

WCIT NEWSLETTER

WATER CONTAMINANT INFORMATION TOOL, Winter 2024

EPA

Connecting with the Water Sector

The WCIT team is committed to equipping Water Sector stakeholders, utilities, emergency management agencies, laboratories, and public health agencies, with essential tools aimed at safeguarding the integrity of drinking water. To that end, WCIT training webinars are regularly scheduled to train stakeholders on the tool and demonstrate how the information housed in the database supports emergency response and fosters a resilient Water Sector. In addition, upon request, we extend our training provisions to offer individualized sessions tailored toward specific organizational needs.

In 2023, the WCIT team expanded the reach of its training program by actively participating in several conferences. These in-person events provided a platform for knowledge exchange and networking among water professionals. The training format consisted of workshops featuring hands-on activities to reinforce acquired knowledge, as well as platform presentations that walked through scenarios to demonstrate WCIT's real-world applications. This allowed the team to engage directly with several WCIT users, gaining valuable insights into their challenges and provided opportunities to explore and demonstrate how the database could offer pertinent information to address those challenges.

The team is enthusiastic about continuing training events, further fortifying the resilience of the Water Sector. If you or your team are interested in seeing the WCIT team at a conference or are interested in organization-specific training opportunities, please send an email to wcit@epa.gov.

Behind the Scenes Work – Infrastructure Decontamination

Eliminating contaminants from drinking water is critical to public health, but even after implementing a decontamination treatment, contaminants can persist. A possible cause of the persistence is the adherence of the contaminant to infrastructure materials. To assist the Water Sector in assessing the impact of a contaminant to their system, WCIT includes a fate and transport section that provides a contaminant's probable adsorption onto surfaces and absorption into sediments. This is further supported by an *Infrastructure Decontamination* section to provide information on processes to remove the contaminant. For example, you may find decontamination process options, such as "Flushing," "Chlorine Dioxide," or "Ozone," with corresponding information on each procedure, relevant materials, effectiveness, residuals, and important considerations in using that process. *Continued on page 2*

Inside the Database

RISK CALCULATOR

Do you know whether a 10,000 gallon gasoline spill into your 100,000,000 gallon reservoir will trigger a public health emergency? Or how little saxitoxin would render the contents of a 100,000 gallon storage tank unsafe to drink? WCIT's Risk Calculator can help!

Once users have identified a contaminant of interest with a Comprehensive profile, look for the "Risk Calculator" link in the upper right corner of the Contaminant Profile page. This powerful tool uses established toxicological reference values to provide an indication of relative risk associated with contamination threats or incidents. Toxicological reference values include LOAEL (Lowest Observed Adverse Effect Level), LD50 (Median Lethal Dose), LDLo (Lowest Fatal Dose), or RfD (Reference Dose), which are often described in the Medical section of the Contaminant Summary. The user can select a reference value and enter a specified quantity of a contaminant to calculate the minimum volume of water that if contaminated would result in an unacceptable exposure, as defined by the specified toxicological reference value. Alternatively, the user can enter a specified volume of water (e.g., reservoir or tank capacity) and calculate the amount of contaminant required that would result in an unacceptable exposure level.

WCIT's Risk Calculator is intended to only provide an indication of relative risk posed by a particular contaminant via the specified exposure route. The calculations should not be used as the definitive information for determining whether a contaminant poses a public health threat. Actual risk to the exposed population could be higher or lower depending on the characteristics of the population and the extent to which reference values account for human dose response factors.

The Risk Calculator allows Water Sector stakeholders to determine and prioritize risks, develop, and implement plans to mitigate the risk of contamination threats and incidents in their water system.

Behind the Scenes

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Scientists at EPA's Office of Research and Development have been conducting bench and pilot scale testing to better understand contaminant's fate, transport, and persistence in water systems and its infrastructure components, including treatment efficiency. In an ongoing effort, the WCIT team has been integrating this information into the database. Recently, the WCIT team added new infrastructure decontamination information in the fentanyl, PFAS/PFOA, *Bacillus*, fuel oil, and strontium^{90} profiles. In 2024, some existing Lab Method-only profiles (i.e., Arsenic, Benzene, Chlordane, and Mercury) will be converted to Partial Profiles to include information on infrastructure decontamination in addition to the other topic areas included in a Partial profile. Awareness of available infrastructure decontamination processes is crucial for water systems following an accidental or intentional water contamination incident. As such, this information in WCIT, can help guide Water Sector remediation activities. WCIT's data allows the Water Sector to make informed decisions for their water system on matters such as selecting the appropriate decontamination procedures based on their clearance goals and objectives. Check out the Infrastructure Decontamination information in your next WCIT session.

WCIT Supports Scenario Development for Analytical Preparedness Full-Scale Exercise

CHLOE DODGE and CORINNE HASENAU
Environmental Scientists for the Nevada Division of Environmental Protection's Laboratory Certification Program

Chloe Dodge and Corinne Hasenau are Environmental Scientists for the Nevada Division of Environmental Protection's (NDEP) Laboratory Certification Program (LCP). The Nevada LCP ensures certified environmental laboratories in the State of Nevada use approved analytical methods to produce data of known and documented quality. Ms. Dodge and Ms. Hasenau are both newly acquainted with the EPA's Water Laboratory Alliance (WLA) program and its resources, including the Water Contaminant Information Tool (WCIT). In 2023, they helped organize and conduct an Analytical Preparedness Full-Scale Exercise. This operational-based exercise included actual sample analysis in response to a fictitious water contamination scenario. The exercise players included utilities, and response partners from several local and state organizations, as well as in-state and out-of-state laboratories. Participants were able to practice their emergency response plans, coordination, and identify gaps and strengths and coordination among response partners.

WCIT was an essential tool during the planning process of the Full-Scale Exercise, specifically in crafting a realistic scenario for the participating organizations to respond to. For example, the Nevada LCP used WCIT to determine the health risks and potential environmental impacts of an unregulated organophosphate pesticide to advise scenario development. In addition, during the exercise participants used WCIT to obtain specific contaminant data pertaining to exposure routes, time until symptom onset occurs, field testing that may act as an early warning of contamination, and treatment techniques for water systems. Ms. Dodge and Ms. Hasenau found WCIT's detailed contaminant information and customizability to be especially useful during this exercise. They have since attended several WCIT online trainings and shared that "This tool will continue to play an important role in future trainings and exercises to help enhance NDEP's preparedness to effectively respond to water contamination events."

WCIT Challenge

Read the scenario below and use WCIT to answer the questions.
(Log in at https://cdx.epa.gov/)

You are an emergency manager at a utility and need to determine the health risks and early warning indicators of an unregulated organophosphate pesticide in a contamination event. Log into WCIT, search for dicrotophos, and use the Comprehensive Profile Report to gather the following information for your assessment.

Send your answers to WCIT@epa.gov

Congratulations to those readers who successfully completed the Summer 2023 challenge.

1. **What are the symptoms of exposure to dicrotophos and how long will it take for symptom onset to occur?**
2. **If ingested, what is the probable lethal dose of dicrotophos in humans?**
3. **What is the treatment for ingestion of dicrotophos?**
4. **What are some early warning indicators that dicrotophos may be present?**