

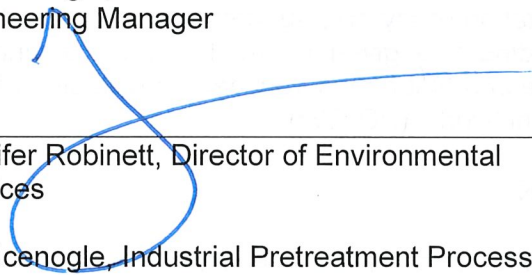


METRO WATER RECOVERY

INDUSTRIAL PRETREATMENT PROGRAM IMPLEMENTATION POLICY FOR HIGHLY COLORED WASTEWATER

PURPOSE/SCOPE:

This document defines the Industrial Pretreatment Program's determination of colored wastes, the investigatory and identification methods, and expectations related to highly colored wastes.

Version Number	Approved By	Effective Date
2	Jennifer Robinett, Director of Environmental Services  Bret Icenogle, Industrial Pretreatment Process Engineering Manager 	April 16, 2025
1	Jennifer Robinett, Director of Environmental Services Bret Icenogle, Industrial Pretreatment Process Engineering Manager	October 1, 2023, superseded



BACKGROUND

Metro Water Recovery (Metro) operates a US EPA approved industrial pretreatment program (IPP) to prevent the introduction of unconventional pollutant loadings to its domestic wastewater treatment plant that have the potential to pass through or interfere with the treatment processes and have the potential to cause degradation to the public health and the environment. Metro's legal authority associated with its IPP implementation resides within Sections 2, 5, 6 and 10 of the Metro Water Recovery *Rules and Regulations Governing the Operation, Use, and Services of the System* (Rules and Regulations)

This implementation policy describes how Metro interprets the information and requirements associated with colored discharges that are included in Rules and Regulations and establishes expectations for Metro's staff and industrial users (IUs) within Metro's service area which discharge or have the potential to discharge highly colored wastewater.

APPLICABILITY

This implementation policy applies to all existing and new IUs within Metro's service area. The requirements of this implementation policy may supersede any past written correspondence issued by Metro to an IU regarding color given that the loading and condition of the Metro's service area changes over time and Metro must routinely reevaluate industrial wastes accepted by its Publicly Owned Treatment Works (POTWs).

REGULATORY FRAMEWORK

The following definition (Section 2, Item 66) from the Rules and Regulations specifically identifies color as a "pollutant":

"Pollutant means any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, biological materials, radioactive materials, an excess of heat, wrecked or discharged equipment, rock, sand, cellar dirt, and industrial, municipal, agricultural waste, and certain characteristics of wastewater [e.g., pH, Lower Explosive Limit (LEL), temperature, TSS, turbidity, **color**, BOD, COD, toxicity, or odor]." (emphasis added)

Rules and Regulations Section 6.14. provides that pollutants (including color) are prohibited if discharged at a concentration that will cause pause through or interference at the POTW.

Rules and Regulations Section 6.13. separately describes requirements for "deleterious wastes" that "are prohibited from being discharged into the Metro System or into the Municipal Sewer System by any IU unless authorized through prior written permission by Metro Water Recovery. Written permission by Metro may include, but not be limited to, the imposition of site-specific limitations, Best Management Practices, and/or requirement to obtain a discharge permit pursuant to Section 6.22.1. These Requirements and prohibitions may be imposed directly on process Wastewaters prior to dilution by domestic or other Wastewaters discharged by Industrial Users." Section 6.13.4 specifically identifies wastes that "**are either highly colored**



or could become highly colored by reacting with any other wastes" as deleterious waste that is prohibited unless authorized through prior written permission by Metro. (emphasis added)

GENERAL APPROACH

The characteristics of untreated domestic wastewater have been well documented, including typical coloring. In general, the color of domestic wastewater varies from a light brownish-grey color for fresh, aerobic domestic wastewater to a dark grey to blackish color for aged anaerobic, septic domestic wastewater. As noted by the previous description, the typical domestic wastewater color range may vary naturally over time based on temperature and microbial activities. POTWs are designed to treat for the dissolved and suspended solids that create the colors generally associated with domestic wastewater, and release treated effluents that have little to no discernable color difference from the receiving water. Alternately, POTWs are not designed to treat for color characteristics that are not inherent to typical domestic wastewater. To this end, highly colored industrial wastewaters caused by sources uncharacteristic of typical domestic wastewaters may cause pass through or interference at the POTW.

Industrial wastewater discharges may have colored discharges influenced by a variety of factors that are outside the typical characteristics of domestic wastewater. Color may be caused by one or a combination of the following: pH, temperature, dyes, colloidal solids, tannins, dissolved materials, suspended solids, organic matter, oxides, algae, or metals. Metro recognizes that a visual inspection is typically the most straightforward way to identify colored wastewater for proposed industrial discharges. Moreover, a visual inspection alone cannot determine whether the color may pass through or cause interference at the POTW.

Due to the wide range of potential causes for color, the Rules and Regulations include colored discharges among those that may be prohibited. Metro has adopted the "Visual Threshold" method to screen industrial wastewater discharges for color.

Visual Threshold

A Metro Industrial Pretreatment Program team member may use the "Visual Threshold" method to evaluate effluent for being colored when observing an existing industrial discharge. To perform the "Visual Threshold" method and make the determination, a Metro Industrial Pretreatment Program team member must observe the industrial discharge before entering a public sewer or being diluted. The Metro Industrial Pretreatment Program team member may find the industrial discharge to be considered colored when 1) the discharge has an appearance that does not represent that of a typical wastewater (e.g., white, blue, red, etc.), or 2) when the discharge has an appearance of typical domestic wastewater but originates from industrial sources (i.e., not a domestic source). When either of these cases exist, the Metro Industrial Pretreatment Program team member shall notify the IU in writing that the discharge is being defined as colored and require the IU to investigate the root cause of the color. The IU will be required to complete this root cause investigation (i.e., through sampling and characterization) within a reasonable timeframe to be established by Metro or risk the discharge being prohibited.

Depending on the findings of the investigation, the Metro Industrial Pretreatment Engineer will determine whether the wastewater qualifies as "highly colored" and, in turn, whether the discharge will be prohibited. The wastewater is "highly colored" if the Metro Industrial Pretreatment Engineer determines that the source exceeds a local limit, has the potential to



cause pass through or interference, or otherwise may interfere with the operation of POTW's system at the wastewater treatment facility. Pursuant to Rules and Regulations Section 6.13, the Metro Industrial Pretreatment Engineer may – but is under no obligation to – provide written approval for discharge of “highly colored” wastewater if it is possible for the IU to treat for the root cause to remove the color or for the IU could feasibly mitigate the color through implementation of control measures or best management practices. Approval of a “highly colored” discharge will be subject to the following requirements:

- 1) The IU must treat for the root cause to remove the color based on established industrial pretreatment effluent limits or local limits; or
- 2) The IU must mitigate the color to meet narrative conditions established by the Metro Industrial Pretreatment Engineer.

If the Metro Industrial Pretreatment Engineer determines, based on the IU's investigation of the root cause of the color, that there is no potential for the root cause to result in pass through or interference at the receiving treatment plant and, as a result, treatment or best management practices are not required, the discharge will not be deemed “highly colored.” The Metro Industrial Pretreatment Engineer will document this finding in writing. If, however, the Metro Industrial Pretreatment Engineer determines that the root cause has the potential to cause pass through or interference and if it is *not* possible for the IU to treat for the root cause to remove the color or for the IU to feasibly mitigate the color, the discharge will be prohibited. The Metro Industrial Pretreatment Engineer will similarly document this finding in writing.

The following examples discuss how a “Visual Threshold” determination, characterization, and determination for color may occur:

- 1) A Metro Industrial Pretreatment team member observes that the industrial discharge, before entering into the public sewer or being diluted, has an appearance that does not represent that of typical domestic wastewater. Using the “Visual Threshold” method, this evaluation may be made solely by the visual examination of the industrial wastewater's color. In this example, the discharge varies between a red, blue, or green discharge that is visually and discernably different than typical wastewater. The Metro Industrial Pretreatment team member then defines the effluent as being colored. Once the team member notifies the IU in writing that the effluent has been defined as colored, the IU must identify the root cause of the color through sampling and characterization. For purposes of this example, and based on the IU's sampling and characterization, a Metro Industrial Pretreatment Engineer subsequently determines that the discharge has the potential to cause pass through or interference of the POTW's treatment processes and is therefore “highly colored,” but that it is possible for the IU to treat for the root cause. The Metro Industrial Pretreatment Engineer provides written approval for the discharge subject to a requirement that the IU provide treatment to meet pretreatment standards, if existing, or meet a narrative treatment level expectation that protects the POTW from pass through and interference based on the pollutant of concern.
- 2) A Metro Industrial Pretreatment team member observes an industrial discharge, before entering into the public sewer or being diluted, that has a color similar to domestic wastewater but does not originate from domestic sources. In this case, the Metro Industrial Pretreatment team member notifies the IU, in writing, that the discharge is defined as colored. The IU then completes sampling to determine the root cause of the color, which

indicates that inert colloidal material is causing the color. Because colloidal material does not settle in the traditional POTW treatment units, the root cause may cause pass through or interference of the POTW's treatment processes. A Metro Industrial Pretreatment Engineer therefore deems the discharge "highly colored" and outlines expectations for the industrial user to implement treatment or operational changes to mitigate the root cause. This determination will be made in writing. Metro also sets an appropriate industrial permit limit or narrative standard to verify ongoing treatment or control measures are in place. For this example, Metro requires that the industrial user reduce Total Suspended Solids to a level to not cause pass through or interference at the wastewater treatment plant. This level may be expressed as an effluent limit at the point of compliance comparable to Metro's permitted limit for Total Suspended Solids, but specific to colloidal materials or as a narrative standard. When implementation of an effluent limit or narrative standard is not possible, however, Metro may prohibit this discharge of highly colored industrial wastewater.

Alternate Approaches

Metro recognizes that a Metro Industrial Pretreatment team member can only apply the "Visual Threshold" method for an existing industrial discharge that can be visually examined prior to entering into the public sewer or being diluted. For the case of proposed industrial discharges or discharges that cannot be visually examined prior to entering into the public sewer or being diluted, additional requirements are necessary to protect the POTW from interference and pass through. The following items establish the process and requirements for these circumstances.

- 1) Discharge Not Visible Prior to Entering the Public Sewer or Being Diluted - A Metro Industrial Pretreatment team member may become aware of a potentially prohibited discharge of colored wastewater through a variety of sources, including but not limited to, an unusual observation investigation, an annual compliance inspection, or a complaint. In this scenario, for example, the Metro Industrial Pretreatment team member accesses the IU's site to investigate the source of the alleged highly colored wastewater but finds that the industrial discharge cannot be visually examined prior to entering into the public sewer or is being diluted. In such a case, the IU must provide a method to visually examine the wastewater upon a written request from the Metro Industrial Pretreatment team member. Once available, the Metro Industrial Pretreatment team member will apply the "Visual Threshold" method.
- 2) Proposed Industrial Discharge – For proposed industrial discharges, the Metro Industrial Pretreatment Engineer will review the proposed permit application, industrial process, chemicals and ingredients, treatment process, and colored discharges from other similar industries to evaluate the potential for a highly colored industrial discharge. At times, the Metro Industrial Pretreatment Engineer may determine that a reasonable potential for a highly colored discharge exists prior to implementing the "Visual Threshold" method based on the characteristics of the review materials. Examples include industries that use dyes or flavorings. When the Metro Industrial Pretreatment Engineer defines the reasonable potential for highly colored wastewater to the IU in writing, the Metro Industrial Pretreatment Engineer may require the industry to take one or more of the following actions:
 - a) Design and install treatment to remove the color prior to commencing the discharge.
 - b) Define enforceable best management practices to mitigate the color prior to commencement of discharge.



- c) Leave space in the facility to add color treatment in the event that, upon a visual inspection, a Metro Industrial Pretreatment team member identifies the discharge to be colored.
- d) Require the industry to have a plan for addressing color in the event that a Metro Industrial Pretreatment team member identifies the discharge to be colored once production begins.

Since a highly colored discharge cannot always be predicted, a permit without color treatment or mitigation requirements is not indicative of Metro accepting the highly colored waste stream in writing. Metro may modify an IPP permit at any time to address newly discovered pollutants that have the potential to cause pass through or interference at the POTW or otherwise interfere with the operation of POTW's system. In addition, IUs are required to report any suspected colored wastewater to Metro within 24 hours of being identified.