September 23, 2025

John Hoke
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102
Via email: publicnoticenpdes@dnr.mo.gov

RE: Comments on Proposed Rules 10 CSR 20-6.015 No-Discharge [Permits] Operations and Land Application Requirements; 10 CSR 20-2.010 Definitions; 10 CSR 20-6.020 Public Participation, Hearings, and Notice to Governmental Agencies; INMTS

Dear Mr. Hoke,

On behalf of the Moniteau County Neighbors Alliance ("MCNA"), the Interdisciplinary Environmental Clinic (IEC) at Washington University School of Law submits these comments on the Missouri Department of Natural Resources' ("MDNR") recently issued draft regulations including 10 CSR 20-6.015 No-Discharge Permits Operations and Land Application Requirements, 10 CSR 20-2.010 Definitions, and 10 CSR 20-6.020 Public Participation, Hearings, and Notice to Governmental Agencies.

MCNA is a non-profit organization formed to advocate for clean air, clean water, environmental and public health in Moniteau County and the surrounding region. Members of MCNA live in rural Missouri, depend on Missouri's water resources, and advocate for the protection of Missouri's natural resources and public health. MCNA is committed to protecting Moniteau County's citizens, and their environment, primarily through education and advocacy. Moniteau County itself has an agricultural-based economy and, as such, may be impacted by the application of waste to its land.

MCNA commends MDNR's efforts to bring about positive change

MCNA supports MDNR's decision to require the Industrial Nutrient Management Technical Standard ("INMTS") be used for all land application of industrial waste. For too long, land application has gone unregulated, leaving neighbors without recourse when they experience odors, runoff, and pollution of local streams. The following strong language is appreciated: "In Missouri, any person land applying industrial wastewater, industrial wastewater treatment sludge, or related process wastes **must** follow the requirements set forth in this INMTS in accordance with the regulations found in 10 CSR 20-6.015…" [emphasis added].[1]

MCNA supports the required annual soil sampling for all permitted features. The INMTS states: "Soil sampling pollutants and frequency will be established in permit. Nutrient sampling must be conducted annually; other sampling will be determined based on current data, variability, and pollutant concentrations."[2] Soil sampling is vital because land application is only useful insofar as it is agronomically necessary. Soil testing will ensure that the land application site is

[1] Draft INMTS for Industrial Wastewater and Wastewater Treatment Residuals, Proposed Edition at 2.
[2] Section A3, Subsection 2

utilizing the applied nutrients, thereby reducing the likelihood of excessive application leading to damaging environmental effects.

MCNA supports the requirement to flag sensitive features **prior** to land application. As stated in the IMNTS, "All land application setbacks must be identified with flags or other physical markers."[3] Flagging is important because it is an unambiguous physical indication that will minimize land application errors and reduce unwanted contamination.

MCNA appreciates that setbacks for sensitive features such as springs, sinkholes, wells, and homes are well-defined. Setbacks are vital to protecting the health and well-being of residents and the environment. These setbacks, coupled with flagging requirements, should ensure that applicators adhere to boundaries when applying waste.[4]

Even so, MCNA believes that the draft regulations should go further in providing protection for the local community and its natural areas. Below, we highlight MCNA's questions and concerns. We hope these comments prove useful as MDNR finalizes its analysis.

10 CSR 20-6.015 No Discharge Operations and Land Applications Requirements

The proposed changes to 10 CSR 20-6.015 set forth requirements for no-discharge operations seeking to perform land application of domestic, nondomestic, and industrial wastewater. The amendment is intended to align with the new statutory language established in 2024:

> ". . .the Department [of Natural Resources] must: (1) Require groundwater monitoring when the basin or vessel is located in proximity to a geological feature that increases the likelihood for groundwater contamination; (2) Establish by rule sampling requirements for basins or vessels based on its permitted materials; (3)…promulgate rules, including a chain of custody form to be used during the handling of testing samples, and establish criteria to require annual sampling and testing for specified metal concentrations and pathogens."[5]

MCNA supports these aims. Yet, the Proposed Rule falls short of these requirements in several ways:

1. Monitoring: Although the Proposed Rule implies that monitoring of the permit conditions will occur, it does not explain what form that will take. Who will monitor the storage areas and land application fields to ensure the operators are following the permit details? **It is MDNR's legal responsibility to monitor and ensure compliance, but the proposed rules do not explain how this monitoring will take place – a crucial omission.**
2. Inspections & Documentation Relatedly, the Proposed Rule does not specify the frequency and type of oversight that will ensure compliance with the permit conditions. How often will inspections of storage basins and land application operations occur? Will there be on-site inspections of the premises? Will the inspections be unannounced or will they be scheduled with the operators in advance? **MCNA urges MDNR to conduct**

[3] Section B3(b)
[4] See INMTS, Section B3, Table 4, at 14.
[5] MO H.B. 2134

unannounced, on-site inspections rather than document reviews, such that the inspections capture normal operations at the facilities.

In addition, although the Proposed Rule imposes recordkeeping requirements, it is unclear how those records will be maintained. **MCNA asks that the documents tracking individual permit compliance be filed with MDNR, rather than being maintained at the facility.** This ensures greater accountability for waste handling and application by streamlining accessibility. MCNA is aware of MDNR's personnel and finance constraints but urges MDNR to exercise as much oversight as is possible under the circumstances.

3. Consequences of non-compliance: **The rules should explain the consequences of non-compliance with the permit terms**, even if only through mention of the Rule section in which those provisions are discussed. For instance, MDNR must clarify how they will enforce compliance with specific violations (e.g., flagging rules, failure to monitor the weather forecast, or overapplication in general).

4. Use HUC12 listings to indicate where the waste has been applied: MCNA also urges MDNR to include a provision requiring the operator to report the Hydrologic Unit Code 12 ("HUC 12") watershed in which the waste was spread. This parallels the provision in the CAFO rule and is within MDNR's authority. This information will allow MDNR and the public to understand the amount of waste applied in each HUC12 watershed in Missouri and provide valuable insight into the potential for pollution. The exact location of the land application is preferred. MCNA requests that the public have access to this information in aggregate form rather than just by individual permitted feature.

10 CSR 20-1.010 Definitions

The proposed changes to 10 CSR 20-2.010 update the definitions of terms used in regulations passed pursuant to the Missouri Clean Water Law and Missouri Concentrated Animal Feeding Operation Law. Many of the updated definitions successfully clarify and incorporate new or updated definitions associated with statutory and regulatory changes. However, **MCNA is especially concerned about the definition of "occupied residence or dwelling."**

Section 2.010(61) defines an "occupied residence or dwelling" as "a residential dwelling which has been inhabited at least fifty percent (50%) of the previous year." The definition excludes "[r]esidences or dwellings for which construction began after the associated permit application was submitted, or neighbor notice was conducted."

This definition may work when it pertains to CAFOs, or industrial wastewater storage basins, but it falls short in the context of land application. Industrial wastewater applicators should use the setback appropriate for any occupied dwellings in existence at the time of application, regardless of whether they were occupied at the time of neighbor notice or during the previous year. If a house is occupied at the time of land application, the setbacks should be maintained.

During the stakeholder process, when these rules were still in the discussion stages, the possibility of an accommodation for newly constructed homes was mentioned. However, these protections were not included in the Proposed Rule. MCNA requests that the setback distance for

newly constructed homes be 150 feet. This distance should be listed in the setback table 4 on page 14 of the INMTS and in the LAMP narrative for setbacks. In Section 3.3 Land Application Maps (1)(a)(ix) of the LAMP, the narrative should read:

> "Within 150 feet of an occupied residence, **newly constructed home**, public building or public use area..."

MCNA requests both changes be made in the final version of the Rule. Specifically listing this will add clarity to protections provided for rural residents.

10 CSR 20-6.020 Public Participation, Hearings, and Notice to Governmental Agencies

MCNA has concerns with a few of the provisions in this section as well.

1. Electronic Documents. Section 10 CSR 20-6.020 does a good job of incorporating electronic management into the public participation process, making it easier for a larger segment of the population to engage. However, MCNA believes that **additional training of industrial waste storage basin operators and land appliers may be needed** given some of the shortcomings observed with the annual reports.

2. "Minor Modifications." Amendment 10 CSR 20-6.020 alters Section (1)(B) Public Notice for Site Specific Permits. The amendment adds: "[e]xcept for minor modifications" before the original language stating that there "shall be a period of not less than thirty (30) days following the date of the public notice when interested persons may submit their written views on the proposed permit." Similarly, Section 6.020(1)(C) Public Notice for General Permits, is modified as well because it functions in accordance with Section 6.020(1)(B). Section (1)(C) with the amendment states: "[f]or issuance of the initial individual general permit for any newly constructed water contaminant source, point source, or wastewater treatment facility, public notice shall occur in accordance with subsections (1)(B) and (C) of this rule."

MCNA is concerned that the provisions related to "minor modifications" of permits may allow some operations to escape public notice. MCNA requests that even minor modifications undergo public notice. At a minimum, MCNA asks that the term "minor modification" is defined. Within the definition, the process used to determine whether something qualifies as a "minor modification" should be included.

3. General Permits. We have a similar concern regarding the public notice requirements in Section 6.020(1)(C)(2.). This section includes a list of the general permits that are subject to Section 6.020(1)(B) public notice requirements. **MCNA asks that industrial waste storage basins be listed under the general permit items requiring public notification.**

4. Public Participation and Notification. Section 6.020(1)(E) discusses the circulation of notices. It appears that notices are mailed to a small subset of those affected by the proposed discharge. **Notifications should be mailed to all residents living within the potentially affected radius of the proposed discharge.**

In addition, section 6.020(4) discusses the public participation process. It appears that notifications of hearings are *either* published in a newspaper of general circulation in the geographical area of the discharge *or* mailed/emailed, to anyone who requests to receive

notification of proposed permits. Again, n**otification of hearings should be mailed to all residents living within the affected radius of the proposed discharge.**

PFAS must be included in the INMTS

The INMTS outlines how each source of industrial activity in Missouri must act to protect the health of the soil, the air, and the local community. In the context of the proposed rule, the INMTS has an important relationship with the Land Application Management Plans (LAMP) that govern land application practices: "The LAMP [*Land Application Management Plan*] must comply with the requirements established in the INMTS...". Thus, any issues with the INMTS will manifest in LAMPs filed in the state of Missouri.

MCNA is concerned that the INMTS fails to consider polyfluoroalkyl substances (PFAS). The proposed INMTS states:

> "Missouri State Operating Permits issued under the authority of the Missouri Clean Water Law cannot authorize land application of potential pollutants in amounts, concentrations, or quantities that would violate the limits, thresholds or requirements of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances or Resource Conservation and Recovery Act (RCRA) hazardous waste."[6]

Two types of PFAS – perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) – are hazardous substances under Section 102(a) of CERCLA.[7] CERCLA establishes a reportable quantity of **1 pound per 24 hours.** Thus, the INMTS must explicitly prohibit their application at or above these levels. This will require regular testing to ensure compliance.

The dangers posed by PFAS are scientifically supported. The Environmental Working Group estimates that almost 20 million acres of U.S. farmland are fertilized with sewage sludge containing PFAS.[8] Such widespread use of sludge contaminated with PFAS threatens to infect not just the soil, but the plants and animals that depend on it. For instance, researchers at Penn State conducted a 14-month study analyzing PFAS concentrations in treated wastewater used as part of a "beneficial reuse system," wherein treated wastewater is used to irrigate a mixed-use area known as the "Living Filter."[9] The study authors found 10 types of PFAS across the Living Filter at concentrations that pose a threat to human health. Alarmingly, they found that PFAS compounds contaminated crops used for livestock feed, suggesting that PFAS could make their way into animals that used for human consumption.

MDNR previously recognized the need for PFAS regulations in the context of land application. **Past iterations of these same DNR regulations** and INMTS **have included**

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[6] Proposed August 2025 INMTS, pg. 7

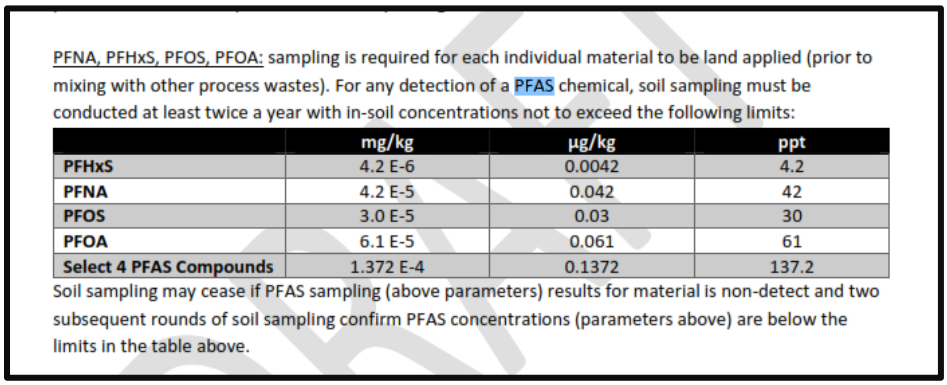
[7] https://www.epa.gov/epcra/designation-pfoa-and-pfos-hazardous-substances-under-cercla-release-reporting-requirements

[8] "EWG: 'Forever Chemicals' May Taint Nearly 20 Million Cropland Acres | Environmental Working Group." https://www.ewg.org/news-insights/news/2022/04/ewg-forever-chemicals-may-taint-nearly-20-million-cropland-acres.

[9] Olivia Mroczko et al., "Spatiotemporal Patterns of PFAS in Water and Crop Tissue at a Beneficial Wastewater Reuse Site in Central Pennsylvania." https://doi.org/10.1002/jeq2.20408

provisions for PFAS monitoring and prevention of contamination. The Regulatory Impact Report (RIR) 10 CSR 20-6.015 from 2024, which includes this language on page 3, under a section detailing the individuals potentially affected by the then-proposed rule change: "Additionally, sampling for PFAS compounds in wastewater, wastewater treatment residuals, and in-soil **prevents the buildup of potentially toxic PFAS compounds in soil, reducing potential groundwater impacts, and providing a benefit to the health of Missourians,** especially those which utilize groundwater as their primary source of drinking water."

The August 14, 2024 version of the INTMS contained the following provisions:



PFNA, PFHxS, PFOS, PFOA: sampling is required for each individual material to be land applied (prior to mixing with other process wastes). For any detection of a PFAS chemical, soil sampling must be conducted at least twice a year with in-soil concentrations not to exceed the following limits:

	mg/kg	µg/kg	ppt
PFHxS	4.2 E-6	0.0042	4.2
PFNA	4.2 E-5	0.042	42
PFOS	3.0 E-5	0.03	30
PFOA	6.1 E-5	0.061	61
Select 4 PFAS Compounds	1.372 E-4	0.1372	137.2

Soil sampling may cease if PFAS sampling (above parameters) results for material is non-detect and two subsequent rounds of soil sampling confirm PFAS concentrations (parameters above) are below the limits in the table above.

MCNA asks that language around PFAS be restored to the Rule and the INMTS. Specifically, MDNR should set acceptable thresholds in line with its earlier proposed regulations, or with CERCLA and require regular testing and monitoring. At a minimum, MDNR must require testing and monitoring so that state officials and the public can understand the extent of PFAS contamination in land applied wastes.

Section E of the INMTS and Related Application Materials

1. Land Application Management Plan (LAMP). The LAMP details how owners will handle pollutants from land application, while also providing a net benefit for the land in question. The INMTS are closely linked to the LAMP by taking the permit requirements enumerated in the regulations and providing a procedural implementation plan unique to each facility's geographic, economic, and personal considerations.

In line with our recommendations regarding the INMTS, PFAS, we highlight the scientific and statutory logic for setting PFAS thresholds and requiring testing and monitoring. Because the LAMP requires permit holders to "provide checklists and hyperlinks to guidance documents like the Industrial Management Technical Standard (INMTS) to fulfill permit requirements" and pollutant loading rates are informed by the INMTS, we note that **the LAMP should also include information about PFAS testing and monitoring.**

Setback Distances under LAMP versus INMTS.

The LAMP requires a minimum setback distance "within 150 feet of an **occupied residence, public building, or public use area**."[10] The INMTS requires a minimum setback distance of 150 feet for a "**non-owned occupied residence…public use area including non-owned businesses…[or] public road**"[11] Additionally, in the INMTS, the footnote under the setback feature "Public or private drinking water well..." states that if the location of the well is unknown, "all **private residences** shall be assumed to have a well within 300 feet of the residential structure(s)."[12] This is the only time the term "private residence" is used in the INMTS, and the term is not used at all in the LAMP.

[10] Draft Land Application Management Plan, pg. 5
[11] Proposed INMTS, pg. 14
[12] *Id.*

The inconsistency in naming conventions for setback features is confusing and will leave to avoidable mistakes at best or malfeasance at worst. Confusion surrounding the definition of "non-owned" "private residence," and "occupied residence" leaves us uncertain as to how these setback distances are determined, and how they apply to residential areas abutting on agricultural land. **We request that MDNR unify the language around setback features such that they are clear and unambiguous**.

LAMP Appendix G: Land Application Log. Section 1. PRE-LAND APPLICATION CHECKS indicates that a 24-hour forecast must be included as an attachment. Two check boxes labeled "Attached" and "Not Attached" appear beside this text (see below).

1. PRE-LAND APPLICATION CHECKS - COMPLETE THIS BEFORE STARTING LAND APPLICATION		
24-Hour Forecast. Include as an attachment.	☐ Attached	☐ Not Attached

"Not Attached" should be removed as an option and the text should be re-phrased to explicitly indicate that the user cannot proceed with the application without the 24-hour forecast attached. MDNR offers no justification for allowing land appliers to forgo attaching these documents.

Likewise, Section 1.2 APPLICATION METHOD offers applicants a choice to indicate whether setbacks were flagged before land application (see below).

Setbacks (see LAMP for required setback distances): Were all setbacks flagged before land application?	☐ Yes	☐ No

"No" should be removed as an option, as applicants cannot proceed without flagging setbacks. The option to select "No" creates unnecessary confusion by implying a choice when applicants have none.

2. Geohydrologic Evaluations. Geohydrologic evaluations are critical to gaining a scientific understanding of the soil conditions for new and existing facilities. It seeks to qualify the movement, usage, and quality of groundwater as it flows beneath the surface, which is vital information when designing strategies for proper land application techniques, water well construction, or any other project requiring the usage of groundwater or the soil.

Under the INMTS guidelines, "geohydrologic evaluations must be completed for new land application fields per 10 CSR 8.200(2)(B)."[13] The LAMP states that "any addition of land application fields will require department's approval and a geohydrologic evaluation."[14]

Neither the INMTS or the LAMP specify if an evaluation will be conducted for every permitted feature, or what the scope of the evaluations entail. **MCNA requests that geohydrologic evaluations be conducted for each permitted feature**.

[13] Proposed INMTS, Section C, pg. 16
[14] Draft LAMP, Section 8.1, pg. 8

Conclusion

On behalf of MCNA, the Washington University IEC thanks MDNR for considering our comments about the proposed rule changes. We believe that these changes are necessary to safeguard our environment, natural resources, and public health in Missouri. We appreciate the extraordinary efforts undertaken by MDNR to create a comprehensive set of land application guidelines for the state, and we submit these comments in the hope that action will be taken to protect Missourians. Thank you.

Sincerely,

/s/ Elizabeth Hubertz

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