



FINAL

NJ Water Monitoring Council

Measuring What Counts for Clean & Plentiful Water

February 6, 2019
MEETING MINUTES

Member Attendees

NJDEP – *DWM&S*: Leslie McGeorge, Alena Baldwin-Brown, Bruce Friedman, Brian Henning, Helen Pang, Vic Poretti *DWS&G*: Jeff Hoffman, Ray Bousenberry *DSR*: Nick Procopio, Sandra Goodrow, Rob Newby
DWQ: Teresa Guloy

NJDOH –

NJDMAVA – Sara Helble

USGS – Heather Heckathorn, Pam Reilly

DRBC – Namsoo Suk

EPA R2 – Muhammad Manj

IEC –

NJ Pinelands Commission – Marilyn Sobel

NJ Water Supply Authority – Angela Gorczyca

Rutgers (Coop Extension Service) –

Rutgers (IMCS) –

Rutgers (Env. Bioengineering) – Eric Vowinkel

Montclair University –

Monmouth University/Urban Coast Institute –

Stockton University – Christine Thompson

NJ Sea Grant Consortium –

Meadowlands Environmental Research Institute – Cheryl Yao

NOAA –

Monmouth County Health Dept. – Dave Sorensen

Barnegat Bay Partnership – Jim Vasslides

The Watershed Institute – Nik Hansen

Musconetcong Watershed Association – Nancy Lawler

Raritan Headwaters Association – Maria Berezin

Great Swamp Watershed Association –

American Littoral Society -

NJ Harbor Dischargers – Greg Alber

Brick Township MUA – William Ruocco

Guest Speaker/Discussion Leaders

Kati Angarone – DEP/CO

Deborah Kratzer – DEP/DWM&S

Paul Morton - DEP/DWM&S

Zoltan Szabo - USGS

Other Attendees

Stephanie Beck – DEP/DWM&S

Dean Bryson - DEP/DWM&S

Brandon Carreno – DEP/DWS&G

FINAL

Lisa Congiu – DEP/DWQ
James Duffy – DEP/DWM&S
Eric Engle – DRBC
Tracy Fay – DEP/DWM&S
Eric Jacobson – USGS
David Kovach - DRBC
Sandy Krietzman – DEP/DWS&G
Chris Kunz - DEP/DWM&S
Ron MacGillivray - DRBC
Kelly Mascarenhas - DEP/DWM&S
Nina Odulamni – DEP/DWS&G
Terry Pilawski – DEP/DWS&G
Ismail Sukkar - DEP/DWM&S
Emily Wengrowski – USGS
Wen Zhang – NJIT
Kevin Zolea - DEP/DWM&S

- **Council Business** (Copies of the agenda, minutes and many of the information updates and presentations are or will be available on the Council’s webpage, under “Meeting Information” - <http://www.state.nj.us/dep/wms/wmccmeetinginfo.html>)
 - Minutes from the 09/26/18 Council meeting were approved
 - The next meeting will be May 22, 2019 at USGS. The final 2019 Council meeting will be September 18 at DRBC. The topic chosen by the Council for the May meeting is climate change and its effects on both water quality and quantity. The Council Steering Committee will develop the meeting agenda. In addition, Council members suggested revisiting Harmful Algal Bloom monitoring as a topic for the September meeting.
 - Sarah Johnson (American Littoral Society) and Tom Imbrigotta (USGS) have resigned from the Council due to job change (Sarah) and retirement (Tom).
- Kati Angarone, Associate DEP Commissioner for Science and Policy, welcomed the Council to DEP on behalf of Commissioner McCabe. Kati shared the Commissioner’s priorities, especially those related to water and use of best available science for decision making, acknowledged the Council’s significant contributions in these areas including monitoring partnerships and enhanced data availability, as well as summarized some of DEP’s activities in the two major topics on the Council’s meeting agenda – PFAS and freshwater salinization monitoring.

Information Updates, Presentations and Announcements:

1. Announcements –

- Vic Poretti announced that DEP is updating its Field Sampling Procedures Manual (current version available at: <https://www.nj.gov/dep/srp/guidance/fspm/>). The document has not been revised since 2005 so a major intent of the update is to streamline the process so that information and links remain current. The revisions are being undertaken chapter-by-chapter. Chapter 2 (Quality Assurance) is expected to be completed sometime this spring. Chapters 5 and 6 (sampling equipment and procedures) are also underway. Final revisions to the document will include a section on contaminants of emerging concern and methods for HABs will be addressed as well. The Site Remediation Program is leading this effort and it is expected to take a year to complete. [NOTE: USGS – Ed Furlong – noted that they are currently developing a PFAS chapter for their field manual. Ed offered to put Vic in touch with Stan Skrobialowski who is leading this effort.]
- Paul Morton provided an update on WQDE and WQX-Web data entry from Council member organizations. During the past year, a significant amount of data was entered through WQDE from DRBC, DEP’s BMW, BFBM and DSR, as well as the NJ Harbor Dischargers Association. Raritan Headwaters Association has been the top submitter through WQX-web. Paul also reminded the Council that the

FINAL

deadline to submit data for use in the 2020 Integrated Water Quality Assessment Report was extended until March 1, 2019, including providing the data requirements and the web links for submitting data.

- Leslie McGeorge reminded the Council about the upcoming National Water Monitoring Conference, March 25-29, 2019 in Denver, CO. Several Council member organizations, including DEP/DWM&S, The Watershed Institute, and Raritan Headwaters Association, are planning to present either platform talks or posters. Leslie also announced the call for articles for the upcoming 18th edition of the National Council's newsletter [NOTE: deadline for article submission was March 15].
- On behalf of Chair Heather Desko, Angela Gorczyca provided an update on the activities of the Decontamination Protocols Workgroup including its objective, members and progress to date. As part of the update, Angela shared an outline of the draft Protocols Document and requested that Council members provide any comments to either her or Alena Baldwin-Brown by February 22 [NOTE: comments were received from several Council member organizations and are being reviewed by the Workgroup. Additionally, Marilyn Sobel, Pinelands Commission, has offered to join the Workgroup].

2. Presentations:

Session – Emerging Contaminants: Polyfluoroalkyl Substances (PFAS)

- A. ***Per- and Polyfluoroalkyl Substances in Source and Treated Drinking Waters of the US*** – Susan Glassmeyer (EPA) shared the results of a combined EPA/USGS national study looking at per- and polyfluoroalkyl substances (PFAS) in both source and treated drinking water. This study examined chemical concentration trends, PFAS occurrence patterns in two river systems, investigated sources of PFAS via *de facto* reuse modeling, the potential for removal during drinking water treatment, the role of granular activated carbon during treatment and the examination of data in relation to the 3rd round of the unregulated contaminant monitoring rule (UCMR3). Susan indicated that both the project overview and the PFAS specific paper, authored by EPA and USGS, were published open access (overview: <https://www.sciencedirect.com/science/article/pii/S0048969716326894> ; PFAS <https://www.sciencedirect.com/science/article/pii/S004896971834141X>).
- B. ***PFAS Compounds in Water, Sediment and Fish Tissue and Resulting Advisories*** – Sandra Goodrow (DEP/DSR) provided some basic information regarding PFAS including, chemical structures and common uses, as well as summarized a study that was cooperatively undertaken between DSR and DWM&S' Bureau of Freshwater & Biological Monitoring, to determine levels of PFAS in fish tissue, water and sediment. The objectives were to collect fish from areas located near potential PFAS sources to evaluate PFAS levels in the fish tissue; collect surface water and sediment samples to determine the fate and transport of these compounds through the system; and to apply Reference Dose concentrations to determine if consumption advisories were warranted. The study showed that PFOS is the compound most often found and that it is highly bioaccumulative in fish. As a result, fish consumption advisories for PFOS have been issued (https://www.state.nj.us/dep/dsr/Fish_Advisories_2018.pdf). This study is continuing with fish, water and sediment collection occurring in other areas with potential sources as well as for use in potentially supporting development of a state-specific bioaccumulation factor. Additional information about this study is available at <https://www.nj.gov/dep/dsr/>.

Session – Freshwater Salinization Monitoring (continued from September 2018 meeting)

- C. ***Elevated Chloride Levels and Other Major Ions in Streams: Implications for Freshwater Systems*** – Joel Moore (Towson University) summarized work that has been done to examine elevated chloride and other ion levels across the US and what that may mean for freshwater ecology. Joel shared USGS research indicating that, nationally, road salt use is growing 40% faster than urban land cover – with changes in the practice of road salt use as the culprit. As one moves north, where the weather is colder and snow more frequent, the elevated chloride and other ion levels increase. Stormwater management only shifts chloride loading into the groundwater and thus alters the aquifer/soil chemistry. Increasing specific conductance directly and indirectly related to road salt has implications for aquatic communities since recent research shows that conductivity has negative effects on aquatic community abundance (diversity and numbers) at lower thresholds than previously thought. Joel also noted that, besides chloride, calcium and other major ions are also increasing with both potentially positive and negative ecological effects.

FINAL

- D. **Road Salt Monitoring in Northwest NJ** – Nancy Lawler (MWA) talked about a variety of work being done in the Musconetcong Watershed to determine if sodium and chloride levels are rising in the Musconetcong River and, if so, how the river is being affected. MWA worked with Rider University from April 2015-December 2016 to study sources of salt in streams that are headwaters to the Delaware River, including the Musconetcong, Paulins Kill, Pohatcong, Lopatcong and Pequest rivers. The results of this study showed that sodium levels were higher than expected and higher than other ions related to road salt. To answer additional questions related to changes from rain/snow, MWA received five (5) continuous monitoring sensors from the Stroud Water Research Center, as part of the Delaware River Watershed Initiative, to study conductivity, depth and temperature. Data are collected 1x/5min and can be viewed, along with the other sensors in the watershed, at <https://monitormywatershed.org/browse>. Nancy also shared that MWA has joined the Coalition for the Delaware River Watershed (<http://www.delriverwatershed.org/>) and that this organization has recently created a Salt Workgroup.
- E. **Chloride Trends in the Ambient Ground Water Monitoring Network** – Ray Bousenberry (DEP/DWS&G) presented information regarding sodium and chloride concentrations in NJ’s shallow groundwater, as measured through NJ’s Ambient Ground Water Quality Monitoring Network. This 150 well network, which is a cooperative effort between the DEP Geologic and Water Survey, DEP Bureau of Freshwater and Biological Monitoring, and the USGS, looks at ground water quality status & trends in agricultural, urban and undeveloped land. Results from this investigation show that sodium and chloride levels are elevated in agricultural and urban areas. Additionally, in the Coastal Plain, sodium and chloride levels are statistically increasing in urban land use areas. Ray also shared information from an aquifer storage and recovery case study in which ground water has been used to supplement surface water (which was the primary source of drinking water) when either passing flows weren’t being met or when chloride levels in the surface water exceeded the surface water MCL.
- F. **Chloride Trends in Public-supply Wells, Coastal Plain, ’98-’18** – Zoltan Szabo (USGS) summarized work related to trends in chloride in public-supply wells in the NJ Coastal Plain, specifically in the Kirkwood-Cohansey aquifer. This work, which has been ongoing for ~20 years, focused on the public-supply wells primarily clustered in the Glassboro area where, due to land use changes, well vulnerability to chloride is of concern. Zoltan explained how areas with increased urbanization have also shown the highest increases in chloride/bromide ratios and shallow ground water recharge issues, which is believed to be indicative of increased road salt usage. He also showed how evaluation of monitoring data from shallow ground water wells can be used to estimate long term changes in ground water quality in deeper parts of aquifers. Increasing trends were observed in 24 of the 25 public supply wells from 1998-2009 and 1998- 2017.

➤ **Action Items**

- Obtain full Council review of draft Decontamination Protocols Document outline; incorporate comments as appropriate – Alena/Angela Gorczyca/Heather Desko

➤ **Topics for Next Meeting**

Climate change and its effects on water quality and quantity

➤ **Next Meeting**

May 22, 2019 at USGS

➤ **Monitoring Gaps and Needs** - to be added