



August 26, 2024

Submitted electronically via email to Bilin Basu (basu.bilin@epa.gov)

Mathew J. Martinson
CAPT, USPHS
Branch Chief
Permits, Drinking Water and Infrastructure
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460

Re: Revised Public Notice Draft – [Joint Base Lewis-McChord MS4 – Authorization to Discharge Under the National Pollutant Discharge Elimination System](#) (NPDES Permit No. WAS026638)

Dear Mr. Martinson,

The U.S. Tire Manufacturers Association (USTMA) appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed National Pollutant Discharge Elimination System (NPDES) permit for the Joint Base Lewis-McChord (JBLM), NPDES Permit No. WAS026638. USTMA is the national trade association of tire manufacturers that produce tires in the United States. Domestic tire manufacturing is responsible for more than 291,000 jobs and has an annual economic footprint of \$170.6 billion in the United States. The tires from our member companies make mobility possible and keep the U.S. economy moving, as well as being a critical component of maintaining our armed forces.

USTMA members are committed to sustainable practices in every aspect of their businesses and embrace a shared responsibility of helping to achieve a more sustainable society. As part of this, we remain committed to understanding any potential impacts of our tires on the environment. USTMA advances a sustainable tire manufacturing industry through a commitment to science-based public policy advocacy. USTMA is pleased to provide input on this NPDES permit which includes an important addition of a permittee mitigating for N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine quinone (6PPDQ, 6PPD-Q, or 6PPD-quinone).

The use of 6PPD in tires serves an essential safety function, protecting the components of the tire from attack by ozone and oxygen and has been used for decades. Without 6PPD, a tire's integrity would be severely and quickly compromised, jeopardizing driver and passenger safety. Since 6PPDQ, a transformation product of 6PPD, was first identified in Tian et al., 2021¹, USTMA has engaged with state, federal, and tribal agencies, researchers, and other stakeholders to

¹ Zhenyu Tian *et al.* A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon. *Science* 371,185-189(2021). DOI:10.1126/science.abd6951

identify and support existing and future research related to 6PPDQ and to ensure research utilizes the most robust methodologies.

Addition of 6PPDQ monitoring requirements (Permit Part 3):

The proposed JBLM NPDES permit would require the permittee to sample for 6PPDQ during (1) wet weather discharge monitoring and (2) surface water quality monitoring of Canal and Clover Creek. USTMA appreciates EPA's desire to further evaluate 6PPDQ and its introduction into the environment through stormwater discharges. USTMA has two recommendations to help ensure the data obtained is of most use.

USTMA recommends that EPA remove the word "Total" in stating the analyte name for 6PPD-Q as shown, for example, in Tables 3.2.6.4, 3.2.6.5, and 3.2.7.4. The association is unaware of any other use of this term. Additionally, the EPA Draft Method 1634 for 6PPD-Q does not use the term "Total" when referring to this compound.

Additionally, USTMA recommends that the permit require JBLM to thoroughly document the monitoring activities and the results obtained through this permit's requirements. This will help ensure appropriate quality assurance and control and that the data can be appropriately characterized and compared with similar sampling efforts now, and in the future.

Revisions to the stormwater retrofit requirements (Permit Part 2.4.4):

EPA should ensure that research used to inform actions taken under the permit is robust, peer-reviewed, transparent, and reproducible. We encourage promoting clarity by including additional examples of "other current research" described in in Section 2.4.4.4 in the permit. Specifically, to illustrate the types of current research that could be referenced, we suggest including references to the following articles:

- McIntyre et al., 2023²:
 - Tested the efficiency of bioretention soil media (46 cm layer of 60% sand/40% compost mix with a 8 cm mulch layer) and exposed coho embryos to unfiltered runoff and bioretention effluent.
 - Collected highway runoff from Spromberg et al., 2016 was used and filtered through drums containing bioretention media in a lab-based setting.
 - Found that filtering stormwater with bioretention led to no significant mortality of coho salmon alevin (embryos) exposed to stormwater prior to hatching).

² McIntyre, J. K., Spromberg, J., Cameron, J., Incardona, J. P., Davis, J. W., & Scholz, N. L. (2023). Bioretention filtration prevents acute mortality and reduces chronic toxicity for early life stage coho salmon (*Oncorhynchus kisutch*) episodically exposed to urban stormwater runoff. *Science of The Total Environment*, 902, 165759. <https://doi.org/10.1016/j.scitotenv.2023.165759>

- Rodgers et al., 2023³:
 - Investigated the fate and transport of 6PPDQ in an existing bioretention pond with plants and modeled its performance under different hydrologic scenarios.
 - Conducted a spike and recovery experiment using artificial stormwater to represent the largest rainfall event that would fill the pond without overflowing the system.
 - Found that 6PPDQ infiltrated the system and was mostly bound to the soil, with little plant uptake or remobilization.
 - The model predicted that bioretention cells reduce mass-loadings of 6PPDQ by >90% for storm events with a recurrent period of ≤ 2-years, and >95% reduction in annual mass loadings in an “average” water year.
- Rodgers et al., 2024⁴:
 - Modeled various bioretention design modifications to evaluate how certain design features of a bioretention pond affects its ability to remove 6PPDQ from stormwater.
 - Found that increasing the pond’s surface area, depth, or infiltration rate increased the effectiveness of the pond.
 - Found that increasing more than one feature can have an antagonistic effect and that high infiltration rates can lead to 6PPDQ leaching to the outflow drain.

Incorporating the above examples of “other current research” would enhance the clarity and utility of the permit requirements and ensure that the permittee has access to the latest and most relevant scientific data to guide their retrofit projects.

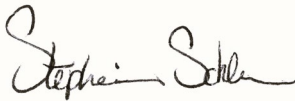
Filling data gaps is important to drive appropriate management strategies. This permit provides an opportunity to expand the understanding of best management practices (BMPs) for permittees to address 6PPDQ through the requirements to “select retrofit projects using practices that have been shown to effectively reduce the pollutants listed in Table 3.3.5, with particular emphasis on the removal of 6PPD-quinone in stormwater discharges.” USTMA recommends that EPA add the term “management,” to Section 2.4.4.4 to better acknowledge the suite of tools and methods that may be appropriate for addressing 6PPDQ in stormwater.

³ Rodgers, T. F. M., Wang, Y., Humes, C., Jeronimo, M., Johannessen, C., Spraakman, S., Giang, A., & Scholes, R. C. (2023). Bioretention Cells Provide a 10-Fold Reduction in 6PPD-Quinone Mass Loadings to Receiving Waters: Evidence from a Field Experiment and Modeling. *Environmental Science & Technology Letters*, *acs.estlett.3c00203*. <https://doi.org/10.1021/acs.estlett.3c00203>

⁴ Rodgers, T. F. M., Spraakman, S., Wang, Y., Johannessen, C., Scholes, R. C., & Giang, A. (2024). Bioretention Design Modifications Increase the Simulated Capture of Hydrophobic and Hydrophilic Trace Organic Compounds. *Environmental Science & Technology*, *58*(12), 5500–5511. <https://doi.org/10.1021/acs.est.3c10375>

For any retrofit projects initiated during this permit term, the Permittee must select retrofit projects using practices that have been shown to effectively reduce the pollutants listed in Table 3.3.5, with particular emphasis on the **management or** removal of 6PPD-quinone in stormwater discharges, using practices such as those detailed in Ecology's 2022 Stormwater Treatment of Tire Contaminants Best Management Practices (BMP) Effectiveness Report, or other current research.

USTMA appreciates the opportunity to comment on this permit. The association looks forward to continuing to work with EPA and other partners on issues related to 6PPDQ in the environment. Please contact me with any questions about these comments at sschlea@ustires.org or 1.202.682.4836.

A handwritten signature in black ink on a light yellow background. The signature reads "Stephanie Schlea" in a cursive script.

Stephanie Schlea

Vice President, Environment, Health, Safety, and Sustainability