

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-0101354

Owner: Missouri American Water Company
Address: 901 Hog Hollow Road, Chesterfield, MO 63017

Continuing Authority: Same as above
Address: Same as above

Facility Name: MO-AWC Parkville Plant
Facility Address: 10550 NW River Road, Parkville, MO 64152

Legal Description: SE¼, SE¼, Sec. 35, T51N, R34W, Platte County
UTM Coordinates: X= 354433, Y= 4338657

Receiving Stream: Missouri River
First Classified Stream and ID: Missouri River (P) (226) 303(d) List?
USGS Basin & Sub-watershed No.: 10240011-0604

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

FACILITY DESCRIPTION

Public Water Supply; SIC # 4941

This is a drinking water treatment facility treating water for distribution as a public water supply.

OUTFALL #001


Discharges consists of filter backwash water from four filters, sludging from two solids contact basins (clarifiers), sample by-pass lines, and wastewater from the eductor, which removes inert lime grit from the lime feed system. All these waste streams are combined in a backwash equalization basin prior to discharge.

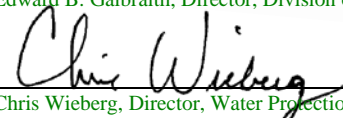
Design Flow: 1.000 MGD
Average Flow: 0.303 MGD

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 Sections 640.013, 621.250, and 644.051.6 of the Law.

March 1, 2018
Effective Date

February 28, 2023
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

PERMITTED FEATURE #001 - OUTFALL #001		TABLE A-2 FINAL 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 on March 1, 2021 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/month	24 hr. total
CONVENTIONAL						
Chlorine, Total Residual	µg/L	209		141	once/month	grab
pH ∞	SU	6.0-10.5		6.0-10.5	once/month	grab
Settleable Solids (Note 1)	mL/L/hr	*		*	once/month	grab
Total Suspended Solids (Note 1)	mg/L	*		*	once/month	grab
METALS						
Iron, Total Recoverable	µg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2021</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
WET TESTING						
Whole Effluent Toxicity, Acute See Special Condition #2	TU _a	*			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>YEARLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2022</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

* Monitoring requirement only.

∞ The facility will report the minimum and maximum values. pH is not to be averaged.

Note 1 The permittee shall comply with specific best management practices to reduce the volume of solids in the discharge. See Special Condition #1 for a list of best management practices.

B. SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed per 40 CFR 122.47. The facility shall attain compliance with final effluent limitations established for total residual chlorine in this permit as soon as reasonably achievable:

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.
2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date. The first report is due March 28, 2019.
3. Within 3 years of the effective date of this permit, the permittee shall attain compliance with the final effluent limits at outfall #001, for total residual chlorine.

Please submit progress reports via the electronic reporting system.

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I and Part III standard conditions dated August 1, 2014 and March 1, 2015, respectively, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
 - (a) Should the discharge result in color changes to the Missouri River, the permittee will be required to alter operations in order to mitigate the cause of the color change. This may require adjusting the float system so that discharge is triggered at lower volumes, resulting in more continuous flow. A color change prompting use of this BMP is considered any color observed in the Missouri River just below the discharge point that is the same as the color observed in the backwash equalization basin or the same as the colors of the individual waste streams contributing to the overall flow into the backwash equalization basin, and subsequently the discharge and receiving stream.
2. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:

 - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
 - The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
 - The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
 - (b) Chemical and physical analysis of the upstream control sample 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. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The Allowable Effluent Concentration (AEC) for this facility is 9.1% with the dilution series being: 35.28%, 17.64%, 8.82%, 4.41%, 2.205%.
 - (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

D. SPECIAL CONDITIONS (CONTINUED)

3. Electronic Discharge Monitoring Report (eDMR) Submission System

- (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
- (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
 - (1) Schedule of Compliance Progress Reports; and
 - (2) Any additional report required by the permit excluding bypass reporting.After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
- (c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
 - (1) General Permit Applications/Notices of Intent to discharge (NOIs);
 - (2) Notices of Termination (NOTs);
 - (3) No Exposure Certifications (NOEs);
 - (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
 - (5) Bypass reporting.
- (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>.
- (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

4. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to 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 contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.

5. All outfalls must be clearly marked in the field.

6. Changes in Discharges of Toxic Pollutant

In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

- (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, 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;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (6) The notification level established by the department in accordance with 40 CFR 122.44(f).
- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/L);
 - (2) One milligram per liter (1 mg/L) for antimony;

D. SPECIAL CONDITIONS (CONTINUED)

- (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
 - (4) The level established by the Director in accordance with §122.44(f).
- 7. Report as no-discharge when a discharge does not occur during the report period.
- 8. Reporting of Non-Detects
 - (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
 - (b) The permittee shall not report a sample result as “non-detect” without also reporting the detection limit of the test. Reporting as “non-detect” without also including the detection limit will be considered failure to report, which is a violation of this permit.
 - (c) The permittee shall report the “non-detect” result using the less than sign and the minimum detection limit (e.g. <10).
 - (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
 - (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
 - (f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).
- 9. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0101354
MO-AWC PARKVILLE PLANT

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 stormwater 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 for less.

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 (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I. FACILITY INFORMATION

Facility Type: Industrial, Public Water Supply
Facility SIC Code(s): 4941
Application Date: 03/23/2017
Expiration Date: 09/30/2017
Last Inspection: 05/13/2013 - in compliance

FACILITY DESCRIPTION:

This is a drinking water treatment facility treating water for distribution as a public water supply.

OUTFALL #001

Discharges consists of filter backwash water from four filters, sludging from two solids contact basins (clarifiers), sample by-pass lines, and wastewater from the eductor, which removes inert lime grit from the lime feed system.

Design Flow: 1.000 MGD
Average Flow: 0.303 MGD

The following detailed descriptions were provided by the permittee but include relevant information used to make permitting decisions.

Source water: alluvial groundwater wells

Filter backwash

- A filter backwash generates approximately 87,000 gallons of backwash water. On average two filters are backwashed every day for a total of 174,000 gallons per day.
- Treated water is used to backwash the filters. The backwash water contains the solids/particles filtered out of the water during the treatment process along with the treated water used for the backwashing.
- Filter backwash water makes up approximately 57% of the average day flow for Outfall #001.

Sludging

- Every hour for approximately 5 minutes the sludge valves for the two clarifiers are opened to remove accumulated sludge from the basins. The sludge consists primarily of lime residuals from the water treatment process.
- Total volume is approximately 72,000 gallons per day (or 36,000 gallons per clarifier) and contains about 3-5% solids with the rest being basin water.
- Sludging water makes up approximately 24% of the average day overall flow from Outfall #001.

Sample by-pass lines

- Treated water for collecting process control samples.
- Run continuously at a maximum of 15 gallons per minute.
- The flows consist of treated water.
- Total volume is approximately 21,600 gallons per day or approximately 7% of the overall flow of Outfall #001.

Eductor

- Removes inert lime grit from RDP lime system.
- Runs continuously at an average volume of 25 gallons per minute.
- Utilizes treated water to carry grit from the RDP system to the EQ basin.
- Total volume is approximately 36,000 gallons per day or approximately 12% of the overall flow of Outfall #001.

Backwash Equalization Basin

All of the above waste-streams flow into the plant's backwash equalization basin for holding/ mixing prior to being discharged to the Missouri River via Outfall #001. The discharge pumps in the backwash equalization basin operate off of a float system. The floats will be set to trigger the pumps at an elevation short of 87,000 gallons, which is the amount generated from one filter backwash. The plan is to have the inflow of the backwash water trigger the float system. The backwash water will be entering the basin at a high rate of flow/ volume and should help mix the residuals in the basin so when the pumps are activated the effluent will be mixed. We anticipate the effluent to be discharged to the river will average around 1% solids. As described above the discharge pump will be triggered during every filter backwash event. The discharge pumps will pump at 1,000 -1,100 gpm and will be able to drain the 87,000 gallons from the basin in roughly 85 minutes.

Sanitary Sewer Discharges

The following waste-streams will be discharged to the sanitary sewer connection at the plant:

- kitchen sink, dish washer, toilets, bathroom sinks, showers, water fountains, eye washes, floor drains, maintenance area sink, lab sinks, and sample water from the analyzers.

The sanitary sewer that serves the plant is connected to the City of Parkville's POTW (M0-0113085).

Stormwater

The stormwater from the property is managed with a system of swales, curbs and sewers that drain to an on-site pond. The overflow water from the pond is sent off-site through the existing culvert system. The stormwater system is designed to manage back to back 100-year storms, as required by the City of Parkville.

Note – though the permittee provided information on stormwater control measures, the stormwater from this site is not regulated under 10 CSR 20-6.200. Thus, specific stormwater requirements will not be included in the permit.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW (MGD / CFS)	DESIGN FLOW (MGD / CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.303 / 0.469	1.00 / 1.55	Best Management Practices	Industrial Process Wastewater

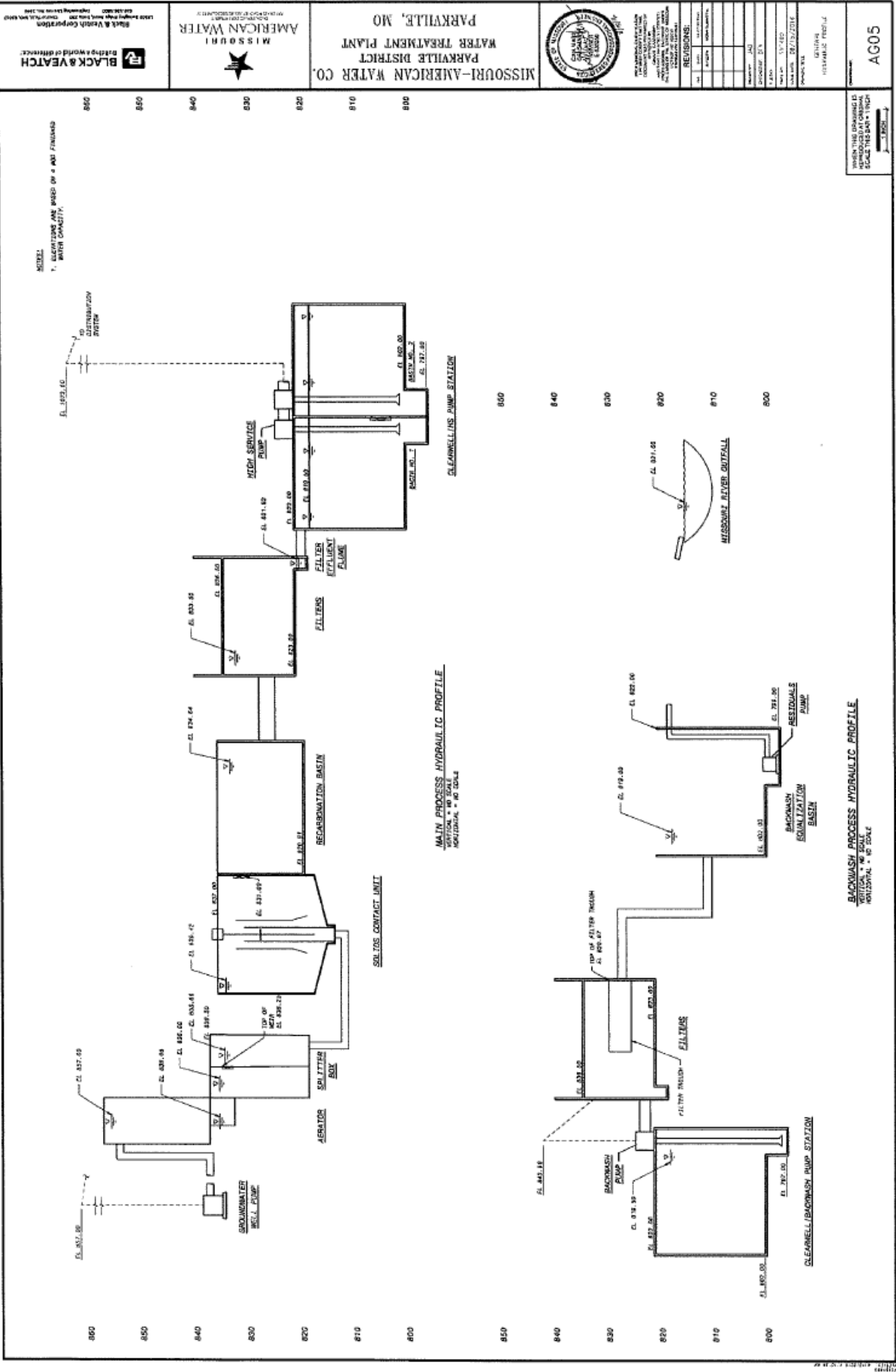
FACILITY PERFORMANCE HISTORY & COMMENTS:

The most recent site inspection to determine compliance with MO-0101354 was conducted on May 13, 2013. The facility was found to be in compliance during the time of the inspection.

FACILITY MAP:



WATER BALANCE DIAGRAMS:



MISSOURI-AMERICAN WATER CO.
PARKVILLE DISTRICT
WATER TREATMENT PLANT
PARKVILLE, MO

AMERICAN WATER
MISSOURI

BLACK & VEATCH
Building a World of Difference

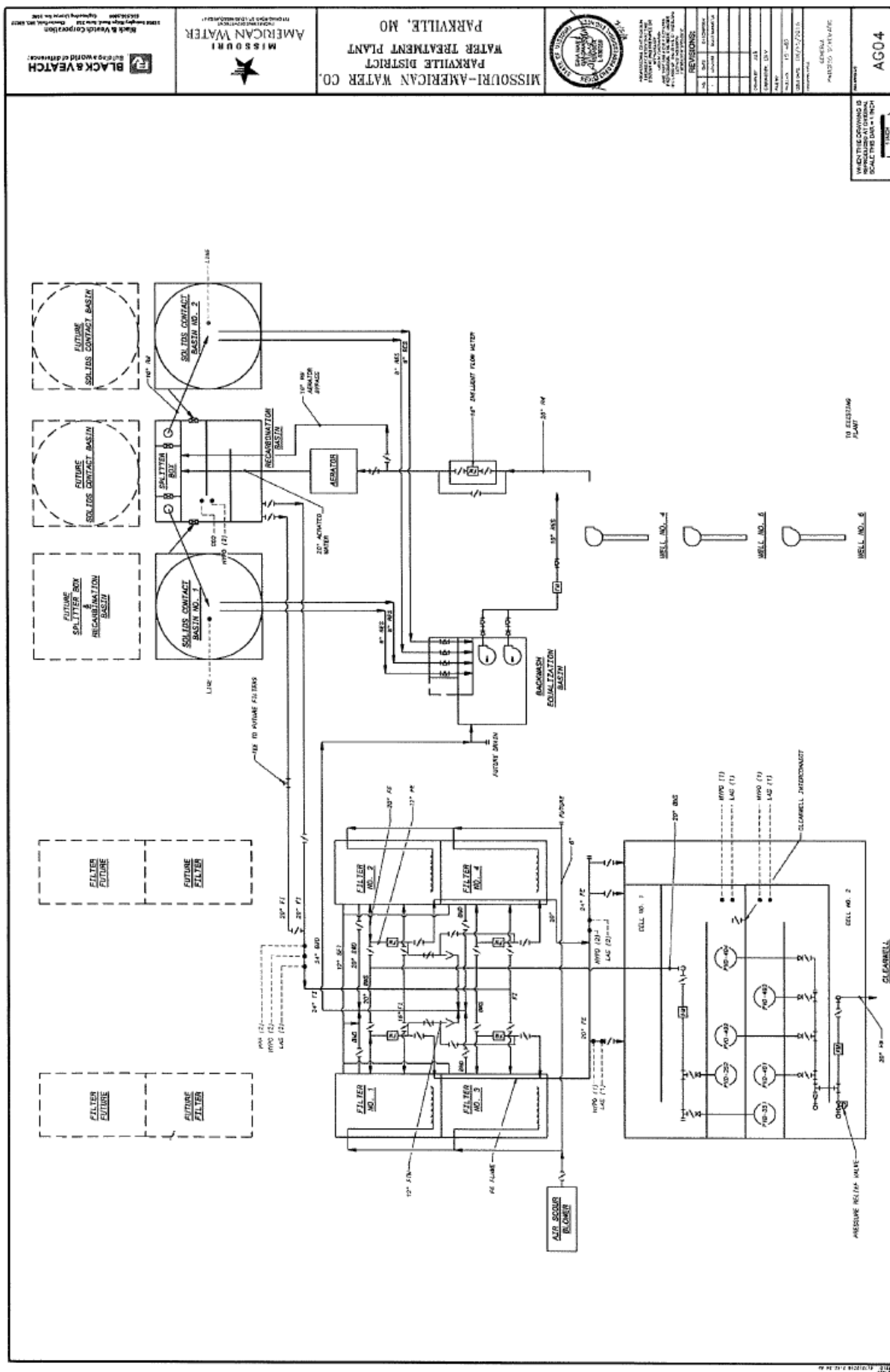
REVISIONS:

NO.	DATE	DESCRIPTION
1	11/1/2011	ISSUED FOR PERMIT

PROJECT DATA:

PROJECT NO.	111-001
DATE	11/1/2011
DESIGNED BY	J. L. B.
CHECKED BY	J. L. B.
APPROVED BY	J. L. B.

AG05



Part II. RECEIVING STREAM INFORMATION**RECEIVING WATER BODY'S WATER QUALITY:**

The Missouri River near this facility has no concurrent water quality data available other than the impairments discussed below.

303(D) LIST:

Section 303(d) of the federal Clean Water Act requires each state identify waters 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 impaired waters not addressed by normal water pollution control programs. <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>

- ✓ Applicable; Missouri River (P) (226) is listed on the 2016 Missouri 303(d) list for Escherichia coli.
- ✓ This facility is not considered a source of the above listed pollutant(s) or considered to contribute to the impairment. The source is listed as municipal point source discharges and nonpoint sources. The listing does not specifically call out this facility.

TOTAL MAXIMUM DAILY LOAD (TMDL):

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; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. <http://dnr.mo.gov/env/wpp/tmdl/>

- ✓ Applicable; Missouri River (P) (226) is associated with the 2006 EPA approved TMDL for chlordane and PCBs.
- ✓ This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

- ✓ As per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven 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: ☒
 Lake or Reservoir: ☐
 Losing: ☐
 Metropolitan No-Discharge: ☐
 Special Stream: ☐
 Subsurface Water: ☐
 All Other Waters: ☐

RECEIVING STREAMS TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	DISTANCE TO SEGMENT (MILES)	12-DIGIT HUC
#001	Missouri River	P	226	DWS, GEN, HHP, IND, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.0	10240011-0604

n/a not applicable

WBID = Waterbody Identification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip

* As per 10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC-A = Whole body contact recreation supporting swimming uses and has public access;

WBC-B = Whole body contact recreation supporting swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHH) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): GRW = Groundwater

RECEIVING STREAM LOW-FLOW VALUES:

OUTFALL	RECEIVING STREAM (C, P)	LOW-FLOW VALUES (CFS)		
		1Q10	7Q10	30Q10
#001	Missouri River (P)	19,800.00	20,185.71	21,092.00

Low flow values were obtained from USGS Gaging Station at Kansas City, MO. Data were obtained from 10/01/1928 to 01/31/2017 and were calculated using a departmentally developed spreadsheet (available upon request).

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) (CHRONIC) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) (ACUTE) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
4,950.00	5,046.43	5,273.00	15.5	15.5	15.5

ZID cannot be more than 10 times the facility design flow. The design flow is 1.55 CFS; thus, 10 times the design flow is 15.5 CFS. This flow is smaller than the ZIDs calculated from the mixing zone flows in the table. Therefore, the ZID is 15.5 CFS.

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements are recommended at this time.

Part III. 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:

Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- ✓ Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
- ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
 - The previous permit contained monitoring for volume of lime used in a given month as an effluent limitation. The permit writer has been exploring options to better capture the discharge from drinking water treatment plants in these NPDES permits. Monitoring of settleable solids and total suspended solids in both the influent and effluent better characterizes those volumes of sludge generated during the treatment process. With this in mind, monitoring of lime is no longer necessary. The permit writer used best professional judgment to remove lime monitoring at this time. The permit will rely of solids monitoring and best management practices to address lime use and well as other solids generated during the treatment process.
- ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
 - The previous permit contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality standards in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires that in instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination and establishing numeric effluent limitations for specific pollutant parameters, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined that the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality.

ANTIDEGRADATION REVIEW:

For process water discharge with new, altered, or expanding discharges, the department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

- ✓ Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ Not applicable; the facility does not have stormwater discharges or the stormwater outfalls onsite have no industrial exposure.

BENCHMARKS:

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

Because of the fleeting nature of stormwater discharges, the department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

- ✓ Not applicable; this facility does not have any stormwater outfalls.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). Sewage sludge is solid, semi-solid, 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 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: <http://extension.missouri.edu/main/DisplayCategory.aspx?C=74> (WQ422 through WQ449).

- ✓ Not applicable; this condition is not applicable to the permittee for this facility.

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.

- ✓ Not applicable; the permittee/facility is not currently under Water Protection Program enforcement action.

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

- ✓ The facility does not have an associated ELG.

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

- ✓ This facility is not required to monitor groundwater for the water protection program.

INDUSTRIAL SLUDGE:

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

- ✓ Applicable; industrial sludge is generated at this facility. The drinking water treatment generates sludge that is discharged directly to the Missouri River. This sludge is authorized to be discharged; however, the permit will contain specific condition controlling the rates and volumes of discharge in order to protect water quality.

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 causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. If the permit writer determines 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 [40 CFR Part 122.44(d)(1)(iii)].

- ✓ Applicable; an RPA was conducted on appropriate parameters and was 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. See Wasteload Allocations (WLA) for Limits in this section.

Parameter *	CMC	RWC Acute	CCC	RWC Chronic	n	Range min; max	CV	MF	RP Yes/No
Chlorine, Total Residual	19.0	416.35	10.0	1.41	17.00	2900/1000	0.3	1.58	YES

N/A Not Applicable

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

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

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

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

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

RP Reasonable Potential: 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).

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, 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. SOC's are allowed under 40 CFR 122.47 providing certain conditions are met.

- ✓ 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(12)]. The facility has been given a schedule of compliance to meet final effluent limits for total residual chlorine. The permittee will be granted a three year schedule of compliance. This will allow the permittee to make operational changes or install structural treatment devices to reduce the total residual chlorine in the discharge.

SPILL REPORTING:

Per 10 CSR 24-3.010, any emergency involving a hazardous substance must be reported to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <http://dnr.mo.gov/env/esp/spillbill.htm>

STORMWATER PERMITTING:

A standard mass-balance equation cannot be calculated for stormwater from this facility because the stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day. The amount of stormwater discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability increases the flash of the stream.

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)4.B.]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above staff are unable to perform statistical Reasonable Potential Analysis (RPA). However, staff will use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used 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 stormwater 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 waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater 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.

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (<http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf>).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs that are reasonable and cost effective. The AA evaluation should include practices that are designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: <http://dnr.mo.gov/forms/index.html>.

✓ Not applicable; at this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:

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 permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does provide adequate protection for the receiving waters, then the other must be used.

✓ Applicable; wasteload allocations were calculated where relevant using water quality criteria or water quality model results and by applying 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
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

- Acute wasteload allocations designated as daily maximum limits (MDL) 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).
- Chronic wasteload allocations designated as monthly average limits (AML) 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).
- Water quality based MDL and AML effluent limitations were calculated using methods and procedures outlined in USEPA's *Technical Support Document For Water Quality-based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.
- Number of Samples "n": 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, targeted to comply with the values dictated by the WLA. Therefore, it is recommended 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:

Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

✓ 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(4), 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 to determine discharges from the facility cause 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 the provisions in 10 CSR 20-6 and the Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the department may require other terms and conditions it deems necessary to assure compliance with the CWA and related regulations of the Missouri Clean Water Commission. The following Missouri Clean Water Laws (MCWL) apply: §644.051.3. requires the department to set permit conditions complying 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); and §644.051.5. is the basic authority to require testing conditions. WET tests are required by all facilities meeting the following criteria:

- ☒ Facility is a designated a Major
- ☐ Facility continuously or routinely exceeds its design flow
- ☐ Facility that exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded
- ☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year
- ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts
- ☐ Facility has Water Quality-Based Effluent Limitations for toxic substances (other than NH₃)
- ☐ Facility is a municipality with a Design Flow ≥ 22,500 GPD
- ☒ Other – the discharge contains large volumes of lime sludge. The purpose of lime in the drinking water treatment plant is to bond to impurities and pollutants in the water so that the water is safe to drink. All those pollutants are concentrated in the sludge being discharge. WET testing is required to determine if the combined effect of the concentrated pollutants is toxic to aquatic life.

Part IV. EFFLUENT LIMITS DETERMINATION

Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required under 40 CFR 122.45(d)(1) for continuous discharges not from a POTW.

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

- (A) 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.

The discharge flows directly into the Missouri River. Because the discharge flow of 1.5 CFS is only a small fraction of the Missouri River flow of 20,186 CFS at the 7Q10 low flow, the discharge is not expected to cause any putrescent, unsightly or harmful deposits or prevent full maintenance of beneficial uses in the river at this time. The permit will implement TBEL best management practices to continue to reduce solids discharges and maintain compliance with this criterion.

- (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.

The discharge consists of wastewater from the drinking water treatment process. The intake water, treatment process and additives are not expected to result in any oil, scum or floating debris in the wastewater discharge.

- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.

The discharge flows directly into the Missouri River. Because the discharge flow of 1.5 CFS is only a small fraction of the Missouri River flow of 20,186 CFS at the 7Q10 low flow, the discharge is not expected to cause any unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses in the river at this time. The permit will implement TBEL best management practices to continue to reduce solids discharges and maintain compliance with this criterion.

- (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.

The permit writer already considered specific toxic pollutants. Numeric effluent limitations are included for those pollutants that could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.

- (E) There shall be no significant human health hazard from incidental contact with the water.

It is the permit writer's opinion that this criterion is the same as (D).

- (F) There shall be no acute toxicity to livestock or wildlife watering.

It is the permit writer's opinion that this criterion is the same as (D).

- (G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

The discharge flows directly into the Missouri River. Because the discharge flow of 1.5 CFS is only a small fraction of the Missouri River flow of 20,186 CFS at the 7Q10 low flow, the discharge is not expected to cause any physical, chemical or hydrologic changes to the river that would impair the natural biological community at this time.

- (H) 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.

There are no solid waste disposal activities or any operation that has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

OUTFALL #001 – MAIN FACILITY OUTFALL**EFFLUENT LIMITATIONS TABLE:**

PARAMETERS	UNIT	BASIS FOR LIMITS	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL								
FLOW	MGD	1	*	*	SAME	ONCE/MONTH	ONCE/MONTH	24 Hr. TOT
LIME	TONS	6	REMOVED		*/*	REMOVED		
CONVENTIONAL								
CHLORINE, TOTAL RESIDUAL	µg/L	1, 2, 3	209	141	*/*	ONCE/MONTH	ONCE/MONTH	GRAB
pH ‡	SU	1, 3	6.0-10.5	6.0-10.5	*/*	ONCE/MONTH	ONCE/MONTH	GRAB
SETTLABLE SOLIDS	mL/L/HR	6	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
TSS	MG/L	1, 6	*	*	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
METALS								
IRON, TOTAL RECOVERABLE	µg/L	1, 6	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
OTHER								
ACUTE WET TEST	TUa	8	*	-	PASS/FAIL	ONCE/YEAR	ONCE/YEAR	COMPOSITE

* Monitoring requirement only

‡ The facility will report the minimum and maximum pH values; pH is not to be averaged.

NEW Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

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

DERIVATION AND DISCUSSION OF LIMITS:**EFFLUENT MONITORING AND LIMITATIONS:****PHYSICAL:****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. The facility will report the total flow in millions of gallons per day (MGD).

Lime

Parameter removed. The permit writer used best professional judgment to remove this parameter at this time. This permit implements best management practices that will capture monitoring of lime use in the plant. Additionally, the permit will contain influent and effluent monitoring of both settleable solids and total suspended solids. This will more adequately capture all of the solids generated at the facility and that are contributing to solids in the discharge.

CONVENTIONAL:**Chlorine, Total Residual (TRC)**

Daily Maximum of 209 µg/L and Monthly Average of 141 µg/L. The previous permit contained monitoring for this parameter. Five years of DMR data was used to conduct a Reasonable Potential Analysis (RPA). The RPA resulted in reasonable potential for the discharge to cause or contribute to excursions of the water quality standards at the edge of the mixing zone. For this reason, effluent limitations are included in the permit. See below for a summary of the limit calculations.

Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background = 0 µg/L.

$$\text{Acute WLA: } C_e = ((1.55 + 15.5)19 - (15.5 * 0.0))/1.55 \quad C_e = 209.0 \text{ µg/L}$$

$$\text{Chronic WLA: } C_e = ((1.55 + 5046.43)10 - (5046.43 * 0.0))/1.55 \quad C_e = 32,567.6 \text{ µg/L}$$

$$\text{LTA}_a = 290.0 (0.538) = 112.44 \text{ µg/L} \quad [\text{CV} = 0.3, 99^{\text{th}} \text{ Percentile}]$$

$$\text{LTA}_c = 32,567.6 (0.723) = 23,546.37 \text{ µg/L} \quad [\text{CV} = 0.3, 99^{\text{th}} \text{ Percentile}]$$

Use most protective number of LTA_a or LTA_c.

$$\text{MDL} = 112.44 (1.86) = 209 \text{ µg/L} \quad [\text{CV} = 0.3, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 112.44 (1.25) = 141 \text{ µg/L} \quad [\text{CV} = 0.3, 95^{\text{th}} \text{ Percentile, } n = 4]$$

pH

6.0 to 10.5 SU. Technology standards include an allowance for drinking water treatment plants at a range of 6-10.5 SU, so long as the permittee can demonstrate that the pH will not exceed 9 SU at the edge of the mixing zone [10 CSR 20-7.015(9)(I)1]. If this cannot be demonstrated, then the technology standard is 6.0-9.0 SU. The water quality standard is set at a range of 6.5-9.0 SU [10 CSR 20-7.031(5)(E)]. The discharge directly enters the Missouri River, which has a large buffering capacity within the mixing zone. The permit writer believes that the pH will equalize to 9.0 SU at the edge of the mixing zone. For this reason, the technology standard of 6.0-10.5 SU will be applied.

Settleable Solids (SS) and Total Suspended Solids (TSS)

Monitoring only and best management practices. There are no technology or numeric water quality standards for these parameters.

Since there are no numeric standards, the permit writer is tasked with developing appropriate standards or controls to mitigate solids in the discharge. The following discussion walks through that iterative process for evaluating both technology controls and water quality considerations.

Technology-based Effluent Limitations

If the EPA has not promulgated technology-based effluent limitation guidelines, the permit writer is required to develop technology controls using best professional judgment. According to the EPA's NPDES Permit Writers' Manual, these controls can be developed by one of the following two methods: 1) transferring limits from an existing source (e.g. from other guidelines for similar sources or from existing NPDES permits); or 2) deriving case-by-case technology controls. When using the first method, the permit writer must determine whether the permit being considered applies to a facility that is similar in size and treatment. If the facility is similar, then those limits can be transferred to the permit easily. If not, then the permit writer must either provide significant justification for using those limits or must consider a different permit from a different facility that is more similar. When using the second method, the permit writer is required to complete the steps of a technology review outlined in the Clean Water Act. This review is as follows [40 CFR 125.3(d)(1)]:

For BPT requirements (all pollutants)

- The age of equipment and facilities involved*
- The process(es) employed*
- The engineering aspects of the application of various types of control techniques*
- Process changes*
- Non-water quality environmental impact including energy requirements*
- The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application

For BCT requirements (conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits
- The comparison of the cost and level of reduction of such pollutants from the discharge of POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources

For BAT requirements (toxic and non-conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The cost of achieving such effluent reduction

Recent permitting decisions for drinking water treatment plants in neighboring states allow the permit writer to use the first method to develop technology controls that satisfy the TBEL analysis. These decisions and the resulting TBEL's are detailed below.

Method 1

The Department has a general permit for water treatment plant settling basins, MO-G64. This permit authorizes the discharge of filter backwash water and treated sludge blowdown. This permit limits the parameter settleable solids to a daily maximum and monthly average of 1.0 mL/L/hr. The permit writer can simply choose these limits as the limits for this permit. However, the sludge being discharged at this site is not treated. According to the facility diagram provided by the permittee and shown on page 4 of the factsheet, sludge drains directly from the water treatment basins to the Missouri River without undergoing any wastewater treatment. The general permit strictly authorizes the discharge of only treated sludge. TSS is not included in that general permit.

The permit writer has reviewed a recently issued permit in the state of Iowa for a water treatment facility with similar treatment and discharge waste streams. The Council Bluffs Narrows Treatment Plant has been issued, after an extensive public participation period with collaboration from EPA and an appeal settlement, with narrative conditions related to best management practices to reduce both the volume of solids generated and the volume of solids discharged from the facility. This effort was supported by federal regulation 40 CFR 122.44(k), which states: "Best management practices (BMPs) to control or abate the discharge of pollutants when: (1) Authorized under section 304(E) of the 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 stormwater 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 purpose and intent of the CWA. The best management practices for the Council Bluffs Narrows permit include: 1) Discharge from the Narrows Treatment Plant sedimentation basins shall occur continuously to avoid slug discharges of treatment residual solids; and 2) Lime solids shall be recycled from the sedimentation basin to the mixing basin to the extent practicable to minimize the production and discharge of treatment residual solids. The permit writer believes that the Council Bluffs Narrows permit fits into the scope of 40 CFR 122.44(k)(3) and (4). Use of these best management practices was accepted by all parties (IDNR, EPA, and Council Bluffs) and provides further reasoning to develop best management practices to required control of the sludge at this facility.

The permittee has disclosed certain practices for wastewater and sludge handling at the plant that are designed to prevent slugs of solids and mitigate risk of pollution. These are listed below.

Filter backwash

- A filter backwash generates approximately 87,000 gallons of backwash water. On average two filters are backwashed every day for a total of 174,000 gallons per day.
- Treated water is used to backwash the filters. The backwash water contains the solids/particles filtered out of the water during the treatment process along with the treated water used for the backwashing.
- Filter backwash water makes up approximately 57% of the average day flow for Outfall #001.

Sludging

- Every hour for approximately 5 minutes the sludge valves for the two clarifiers are opened to remove accumulated sludge from the basins. The sludge consists primarily of lime residuals from the water treatment process.
- Total volume is approximately 72,000 gallons per day (or 36,000 gallons per clarifier) and contains about 3-5% solids with the rest being basin water.
- Sludging water makes up approximately 24% of the average day overall flow from Outfall #001.

Sample by-pass lines

- Treated water for collecting process control samples.
- Run continuously at a maximum of 15 gallons per minute.
- The flows consist of treated water.
- Total volume is approximately 21,600 gallons per day or approximately 7% of the overall flow of Outfall #001.

Eductor

- Removes inert lime grit from RDP lime system.
- Runs continuously at an average volume of 25 gallons per minute.
- Utilizes treated water to carry grit from the RDP system to the EQ basin.
- Total volume is approximately 36,000 gallons per day or approximately 12% of the overall flow of Outfall #001.

Backwash Equalization Basin

All of the above waste-streams flow into the plant's backwash equalization basin for holding/ mixing prior to being discharged to the Missouri River via Outfall #001. The discharge pumps in the backwash equalization basin operate off of a float system. The floats will be set to trigger the pumps at an elevation short of 87,000 gallons, which is the amount generated from one filter backwash. The plan is to have the inflow of the backwash water trigger the float system. The backwash water will be entering the basin at a high rate of flow/ volume and should help mix the residuals in the basin so when the pumps are activated the effluent will be mixed. We anticipate the effluent to be discharged to the river will average around 1% solids. As described above the discharge pump will be triggered during every filter backwash event. The discharge pumps will pump at 1,000 -1,100 gpm and will be able to drain the 87,000 gallons from the basin in roughly 85 minutes.

From discussions with the permittee, these are permanent best management practices that will reduce slugs of solids in the discharge. Though discharge is not continuous for the entirety of an 8 hour work day, discharge will be occurring for a significant amount of time throughout the day. The volume of wastewater generated is approximately 303,600 gallons per day. The discharge is triggered once the volume of wastewater reaches 87,000 gallons in the equalization basin. This results in about 3.5 discharge events per day. At a length of 85 minutes per event, the discharge will be occurring roughly 5 hours in a 24 hour day. The permittee will be required to explore changing the float heights in order to trigger discharge on a more continual basis should the discharge result in changes to color or turbidity in the receiving water body. In order to capture this, the following BMP will be implemented in the permit.

Should the discharge result in changes to color of the Missouri River, the permittee will be required to alter operations in order to mitigate the cause of the color change. This may require adjustment the float system so that discharge is triggered at lower volumes, resulting in more continuous flow.

The permittee also described the use of a lime feed system that is designed to minimize dosage based on quality needs. This system also recycles used lime in an effort to maximize the life of the product used for treating water. This will help reduce the amount of lime solids generated during the water treatment process. Since this is the case, there is no need to include a BMP mandating recycling of lime solids in the system. On those same lines, the permittee indicated that along with this dosing system, they monitor use of additives very closely. Additives increase costs of operations. The permittee makes efforts to minimize costs while meeting water quality standards. This reduces concerns for over dosing or over adding of other residuals that would contribute to solids in the discharge.

There are no surface water intakes, so the use of intake credits cannot be implemented. The BMP of intake monitoring and credits, as seen in other drinking water treatment plant permits, will not be included in this permit.

The permit writer will also require effluent monitoring of both settleable solids and TSS. Monitoring these parameters will indicate the true concentrations of solids in the discharge. Monitoring will also show how well best management practices are reducing the volume of sludge being discharge. With these data, the permittee and the Department can quantify discharge performance. During the following permit renewal, numeric technology controls may be developed using site-specific performance data within the case-by-case BPJ process.

Water Quality-based Effluent Limitations

As stated above, there are no numeric water quality standards for settleable solids or TSS. However, these two general criteria (narrative; below) from 10 CSR 20-7.031(4) are relevant to the discussion of these pollutants and shall be met at all times, including the mixing zone. The permit writer is tasked with evaluating these criteria relative to the technology-based best management practices.

- (A) “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”

Operating the discharge in accordance with the establish technology-based best management practices will control the deposition of solids from the discharge to levels that will not cause or contribute to an excursion from this narrative water quality criterion, therefore no reasonable potential exists. At these levels the solids contained in the discharge are not likely to cause putrescence, as they are not composed of organic materials. The discharge is not likely to cause or contribute to unsightly or harmful bottom deposits as it will be difficult to differentiate these solids from naturally occurring solids in the Missouri River, at these levels.

- (C) “Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses”

Again, adherence to technology-based best management practices will control solids in the discharge to levels that will not cause or contribute to an excursion from this narrative water quality criterion, therefore no reasonable potential exists. At these levels the solids contained in the discharge are not likely to cause unsightly color or turbidity, as the Missouri River is inherently turbid. The discharge is not likely to cause offensive odor, as the solids are not organic or odorous prior to discharge.

Conclusion

After evaluating both technology and water quality, it is the permit writers best professional judgement that the technology-based best management practice will be protective of Missouri's water quality criteria and numeric water quality-based effluent limits are not necessary at this time.

In considering these technology alternatives the permit writer has established best management practices under Special Condition #1 of the permit.

These represent practicable and achievable practices to control the pollutants, namely solids, in the discharge. These best management practices meet the obligations of the Clean Water Act and Missouri Clean Water Law. With these best management practices, the permittee will be required to take measures to reduce the influence of the discharge on the receiving water body as well as reducing pollutants in the discharge. The permit writer will also require effluent monitoring of both settleable solids and total suspended solids. Monitoring these parameters will indicate the true concentrations of solids in the discharge and enable the permittee to quantify the performance of the control techniques.

METALS:

Iron, Total Recoverable

Monitoring only. There are no technology standards for this parameter. The water quality standards include Protection of Aquatic Life CCC = 1000 µg/L. The permittee indicated that they believe this parameter is present in the discharge. At this time, the discharge does not have reasonable potential to cause or contribute to excursions of water quality standards beyond the mixing allowances. Monitoring is included to assess concentrations of iron in the discharge. Data collected will be evaluated during the following permit renewal to determine if limits are necessary to protect water quality.

OTHER:

Whole Effluent Toxicity (WET) Test, Acute

Monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream. The discharge contains large volumes of lime sludge. The purpose of lime in the drinking water treatment plant is to bond to impurities and pollutants in the water so that the water is safe to drink. All those pollutants are concentrated in the sludge being discharge. WET testing is required to determine if the combined effect of the concentrated pollutants is toxic to aquatic life.

For classified permanent streams with other than default mixing considerations, the Allowable Effluent Concentration (AEC)% is determined as follows:

$$\begin{aligned} \text{Acute AEC\%} &= [\text{DF}_{\text{cfs}} \div (\text{ZID}_{7\text{Q}10} + \text{DF}_{\text{cfs}})] \times 100\% = \text{\#\%} \\ \text{AEC}_a\% &= [1.5 \div (15.5 + 1.5)] \times 100\% = 8.82\% \end{aligned}$$

10 CSR 20-7.015((9)(L)4.A. states the dilution series must be proportional. Each dilution was determined by multiplying or dividing 2 from the AEC and then each consecutive value.

The dilution series is: 2.205%, 4.41%, 8.82%, 17.64%, 35.28%

Part V. SAMPLING AND REPORTING REQUIREMENTS:

Refer to each outfall's derivation and discussion of limits section to review individual sampling and reporting frequencies and sampling type. Additionally, see Standard Conditions Part I attached at the end of this permit and fully incorporated within.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

- ✓ The permittee/facility is currently using the eDMR data reporting system.

SAMPLING FREQUENCY JUSTIFICATION:

Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

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*. When I&I is an issue, it is recommended that WET testing be conducted during the period of lowest stream flow.

Acute Whole Effluent Toxicity

☒ - No less than **Once/Year:**

- ☒ -Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- ☐ -Facility incorporates a pretreatment program and dilution of the receiving stream is 100x or greater.
- ☐ -Facility continuously or routinely exceeds their design flow.
- ☐ -Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- ☒ -Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

SAMPLING TYPE JUSTIFICATION:

Sampling type was continued from the previous permit. Flow will be a 24 hour total. All parameters require grab samples. The sampling types are representative of the discharges, and are protective of water quality.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the department. Table A at 10 CFR 20-7.031 shows water quality standards.

Part VI. 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.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. <http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf>. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

✓ *This permit will become synchronized by expiring the end of the first quarter, 2023.*

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending.

<http://dnr.mo.gov/env/wpp/permits/pn/index.html> 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 12/22/2017 to 01/22/2018. Comments received merited a change to the final permit. The sampling type for TSS, SS was changed to grab rather than composite, because the discharge only occurs once per day for 90 minutes and is preceded by equalization making a composite sample unnecessary. This change did not merit re-public notice of this draft permit.

DATE OF FACT SHEET: NOVEMBER 1, 2017

COMPLETED BY:

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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
 - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.
- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittee with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

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**PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND INDUSTRIAL WASTEWATER
TREATMENT FACILITIES**

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
 - a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:

 - a. A site specific permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the Department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
 - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section H.

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
 - a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
 - b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.

5. Public Contact Sites:

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.

- a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
- b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.

6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri

- a. Haulers that land apply septage must obtain a state permit
- b. Do not apply more than 30,000 gallons of septage per acre per year.
- c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
- d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
- e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

- a. Biosolids shall be monitored to determine the quality for regulated pollutants
- b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to reach the maximum concentration of pollutants allowed.
- c. Table 1 gives the maximum concentration allowable to protect water quality standards

TABLE 1

Biosolids ceiling concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

¹ Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

- d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

TABLE 2

Biosolids Low Metal Concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

¹ You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

- e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

TABLE 3

Pollutant	CEC 15+		CEC 5 to 15		CEC 0 to 5	
	Annual	Total ¹	Annual	Total ¹	Annual	Total ¹
Arsenic	1.8	36.0	1.8	36.0	1.8	36.0
Cadmium	1.7	35.0	0.9	9.0	0.4	4.5
Copper	66.0	1,335.0	25.0	250.0	12.0	125.0
Lead	13.0	267.0	13.0	267.0	13.0	133.0
Mercury	0.7	15.0	0.7	15.0	0.7	15.0
Nickel	19.0	347.0	19.0	250.0	12.0	125.0
Selenium	4.5	89.0	4.5	44.0	1.6	16.0
Zinc	124.0	2,492.0	50.0	500.0	25.0	250.0

¹ Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

TABLE 4 - Guidelines for land application of other trace substances ¹

Cumulative Loading	
Pollutant	Pounds per acre
Aluminum	4,000 ²
Beryllium	100
Cobalt	50
Fluoride	800
Manganese	500
Silver	200
Tin	1,000
Dioxin	(10 ppt in soil) ³
Other	⁴

¹ Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

² This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

³ Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

⁴ Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426 (WQ426) published by the University of Missouri

- a. Use best management practices when applying biosolids.
- b. Biosolids cannot discharge from the land application site
- c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
- d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
- e. Do not apply more than the agronomic rate of nitrogen needed.
- f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - i. PAN can be determined as follows and is in accordance with WQ426
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
- ¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
- g. Buffer zones are as follows:
 - i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet if dwellings;
 - iv. 100 feet of wetlands or permanent flowing streams;
 - v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
- h. Slope limitation for application sites are as follows;
 - i. A slope 0 to 6 percent has no rate limitation
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
 - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
- i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
- k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
 - i. PAN can be determined as follows:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$

¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
 - a. Testing for metals or fecal coliform is not required
 - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
 - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
 - b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
 - c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

- At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Design Sludge Production (dry tons per year)	Monitoring Frequency (See Notes 1, 2, and 3)			
	Metals, Pathogens and Vectors	Nitrogen TKN ¹	Nitrogen PAN ²	Priority Pollutants and TCLP ³
0 to 100	1 per year	1 per year	1 per month	1 per year
101 to 200	biannual	biannual	1 per month	1 per year
201 to 1,000	quarterly	quarterly	1 per month	1 per year
1,001 to 10,000	1 per month	1 per month	1 per week	-- ⁴
10,001 +	1 per week	1 per week	1 per day	-- ⁴

¹ Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

² Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

³ Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

⁴ One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids.

This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

Note 3: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

- If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
- Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the Department.
- At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

- The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
- Reporting period
 - By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
 - Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
- Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
- Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
11201 Renner Blvd.
Lenexa, KS 66219

5. Annual report contents. The annual report shall include the following:
- a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
 - b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
 - c. Gallons and % solids data used to calculate the dry ton amounts.
 - d. Description of any unusual operating conditions.
 - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
 - i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
 - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
 - f. Contract Hauler Activities:

If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
 - g. Land Application Sites:
 - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest 1/4, 1/4, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
 - iii. Report the method used for compliance with pathogen and vector attraction requirements.
 - iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

26559

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MAR 23 2017



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
**FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI
CLEAN WATER LAW**

FOR AGENCY USE ONLY

CHECK NUMBER

DATE RECEIVED

FEE SUBMITTED

3-23-17

0.00

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

☐ An operating permit for a new or unpermitted facility:

Please indicate the original Construction Permit # _____

☒ An operating permit renewal:

Please indicate the permit # MO- 0101354 Expiration Date 09/30/2017

☐ An operating permit modification:

Please indicate the permit # MO- _____ Modification Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) ☒ YES ☐ NO**2. FACILITY**

NAME MO-AWC Parkville Plant		TELEPHONE NUMBER WITH AREA CODE (816) 741-2992	
		FAX	
ADDRESS (PHYSICAL) 10550 NW FF Hwy	CITY Parkville	STATE MO	ZIP CODE 64052

3. OWNER

NAME Missouri American Water Company		EMAIL ADDRESS timothy.ganz@amwater.com		TELEPHONE NUMBER WITH AREA CODE (314) 469-6050	
				FAX	
ADDRESS (MAILING) 901 Hog Hollow Rd.		CITY Chesterfield		STATE MO	ZIP CODE 63017

3.1 Request review of draft permit prior to public notice? ☒ YES ☐ NO**4. CONTINUING AUTHORITY**

NAME SAME		EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
				FAX	
ADDRESS (MAILING)		CITY		STATE	ZIP CODE

5. OPERATOR

NAME Scott Keith		CERTIFICATE NUMBER 14170		TELEPHONE NUMBER WITH AREA CODE (816) 741-2992	
				FAX	
ADDRESS (MAILING) 10550 NW FF Hwy		CITY Parkville		STATE MO	ZIP CODE 64052

6. FACILITY CONTACT

NAME Scott Keith		TITLE Operations Superintendent		TELEPHONE NUMBER WITH AREA CODE (816) 741-2992	
		E-MAIL ADDRESS scott.keith@amwater.com		FAX	

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 SE ¼ SE ¼ Sec 35 T 51N R 34W Platte County
UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 ¼ ¼ Sec _____ T _____ R _____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 ¼ ¼ Sec _____ T _____ R _____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ¼ ¼ Sec _____ T _____ R _____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC 4941 and NAICS 221310 002 – SIC _____ and NAICS _____
003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION**(Complete all forms that are applicable.)**

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES ☒ NO ☐
If yes, complete Form C or 2F.
(2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)
- B. Is application for storm water discharges only? YES ☐ NO ☒
If yes, complete Form C or 2F.
- C. Is your facility considered a "Primary Industry" under EPA guidelines: YES ☐ NO ☒
If yes, complete Forms C or 2F and D.
- D. Is wastewater land applied? YES ☐ NO ☒
If yes, complete Form I.
- E. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES ☐ NO ☒
If yes, complete Form R.
- F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.
- F. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit <http://dnr.mo.gov/env/wpp/edmr.htm> to access the Facility Participation Package.

- ☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.
- ☒ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.
- ☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

10. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions.
(PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME City of Parkville			
ADDRESS 8880 Clark Ave.	CITY Parkville	STATE MO	ZIP CODE 64052

11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Timothy C. Ganz, Environmental Manager	TELEPHONE NUMBER WITH AREA CODE (314) 469-6050
SIGNATURE 	DATE SIGNED 3/17/2017

MO 780-1479 (09-16)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Appropriate Fees? | <input type="checkbox"/> Form I (Irrigation), if applicable? |
| <input checked="" type="checkbox"/> Map at 1" = 2000' scale? | <input type="checkbox"/> Form R (Sludge), if applicable? |
| <input checked="" type="checkbox"/> Signature? | <input type="checkbox"/> Revised Nutrient Management Plan, if applicable? |
| <input checked="" type="checkbox"/> Form C or 2F, if applicable? | |
| <input type="checkbox"/> Form D, if applicable? | |

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MAR 23 2017

Water Protection Program



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM C – APPLICATION FOR DISCHARGE PERMIT –
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

FOR AGENCY USE ONLY

CHECK NO.

DATE RECEIVED

FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

MO-AWC Parkville Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO-0101354

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 4941 B. SECOND _____
C. THIRD _____ D. FOURTH _____

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) SE 1/4 SE 1/4 SEC 35 T 51N R 34W Platte COUNTY

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST) 001 RECEIVING WATER Missouri River

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Public water supply

B. For each outfall, provide a description of 1. All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water runoff. 2. The average flow contributed by each operation. 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

[illegible]

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

☐ YES (COMPLETE THE FOLLOWING TABLE)

☒ NO (GO TO SECTION 2.50)

1. OUTFALL NUMBER (list)	2. OPERATION(S) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW				C. DURATION (in days)
				A. FLOW RATE (in mgd)		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK (specify average)	B. MONTHS PER YEAR (specify average)	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

☐ YES (COMPLETE B.)

☒ NO (GO TO SECTION 2.60)

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

☐ YES (COMPLETE C.)

☐ NO (GO TO SECTION 2.60)

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS (list outfall numbers)
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET, ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

☐ YES (COMPLETE THE FOLLOWING TABLE)

☒ NO (GO TO 3.00)

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS (OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES) YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

[illegible]

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON A RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

☐ YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.)

☒ NO (GO TO 3.20)

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☒ YES (LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.)

☐ NO (GO TO 3.30)

A. NAME	B. ADDRESS	C. TELEPHONE (area code and number)	D. POLLUTANTS ANALYZED (list)
American Water Central Laboratory	1115 South Illinois Street Belleville, IL 62220-3102	618-235-3600	Nitrate-Nitrite Nitrogen Phosphorus Sulfate Aluminum Barium Iron Magnesium Molybdenum Manganese Strontium

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)

Timothy C. Ganz, Environmental Manager

TELEPHONE NUMBER (AREA CODE AND NUMBER)

314-991-3404

SIGNATURE (SEE INSTRUCTIONS)

DATE SIGNED

3-17-17

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.
SEE INSTRUCTIONS.

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)	OUTFALL NO. 001
---	--------------------

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT						3. UNITS (specify if blank)		4. INTAKE (optional)			
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE <i>(if available)</i>		C. LONG TERM AVRG. VALUE <i>(if available)</i>		D. NO. OF ANAL- YSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANAL- YSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand (<i>BOD</i>)	*											
B. Chemical Oxygen Demand (<i>COD</i>)	*											
C. Total Organic Carbon (<i>TOC</i>)	*											
D. Total Suspended Solids (<i>TSS</i>)	7280						1	mg/L				
E. Ammonia (<i>as N</i>)	*											
F. Flow	VALUE	#####	VALUE		VALUE			GPD		VALUE		
G. Temperature (<i>winter</i>)	VALUE	*	VALUE		VALUE			°C		VALUE		
H. Temperature (<i>summer</i>)	VALUE	*	VALUE		VALUE			°C		VALUE		
I. pH	11.24		MINIMUM	MAXIMUM	<div></div>		1	STANDARD UNITS	<div></div>			

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER <i>(if available)</i>	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE <i>(optional)</i>			
	A. BE- LIEVED PRE- SENT	B. BE- LIEVED AB- SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE <i>(if available)</i>		C. LONG TERM AVRG. VALUE <i>(if available)</i>		D. NO. OF ANAL- YSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Bromide (24959-67-9)		X												
B. Chlorine Total Residual	X		1.6						1	mg/L				
C. Color	X		4						1	Color Units				
D. Fecal Coliform	X		<1						1	MPN				
E. Fluoride (16984-48-8)	X		0.2						1	mg/L				
F. Nitrate- Nitrite <i>(as N)</i>	X		0.26/ND						1	mg/L				

MO 780-1514 (6-04)

PAGE 6

*Not required to test per MDNR

CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. BE- LIEVED PRE- SENT	B. BE- LIEVED AB- SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANAL- YSES	A. CONCEN- TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen Total Organic (as N)	X		1.4						1	mg/L				
H. Oil and Grease		X												
I. Phosphorus (as P) Total (7723-14-0)	X		1.52						1	mg/L				
J. RADIOACTIVITY														
(1) Alpha Total			*											
(2) Beta Total			*											
(3) Radium Total			*											
(4) Radium 226 Total			*											
K. Sulfate (as SO ⁴) (14808-79-8)	X		132.1						1	mg/L				
L. Sulfide (as S)		X												
M. Sulfite (as SO ³) (14265-45-3)		X												
N. Surfactants		X												
O. Aluminum Total (7429-90-5)	X		0.73						1	mg/L				
P. Barium Total (7440-39-3)	X		1.9						1	mg/L				
Q. Boron Total (7440-42-8)	X		0.126						1	mg/L				
R. Cobalt Total (7440-48-4)		X												
S. Iron total (7439-89-6)	X		24.45						1	mg/L				
T. Magnesium Total (7439-95-4)	X		55						1	mg/L				
U. Molybdenum Total (7439-98-7)		X												
V. Manganese Total (7439-96-5)	X		5.77						1	mg/L				
W. Tin Total (7440-31-5)		X												
X. Titanium Total (7440-32-6)		X												

*Not required to test per MDNR

**MAWC – Renewal Application for Missouri State Operating Permit MO-0101354
Form C., Part 2.40, B.**

The following information pertains to operation of the new MAWC Parkville District Drinking Water Treatment Plant – scheduled to be on-line in December of 2017.

Outfall 001 – Potable water treatment.

Average flow =	302,940 GPD
Maximum flow =	476,280 GPD
Design flow =	1 MGD

The discharge from outfall 001 consists of the following waste-streams:

1. Filter backwash water from the four filters.
2. Sludging from the two solids contact basins (clarifiers).
3. Sample by-pass lines.
4. Eductor – removes inert lime grit from lime feed system.

More detail on each of the waste-streams is provided below.

Filter backwash

- A filter backwash generates approximately 87,000 gallons of backwash water. On average two filters are backwashed every day for a total of 174,000 gallons per day.
- Treated water is used to backwash the filters. The backwash water contains the solids/particles filtered out of the water during the treatment process along with the treated water used for the backwashing.
- Filter backwash water makes up approximately 57% of the average day flow for Outfall 001.

Sludging

- Every hour for approximately 5 minutes the sludge valves for the two clarifiers are opened to remove accumulated sludge from the basins. The sludge consists primarily of lime residuals from the water treatment process.
- Total volume is approximately 72,000 gallons per day (or 36,000 gallons per clarifier) and contains about 3-5% solids with the rest being basin water.
- Sludging water makes up approximately 24% of the average day overall flow from Outfall 001.

Sample by-pass lines

- Treated water for collecting process control samples.
- Run continuously at a maximum of 15 gallons per minute.
- The flows consist of treated water.
- Total volume is approximately 21,600 gallons per day or approximately 7% of the overall flow of Outfall 001.

Eductor

- Removes inert lime grit from RDP lime system.
- Runs continuously at an average volume of 25 gallons per minute.
- Utilizes treated water to carry grit from the RDP system to the EQ basin.

- Total volume is approximately 36,000 gallons per day or approximately 12% of the overall flow of Outfall 001.

Backwash Equalization Basin

All of the above waste-streams flow into the plant's backwash equalization basin for holding / mixing prior to being discharged to the Missouri River via Outfall 001. The discharge pumps in the backwash equalization basin operate off of a float system. The floats will be set to trigger the pumps at an elevation short of 87,000 gallons, which is the amount generated from one filter backwash. The plan is to have the inflow of the backwash water trigger the float system. The backwash water will be entering the basin at a high rate of flow / volume and should help mix the residuals in the basin so when the pumps are activated the effluent will be mixed. We anticipate the effluent to be discharged to the river will average around 1% solids. As described above the discharge pump will be triggered during every filter backwash event. The discharge pumps will pump at 1,000 -1,100 gpm and will be able to drain the 87,000 gallons from the basin in roughly 85 minutes.

Sanitary Sewer Discharges

The following waste-streams will be discharged to the sanitary sewer connection at the plant:

- kitchen sink, dish washer, toilets, bathroom sinks, showers, water fountains, eye washes, floor drains, maintenance area sink, lab sinks, and sample water from the analyzers.

The sanitary sewer that serves the plant is connected to the City of Parkville's POTW (MO-0113085).

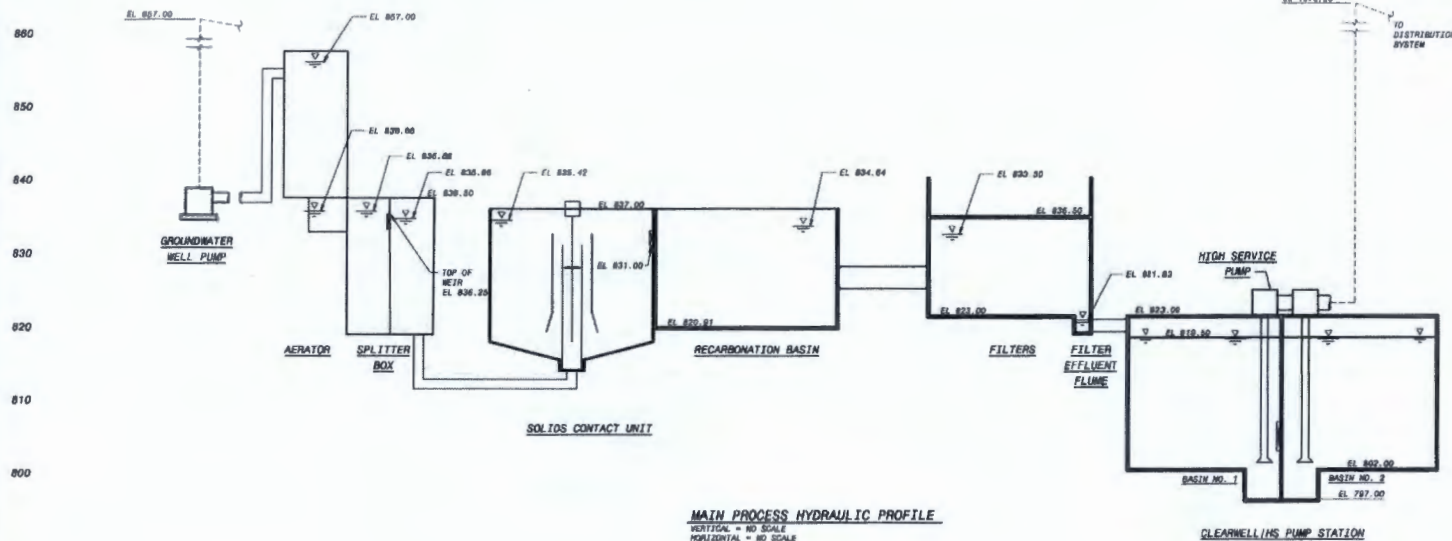
Stormwater

The stormwater from the property is managed with a system of swales, curbs and sewers that drain to an on-site pond. The overflow water from the pond is sent off-site through the existing culvert system. The stormwater system is designed to manage back to back 100-year storms, as required by the City of Parkville.

The attached diagrams illustrates the process flow for the plant and the various points of generation for the above waste-streams.



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 171 EAST 10TH ST. ST. LOUIS, MO 63102

MISSOURI-AMERICAN WATER CO. PARKVILLE DISTRICT PLANT WATER TREATMENT PLANT PARKVILLE, MO



REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	08/15/2018	AG	ISSUED FOR PERMIT

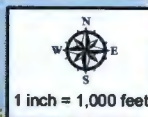
DESIGN BY: AG
 CHECKED BY: JTV
 DATE: 08/15/2018
 SCALE: 1" = 20' H
 DRAWING TITLE: GENERAL HYDRAULIC PROFILE

AG05



Parkville Plant outfall #001

Parkville Plant



- Legend
- MAWC Plant Locations
 - MAWC Outfalls
 - Facility Boundaries

