STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

GENERAL 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-G641000
Owner:	< name >
Address:	< address >
Continuing Authority:	< name, or Same as above >
Address:	< address, or Same as above >
Facility Name:	< name >
Facility Address:	< physical address >
Legal Description:	¼, ¼, ¼, Sec. xx, TxxN, RxxW, < county > County
UTM Coordinates:	X = ,Y =
Receiving Stream:	< receiving stream > < (U, C, P, L1, L2, L3) >
First Classified Stream and ID:	< 1st classified stream > <(U, C, P, etc.)> <(ID number)>
USGS Basin & Sub-watershed No.:	< (USGS HUC 12 #) >

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

FACILITY DESCRIPTION

All Outfalls (As listed in the permit application)

SIC code 4941

Discharges of backwash water from potable water supply water softening units and Zeolite filter backwash discharges

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

June 1, 2013
Effective Date Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

May 31, 2018
Expiration Date

John Madras, Director, Water Protection Program

TABLE A-1	INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations apply solely to facilities previously covered under this permit and shall become effective upon issuance and remain in effect no longer than two years minus one day from the effective date of the permit modification or until the re-issuance of a new Master General Permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: All newly permitted facilities are required to meet final effluent limits in table A-2.

EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/quarter	24 hr. estimate
Chlorides	mg/L	557		277	once/quarter	grab
Chlorides + Sulfate	mg/L	1000		1000	once/quarter	grab
Settleable Solids	mL/L	1.5		1.0	once/quarter	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter	grab
pH – Units	SU	**		**	once/quarter	grab

MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**; THE FIRST REPORT IS DUE **JANUARY 28, 2017** (see Note 1). THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

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

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. For previously permitted facilities, the final effluent limitations shall become effective no more than two years from the effective date of the permit modification and remain in effect until expiration of the permit. New facilities applying for this permit shall be required to meet final effluent limits immediately. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/quarter	24 hr. estimate
Chlorides	mg/L	557		277	once/quarter	grab
Chlorides + Sulfate	mg/L	1000		1000	once/quarter	grab
Settleable Solids	mL/L	1.5		1.0	once/quarter	grab
Copper, Total Recoverable	µg/L	22.0		11.0	once/quarter	grab
Lead, Total Recoverable	µg/L	10.0		5.0	once/quarter	grab
pH – Units	SU	**		**	once/quarter	grab

MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**; THE FIRST REPORT IS DUE **JANUARY 28, 2017** (see Note 1). THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

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

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Note 1 - An annual report shall be submitted by January 28th, and shall be for the reporting period of January 1st to December 31st of the previous year.

APPLICABILITY

1. This permit authorizes the discharge of backwash water from potable water system water softening units. SIC Code 4941

2. If at any time the Missouri Department of Natural Resources (department) determines that the quality of waters of the state may be better protected by requiring the owner of zeolite filter backwash discharges to apply for an individual State Operating permit, the Department may do so.

3. If at any time the owner desires to apply for a site specific Missouri State Operating permit, the owner may do so.

4. This permit does not apply to the discharge of any water other than the water softener backwash water.

5. This permit does not apply to discharges:

   (a) Within 1,000 feet upstream of an outstanding state resource water*;
   (b) Within the watersheds of streams or lakes listed as an outstanding national resource water* or their tributaries;
   (c) Within two stream miles upstream of biocriteria reference locations*;
   (d) Within 1,000 feet upstream of streams, lakes, or reservoirs identified as critical habitat for endangered species.
   (e) Within two stream miles upstream of losing stream segments, sinkholes, and/or direct conduits to groundwater.

   * Identified or described in 10 CSR 20, Chapter 7. These regulations are available at many libraries and online at www.sos.mo.gov, or may be purchased from the department by calling the Water Protection Program.

6. Facilities that are located within the watershed of an impaired water as designated on the 305(b) Report need to be evaluated on a case-by-case basis for inclusion under this permit. Missouri's impaired waters can be found at www.dnr.mo.gov/env/wpp/waterquality/index.html. Facilities that are found to be discharging the listed pollutant(s) of concern for any impaired water may be required to obtain a site-specific permit.

7. Any facility located in the watershed of an Outstanding National Resource Water (ONRW) must be operated in a no-discharge manner in accordance with 10 CSR 20 6.015 (1)(B)(7). Any new or existing facility that plans to operate within an ONRW watershed must submit an application for this permit. The application must include an engineering report sealed by a professional engineer licensed in the state of Missouri. The engineering report must demonstrate the facility is capable of operating as a no-discharge facility. The engineering report will also provide details of water usage and methods of land application.

8. Any facility located within two (2) miles of losing streams, sinkholes and/or direct conduits to groundwater must be operated in a no-discharge manner in accordance with 10 CSR 20 6.015 (1)(B)(7). Any new or existing facility that plans to operate within 2 miles of losing streams, sinkholes, and/or direct conduits to groundwater must submit an application for this permit. The application must include an engineering report sealed by a professional engineer licensed in the state of Missouri. The engineering report must demonstrate the facility is capable of operating as a no-discharge facility. The engineering report will also provide details of water usage and methods of land application.

SCHEDULE OF COMPLIANCE

The Schedule of Compliance only applies to facilities that obtained and operated under this Master General Permit prior to the modification date. Within 1 year of the effective date of the Master General Permit modification, a facility that operated under the permit prior to modification shall submit a report to the department detailing progress made in attaining compliance with the final effluent limitations for Lead and Copper.

A facility that obtained and operated under the previous Master General Permit shall attain compliance with final effluent limitations for Lead and Copper as soon as reasonably achievable or no later than one (1) year and 364 days after the effective date of the Master General Permit modification.

Facilities that obtained this permit for the first time after the effective date of the permit modification must meet the final effluent limitations in this permit at time of permit issuance. The schedule of compliance does not apply to new facilities.

STANDARD CONDITIONS

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

REQUIREMENTS

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

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

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

3. Water Quality Standards
   (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock and wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

4. Changes in Discharges of Toxic Substances
   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;
      (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).

5. Report as no-discharge when a discharge does not occur during the report period.

6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055, RSMo).

<u>PERMIT TRANSFER</u>

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This permit may be transferred to a new owner by submitting an "Application for Transfer of Operating Permit" signed by the seller and buyer of the facility, along with the appropriate modification fee.

TERMINATION

In order to terminate this permit, the permittee shall notify the department by submitting Form H, included with the State Operating Permit. The permittee shall complete Form H and mail it to the department at the address noted in the cover letter of this permit. Proper closure of any storage structure is required prior to permit termination.

PERMIT RENEWAL REQUIREMENTS

Unless this permit is terminated, the permittee shall submit an application for the renewal of this permit no later than thirty (30) days prior to the permit's expiration date. As part of the complete application and as required by the federal NDPES eReporting rule, participation in the department's Electronic Discharge Monitoring Report Submission System (eDMR) will be required at the next renewal. More information can be found at: http://dnr.mo.gov/env/wpp/edmr.htm. Failure to apply for renewal may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

DUTY OF COMPLIANCE

The permittee shall comply with all conditions of this general permit. Any noncompliance with this general permit constitutes a violation of Chapter 644, Missouri Clean Water Law, and 10 CSR 20-6. Noncompliance may result in enforcement action, termination of this authorization, or denial of the permittee's request for renewal.

This permit authorizes only the activities described in this permit. Compliance with this permit may not be considered a shield from compliance with any local ordinance, State Regulation or State Law

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF MODIFICATION OF
MOG641000
MASTER GENERAL PERMIT FOR POTABLE WATER SUPPLY WATER SOFTENING UNITS, AND ZEOLITE FILTER BACKWASH DISCHARGES

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

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

A Factsheet is not an enforceable part of an operating permit.

PERMIT MODIFICATION – MAY 2016:
This is a modification of an existing Master General Permit for Potable Water Supply Water Softening Units and Zeolite Filter Backwash Discharges. The department recently became aware of currently permitted and unpermitted facilities using zeolite filters for lead and/or copper removal. The previous version of this permit did not include effluent limits for lead and copper. At the last renewal of the master general permit, lead and copper were not considered pollutants of concern of the facilities that were permitted at that time. Since lead and copper are now considered pollutants of concern, they have been added to the permit as effluent limits to ensure protection of waters of the state. In addition, coordination between the Water Pollution Control Branch and the Public Drinking Water Branch will ensure all known public water systems utilizing softening units and filters for removal of metals will be covered under this master general permit.

Facilities that would otherwise be covered by this permit but discharge to a currently permitted system, such as a municipal wastewater treatment facility, will not be required to obtain this master general permit. The facility receiving their discharge must be made aware of the updated pollutants of concern and responsibility for compliance would lie with the facility receiving the backwash discharge.

A two year Schedule of Compliance has been added to this permit. The Schedule of Compliance is discussed at length on page 3 of this Fact Sheet, which also lists options for actions to be taken in the event that final effluent limits cannot be met by the end of the SOC.

The following changes were made:

- Lead and copper final effluent limits and monitoring requirements were added. See Part VI of the Fact Sheet for further information regarding addition of effluent parameters. Raw waters feed shall not be chlorinated for disinfection prior to softening to prevent clogging of the softener media.
- Interim effluent limitations were added for existing permitted facilities.
- There are no interim limits for newly permitted facilities.
- Setback limits have been changed to be consistent with current permitting practices.

Part I – Facility Information

Facility Type: Industrial
Facility SIC Code(s): 4941
Facility location information shall appear on the coverage document issued to a General Permit Covered Facility.

Facility Description:
Discharges of backwash water from potable water supply water softening units and Zeolite filter backwash discharges.

Part II – Operator Certification Requirements

☐ - This facility is required to have a certified operator.
☒ - This facility is not required to have a certified **Wastewater** operator.

Please see 10 CSR 60-14 for **Drinking water** operator requirements.

Part III – Receiving Stream Information

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses are to be maintained.

A full description of the receiving stream shall appear on the coverage document issued to a General Permit Covered Facility.

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

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☒
Lake or Reservoir [10 CSR 20-7.015(3)]: ☒
Losing [10 CSR 20-7.015(4)]: ☐
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses."

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

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

☒ - Limitations in this modified operating permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44. Additional protections are added in the case of lead and/or copper to be more protective. All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDEGRADATION:
Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as Outstanding National Resource Waters and Outstanding State Resource Waters [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water. The department has determined that the best avenue forward for implementing the Antidegradation requirements into general permits is by requiring the appropriate development and maintenance of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must identify all Best Management Practices (BMPs) that are reasonable and effective, taking into account environmental impacts and costs. This analysis must document why no discharge or no exposure options are not feasible at the facility. This selection and documentation of appropriate control measures will then serve as the analysis of alternatives and fulfill the requirements of the Antidegradation Rule and Implementation Procedure 10 CSR 20-7.031(3) and 10 CSR 20-7.015(9)(A)5.

Any facility seeking coverage under this permit, which undergoes expansion or discharges a new pollutant of concern, must update their SWPPP and select new BMPs that are reasonable and cost effective through an analysis of alternatives. New facilities seeking coverage under this permit are required to develop a SWPPP that includes this analysis and documentation of appropriate BMPs. Renewal of coverage for a facility requires a review of the SWPPP to assure that the selected BMPs continue to be appropriate. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address new or expanded discharges or benchmark exceedances

☒- Applicable: The pollutants of concern in this permit are listed in Table A-1 and A-2 of this permit. Compliance with the effluent limitations established in this permit for the protection of General and Specific Criteria, along with the evaluation and implementation

of BMPs as documented in the SWPPP, meets the requirements of Missouri's Antidegradation Review [10 CSR 20-7.031(3), 10 CSR 20-7.031 Table A, and 10 CSR 20-7.015(9)(A)5.].

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation 40 CFR Part 122.44(d)(1)(i) requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with 40 CFR Part 122.44(d)(iii) if the permit writer determines that any given 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.

☒ An RPA was not conducted for this facility.

- **Conservative assumption:** A reasonable potential to violate water quality standards is assumed for the pollutants of concern, resulting in the effluent limits contained in the permit.

SCHEDULE OF COMPLIANCE (SOC):
Per § 644.051, RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. An SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502 (17) of the Clean Water Act, and 40 CFR§ 122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, an SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

☒ - This permit contains a schedule of compliance

In order to provide guidance to Permit Writers in developing SOCs and attain a greater level of consistency, as of April 9, 2015, the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules of common activities and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

☒ - The time given for effluent limitations of this permit listed under Interim Effluent Limitations and Final Effluent Limitations were established in accordance with 10 CSR 20-7.031(11). Existing permitted facilities have been given a schedule of compliance to meet the final effluent limits for lead and copper. The two year schedule of compliance allowed for these facilities should provide adequate time to evaluate operations, obtain an engineering report, obtain a construction permit and implement upgrades (if any) required to meet final effluent limits. New facilities seeking coverage under this permit are not eligible for interim effluent requirements and must meet final effluent limitations immediately. Existing permitted facilities that become aware during the SOC period that they will be unable to meet effluent limits for lead and copper may explore other options such as:

- Convert to a land application system and transfer to MO-G640000 General Permit for Land Application of Water Treatment Plant Filter Backwash;
- Begin operation as a no discharge pump and haul facility. This option would not require a permit if the owner has a written contract with the hauler and approval from the receiving facility. Facilities wishing to choose this option must supply the hauler contract and receiving facility approval to the department prior to termination of this discharge permit; or
- Directly discharge to a wastewater treatment plant that is currently permitted to accept wastewater that is similar in nature to the zeolite filter backwash from your filter. It is important to note that permitted wastewater treatment plants are required to notify the department when accepting wastewaters that may change the nature of their discharge as it relates to toxic pollutants such as lead and copper. This notification may result in the department modifying the receiving facilities permit in cases where dilution with other wastewater or the receiving waterbody is not available to avoid toxicity in the receiving stream.

SETBACKS:
Setbacks are common elements of permits and are established to provide a margin of safety in order to protect the receiving water from accidents, spills, unusual events, etc.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) authorized under section 402(p) of the CWA for the control of 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 Prevention Plan, A Guide for Industrial Operators* (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity or physical structure.

Additionally in accordance with stormwater management, an 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 stormwater discharges.

☒ - At this time, the permittee is not required to develop and implement a SWPPP.

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

☒ - This operating permit is not drafted under premises of a petition for variance.

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 conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality [10 CSR 20-7.031(5)].

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

☒ - Wasteload allocations were not calculated.

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

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

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

☒ Not Applicable; At this time, the permittee is not required to conduct WET test for this facility.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs. It is a part of the 305(b) report.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation. Applications for coverage under Master General Permits in the watersheds of bodies of water with a TMDL are evaluated on a case by case basis. Waters with approved TMDLs are listed as part of the 305(b) report.

Part VI – Effluent Limits Determination

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	mgd	1	*		*	No	*/*
Chlorides	mg/L	2,3	557		277	Yes	377/188***
Chlorides + Sulfate	mg/L	1,3	1000		1000	No	1000/1000
Settleable Solids	mL/L	2	1.5		1.0	No	1.5/1.0
Copper, Total Recoverable	µg/L	2, 3	22.0		11.0	Yes	**
Lead, Total Recoverable	µg/L	2, 3	10.0		5.0	Yes	**
pH – Units	SU	2	6.5-9.0		6.5-9.0	No	6.5-9.0

* - Monitoring requirement only.
** - Parameter not previously established in previous state operating permit.
***- Change retained from 2013 issued permit and not changed in this permit modification

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

DERIVATION AND DISCUSSION OF LIMITS:

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- **Chlorides**. 10 CSR 20-7 Table A. Protection of aquatic life 230 mg/L chronic (LTA_c), 860 mg/L acute (LTA_a). Effluent limitations were revised during the 2013 renewal from previous state operating permit due to the fact that the hardness dependent standards put into water quality standards was not approved by EPA. No changes were made to this limit during the current permit modification.

  LTA_c = 230 mg/L (0.780) = 179 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
  LTA_a = 860 mg/L (0.321) = 276 mg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 179 mg/L (3.11) = 557 mg/L [CV = 0.6, 99th Percentile]
  AML = 179 mg/L (1.55) = 277 mg/L [CV = 0.6, 95th Percentile, n =30]

- **Chlorides + Sulfates**. Effluent limitations have been retained from previous state operating permit. Limits remain at 1,000 mg/L required per 10 CSR 20-7.031(4)(L).

- **Settleable Solids**. Effluent limitations have been retained from previous state operating permit.

- **Metals**. Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support document for Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA823-B-96-007). General warm-water fishery criteria apply and a water hardness of 162 mg/L, which is the statewide average, is used in the conversion below.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Lead	0.721	0.721
Copper	0.960	0.960

Conversion factors for Lead and Copper are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162.0 mg/L.

- **Lead, Total Recoverable:** Protection of Aquatic Life: Chronic Criteria = 4.24 µg/L, Acute Criteria = 108.69 µg/L.

  Acute WQS = 108.69 ÷ 0.721 = 150.82 µg/L
  Chronic WQS = 4.24 ÷ 0.721 = 5.88 µg/L

  Acute WQS: C_e = WQS = 150.82 µg/L
  Chronic WQS: C_e = WQS = 5.88 µg/L

  LTA_a = 150.82 µg/L * (0.321) [CV = 0.6, 99th Percentile]
  48.41 µg/L

  LTA_c = 5.88 µg/L * (0.527) [CV = 0.6, 99th Percentile]
  3.10 µg/L

  Use most protective number of LTA_a or LTA_c.

  MDL = 3.10 µg/L * (3.11) [CV = 0.6, 99th Percentile]
  9.64 µg/L

  AML = 3.10 µg/L * (1.55) [CV = 0.6, 95th Percentile, n = 4]
  4.81 µg/L

- **Copper, Total Recoverable:** Protection of Aquatic Life Chronic Criteria = 13.5 µg/L, Acute Criteria = 21.2 µg/L.

  Acute WQS = 21.2 ÷ 0.96 = 22.05 µg/L
  Chronic WQS = 13.5 ÷ 0.96 =14.09 µg/L

  Acute WLA: C_e = WQS = 22.05 µg/L
  Chronic WLA: C_e = WQS = 14.09 µg/L

  LTA_a = 22.05 * (0.321) [CV = 0.6, 99th Percentile]
  7.08 µg/L

  LTA_c = 14.09 * (0.527) [CV = 0.6, 99th Percentile]
  7.43 µg/L

  Use most protective number of LTA_a or LTA_c.

  MDL = 7.08 * (3.11) [CV = 0.6, 99th Percentile]
  22.02 µg/L

  AML = 7.08 * (1.55) [CV = 0.6, 95th Percentile, n = 4]
  10.97 µg/L

- **pH**. Effluent limitation range is ≥ 6.5 or 6.5 – 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.031(5)(E) and is retained from the previous version of this permit. pH is not to be averaged.

- **Radioactive Material**.

  The **Atomic Energy Act of 1946** (Public Law 79-585) determined how the United States federal government would control and manage the nuclear technology it had jointly developed with its wartime allies (Britain and Canada). Most significantly, the Act ruled that nuclear weapon development and nuclear power management would be under civilian, rather than military control, and it established the United States Atomic Energy Commission for this purpose.

  The **Atomic Energy Act of 1954 (**Public Law 83-703) covered the laws for the development, regulation, and disposal of nuclear materials and facilities in the United States.

  The **Energy Reorganization Act of 1974** (Public Law 93-438) established the Nuclear Regulatory Commission. Under the Atomic Energy Act of 1954, a single agency, the U.S. Atomic Energy Commission, had responsibility for the development and production of nuclear weapons and for both the development and the safety regulation of the civilian uses of nuclear materials. The Act of 1974 split these functions, assigning to the Energy Research and Development Administration (now the United States Department of Energy) the responsibility for the development and production of nuclear weapons, promotion of nuclear power, and other energy-related work, and assigning to the NRC the regulatory work, which does not include regulation of defense nuclear facilities.

10 CSR 20-7.031(5)(I) states:
All streams and lakes shall conform to state and federal limits for radionuclides established for drinking water supply.
This permitting requirement is a specific criterion for radioactive materials contained within the Water Quality Standards. Historical research found that this requirement was filed on May 13, 1977 and became effective December 11, 1977 and has not been changed.

As noted above the Energy Reorganization Act of 1974 assigned the responsibility for safety regulation of radioactive materials to the Nuclear Regulatory Commission. At the time individual states had the option of becoming "delegated states" and could assume the responsibilities of implementing safety regulation for radioactive materials. The State of Missouri declined the option to become a "delegated state." In 1977 when this code was promulgated, as a non-delegated state, the legislature did not feel that it had the authority to develop specific water quality standards for radioactive materials. Instead the legislature, in order to protect human health, adopted by reference federal or state drinking water supply standards.

The **Safe Drinking Water Act** of 1974 (Public Law 93-438) was intended to ensure safe drinking water for the public. Pursuant to the act, the United States Environmental Protection Agency (EPA) was required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. In 1976 the EPA promulgated requirements for Radium 226/228, Gross Alpha, and Beta Particle and Photon Radioactivity and specified that the concentration of man-made radionuclides causing 4 millirem total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake using the 168 hour data list in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. In 2000 the Federal Drinking Water Standards for Radionuclides were changed to include Uranium.

The purpose of these water softening units is to provide potable water that complies with the Safe Drinking Water Act of 1974, as amended, in its entirety, including Radionuclides. Some groundwater aquifers used to supply drinking water contain Naturally Occurring Radioactive Material (NORM), specifically Radium and Uranium, above the drinking water standard. The filter backwash from these facilities will contain Technically Enhanced Naturally Occurring Radioactive Material (TENORM).

TENORM has often been defined by what it is not, rather than what it is. It has been defined by exclusion: it is not low level waste, nor is it source, special nuclear, or byproduct material under the 1972 amendment of Atomic Energy Act of 1954. The definition of source material found in the 1972 amendment is based on the early safeguards concerns for material that could be used to ultimately make reactor fuel or nuclear weapons. When the definition was written, Congress considered that source materials needed to be placed under regulatory control on the basis of promoting common defense and national security. The health and safety impacts from NORM other than source material were considered to be manageable, to be relatively insignificant, and to have no basis for regulation from the standpoint on the common defense and national security (Decommissioning - Non-Reactor Facilities. Strategic Assessment Issue Paper. U.S. Nuclear Regulatory Commission. September 16, 1996)

TENORM, as it specifically relates to potable water supply filter backwash, falls outside the jurisdiction of the NRC, and EPA does not have any statutory requirements. The purpose of the original 1977 version of 10 CSR 20-7.031(5)(I) was to use the safe drinking water act to protect people from exposure to man-made radionuclides in a drinking water. NORM and TENORM were not considerations in the original statute, and the consequence of considering them applicable and relevant now is inappropriate. While the TENORM filter backwash is likely to be above the drinking water standard, the only situations where a general public exposure pathway could be complete is in a losing stream setting. A review of existing G641 permits shows that at present no facilities would fall into this category. Therefore instead of applying a radioactive material effluent limitation in this permit; the permit will instead not be allowed in a karst or losing stream setting, including sinkholes and other conduits to ground water.

Sampling Frequency:
Sampling frequency is established in accordance with department policy. The department will review the last five years of Discharge Monitoring Reports submitted by facilities covered under this permit. As a result, the department has decided not to modify the sampling frequency.

Part VII – Finding of Affordability

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

☒ Not Applicable; The department is not required to determine findings of affordability because the facility is not a combined or separate sanitary sewer system or a publicly-owned treatment works.

Part VIII – Administrative Requirements

PUBLIC NOTICE OF COVERAGE FOR AN INDIVIDUAL FACILITY

The need for an individual public notification process shall be determined and identified in the general permit per 10 CSR 20-6.020(1)(C)2. Public Notice of **reissuance** of coverage is not required unless the facility has been found to be in significant noncompliance, 10 CSR 20-6.020(1)(C)4.

☒ Not Applicable; Public notice is not required for issuance of initial coverage under this Master General Permit to individual facilities. Public notice of reissuance of coverage for individual facilities is not required unless the facility has been found to be in significant noncompliance.

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

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

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than thirty (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, please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit was from March 15, 2013 to April 15, 2013. No comments were received.

☒ - Public Notice for modification of this master general permit was from April 29, 2016 to May 27, 2016. Two comments were received and are summarized below.

The summarized comments from the letters and the department's response to the comments are below and are in reference to all Public Notices (PN) of this permit.

Comment 1:

Our water softener was installed to address excess radium levels. Discharge from the softener is small and we believe it does not enter waters of the state. The proposed additional testing on water softener discharge makes no exception for small providers who do not discharge to a public waterway. The increased cost of lead and copper testing is unwarranted since there has never been an issue with lead and copper in the drinking water. We are asking that those tests be removed from the general permit. Please note this objection to the proposed modification as it would create an additional unwarranted expense for small water providers.

Response 1:

Zeolite water treatment filters are designed to remove water contaminants from drinking water which are then periodically discharged in concentrate. In the case of this permit the discharge is allowed to waters of the state which are required to be protected from toxicity of aquatic life. Lead and Copper discharged at concentrated levels above the Missouri Water Quality Standards will result in toxicity therefore this permit action is needed to address this issue. Not all water being treated by Zeolite filters in Missouri have lead and copper concentrations that would result in a backwash above the water quality standards however, since this is a general permit that covers all zeolite filter backwashes, the permit must be protective of all backwash discharge scenarios. Given the broad coverage of this permit the department is requiring all authorized discharges to sample for lead and copper and achieve compliance with water quality standards no later than 2 years from the issuance of this permit modification.

Facilities that wish to seek a no discharge status and forgo testing requirements in the permit modification can:

- Convert to a land application system and transfer to MO-G640000 General Permit for Land Application of Water Treatment Plant Filter Backwash;
- Begin operation as a no discharge pump and haul facility. This option would not require a permit if the owner has a written contract with the hauler and approval from the receiving facility. Facilities wishing to choose this option must supply the hauler contract and receiving facility approval to the department prior to termination of this discharge permit; or
- Directly discharge to a wastewater treatment plant that is currently permitted to accept wastewater that is similar in nature to the zeolite filter backwash from your filter. It is important to note that permitted wastewater treatment plants are required to

notify the department when accepting wastewaters that may change the nature of their discharge as it relates to toxic pollutants such as lead and copper. This notification may result in the department modifying the receiving facilities permit in cases where dilution with other wastewater or the receiving waterbody is not available to avoid toxicity in the receiving stream.

DATE OF FACT SHEET: APRIL 23, 2013

COMPLETED BY:

ALAN MOREAU
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DATE OF MODIFICATION: JUNE 8, 2016

MODIFICATION BY:

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