MO	ZIP CODE 64068
COUNTY Clay				
Wastewater Treatment Facility: Mo- TBD (Outfall 1 Of 1)				
3.1 Legal Description: <u> </u> ¼, <u>SW</u> ¼, <u>SW</u> ¼, Sec. <u>30</u> , T <u>51N</u> , R <u>31W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>375924</u> Northing (Y): <u>4339622</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Shoal Cr</u>				
4.0 PROJECT OWNER				
NAME City of Liberty		TELEPHONE NUMBER WITH AREA CODE (816) 439-4549		E-MAIL ADDRESS bhess@ci.liberty.mo.us
ADDRESS 101 E. Kansas Street		CITY Liberty	STATE MO	ZIP CODE 64068
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 City of Liberty		TELEPHONE NUMBER WITH AREA CODE (816) 439-4549		E-MAIL ADDRESS bhess@ci.liberty.mo.us
ADDRESS 101 E. Kansas Street		CITY Liberty	STATE MO	ZIP CODE 64068
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 type="checkbox"/> NO				
B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Kenneth S. Knight / Crawford, Murphy & Tilly, Inc.		TELEPHONE NUMBER WITH AREA CODE (314) 571-9057		E-MAIL ADDRESS sknight@cmtengr.com
ADDRESS One Memorial Drive, Suite 500		CITY St. Louis	STATE MO	ZIP CODE 63102
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 				
PRINTED NAME Brian Hess, P.E.			DATE January 16, 2015	
TITLE OR CORPORATE POSITION Director of Utilities		TELEPHONE NUMBER WITH AREA CODE (816) 439-4549		E-MAIL ADDRESS bhess@ci.liberty.mo.us
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):

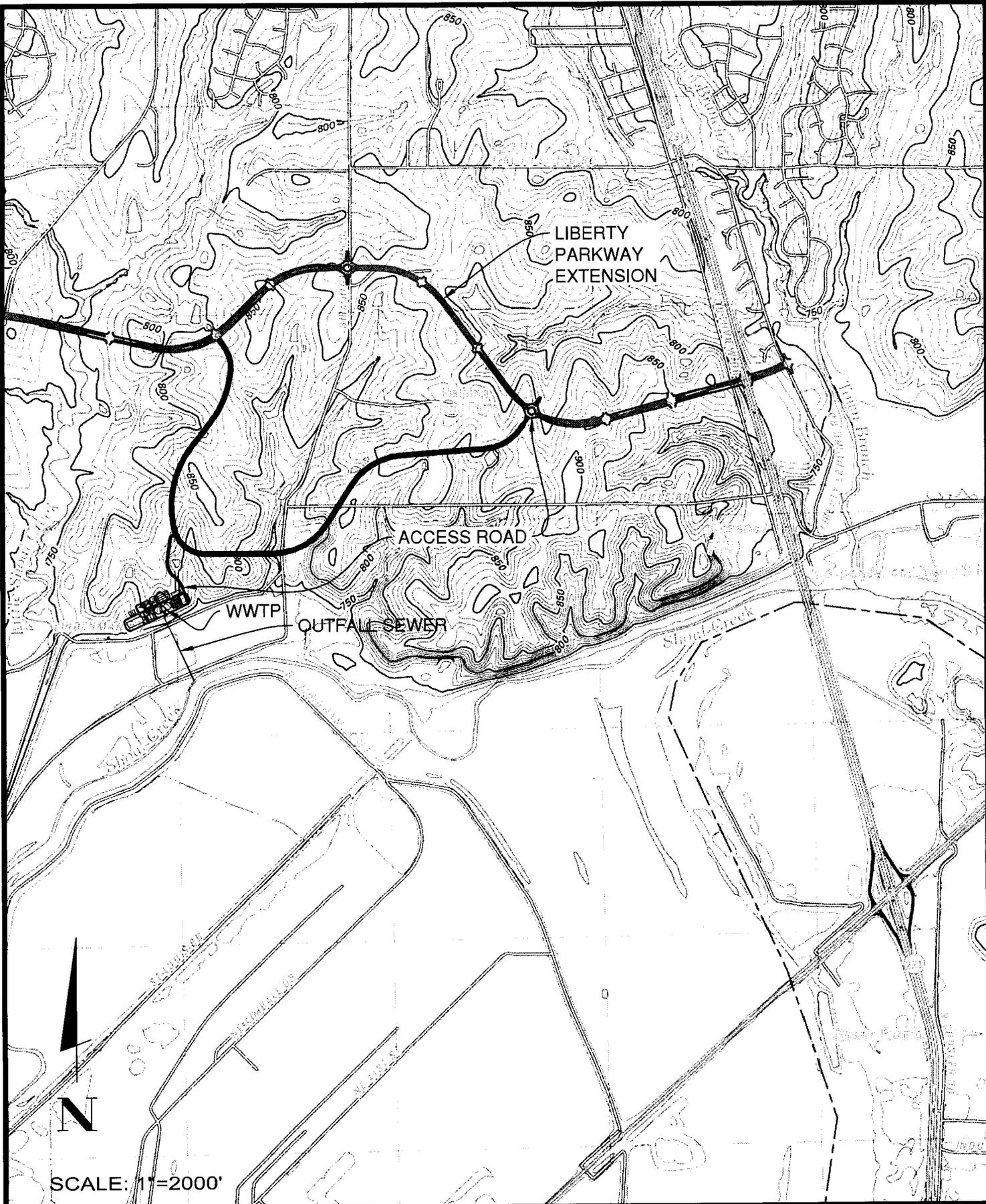
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

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

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SCALE: 1"=2000'

CRAWFORD MURPHY & TILLY, INC.
CONSULTING ENGINEERS
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102



SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO

USGS MAP

CITY OF LIBERTY CLAY COUNTY, MISSOURI FACILITY PLAN AMENDMENT

EXHIBIT NO.
1

DATE
1/6/15

DRAWN TLL	CHECKED APE
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