

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0024911

Owner: City of Kansas City
Address: 4800 East 63rd Street, Kansas City, MO 64130

Continuing Authority: Same as above
Address: Same as above

Facility Name: KC, Blue River Wastewater Treatment Facility
Facility Address: 7300 Hawthorne Road, Kansas City, MO 64120

Legal Description: See Page Two (2)
UTM Coordinates: See Page Two (2)

Receiving Stream: See Page Two (2)
First Classified Stream and ID: See Page Two (2)
USGS Basin & Sub-watershed No.: See Page Two (2)

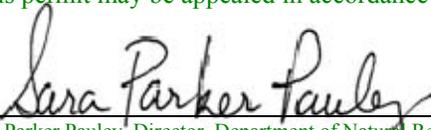
is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page Two (2). Blue River Wastewater Treatment Plant has a design flow of 105 MGD with an average flow of 81.0 MGD. The preliminary treatment includes barscreens, and grit removal. Secondary treatment is high rate trickling filters with gravity clarifiers.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

November 16, 2011
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

November 15, 2016
Expiration Date


John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

Outfall #001 – POTW - SIC #4952-**Class A Operator Required**

Trickling filter/anaerobic sludge digestion/sludge incinerated or land applied

UTM Coordinates: x = 371700; y= 4333636

Legal Description: NE ¼, SW ¼, Sec. 15, T50N, R32W

Receiving Stream: Missouri River (P)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Design population equivalent is 850,000

Design flow is 105 MGD. Actual flow is 81 MGD.

Design sludge production is 23,800 dry tons/year.

Outfall #002 – Storm water runoff from wastewater facility – SIC #4952

Legal Description: NW ¼, SW ¼, Sec. 22, T50N, R32W, Jackson County

UTM Coordinates: x= 371015; y= 4332544

Receiving Stream: Tributary to Missouri River (U)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall #003 – Storm water runoff from wastewater facility – SIC #4952

Legal Description: NW ¼, SW ¼, Sec. 22, T50N, R32W, Jackson County

UTM Coordinates: x= 371015; y= 4332544

Receiving Stream: Tributary to Missouri River (U)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall #004 – Storm water runoff from wastewater facility – SIC #4952

Legal Description: NW ¼, SW ¼, Sec. 22, T50N, R32W, Jackson County

UTM Coordinates: x= 371015; y= 4332544

Receiving Stream: Tributary to Missouri River (U)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall # 005 – Discharges from this outfall are no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(ii).

CSO Locations 006-100 :

See Attachment A: Combined Sewer Overflow on pages 15-18 of the permit for the list of the CSO locations, UTM coordinates, legal descriptions, and stream information.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER: 3 of 18

PERMIT NUMBER: MO-0024911

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/weekday (Note 1)	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		60	40	once/weekday	24 hr. composite***
Total Suspended Solids	mg/L		60	40	once/weekday	24 hr. composite***
Ammonia as N (April 1- Sept. 30)	mg/L	45.1		17.3	once/weekday	grab
Ammonia as N (Oct. 1- March 31)	mg/L	70.1		27.1	once/weekday	grab
Temperature	°C	*		*	once/weekday	grab
Oil & Grease	mg/L	15		10	once/month	grab
Cyanide, amenable to chlorination	µg/L	44.8		19.3	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2012.

Fluoride	mg/L	*		*	once/quarter****	24 hr. composite***
Hardness as CaCO ₃	mg/L	*		*	once/quarter****	grab
Nitrogen, Total	mg/L	*		*	once/quarter****	24 hr. composite***
Nitrate, Nitrites	mg/L	*		*	once/quarter****	24 hr. composite***
Phosphorus, Total	mg/L	*		*	once/quarter****	24 hr. composite***
Arsenic, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Chromium III, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Chromium VI, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Lead, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Manganese, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Mercury, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Nickel, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Thallium, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Whole Effluent Toxicity Test	% survival	See Special Condition # 12		twice/year in August and January	24 hr. composite***
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MONITORING REPORTS SHALL BE SUBMITTED SEMI-ANNUALLY; THE FIRST REPORT IS DUE February 28, 2012.

Total Toxic Organics (Note 2)	mg/L			once/year in June	24 hr. composite***
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MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE July 28, 2012.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PARTS I, II, & III STANDARD CONDITIONS DATED OCTOBER 1, 1980 and AUGUST 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PERMIT NUMBER MO-0024911

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until **364 days** after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 pH – Units	SU	**		**	once/weekday (Note 1)	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2012.

Outfall #001 Final pH effluent limits below

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective **one (1) year** from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE
Outfall #001 pH – Units	SU	***		***	once/weekday (Note 1)	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2013.

B. STANDARD CONDITIONS**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until December 30, 2013. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 Escherichia Coliform (Note 4)	colonies/ 100 mL		*	*	once/weekday (Note 1)	grab
Total Residual Chlorine (Note 5)	mg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2012.

Cadmium, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Copper, Total Recoverable	µg/L	*		*	once/quarter****	24 hr. composite***
Phenol	µg/L	*		*	once/quarter****	24 hr. composite***

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2012.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PARTS I, II & III STANDARD CONDITIONS DATED OCTOBER 1, 1980 and AUGUST 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 5 of 18
	PERMIT NUMBER MO-0024911

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective December 31, 2013 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Escherichia Coliform (Note 4)	colonies/100 mL		1030	206	once/weekday (Note 1)	grab
Total Residual Chlorine (Note 5)	mg/L	0.042 (0.13 ML)		0.021 (0.13 ML)	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE February 28, 2014.

Cadmium, Total Recoverable	µg/L	5.2		2.9	once/quarter****	24 hr. composite***
Copper, Total Recoverable	µg/L	88		39	once/quarter****	24 hr. composite***
Phenol	µg/L	458		100	once/quarter****	24 hr. composite***

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2014. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PARTS I, II, & III STANDARD CONDITIONS DATED OCTOBER 1, 1980 and AUGUST 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #002, 003, 004						
Flow	MGD	*		*	once/quarter****	24 hr. estimate
Precipitation	inches	*		*	once/quarter****	24 hr. total
Biochemical Oxygen Demand ₅	mg/L	*		*	once/quarter****	grab
Oil & Grease	mg/L	15		10	once/quarter****	grab
Settleable Solids	mL/L/hr	1.5		1.0	once/quarter****	grab
pH	SU	***		***	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED PARTS I, II, & III STANDARD CONDITIONS DATED OCTOBER 1, 1980 and AUGUST 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

C. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 6 of 18
		PERMIT NUMBER MO-0024911
The facility is required to meet a removal efficiency of 65% or more as a monthly average. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:		
SAMPLING LOCATION AND INFLUENT PARAMETER(S)	UNITS	MONITORING REQUIREMENTS
		MEASUREMENT FREQUENCY SAMPLE TYPE
Outfall #001		
Biochemical Oxygen Demand ₅	mg/L	once/month 24 hr. composite***
Total Suspended Solids	mg/L	once/month 24 hr. composite***

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 standard units.

*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 standard units.

**** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

***** See table below for quarterly sampling.

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

Note 1: Once each weekday means: Monday, Tuesday, Wednesday, Thursday & Friday except nine Federal legal holidays (New Years, Martin Luther King Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas).

Note 2: Total Toxic Organics. See Page 13 of the permit for the list of Total Toxic Organics.

Note 3: Monitoring Requirements for Mercury, Total Recoverable

- (a) Monitoring is required for this parameter. When using EPA test method 200.8, the department has determined the current acceptable ML for 0.2 µg/L. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values.
- (b) If there is no flow in a given sampling period, an actual analysis is not necessary. Simply report as “0 µg/L”

Note 4: Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean.

Note 5: This permit contains a Total Residual Chlorine (TRC) limit.

- (a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 0.13 mg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 0.13 mg/L will be considered violations of the permit and values less than the minimum quantification level of 0.13 mg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Disinfection is required year-round unless the permit specifically states that “Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31.” If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.
- (c) Do not chemically dechlorinate **if it is not needed to meet the limits in your permit.**
- (d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 mg/L” TRC.

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(ii), and with Standard Condition Part I, Section B, subsection 2.b.
4. Report as no-discharge when a discharge does not occur during the report period.
5. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
6. Water Quality Standards
 - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

D. SPECIAL CONDITIONS (continued)

7. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.

The SWPPP must include the following:

- (a) An assessment of all storm water discharges associated with this facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
 - (b) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water.
 - (c) The SWPPP must include a schedule for monthly site inspections and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. The Department must be notified within fifteen (15) days by letter of any corrections of deficiencies. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a treatment device to correct should be detailed in the written notification. Installation of a treatment device, such as an oil water separator, may require a construction permit. Inspection reports must be kept on site with the SWPPP. These must be made available to DNR personnel upon request.
 - (d) A provision for designating an individual to be responsible for environmental matters.
 - (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.
8. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.
9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report annually by March 31st per the requirements of the Administrative Order of Consent (Civil Action No. 4:10-cv-0497-GAF).
10. The permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference. The permittee shall submit to the Department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
- (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
 - (b) A summary of the status of Industrial User compliance over the reporting period;
 - (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
 - (d) Any other relevant information requested by the Department.

D. SPECIAL CONDITIONS (continued)

11. Kansas City Sewer Extension Authority

- (a) The Department has approved the Sewer Extension Program for Kansas City to regulate and approve construction of sanitary sewers which are owned and/or operated by Kansas City.
- (b) The approval of the Sewer Extension Program may be modified or revoked by the Department if the sewage collection, transportation, and receiving treatment facility reach their respective design capacity, or if the Department determines that this program is causing or contributing to chronic non-compliance of the receiving treatment facility, or if the permittee fails to follow the terms and conditions of the submitted and approved program.
- (c) The Sewer Extension Program Special Condition may be reopened and modified and reissued, or alternatively revoked to incorporate new or modified conditions to the sewer construction permit authority, if information or regulation or statute indicates changes are necessary to assure compliance with Missouri's Clean Water Law and associated regulations.
- (d) If items b or c of the Sewer Extension Program occur, the permittee will be notified to any modification to this operating permit.
- (e) The Permittee, as part of their Sewer Extension Program, shall submit an annual report by March 31st of each year, to the Missouri Department of Natural Resources' Kansas City Regional Office. The report shall include, but is not limited to, the following:
 - (1) A list of the name of each individual project and their respective:
 - i. Length of sewer and force main
 - ii. Capacity of the lift stations constructed under the sewer extension (if applicable);
 - iii. Inspections made of the construction and the findings of each;
 - iv. Results of leakage and deflection test;
 - v. Population or number of lots to be served by this extension; and
 - vi. Type of wastewater (i.e., domestic or industrial);
 - (2) An annual summary of
 - i. Number of construction permits issued
 - ii. Number of inspections completed
 - iii. Number of sewer lines tested and/or inspected with Closed Circuit Television
 - iv. Number of warnings, violations, or notices given
 - v. Capacity remaining at the treatment plant
- (f) The Sewer Extension Authority is valid the length of this operating permit. Upon renewal of the permit, the Sewer Extension Authority for the facility will be reevaluated.

12. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	45%	twice/year	24 hr. composite*	January and August

* A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampler.

Dilution Series							
AEC %	100% effluent	50% effluent	25% effluent	12.5% effluent	6.25% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.

D. SPECIAL CONDITIONS (continued)

- (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
 - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
- (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
- (5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
 - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC₅₀ concentration for the most sensitive of the test organisms; **OR**,
 - (b) For facilities with an AEC greater than 30%, the LC₅₀ concentration must be greater than 100%; **AND**,

D. SPECIAL CONDITIONS (continued)

11. WET Testing (continued)

- (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required.

(c) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
- (3) Test species: *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Unless otherwise specified above, multiple-dilution tests will be run with:
 - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, $\frac{1}{2}$ AEC and $\frac{1}{4}$ AEC;
 - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
 - (c) Reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

E. COMBINED SEWER SYSTEM

1. Nine Minimum Controls

(a) CSO Locations.

The permittee is authorized to discharge from the CSO locations listed in Attachment A and additional CSO locations within the boundaries of the permittee's jurisdiction identified after the effective date of this permit, in accordance with the requirements of Sections B and C below, and other pertinent provisions of this permit.

(b) "Nine Minimum Controls" Technology-based Requirements.

The permittee shall document implementation its Nine Minimum Controls, and shall retain these records in accordance with the State and Local Records Law as codified in Section 109.200 RSMo. et seq., and standards and regulations promulgated pursuant thereto. The permittee shall continue its compliance with the following technology-based requirements:

- Control 1 – Proper Operation and Maintenance Programs;
- Control 2 – Maximum Use of the Collection System for Storage;
- Control 3 – Review and Modification of Pretreatment Requirements;
- Control 4 – Maximization of Flow to the POTW for Treatment;
- Control 5 – Dry Weather Flows from CSO's are prohibited;
- Control 6 – Control of Solid and Floatable Materials in CSO's;
- Control 7 – Pollution Prevention;
- Control 8 – Public Notification;
- Control 9 – Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls.

- (c) The permittee shall implement its Nine Minimum Control Plan that meets the performance criteria previously approved by the Department and shall submit an annual report on March 31st of each year on the previous year's efforts.

E. COMBINED SEWER SYSTEM (continued)

2. Long Term Control Plan

(a) The Department acknowledges the Long Term Control Plan (LTCP) was submitted on January 30, 2009 and was approved by the Department on April 14, 2010 and signed in the Western District Court of Missouri on September 27, 2010.

(b) The Permittee shall submit an annual report on March 31st of each year on the previous year's efforts to implement the LTCP.

3. The Consent Decree (Civil Action No. 4:10-cv-0497-GAF) and any modifications to the decree are hereby incorporated into this permit.

F. SCHEDULE OF COMPLIANCE- *E. Coli*

The final shall become effective as soon as possible but no later than December 31, 2013, in accordance with the conditions below.

1. Within one year from the issuance of the permit, the permittee shall submit a construction permit application and an activity schedule toward meeting the disinfection requirement.
2. The facility shall submit an interim progress report within twelve months if the construction completion and operation of the disinfection equipment will be more than 1 year.
3. If the permittee will fail to meet any of the interim dates above, the permittee shall notify the Department in writing of the reason for non compliance no later than 14 days following each interim date.
4. Upon completion of construction, the permittee submit a Statement of Work complete and signed by the owner and licensed professional engineer in the state of Missouri.

SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

Total Toxic Organics (Note 2)

Acenaphthene	4-chlorophenyl phenyl ether
Acrolein	4-bromophenyl phenyl ether
Acrylonitrile	Bis (2-chloroisopropyl) ether
Benzene	Bis (2-chloroethoxy) methane
Benidine	Methylene Chloride (dichloromethane)
Carbon Tetrachloride (tetrachloromethane)	Methyl Chloride (chloromethane)
Chlorobenzene	Methyl bromide (bromomethane)
1,2,4-trichlorobenzene	Bromoform (tribromomethane)
Hexachlorobenzene	Dichlorobromomethane
1,2-dichloroethane	Chlorodibromomethane
1,1,1-trichloroethane	Hexachlorobutadiene
Hexachloroethane	Hexachlorocyclopentadiene
1,1-dichloroethane	Isophorone
1,1,2-trichloroethane	Naphthalene
1,1,2,2-tetrachloroethane	Nitrobenzene
Chloroethane	2-nitrophenol
Bis (2-chloroethyl) ether	4-nitrophenol
2-chloroethyl vinyl ether	2,4-dinitrophenol
N-nitrosodi-n-propylamine	4,6-dintro-o-cresol
Pentachlorophenol	N-nitrosodimethylamine
Phenol	N-nitrosodiphenylamine
Bis (2-ethylhexyl) phthalate	Phenanthrene
Butyl benzyl phthalate	1,2,5,6-dibenzanthracene (dibenzo(a,h)anthracene)
Di-n-butyl phthalate	Indeno (1,2,3-cd) pyrene
	(2,3-o-phenylene pyrene)
Di-n-octyl phthalate	Pyrene
Diethyl phthalate	Tetrachloroethylene
Dimethyl phthalate	Toluene
1,2-benzanthracene (benzo(a)anthracene)	Trichloroethylene
Benzo(a)pyrene (3,4-benzopyrene)	Vinyl Chloride (chloroethylene)
3,4-benzofluoranthene (benzo(b)fluoranthene)	Aldrin
11,12-benzofluoranthene (benzo(k)fluoranthene)	Dieldrin
Chrysene	Chlordane (technical mixture and metabolites)
Anthracene	4,4-DDT
1,12-benzoperylene (benzo(ghi)perylene)	4,4-DDE (p,p-DDX)
Fluorene	4,4-DDD (p,p-TDE)
2-chloronaphthalene	Alpha-endosulfan
2,4,6-trichlorophenol	Beta-endosulfan
Parachlorometa cresol	Endosulfan sulfate
Chloroform (trichloromethane)	Endrin
2-chlorophenol	Endrin aldehyde
1,2-dichlorobenzene	Heptachlor
1,3-dichlorobenzene	Heptachlor epoxide (BHC hexachlorocyclohexane)
1,4-dichlorobenzene	Alpha-BHC
3,3-dichlorobenzidine	Beta-BHC
1,1-dichloroethylene	Gamma-BHC
1,2-trans-dichloroethylene	Delta-BHC (PCB polychlorinated biphenyls)
2,4-dichlorophenol	PCB-1242 (Arochlor 1242)
1,2-dichloropropane (1,3-dichloropropane)	PCB-1254 (Arochlor 1254)
2,4-dimethylphenol	PCB-1221 (Arochlor 1221)
2,4-dinitrotoluene	PCB-1232 (Arochlor 1232)
2,6-dinitrotoluene	PCB-1248 (Arochlor 1248)
1,2-diphenylhydrazine	PCB-1260 (Arochlor 1260)
Ethylbenzene	PCB-1016 (Arochlor 1016)
Fluoranthene	Toxaphene

Attachment A: Combined Sewer System Overflow Locations

CSO No.	Description	UTM Coordinates	Legal Description	Receiving Water	First Classified Stream & ID	USGS Basin & Sub-watershed No.
006	50 th & Stateline	x= 361374; y= 4321912	NE ¼, NW ¼, Sec. 31, T49N, R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
007	50 th Terrace & Brush Creek	x= 361400; y= 4322004	SE ¼, SW ¼, Sec. 30, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
008	49 th Terrace & Westwood Road	x= 361450; y=4322126	SE ¼, SW ¼, Sec. 30, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
009	50 th & Holly	x= 361450; y=4322126	SE ¼, SW ¼, Sec. 30, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
010	50 th & Brush Creek	x= 361498; y= 4322126	SE ¼, SW ¼, Sec. 30, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
011	Roanoke & Brush Creek	x= 361815; y= 4322367	SW ¼, SE ¼, Sec. 30, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
012	Summit & Brush Creek	x= 361814; y= 4322305	SW ¼, SE ¼, Sec. 30, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
013	47 th & Wornall	x= 362249; y= 4322421	NW ¼, SW ¼, Sec. 29, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
014	49 th & Wornall	x= 362273; y= 4322420	NW ¼, SW ¼, Sec. 29, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
015	Nichols Road & Wornall	x= 362490; y= 4322478	NW ¼, SW ¼, Sec. 29, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
016	Main Street & Brush Creek	x= 362754; y= 4322412	NE ¼, SW ¼, Sec. 29, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
017	46 th Terrace & Wornall	x= 362944; y= 4322316	NE ¼, SE ¼, Sec. 29, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
018	48 th & Harrison	x= 363760; y= 4322179	NE ¼, SE ¼, Sec. 29, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
019	49 th & Troost	x= 363879; y= 4322146	SW ¼, SW ¼, Sec. 28, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
020	48 th & The Paseo	x= 364244; y= 4322355	NE ¼, SW ¼, Sec. 28, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
021	47 th & The Paseo	x= 364318.; y= 4322508	NE ¼, SW ¼, Sec. 28, T49N,R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
022	Virginia & Brush Creek Boulevard	x= 364200; y= 4322778	SW ¼, NW ¼, Sec. 28, T49N, T33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
023	46 th & Woodland	x= 364706; y= 4322687	SE ¼, NW ¼, Sec. 28, T49N, R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
024	45 th & Garfield	x= 365065; y= 4322588	SW ¼, NE ¼, Sec. 28, T49N, R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
025	46 th & Prospect	x= 365447; y= 4322427	NE ¼, SE ¼, Sec. 28, T49N, R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
026	49 th & Chestnut	x= 365925; y= 4322234	NE ¼, SW ¼, Sec. 27, T49N, R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
027	45 th & Mersington	x= 366823.; y= 4322743	SE ¼, NE ¼, Sec.27, T49N, R33W	Tributary to Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
028	46 th & Norton	x= 366989; y= 4322555	SE ¼, NE ¼, Sec.27, T49N, R33W	Tributary to Brush Creek	Blue River (418) 303(d), MND*	10300101-0105

CSO No.	Description	UTM Coordinates	Legal Description	Receiving Water	First Classified Stream & ID	USGS Basin & Sub-watershed No.
029	51 st Terrace & Brookside	x= 36290; y= 4321676	NE ¼, NW ¼, Sec.32, T49N, R33W	Tributary to Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
030	4200 Brush Creek	x= 363569; y= 4322274	NE ¼, SE ¼, Sec. 29, T49N, R33W	Brush Creek	Blue River (418) 303(d), MND*	10300101-0105
031	Gardner Ave at MO River	x= 371070; y= 4330967	NW ¼, NW ¼, Sec. 31, T50N, R32W	Blue River	Blue River (417) 303(d), MND*	10300101-0106
032	Belmont Ave & Belmont Blvd	x= 370454; y= 4329991	NE ¼, SE ¼, Sec. 36, T50N, R33W	Blue River	Blue River (417) 303(d), MND*	10300101-0106
033	Wilson & Bennington	x= 370335; y= 4330085	NE ¼, SE ¼, Sec. 36, T50N, R33W	Blue River	Blue River (417) 303(d), MND*	10300101-0106
034	8 th Street at Blue River	x= 370440; y= 4329127	NE ¼, NE ¼, Sec. 01, T49N, R33W	Blue River	Blue River (417) 303(d), MND*	10300101-0106
035	Truman Road at Blue River	x= 370809; y= 4328196	SW ¼, SW ¼, Sec.06, T49N, R32W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
036	18 th Street at Blue River	x= 370437; y= 4327524	NE ¼, NE ¼, Sec. 12, T49N, R33W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
037	35 th Street at Blue River	x= 369093; y= 4324740	SW ¼, SW ¼, Sec. 13, T49N, R33W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
038	37 th & White	x= 368989; y= 4324279	NW ¼, NW ¼, Sec. 24, T49N, R33W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
039	33 rd Terrace & Topping	x= 369044; y= 4324679	NW ¼, NW ¼, Sec. 24, T49N, R33W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
040	41 st & Elmwood	x= 367486 ; y =4323533	SW ¼, SW ¼, Sec. 23, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
041	40 th & Cleveland	x= 366744; y= 4323731	NE ¼, SE ¼, Sec. 22, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
042	40 th Terrace & Monroe	x= 366657; y= 4323810	NW ¼, SE ¼, Sec. 22, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
043	40 th Terrace & Cleveland	x= 366816; y= 4323699	NW ¼, SE ¼, Sec. 22, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
044	40 th Terrace & Myrtle	x= 366910; y= 4323605	NW ¼, SE ¼, Sec. 22, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
045	41 st & Myrtle	x= 366958; y= 4323573	SE ¼, SE ¼, Sec. 22, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
046	41 st Norton	x= 367054; y= 4323572	SE ¼, SE ¼, Sec.22, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
047	41 st & Jackson	x= 367173; y= 4323508	SW ¼, SW ¼, Sec.23, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
048	45 th Terrace & Lister	x= 367833; y= 4322695	SE ¼, NW ¼, Sec.26, T49N, R33W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
049	41 st & Spruce	x= 367270; y= 4323537	SW ¼, SW ¼, Sec.23, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
050	Spruce & Towers Road	x= 367246; y=4323538	SW ¼, SW ¼, Sec.23, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
051	Skiles & Winner Road	x= 370785; y= 4329708	SW ¼, SW ¼, Sec.31, T50N, R32W	Blue River	Blue River (417) 303(d), MND*	10300101-0106

CSO No.	Description	UTM Coordinates	Legal Description	Receiving Water	First Classified Stream & ID	USGS Basin & Sub-watershed No.
052	Truman & Crystal	x= 370833; y= 4328196	SW ¼, SW ¼, Sec.06, T49N, R32 W	Blue River	Blue River (418) 303(d), MND*	10300101-0106
053	12 th & Frisco Railroad	x= 367672; y= 4328781	SW ¼, NW ¼, Sec.02, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
054	17 th & Belmont	x= 369238; y= 4327667	NW ¼, NW ¼, Sec.12, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
055	I-70 & White	x= 369060; y= 4325666	SW ¼, NW ¼, Sec.13, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0106
056	55 th & Elmwood	x= 367607; y= 4320725	NE ¼, SW ¼, Sec.35, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0105
057	76 th & Indiana	x= 365926; y= 4316622	NW ¼, NW ¼, Sec.15, T48N, R33W	Unnamed Tributary to the Blue River	Blue River (419) 303(d), MND*	10300101-0105
058	83 rd Terrace & McGee	x= 362559; y= 4315384	NE ¼, NW ¼, Sec.20, T48N, R33W	Dyke Branch	Blue River (419) 303(d), MND*	10300101-0105
059	85 th & Tracy	x= 363680; y= 4314810	SW ¼, NW ¼, Sec.21, T48N, R33W	Dyke Branch	Blue River (419) 303(d), MND*	10300101-0105
060	58 th & Kensington	x= 367165; y= 4320209	SW ¼, SW ¼, Sec.35, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0105
061	58 th & Elmwood	x= 367309; y= 4320144	SW ¼, SW ¼, Sec.35, T49N, R33W	Unnamed Tributary to the Blue River	Blue River (418) 303(d), MND*	10300101-0105
062	63 rd Terrace & Elmwood	x= 367459; y= 4319093	NE ¼, SW ¼, Sec.02, T48N, R33W	Unnamed Tributary to the Blue River	Blue River (419) 303(d), MND*	10300101-0105
063	69 th & Cleveland	x= 366405; y= 4317939	SW ¼, NE ¼, Sec.10, T48N, R33W	Unnamed Tributary to the Blue River	Blue River (419) 303(d), MND*	10300101-0105
064	Gregory & Mersington	x= 366594; y= 4317690	SE ¼, NE ¼, Sec. 10, T48N, R33W	Unnamed Tributary to the Blue River	Blue River (419) 303(d), MND*	10300101-0105
065	81 st Terrace & Campbell	x= 363471; y= 4315214	SE ¼, NE ¼, Sec. 20, T48N, R33W	Unnamed Tributary to the Blue River	Blue River (419) 303(d), MND*	10300101-0105
066	84 th & Main	x= 362269; y= 4315328	NE ¼, NW ¼, Sec.20, T48N, R33W	Dyke Branch	Blue River (419) 303(d), MND*	10300101-0105
067	83 rd & Main	x= 362270; y= 4315359	NE ¼, NW ¼, Sec.20, T48N, R33W	Dyke Branch	Blue River (419) 303(d), MND*	10300101-0105
068	85 th & Flora	x= 363989; y= 4314558	SE ¼, NW ¼, Sec. 21, T48N, R33W	Dyke Branch	Blue River (419) 303(d), MND*	10300101-0105
069	77 th & Prospect	x= 365126; y= 4316296	SW ¼, NW ¼, Sec. 15, T48N, R33W	Unnamed Tributary to the Blue River	Blue River (419) 303(d), MND*	10300101-0105
070	Meyer at Blue River	x= 367834; y= 4318470	SW ¼, SE ¼, Sec. 02, T48N, R33W	Blue River	Blue River (419) 303(d), MND*	10300101-0105
071	Delaware Street at MO River	x= 362918; y= 4330458	Sec. 32, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
072	Main Street at MO River	x= 363403; y= 4330727	Sec. 32, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
073	Gillis Avenue at MO River	x= 363985; y= 4331025	Sec. 32, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
074	Lydia Avenue at MO River	x= 364421; y= 4331264	Sec. 33, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
075	Prospect Avenue at MO River	x= 365973; y= 4332070	Sec. 28, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301

CSO No.	Description	UTM Coordinates	Legal Description	Receiving Water	First Classified Stream & ID	USGS Basin & Sub-watershed No.
076	Chouteau Trafficway at MO River	x= 367752; y= 4333613	Sec.18, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
077	Holmes Street at MO River	x= 363597; y= 4330816	Sec. 32, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
078	Lydia Avenue at MO River	x= 364445; y= 4331264	Sec. 33, T50N, R33W	Missouri River	Missouri River (356) (303(d))	10300101-0301
079	51 st & Indiana	x= 366275; y= 4321611	NW ¼, NE ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
080	53 rd & Walrond	x= 366014; y= 4321242	SE ¼, NW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
081	53 rd Terrace & Walrond	x=366003; y= 4321153	SE ¼, NW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
082	55 th & Indiana	x= 366022; y= 4320845	SE ¼, NW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
083	57 th & Agnes	x= 365919; y=4320446	NW ¼, SW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
084	58 th & S. Benton	x= 365608; y= 4320256	SW ¼, SW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
085	59 th & Prospect	x= 365528; y= 4320082	SW ¼, SW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
086	60 th Terrace & Montgall	x= 365476; y= 4319723	NW ¼, NW ¼, Sec. 03, T48N, R33W	Unnamed Tributary to Mill Creek	Blue River (418) 303(d), MND*	10300101-0105
087	60 th & Prospect	x= 365306; y= 4319889	NW ¼, NW ¼, Sec. 03, T48N, R33W	Unnamed Tributary to Mill Creek	Blue River (418) 303(d), MND*	10300101-0105
088	60 th Terrace & Wabash	x= 365206; y= 4319805	NE ¼, NE ¼, Sec.04, T48N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
089	61 st Terrace & Park	x= 365063; y= 4319628	SE ¼, NE ¼, Sec.04, T48N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
090	63 rd & Highland	x= 364342; y= 4319399	SE¼, NW ¼, Sec. 04, T48N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
091	59 th & Bellefontaine	x= 365794; y= 4320201	SW ¼, SW ¼, Sec.34 , T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
092	Gregory & Tracy	x= 363780; y= 4317799	SW ¼, NW ¼, Sec.09, T48N, R33W	Unnamed Tributary to Mill Creek	Blue River (418) 303(d), MND*	10300101-0105
093	Gregory & Tracy	x= 363804; y= 4317799	SW ¼, NW ¼, Sec.09, T48N, R33W	Unnamed Tributary to Mill Creek	Blue River (418) 303(d), MND*	10300101-0105
094	69 th Terrace & Lydia	x= 363987; y= 4318081	SE ¼, NW ¼, Sec. 09, T48N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
095	69 th & Flora	x= 364154; y= 4318533	NE ¼, NW ¼, Sec.09, T48N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
096	68 th & Woodland	x= 364368; y= 4318375	NW ¼, NW ¼, Sec.09, T48N, R33W	Unnamed Tributary to Mill Creek	Blue River (418) 303(d), MND*	10300101-0105
097	66 th Terrace & Flora	x= 364156; y= 4318687	SE ¼, SW ¼, Sec.04, T48N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
098	66 th Terrace & Woodland	x= 364434; y= 4318674	SW¼, SE¼, Sec. 04, T48N, R33W	Unnamed Tributary to Mill Creek	Blue River (418) 303(d), MND*	10300101-0105
099	56 th & Bellefontaine	x= 365970; y= 4320630	NE ¼, SW ¼, Sec. 34, T49N, R33W	Townfork (Mill) Creek	Blue River (418) 303(d), MND*	10300101-0105
100	7300 Hawthorne Road	x= 370643; y= 4329802	SE ¼, SE ¼, Sec.36, T50N, R33W	Blue River	Blue River (417) 303(d), MND*	10300101-0106

*MND= Metropolitan No-Discharge Stream per 10 CSR 20-7.031(6) and Table F

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0024911
KANSAS CITY-BLUE RIVER WWTF

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit. This Factsheet is for a Major .

Part I – Facility Information

Facility Type: POTW
Facility SIC Code(s): 4952

Facility Description:

Blue River Wastewater Treatment Plant is the largest of the Kansas City treatment plants. The treatment plant has a design flow of 105 MGD with an average flow of 81.0 MGD. The preliminary treatment includes barscreens, and grit removal. Secondary treatment is high rate trickling filters with gravity clarifiers. The permit contains a schedule of compliance to meet disinfection requirements by December 31, 2013. Primary sludge is incinerated. Secondary sludge is combined with all sludge pumped from Birmingham WWTP and Westside WWTP, thickened and anaerobically digested. The digested sludge is then land applied. The facility is also covered under a department air permit for its incinerator.

Outfalls #002-004 are stormwater outfalls for the facility. The facility is required to develop a Stormwater Pollution Prevention Plan to address stormwater flows at the facility. Outfall #005 was an emergency discharge to Blue River that is not authorized to discharge. Outfall #005 was eliminated in the previous permit cycle. Discharges from Outfall #005 are considered bypasses and are subject to 40 CFR 122.41(m).

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation? - Yes:
Oil and Grease effluent limits were reduced to reflect the Water Quality Standard of monthly average on 10 mg/L.

Background concentrations for the Water Quality Based Effluent Limits are based on the average of the USGS water quality data from gaging station 06818000 in St. Joseph from January 1995- November 2010 and water quality data collected by MDNR close to the Blue River confluence with the Missouri River.

A reasonable potential analysis was conducted and as a result of the RPA, there is reasonable potential for cadmium, copper, and phenol to exceed water quality based effluent limits. The reasonable potential analysis was conducted against the Aquatic Life Criteria and the Drinking Water Criteria, as the Missouri River has both beneficial uses. Effluent limits based on drinking water criteria were developed based on EPA's Technical Support Document for Human Health Protection (EPA/505/2-90-001/Section 5.4.4).

Application Date: 06/08/2010
Expiration Date: 12/29/2010
Last Inspection: 08/28/2010 In Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	162.75	secondary	Municipal, domestic	0.0
002	varies	BMPs	stormwater runoff from plant	~0.73
003	varies	BMPs	stormwater runoff from plant	~0.80
004	varies	BMPs	stormwater runoff from plant	~0.81
005		Eliminated	Emergency Overflow	0.0

Outfall #001 – Main Facility Outfall- SIC #4952

Legal Description: NE ¼, SW ¼, Sec. 15, T50N, R32W

UTM Coordinates: x = 371700; y= 4333636

Receiving Stream: Missouri River (P)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall #002 – Storm water runoff from wastewater facility – SIC #4952

Legal Description: NW ¼, SW ¼, Sec. 22, T50N, R32W, Jackson County

Latitude/Longitude: 39.1325/-94.492

UTM Coordinates: x= 371015; y= 4332544

Receiving Stream: Tributary to Missouri River (U)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall #003 – Storm water runoff from wastewater facility – SIC #4952

Legal Description: NW ¼, SW ¼, Sec. 22, T50N, R32W, Jackson County

Latitude/Longitude: 39.13233/-94.4932

UTM Coordinates: x= 371015; y= 4332544

Receiving Stream: Tributary to Missouri River (U)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall #004 – Storm water runoff from wastewater facility – SIC #4952

Legal Description: NW ¼, SW ¼, Sec. 22, T50N, R32W, Jackson County

Latitude/Longitude: 39.1333/-94.4933

UTM Coordinates: x= 371015; y= 4332544

Receiving Stream: Tributary to Missouri River (U)

First Classified Stream and ID: Missouri River (P) (00356) (303(d))

USGS Basin & Sub-watershed No.: (10300101-0301)

Outfall # 005 – Emergency outfall- ELIMINATED

Discharges from this outfall is no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(ii).

Receiving Water Body's Water Quality & Facility Performance History:

Outfall 001: Ammonia concentration missing February 2007.

TSS exceedances: February & April 2006; December 2008; April, May, August & September 2009; February, March & April 2010

Outfall 002: Failure to submit DMRs, March 2008

Outfall 003: Settleable Solids exceedance September 2009. Failure to submit DMRs, March 2008

Outfall 004: Oil and Grease exceedance March 2007. Failure to submit DMRs, March 2008

Comments:

A mixing zone study was conducted by the U.S. EPA on February 13-14, 2008. The results of this study were used to develop final effluent limits in this permit. See Receiving Stream Results for more information on applicable mixing zones and zones of initial dilution for Blue River.

Kansas City will be submitting annual reports by March 31 documenting the implementation of the Nine Minimum Controls, efforts to implement the Overflow Control Plan, the measures taken under the Capacity, Management, Operations and Maintenance Plan, the pretreatment activities, and the activities undertaken through its Sewer Construction Authority. The Overflow Control Plan that was memorialized by a Consent Decree that was signed September 27, 2010. The requirements and the plan are further discussed in Appendix C.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Owned or operated by or for: Municipalities

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/or fifty (50) or more service connections. This facility currently requires an operator with an A Certification Level. Please see **Appendix A - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified. The listing of the operator only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

Operator's Name: Kurt Bordewick
 Certification Number: 8492
 Certification Level: A

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]:
 Metropolitan No-Discharge [10 CSR 20-7.015(5)]: - See Appendix C for more information
 All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Missouri River	P	00356	AQL, DWS, IND, IRR, LWV, SCR, WBC(B)***	10300101	Central Plains/ Blackwater/Lamine
Tributaries to Missouri River	U	--	General Criteria		

* - Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Drinking Water Supply (DWS), Groundwater (GRW), Industrial (IND), Irrigation (IRR), Livestock & Wildlife Watering (LWW), Secondary Contact Recreation (SCR), Whole Body Contact Recreation (WBC).

** - Ecological Drainage Unit

*** - UAA has not been conducted. Comments received during public notice to retain the whole body contact uses.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)	
	7Q10	30Q10
Missouri River (P)-summer	11,674	28,823
Missouri River (P)-winter	11,674	17,248

The flows and level of the Missouri River are controlled by the US Army Corps of Engineers and is subject to human interference. The critical low flow values for the Missouri River were calculated by the U.S. EPA, at a 30Q10 of 28,823 cfs in the summer and 17,248 cfs in the winter (applicable to Ammonia) a 7Q10 of 11,674 cfs (applicable to all other parameters).

MIXING CONSIDERATIONS:

A mixing zone study was conducted by the U.S. EPA on February 13-14, 2008. The results of this study were used to develop final effluent limits in this permit.

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4BIII(A)]		ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4BIII(B)]	
7Q10	30Q10	7Q10	30Q10
2,159	3,190	200.8	589

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable : The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44. When using the results of the reasonable potential analysis, the average monthly limit for Cyanide, Amenable to Chlorination is higher.

ANTIDEGRADATION:

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary. Total Residual Chlorine effluent limits are not subject to antidegradation because the water quality based effluent limits were determined by the permit writer. When the facility applies for their construction permit for the disinfection, the facility will submit the No Degradation Form. The proposed effluent limits for total residual chlorine are below the method detection limit.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

Kansas City was designated a 208 area wide management in June 1975. The Missouri Clean Water Commission certified Kansas City's 208 plan in February 1979. The area was designated the Mid-America Region. In the Kansas City Area, the Mid-America Regional Council exists today to help with planning in Clay, Jackson, Platte, Ray, and Cass Counties in Missouri and Leavenworth, Wyandotte, Johnson, and Miami Counties in Kansas (<http://www.marc.org/>).

BIOSOLIDS, SLUDGE, & SEWAGE SLUDGE:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Permittee land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan. The Permittee incinerates or dewateres and sends to a landfill the primary sludge. Secondary sludge is combined with sludge from Birmingham WWTP (MO-0049531) and Westside WWTP (MO-0024929), thickened and anaerobically digested. Digested sludge is pumped to the Birmingham Land Application Facility for land application.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Applicable : The permittee/facility is currently under enforcement action due to overflows and sanitary sewer bypasses in Kansas City.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through. Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Applicable : This permittee has an approved pretreatment program in accordance with the requirements of [40 CSR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved program. The facility was inspected July 2009 by the state and in January 2010 EPA conducted an audit of the pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Applicable : A RPA was conducted on appropriate parameters. Based on the results of the RPA, the following parameters have a schedule of compliance to meet WQBELs: Total Recoverable Cadmium, Total Recoverable Copper and Phenol. For more information on the RPA, please see **APPENDIX B: RPA RESULTS**.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

Applicable : Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSOs), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:

Sanitary Sewer Systems (SSSs) are municipal wastewater collection systems that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSO is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater). A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSO’s are bypassing under state regulation and should not be confused with the federal definition of bypass. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSO is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

In accordance with 40 CFR Part 122.41(e), the permittee is required to develop and/or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance. In addition, the Department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

At this time, the Department recommends the US EPA’s Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002). The CMOM identifies some of the criteria used by the EPA to evaluate a collection system’s management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

Applicable : This facility had one (1) previously permitted discharging outfalls that contained partially treated effluent. Discharging from Outfall #005 is no longer authorized. Kansas City developed an Overflow Control Plan, which encompasses the Long Term Control Plan required for Combined Sewer Systems along with plans for handling and decreasing Sanitary Sewer Overflows, bypasses and inflow and infiltration. Kansas City and its satellite communities has approximately 1,150 miles of sanitary sewer and 1,061 miles of combined sewers. Blue River Wastewater Treatment Plant contains approximately 889 miles of sanitary sewers and 851 miles of combined sewers. [Overflow Control Plan, Chapter 4]

In the Overflow Control Plan that was memorialized in the Consent Decree with US EPA and US Department of Justice, a Capacity, Management, Operation, and Maintenance Plan was developed. The plan is incorporated as Appendix C of the Consent Decree and is available on Kansas City's website.

SEWER EXTENSION AUTHORITY:

In accordance with Missouri Regulation [10 CSR 20-6.010(6)(A)], persons who construct sewer tributaries to a system operating by one (1) of the Continuing Authorities (CA) listed in [10 CSR 20-6.010(3)(B)1 or 2] will be exempt from the construction permit requirements for sewers if the CA administers a permit program which has been approved by the Department.

In accordance with 10 CSR 20-6.010(6)(A)2., approvals may be granted for a period of up to five (5) years in the permittee's operating permit. Therefore, the permittee must obtain approval for their Sewer Extension Authority every five (5) years, which should coincide with their operating permit renewal.

Applicable : The permittee has received the necessary approval to construct sewer tributaries in accordance with 10 CSR 20-6.010(6)(A). The department granted the initial Sewer Extension Authority in 1991. As part of this permit, Kansas City is required to annually report activities undertaken with the Sewer Extension Authority.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable : The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The schedule of compliance is to allow the facility time to get a construction permit to add disinfection by December 2013 and to have time to meet the cadmium, copper, and phenol effluent limits.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Applicable : A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

VARIANCE:

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable : This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable : Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

- Where C = downstream concentration
- C_s = upstream concentration
- Q_s = upstream flow
- C_e = effluent concentration
- Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable : A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable : Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. **WET test will be required by all facilities meeting the following criteria:**

- Facility is a designated Major.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable : The Missouri River is listed on the 2010 Missouri 303(d) List for bacteria.

- This facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s). The facility is under US EPA Consent Decree to add disinfection to the treatment process by December 31, 2013. The TMDL for the Missouri River for bacteria is tentatively scheduled for 2011. EPA approved a TMDL for chlordane and poly-chlorinated biphenyls in November 2006. The facility is not expected to contribute chlordane or poly-chlorinated biphenyls. See Appendix C for more information on CSOs discharging to the Missouri River.

Applicable : The Blue River is listed on the 2010 Missouri 303(d) List for bacteria.

- The Combined Sewer Overflows located on or on tributaries to the Blue River are considered to be a source of or has the potential to contribute to the above listed pollutant(s). The facility is under US EPA Consent Decree to address the CSOs. Projects that will be started during this permit cycle to address the CSOs include increasing storage, sewer separation, sewer work, work on pump stations, and other inflow and infiltration projects. For a complete list of the projects and the timelines associated with the CSOs, please see the final consent decree on Kansas City's website, <http://www.kcmo.org/CKCMO/Depts/WaterServices/index.htm>. Appendix C contains more information on contributions to Blue River by the CSOs.

Part V – Effluent Limits Determination

Outfall #001 – Main Facility Outfall

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supercedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	N	
BOD ₅	MG/L	2		60	40	N	
TSS	MG/L	2		60	40	N	
OIL & GREASE	MG/L		15		10	Y	20/15
pH	SU	2	**		**	Y	6.0-9.0
TEMPERATURE	°C	9	*		*	N	
AMMONIA AS N (APR 1 – SEPT 30)	MG/L	3,5	45.1		17.3	N	
AMMONIA AS N (OCT 1 – MAR 31)	MG/L	3,5	70.1		27.1	N	
CYANIDE, AMENABLE TO CHLORINATION	µg/L	2,3	44.8		19.3	Y	44.5/16.1
FLUORIDE	MG/L	2,9	*		*	N	
TOTAL NITROGEN	MG/L	9	*		*	N	
NITRATES, NITRITES	MG/L	2,9	*		*	N	
TOTAL PHOSPHORUS	MG/L	9	*		*	N	
ARSENIC, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
CADMIUM, TOTAL RECOVERABLE	µg/L	2,3	5.2		2.9	Y	*/*
CHROMIUM (III), TOTAL RECOVERABLE	µg/L	2,3	*		*	Y	TOTAL CHROMIUM
CHROMIUM (VI), TOTAL RECOVERABLE	µg/L	2,3	*		*	Y	TOTAL CHROMIUM
COPPER, TOTAL RECOVERABLE	µg/L	2,3	88		39	Y	*/*
LEAD, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
MANGANESE, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
MERCURY, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
NICKEL, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
PHENOL	µg/L	2,3	458		100	Y	*/*
THALLIUM, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
ZINC, TOTAL RECOVERABLE	µg/L	2,3	*		*	N	
ESCHERICHIA COLI	***	1,2,3		1030	206	Y	****
CHLORINE, TOTAL RESIDUAL	MG/L	3	(0.13 ML)		(0.13 ML)	Y	****
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only.

** - For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

*** - # of colonies/100mL; the Monthly Average for *E. coli* is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. 10 CSR 20-7.015(2)(A)3 B states trickling filters shall have an effluent limit less than or equal to 45 mg/L for monthly average and 65 mg/L for weekly average. 10 CSR 20-7.015(2)(A)3D allows the department to set more stringent effluent limits based on the facilities performance. In a previous permit, the department determined a weekly average of 60 mg/L and a monthly average of 40 mg/L based on Blue River's performance. Therefore, effluent limitations were retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**. Influent monitoring is required to determine percent removal. Weekly average = 60 mg/L; Monthly average = 40 mg/L.
- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. 10 CSR 20-7.015(2)(A)3 B states trickling filters shall have an effluent limit less than or equal to 45 mg/L for monthly average and 65 mg/L for weekly average. 10 CSR 20-7.015(2)(A)3D allows the department to set more stringent effluent limits based on the facilities performance. In a previous permit, the department determined a weekly average of 60 mg/L and a monthly average of 40 mg/L based on Blue River's performance. Therefore, effluent limitations were retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**. Influent monitoring is required to determine percent removal. Weekly average = 60 mg/L; Monthly average = 40 mg/L.
- **pH.** pH shall be maintained in the range from six and half to nine (6.5– 9.0) standard units [10 CSR 20-7.015 (2)(A)2].
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life. Previous permit contained daily maximum of 20 mg/L and monthly average of 15 mg/L. Effluent limits were reduced to meet the Water Quality Standard of 10 mg/L in 10 CSR 20-7.031 Table A. Facility should be able to meet the lower effluent limits without a schedule of compliance. 10 mg/L monthly average, 15 mg/L daily maximum.
- **Temperature.** Monitoring requirement due to the toxicity of Ammonia varies by temperature.
- **Total Ammonia Nitrogen.** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream's Water Quality. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] Background total ammonia nitrogen = 0.1 mg/L. pH at the edge of the mixing zone is 8.1 (that of the Missouri River). pH at the edge of the zone of initial dilution 7.66.

Summer (April 1- September 30)

Chronic WLA: $C_e = ((162.75 + 3,191)1.00 - (3,191 * 0.1))/162.75$
 $C_e = 18.6 \text{ mg/L}$

Acute WLA: $C_e = ((162.75 + 589)15.44 - (589 * 0.1))/162.75$
 $C_e = 70.1 \text{ mg/L}$

$LTA_c = 18.6 \text{ mg/L} (0.780) = 14.5 \text{ mg/L}$	[CV = 0.6, 99 th Percentile, 30 day avg.]
$LTA_a = 70.1 \text{ mg/L} (0.321) = 25.1 \text{ mg/L}$	[CV = 0.6, 99 th Percentile]
$MDL = 14.5 \text{ mg/L} (3.11) = 45.1 \text{ mg/L}$	[CV = 0.6, 99 th Percentile]
$AML = 14.5 \text{ mg/L} (1.19) = 17.3 \text{ mg/L}$	[CV = 0.6, 95 th Percentile, n = 30]

Winter (October 1- March 31)

Chronic WLA: $C_e = ((162.75 + 3,191)2.1 - (3,191 * 0.1))/162.75$
 $C_e = 41.3 \text{ mg/L}$

Acute WLA: $C_e = ((162.75 + 589)15.44 - (589 * 0.1))/162.75$
 $C_e = 70.1 \text{ mg/L}$

$LTA_c = 41.3 \text{ mg/L} (0.780) = 32.2 \text{ mg/L}$ [CV = 0.6, 99th Percentile, 30 day avg.]
 $LTA_a = 70.1 \text{ mg/L} (0.321) = \mathbf{22.8 \text{ mg/L}}$ [CV = 0.6, 99th Percentile]
 $MDL = 22.8 \text{ mg/L} (3.11) = 70.1 \text{ mg/L}$ [CV = 0.6, 99th Percentile]
 $AML = 22.8 \text{ mg/L} (1.19) = 27.1 \text{ mg/L}$ [CV = 0.6, 95th Percentile, n = 30]

Season	MDL (mg/L)	AML (mg/L)
Summer	45.1	17.3
Winter	70.1	27.1

- Escherichia coli (E. coli).** Monthly average of 206 per 100 ml as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). 40 CFR 131.xxx requires publicly owned treatment plants to have weekly limits, thus the average weekly limit is 1030 colonies per 100 mL. In discussions with the facility, the facility plans to use chlorine for disinfection.
- Total Residual Chlorine (TRC).** In discussions with Kansas City, the City is planning on using chlorine for disinfection. Water Quality Based Effluent limits are calculated below. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA: $C_e = ((162.75 + 2,159)10 - (2,159 * 0.0))/162.75$
 $C_e = 142.66 \text{ µg/L}$

Acute WLA: $C_e = ((162.75 + 200.8)19 - (200.8 * 0.0))/162.75$
 $C_e = 42.44 \text{ µg/L}$

$LTA_c = 142.66 (0.527) = 75.18 \text{ µg/L}$ [CV = 0.6, 99th Percentile]
 $LTA_a = 42.44 (0.321) = \mathbf{13.62 \text{ µg/L}}$ [CV = 0.6, 99th Percentile]

$MDL = 13.62 (3.11) = 42 \text{ µg/L}$ [CV = 0.6, 99th Percentile]
 $AML = 13.62 (1.55) = 21 \text{ µg/L}$ [CV = 0.6, 95th Percentile, n = 4]

The effluent limitation above is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined that current acceptable ML for total residual chlorine to be 0.13 mg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. Standard compliance language for TRC, including the minimum level (ML), is included in the permit as Note 4.

- Cyanide, Amenable to Chlorination.** Reasonable potential analysis conducted on previous permit. Protection of Aquatic Life CCC = 5 µg/L, CMC = 22 µg/L [10 CSR 20-7.031, Table A]. Background cyanide for Missouri River = 3.5 µg/L.

Chronic WLA: $C_e = ((162.75 + 2159)5 - (2,159 * 3.5))/162.75$
 $C_e = 24.9 \text{ µg/L}$

Acute WLA: $C_e = ((162.75 + 200.8)22 - (200.8 * 3.5))/162.75$
 $C_e = 44.8 \text{ µg/L}$

$LTA_c = 24.9 \text{ µg/L} (0.452) = 11.25 \text{ µg/L}$ [CV = 0.77, 99th Percentile]
 $LTA_a = 44.8 \text{ µg/L} (0.259) = 11.59 \text{ µg/L}$ [CV = 0.77, 99th Percentile]

$MDL = 11.25 \text{ µg/L} * 3.87 = 43.5 \text{ µg/L}$ [CV = 0.77, 99th Percentile]
 $AML = 11.25 \text{ µg/L} * 1.72 = 19.3 \text{ µg/L}$ [CV = 0.77, 95th Percentile, n = 4]

- **Phenol.** Previous permit contained quarterly monitoring for phenols. When conducting the Reasonable Potential Analysis, there was potential present to exceed the Drinking Water Standard for phenol. Drinking Water Standard = 100 µg/L.
 DWS=WLA= 100 µg/L
 AML=WLA= 100 µg/L [Per EPA’s TSD Section 5.4.4]
 MDL= 100 (4.582) = 458 µg/L [CV = 1.834, 95th Percentile]
- **Total Nitrogen, Total Phosphorus, Fluoride, Nitrates+ Nitrites.** Monitoring only to verify the efficacy of pretreatment program. No reasonable potential exists to exceed Water Quality Standards
- **Total Recoverable Arsenic, Lead, Manganese, Nickel, Thallium, Zinc.** Monitoring only to verify the efficacy of pretreatment program. No reasonable potential exists to exceed Water Quality Standards
- **Chromium III, Total Recoverable.** Previous permit contained Total Chromium; however Missouri Water Quality Standards separates Chromium III and Chromium VI. Monitoring only to verify the efficacy of pretreatment program
- **Chromium VI, Total Dissolved.** Previous permit contained Total Chromium; however Missouri Water Quality Standards separates Chromium III and Chromium VI. Monitoring only to verify the efficacy of pretreatment program and to determine if reasonable potential exists to exceed Water Quality Standards.
- **Hardness, as CaCO₃.** Monitoring requirement only. Cadmium and Copper are hardness dependant

Metals Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the “Technical Support Document For Water Quality-based Toxic Controls” (EPA/505/2-90-001) and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 250 mg/L is used in the conversion below. Hardness determined from Water Quality Data 1995-2009 from USGS Gaging Station in St. Joseph, MO and compared with USGS gaging stations downstream of Blue River WWTF.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.896	0.861
Copper	0.960	0.960

Conversion factors for Cd and Cu are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness =250 mg/L.

- **Cadmium, Total Recoverable.** Previous permit contained monitoring only. When conducting the Reasonable Potential Analysis, the potential exist to exceed Water Quality Limits. Protection of Aquatic Life Chronic Criteria = 0.54 µg/L, Acute Criteria = 14.50 µg/L.

Chronic: $0.54/0.861 = 0.60 \mu\text{g/L}$
 Acute: $14.50/0.896 = 16.2 \mu\text{g/L}$

Chronic WLA: $C_e = ((162.75 + 2159)0.60 - (2,159 * 0.25))/162.75$
 $C_e = 5.24 \mu\text{g/L}$

Acute WLA: $C_e = ((162.75 + 200.8)180 - (200.8 * 0.25))/162.75$
 $C_e = 35.88 \mu\text{g/L}$

$LTA_c = 5.24 (0.598) = 3.13 \mu\text{g/L}$	[CV = 0.472, 99 th Percentile]
$LTA_a = 35.88 (0.390) = 2.042 \mu\text{g/L}$	[CV = 0.472, 99 th Percentile]
$MDL = 2.042 (2.57) = 5.2 \mu\text{g/L}$	[CV = 0.472, 99 th Percentile]
$AML = 2.042 (1.43) = 2.9 \mu\text{g/L}$	[CV = 0.472, 95 th Percentile, n = 4]

- **Copper, Total Recoverable.** Previous permit contained monitoring only. When conducting the Reasonable Potential Analysis, the potential exist to exceed Water Quality Limits. Protection of Aquatic Life Chronic Criteria = 23.85 $\mu\text{g/L}$, Acute Criteria = 39.6 $\mu\text{g/L}$.

Chronic: $23.85/0.960 = 24.8 \mu\text{g/L}$
 Acute: $39.6/0.960 = 41.2 \mu\text{g/L}$

Chronic WLA: $C_e = ((162.75 + 2159)24.8 - (2,159 * 3.1))/162.75$
 $C_e = 312.67 \mu\text{g/L}$

Acute WLA: $C_e = ((162.75 + 200.8)41.2 - (200.8 * 3.1))/162.75$
 $C_e = 88.22 \mu\text{g/L}$

$LTA_c = 312.67 (0.456) = 142.63 \mu\text{g/L}$	[CV = 0.758, 99 th Percentile]
$LTA_a = 88.22 (0.262) = 23.10 \mu\text{g/L}$	[CV = 0.758, 99 th Percentile]
$MDL = 23.10 (3.82) = 88.2 \mu\text{g/L}$	[CV = 0.758, 99 th Percentile]
$AML = 23.10 (1.71) = 39.4 \mu\text{g/L}$	[CV = 0.758, 95 th Percentile, n = 4]

- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

- Acute
 - No less than ONCE/YEAR:**
 - Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
 - Facility has Water Quality-based effluent limitations for toxic substances (other than NH_3).

WET testing will occur in January and August annually. The Allowable Effluent Concentration for Blue River is 45%, which is based on the results of the EPA Mixing Zone Study. WET test will be run at the default AECS of 100%, 50%, 25%, 12.5% and 6.25%.

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit, except for cadmium, copper and phenol which have been increased to monthly monitoring. E. Coli and TRC sampling and reporting were added, with E. Coli sampling required once per weekday during the recreational season and TRC sampling required once per week.

Outfalls #002-004: Stormwater Outfalls

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	N	
PRECIPITATION	INCHES	9	*		*	N	
BOD ₅	MG/L	9	*		*	N	
SETTLABLE SOLIDS	MG/L	9	1.5		1.0	N	
pH	SU	2	**		**	Y	6.0-9.0
OIL AND GREASE	MG/L	2	15		10	N	
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only.

** - pH shall not be averaged. pH shall be maintained between 6.5 and 9.0 Standard Units.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALLS #002-004— DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **Settleable Solids** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.** Daily Maximum = 1.5 mL/L/hr; Monthly Average =1.0 mL/L/hr.
- **pH.** pH shall be maintained in the range from six and half to nine (6.5– 9.0) standard units [10 CSR 20-7.015 (2)(A)2.].
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit. Once per quarter sampling

PART VI: Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Applicable : 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**.

Finding of affordability - 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.

The department is hereby making a finding based from the following facts:

- 1) The applicant states that the terms and conditions are affordable for the community. OR; This permit action was taken at the discretion of the facility, therefore the department assumes the applicant already determined it is affordable;
- 2) The permit action is taken at the discretion of the system itself (e.g., sewer extension construction permits, or the relocation of an outfall in lieu of otherwise upgrading a system in order to comply with a permit issued prior to July 11, 2011);
- 3) This permit contains no new or expanded terms and conditions;
- 4) The department is not aware of any significant economic impacts this permit would cause on distressed populations;
- 5) No comments indicating such impact were received during the public comment period on the draft permit;
- 6) The department is not aware of any other more cost effective wastewater treatment options that would achieve the required effluent quality;
- 7) The Facility Plan on the construction permit contained an affordability finding;
- 8) The applicant provided increased effluent discharge monitoring costs due to expanded monitoring frequency for certain permit parameters;
- 9) An affordability analysis was performed as part of the Long Term Control Plan on Combined Sewer Overflows;
- 10) An affordability analysis was performed as part of an Antidegradation Review Determination;
- 11) Others: explain.

Section 644.145 of HB 89 as signed by the Governor on July 11, 2011, requires the Department to make a finding of affordability, with respect to the community and its residents, in connection with the issuance of certain permits under the Missouri Clean Water Law. In Overflow Control Plan submitted to the Department, Kansas City conducted a financial analysis that addresses elements of Section 644.145 for the construction and operation of addition of disinfection. The cost associated to constructing and adding chlorine disinfection to Blue River is \$60 million. [OCP, 11-4] The Department has reviewed this submittal and hereby finds that the installation of the proposed upgrade is an affordable option and its community to meet the requirements established by the City's Missouri State Operating Permit.

Part VII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from March 18, 2011 to April 17, 2011. No responses received or responses to the Public Notice of this operating permit do not warrant the modification of effluent limits and/or the terms and conditions of this permit.

DATE OF FACT SHEET: DECEMBER 27, 2010; FEBRUARY 28, 2011; OCTOBER 11, 2011

COMPLETED BY:

LEASUE MEYERS, ENVIRONMENTAL ENGINEER II
PERMITTING AND ENGINEERING SECTION
WATER PROTECTION PROGRAM
LEASUE.MEYERS@DNR.MO.GOV

Part VII – Appendices

APPENDIX A: CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	10
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	10
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	0
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	
PRIMARY TREATMENT		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	
Chemical addition (except chlorine, enzymes)	4	
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Push – button or visual methods for simple test such as pH, Settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	
Land Disposal – low rate	3	
High rate	5	
Overland flow	4	
Total from page ONE (1)	----	36

APPENDIX A: CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	
Raw wastes subject to toxic waste discharge	6	
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	10
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Waste Treatment Polishing Pond	2	
Chemical/physical – without secondary	15	
Chemical/physical – following secondary	10	
Biological or chemical/biological	12	
Carbon regeneration	4	
DISINFECTION		
Chlorination or comparable	5	
Dechlorination	2	
On-site generation of disinfectant (except UV light)	5	
UV light	4	
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	5
Anaerobic digestion	10	10
Aerobic digestion	6	
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	12
Land application	6	
Total from page TWO (2)	----	37
Total from page ONE (1)	---	36
Grand Total	---	73

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX B: RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	1.00	15.44	33.96	1.8774	27	38.4/9.5	0.350		Yes
Total Ammonia as Nitrogen (Winter) mg/L	2.10	15.44	14.41	1.1013	23	24.1/11.0	0.192		Yes
Arsenic, Total Recoverable	na	20.00	na	7.6764	27	18/0.5	1.183	3.43	No
Cadmium, Total Recoverable	16.20	0.60	2.12	0.5431	29	2.5/1.0	0.472	1.772	Yes
Chromium, Total Recoverable					28	6.0/2.5	0.294		Note 1
Copper, Total Recoverable	41.20	24.80	54.58	11.1622	28	50/2.5	0.758	2.362	Yes
Cyanide, Amenable to Chlorination	22.00	5.00	32.30	8.0098	28	28/3.5	0.768	2.423	Yes
Fluoride (mg/L)	na	4.00	na	4.6885	31	1.04/0.22	0.291	1.423	No
Lead, Total Recoverable	351.10	13.70	8.72	5.1267	28	7.5/0.5	0.508	1.863	No
Mercury, Total Recoverable	2.40	0.50	0.45	0.0701	26	1	0	1.0	Note 2
Nickel, Total Recoverable	1238.00	137.6	10.22	10.0348	28	7/2.5	0.32	1.5	No
Phenol	na	100.0	na	71.6939	30	216/1	1.834	4.862	Yes
Thallium, Total Recoverable	na	2	na	0.5818	28	2.5/0.5	0.571	1.994	No
Zinc, Total Recoverable	316.00	316.00	102.26	31.5487	30	72/10	0.475	2.857	No

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

Note 1- Total Chromium has been separated in the permit to reflect the trivalent chromium and hexavalent chromium water quality standards.

Note 2- All Mercury samples were reported less than the detection limit of 2 µg/L.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

APPENDIX C: COMBINED SEWER SYSTEM AND THE LONG TERM CONTROL PLAN

BACKGROUND ON EPA'S CSO POLICY:

Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies. These overflows, called combined sewer overflows (CSOs), contain not only stormwater but also untreated human and industrial waste, toxic materials, and debris. EPA's CSO Control Policy, published April 19, 1994, is the national framework for control of CSOs. The Policy provides guidance on how communities with combined sewer systems can meet Clean Water Act goals in as flexible and cost-effective a manner as possible. In the policy, a city can elect to use a presumptive approach or the demonstration approach. The presumptive approach presumes the CSO controls selected will be sufficient to meet the water quality standards following implementation. That approach requires elimination or capture for treatment of at least 85% by volume of the combined sewage collected on a system-wide annual basis. The demonstration approach that the selected CSO controls, when implemented, will meet water quality standards. Following the implementation of either the presumptive or demonstrative approach, if water quality standards are not being achieved, the permittee must a) perform more work to meet standards b) conduct an use attainability analysis c) request a variance from the standard and/or d) complete a no feasible alternative study. For more information on EPA's CSO policy, please visit EPA's CSO webpage: http://cfpub1.epa.gov/npdes/home.cfm?program_id=5.

CSO's are covered in Missouri Code of Regulations, 10 CSR 20-7.015(10). The regulation states "The permitting and control of CSOs shall conform to EPA's CSO Control Policy,.... Effluent monitoring commitments for CSOs shall be addressed in the long term control plans required under EPA's CSO Control Policy." It is the department's understanding that the monitoring and control of the CSO's is covered under the Long Term Control Plan and the department cannot add anything not in the approved plan until the period of post-construction monitoring is complete or until the plan is revised. In the future the department may incorporate requirements and projects of the approved Long Term Control Plan into the permit.

BACKGROUND ON KANSAS CITY'S CSO'S:

Kansas City was required to develop a Long Term Control Plan under the previous operating permit to address CSOs in accordance with EPA's 1994 CSO policy, Section 402(q) of the federal Clean Water Act, 33 USCA§ 1342(q) and 10 CSR 20-7.015(10). For Kansas City, MO as a whole, there are approximately 90 active CSO locations, which are all documented in the Long Term Control Plan (LTCP), Table 5-3. In a typical year, the overflow volume from the CSO's is 6.4 billion gallons. The majority of the CSOs in Kansas City discharge into Blue River and its tributaries, which are listed below.

BACKGROUND ON KANSAS CITY'S LTCP:

Kansas City has developed and submitted a LTCP (also known as Overflow Control Plan, OCP); which was approved by the department on April 14, 2010. Before submittal of the LTCP, Kansas City public noticed the plan from May 6- June 6, 2008 and held a number of public hearings. The LTCP was developed to meet regulatory requirements related to reducing overflows from the combined sewer system and preventing overflows from the separate sewer system. The plan meets those objectives over a 25-year time period by providing a planned list of improvements targeted at capturing for treatment, 88% of combined sewer overflows, and eliminating sanitary sewer overflows during a 5-year rainfall event. Under the LTCP, Kansas City decided to use the presumptive approach that following the implementation of the projects in the LTCP, the overflow water will meet water quality standards. With the presumptive approach Kansas City assumed disinfection of the CSOs would not be required [10 CSR 20-7.015(10)]. A copy of the LTCP is available on Kansas City's Water Services website:

http://www.kcmo.org/idc/groups/water/documents/ckcmowebassets/plan_full.pdf

The Department approved the Long Term Control Plan on April 14, 2010 based on the draft consent decree between EPA and Kansas City, MO. EPA announced the draft consent decree on May 18, 2010. The public comment period on the draft consent decree was May 27, 2010 to June 28, 2010. The plan was memorialized on September 27, 2010 in the United States District Court for the Western District of Missouri by Judge Gary A. Fenner under an EPA-Department of Justice Consent Decree. The department can not add requirements in the permit for the CSOs that are not in the approved LTCP, because 10 CSR 20-7.015(10) requires all control and monitoring to be covered under the LTCP. The draft consent decree, which summarizes the requirements of the LTCP is available on EPA Region 7's website, http://www.epa.gov/region07/enforcement_compliance/KCMO_consent_decree_cwa.htm. A copy of the schedule is included at the end of the fact sheet.

SPECIFIC INFORMATION ON KANSAS CITY BLUE RIVER’S CSOs:

A description of the Blue River CSOs is below. Eight of the CSOs below discharge directly to the Missouri River. The rest of the CSOs discharge to Blue River or tributaries to Blue River. All CSO locations are south of the Missouri River in Jackson County. Disinfection of the CSO’s is not being required at this time per the LTCP and the signed Consent Decree. During this permit cycle, there are CSO reduction activities to be conducted per the Consent Decree. These activities include sewer separations, storage, sewer upgrades, the 100 acre pilot project in Middle Blue River Basin, and upgrades of pumping stations. The timeline of activities for CSO activities and upgrades to the Blue River Wastewater Treatment Plant is found in Appendix A of the Consent Decree. Future renewals of the permit may contain requirements and/or descriptions of projects that are ongoing during the permit cycle in accordance with the Long Term Control Plan. Appendix A of the Consent Decree is attached at the end of the fact sheet to provide information on the scheduled and events to occur.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING CSO STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Missouri River	P	356	AQL, DWS, IND, IRR, LWW, SCR, WBC(B)***	10300101	Central Plains/ Blackwater/ Lamine
Blue River	P	417,418,419	AQL, IND, LWW, SCR, WBC(A)		
Brush Creek	U	--	General Criteria		
Mill Creek	U	--	General Criteria		
Unnamed Tribs. to Blue River	U	--	General Criteria		
Unnamed Tribs. to Brush Creek	U	--	General Criteria		
Unnamed Tribs. to Mill Creek	U	--	General Criteria		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

** - Ecological Drainage Unit

*** - Comments were received verifying that Whole Body Contact Recreation exists, thus no UAA was conducted.

METROPOLITAN NO-DISCHARGE STREAM:

Blue River is a metropolitan no-discharge per 10 CSR 20-7.031, Table F. Table F contains an exception for discharges from CSOs from Brush Creek. The discharges to Blue River are allowed under 10 CSR 20-7.015(5) and 10 CSR 20-7.031(6) as excess wet-weather bypasses. While the current CSOs may be interfering with the beneficial uses of Blue River, the signed Consent Decree is to eliminate a number of the overflow events and to not affect Blue River’s beneficial uses. If at the end of the Consent Decree, if the discharges do not meet Water Quality Standards, Kansas City will be required to do more activities.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable : The Missouri River and the Blue River are listed on the 2010 Missouri 303(d) List for bacteria.

– The Combined Sewer Overflows located on or on tributaries to the Blue River and the Missouri River are considered to be a source of or has the potential to contribute to the above listed pollutant(s). The facility is under US EPA Consent Decree to address the CSOs. Projects that will be started during this permit cycle to address the CSOs include increasing storage, sewer separation, sewer work, work on pump stations, and other inflow and infiltration projects. The department is working on the bacteria TMDL for the Blue River and is expected to public notice the TMDL in 2011. The Missouri River TMDL for bacteria is scheduled for 2013. For a complete list of the projects and the timelines associated with the CSOs, please see the final consent decree on Kansas City's website, <http://www.kcmo.org/CKCMO/Depts/WaterServices/index.htm>.

Outfall 006: 50th & Stateline

Latitude/Longitude: 39.035278/-94.60167

UTM Coordinates: x= 361374; y= 4321912

Legal Description: NE ¼, NW ¼, Sec. 31, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 007: 50th Terrace & Brush Creek

Latitude/Longitude: 39.0361/ -94.601389

UTM Coordinates: x= 361400; y= 4322004

Legal Description: SE ¼, SW ¼, Sec. 30, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 008: 49th Terrace & Westwood Road

Latitude/Longitude: 39.0372/ -94.60083

UTM Coordinates: x= 361450; y=4322126

Legal Description: SE ¼, SW ¼, Sec. 30, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 009: 50th & Holly

Latitude/Longitude: 39.0372/ -94.60083

UTM Coordinates: x= 361450; y=4322126

Legal Description: SE ¼, SW ¼, Sec. 30, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Kansas City Blue River WWTF

Outfall 010: 50th & Brush Creek

Latitude/Longitude: 39.0372/ -94.600277
UTM Coordinates: x= 361498; y= 4322126
Legal Description: SE ¼, SW ¼, Sec. 30, T49N, R33W, Jackson County
Receiving Stream: Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 011: Roanoke & Brush Creek

Latitude/Longitude: 39.03944/ -94.596658
UTM Coordinates: x= 361815; y= 4322367
Legal Description: SW ¼, SE ¼, Sec. 30, T49N, R33W, Jackson County
Receiving Stream: Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 012: Summit & Brush Creek

Latitude/Longitude: 39.0389/ -94.59667
UTM Coordinates: x= 361814; y= 4322305
Legal Description: SW ¼, SE ¼, Sec. 30, T49N, R33W, Jackson County
Receiving Stream: Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 13-47th & Wornall

Latitude/Longitude: 39.0399/ -94.5916
UTM Coordinates: x= 362249; y= 4322421
Legal Description: NW ¼, SW ¼, Sec. 29, T49N, R33W, Jackson County
Receiving Stream: Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 14: 49th & Wornall

Latitude/Longitude: 39.040/ -94.5914
UTM Coordinates: x= 362273; y= 4322420
Legal Description: NW ¼, SW ¼, Sec. 29, T49N, R33W, Jackson County
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 15: Nichols Road & Wornall

Latitude/Longitude: 39.04055/ -94.5889

UTM Coordinates: x= 362490; y= 4322478

Legal Description: NW ¼, SW ¼, Sec. 29, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 16: Main Street & Brush Creek

Latitude/Longitude: 39.040/ -94.58583

UTM Coordinates: x= 362754; y= 4322412

Legal Description: NE ¼, SW ¼, Sec. 29, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 017: 46th Terrace & Wornall

Latitude/Longitude: 39.03917/-94.5836

UTM Coordinates: x= 362944; y= 4322316

Legal Description: NE ¼, SE ¼, Sec. 29, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 018- 48th & Harrison

Latitude/Longitude: 39.038056/ -94.574167

UTM Coordinates: x= 363760; y= 4322179

Legal Description: NE ¼, SE ¼, Sec. 29, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 19- 49th & Troost

Latitude/Longitude: 39.03778/ -94.5728

UTM Coordinates: x= 363879; y= 4322146

Legal Description: SW ¼, SW ¼, Sec. 28, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 020- 48th & The Paseo

Latitude/Longitude: 39.03972/ -94.56861

UTM Coordinates: x= 364244; y= 4322355

Legal Description: NE ¼, SW ¼, Sec. 28, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 021: 47th & The Paseo

Latitude/Longitude: 39.041/ -94.56778

UTM Coordinates: x= 364318.; y= 4322508

Legal Description: NE ¼, SW ¼, Sec. 28, T49N,R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 022: Virginia & Brush Creek Boulevard

Latitude/Longitude: 39.043525/ -94.5692

UTM Coordinates: x= 364200; y= 4322778

Legal Description: SW ¼, NW ¼, Sec. 28, T49N, T33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Outfall 023: 46th & Woodland

Latitude/Longitude: 39.042778/ -94.5633

UTM Coordinates: x= 364706; y= 4322687

Legal Description: SE ¼, NW ¼, Sec. 28, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 024: 45th & Garfield

Latitude/Longitude: 39.0419444/ -94.559167

UTM Coordinates: x= 365065; y= 4322588

Legal Description: SW ¼, NE ¼, Sec. 28, T49N, R33W, Jackson County

Receiving Stream: Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 025: 46th & Prospect

Latitude/Longitude: 39.04056/ -94.55472
UTM Coordinates: x= 365447; y= 4322427
Legal Description: NE ¼, SE ¼, Sec. 28, T49N, R33W, Jackson County
Receiving Stream: Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 026: 49th & Chestnut

Latitude/Longitude: 39.03889/ -94.549167
UTM Coordinates: x= 365925; y= 4322234
Legal Description: NE ¼, SW ¼, Sec. 27, T49N, R33W, Jackson County
Receiving Stream: Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 027: 45th & Mersington

Latitude/Longitude: 39.04361/-94.5389
UTM Coordinates: x= 366823.; y= 4322743
Legal Description: SE ¼, NE ¼, Sec.27, T49N, R33W, Jackson County
Receiving Stream Tributary to Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 028: 46th & Norton

Latitude/Longitude: 39.0419/ -94.5369
UTM Coordinates: x= 366989; y= 4322555
Legal Description: SE ¼, NE ¼, Sec.27, T49N, R33W, Jackson County
Receiving Stream Tributary to Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 029: 51st Terrace & Brookside

Latitude/Longitude: 39.033393/ -94.584
UTM Coordinates: x= 36290; y= 4321676
Legal Description: NE ¼, NW ¼, Sec.32, T49N, R33W, Jackson County
Receiving Stream Tributary to Brush Creek (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Brush Creek Basin
Table 12-4 Brush Creek, pg. 12-22

Outfall 030: 4200 Brush Creek

Latitude/Longitude: 39.03889/ -94.576389

UTM Coordinates: x= 363569; y= 4322274

Legal Description: NE ¼, SE ¼, Sec. 29, T49N, R33W, Jackson County

Receiving Stream Brush Creek (U)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Brush Creek Basin

Table 12-4 Brush Creek, pg. 12-22

Outfall 031: Gardner Avenue at MO River

Latitude/Longitude: 39.1183/-94.491389

UTM Coordinates: x= 371070; y= 4330967

Legal Description: NW ¼, NW ¼, Sec. 31, T50N, R32W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (417) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Watershed Basin: NEID Basin

Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 032: Belmont Avenue & Belmont Boulevard

Latitude/Longitude: 39.1094/-94.4983

UTM Coordinates: x= 370454; y= 4329991

Legal Description: NE ¼, SE ¼, Sec. 36, T50N, R33W, Jackson County

Receiving Stream Blue River

1st Classified Stream & WBID: Blue River (417) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Gooseneck Creek Basin

Table 12-5 Gooseneck Creek, pg. 12-24

Outfall 033: Wilson & Bennington

Latitude/Longitude: 39.11027/-94.49972

UTM Coordinates: x= 370335; y= 4330085

Legal Description: NE ¼, SE ¼, Sec. 36, T50N, R33W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (417) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Gooseneck Creek Basin

Table 12-5 Gooseneck Creek, pg. 12-24

Outfall 034: 8th Street at Blue River

Latitude/Longitude: 39.101667/ -94.49833

UTM Coordinates: x= 370440; y= 4329127

Legal Description: NE ¼, NE ¼, Sec. 01, T49N, R33W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (417) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 035: Truman Road at Blue River

Latitude/Longitude: 39.0933/ -94.49389

UTM Coordinates: x= 370809; y= 4328196

Legal Description: SW ¼, SW ¼, Sec.06, T49N, R32W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

Distance to 1st Classified Stream: ~

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Outfall 036: 18th Street at Blue River

Latitude/Longitude: 39.0872/-94.49806

x= 370437; y= 4327524

Legal Description: NE ¼, NE ¼, Sec. 12, T49N, R33W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

Distance to Classified Stream: ~0.0 miles

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 037: 35th Street at Blue River

Latitude/Longitude: 39.06194/ -94.513056

UTM Coordinates: x= 369093; y= 4324740

Legal Description: SW ¼, SW ¼, Sec. 13, T49N, R33W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

Distance to 1st Classified Stream: ~

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 038: 37th & White

Latitude/Longitude: 39.0578/ -94.514167

UTM Coordinates: x= 368989; y= 4324279

Legal Description: NW ¼, NW ¼, Sec. 24, T49N, R33W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Outfall 039: 33rd Terrace & Topping

Latitude/Longitude: 39.061389/ -94.51361

UTM Coordinates: x= 369044; y= 4324679

Legal Description: NW ¼, NW ¼, Sec. 24, T49N, R33W, Jackson County

Receiving Stream Blue River (P)

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/ Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 040: 41st & Elmwood

Latitude/Longitude: 39.05083/ -94.531389
UTM Coordinates: x= 367486 ;y =4323533
Legal Description: SW ¼, SW ¼, Sec. 23, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 041: 40th & Cleveland

Latitude/Longitude: 39.0525/ -94.540
UTM Coordinates: x= 366744; y= 4323731
Legal Description: NE ¼, SE ¼, Sec. 22, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River (U)
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/ Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 042: 40th Terrace & Monroe

Latitude/Longitude:39.053195/-94.541017
UTM Coordinates: x= 366657; y= 4323810
Legal Description: NW ¼, SE ¼, Sec. 22, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Outfall 043: 40th Terrace & Cleveland

Latitude/Longitude:39.0522/ -94.53917
UTM Coordinates: x= 366816; y= 4323699
Legal Description: NW ¼, SE ¼, Sec. 22, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 044: 40th Terrace & Myrtle

Latitude/Longitude:39.051389/ -94.53806
UTM Coordinates: x= 366910; y= 4323605
Legal Description: NW ¼, SE ¼, Sec. 22, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 045: 41st & Myrtle

Latitude/Longitude: 39.05111/ -94.53750
UTM Coordinates: x= 366958; y= 4323573
Legal Description: SE ¼, SE ¼, Sec. 22, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 046: 41st & Norton

Latitude/Longitude: 39.0511/ -94.536389
UTM Coordinates: x= 367054; y= 4323572
Legal Description: SE ¼, SE ¼, Sec. 22, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 047: 41st & Jackson

Latitude/Longitude: 39.05056/ -94.5350
UTM Coordinates: x= 367173; y= 4323508
Legal Description: SW ¼, SW ¼, Sec. 23, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 048: 45th Terrace & Lister

Latitude/Longitude: 39.0433/ -94.52722
UTM Coordinates: x= 367833; y= 4322695
Legal Description: SE ¼, NW ¼, Sec. 26, T49N, R33W, Jackson County
Receiving Stream: Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 049: 41st & Spruce

Latitude/Longitude: 39.05083/ -94.53389
UTM Coordinates: x= 367270; y= 4323537
Legal Description: SW ¼, SW ¼, Sec. 23, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 050: Spruce & Towers Road

Latitude/Longitude:39.05083/ -94.534167

UTM Coordinates: x= 367246; y=4323538

Legal Description: SW ¼, SW ¼, Sec.23, T49N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 051: Skiles & Winner Road

Latitude/Longitude:39.10694/ -94.494

UTM Coordinates: x= 370785; y= 4329708

Legal Description: SW ¼, SW ¼, Sec.31, T50N, R32W, Jackson County

Receiving Stream: Blue River

1st Classified Stream & WBID: Blue River (417) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 052: Truman & Crystal

Latitude/Longitude:39.0933/ -94.49361

UTM Coordinates: x= 370833; y= 4328196

Legal Description: SW ¼, SW ¼, Sec.06, T49N, R32 W, Jackson County

Receiving Stream: Blue River

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 053: 12th & Frisco Railroad

Latitude/Longitude:39.098128/ -94.530263

UTM Coordinates: x= 367672; y= 4328781

Legal Description: SW ¼, NW ¼, Sec.02, T49N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Outfall 054: 17th & Belmont

Latitude/Longitude:39.0883/ -94.51194

UTM Coordinates: x= 369238; y= 4327667

Legal Description: NW ¼, NW ¼, Sec.12, T49N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Lower Blue River Basin

Table 12-7 Lower Blue River, pg. 12-27

Outfall 055: I-70 & White

Latitude/Longitude: 39.07027/ -94.51361
UTM Coordinates: x= 369060; y= 4325666
Legal Description: SW ¼, NW ¼, Sec.13, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0106
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Lower Blue River Basin
Table 12-7 Lower Blue River, pg. 12-27

Outfall 056: 55th & Elmwood

Latitude/Longitude: 39.02556/ -94.5294
UTM Coordinates: x= 367607; y= 4320725
Legal Description: NE ¼, SW ¼, Sec.35, T49N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Middle Blue River Basin
Table 12-10 Middle Blue River, pg. 12-30

Outfall 057: 76th & Indiana

Latitude/Longitude: 38.9883/ -94.548056
UTM Coordinates: x= 365926; y= 4316622
Legal Description: NW ¼, NW ¼, Sec.15, T48N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to the Blue River
1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)
Distance to 1st Classified Stream: ~
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Middle Blue River Basin
Table 12-10 Middle Blue River, pg. 12-30

Outfall 058: 83rd Terrace & McGee

Latitude/Longitude 38.97667/ -94.58667
UTM Coordinates: x= 362559; y= 4315384
Legal Description: NE ¼, NW ¼, Sec.20, T48N, R33W, Jackson County
Receiving Stream: Dyke Branch
1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Middle Blue River Basin
Table 12-10 Middle Blue River, pg. 12-30

Outfall 059: 85th & Tracy

Latitude/Longitude 38.97167/ -94.57361
UTM Coordinates: x= 363680; y= 4314810
Legal Description: SW ¼, NW ¼, Sec.21, T48N, R33W, Jackson County
Receiving Stream: Dyke Branch
1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Middle Blue River Basin
Table 12-10 Middle Blue River, pg. 12-30

Outfall 060: 58th & Kensington

Latitude/Longitude 39.02083/-94.5344

UTM Coordinates: x= 367165; y= 4320209

Legal Description: SW ¼, SW ¼, Sec.35, T49N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 061: 58th & Elmwood

Latitude/Longitude 39.020278/ -94.53278

UTM Coordinates: x= 367309; y= 4320144

Legal Description: SW ¼, SW ¼, Sec.35, T49N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 062: 63rd Terrace & Elmwood

Latitude/Longitude 39.01083/ -94.53083

UTM Coordinates: x= 367459; y= 4319093

Legal Description: NE ¼, SW ¼, Sec.02, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 063: 69th & Cleveland

Latitude/Longitude 39.000278/ -94.54278

UTM Coordinates: x= 366405; y= 4317939

Legal Description: SW ¼, NE ¼, Sec.10, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 064: Gregory & Mersington

Latitude/Longitude 38.998056/ -94.54056

UTM Coordinates: x= 366594; y= 4317690

SE ¼, NE ¼, Sec. 10, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 065: 81st Terrace & Campbell

Latitude/Longitude 38.975278/ -94.57611

UTM Coordinates: x= 363471; y= 4315214

Legal Description: SE ¼, NE ¼, Sec. 20, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 066: 84th & Main

Latitude/Longitude 38.97611/ -94.590

UTM Coordinates: x= 362269; y= 4315328

Legal Description: NE ¼, NW ¼, Sec.20, T48N, R33W, Jackson County

Receiving Stream: Dyke Branch

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 067: 83rd & Main

Latitude/Longitude 38.976389/ -94.590

UTM Coordinates: x= 362270; y= 4315359

Legal Description: NE ¼, NW ¼, Sec.20, T48N, R33W, Jackson County

Receiving Stream: Dyke Branch

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 068: 85th & Flora

Latitude/Longitude 38.9694/ -94.570

UTM Coordinates: x= 363989; y= 4314558

Legal Description: SE ¼, NW ¼, Sec. 21, T48N, R33W, Jackson County

Receiving Stream: Dyke Branch

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 069: 77th & Prospect

Latitude/Longitude 38.985278/ -94.5572

UTM Coordinates: x= 365126; y= 4316296

SW ¼, NW ¼, Sec. 15, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to the Blue River

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 070: Meyer at Blue River

Latitude/Longitude 39.005278/ -94.526389

UTM Coordinates: x= 367834; y= 4318470

SW ¼, SE ¼, Sec. 02, T48N, R33W, Jackson County

Receiving Stream: Blue River

1st Classified Stream & WBID: Blue River (419) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Middle Blue River Basin

Table 12-10 Middle Blue River, pg. 12-30

Outfall 071: Delaware Street at MO River

Latitude/Longitude 39.1125/-94.5856

UTM Coordinates: x= 362918; y= 4330458

Sec. 32, T50N, R33W, Jackson County

Receiving Stream: Missouri River

1st Classified Stream & WBID: Missouri River (356) (303(d))

USGS Basin & Sub-watershed No.: 10300101-0301

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: NEID Basin

Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 072: Main Street at MO River

Latitude/Longitude 39.115/-94.580

UTM Coordinates: x= 363403; y= 4330727

Sec. 32, T50N, R33W, Jackson County

Receiving Stream: Missouri River

1st Classified Stream & WBID: Missouri River (356) (303(d))

USGS Basin & Sub-watershed No.: 10300101-0301

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: NEID Basin

Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 073: Gillis Avenue at MO River

Latitude/Longitude 39.1178/ -94.573

UTM Coordinates: x= 363985; y= 4331025

Sec. 32, T50N, R33W, Jackson County

Receiving Stream: Missouri River

1st Classified Stream & WBID: Missouri River (356) (303(d))

USGS Basin & Sub-watershed No.: 10300101-0301

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: NEID Basin

Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 074: Lydia Avenue at MO River

Latitude/Longitude 39.120/ -94.5683

UTM Coordinates: x= 364421; y= 4331264

Sec. 33, T50N, R33W, Jackson County

Receiving Stream: Missouri River (303(d))

1st Classified Stream & WBID: Missouri River (356)

USGS Basin & Sub-watershed No.: 10300101-0301

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: NEID Basin

Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 075: Prospect Avenue at MO River

Latitude/Longitude 39.1275/ -94.5505
UTM Coordinates: x= 365973; y= 4332070
Sec. 28, T50N, R33W, Jackson County
Receiving Stream: Missouri River
1st Classified Stream & WBID: Missouri River (356) (303(d))
USGS Basin & Sub-watershed No.: 10300101-0301
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: NEID Basin
Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 076: Chouteau Trafficway at MO River

Latitude/Longitude 39.145124/-94.53171
UTM Coordinates: x= 367752; y= 4333613
Legal Description: Sec.18, T50N, R33W, Jackson County
Receiving Stream: Missouri River (303(d))
1st Classified Stream & WBID: Missouri River (356)
USGS Basin & Sub-watershed No.: 10300101-0301
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: NEID Basin
Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 077: Holmes Street at MO River

Latitude/Longitude 39.115833/ -94.5778
UTM Coordinates: x= 363597; y= 4330816
Legal Description: Sec. 32, T50N, R33W, Jackson County
Receiving Stream: Missouri River
1st Classified Stream & WBID: Missouri River (356) (303(d))
USGS Basin & Sub-watershed No.: 10300101-0301
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: NEID Basin
Table 12-11 Northeast Industrial District, pg. 12-33

Outfall 078: Lydia Avenue at MO River

Latitude/Longitude 39.1199/-94.56805
UTM Coordinates: x= 364445; y= 4331264
Legal Description: Sec. 33, T50N, R33W, Jackson County
Receiving Stream: Missouri River
1st Classified Stream & WBID: Missouri River (356) (303(d))
USGS Basin & Sub-watershed No.: 10300101-0301
Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Outfall 079: 51st & Indiana

Latitude/Longitude 39.0333/ -94.5450
UTM Coordinates: x= 366275; y= 4321611
Legal Description: NW ¼, NE ¼, Sec. 34, T49N, R33W, Jackson County
Receiving Stream: Townfork (Mill) Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 080: 53rd & Walrond

Latitude/Longitude 39.029894 / -94.547943

UTM Coordinates: x= 366014; y= 4321242

Legal Description: SE ¼, NW ¼, Sec. 34, T49N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 081: 53rd Terrace & Walrond

Latitude/Longitude 39.02916/ -94.5480

UTM Coordinates: x=366003; y= 4321153

Legal Description: SE ¼, NW ¼, Sec. 34, T49N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 082: 55th & Indiana

Latitude/Longitude 39.026389/ -94.54778

UTM Coordinates: x= 366022; y= 4320845

Legal Description: SE ¼, NW ¼, Sec. 34, T49N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 083: 57th & Agnes

Latitude/Longitude 39.022778/ -94.54889

UTM Coordinates: x= 365919; y=4320446

Legal Description: NW ¼, SW ¼, Sec. 34, T49N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 084: 58th & So. Benton

Latitude/Longitude 39.021026/ -94.552438

UTM Coordinates: x= 365608; y= 4320256

Legal Description: SW ¼, SW ¼, Sec. 34, T49N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 085: 59th & Prospect

Latitude/Longitude 39.019444/ -94.5533
UTM Coordinates: x= 365528; y= 4320082
SW ¼, SW ¼, Sec. 34, T49N, R33W
Receiving Stream: Townfork (Mill) Creek
Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 086: 60th Terrace & Montgall

Latitude/Longitude 39.016197/-94.55386
UTM Coordinates: x= 365476; y= 4319723
Legal Description: NW ¼, NW ¼, Sec. 03, T48N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to Mill Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 087: 60th & Prospect

Latitude/Longitude 39.017667/ -94.55585
UTM Coordinates: x= 365306; y= 4319889
Legal Description: NW ¼, NW ¼, Sec. 03, T48N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to Mill Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-010060
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 088: 60th Terrace & Wabash

Latitude/Longitude 39.0169/ -94.556987
UTM Coordinates: x= 365206; y= 4319805
Legal Description: NE ¼, NE ¼, Sec.04, T48N, R33W, Jackson County
Receiving Stream: Townfork (Mill) Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 089: 61st Terrace & Park

Latitude/Longitude 39.015278/ -94.55861
UTM Coordinates: x= 365063; y= 4319628
Legal Description: SE ¼, NE ¼, Sec.04, T48N, R33W, Jackson County
Receiving Stream: Townfork (Mill) Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 090: 63rd & Highland

Latitude/Longitude 39.013111/ -94.566885

UTM Coordinates: x= 364342; y= 4319399

Legal Description: SE¼, NW ¼, Sec. 04, T48N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 091: 59th & Bellefontaine

Latitude/Longitude 39.020556/ -94.550278

UTM Coordinates: x= 365794; y= 4320201

SW ¼, SW ¼, Sec.34 , T49N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 092: Gregory & Tracy

Latitude/Longitude 38.998611/-94.573056

UTM Coordinates: x= 363780; y= 4317799

Legal Description: SW ¼, NW ¼, Sec.09, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to Mill Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 093: Gregory & Tracy

Latitude/Longitude 38.998611/-94.572778

UTM Coordinates: x= 363804; y= 4317799

SW ¼, NW ¼, Sec.09, T48N, R33W, Jackson County

Receiving Stream: Unnamed Tributary to Mill Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 094: 69th Terrace & Lydia

Latitude/Longitude 39.001176/ -94.57072

UTM Coordinates: x= 363987; y= 4318081

SE ¼, NW ¼, Sec. 09, T48N, R33W, Jackson County

Receiving Stream: Townfork (Mill) Creek

1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0105

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

Watershed Basin: Townfork Creek Basin

Table 12-13 Townfork Creek , pg. 12-36

Outfall 095: 69th & Flora

Latitude/Longitude 39.0052778/ -94.56889
UTM Coordinates: x= 364154; y= 4318533
NE ¼, NW ¼, Sec.09, T48N, R33W, Jackson County
Receiving Stream: Townfork (Mill) Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 096: 68th & Woodland

Latitude/Longitude 39.003889/ -94.566389
UTM Coordinates: x= 364368; y= 4318375
NW ¼, NW ¼, Sec.09, T48N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to Mill Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 097: 66th Terrace & Flora

Latitude/Longitude 39.00667/-94.56889
UTM Coordinates: x= 364156; y= 4318687
Legal Description: SE ¼, SW ¼, Sec.04, T48N, R33W, Jackson County
Receiving Stream: Townfork (Mill) Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 098: 66th Terrace & Woodland

Latitude/Longitude 39.006587/ -94.565678
UTM Coordinates: x= 364434; y= 4318674
Legal Description: SW¼, SE¼, Sec. 04, T48N, R33W, Jackson County
Receiving Stream: Unnamed Tributary to Mill Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 099: 56th & Bellefontaine

Latitude/Longitude 39.02444/ -94.548333
UTM Coordinates: x= 365970; y= 4320630
Legal Description: NE ¼, SW ¼, Sec. 34, T49N, R33W, Jackson County
Receiving Stream: Townfork (Mill) Creek
1st Classified Stream & WBID: Blue River (418) (303(d), Metropolitan No-Discharge)
Distance to 1st Classified Stream: ~
USGS Basin & Sub-watershed No.: 10300101-0105
Ecological Drainage Unit: Central Plains/Blackwater/Lamine
Watershed Basin: Townfork Creek Basin
Table 12-13 Townfork Creek , pg. 12-36

Outfall 100: 7300 Hawthorne Road

Latitude/Longitude 39.1077778/ -94.49611

UTM Coordinates: x= 370643; y= 4329802

Legal Description: SE ¼, SE ¼, Sec.36, T50N, R33W, Jackson County

Receiving Stream: Blue River

1st Classified Stream & WBID: Blue River (417) (303(d), Metropolitan No-Discharge)

USGS Basin & Sub-watershed No.: 10300101-0106

Ecological Drainage Unit: Central Plains/Blackwater/Lamine

APPENDIX A
Performance Measures

1. Combined Sewer Overflow (“CSO”) Control Measures, Descriptions, Critical Milestones, Performance Criteria

The City of Kansas City, Missouri (“KCMO”) shall implement the CSO Control Measures described below. KCMO shall comply with the Project Start Dates, Date of Achievement of Full Operation, Date of Post-Construction Monitoring Plan Submission, and Critical Milestones for each control measure. Upon completion of the CSO Control Measures, KCMO shall meet the Percent Capture of Wet Weather Flows and the Performance Criteria as set forth below.

KCMO shall submit semi-annual reports, as set forth in Section IX in this Decree, describing the City’s progress in implementing the CSO control measures described below. KCMO shall submit the demonstrations of compliance with the percent capture of wet weather flows and the performance criteria in accordance with the schedule listed in this Appendix “A” and include these demonstrations in the semi-annual reports.

KCMO shall demonstrate compliance with both the Percent Capture of Wet Weather Flows and Performance Criteria as set forth below. Determination of achievement of the Percent Capture and Performance Criteria shall be based upon the Post Construction Monitoring Plans as described in Appendix “D” of this Decree. By the Dates of Demonstration of Compliance set forth on pages 3 and 4 herein, KCMO shall utilize the collection system hydraulic model as described in Section 5 of its January 30, 2009 Overflow Control Plan (“OCP”) and the system monitoring data as described in the Post Construction Monitoring Plans as described in Appendix “D” of this Decree. KCMO shall calibrate the collection system hydraulic model to at least the same degree of calibration as was achieved during the OCP development. Upon calibration of the collection system hydraulic model (hereafter referred to as the “calibrated post-construction hydraulic model”), KCMO shall run a continuous simulation of the model inputting the “typical year” design storms used to develop the OCP in place of the actual storms experienced during the post construction monitoring period.

For purposes of this demonstration, the “typical year” is defined as the 8 design storms which have the depth, peak hourly intensity, duration, and frequency as described in Section 5.2.2.3 and Table 5-1 of the OCP. The continuous simulation shall be based on the same timing and arrangement of the design storms as described in the technical memorandum “Design Year for CSS Analyses” included in Appendix A2 of the OCP. The term “overflow event” shall mean the activation of one or more CSOs in a basin due to a discreet storm. For clarification, the

following would be considered three “overflow events” for the Brush Creek Basin: 1) a storm that causes only CSO 007 to overflow; 2) a second storm that causes only CSO 009 to overflow; and, 3) a third storm that causes CSOs 007, 008, 009, 010, 011, 012, 014, 015, 016, 017, 018, 019, and 020 to overflow.

The Percent Capture of Wet Weather Flows and the maximum volume of CSO discharges included in the CSO Control Measures, as specified in the tables below, will be met if the continuous typical year simulations using the calibrated post-construction hydraulic model demonstrate the specified basins in the “typical year” do not exceed the maximum volumes listed.

The Performance Criteria will be met if the continuous typical year simulations using the calibrated post-construction hydraulic model demonstrate the collection system discharges will not exceed the number of “typical year” overflow events as listed below.

Notwithstanding the forgoing, and consistent with this Consent Decree, KCMO is responsible for achieving the percent capture requirement and performance criteria specified herein. KCMO’s compliance with individual “Control Measures” shall not constitute a defense to a failure to achieve the percent capture requirements and performance criteria and shall not relieve KCMO of the obligation to submit plans proposing additional control measures pursuant to Section VII.A.1.c of the Consent Decree.

The City may request that the CSO and SSO Control Measures set forth in this Appendix A be revised if it can demonstrate that the requested revision (1) reflects good engineering practice and (2) will continue to achieve the “Percent Capture of Wet Weather Flows” and “Performance Criteria” as those terms are used in this Appendix. Any request for a revision to the Performance Criteria shall be in writing. The manner in which EPA will review and approve or deny such requests depends upon the extent to which the City proposes to revise the Control Measure and how the control Measure is characterized in this Appendix: 1. If the City seeks to revise a Control Measure that utilizes the term “approximately” to indicate how compliance will be measured AND the proposed revision represents a 20 percent or less reduction of what is called for in the Control Measure, the City’s request shall be submitted pursuant to, and be governed by the procedures of Section VI of this Consent Decree; 2. If the City seeks to revise a Control Measure that does not include the term “approximately” as a compliance measurement OR seeks a greater than 20 percent reduction in a Control Measure that does utilize the term “approximately” as a compliance measure, the requested revision shall be submitted as a proposed Modification pursuant to Section XXV of this Consent Decree. If EPA approves the request, the Decree will be modified in accordance with the provisions of Section XXV. If EPA denies the request the City may, within thirty (30) days of the denial, appeal the decision to the Director, Water, Wetlands, and Pesticides Division, EPA, whose decision shall be final. Simultaneously with any request for modification made pursuant to this paragraph, the City shall provide to EPA all documentation necessary to support the request for modification, including all information relevant to the three criteria set forth above.

Percent Capture of Wet Weather Flows

Basin	Percent Capture of "Typical Year" Wet Weather Flows Achieved Upon Completion of the CSO Control Measures within the Specified Basins	Maximum Volume of CSO Discharges in the "Typical Year" Achieved Upon Completion of the CSO Control Measures within the Specified Basins (Billion Gallons)	Date of Demonstration of Compliance with Percent Capture of "Typical Year" Wet Weather Flows
Town Fork Creek/Brush Creek	98% *	0.059	April 30, 2037
Lower Blue River/Middle Blue River**	96% **	0.125	April 30, 2035

* These percentages include the percent capture of wet weather flows from 74 of the 87 existing CSO outfalls in the KCMO system. The remaining 13 CSO outfalls are located within the NEID Basin and the Turkey Creek/Central Industrial District Basin in which KCMO shall implement the CSO control measures and meet the maximum volume of CSO discharges as specified in the CSO Control Measures table.

** CSO 031 and CSO 033 are included in the NEID Basin; CSO 032 is included in the Lower Blue River Basin.

Performance Criteria

CSO Number	Number of "Typical Year" Overflow Events	Date of Demonstration of Compliance with Number of "Typical Year" Overflow Events
041,043, 044, 045, 046, 047, 049, 050, 054, 063, 081, 097***,	0	April 30, 2037
All other remaining CSOs in Brush Creek Basin, (006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 023, 024, 025, 026, 027, 028, 029, 030),	6	April 30, 2037
All other remaining CSOs in Lower Blue River Basin (032, 034, 036, 037, 039, 040, 048, 051, 052, 055), Middle Blue River Basin (056, 057, 058, 059, 060, 061, 062, 064, 065, 066, 067, 068, 069, 070)	7	April 30, 2035
Other Remaining CSOs in Town Fork Creek Basin (079, 080, 082, 083, 085, 089, 090, 091, 093, 094, 095, 096, 099)	7	April 30, 2037
W005	7	April 30, 2037

*** All typical year overflows from CSO 092 shall be captured by consolidation piping leading to Town Fork Creek Tunnel north of Forest Hills Cemetery

CSO Control Measures

Brush Creek Basin

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission
Construction of approximately 31 million gallons of deep tunnel storage****	Located along Brush Creek near Brookside Blvd to confluence of Brush Creek and Blue River	2028	12-31-2033	
Construction of a 45-MGD deep-tunnel pump station.	Located near the confluence of Brush Creek and Blue River.	2029	12-31-2033	12-31-2032
Construction of a 200-MGD HRT/disinfection facility at the confluence of Brush Creek and the Blue River.	200 MGD high rate treatment discharging to the Blue River. Flow to the HRT will be from the deep tunnel and gravity flow diverted from the Blue River Interceptor Sewer.	2025	12-31-2030	12-31-2032
Construction of approximately 1,200 linear feet of approximately 72-inch diameter consolidation piping downstream of Diversion Structure 42 (Outfall 024)	Reroutes wet weather flows to tunnel drop shafts.	2029	12-31-2032	
Construction of approximately 350 linear feet of relief sewer.	To be located at 48 th and Roanoke Parkway	2029	12-31-2032	
Construction of approximately 2,100 linear feet of approximately 36-inch diameter consolidation piping diverting flows from Outfall 026	Reroutes wet weather flows to tunnel drop shafts.	2029	12-31-2032	
Construction of approximately 3,300 linear feet of approximately 60-inch diameter consolidation piping diverting	Reroutes wet weather flows to tunnel drop shafts.	2029	12-31-2032	

flows from Outfalls 027 and 028				
Construction of approximately 2,800 linear feet of storm sewer approximately 72 inches in diameter.	Reroute separate storm sewer runoff from Wyandotte County directly to Brush Creek.	2024	12-31-2025	
Combined sewer separation in approximately 1,140 acres of the Brookside sub-basin.		2029	12-31-2032	
Construction of approximately 1,150 linear feet of consolidation piping	Reduce frequency of remaining typical year overflows at Outfall 019.	2029	12-31-2032	
Construct new diversion structure and approximately 1,630 linear feet of consolidation piping; add flap gate at Outfall 023	Reduce frequency of remaining typical year overflows at Outfall 023. New diversion structure on existing outfall line.	2029	12-31-2032	
Construct new diversion structure and approximately 950 linear feet of consolidation piping; add flap gate at Outfall 025	Reduce frequency of remaining typical year overflows at Outfall 025. New diversion structure on existing outfall line.	2029	12-31-2032	
Various baseline improvements	Install flap gates on outfalls 007, 009, 010, 011, and 012.	2024	12-31-2025	
Basin-wide small-sewer rehabilitation. The location of the rehabilitations to be determined based upon the discovered condition of the sewers.	Repair of small diameter sewers (less than 12 inches) to reduce the quantity of flow entering the system.	2017	12-31-2020	

A Sewer System Improvement Flow Monitoring Plan consistent with Appendix "D" shall be submitted for the Brush Creek Basin by 12-31-2032.

**** The deep tunnels in the Brush Creek and Town Fork Creek Basins will provide a combined total of 50 million gallons of storage.

Lower Blue River Basin

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission
Increase the 15 th Street Pump Station capacity to 6.5 mgd or conduct sewer separation to eliminate typical year wet weather flows exceeding the station's current capacity.	Either replace or rehabilitate the 15 th Street Pump Station which will increase its capacity, or provide sewer separation in the upstream drainage basin	2020	12-31-2022	
Install approximately 3,500 linear feet of approximately 54-inch diameter relief sewer	Downstream of the intersection of Hardesty Avenue and 31 st Street	2020	12-31-2022	
Install approximately 3,400 linear feet of approximately 48-inch diameter relief sewer	Downstream of the intersection of Vineyard and Lawn Street.	2020	12-31-2022	
Install approximately 1,500 linear feet of approximately 24-inch diameter relief sewer	South of 45 th Street, between Chelsea Avenue and Van Brunt Boulevard	2020	12-31-2022	
Separate approximately 225 acres at 40 th and Monroe	Eliminate typical year overflows at 9 outfalls (041, 043, 044, 045, 046, 047, 049, 050, 052)	2022	12-31-2023	
Separate approximately 35 acres in the upstream drainage area to Outfall 054.	Eliminate typical year overflows at Outfall 054	2022	12-31-2023	
Install approximately 660 linear feet of approximately 18-inch dry weather line	Reduce frequency of typical year overflows at Outfall 055.	2020	12-31-2022	
Basin-wide small-sewer	Repair of small diameter sewers (less	2018	12-31-2021	

rehabilitation. The location of the rehabilitations to be determined based upon the discovered condition of the sewers.	than 12 inches) to reduce the quantity of flow entering the system.			
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A Sewer System Improvement Flow Monitoring Plan consistent with Appendix "D" shall be submitted for the Lower Blue River Basin by 12-31-2022.

Middle Blue River Basin

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission
Construction of approximately 9,400 linear feet of relief sewers from Diversion Structure 68 (upstream of Outfall 068) to the Blue River Sewer.		2017	12-31-2018	
Sewer separation in approximately 270 acres in the upstream drainage area to outfall 067,	Elimination of typical year overflows at Outfall 067)	2016	12-31-2019	
Sewer separation in approximately 50 acres in the upstream drainage area to diversion structure 099.	Elimination of typical year overflows at Diversion Structure 099	2016	12-31-2017	
Construction of distributed storage using green infrastructure	To be installed in the 475 acres tributary to Outfall 069. A sufficient volume of	2012	12-31-2017	

	storage will be achieved through distributed green solutions to reduce the typical year activation frequency at Outfall 069 to six.				
Construction of distributed storage using green infrastructure	To be installed in the 269 acres tributary to Outfall 059. A sufficient volume of storage will be achieved through distributed green solutions to reduce the typical year activation frequency at Outfall 059 to six.	2012		12-31-2017	
Construction of approximately 12,000 linear feet of consolidation piping	Elimination of typical year overflows at 14 diversion structures upstream of Outfall 063	2016		12-31-2017	
Install approximately 1,200 linear feet of 18-inch dry weather line	Reduce frequency of typical year overflows at Outfall 056.	2017		12-31-2018	
Raise manhole rim elevations and make structural modifications	Raise the rim elevations of approximately 4 manholes on the main interceptor sewer a minimum of three feet.	2017		12-31-2018	
Basin-wide small-sewer rehabilitation. The location of the rehabilitations to be determined based upon the discovered condition of the sewers.	Repair of small diameter sewers (less than 12 inches) to reduce the quantity of flow entering the system	2014		12-31-2017	

A Sewer System Improvement Flow Monitoring Plan consistent with Appendix "D" shall be submitted for the Middle Blue River Basin by 12-31-2018.

Northeast Industrial District Basin

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission	Critical Milestone
Sewer Separation in approximately 260 acres	Includes approximately 13,500 linear feet of new sanitary sewer. Eliminate typical year overflows at diversion structure 006.	2016	12-31-2017		
Green Infrastructure Projects	Green infrastructure pilot project(s) will be constructed to achieve a significantly higher level of CSO control downstream of the project area.	2015	12-31-2020		Submit a conceptual proposal for the green infrastructure projects by 12-31-2014.
Basin-wide small-sewer rehabilitation. The location of the rehabilitations to be determined based upon the discovered condition of the sewers.	Repair of small diameter sewers (less than 12 inches) to reduce the quantity of flow entering the system.	2017	12-31-2020		
Construct 4-MGD pump station	Construct 4 mgd pumping station to dewater the Gooseneck Creek Arch to the Blue River Interceptor Sewer following installation of the automated gate.	2018	12-31-2021	12-31-2020	Upon Completion of this control measure and the Brush Creek HRT, this basin will have a maximum volume of CSO discharges in the 'Typical Year' of 0.700 billion gallons.
Install automated	This will provide 4 MG storage in	2018	12-31-2021	12-31-2020	

gate in existing Gooseneck Arch Sewer	the existing Gooseneck Creek Arch.			
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A Sewer System Improvement Flow Monitoring Plan consistent with Appendix "D" shall be submitted for the Northeast Industrial District Basin by 12-31-2020.

Town Fork Creek Basin

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission
Construction of approximately 19 million gallons of deep tunnel storage *****	The Tunnel will connect to the Brush Creek tunnel near diversion structure 314 and will provide 19 MG of storage capacity	2028	12-31-2032	12-31-2031
Placement of approximately 3,800 linear feet of consolidation piping near and downstream of Outfall 097.	Reroutes wet weather flows to tunnel drop shafts.	2032	12-31-2035	
Placement of approximately 1,100 linear feet of approximately 36 inch diameter consolidation piping downstream of Diversion Structure 46 (Outfall 079)	Reroutes wet weather flows to tunnel drop shafts. To be located near Satchel Paige Stadium	2032	12-31-2035	
Conduct sewer separation in approximately 59 acres	Area is tributary to outfall 082	2024	12-31-2025	
Conduct sewer separation in approximately 138 acres	Area is tributary to outfall 081	2022	12-31-2025	

Construct new diversion structure and approximately 450 linear feet of consolidation piping; add flap gate at Outfall 083	Reduce frequency of remaining typical year overflows at Outfall 083. New diversion structure in existing junction box on outfall line.	2032	12-31-2035	
Construct new diversion structure and approximately 300 linear feet of consolidation piping; add flap gate at Outfall 099	Reduce frequency of remaining typical year overflows at Outfall 099. New diversion structure in existing junction box on outfall line.	2032	12-31-2035	
Basin-wide small-sewer rehabilitation. The location of the rehabilitations to be determined based upon the discovered condition of the sewers.	Repair of small diameter sewers (less than 12 inches) to reduce the quantity of flow entering the system	2015	12-31-2018	

A Sewer System Improvement Flow Monitoring Plan consistent with Appendix "D" shall be submitted for the Town Fork Creek Basin by 12-31-2025.

***** The deep tunnels in the Brush Creek and Town Fork Creek Basins will provide a combined total of 50 million gallons of storage.

Turkey Creek/Central Industrial District Basins

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission	Critical Milestone
Sewer separation in approximately 66 acres.	Located at 31 st Street and Broadway, upstream of George Washington Lake in Penn Valley Park. Eliminates typical year overflows at Outfall W006	2020	12-31-2022		
Construction of	From Turkey Creek Pump Station to	2032	12-31-2035		

approximately 10,600 linear feet of approximately 48-inch force main.	Westside WWTP						
Central Industrial District Storm Drainage Improvements	Includes replacement of gates at the Santa Fe Pumping Station and institution of real-time gate control	2016	12-31-2017	12-31-2017			
Construction of 30 million gallons of deep tunnel storage.	Extends from near West 22 nd Street at Grand to the Turkey Creek Pump Station.	2030	12-31-2035				Upon Completion of this control measure, these basins will have a maximum volume of CSO discharges in the "Typical Year" of 0.574 billion gallons.
Construction of a 30-MGD deep-tunnel pump station.	Located at Turkey Creek Pump station and to be used to dewater the deep storage tunnel	2030	12-31-2035	12-31-2034			
Green Infrastructure Projects	Green infrastructure pilot project(s) will be constructed in the CID to achieve a significantly higher level of control downstream of the project area	2015	12-31-2020				Submit a conceptual proposal for the green infrastructure projects by 12-31-2014.
Upgrade the Turkey Creek Pump Station capacity to 30 MGD.		2014	12-31-2016	12-31-2017			
Construction of OK Creek in-line	To be used for real-time control of depths in the OK Creek sewer to take	2015	12-31-2018	2017			

storage gates	advantage of available system storage.				
Basin-wide small-sewer rehabilitation. The location of the rehabilitations to be determined based upon the discovered condition of the sewers.	Repair of small diameter sewers (less than 12 inches) to reduce the quantity of flow entering the system	2018	12-31-2021		

A Sewer System Improvement Flow Monitoring Plan consistent with Appendix "D" shall be submitted for the Turkey Creek / Central Industrial District Basins by 12-31-2021.

Blue River WWTP

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission	Critical Milestone
Diversion of up to 80 MGD of primary-plant effluent directly to disinfection facilities for treatment and discharge to the Blue River during wet-weather events.	This diversion is proposed for flows that exceed the 140-MGD secondary treatment capacity.	2026	12-31-2030	12-31-2029	
Construction of a 50-MGD wet weather treatment facility with disinfection.	Discharges to the Blue River	2026	12-31-2030	12-31-2029	

Expansion, replacement, and/or modification of solids handling facilities to accommodate additional loading from all proposed upgrades to the WWTP.		2025	12-31-2030		
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Westside WWTP

CSO Control Measure	Additional Description	Project Start Date	Date of Achievement of Full Operation	Date of Post-Construction Monitoring Plan Submission	
Construction of 30 to 32 MGD enhancement of peak treatment capacity.	This is a 30 MGD increase of the peak hydraulic capacity through modification of existing treatment facilities, or if such an increase is determined to be infeasible, a 32 MGD HRT/disinfection facility along with grit removal and fine screening. Any bypass is subject to 40 C.F.R. § 122.41(m).	2017	12-31-2020	12-31-2019	A no-feasible alternative analysis pursuant to 40 C.F.R. § 122.41(m) shall be submitted for all planned bypasses as a result of implementation of this Control Measure, 1 year prior to proposed project start date.
Construction of a 32 MGD HRT/disinfection facility	This is an additional increase of 32 MGD in treatment capacity	2032	12-31-2035	12-31-2034	

