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DEEP Programs		
Proposed change to Permit Modifications: CTDEEP sought input from stakeholders regarding alternatives for "3(i)" determinations. Using working definitions of "significant", stakeholders provided examples illustrating both "significant" and non-"significant" changes as the term applies to RCSA Section 22a-430-3(i)(2). Kim Hudack response June 22, 2020: "DEEP staff have reviewed the proposed "significant /not significant" ideas and have put together a table that needs a little editing. We will be putting out the straw proposal to the group soon." CBIA is waiting for the straw proposal. Per Kim Hudack, • DEEP team met week of April 26th "to review the draft that we had prepared that Ozzie presented as part of his presentation last Summer/Fall." • May 12th email - "The group has met a few times and we are anticipating finishing up soon."		
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Wastewater Permits Contact: Ozzie Inglese at (860) 424-3725 or oswald.inglese@ct.gov		
Comprehensive General Permit for Discharges to Surface Water and Groundwater	NO CHANGE Effective 3/30/18 Expires 3/29/2023	The purpose of the Comprehensive General Permit is to provide a single general permit that will encompass discharges from the General Permit for the Discharge of Water Treatment Wastewater, General Permit for the Discharge of Minor Non-contact Cooling and Heat Pump Water, and the General Permit for the Discharge of Hydrostatic Pressure Testing Water. The Comprehensive General Permit will also include coverage for discharges of ***fire suppression testing wastewater***, hydrant flushing wastewater, potable water system tank and pipeline draining wastewater, and boiler blowdown wastewater (to groundwater only). The Swimming Pool GP has been reissued for two more years (expires August 05, 2021) without any changes or re-registration required. It is the intent to eventually consolidate this general permit into the Comprehensive GP in the future.

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MIU General Permit (formerly known as MISC Wastewater General Permit)	NO CHANGE Issuance Date: Sept. 29, 2020 Effective Date: October 31, 2020 Expiration Date: October 30, 2025	This general permit is issued under the authority of section 22a-430b of the Connecticut General Statutes. https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Industrial-Wastewater/Industrial-Wastewater This general permit authorizes discharges of Miscellaneous Industrial User (MIU) wastewater to a Publicly Owned Treatment Works (POTW) from an Industrial User which is not a Significant Industrial User, as defined in this general permit, and where such wastewater is: • conveyed by sanitary sewer; or • transported by a licensed waste hauler in accordance with Section 5(e)(4) of this general permit. https://portal.ct.gov/DEEP/Permits-and-Licenses/Water-Discharge-Permits-and-General-Permits
SIU General Permit (formerly known as the General Permit for the Discharge of Wastewaters from Categorical Industrial Users to a Publicly Owned Treatment Works (POTW))	NO CHANGE Issuance Date: October 30, 2020 Effective Date: October 31, 2020 Expiration Date: October 30, 2025	This general permit is issued under the authority of section 22a-430b of the Connecticut General Statutes. https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Industrial-Wastewater/Industrial-Wastewater Provided the requirements of Section 3(b) of this general permit are satisfied, this general permit authorizes the following indirect discharges from a Significant Industrial User, as defined in this general permit, to a Publicly Owned Treatment Works (POTW) via sanitary sewer or through transport by a licensed waste hauler in accordance with Section 5(e)(4) of this general permit: (1) Metal finishing wastewater, as defined in this general permit; and/or (2) Process and non-process wastewater that is not subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, subchapter N. Any discharge of water, substance or material into the waters of the state other than those specified in this section is not authorized by this general permit, and any person or municipality which initiates, creates, originates or maintains such a discharge shall apply for and obtain authorization under section 22a-430 of the Connecticut General Statutes prior to the occurrence of such discharge. https://portal.ct.gov/DEEP/Permits-and-Licenses/Water-Discharge-Permits-and-General-Permits

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Stormwater Permits Contact: the stormwater group at 860-424-3025 or DEEP.StormwaterStaff @ct.gov	REMINDER to set up user accounts in ezFile and subscriber agreements for both ezFile and NetDMR.	Construction and Industrial Stormwater General Permits - Effective January 20, 2016, DEEP's ezFile on-line system should be used to submit stormwater construction and industrial general permit registration(s). Please refer to the Construction Stormwater web page or the Industrial Stormwater web page for details on using ezFile.
Industrial Stormwater General Permit	Notice of Tentative Decision Intent to Reissue ***without modifications*** No renewal registration is required.	Notice of Reissuance without modifications of the General Permit for the Discharge of Stormwater Associated with Industrial Activity. Written comments due by May 2, 2021. The current industrial general permit became effective on October 1, 2011. It was most recently reissued *without modifications* on October 1, 2019 and will expire on September 30, 2021. The DEEP is proposing to **continue permit authorization** by issuing this notice to reissue the industrial general permit *without modifications* for the period beginning on October 1, 2021 and expiring on September 30, 2024. The Department intends to reissue a new industrial general permit *with modifications* prior to the expiration of this proposed reissued general permit *without modifications*. The Department will seek public comment on a notice of tentative decision to reissue the industrial general permit *with modifications* by July 2022. For more information, go to: https://portal.ct.gov/DEEP/Public-Notices/Public-Notices-Proposed-Actions---Opportunity-for-Comment/Proposed-General-Permits/General-Permit-for-the-Discharge-of-Stormwater-Associated-with-Industrial-Activity

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Stormwater and Dewatering Wastewaters from Construction Activities	NO CHANGE **Issued: 12/21/2020; Effective Date: 12/31/2020 Renewal registration is required within 120 days. Notice of Reissuance of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities	The Department of Energy & Environmental Protection (DEEP) hereby gives notice of the reissuance with modifications of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (construction general permit). The reissued construction general permit will be effective December 31, 2020. The Public Notice of Tentative Decision to modify the construction general permit was published in newspapers statewide on December 31, 2019 and January 2, 2020 and a public informational meeting was held on January 8, 2020. Two hundred and four (204) comment letters or emails and a petition for hearing were received during the 45-day comment period for the general permit. Staff from the Water Permitting and Enforcement Division met with a workgroup of consulting engineers, representatives from the solar industry, and other intervening parties from June to October 2020 to reach agreement on the final construction general permit. The petition for hearing was withdrawn on October 23, 2020. Further information on the general permit and a Response to Comments is available on the DEEP website at https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Construction-Stormwater-GP. **Current Permittees Under the construction general permit**--Permittees currently authorized to discharge under the construction general permit must submit a reregistration electronically via DEEP's eZFile portal within 120 days of the date of issuance of the general permit in order to continue authorization. For more information, search for 'construction stormwater' on the DEEP website.

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Stormwater Associated with Commercial Activity	NO CHANGE Reissued 9/10/2020 Expires 5/14/2022	The DEEP will be reissuing without modifications for two years – no registration required for existing registrants. Registrants are expected to comply with the terms and conditions of the current Commercial Stormwater General Permit in the interim until such time the reissued general permit becomes effective. The current commercial general permit became effective on May 15, 2017 and expired on May 14, 2020. The DEEP is proposing to continue permit authorization by issuing a notice to reissue the commercial general permit without modifications for the period beginning on the date of issuance by the Commissioner and expiring on May 14, 2022. For more information, go to: https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Commercial-Stormwater
Water Diversion Program Contact: Land and Water Resources Division at (860) 424-3019	NO CHANGE 2020 Annual Water Use Reporting Form for reporting of both registered and permitted diversions	July 14, 2020 – Letter from the Commissioner Re *Notice of Availability of Forms for the Reporting of Operating Data for Registered Diversions and Submission Deadline* In accordance with Section 22a-368a of the General Statutes of Connecticut, the Commissioner of the Connecticut Department of Energy and Environmental Protection hereby gives notice that a form for the reporting of operating data for water diversions registered pursuant to Section 22a-368 CGS is available on-line at www.ct.gov/deep/waterdiversionreporting. The deadline for diversion registrants to submit their first completed reporting form was January 31, 2021. This form will contain daily diversion operating data for the year 2020. All registrants expected to submit annual reports were mailed individual notices dated September 30, 2019. Anyone requiring more information regarding this matter may visit the Department's Water Diversion Reporting website at www.ct.gov/deep/waterdiversionreporting or contact the Department by email at deep.waterdiversionreporting@ct.gov or by phone at 860-424-3020. Department staff has limited access to phones during the on-going health crisis therefore email contact is preferred. NOTE: In light of COVID-19, timely renewal for individual diversion permits has been reduced to 30 days prior to expiration.

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Water Quality Standards Contact: Bureau of Water Protection and Land Reuse at (860) 424-3020	NO CHANGE Triennial Review Process underway	9/17/2020 From Phil Trowbridge (since retired): "DEEP is currently finalizing our response to comments on the list of topics to be considered for rule changes. After that, we will need to submit the document to EPA for approval. Once approved, we will post the document on our website and email all those who commented. I expect that we will be done with these steps by the end of the year. The next step after that would be to start the rulemaking process for making changes to the standards, which is a long process by itself." Topics under Consideration for Revision within the WQS Regulations include Updates to Numeric Water Quality Criteria, Revise the Low Flow Statistic Applicable to Fresh Waters, Extended Disinfection Period, Define Highest Attainable Use, Downstream Protection, and Water Quality Classification Maps. More information including the public comments can be found at https://www.ct.gov/deep/cwp/view.asp?a=2719&q=325618&deepNav_GID=1654 or by searching the DEEP website for "water quality standards".
EPA Programs		
PFOA, PFOS and Other PFASs	On-going EPA's PFAS website at https://www.epa.gov/pfas	**3M challenges Mich. PFAS drinking water rules in court** 3M has filed a lawsuit against Michigan seeking to overturn the state's limits for PFAS in drinking water, as well as its criteria for cleaning up the substances in groundwater. The rules are "scientifically flawed" because Michigan used a "rushed and invalid regulatory process" to develop them, the lawsuit says. **Full Story:** MLive (Michigan) (tiered subscription model) (5/7) **EPA Announces New PFAS Council; Fox and Szaro to Co-Chair** May 5, 2021 - Administrator Michael Regan announced last week during *Water Week* the formation of a new EPA Council on PFAS (ECP) that will build upon the momentum already happening under the Agency's PFAS Action Plan. The ECP will be co-chaired by EPA's Principal Deputy Assistant Administrator Radhika Fox and EPA Region 1's Acting Administrator Deb Szaro. The direct tasks for the ECP include:

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		• Developing a multi-year strategy that reviews all ongoing actions under the EPA PFAS Action Plan, proposing modifications as needed, and finding and identifying new strategies and elevating priorities. Within 100 days, EPA will put forth recommendations in a document titled *PFAS 2021-2025 – Safeguarding America's Waters, Air and Land.* • Continuing interagency coordination on issues specific to regions and across environmental media to help states, Tribes, and local communities address PFAS challenges. • Working with national program offices and regions to maximize EPA's funding and financing programs to better leverage federal and state dollars to support cleanup and remediation of PFAS pollution, particularly in underserved communities. • Expanding engagement opportunities with stakeholders to ensure consistency in communication, the exchange of information, and to identify collaborative solutions. It remains unclear what portions of the EPA Action Plan the ECP will review and possibly propose modifications to. • In December 2019, EPA accomplished a key milestone in the PFAS Action Plan by publishing a new validated method to accurately test for 11 additional PFAS in drinking water. Method 533 complements EPA Method 537.1, and the agency can now measure 29 chemicals. • In November 2020, EPA issued a memo detailing an interim National Pollutant Discharge Elimination (NPDES) permitting strategy for PFAS. The agency also released information on progress in developing new analytical methods to test for PFAS compounds in wastewater and other environmental media. • In January 2021, EPA announced final determinations to regulate PFOS and PFOA in drinking water and a proposal to require monitoring for 29 PFAS in drinking water under the fifth Unregulated Contaminant Monitoring Rule. • In January 2021, EPA finalized Effluent Guidelines Program Plan 14 and announced an Advanced Notice of Proposed Rulemaking to collect data and information regarding

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		PFAS manufacturers that will help inform whether these industrial sources warrant regulation through national Effluent Limitation Guidelines to address PFAS discharges. **Interim Guidance on Destroying and Disposing of Certain PFAS and PFAS-Containing Materials That Are Not Consumer Products**: On December 18, 2020, EPA released for public comment new interim guidance that will help protect the public from exposure to these emerging chemicals of concern. Specifically, the new interim guidance outlines the current state of the science on techniques and treatments that may be used to destroy or dispose of PFAS and PFAS-containing materials from non-consumer products, including aqueous film-forming foam (for firefighting). This interim guidance was available for public comment until February 22, 2021. February 2020 - EPA released the PFAS Action Plan: Program Update. The Agency's PFAS Action Plan is the first multi-media, multi-program, national research, management, and risk communication plan to address a challenge like PFAS. From issuing groundwater cleanup guidance to proposing a positive regulatory determination for both PFOA and PFOS, EPA has made progress under every aspect of the Action Plan. The actions EPA has taken reflect the comprehensive and coordinated approach that was outlined in the February 2019 PFAS Action Plan. Available at https://www.epa.gov/pfas/pfas-action-plan-program-update-february-2020 On November 4, 2019, Governor Ned Lamont officially released the finalized PFAS Action Plan prepared by the Connecticut Interagency PFAS Task Force. CT PFAS Action Plan and more information available on www.ct.gov/ctpfastaskforce . As of August 2020, DEEP and the Department of Emergency Services and Public Protection (DESPP) have begun planning for the take-back and safe disposal of aqueous film-forming foam (AFFF) containing PFAS from state and municipal fire departments. In addition, DEEP is developing a Geographic Information System (GIS) project specific to potential PFAS sources for use as a tool to evaluate the vulnerability of sensitive receptors, including drinking water supplies and surface water bodies, to PFAS pollution. This GIS project will assist DEEP and DPH in prioritizing future site investigations throughout the state. Furthermore,

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		DEEP is planning initial testing at about one third of the state's wastewater treatment plants. This testing will include analysis of influent to and effluent from the treatment facilities. For more information on steps being taken by DEEP and DPH, please contact: •Shannon Pociu - CT DEEP Remediation Division •Lori Mathieu -CT DPG Environmental Health and Drinking Water Branch •Pat Bisacky- CT DPH Drinking Water Section **Addition of Certain PFAS to the TRI by the National Defense Authorization Act** Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis. Updates on Implementation • Reporting forms on the 172 PFAS initially added by the NDAA for Reporting Year 2020 are due by July 1, 2021. o On June 22, 2020, EPA published a final rule to include these PFAS in the Code of Federal Regulations. • EPA has compiled summaries of existing TRI reporting guidance to address frequently asked questions related to PFAS reporting, and gathered links to external technical guidance. Find these resources in GuideME. • For Reporting Year 2021 (reporting forms due by July 1, 2022), the NDAA automatically added three PFAS to the TRI list.

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		o EPA will be revising the EPCRA Section 313 list of reportable chemicals in 40 CFR 372.65 to include the three PFAS added by the NDAA: ▪ Perfluorooctyl iodide (507-63-1) ▪ Potassium perfluorooctanoate (2395-00-8) ▪ Silver(I) perfluorooctanoate (335-93-3) • Updates related to implementation of the NDAA's requirements and TRI PFAS reporting will be provided on this page. https://www.epa.gov/toxics-release-inventory-tri-program/addition-certain-pfas-tri-national-defense-authorization-act
Waters of the United States (WOTUS) Rulemaking	On-going Litigation WOTUS to be mired in legal uncertainty for many years Definition of "Waters of the United States" - Please visit https://www.epa.gov/nwpr for more information.	**Most US waterways in analysis lack protection under CWA** Over 40,000, or 72%, of the 55,519 waterways reviewed by the US Army Corps of Engineers under the Trump administration's Navigable Waters Protection Rule aren't eligible for Clean Water Act protection, according to an E&E News analysis. The Southern Environmental Law Center has filed a brief asking the USACE to share its data with the public, noting that an Environmental Protection Agency database puts the number of unprotected waterways even higher, at 91%. **Full Story:** E&E News (subscription required) (3/19) **EPA could provide clarity on SCOTUS' groundwater ruling** The Supreme Court's ruling in County of Maui v. Hawaii Wildlife Fund has left many state officials confused about how to carry it out, so the Environmental Protection Agency could issue a rule clarifying when polluted groundwater is subject to the Clean Water Act. The EPA plans to strike a balance between the Trump and Obama administrations' Waters of the US rules, according to Ken Kopocis, a member of President Joe Biden's EPA transition team. **Full Story:** E&E News (free content) (5/3)

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		On June 22, 2020, the Navigable Waters Protection Rule, which fulfills Executive Order 13788 and follows legal precedent set by previous Supreme Court cases, went into effect. Overall, it narrows the scope of what falls under federal jurisdiction, removing interstate and ephemeral streams, water features, and nonadjacent or isolated wetlands as part of the "waters of the United States." Resources covered within the refined definition include: • The territorial seas and traditional navigable waters, • Perennial and intermittent tributaries to those waters, • Certain lakes, ponds, and impoundments, and • Wetlands adjacent to jurisdictional waters The final rule also details 12 categories of exclusions, features that are not "waters of the United States," such as features that only contain water in direct response to rainfall (e.g., ephemeral features); groundwater (questionable after a recent Supreme Court case County of Maui, Hawaii v. Hawaii Wildlife Fund); many ditches; prior converted cropland; and waste treatment systems.
EPA's Stormwater Discharges from Industrial Activities	2021 MSGP will become effective on March 1, 2021	The U.S. Environmental Protection Agency (EPA) signed and issued the 2021 Multi-Sector General Permit (MSGP) for industrial stormwater discharges on January 15, 2021. The 2021 MSGP will become effective on March 1, 2021 and will replace the 2015 MSGP. For more information, see EPA's 2021 MSGP. The permit, fact sheet, and other associated documents can be found at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities.
Drinking Water	Lead and Copper Rule Revisions	Lead and Copper Rule Revision Effective Date Delayed; Round Two of Public Comment Ahead - (March 18, 2021) – In a Federal Register Notice from March 12, EPA is delaying the effective date of the Lead and Copper Rule Revisions (LCRR) from March 16, 2021 to June 17, 2021. The move to delay comes after President Biden's "Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis" directing federal agencies to review certain regulatory initiatives, such as the LCRR. The LCRR was listed on White House's short list for agency actions to be reviewed for consistency with the EO and was explicitly included in the administration's "Regulatory Freeze Pending Review" memorandum directing agency leads to consider postponing effective dates for regulations that have been published in the Federal Register but have not taken effect, like the LCRR.

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		Notably, the LCRR as written has not only drawn numerous court challenges which have now been consolidated in the DC Circuit, but it has also gained considerable attention from organizations and individuals requesting that EPA review the LCRR and initiate an entirely new rulemaking. With this recent Notice, EPA is reviewing the LCRR for any questions of fact, law, and policy and is also allowing an opportunity for public engagement and input. EPA is expecting their review to be finished by December 2021 and it is expected that EPA's review of the LCRR will be "deliberate and have the benefit of meaningful engagement with the affected public, including underserved communities disproportionately affected by exposure to lead." During the review of the LCRR, EPA will likely take a hard look at: 1) the requirement or adequate incentives for a public water system to replace lead service lines, 2) a public water system's requirement to conduct an inventory of lead service lines, 3) the adequacy of the new "trigger level" of 10 parts per billion, 4) the flexibility granted to small water systems, 5) sampling requirements at schools and childcare facilities, and 6) a more reliable cost/benefit analysis. Subsequent to the Notice, EPA also issued a Proposed Rule and re-opened the docket for public comment. Specifically, **EPA is seeking feedback on further extending the effective date from June 17, 2021 to December 16, 2021 and extending the compliance date of January 16, 2024 to September 16, 2024.**
Drinking Water	Lead and Copper Rule - Can Newark's Quick, Cheap Lead-Pipe Replacement Serve As A Model?	Like many communities around the country, Newark, New Jersey was beset with outdated, lead-based pipeline infrastructure that had the potential to leech the contaminant directly into drinking water as it traveled to consumers. But now, the city stands as a model for how others can address the problem and leave consumers safe. "A project to fix thousands of lead-contaminated water pipes that threatened the wellbeing of the folks in New Jersey's largest city is nearly complete, set to be finished years ahead of schedule," ABC 7 reported. "What started as another dark chapter in Newark's history has changed to a story of success." Following a lead contamination emergency that prompted the distribution of bottled water in 2019, Newark committed to replacing some 18,000 lead drinking water lines that were at the root of the problem. ABC 7 reported that the issue was supposed to take 10 years to resolve at one point, but that it is now **close to being complete in only two years**.

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		"I don't think anyone believed that we would be able to do this much in this short period of time," Newark Mayor Ras Baraka said of the project, per ABC 7. "We went through a storm, and then the sun came out." **Newark's quick remediation of the issue, and the fact that it completed the project without raising taxes or water bills, may serve as an example for other locales around the country that face similar problems.** "Erik Olson, of the [Natural Resources Defense Council], who flagged Newark's lead problems in a report in 2003, now says Newark could be a model for other cities," The Economist reported. "A city ordinance allowed workers to replace pipes without the homeowner's permission… **It has been done not only at high speed but also at low cost — roughly $7,000 per line.**" President Biden's administration has announced an ambitious goal of replacing 100% of lead drinking water infrastructure around the country, which could help unlock federal resources to combat the problem. With those resources, and lessons learned from Newark's own success, hopefully more cities will be able to address lead-based drinking water contamination once and for all as well. Source: https://www.wateronline.com/doc/can-newark-s-quick-cheap-lead-pipe-replacement-serve-as-a-model-0001?vm_tId=2299521&vm_nId=64930&user=6286d9d1-3f95-473e-a5b2-96f40bfdbe8f&gdpr=0&vm_alias=Can%20Newark%26amp;%238217;s%20Quick,%20Cheap%20Lead-Pipe%20Replacement%20Serve%20As%20A%20Model%3F&utm_source=mkt_WOL&utm_medium=email&utm_campaign=WOL_05-11-2021&utm_term=6286d9d1-3f95-473e-a5b2-96f40bfdbe8f&utm_content=Can%20Newark%26amp;%238217;s%20Quick,%20Cheap%20Lead-Pipe%20Replacement%20Serve%20As%20A%20Model%3F&mkt_tok=MDc1LU5WQy0wODYAAAF8-eYUYguwjvFB_X_dfDqo2V6-hxG048fh54DK_pF1v3aVwcyEME9PscWGS43_KcpaSmucHbJ2ZPlWSr5E2cYGcQSOAlW0QB-Au13CI4RW3lM
Toxics Release Inventory (TRI)	EPA Announces Plan To Update Toxics Release	April 29, 2021 - *Plan includes expanding reporting requirements for certain chemicals and facilities, including ethylene oxide and PFAS, and providing new tools for communities.*

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	Inventory To Advance Environmental Justice	Today, as the U.S. Environmental Protection Agency (EPA) pursues its mission to protect human health and the environment, the agency announced that it will be taking important steps under the Toxics Release Inventory (TRI) to advance Environmental Justice, improve transparency, and increase access to environmental information. The comprehensive plan includes expanding the scope of TRI reporting requirements to include additional chemicals and facilities, including facilities that are not currently reporting on ethylene oxide (EtO) releases, and providing new tools to make TRI data more accessible to the public. TRI is a resource for learning about annual chemical releases, waste management, and pollution prevention activities reported by nearly 22,000 industrial and federal facilities. "Every person in the United States has a right to know about what chemicals are released into their communities," said EPA Administrator Michael S. Regan. "By requiring new and more data on chemical releases from facilities, EPA and its partners will be better equipped to protect the health of every individual, including people of color and low-income communities that are often located near these facilities but have been left out of the conversation for too long." Today's announcement includes several components: **TRI Facility Expansion to Include Certain Contract Sterilizers using EtO** EPA recognizes and shares the public's concerns about the harmful effects of EtO on human health, including cancer and the environment. The agency is committing to broadening TRI reporting on this chemical to include certain contract sterilization facilities that use EtO that are not currently required to report this information. EtO is used to make other industrial chemicals and is also used to sterilize medical devices. Many of these contract sterilization facilities are located near areas with Environmental Justice concerns. Workers in facilities that use EtO and communities – including historically underserved communities – living adjacent to these facilities are at the highest risks from exposure to EtO. Making more information available about releases of EtO will assist the agency in identifying and responding to any human health and environmental threats they cause. The agency will provide more details in

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		upcoming months on its effort to require these contract sterilization facilities to report to TRI and will keep the public informed as next steps are determined. **Additional TRI Reporting Requirements for Other Chemicals and Sectors** The agency will continue to expand the TRI program to protect the health and safety of underserved communities, including: • TRI Reporting for Natural Gas Processing Facilities: EPA plans to finalize a rule to add natural gas processing facilities to the list of industry sectors covered under the Emergency Planning and Community Right-to-Know Act (EPCRA) section 313. This rule was proposed by EPA on January 6, 2017, following a petition submitted to EPA by the Environmental Integrity Project and other organizations. Adding natural gas processing facilities to TRI would increase the publicly available information on chemical releases and other waste management activities of TRI-listed chemicals from this sector. Millions of people live within 30 miles of at least one natural gas processing facility. • TRI Reporting for Additional Per-and Polyfluoroalkyl Substances (PFAS): EPA will continue to add new PFAS to TRI, in addition to the three PFAS added in Reporting Year 2021. The provisions included in the 2020 National Defense Authorization Act (NDAA) automatically add certain PFAS to the TRI chemical list when certain conditions are met (see NDAA Section 7321(c)). EPA also anticipates the automatic addition of more PFAS, including perfluorobutane sulfonic acid (PFBS), following EPA's recent publication of a toxicity assessment on the chemical. • TRI Reporting for TSCA Workplan and High-Priority Chemicals: EPA plans to propose adding to TRI the chemicals included in the TSCA workplan and other substances designated as high-priority substances under TSCA. In addition, EPA plans to propose to list chemicals included in a 2014 petition received from the Toxics Use Reduction Institute. Many of these substances could be present in fence line communities, those communities within close proximity to industrial uses of these chemicals where releases to water, air, or land could be of a greater impact.

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		Additional TRI Tools for Communities The ability to access and use TRI data empowers communities to make informed health and safety decisions. EPA has taken several steps to make TRI data more useful and accessible to communities with Environmental Justice concerns by: • Enhancing TRI search tools to include a "Demographic Profile" section which displays a map showing information like the income profile and the racial makeup surrounding TRI facilities derived from EJSCREEN. Users can also access demographic data for individual TRI facilities, as well as view a "Community Report" by selecting a facility from the "Facility Comparison Table" in the "Facility Summary" section. • Launching a Spanish version of the TRI website, making the most popular resources from the English version of the website available in Spanish for the first time and continuing to provide the annual TRI National Analysis in Spanish. • Promoting the use of Pollution Prevention (P2) information as a tool for communities to engage with reporting facilities on workable solutions for building community health by encouraging facilities to reduce their use and releases of toxic chemicals, thereby helping to prevent possible exposure to such chemicals. Reporting on P2 activities is required by TRI and reveals how facilities can – and have – adopted source reduction practices that can lead to meaningful reductions in releases, across a range of industrial sectors. To learn more about TRI, generally, visit https://www.epa.gov/toxics-release-inventory-tri-program. For TRI information specifically focused for communities, visit TRI for Communities | Toxics Release Inventory (TRI) Program | US EPA *Source: U.S. Environmental Protection Agency (EPA)*

From the Wastewater Drain, Solid Pandemic Data

The coronavirus could turn sewage surveillance into a mainstream public health practice.

Source: https://www.nytimes.com/2021/05/07/health/coronavirus-sewage.html

By Emily Anthes

Published May 7, 2021; Updated May 11, 2021, 9:10 a.m. ET

Marc Johnson saw trouble in the water.

Dr. Johnson, a virologist at the University of Missouri, had spent much of 2020 studying sewage, collecting wastewater from all over the state and analyzing it for fragments of the coronavirus. People with Covid-19 shed the virus in their stool, and as the coronavirus spread throughout Missouri, more and more of it began to appear in the state's wastewater.

In January, Dr. Johnson spotted something new in his water samples: traces of B.1.1.7, a more contagious variant that was first detected in Britain. Officially, the state had no confirmed cases of B.1.1.7, but the wastewater suggested that the variant had arrived. By the end of the month, the B.1.1.7 levels in Dr. Johnson's water samples had risen sharply, and in early February, the state finally found its first case. It has since found hundreds more.

Using some samples of sewage, Dr. Johnson had been able to peer into Missouri's coronavirus future. "I can't believe how well it works," he said. "I feel like an oracle."

Dr. Johnson is one of many scientists who have been drawn into the once niche field of wastewater epidemiology in the past year. Researchers in 54 countries are now tracking the coronavirus in sewage, according to the Covid19Poops Dashboard, a global directory of the projects.

Their work has validated the idea that wastewater surveillance can be a useful way to track infectious disease across entire communities, revealing epidemiological blind spots and yielding actionable public health information.

It has also helped push wastewater epidemiology into the mainstream. In March, the European Commission recommended that member states establish systems to monitor sewage for the coronavirus. And last fall, the Centers for Disease Control and Prevention and the Department of Health and Human Services established the National Wastewater Surveillance System to help local officials respond to Covid-19. It is the first system of its kind in the United States.

"Wastewater surveillance is not a new idea," said Amy Kirby, the program lead for the surveillance system. It has been used in low- and middle-income countries in the fight to eradicate polio, for instance, and has been proposed as a way to keep tabs on noroviruses, a common cause of stomach bugs. "But really, the return on investment to build this large new infrastructure was never enough to warrant building the system for any of those other diseases," Dr. Kirby said. "But Covid and the pandemic really changed the calculus."

The system, and others like it now emerging around the world, could ultimately usher in a new age of wastewater epidemiology, helping officials track not just the coronavirus, but also other outbreaks and diseases. "I think this is really going to be the beginning of a whole new type of data collection for public health disease surveillance," Dr. Kirby said.

Getting their feet wet

Although Covid-19 is primarily a respiratory disease, research conducted early in the pandemic revealed that people infected with the coronavirus often shed it in their stool. This finding, combined with the scale and urgency of the crisis, spurred immediate interest in tracking the virus by sampling wastewater.

By searching for, and then counting, certain coronavirus genes in sewage, researchers hoped to determine whether the virus was present in a particular region and how widespread it was. Before long, wastewater surveillance projects were popping up everywhere from Kansas City, Mo., to Kathmandu, Nepal.

The resulting data, now appearing in a flood of scientific papers and preprints, have provided a powerful proof of principle. Scientists have detected the virus in all kinds of environments: in treated and untreated water, in sludge and settled solids, in sewers and septic tanks, in pit latrines and open drainage systems. They found it in water flowing into enormous treatment plants and out of schools, dormitories and nursing homes. "It's just fascinating how robust this tool has become," said Peter Grevatt, chief executive of the Water Research Foundation.

Teams all over the globe — in the United States, France, Portugal, India, Iran, Brazil, Canada and elsewhere — also found that the wastewater data seemed to be an accurate indicator of what was happening in the real world. When the number of diagnosed Covid-

19 cases in an area increased, more coronavirus appeared in the wastewater. Levels of the virus fell when areas instituted lockdowns and surged when they reopened.

Multiple teams have also confirmed that sewage can serve as an early warning system; Wastewater viral levels often peaked days before doctors saw a peak in official Covid-19 cases.

This lead time, which can range from a couple of days to two weeks, depends partly on the robustness of local clinical testing programs, scientists say: When more people are being tested for the virus more frequently, the wastewater data provides less advance warning. The lead time also exists because infected people often begin shedding the virus, SARS-CoV-2, before they feel symptoms and then, once they fall ill, frequently delay seeking medical care.

"I think wastewater has proven itself as one of the most, I would say, objective means of understanding what SARS-CoV-2 is doing in our society," said Gertjan Medema, a microbiologist at KWR Water Research Institute in the Netherlands.

It has proved sensitive, too, allowing researchers to detect a single infected student in a dorm or resident in a nursing home.

Plugging holes

Wastewater surveillance is not a replacement for clinical testing, experts said, but can be an efficient, cost-effective complement. In one study published last August, researchers calculated that they could test the wastewater from every treatment plant in Germany millions of times for less than it would cost them to test every German resident just once. The approach is likely to be especially valuable in low- and middle-income countries, where testing resources are even more limited.

"Not every population gets tested, not everyone has access to health care," Dr. Johnson said. "If there's groups of people that are asymptomatic, they probably aren't getting tested either. So you aren't really getting the full big picture. Whereas for our testing, everyone poops."

Although there is a lot left to learn, even the small pilot projects started over the last year have already helped officials identify hidden viral hot spots and figure out how to target their resources.

For instance, a number of U.S. colleges and universities, including the University of Arizona and the University of North Carolina at Charlotte, have used wastewater surveillance of dorms to find asymptomatic, infected students who had otherwise evaded detection. In the Netherlands, health officials have used wastewater data to determine where to send their mobile testing buses, Dr. Medema said.

In Australia, where case numbers have been relatively low, the wastewater monitoring has helped reassure authorities that their pandemic controls are working. “Almost all the samples come back with nothing in them,” said Daniel Deere, the project manager for ColoSSoS, a coronavirus sewage surveillance project in Australia. “It’s been good to give confidence to allow the economy to stay open, to allow movement to continue between states.” (On the occasions when a water sample has come back positive, the government has ramped up testing and launched media campaigns to alert people who live in the region, he said.) Wastewater analysis has also allowed scientists to detect the arrival of certain variants in a region weeks before they are found in actual patients — and to identify mutations that have not yet been detected in patients anywhere.

Dr. Johnson and his colleague John Dennehy, a virologist at Queens College, recently identified novel combinations of mutations, which might suggest the presence of new variants, in New York City wastewater. “We don’t know what it means yet,” Dr. Johnson said, noting that the new sequences could be coming from animals, not people. “We can see a little bit into the future, but you know, the crystal ball is always a little cloudy.”

Waste not, want not

This flurry of research and investment has been a boon to wastewater epidemiology. “This has been just an amazingly huge catalyst for the field,” said Tim Julian, who leads the pathogens and human health group at the Swiss Federal Institute of Aquatic Science and Technology.

Over the last year, scientists have refined their methods, and water utilities, environmental laboratories and public health agencies have forged new connections. “The big question mark on everyone’s mind is what happens next,” said Christopher Mason, a geneticist at Weill Cornell Medical College who is part of a team tracking the coronavirus in wastewater samples collected from sites around the world. “How long does this go? How do we really sustain it?”

The C.D.C.’s new wastewater surveillance system is one answer.

"A lot of the initial efforts were coming from academic researchers, commercial laboratories and a few utilities that were able to do the testing themselves," Dr. Kirby said. "And they have done great work to develop these methods. But routine, long-term surveillance work is not what any of those groups were designed to do."

The National Wastewater Surveillance System provides funding, technical support, a national data repository and other resources that will allow state and local health departments to take over this long-term monitoring. Since its founding last year, the system has grown to include 33 states, four cities, one county and three U.S. territories.

Some health departments were initially skeptical that wastewater data could be useful, but they have since come to embrace it, Dr. Kirby said, using it to figure out where to target their testing resources or to forecast hospital demand. "When you see an increase in wastewater data, we know that within a couple of weeks, you're going to start seeing an increase in hospitalizations," she said.

In the next three to five years, the agency plans to expand the system to include monitoring for other pathogens, including antibiotic-resistant bacteria and microbes that frequently contaminate food, Dr. Kirby said.

The European Union is also developing a "sewage sentinel system" that aims to monitor the wastewater in roughly 6,000 cities, Dr. Medema said. Although Covid-19 is the immediate priority, researchers are also assessing the feasibility of using such a system "in a post-pandemic E.U. for antibiotic resistance, infectious diseases, use of pharmaceuticals and illicit drugs and maybe more on the horizon," he said.

These systems could ultimately help officials stay ahead of emerging threats, providing early warnings about whatever pathogen is poised to cause the next pandemic. An Italian team recently found that the new coronavirus was already present in the wastewater in northern Italy in mid-December 2019, days before the first Covid-19 cases in Wuhan, China, were publicly reported.

"This isn't the last infectious disease that will come through our water supplies," said Belinda Sturm, an environmental engineer at the University of Kansas. "This is a tool that we should make sure that we keep sharpened."