



The Potomac Drinking Water Source Protection Partnership Quarterly Meeting Summary

ICPRB Offices, 30 W. Gude Dr, Rockville, MD, and virtual

February 7, 2024

Attendees

*virtual attendee

Guest Speaker

Kelly Anderson, Philadelphia
Department of Water

Priscilla To
Robin Forte
Steve Nelson
Jin Shin

Laura Casillas
Virginia Vassalotti (Hogsten)

Water Suppliers

Berkeley Water:

Alison Auvil
Mitchell Henson

City of Rockville:

John Scabis

Fairfax Water:

Nicki Bellezza*
Doug Grimes
Gregory Prelewicz
Niffy Saji
Anne Spiesman

Loudoun Water:

Catherine Cogswell*
Jessica Edwards-Brandt*
Carolyn Hannocho*
Darrin Geldert*
Pam Kenel
Mark Peterson*
Bradley Schmitz*

WSSC Water

Robert Hsu*
Monica Lee-Masi
Laura O'Donnell
Kishia Powell
Hector Rojas

State and Local Agencies

DC DOEE:

Jayne Brown

PA DEP

David Bolig*
Adrian Bouknight*

MDE:

John Anthony*
Robert Peoples*

VDH:

Raven Jarvis*

VDEQ

Steven Fontenot*
Mark Miller

WV DHHR

Brian Carr*
Monica Whyte

ICPRB:

Renee Bourassa
Christina Davis
Rikke Jepsen*
Heidi Moltz
Serena Moncion
Andrea Nagel*
Mike Nardolilli
Stephanie Nummer*
Alimatou Seck*
Cherie Schultz
Carlington Wallace

MWCOG:

Steven Bieber
Caitlin Bolton*
Lisa Ragain*

USACE:

Rachel Ledonne
Audrey Litz
Nina Hallissy

USGS:

Ethan Weikel*

Federal and Regional Agencies

EPA Region 3:

Alison Aminto*
Chris Anderson
Beth Garcia*

Business Meeting

The February 7, 2024 Quarterly Meeting was held both in person and via webinar. There were 58 attendees, including the moderator and presenters.

Presentations

Delaware Valley Early Warning System’s Role in Supporting the March 2023 Trinseo Chemical Spill Response—Kelly Anderson, Philadelphia Water Department (via Webex)

About Speaker:

Kelly is the Director of the Philadelphia Water Department’s Office of Watersheds. PWD has extensive water resources planning programs that focus on using sound, actionable science and technical tools to actively manage, monitor and coordinate the necessary programs that best protect the Schuylkill and Delaware Rivers, the sources of the City of Philadelphia’s drinking water supply. Kelly’s responsibilities include overseeing wet weather compliance; water resources monitoring, modeling and data analysis; climate change adaptation planning; source water protection, and many other aspects of water resources management.

Kelly started with PWD in 2005, after graduating from Drexel University with degrees in Environmental Science and Environmental Policy. In 2002, she was awarded a yearlong fellowship at Duke University focused on innovation and leadership in the public water utility sector.

The Philadelphia after-action report is in progress but not complete. This presentation will not speak to public-facing response or communications after the March 2023 spill. This Presentation is provided as of February 7, 2024. If you are viewing this Presentation after that date, there may have been events that occurred subsequently that could have a material effect on the information that was presented. By presenting this information, PWD has not undertaken any obligation to update the information beyond the date of the Presentation. Data and other information provided are not warranted as to completeness or accuracy and are subject to change without notice. This Presentation is provided for your information and convenience only.

Kelly can share these slides with individual members by request. Email: Kelly.anderson@phila.gov

Anderson stated at the top of her presentation, “Partnerships are the most effective best management practice.”

Anderson began with background on Philadelphia Water Department (PWD), which oversees:

- 1) Stormwater (60% combined system, 40% separate) storage and management.
- 2) Drinking water treatment and delivery, 300+ million gallons per day, serving about 1.7 million people.
- 3) Wastewater collection and treatment. 522+ million gallons per day, serving about 2 million people.

About the PWD Source Water Protection Program

Philadelphia’s jurisdictional area covers less than **2%** of the watershed area to its three drinking water treatment plants—the Baxter WTP (tidal Delaware River), Belmont & Queen Lane WTPs (Schuylkill River), which collectively treat 300 million gallons per day. PWD focuses on a

partnership approach to source water protection and emergency preparedness. Some notable partnerships include:

Delaware Valley Early Warning System (**EWS**)
Schuylkill Action Network (**SAN**)
Schuylkill River Restoration Fund (**SRRF**)
Partnership for the Delaware Estuary (**PDE**)
Water Resources Association of the Delaware River Basin (**WRA**)

The Delaware River watershed provides water to 15 million people, spans 13,589 square miles, 4 states, 42 counties, 800 towns. There are thousands of point sources of pollution, characterized mainly by forest, industrial, and urban land types, which has necessitated a cooperative approach upstream of Philadelphia. The Schuylkill River watershed covers about 2,000 square miles, 11 counties, and over 200 towns. There are thousands of point sources of pollution, characterized mainly by mining, agriculture, industrial, and urban influences.

Delaware Valley Early Warning System (EWS) is a notification and modeling system designed to provide advance warning of surface water contamination events in the Schuylkill and lower Delaware River watersheds. Its key features include: a password protected website, a fully automated email and phone notification system, predictive spill modeling using real-time water data and tidal conditions. The EWS has undergone recent upgrades to be more mobile-accessible.

Partnership is key to the function of the EWS. There are 502 registered users of the EWS from 61 organizations representing water, wastewater, regulatory, industrial, safety and security organizations in the Delaware Valley. PWD developed the EWS between 2002 and 2004 with support from PA DEP, EPA, and water utilities in the region. Since 2004, PWD has owned and operated the EWS on behalf of regional water systems.

The EWS helps protect PWD drinking water supply by helping PWD to be better informed about upstream events/water quality. EWS directly supports the ability of PWD to maintain safe reliable drinking water throughout Philadelphia.

- A Brief history of the EWS
 - 1999 – 2002 reports identified a need for an early warning system in the lower Delaware River watershed, to best detect incidents and respond.
 - 2002-2004 SRF funding allowed PWD to develop EWS.
 - 2005 – 2019: updates for usability (web and telephone notification), industrial intakes, tidal spill model introduced.
 - 2020 EWS 3.0 deployment: more accessibility updates, map upgrades, tidal spill model enhancement, and focus on simplifying user experience.
- How does the EWS work?
 - Reporting of event via the EWS website or telephone hotline.
 - Notification occurs once an incident is reported and is automated. All EWS users get an email notification.
 - Spill modeling: automatic time of travel modeling for reported events, linked to all USGS stations with real-time flow.

- Event details/location can be updated at any time.

Over 500 events have been reported since 2005. Examples of events that have potential to contaminate surface water supplies within the EWS coverage area include: spills (fuel and chemical), transportation accidents, sewage treatment plant upsets, illegal dumping of waste, and major fires.

EWS played a critical role in connecting the water suppliers and first responders so that they could respond to the March 2023 Trinseo Chemical Spill. After midnight on Friday, March 24, 2023, at the Trinseo chemical plant in Bristol, PA, a pipe carrying a latex product (used to provide coating on headlights and other glass products) failed, and overflowed from the plant's on-site containment system into Mill/Otter Creek via a storm drain. Otter Creek is a small tributary that flows into the tidal Delaware River. It was reported that rainwater consumed some of the containment facility capacity. Rain and wind also caused the pollution plume to "hug" the PA side of the shoreline. Over 8,000 gallons of the substance flowed into the tidal Delaware River at Bristol, PA. The spill location was approximately 9 miles upstream of the PWD intake. The primary substances of concern for public health were butyl acrylate, ethyl acrylate, and methyl methacrylate. This pollution event occurred shortly after the East Palestine OH contamination event, triggering more public attention and concern.

EWS did its job. A PA DEP staff member first reported the Trinseo chemical spill to the EWS website on Saturday, March 25, 2023 at 12:27 am. Email notification to 481 users from 61 organizations occurred within a minute. Within 2 minutes, a phone notification was automatically delivered to 142 EWS users (some users elect to not receive phone notifications). EWS tidal hydrodynamic transport model automatically provided estimated spill arrival times and tidal movement at downstream intakes.

Anderson emphasized that EWS provides information, but does not make decisions for you. It is a tool to help users make decisions. Spill modeling helped technicians get a handle on arrival times. 2 inches of rain up to the event impacted the event. Arrival with current flow and arrival time with historic max flow was simply displayed in EWS. Communications between water operators were helped along by EWS. There were 4 critical updates entered into the EWS as the event evolved. The updates focused on the spill duration, quantity, chemical type, emergency response and stakeholder coordination. With each update, the new information was automatically emailed to EWS users.

Challenges for PWD during the Trinseo spill were highlighted. Managing a crisis in real time was a challenge. PWD's treatment and monitoring strategy had to evolve as information was received. Water quality monitoring challenges included: 1) Identifying which substances to test for; 2) Appropriate laboratory methods; 3) Laboratory coordination and expediting analyses. Aqua, PA had available standards and lab tests which they had used for the East Palestine incident; 4) Identifying appropriate windows for sampling.

The tide had an effect not only on the sampling windows, but the decisions made at the WTP. The spill plume was pushed upstream and downstream of the Baxter intake, and PWD had to adjust the opening and closing of that intake. Another water user, New Jersey American Water, was not affected on the other side of the Delaware but they coordinated with PWD and used EWS to inform their decisions.

EWS provided advance spill modeling and provided information to help PWD managers navigate a serious water contamination event. EWS alerted PWD staff, facilitated communication among stakeholders/PA DEP. EWS modeling informed plant operations and monitoring, how best to open and close intakes over this 4-day event, informed when and where to monitor water quality in the river and treatment plant, provided estimates for when chemical plume was likely to dissipate, and indicated when the risk of spill chemicals passing near Baxter intake was sufficiently reduced. Outside of the automated modeling through EWS, planning by PWD hydraulic and riverine modeling staff proved to be invaluable.

Operational objectives were broken down into needs, constraints, and actions. Key needs include safe and sufficient drinking water, and firefighting capacity. It was noted that there were 2 major fires leading up to this event. There was analysis happening to ensure PWD could provide for fire protection needs. One major constraint was that regular storage capacity was not available at the time of the incident due to routine maintenance. PWD took action using this information.

The spill release locations used in the automated spill model are deliberately coarse to include uncertainty of exact spill origin, while the custom simulations allowed more accurate modeling of the spill event characteristics. Anderson gave more detail about the EWS custom spill modeling and analysis. 3-dimensional modeling was in Anderson's words, absolutely necessary. Spill release over time: the EWS automated model used instantaneous spill release at 12:00 am on March 25, 2023. Custom simulations modeled the spill as ongoing for 19 hours, providing a better picture for decision-making. Model assumes that the release began earlier than the automated model. Custom simulation results were shared with managers, plant operators, Emergency response agencies and reported as "plume density", an option to simulate the spill in various tidal conditions. The custom model evaluated plume density in vicinity of Baxter intake to inform understanding of risk at various tidal conditions.

PWD learned much from experiencing the Trinseo Spill. Overall, the EWS worked as expected in the face of one of the most significant events since its adoption. Water suppliers need to better understand what types of chemicals can enter their source waters. Under current state and federal regs this info is very difficult to obtain; Inventory of upstream chemicals and pollutants would be helpful. Partnership is the most effective approach to source water protection. Years of partnership building has strengthened the system.

Planned EWS improvements following the test of the Trinseo Spill include adding custom simulation tools for high-risk events to better represent a range of continuous release events and to continue to improve the speed of output for the existing automated EWS Tidal Model. In 2024 there will be an EWS engagement workshop with the goal of gathering feedback from its userbase for upcoming improvements.

Water withdrawal data from the Delaware River Basin Commission helps calculate fees for entities participating in EWS based on water withdrawal data, and DRBC also helps with invoice generation and payment processing for the program.

General Updates

Oil Spill Exercise After-Action Report—Laura Casillas, EPA Region 3

Casillas described her role as the EPA Region 3 Federal on-scene coordinator, which requires on the ground response, coordination of preparedness activities, other quick interactions, and support within their jurisdiction in cleanup. The National Capital Region (NCR) is large and has many jurisdictions. The on-scene coordinator is a good tool in the water suppliers' and other DWSPP members' toolkit. There is a unified incident commander; that contact is usually Casillas in the NCR. Planning for the NCR is another area of the coordinator's responsibility, and the plan is updated every 5 years.

Chris Anderson, EPA Region 3, shared that hazmat and oil spill incidents are within EPA's authority, and incidents within the District of Columbia are their primary authority. Other incidents taking place in Virginia, Maryland, West Virginia, etc. are that state's department of the environment's authority to enforce.

The National Capital Region Oil Spill Exercise took place at WSSC Water facilities in October 2023. The presenters expounded upon the regulatory capabilities, and demonstrated practical ways of responding to a spill. There was useful discussion among the state and utility jurisdictions on how to cooperate in the event of a spill. Strengths highlighted in the After-Action Report Draft:

- Notification systems
- Modeling expertise and continued study of a complex river system by ICPRB
- Each utility has emergency response plans
- Several utilities have containment boom equipment and knowledge
- Laboratory capabilities in-house at several utilities
- National contingency plan

Casillas and EPA Region 3 are seeking feedback on the after-action plan from any members. DHS uses trends from these exercises and reports to inform national decisions for all entities.

PFAS Watershed Study Update & CEC Workgroup Update—Bradley Schmitz, Loudoun Water

- For the Water Research Foundation (WRF) study, "Understanding the Factors Affecting PFAS Variability in the Potomac River Watershed" several data sources will be accounted for.
- Final agreement completed and sent. Loudoun Water's agreement still under review. Sub-contracts for ICPRB, GMU, JHU/Stantec in progress.
- Honing in on "Task 1" in the list of Project Objectives, before sampling has started and while contracts are still going through.
 - Task 1: Identify sample locations. One meeting completed with the PIs and ICPRB to determine considerations for sites.
 - Next steps: WaterSuite GIS layers for PFAS expected in February. ICPRB generating map of Potomac River with discharges, intakes, and confluences of tributaries to help with selection criteria. Next research

team meeting will occur on February 16 with the academic partners on the study to discuss more considerations and gather insight.

- DSWPP members are invited to a workshop for prioritizing 10 out of (maximum) 40 sampling locations

Workgroup Updates

Contaminants of Emerging Concern (CEC)

Bradley Schmitz, Loudoun Water

- The workgroup met on January 22 and received the above update on the PFAS Watershed Study.
 - Still on the agenda: gather data from UCMR5 to share with workgroup
 - They discussed whether to include microplastics sampling with PFAS study
 - Preliminary sampling was performed by ICPRB and Loudoun Water, and sent to Rutgers University for analysis, about 5 months ago. 10 samples cost about \$10,000.
 - Add microplastics sample alongside PFAS, but as a separate study with a research question of determining the variability of microplastics in the Potomac watershed, and investigating any association between PFAS and microplastics. The workgroup resolved to continue discussions after receiving the preliminary results. Funding the sampling with the ICPRB team, and the analysis through Rutgers would result in a side-by-side dataset of microplastics and PFAS.
 - Dr. Fahrenfeld (Rutgers) has applied for funding through the DoD to investigate the association between PFAS and Microplastics and is open to working together.

Agricultural Issues

Pam Kenel, Loudoun Water

- The Agricultural Issues workgroup met on February 1:
 - Reflection on the workgroup's history – NRCS and Farm Bill with Source Water Protection focus in 2017
 - Discussion of expanding scope of workgroup perhaps on non-crop lands and forests
 - Will have an in-person meeting in May (and subsequent strategic planning session open to other DWSPP members)
- ICPRB webinar on Agricultural water quality mitigation and funding occurred on January 19
 - IRA funding to NRCS and how does this affect Source Water Protection spending.
- Small Systems Roundtable in the Shenandoah Valley with the Reaching Out Workgroup on May 21.
- VA Forests and Water Partnership looking to hold a specific Drinking Water Protection and Forests event.

- Patuxent Partnership: learning from WSSC Water’s approach to agricultural land and BMPs in Howard County to determine actions on the Potomac.
- USDA Ag census and CAST model to be released soon.
- Re-scoping Ag workgroup mission considering water quality concerns: climate change, sediment/nutrients, algae, HABs, biosolids/PFAS.
- Future DWSPP meetings:
 - May: PFAS focus (planning Ag Issues Strategic planning meeting after the general DWSPP meeting)
 - August: Climate Resilience (will report-out on Ag Strategic Planning)
- AWWA 9b analysis to look at BMP practices
- SWP Priority Areas: Maryland has expanded land area covered to 26% of the state. MDE: NRCS expanded karst systems, makes eligible for increased funding if located in one of those areas

Reaching Out Workgroup

Virginia Vassalotti, EPA Region 3

- Thank you to Lisa Ragain for 5 years of leadership as the workgroup chair. She is staying on as a member. Call for any new members to support communications and outreach for all the other workgroups of the DWSPP, as well as recruitment of new members in general.
- The 2023 annual report is on the DWSPP website. Please take a look and share.
- 2024 Small Systems roundtable planning in progress with the goal of targeting small systems and bringing them into the DWSPP. The workshop will take place on May 21 in the Shenandoah Valley. Strong partnership with VDH is proving beneficial.
 - Potential topics include: 1) about DWSPP 2) algae/harmful algal blooms 3) agriculture 4) PFAS 5) VDH technical and financial resources
- 2023 DWSPP member survey to tell us how the ROW can best support you.
- AWWA student chapter at WVU is having an event that might be a good ‘in’, and it may be a good idea to connect with other student chapters.

Urban and Industrial Issues (U&II)

Greg Prelewicz, Fairfax Water

The workgroup met last week and discussed the following topics:

- Salt and Sodium: noted lots of recent press in the region, several jurisdictions had MS4 permits renewed and have incorporated new language including salt reduction strategies, WSSC Water Salt Summit in January 2024, update on regional research projects and discussed a regional research forum as a long-term action item.
- Hidden Lane landfill on the Virginia side of the Potomac River is going to be remediated for PCB and related organic constituents in groundwater. Inquiry into potential for PFAS sampling.
- Warrior Run Power Plant in Maryland will be retired as a coal-fired plant. The workgroup will continue to keep up with the project in terms of drinking water impacts.

- Allegany Ballistics Laboratory (WV/MD) has a West Virginia NPDES permit, workgroup has worked with WV DEP to be able to access PFAS data results (PFOA detected)
- GIS Data sources for the WRF PFAS Watershed study.

Water Quality (WQ) Monitoring

Niffy Saji, Fairfax Water

- Updating the Utility Lab Capabilities spreadsheet.
- Updating the Utility Spill Response Plan
- Helping the ROW with a salt data Story Map
- As part of the Utility Spill Response Plan update, collecting a list of products transported by the Colonial Pipeline.

DWSPP Chairperson and Funding

Priscilla To, WSSC Water

- Metro Area Utilities committee is currently led by WSSC Water, and in those meetings the management and sustainability of the DWSPP Committee Chairperson rotation was discussed. The Governmental Partner Committee or “Government Committee” rotates between 5 jurisdictions every 2 years, and the Metro Area Utility SWP Committee rotates between Fairfax Water, Washington Aqueduct, and WSSC Water every 2 years. The suggestion is that other utilities be allowed to join the chairperson rotation.
- Contributions to DWSPP
 - Revisit calculations to be clear and consistent, equitable to the partners, keeps pace with inflation, can help plan 5-year lookahead for budgeting, has more consistent year-end accounting, and returns to original funding principles of the DWSPP.
 - Framework principles: funding for administration and coordination of the DWSPP, adjusts the scope to available budget, provides formula for cost-sharing of special projects, and builds in consecutive and groundwater systems.
 - Share proposal and gather feedback in order to discuss with your organization’s representative at a separate February meeting. Please commit to reviewing the framework and/or attending the meeting.
 - Reach consensus in March, make final recommendation in April.

Adjournment.