MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Regulatory Impact Report (RIR)
10 CSR 20-7.031 Water Quality Standards

The RIR was open for public comment April 29, 2020 through June 29, 2020

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Introduction

Pursuant to Section 640.015, RSMo, all rulemakings that prescribe environmental conditions or standards promulgated by the Department of Natural Resources pursuant to authorities granted in Chapters 640 and 644 shall be based on a regulatory impact report. This requirement does not apply to rules where the Department Director determines that immediate action is necessary to protect human health, public welfare, or the environment; or to rules of applicable federal agencies adopted by the Department without variance.

The Missouri Department of Natural Resources has determined these rulemakings prescribe environmental conditions or standards. Due to the complexity of the text and several changes, the Department has produced this Regulatory Impact Report to provide the public with specific explanations of the changes that are proposed and how the Department would incorporate them into the rule. The Department will make the Regulatory Impact Report publicly available for comment for a period of 60 days. Upon completion of the comment period, official responses will be developed and made available on the agency web page prior to filing the proposed rulemakings with the Secretary of State. Contact information is at the end of this regulatory impact report.

Revisions

This rulemaking includes revisions that ensure that state water quality standards (WQS) are functionally equivalent to federal standards and that improve the clarity, specificity, and effectiveness of the WQS. In summary, the revisions include the following:

a. Section 304(a) Water Quality Criteria

The Department is recommending revisions to aluminum and cadmium water quality criteria for the protection of aquatic life based on a review of the U.S. Environmental Protection Agency (EPA) national criteria developed pursuant to Section 304(a) of the federal Clean Water Act. These modifications would bring Missouri's water quality standards up-to-date with the latest EPA national recommended water quality criteria for these parameters.

b. Water Quality Standards Variances

Proposed revisions to 10 CSR 20-7.031 add three discharger-specific variances to Table J for the cities of Joplin, Salem, and Bolivar. Also, the Department has made minor revisions to clarify the “Missouri Multiple Discharger Variance Framework from the Water Quality Standards of Total Ammonia Nitrogen, CWC-MDV-1-17” (MDV Framework), which is incorporated by reference in the rule.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

The proposed revision modifies 10 CSR 20-7.031 Table K, Site-Specific Criteria. The Department removed expired, site-specific dissolved oxygen criteria for Sni-a-Bar Creek in Jackson County; however, the City of Blue Springs submitted a request to reinstate these criteria on July 22, 2019. The request included additional information to support site-specific

criteria based on sound scientific rationale that protects the applicable designated aquatic habitat protection use. As a result, the Department is reestablishing site-specific criteria for dissolved oxygen in rule for Sni-a-Bar Creek (Water Body ID: 399).

d. Chloride Plus Sulfate

The chloride plus sulfate criterion is currently dependent on the low flow volume of the water body. This revision removes that condition and applies a single criterion to water bodies of all flow volumes. The revised criterion for chloride plus sulfate will be protective of critical low-flow conditions (e.g., 7Q10) as well as during higher flows. This criterion has long caused difficulty pertaining to permit implementation, which led to a commitment by the Department to remedy the issue during this rulemaking.

e. Missouri Use Designation Dataset Update

The Department first adopted the Missouri Use Designation Dataset (MUDD) on November 6, 2013. This MUDD update contains revisions that use more accurate Geographic Information System (GIS) data to refine the delineation of start and end points of water body features, update and incorporate water body features according to 10 CSR 20-7.031(2), and recalculate stream mileages and lake acreages. Other revisions to the MUDD include a reevaluation of drinking water and industrial uses statewide to ensure accurate designations for these uses are in rule. The MUDD currently contains a statewide generic water body identification number (WBID) for approximately 90,000 miles of stream (WBID 3960) and 26,000 acres of lake (WBID 7630). In order to simplify working with these WBIDs, the Department will renumber the statewide number according to 8-digit hydrologic code. The Department used data and information contained in the 1:100,000 and 1:24,000 National Hydrography Dataset (NHD), Missouri's Aquatic Gap project, and supplemental information such as Digital Orthophoto Quarter Quads (DOQQs), other high resolution imagery and maps, and information contained in permit applications or other sources for these revisions.

f. Losing Stream References

The proposed revision removes all references and requirements for losing streams from the WQS. This action does not remove any protections, however, because losing stream requirements also exist in 10 CSR 20-7.015 Effluent Regulations. The removal of duplicative requirements creates clarity for implementation of the rule.

g. Miscellaneous Text Revisions

The proposed rule contains several revisions to correct typographical errors, provide clarity, and improve formatting. The Department discovered and compiled these revisions after the effective date of the last revisions to the WQS on March 31, 2018. Specifically, water quality criteria for 2,4-dichlorophenol and hexachlorocyclopentadiene were mistakenly deleted during the previous rulemaking. Likewise, Table I – Biocriteria Reference Locations was accidently truncated, which omitted several water bodies. This rule restores those typographic omissions.

Regulatory Impact Report

1. **A report on the peer-reviewed scientific data used to commence the rulemaking process.**

It is the policy and practice of the Department to use peer-reviewed, sound science and scientific data for rulemaking. To the extent that scientific data and research are available to reference, the Department has reviewed and included for each proposed revision those sources:

a. Section 304(a) Water Quality Criteria

Peer-reviewed science, information, and studies support recommended revisions to federally developed Section 304(a) criteria. Aquatic life protection criteria (AQL) for toxic pollutants are the highest concentration of specific pollutants or parameters in water that are not expected to pose a significant risk to the majority of species. Documents that contain or reference supporting peer-reviewed science and information for individual pollutants are available at the links below.

- Aluminum: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum
- Cadmium: https://www.epa.gov/wqc/aquatic-life-criteria-cadmium

b. Water Quality Standards Variances

The applicants provided justification and information to inform the approval of these variances in the form of effluent data, instream data, history of compliance, regulatory obligations, financial records, cost estimates for compliance, and estimated costs for interim infrastructure improvements. Find this information either in the individual variance or its appendices. The Department did not use additional peer-reviewed scientific information or data to make the revision. All three variances follow state and federal water quality variance regulations at 10 CSR 20-7.031(12) and 40 CFR 131.14, respectively.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

State developed site-specific criteria must be based on sound scientific rationale and protect applicable designated uses per 40 CFR 131.11(a)(1). The City of Blue Springs provided rationale in the form of a Stream Evaluation Report for Sni-A-Bar Creek, which outlines a study conducted to support the establishment of site-specific dissolved oxygen criteria. The City also supplied water chemistry and biological data to support this site-specific criteria. The Department reviewed the study and supporting information to ensure the City used quality-assured data and methods in the criteria derivation process.

d. Chloride Plus Sulfate

The Department made the decision to revise this combined criterion following a review of the rulemaking history to find any justification for the flow-based criterion. Finding none, no additional scientific analyses or data were involved in the revision to remove the flow-based condition from the proposed rule. The revised combined chloride plus sulfate criterion will protect the aquatic life designated use at all flows.

e. Missouri Use Designation Dataset Update

These revisions involve the use of GIS information and data to clarify or correct water body segment identifications within the WQS. The GIS information and data used to revise water body segment delineation and mileages is peer-reviewed prior to publication and distribution. The Department houses these data on its GIS server and must have complete metadata and supporting documentation of data quality in order to be posted. External data downloaded from the Missouri Spatial Data Information Service (MSDIS) at http://msdis.missouri.edu/ or other sources must meet similar standards for use. The Department did not use additional scientific analyses or data in making these revisions.

f. Losing Stream References

No scientific analyses or data were involved in the removal of references to losing streams from the WQS rule. All losing stream requirements are now solely in 10 CSR 20-7.015 Effluent Regulations.

g. Miscellaneous Text Revisions

No scientific analyses or data were involved in the identification and correction of typographical errors, formatting issues, or minor revisions to improve clarity or completeness.

2. A description of persons who will most likely be affected by the proposed rule, including persons that will bear the costs of the proposed rule and persons that will benefit from the proposed rule.

Rulemaking and implementation of effective, approved rules affect persons both directly and indirectly. To the extent that information on persons that will bear the costs of the proposed rule and persons that will benefit from the proposed rule are available, the Department has listed and described for each proposed revision those persons or groups of persons:

a. Section 304(a) Water Quality Criteria

The Section 304(a) numeric water quality criteria that the Department is revising may affect facilities that treat wastewater. Find a summary of the number of facilities having permitted effluent limits for the pollutants the Department is revising in Appendix A. The effect of the proposed rule on each facility depends on the type of treatment system, the levels of the pollutant in the wastewater and in the receiving stream, and the applicability of anti-backsliding requirements. Because these factors are unique to each facility, the Department is unable to determine from this list the precise extent of impact from the proposed changes. However, the Department has estimated general impacts on these facilities, either positively through an increased limit or negatively through a decreased limit, based on the available data.

Aluminum. There are currently 250 Missouri State Operating Permits containing aluminum requirements, of which, 66 have effluent limits. See Appendix B for a breakdown of the types of permitted facilities potentially impacted by the aluminum criteria revision. The revised aluminum criteria take into account more site-specific conditions (hardness, pH, and dissolved organic carbon) as compared to the previous criteria. Because of this, effluent limits derived from these criteria will be more accurate. The majority of facilities will see a relief in aluminum limits under this revised criteria. If the site-specific conditions produce less stringent

criteria, either effluent limits will be less stringent, or effluent limits will be removed and replaced with requirements to monitor only, benefiting permit holders and rate payers.

Cadmium. The Department conducted an analysis of permittees where the proposed acute cadmium criterion could potentially impact permit requirements:

1. Analysis of Missouri State Operating Permits (permits) from the Department's database:
   - 118 permits with cadmium requirements (See Appendix C):
     - 83 permits with monitoring only
     - 35 permits containing effluent limits
2. Analysis of 35 permits with effluent limits:
   - 26 permits with limits driven by chronic cadmium criteria
   - 9 permits with limits driven by acute cadmium criteria
3. Analysis of 9 permittees' discharge monitoring reports (DMRs) with cadmium effluent limits driven by the acute criterion:
   - 6 permittees' DMRs show capability of compliance with proposed acute cadmium criteria
   - 3 permittees' DMRs show potential compliance issues with proposed acute cadmium criteria

This revision is only to the acute cadmium criterion. The Department revised the chronic criterion during a previous rulemaking. When deriving permit limits, permit writers select the more protective value between chronic and acute criterion, of which chronic is usually more protective. In some instances, the acute criterion derives limits such as stormwater discharges since they are intermittent in nature or when a facility discharges into a big river where larger stream flows provide greater dilution and assimilative capacity. See Appendix D for the list of permits with cadmium limits based on the acute criterion.

b. Water Quality Standards Variances

The addition to the rule of variances for the cities of Joplin, Salem, and Bolivar will provide regulatory relief to those communities and save rate payers from bearing the costs of expensive wastewater infrastructure upgrades at unaffordable amounts. The Missouri Clean Water Commission may grant the variance for Joplin under the condition in 40 CFR 131.10 (g) stating, "Human caused conditions or sources of pollution preventing the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place". The commission may grant variances for Salem and Bolivar under the condition stating, "Controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act would result in substantial a widespread economic and social impact." In these communities there are local conditions preventing the affordability of compliance with current WQS. These variances will allow incremental improvements to water quality while keeping the cost of compliance to an affordable rate.

The minor revisions to clarify the MDV Framework do not change any of the requirements, and therefore, will not impact permittees or others.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek
The reinstatement of the site-specific dissolved oxygen criteria for Sni-A-Bar Creek will provide regulatory relief to the City of Blue Springs. The revised criteria are less stringent than the statewide criteria while still being protective of water quality in Sni-A-Bar Creek. This will prevent the city from having to make unnecessary upgrades to the municipal wastewater facility.

d. Chloride Plus Sulfate
There are currently 89 Missouri State Operating Permits containing requirements for chloride plus sulfate and 43 of those permits have effluent limits; however, the only effluent limit that is used is a concentration of 1,000 mg/L. The removal of the flow based condition for this criterion will not alter any of these permits and will make implementing the criterion more straight forward for Department staff.

e. Missouri Use Designation Dataset Update
The proposed rule revisions will ensure that an accurate water body segment delineation system supports permits and water quality assessments. Increased locational accuracy of water body segments reduces the potential for mistakes in the identification of applicable WQS and, consequently, for these errors to result in inappropriate permit limits and conditions or inaccurate water quality assessments. Avoiding these mistakes will save both time and resources for permit applicants and the Department when preparing and reviewing permit applications.

f. Losing Stream References
Because losing stream references and requirements have been historically located in both the WQS and Effluent Regulation, the removal from the WQS should provide clarity when implementing the rule. Because there are no new losing stream requirements, there will be no costs to bear.

g. Miscellaneous Text Revisions
The typographical errors and formatting issues could result in some misunderstanding of the WQS. These rule revisions should prevent misunderstandings that could cause delays in decisions based on the sections of the rule affected by the errors.

3. <u>A description of the environmental and economic costs and benefits of the proposed rule.</u>

Implementation of effective, approved rules can have both environmental and economic costs and benefits. To the extent that costs and benefits of the proposed rule can be calculated and articulated, this report does so for each proposed revision:

a. Section 304(a) Water Quality Criteria
The proposed revisions to Section 304(a) criteria in rule are in response to changes in these criteria at the federal level to establish appropriate thresholds to prevent toxic effects on aquatic life. Missouri is adopting federal criteria for aluminum and cadmium without

modification. Federal level actions determine any environmental and economic costs and benefits. Find an explanation of the basis for the changes in the federal criteria here:

- Aluminum: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum
- Cadmium: https://www.epa.gov/wqc/aquatic-life-criteria-cadmium

Aluminum. The revised aluminum criteria are based on site-specific instream hardness, pH, and dissolved organic carbon. There will be a positive environmental impact from this revision since the criteria are based on more up-to-date science and are more specific to each water body. Because the criteria are based on site-specific conditions, the extent of the economic impact is unknown to the Department. However, the majority of facilities will see a relief in aluminum limits under this revised criteria. If the site-specific conditions produce less stringent criteria, either permit writers will make effluent limits less stringent, or will remove effluent limits and replace with requirements to monitor only.

Cadmium. Section 2a identifies facilities most likely impacted by the proposed rule. To begin, 83 permits contain a monitoring only requirement for cadmium. There is no new cost associated with the proposed cadmium criterion for these facilities. However, it is possible, during a future permit renewal, that a permit would establish cadmium limits based on the acute criterion. This is dependent on many factors such as discharge monitoring data, type of facility, receiving stream, and a statistical analysis to determine that there is a reasonable potential for the discharge to cause or contribute to an instream excursion of the criterion. The Department has not completed such an analysis for these 83 permitted facilities as a part of this report. The permit writer should conduct the analysis when they renew the permit, evaluating the most current data and facility conditions. When permits contain new requirements such as these, permit writers establish schedules of compliance to allow permittees time to evaluate and alter their treatment processes as needed.

The Department's analysis, outlined in Section 2a of this report, identifies 35 permits with cadmium effluent limits with 9 of those driven by the acute criterion. The proposed cadmium revision is only to the acute criterion. The Department revised the chronic criterion during a previous rulemaking. When deriving permit limits, permit writers select the more protective value between chronic and acute, of which chronic is usually more protective. Cadmium limits for 7 facilities are driven by the acute criterion because they are applied to stormwater, where discharges are typically intermittent in nature. In the remaining 2 instances, the limits driven by acute criterion is due to discharges into big rivers where larger stream flows provide greater dilution and assimilative capacity. See Appendix D for the list of permits with cadmium limits based on the acute criterion. The Department reviewed discharge monitoring report (DMR) data for these 9 facilities. DMRs show that 6 facilities have the capability of compliance with proposed acute cadmium criterion. DMRs for the remaining 3 show potential compliance issues with proposed acute cadmium criterion.

Facilities can work to comply with more stringent cadmium limits by reducing cadmium concentrations entering the system, through installing and/or optimizing stormwater best management practices (BMPs), or through installing and/or optimizing treatment technologies. Actions taken to reduce cadmium by facilities are variable and site-specific. Because of this,

the Department contacted the 3 facilities that could have potential compliance issues with the proposed criterion in order to obtain cost estimates for this report.

- Columbia Landfill (MO0112640). This facility has been reporting values that would exceed limits based on the proposed criterion. After contacting the permittee, Department has concluded that those values are actually non-detects, but, in error, are missing the appropriate identifier. Their next permit will contain cadmium benchmark requirements instead of effluent limits.
- Doe Run, Herculaneum (MO0000281). This facility will cease all production in 3-5 years. There is a slag storage area that has permitted benchmarks for cadmium, not limits. They are expecting to cap the slag storage area in 4 years.
- Eagle-Picher Technologies (MO0002348). This facility installed a stormwater storage basin in 2018, and has not discharged since.

Based on the evaluation of facilities with potential to exceed the proposed acute cadmium criterion, the Department has not identified any facilities with potential compliance issues based on how the permittees operate or will operate their facilities. Therefore, there are no new anticipated costs associated with the proposed acute cadmium criterion.

b. Water Quality Standards Variances

WQS variances are a regulatory compliance mechanism that allows for incremental water quality improvements over time. Even though the incorporation of a variance into a permit delays the establishment of water quality-based effluent limits, variance terms and conditions require continuous environmental improvement through facility optimization and pollutant reduction activities. Because of this, the net environmental impact caused by this revision will initially be minimal, but will result in incremental improvement in water quality over time as wastewater operators optimize their treatment systems. Permittees will be required to optimize their current treatment facilities and upgrade when financially capable. The incorporation of a variance will allow them to do this over a time-period that does not create an unaffordable cost burden to the community and rate payers. Because of this, there is a net economic benefit to communities as a result of this revision.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

The reestablishment of the site-specific dissolved oxygen criteria for Sni-A-Bar Creek will not cause environmental impacts and the City of Blue Springs detailed this further in the rationale document that the City provided to the Department. The document “Stream Evaluation Report for Sni-A-Bar Creek” outlines the study and analysis conducted to support the establishment of site-specific dissolved oxygen criteria. The City supplied water chemistry and biological data to support this site-specific criteria and demonstrate that beneficial uses are being attained in Sni-A-Bar Creek during site-specific criteria conditions. There is no economic cost associated with this revision as no upgrade or change in facility design will be required of the Blue Springs wastewater treatment facility.

d. Chloride Plus Sulfate

The flow-based condition has long caused difficulty with regard to permit implementation and this revision will lead to increased efficiency when processing permit applications with this

requirement. However, the Department expects no significant economic or environmental costs or benefits to result from the removal of the flow-based condition for this criterion.

e. Missouri Use Designation Dataset Update
These revisions will result in better accuracy in the identification of lakes and streams. This improved accuracy will increase the efficiency of program activities that require the use of the water body delineation information (e.g., permits, water quality assessments, and total maximum daily loads). The increased efficiency and accuracy of revisions should reduce costs for both permit applicants and the Department.

f. Losing Stream References
The Department expects no significant economic or environmental costs or benefits to result from the removal of losing stream references from the WQS rule. The same references and requirements for losing streams are in the Effluent Regulation; therefore, there is no overall change to the level of protection of these water bodies.

g. Miscellaneous Text Revisions
The Department expects no significant economic or environmental costs or benefits to result from the correction of typographical errors, revisions for clarity, or updating of formatting.

4. <u>The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenue.</u>

As the agency responsible for environmental rules and regulations, the Department of Natural Resources may incur costs for the implementation and enforcement of the proposed rule. Other state agencies that have a regulatory interest in environmental control and process may also have costs that may arise due to the Department's rulemaking efforts. This section of the report lists probable costs to the agency, to any other agency, and any anticipated effect the rule may have on state revenue for each revision:

a. Section 304(a) Water Quality Criteria
The proposed revisions would not change the Department's process for the review of permit applications. Staff would perform reasonable potential analyses and calculate wasteload allocations for water quality-based effluent limits in the same manner as done currently. Although the results of these analyses may be different, the amount of time involved with the effort will be the same. Because the new aluminum criteria are based on pH, hardness, and dissolved organic carbon, these parameters will need to be sampled in order to assess the water quality of a particular water body for aluminum and to establish default values for permit implementation. The Department has not collected many dissolved organic carbon samples in the past, so more will need to be collected. It is around $70 to have a sample analyzed for dissolved organic carbon. If the Department adds this parameters to statewide sites where metals sampling is occurring, it would cost approximately $4,900 annually. The Department estimates that it needs 3-5 years of data to calculate values for assessment and/or permit implementation. Therefore, the Department expects to incur minimal costs from this proposed rule. The Department does not anticipate that the proposed rule effect state revenue.

b. Water Quality Standards Variances
WQS variances contain new requirements for permittees, while also providing regulatory relief for the communities seeking the variances. Time-limited variances also provide a way to make incremental improvements in water quality without changing the underlying designated use of the receiving water body. These activities will likely shift work responsibilities within the Water Protection Program, but will not require a net gain of resources. For example, instead of spending staff resources on compliance assistance, the Department may spend efforts on monitoring water quality. The Department does not anticipate the proposed rule to effect state revenue.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek
The Department is reestablishing this site-specific criteria; therefore, this revision will not result in costs to the Department or any other state agency, nor are there anticipated effects on state revenue.

d. Chloride Plus Sulfate
Removing the flow-based condition of this criterion will make implementation easier to understand without a decrease in environmental protection. This revision will save staff time in determining effluent limitations and will not result in costs to the Department or any other state agency, nor are there anticipated effects on state revenue.

e. Missouri Use Designation Dataset Update
The proposed rule revisions should lead to more consistent and clear delineations of water bodies in the state and lead to increases in work efficiency and a reduction of costs for the Department. The Department does not anticipate the revision to result in costs to the Department or any other state agency, nor are there anticipated effects on state revenue.

f. Losing Stream References
Removal of losing stream references and requirements from the WQS will provide clarity to Department staff and permit applicants since multiple rules will no longer list the same requirements. No costs to the Department or any other agency is expected and there are no anticipated effects on state revenue as a result of this revision.

g. Miscellaneous Text Revisions
The Department does not expect new costs to itself or any other agency from the correction of typographical errors, revisions for clarity, or updating of formatting. Likewise, the Department does not anticipate these revisions to have an effect on state revenue.

5. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction, which includes both economic and environmental costs and benefits.

One of the state's greatest natural resources is its abundant water. The WQS regulations protect and preserve this resource for this and future generations. If this rulemaking does not become

effective, some of those resources may not be protected to the extent required by state and federal law. Many of these impacts are immeasurable in terms of costs simply because the exact effects from lack of action are incalculable. While the potential economic cost explained in Section 3 of this report may be significant for portions of the rulemaking, the Department cannot make a comparison to environmental benefits without associating a cost to lowered health of citizens and the diminished resources that this rulemaking is intended to prevent.

The state of the economy depends to some extent on the state of the environment. For example, an area that can advertise good water quality is attractive to many human activities, from tourism to industry. Investments in infrastructure to meet regulatory requirements can also be a benefit to public and private facilities that wish to improve capacity or customer service. Improved infrastructure can attract additional industry and customers which, over time, can help subsidize and repay any costs incurred for the improvements. The following compares the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction, which includes both economic and environmental costs and benefits for each item:

a. Section 304(a) Water Quality Criteria

With adequate aluminum and cadmium data from the facilities impacted, the Department could make a comparison between the increased or decreased costs in treatment and the revisions in water quality criteria which would result from this amendment. However, monitoring data are insufficient to determine the specific magnitude as to affected treatment systems, although general estimates can be made (Appendix A). Inaction with regard to promulgating Section 304(a) water quality criteria would compel EPA to notify the state of the deficiency and promulgate these criteria at the federal level if Missouri is unresponsive. The Department does not expect the difference in cost and impact of EPA promulgating aluminum and cadmium criteria instead of the state to be significant.

b. Water Quality Standards Variances

WQS variances contain new requirements for permittees while also providing regulatory relief for the communities seeking the variances. Time-limited variances also provide a way to make incremental improvements in water quality without changing the underlying designated use of the receiving water body. These variances will delay the establishment of permit limits based on certain state-wide criteria; however, the rationale in these variances shows that infrastructure improvements for compliance are not reasonable for various factors such as affordability. Inaction would place requirements on these communities that are unachievable and could eventually lead to unnecessary enforcement action. Implementation of these requirements would place a heavy cost burden on these communities.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

The Department is reestablishing this site-specific criteria. Inaction could result in unnecessary costs for the City of Blue Springs to comply with the state-wide dissolved oxygen criteria without commensurate environmental benefit because designated uses are attained on Sni-A-Bar Creek.

d. Chloride Plus Sulfate

Removing the flow-based condition of this criterion will make implementation easier to understand. Inaction could lead to inconsistencies in implementation of these requirements. There is no cost benefit for action or inaction of this revision.

e. Missouri Use Designation Dataset Update

The proposed revisions incorporate and update water body features according to the effective, approved rule. As a result, the Department does not expect new costs from these revisions. The revisions should eliminate confusion in locating and using the water body segments for Clean Water Act purposes and may result in some cost savings and efficiencies. Inaction would defer needed updates to the MUDD until a later date, potentially causing confusion as to which waters are covered by designated uses in rule and applicable for Clean Water Act purposes.

f. Losing Stream References

This proposed revision benefits Department staff and the regulated community by providing clarity for losing stream requirements. Inaction could lead to inconsistencies in implementation of these requirements as well as leave in place a duplication of regulatory requirements. There is no cost benefit for action or inaction of this revision.

g. Miscellaneous Text Revisions

Neither action nor inaction to correct typographical errors, to clarify text, or to update formatting would result in any significant difference in the costs or benefits associated with this rulemaking.

6. A determination of whether there are less costly or less intrusive methods for achieving the proposed rule.

Regional organizations, county governments, or municipal governments could enact laws or policies that provide similar or greater protection of water resources within their jurisdiction. This has been done in a few select areas of the state, but does not provide adequate protection for the entire state population or its water resources. As a result, statewide action through rulemaking is required for these items.

Missouri's delegated WQS regulatory program ensures the effective administration of clean water standards. No other state agency has the authority or funding source to administer such a program. Missouri's delegation hinges on the program being functionally equivalent to the federal Clean Water Act. The following discussion includes determinations of whether there are less costly or less intrusive methods for achieving the proposed rule for each item:

a. Section 304(a) Water Quality Criteria

The federal criteria allow for some refinement of criteria to site-specific conditions through "species recalculation" procedures and/or the use of "water effect ratios". However, these procedures are highly site-specific and resource intensive and, as such, are not less costly or less intrusive methods.

b. Water Quality Standards Variances

The Department can use several regulatory tools for compliance with water quality-based permit limits. However, for these communities, WQS variances are the most appropriate because the wastewater facility is addressing the water quality issues. No other less costly or intrusive option exists to achieve the objective of the revisions.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

The reestablishment of this criteria will be a cost savings to the City of Blue Springs and will not impose any new costs. The Department can use tools such as a WQS variance or Use Attainability Analysis for compliance under these conditions; however, site-specific criteria development is also appropriate. No other less costly or intrusive option exists to achieve the objective of the revisions.

d. Chloride Plus Sulfate

This proposed revision does not impose any new costs nor does it require significant changes in efforts to achieve compliance. Therefore, no other less costly or intrusive option exists to achieve the objective of the revisions.

e. Missouri Use Designation Dataset Update

The revision to the MUDD will incorporate and update water body features according to the effective and approved rule using the latest peer-reviewed, scientific information. These revisions should not impose any new costs on dischargers nor will they require significant changes in efforts to achieve compliance. Therefore, no other less costly or intrusive option exists to achieve the objective of this revision.

f. Losing Stream References

This proposed revision does not impose any new costs nor does it require significant changes in efforts to achieve compliance. Therefore, no other less costly or intrusive option exists to achieve the objective of the revisions.

g. Miscellaneous Text Revisions

The revisions to rule text proposed in this rulemaking are the only reasonable alternative for addressing the errors, inconsistencies, and formatting issues. No other less costly or intrusive option exists to achieve the objective of this revision.

7. A description of any alternative method for achieving the purpose of the proposed rule that were seriously considered by the Department and the reasons why they were rejected in favor of the proposed rule.

For most water quality rules, EPA guidelines and guidance offer justification and rationale for the selection of the proposed standards and the Department typically defers to EPA's rationale for the science used in developing the standards. In order to establish standards other than those contained in EPA's guidelines and guidance, the state would need to provide rationale that is equally thorough and sound. Such an effort could take years and significant resources, and would likely not result in standards any different from those developed by EPA. However, where the state has flexibility to establish its own requirements (e.g., mixing zones, low flows,

and variances), the EPA will support revisions by the state's rationale and justification. The following provides a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the Department and the reasons why they were rejected in favor of the proposed rule for each item:

a. Section 304(a) Water Quality Criteria

Alternatives to Section 304(a) numeric water quality criteria include development of site-specific criteria for individual pollutants through species recalculation, water effect ratios, or other methods. The statewide criteria revisions proposed are preferred as the most science-based alternatives that broadly protect aquatic communities.

The Department received a petition on behalf of Associated Industries of Missouri (AIM) dated July 10, 2012, to revise Missouri's cadmium criteria. In 2016, EPA updated its national recommended 304(a) cadmium criteria for the protection of aquatic life. Missouri adopted EPA's recommendation for the *chronic* cadmium criterion during the 2018 rulemaking with the support of the petitioner. However, the petitioner proposed alternate *acute* cadmium criterion that considered water temperature and associated species in its derivation. The petitioner proposed two criteria: one for warm and cool-water fisheries and one for cold-water fisheries. The petitioner developed the AIM proposal following the EPA (1985) guidelines, using the EPA (2016) toxicity data and hardness-toxicity regressions. The petitioner's proposal varied, however, in the species selected for toxicity testing data to develop the criteria. The petitioner did not consider temperate basses (*Morone*) in the calculation as species with commercial or recreational value. The Department does not agree with this assessment on the following basis.

There are several types of temperate basses in Missouri, including two important sport species, the native white bass (*Morone chrysops*) and non-native striped bass (*Morone saxatilis*). White bass are more broadly distributed than the striped bass, abundant in the Mississippi River and its principal tributaries, Missouri River and its tributaries, as well as most large reservoirs of the Ozarks. The Missouri Department of Conservation identifies white bass as one of the most important sport fishes in Missouri's large impoundments. It can comprise greater than 40 percent of the fish creeled in some Ozark reservoirs. There are no acute toxicity data available for white bass, but the striped bass (in the same genus) is highly sensitive. Considering this information, the Department is proposing to revise the acute cadmium criterion to follow EPA's national recommendation. The Department finds it to be appropriately protective of aquatic life in Missouri's water bodies.

b. Water Quality Standards Variances

The Department can use several regulatory tools for compliance with water quality-based permit limits. However, for these communities, WQS variances are the most appropriate because the wastewater facility is addressing the water quality issues.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

A WQS variance or Use Attainability Analysis are regulatory tools that can be used for compliance under these conditions; however, site-specific criteria development is more appropriate in this case because the underlying use is being met under the site-specific

conditions being proposed. This revision is the reestablishment of a previous site-specific criteria where the city has already completed the research collected the data. It would be burdensome to take an alternate compliance approach since the data and proposed criteria are sound, protect the designated use, and the city supports it.

d. Chloride Plus Sulfate
The alternative method to this revision would be inaction, which will continue to cause confusion when implementing the criterion.

e. Missouri Use Designation Dataset Update
The Department has previously extrapolated the location and extent of water bodies from paper maps and reported their boundaries in terms of legal descriptions. This method of water body delineation and measurement is relatively inaccurate and may lead to either an under-application or over-application of the beneficial uses and criteria to waters covered by this rule. The proposed revisions will eliminate these potential problems by using more accurate GIS and field data to achieve the proposed rule revisions.

f. Losing Stream References
The alternative method to this revision would be inaction. This would mean that the Department would continue to maintain losing stream language and requirements in both the WQS and Effluent Regulations. This causes confusion when implementing losing stream requirements and creates an administrative burden when the Department needs to update requirements in multiple rules.

g. Miscellaneous Text Revisions
The proposed revisions to the rule text to correct typographical errors, clarify language, and improve formatting are the only reasonable alternative for addressing these errors.

8. An analysis of both short-term and long-term consequences of the proposed rule.

The Department must consider the inherent short- and long-term consequences during rulemaking through the regulatory impact report process. Consequences of the short and long term could be fiscal, environmental, legislative, or any other adverse condition that may arise as a result of implementation of the proposed rule. To the extent that the Department can estimate short- and long-term consequences for the proposed rule, those are listed in the following section:

a. Section 304(a) Water Quality Criteria
The short-term and long-term consequences of this rule amendment are the same: the protection of aquatic habitat without imposing unnecessary costs to the regulated community. Where revised Section 304(a) criteria are more stringent than currently found in rule, the Department may modify permit limits upon permit renewal. This modification may cause the permittee to evaluate their current operation and treatment processes to comply with the new permit requirement. Where revised Section 304(a) criteria are less stringent than currently found in rule, short-term and long-term consequences may include reduction in effluent limit

or monitoring frequency requirements found in the operating permit for the facility. These reductions will likewise result in a reduction in costs for the facility.

b. Water Quality Standards Variances

A short-term consequence of establishing WQS variances for the cities of Joplin, Salem, and Bolivar is that the Department will issue permits with highest attainable conditions for the impacted parameters rather than limits based on certain statewide water quality standards. These permits will include requirements to make incremental improvements through optimizing facility operations. The long-term consequences of incorporating variances into permits is that those incremental improvements lead to improved water quality during the term of the variance. Variances are time-limited and permit limits based on the WQS will eventually need to be met once the variance ends.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

Because this revision reinstates previous site-specific criteria, there will be little to no short- or long-term consequences from this action. The City of Blue Springs will not need to install unnecessary, burdensome infrastructure upgrades to comply with a higher, but unnecessarily stringent, dissolved oxygen criteria.

d. Chloride Plus Sulfate

The short- and long-term consequences for this revision will be greater clarity when implementing the rule. This revision could also prevent potential delays in permitting decisions.

e. Missouri Use Designation Dataset Update

The proposed rule revisions will improve the identification of water body features, making it easier to track the various types of information relative to each water body, such as the standards that apply, the status of water quality, and the discharges affecting the water body. These identifications are essential to decisions relating to effluent limitations, compliance determinations, and water quality restoration activities.

f. Losing Stream References

A short-term consequence of removing losing stream language from the WQS rule could be confusion and the belief that the Department is reducing protections for these water bodies. That issue will be short-lived as the Department communicates internally and externally that losing stream language is duplicate in 10 CSR 20-7.015 Effluent Regulation. The long-term consequence of this change will be clarity in implementing losing stream requirements and elimination of duplication of the requirement in rule.

g. Miscellaneous Text Revisions

The proposed rule text revisions will prevent any confusion or delay in decisions based on the sections of the rule affected by typographical errors, unclear text, and formatting issues.

9. <u>An explanation of the risks to human health, public welfare or the environment addressed by the proposed rule.</u>

An explanation of the risks to human health, public welfare, or the environment addressed by the proposed rule for each proposed revision are as follows:

a. Section 304(a) Water Quality Criteria
The proposed revisions to Section 304(a) water quality criteria address the toxic effects of these pollutants to aquatic life. Because the Department is adopting federal standards for Clean Water Act Section 304(a) criteria, obtain further information on risk assessment by reviewing the administrative record created during EPA's development of their technical guidelines and guidance for these criteria.

b. Water Quality Standards Variances
Variances are time-limited and must meet specific state and federal requirements throughout its term. These requirements ensure the highest attainable water quality condition is maintained without undue social or economic impact to the community. Variance terms and conditions also require continuous environmental improvement through facility optimization and pollutant reduction activities. As a result, unnecessary or unacceptable risks to human health, public welfare, or the environment will be minimal.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek
The addition of site-specific dissolved oxygen criteria for Sni-A-Bar Creek will not cause unnecessary or unacceptable risks to human health, public welfare, or the environment as shown in the City of Blue Spring's request to reinstate these criteria. The Department based the development of these criteria on sound scientific rationale that protects the applicable designated aquatic habitat protection use.

d. Chloride Plus Sulfate
The revision for the chloride plus sulfate criteria in the proposed rule is for implementation clarification, and therefore does not pose or address risks to human health, public welfare, or the environment.

e. Missouri Use Designation Dataset Update
The purpose of these revisions is to improve the accuracy and clarity of the rule with regard to the water bodies contained in the dataset. The revisions will also increase the accuracy and efficiency of decisions made using water body information contained in the MUDD. Having the most up-to-date and current locations and uses of water bodies in the state will increase the accuracy of Clean Water Act activities that may use this information. As a result, unnecessary or unacceptable risks to human health, public welfare, and the environment will be minimal.

f. Losing Stream References
Removing losing stream references from the rule does not pose or address risks to human health, public welfare, or the environment because the requirements are duplicative and also found in 10 CSR 20-7.015.

g. Miscellaneous Text Revisions

Correcting typographical errors, clarifying language, and updating formatting does not pose or address risks to human health, public welfare, or the environment.

10. The identification of the sources of scientific information used in evaluating the risk and a summary of such information.

Because the Department is adopting federal Section 304(a) water quality criteria without modification, obtain further information on risk assessment by reviewing the administrative record created during EPA's development of their guidelines and guidance for these criteria. In these cases, the Department defers to the science used in the national studies for evaluating risks to human health, public welfare, and the environment.

- Aluminum: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum
- Cadmium: https://www.epa.gov/wqc/aquatic-life-criteria-cadmium

For all other proposed revisions, risks to human health, public welfare, or the environment will be minimal or are non-existent (See Section 9); therefore, no sources of scientific information needed to be identified to evaluate risk.

11. A description and impact statement of any uncertainties and assumptions made in conducting the analysis on the resulting risk estimate.

This amendment proposes to revise state criteria to reflect the latest federal criteria developed under Section 304(a) of the federal Clean Water Act. Because the Department is adopting federal standards for these revisions, obtain further information on uncertainties and assumptions made during the risk assessment by reviewing the administrative record created during EPA's development of technical guidelines and guidance for these pollutants.

- Aluminum: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum
- Cadmium: https://www.epa.gov/wqc/aquatic-life-criteria-cadmium

For all other proposed revisions, risks to human health, public welfare, or the environment will be minimal or are non-existent (See Section 9); therefore, no uncertainties or assumptions needed to be made to evaluate risk.

12. A description of any significant countervailing risks that may be caused by the proposed rule.

In addition to the Department analyzing the risks to human health, public welfare, or the environment for the proposed rule, it must also analyze countervailing risks potentially caused by the proposed rule. While many times countervailing risks may be minor or insignificant when compared to the risk being resolved by the rulemaking, there may be major countervailing risks that should be considered in a risk tradeoff analysis. It is in these cases

where additional information or data may be necessary to fully characterize the risk/benefit of the proposed rulemaking. The Department expects no significant countervailing risks to occur that are associated with the proposed rule revisions.

13. **The identification of at least one, if any, alternative regulatory approaches that will produce comparable human health, public welfare or environmental outcomes.**

In most cases, the purpose of the proposed revision or addition is to ensure Missouri's WQS regulation at 10 CSR 20-7.031 is functionally equivalent to federal standards. Because federal technical guidelines and guidance was available in most cases, and development of state-specific alternatives can be resource intensive, The Department did not consider other approaches or alternatives. However, persons who believe another approach is available that can be supported by sufficient science and rationale, are encouraged to submit an explanation of the alternative approach to the Department during the public comment period on the proposed rule.

Listed below are the identification of at least one, if any, alternative regulatory approach that will produce comparable human health, public welfare or environmental outcome for each proposed revision (where available):

a. Section 304(a) Water Quality Criteria

State water quality standards must be as protective as federal standards. The Department has not identified or conducted any alternative regulatory approaches that would produce comparable results to the changes proposed by these revisions. Therefore, the Department considered no other approaches or alternatives to federal Section 304(a) numeric water quality criteria.

b. Water Quality Standards Variances

Alternative compliance tools exist, such as schedules of compliance in Missouri State Operating Permits that would yield similar results to discharger-specific WQS variances. Department staff evaluate these tools on a site-specific basis. The Department determined WQS variances to be the best compliance option for the cities of Joplin, Salem, and Bolivar. The Department has not identified any alternative regulatory approaches that would produce comparable results to the clarifying revisions made to the "Missouri Multiple Discharger Variance Framework from the Water Quality Standards of Total Ammonia Nitrogen, CWC-MDV-1-17". Inaction would lead to greater confusion and potential misapplication of the rule.

c. Site-Specific Dissolved Oxygen Criteria for Sni-A-Bar Creek

The Department has not identified any alternative regulatory approaches that would produce comparable results to the reestablishment of site-specific dissolved oxygen criteria for Sni-A-Bar Creek.

d. Chloride Plus Sulfate

The Department has not identified any alternative regulatory approaches that would produce comparable results to the clarifying revision of the chloride plus sulfate criterion. Inaction would lead to greater confusion and potential misapplication of the rule.

e. Missouri Use Designation Dataset Update

The Department has not identified any alternative regulatory approaches that would produce comparable results to the proposed revisions. The proposed revisions will ensure the geospatial data used by the Department for permit applications and considerations, and used by the public for informational purposes, is current and up to date.

f. Losing Stream References

The Department has not identified any alternative regulatory approaches that would produce comparable results to the proposed revisions. The Department anticipates the removal of losing stream references from 10 CSR 20-7.031 to increase regulatory clarity compared to inaction.

g. Miscellaneous Text Revisions

The proposed revisions to correct typographical errors and update formatting are the only reasonable alternative for addressing these errors.

Public Comment
Find Regulatory Impact Reports for current rule developments of the Water Protection Program on the program's Rule Development web page at: http://dnr.mo.gov/env/wpp/rules/wpp-rule-dev.htm.

The Regulatory Impact Report provides information on rule development. Please provide comments in the time frame indicated. The comment period for this Regulatory Impact Report is April 29, 2020 through June 29, 2020.

Submit comments online at https://dnr.mo.gov/proposed-rules.

Send comments by mail to:

Missouri Department of Natural Resources
Division of Environmental Quality
Water Protection Program
Attn: WQS Coordinator
P.O. Box 176
Jefferson City, Missouri 65102-0176

Request hard copies of received comments via telephone at (573) 751-5723. Web posting will be to the Water Protection Program's Rule Development web page, listed above.

References

Missouri Rulemaking Manual, Missouri Secretary of State
http://www.sos.mo.gov/adrules/manual/manual.asp

Missouri Revised Statutes, Chapter 536 – Administrative Procedure and Review
http://www.moga.mo.gov/mostatutes/chapters/chapText536.html

Missouri Clean Water Law – Chapter 640
http://www.moga.mo.gov/mostatutes/chapters/chapText640.html

Missouri Clean Water Law – Chapter 644
http://www.moga.mo.gov/mostatutes/chapters/chapText644.html

Missouri Water Quality Standards – Chapter 7, Water Quality
http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-7a.pdf

Missouri Department of Natural Resources, Water Quality Standards Workgroup
https://dnr.mo.gov/env/wpp/cwforum/adv-uncl-waters-wetlands.htm

Federal Clean Water Act
http://www3.epa.gov/npdes/pubs/cwatxt.txt

Code of Federal Regulations (CFR), Title 40 Protection of Environment
http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl

Appendix A – Summary of the Number of Facilities Potentially Impacted by the 304(a) Criteria Revisions

Table 1. Number of facilities with aluminum and cadmium permit requirements.

	Aluminum	Cadmium
Number of permits with effluent limits	66	35
Number of permits with monitoring only	184	83
Total	250	118

Appendix B – Facilities Impacted by Aluminum Criteria Revisions

Table 2. Permitted facilities with aluminum limits by Standard Industrial Classification (SIC).

SIC Code	SIC Description	Number of Facilities
4952	Sewerage System	19
8641	Civic and Social Associations	19
7011	Hotels and Motels	5
5015	Motor Vehicle Parts, Used	3
8811	Private Households	3
2869	Industrial Organic Chemicals	2
1011	Iron Ores	1
2015	Poultry Slaughtering And Processing	1
2048	Prepared Feeds	1
2819	Industrial Inorganic Chemicals	1
2875	Fertilizers, Mixing Only	1
2951	Asphalt Paving Mixtures And Blocks	1
3334	Primary Aluminum	1
3441	Fabricated Structural Metal	1
3694	Engine Electrical Equipment	1
4581	Airports, Flying Fields, and Services	1
4953	Refuse Systems	1
5093	Scrap And Waste Materials	1
5541	Gasoline Service Stations	1
7992	Public Golf Courses	1
7999	Amusement And Recreation	1
	Total	**66**

Table 3. Permitted facilities with aluminum monitoring only requirements.

SIC Code	SIC Description	Number of Facilities
4952	Sewerage System	44
5015	Motor Vehicle Parts, Used	31
8641	Civic and Social Associations	19
4953	Refuse System	13
4911	Electric Services	7
7011	Hotels and Motels	5
5093	Scrap and Waste Materials	4
6515	Mobile Home Site Operators	4
7032	Sporting And Recreational Camps	4
4941	Water Supply	3
1422	Crushed And Broken Limestone	2
3469	Metal Stampings	2
3714	Motor Vehicle Parts And Accessories	2
4931	Electric And Other Services Combined	2
6512	Nonresidential Building Operators	2
7999	Amusement And Recreation	2
1221	Bituminous Coal And Lignite - Surface	1
2047	Dog And Cat Food	1
2048	Prepared Feeds	1
2099	Food Preparations	1
2599	Furniture And Fixtures	1
2813	Industrial Gases	1
2833	Medicinals And Botanicals	1
2834	Pharmaceutical Preparations	1
2869	Industrial Organic Chemicals	1
2875	Fertilizers, Mixing Only	1
3011	Tires And Inner Tubes	1
3111	Leather Tanning And Finishing	1
3241	Cement, Hydraulic	1
3255	Clay Refractories	1
3264	Porcelain Electrical Supplies	1
3272	Concrete Products	1
3317	Steel Pipe And Tubes	1
3357	Nonferrous Wiredrawing and Insulating	1
3441	Fabricated Structural Metal	1
3465	Automotive Stampings	1
3482	Small Arms Ammunition	1
3562	Ball And Roller Bearings	1
3711	Motor Vehicles And Car Bodies	1
3721	Aircraft	1
3728	Aircraft Parts And Equipment	1

3732	Boat Building And Repairing	1
3799	Transportation Equipment	1
4011	Railroads, Line-Haul Operating	1
4213	Trucking, Except Local	1
4231	Trucking Terminal Facilities	1
4491	Marine Cargo Handling	1
5812	Eating Places	1
6513	Apartment Building Operators	1
6552	Subdividers And Developers	1
7033	Trailer Parks And Campsites	1
7996	Amusement Parks	1
8361	Residential Care	1
9711	National Security	1
	Total	**184**

Appendix C – Facilities Impacted by Cadmium Criterion Revisions

Table 4. Permitted facilities with cadmium limits by Standard Industrial Classification (SIC).

SIC Code	SIC Description	Number of Facilities
4952	Sewerage System	15
1031	Lead and Zinc Ores	9
4953	Refuse Systems	4
1011	Iron Ores	1
2819	Industrial Inorganic Chemicals	1
2875	Fertilizers, Mixing Only	1
3089	Plastic Products	1
3339	Primary Nonferrous Metals	1
3691	Storage Batteries	1
4911	Electric Services	1
	Total	**35**

Table 5. Permitted facilities with cadmium monitoring only requirements.

SIC Code	SIC Description	Number of Facilities
4952	Sewerage System	39
4953	Refuse Systems	20
2048	Prepared Feeds	3
4911	Electric Services	2
1031	Lead And Zinc Ores	1
1422	Crushed And Broken Limestone	1
1629	Heavy Construction	1
2875	Fertilizers, Mixing Only	1
3011	Tires And Inner Tubes	1
3069	Fabricated Rubber Products	1
3241	Cement, Hydraulic	1
3341	Secondary Nonferrous Metals	1
3465	Automotive Stampings	1
3728	Aircraft Parts And Equipment	1
4231	Trucking Terminal Facilities	1
4931	Electric And Other Services Combined	1
4941	Water Supply	1
5093	Scrap And Waste Materials	1
5541	Gasoline Service Stations	1
6512	Nonresidential Building Operators	1
8733	Noncommercial Research Organizations	1
9711	National Security	1
9999	Nonclassifiable Establishments	1
	Total	**83**

Appendix D – Facilities with Acute Cadmium Limits

Table 6. Facilities with cadmium limits driven by the acute cadmium criteria.

Permit Number	Facility Name	Ownership	Outfall Type
MO0104540	Central Missouri Landfill	Private	Stormwater
MO0097543	Champ Landfill Company	Private	Stormwater
MO0112640	Columbia Landfill*	Public	Stormwater
MO0133221	Doe Run, Indian Creek	Private	Stormwater
MO0001856	Doe Run, Fletcher Mine/Mill	Private	Stormwater
MO0000281	Doe Run, Herculaneum*	Private	Process Wastewater
MO0002348	Eagle-Picher Technologies*	Private	Stormwater
MO0024911	Kansas City, Blue River	Public	Municipal
MO0110876	Lee's Summit Resource Recovery Park	Public	Stormwater

* Discharge monitoring report data shows a potential compliance issue with the proposed criteria