QUITTAPAHILLA WATERSHED ASSOCIATION
Meeting Minutes
Annville Town Hall and Remotely Via Zoom (Hybrid Meeting)
Tuesday, April 16, 2024

Present: Michael Schroeder (President), Alyssa Bellucci, Bob Connell, Kent Crawford, Karen Feather, Katie Hollen (LCCD), Kara Lubold, Paul Pyle, Carl Rohr

The meeting opened at 7:02 p.m.

1. **Minutes.** The minutes of March 19 were approved by consensus.

2. **Monitoring Program Updates**

   A. **Upcoming ALLARM Meeting.** Discussion was held on preparation for our 4 pm April 23 Zoom meeting with Julie Vastine of Dickinson College's ALLARM program, as the first step in developing a "study design" for our monitoring program (see https://www.dickinson.edu/allarm -- and in particular, this collection of resources: https://www.dickinson.edu/info/20173/alliance_for_aquatic_resource_monitoring_allarm/2911/volunteer_monitoring/2 Julie Vastine responded via email, in part: "There is a possibility that the Chesapeake Data Explorer [https://cmc.vims.edu/#/home] could be a repository for your discrete data (not continuous). I am including Isabel Ruff on this email, she is the ALLARM point person on the Chesapeake Monitoring Cooperative [https://www.chesapeakemonitoringcoop.org/]." Thanks were extended to Bob for spearheading this initative and for setting up this meeting. Invitees include Mike, Bob, Katie, Kent, Kara, Carl, and Gary Zelinske.

   B. **Automatic sampling units.** Kara and Kent reported that transportation has been arranged for transport of the sampling units from the Poconos to Lebanon County; the units will be stored either at LVC or temporarily in Kara's garage. A reminder was issued that they haven't been used in at least a decade and will need to be evaluated and tested.

   C. **HOBO Data Loggers.** Bob reported in an email of March 27 as follows: "Just wanted you to know that Onset Corp (makers of our Hobo sensors) honored their warranty and replaced the defective logger free of charge. The paperwork associated with that replacement is attached. We also had a pressure sensor (lower unit) that failed at the Q1 site. That was not under warranty, so I purchased a new one (paperwork also attached). It has a one-year warranty. So the water level/temperature logger is now

back in place at Q1. As far as I know, we now have functional loggers at all 5 of our locations (USGS handles the one at Q2)." Bob was thanked for his excellent work.

D. **Data Management & GIS Mapping.** Bob and Alyssa reported that they have been working on organizing the monitoring data we've been collecting in a way that they hope will facilitate its use in assessments – housed here: http://147.185.239.141/qwa/index.php

E. **PA-DEP Monitoring Audit.** Good news – we passed our Feb 22 audit! The full report is included below in **Appendix 1** to these minutes.

F. **Upcoming fieldwork.** Katie reported that she will send out a poll to determine the best dates for our next monitoring fieldwork, likely in early June.

3. **Summer 2024 Student Internship Program Update.** Mike reported the good news that we have received six strong applications and that our two top candidates have accepted the position: Hannah Horengic (who was last year's intern) and Ben Mitchell. Rocky will be in touch with them about classroom and field training, likely to commence in late May.

4. **Stream Restoration Project Updates.** These project updates are summarized in the April 4 meeting minutes of the CAP Watershed Action Team, kindly provided by LCCD District Manager Katie Doster and included below in **Appendix 2**.

5. **Grants Update.** After discussion with Tali MacArthur of POWR (https://pawatersheds.org/), the QWA was included in POWR's grant proposal to NFWF (https://www.nfwf.org/programs/chesapeake-bay-stewardship-fund/chesapeake-wild/chesapeake-watershed-investments-landscape-defense-wild-grants-2024-request-proposals); see attached letter of support to POWR's grant application, included below in **Appendix 3**.

6. **Special events upcoming.** Mike and Katie reported on the following upcoming special events:

A. **Saturday, April 20, 9 am—12 noon, Quittie Creek Nature Park,** annual Leb Co United Way Day of Caring (mulch spreading, invasive species removal, trash pickup, garlic mustard taste-a-thon -- Doc Fritchey will be serving food after 11:30ish).

B. **Friday, April 26, 3-5 pm, Arbor Day** event at South Hills Park in Lebanon, sponsored by the Lebanon County Clean Water Alliance.

C. **Sat April 27, 10 am—12 noon: Greater Annville "Clean Up the Streets Day," Part 2.** Meet next to the fountain in the Annville Town Square (Rts. 422 and 934) to be divided into crews to pick up trash from the streets, sidewalks, alleys, parking lots, and other public spaces in various parts of greater Annville. Volunteers will be provided with

safety vests, trash bags, gloves, and, if enough are available, trash-picker devices, along with maps of their designated trash-pickup area. Bring your own water and, if desired, snacks. Long pants and sturdy footwear are recommended. Organized by the Quittapahilla Creek Garbage Museum in partnership with the Quittapahilla Watershed Association, the Quittie Creek Nature Park Committee, and Lebanon Valley College.

D. **Sat June 8, 9 am—2 pm, Historic Old Annville Day.** The QWA has the same space as last year next to St Anthony's Coptic Church and the Nature Park space. We need volunteers to staff the table. Bob and Katie agreed to help; Katie agreed to bring the LCCD's model watershed, which serves as a kind of kid-magnet at the event.

The meeting adjourned at 8:02 pm.

Respectfully submitted,

Michael Schroeder, Secretary Pro Tem

Appendix 1: Results of PA-DEP Field Audit of Monitoring Team, Feb. 22, 2024

E.1 QUALITY ASSURANCE DATA COLLECTION AUDIT AND TRAINING INTRODUCTION FORM

1

Water quality data that will be used by DEP will need to meet quality assurance criteria. A review of the quality assurance (QA) criteria for specific objectives will need to be performed before any collection occurs. Water quality data that are used by DEP need to be collected by individuals trained and subsequently audited by DEP staff. Documentation of trainings and audits will need to be provided upon request. DEP maintains documentation of trainings and audits as part of the QA requirements.

The data collection audit forms and documentation begin with this Introduction Form. Additional audit forms specific to data collection protocols will be appended to this form.

General Information

Date(s) of Audit

2/22/2024

Auditor/Trainer	Affiliation	Email	Phone
Erika Arnold	PADEP	[redacted]	
Mark Brickner	PADEP		

Collector and Title	Affiliation	Email	Phone
Katie Hollen – Watershed Specialist	Lebanon County Conservation District	[redacted]	
Bob Connell – Volunteer	Quittapahilla Watershed Association		
Lydia Mohn – Mosquito Biologist	Lebanon County Conservation District		
Gary Zelinske – Volunteer	Quittapahilla Watershed Association-		
Michael Schroeder – Volunteer	Quittapahilla Watershed Association		

Monitoring Objective

What is the monitoring objective for collections specific to this audit?

	Protected Use Assessment (Tier III)		Protocol, Method, Standards Development (Tier III)
	Cause and Effect (Tier III)	x	General Data Collection (Tier III)
	Point of First Use (Tier III)		General Data Collection (Tier II)
	Use Evaluation (Tier III)		General Data Collection (Tier I)
	Water Quality Network (Tier III)		Training

Monitoring Objective Comments

See Quittapahilla Watershed Association (quittiecreek.org) for goals and objectives. Summarized: this group is seeking to identify if restoration efforts have improved sediment and nutrient load to the watershed. There may be a possibility for an assessment using their work.

This audit was part of a larger group audit for Lebanon County Conservation District staff and a volunteer group. The audit offered 2 stations where participants were either observed performing field meter calibration or water chemistry sampling. One auditor was stationed per station. Erika Arnold observed field meter calibrations and in-situ field meter readings. Mark Brickner observed water sample collections, filtrations/fixing, sample packaging and Sample Submission Sheet documentation.

Sampling Design

Select sampling design

	Not Applicable		Probabilistic	x	Targeted		Fixed Station (WQN)

Sampling Design Comments

They are implementing streamflow collection, water chemistries, and some biology work to investigate the Quittapahilla Creek watershed. They are collecting at 5 to 6 sites throughout the basin to include both mainstem stations and a few tributary stations. PADEP is funding their water chemistry work.

Location

Station location information specific to each data collection protocol will be documented in each respective protocol form. Provide a general station location(s) and or basin description information.

Quittapahilla Creek (40.332713, -76.470434) near the Cleona Playground lower parking lot. Upstream there is a mix of urban and agricultural land covers. Lebanon City is just upstream of this location.

Data Collection Protocols

Select targeted data collection protocols

x	In-Situ Field Meter and Transect Data		Wadeable Riffle-Run Stream Macroinvertebrate		Stream Habitat Data
x	Discrete Water Chemistry		Wadeable Limestone Stream Macroinvertebrate		Pebble Count Data
	In-Situ Field Meter and Discrete Water Data Entry		Wadeable Multihabitat Stream Macroinvertebrate		Water Flow Data
	Continuous Physicochemical Data Collection		Semi-Wadable Stream Macroinvertebrate		Secchi Depth Data
	Continuous Physicochemical Data Management		Macroinvertebrate Laboratory Subsampling		
	Sediment Chemistry		Macroinvertebrate Laboratory Identification		
	Passive Water Chemistry		Fish Data Collection		
	In-Situ Field Meter and Profile Data		Mussel Data Collection		
			Periphyton Data Collection		
			Bacteriological Data Collection		
			Chlorophyll-a Data Collection		
			HABs Data Collection		
			Plankton Data Collection		
			Aquatic Macrophyte Data Collection		

Summary and Conclusions

This group worked well as part of a team. All collectors demonstrated their ability to follow DEP protocol. It is recommended this group continues to work as part of a team and that Katie oversees work to ensure aspects of data collection are being performed appropriately. If this group has questions regarding data collection procedures going forward, please reach out to Monitoring Section staff.

Collector(s) Signature		Date
[redacted]		4-2-2024
	Katie Hollen	4-2-2024
	Bob Connell	4-3-2024
	Gary Zelinske	
	Lydia Mohn	4-3-2024
	(Michael Schroeder)	4-3-3034
		Date
	Erika Arnold	4/9/2024
	Mark Brickner	04/11/24

E.2 QUALITY ASSURANCE IN-SITU FIELD METER,TRANSECT DATA, AND PROFILE DATA COLLECTION PROTOCOL

Equipment

Make/model: YSI EXO3			
Parameters (check all that apply)			
x	Temperature		Turbidity
x	Specific Conductance		Chlorophyll-a
x	pH		BGA-PC
x	Dissolved oxygen		

Calibration

Yes	No	
x		Is calibration log being maintained?
x		Were the probes clean and free of debris prior to calibration?
x		Were sensors rinsed three times with the standard solution prior to calibration?
x		Did calibration checks bracket the range of values observed in the waterbody?
x*		For specific conductance, were additional checks made after calibration?
x		For parameters with temperature-sensitive standards (e.g., pH, total algae sensors), were temperature-adjusted calibration points used?
x*		Was the dissolved oxygen sensor calibrated or checked on-site?

Location

On site, in the parking lot, but calibration is typically performed at their lab.

Comments

For specific conductance only a 100 SPC check was performed, a zero check was not performed. It was requested that they perform a zero check and document appropriately on the calibration form. DO was calibrated in the field day of audit, this however is typically performed at their lab prior to departing for the field, it has been determined this is okay since their sites are centrally located around their station locations.

This group's process is to usually work as a team of two to perform equipment calibration, the primary purpose is to have a lead performing the work while the other completes documentation. This has been working out well.

Each collector demonstrated their ability to calibrate a field meter. All were evaluated individually. Katie, Bob, and Lydia stood out as being well versed in the protocol and were comfortable with the equipment. Gary and Michael needed some oversight and help from their group mates to complete calibration. It is recommended these folks always be paired off when tasked with calibration.

They demonstrated the need to rinse the probes three times with standard prior to calibrating. In some instances, a DI rinse was also used between standard. During the calibration the collectors demonstrated skills in trouble shooting issues. During the audit, the 100 SPC standard was reading high, some of the troubleshooting discussed was to gentle move the probes around/up and down to get rid of any air bubbles, putting in more standard, starting over, checking standard expiration etc. These solutions would all be appropriate. Calibration criteria ranges were also discussed, and Erika pointed to Table 2 found in PADEP's QAPP which is located in the Monitoring Book. The group paid attention to the pH millivolts during calibration; they have a cheat sheet they use to understand if millivolts are out of range and use this to determine if a new probe is needed. The group specifically uses millivolts provided in USGS guidance which are more restrictive than DEP guidance, this is appropriate. The

group uses a two-point calibration for pH as their conditions typically range between 7 and 10. This is appropriate. During the DO calibration, the calibration cup was not completely closed and only a small amount of water was used which was appropriate. A mg/L DO calibration was performed. This is a deviation from PADEP protocol. PADEP calibrates to a percent saturation. DEP explained how to perform this calibration and skills were checked to ensure collectors understand this requirement. Upon consult with Mark Hoger (PADEP CO equipment coordinator), Mark indicated that if the mg/L calibration is done correctly using the table values this should be fine. As a result of this conversation doing either a mg/L calibration or a DO% calibration would be fine.

Use

Yes	No	
x		Was adequate time allowed for sensor readings to stabilize?
x		Were readings taken at a point representative of the waterbody?
x		After use, was the field meter properly stored?

Comments

Use was appropriate.

Cross-section Transects

Yes	No	
x		**Cross-section Transects**
Approximate stream width: 20 meters		
Number of transect points: 5		
Yes	No	
x		Were the number and location of the transect points appropriate?
x		Are points repeatable (e.g., stable reference points, tape measure or range finder from bank)? Describe how points were determined in comments.
x		Was adequate time allowed for sensor readings to stabilize at each point?
x		Are transects completed across different seasons and flow conditions?
	x	Were calibration checks of the sensors completed after the transect?

Comments

The transect consisted of 5 points, LDB, LDB ¼, MID, ¼ RDB, and RDB. Transects are performed during all data collections. It was additionally recognized that station locations are typically representative of the channel as a whole. It was discussed that in the event, a transect is not homogenous what to do. Options were either to move the chemistry collection away from the influences causing the differences or if the group so chooses to implement a composite sampling technique depending on the project's goals and objectives. All collectors except Michael completed a cross-section transect. It is recommended to Michael that this be implemented going forward.

Vertical Profile

Yes	No	
		Vertical Profile?

Approximate maximum depth:		
Measurement Increment:		
How was depth estimated? Bathymetry maps, portable water sounder and depth meter		
Yes	No	
		Were the number and location of the vertical profile points appropriate?
		Are points repeatable (e.g., stable reference points, marked cable line, etc.)? Describe how the measurement increment was determined in comments.
		Was adequate time allowed for sensor readings to stabilize at each point?
		Was a check at 1 meter below the surface performed after the final measurement?
		Were calibration checks of the sensors completed after the vertical profile?

Comments

E. 3 QUALITY ASSURANCE DISCRETE WATER CHEMISTRY DATA COLLECTION PROTOCOL

Collector and Sample Information

Collector Identification #	Sequence #	Standard Analysis Codes (SACs)	Legal Seal #	SAMPLE, DUP, BLANK
4429	001	87	n/a	n/a
4429	002	87	n/a	n/a
4429	003	87	n/a	n/a
4429	004	87	n/a	n/a
4429	005	87	n/a	n/a

SAC	General Test Description	Bottle	Qty.	Filtered	Preservation
087	General Chemistry	500 mL HDPE	2	No	Ice
087	N+P	125 mL HDPE	1	No	H2SO4
087	Metals	125 mL HDPE	1	No	HNO3
087	Dissolved N+P	125 mL HDPE	1	0.45	H2SO4
087	Dissolved Metals	125 mL HDPE	1	0.45	HNO3
087	Dissolved Gen. Chem.	125 mL HDPE	1	0.45	Ice
087	TOC	40 mL Amber Glass	2	No	H2SO4

Protocol(s) and Equipment

Yes	No	General
x		Were sample bottles labeled correctly?
x		Were samples preserved correctly?
x		Was contamination of samples prevented?
x		Were sample bottles, samplers, churns, tubing, syringes, filter holders rinsed correctly?
x		Was sample collected upstream of or away from any disturbance to avoid sediment or debris that may have been caused by individuals or equipment entering/exiting the water?

Comments

All collectors demonstrated proper collection techniques. All bottles were rinsed well and filled in a manner that minimized any possible contamination. All bottles were labeled and fixed

appropriately, though to help with remembering what fixatives go with which bottles, it is recommended that collectors label the bottles with the proper fixative. Continued use of the ground water filters used during this audit is also acceptable; however, if collectors find themselves collecting many water chemistry samples and begin running low on ground water filters, it may be recommended that collectors switch to using 47 mm paper filter holder instead..

Yes	No	
x		**Filtration?** (If yes, select equipment below)
	x	Systolic pump?
x		Syringe?
	x	Squeeze bottle?
	x	Hand pump?
x		Groundwater filter?
	x	47 mm paper filter with holder?
	x	Glass Microfiber Filter
	x	Disposal disc filter?

Comments

Yes	No	
	x	**Integrated Depth/Width?** (If yes, select equipment below)
		Isokinetic
		Weighted-bottle?
		DH-81
		DH-95
		DH-96
		DH-2
		Was USGS protocol used and was it appropriate for the flow velocity?
		Was equipment cleaned and rinsed prior to data collection?
		Clean Hands / Dirty Hands?
		Were the number of transect points appropriate?
		Transit rate appropriate?
		Were sample aliquots transferred to churn splitter without contamination?

Comments

Yes	No	
	x	**Targeted Depth?** (If yes, select equipment below)
		Van Dorn
		Kemmerer
		Vertical Integrated Depth Sampler
		Was equipment cleaned and rinsed prior to data collection?
		Were sample aliquots transferred to sample bottles without contamination?

Comments

Yes	No	
x		**Discrete Mid-Stream/Mid-Depth?**
x		Was a discrete mid-stream/mid-depth appropriate?
x		Was a cross-section transect performed?

Comments

Transect was performed as part of the filed meter calibration audit.

Sample Submission Sheet

Yes	No	
x		Was the sample submission sheet completed correctly?
x		Was the Collector ID, Reason Code, Cost Center and Program Codes populated correctly?
x		Was the Sequence #, Date, Time, SAC and Additional Tests populated correctly?
x		Was the number of containers section completed correctly?
x		Was sample collector information completed correctly?
x		Was the Chain of Custody information populated correctly?

Comments

All collectors filled out the sample submission sheets with all the appropriate information.

Protocol Variations

Describe protocol variations due to site conditions, equipment limitations or limitations imposed by the procedure.

No variations required.

Appendix 2: Minutes of the Watershed Action Team meeting, April 4, 2024

Lebanon CAP Watershed Action Team
April 4, 2024

Members Present: Bethany Canner, Katie Doster, Darren Heisey, Katie Hollen, Randy Leisure, Rocky Powell, & Mike Schroeder

1. **Applications**
   - Gerald Horst bridge replacement: $23,600 of funding requested for design and permitting. This will be part of the Bachman Run project, which entails 2,700 ft of stream restoration on the Horst properties. The existing bridge is the main entrance to the farm and is undersized. Design and permitting of the bridge is contracted to Steckbeck Engineering and bridge replacement will be included during stream construction, which is planned for 2026 at the earliest. This will be an ACAP funding request and will be presented at the April 18 Board meeting.

2. **In-Process Projects**
   - Hammer Creek Estates: $250,000 of CAP funding for construction-related expenses.

3. **Completed Projects**
   - Quittapahilla Creek- Spruce Street: $27,300 of CAP funding.
   - Quittapahilla Creek- Syner Road Phase 1: $259,200 of CAP funding.

4. **Partner Updates**
   - Clear Creeks Consulting, Rocky Powell
     - Most projects are in the same status as the March meeting.
     - Snitz Creek 2 & 3 – Held an on-site meeting on March 27 with three prequalified contractors interested in placing construction bids. A concern was raised about a suitable location to dispose of soil (18,000 cubic yards of soil will be excavated to create wetlands). A Pennsy Supply employee led a tour of the quarry and showed a location for the dirt. There were also discussions about needing additional rock for the project; contractors are putting bids together with the assumption that they will buy rock. Contractors may provide individual bids and a combined bid for Snitz 2 & 3. Will apply for construction funding in May.
   - Lebanon Consortium/MS4, Darren Heisey
     - Lions Lake Bank Stabilization – Joint permit issued from DEP. Waiting on ACOE.
     - SQ6 – Making progress on landowner agreements.
     - Still waiting for DEP to release next term's permit requirements.
   - Quittapahilla Watershed Association, Mike Schroeder
     - Monitoring program – Five volunteers were successfully audited by DEP for sample collection and sonde use. Arrangements have been made to borrow automatic samplers to collect during high-flow events. Meeting with ALLARM out of Dickinson College later this month to discuss data management.

Lebanon CAP Watershed Action Team

- April 9, 6:30 PM – Presentation by Mike at the Annville Free Library, "Swimming Upstream: The Work of the Quittapahilla Watershed Association"
- April 20, 9 AM – 12 PM – Day of Caring workday at Quittie Creek Nature Park
- June 8, 9 AM – 2 PM – Table at Historic Old Annville Day
- Mike has an initial meeting next week with a landowner who is interested in stream improvements. The landowner is along the Quittie mainstem on Old Forge Rd.

- Swatara Watershed Association, Bethany Canner
  - April 20, 9 AM – 12 PM – Day of Caring cleanup at Swatara Watershed Park
  - May 4 – Swatara Sojourn (Hershey to Middletown)

5. **QWA Summer Internship Program**
   - Six applications received. Mike and Kent C. are currently conducting interviews and will make recommendations by the end of next week. In contact with TLVC about administering the grant.

6. **Environmental Grant Coordinator Update**
   - Kara Lubold will be the new Coordinator starting April 29th. She will assume CAP coordination duties and write grants. Kara was previously the Executive Director of The Lebanon Valley Conservancy.

7. **Next Meeting**
   - May 2, 2024 at 9:00am

Appendix 3: Letter of Support for NFWF Grant via POWR

Mr. Jake Reilly, Program Director
National Fish and Wildlife Foundation, Chesapeake Bay Fund
1133 Fifteenth St. NW
Washington, DC 20005

Re: Project Proposal for the Pennsylvania Organization for Watersheds and Rivers Project: Direct Strategic Planning and Technical Support to Community-based Partners for Watershed Restoration Action

March 25, 2024

Dear Mr. Reilly:

I write on behalf of the Quittapahilla Watershed Association in support of the grant application being submitted by the Pennsylvania Organization for Watersheds and Rivers (POWR) for funding under the NFWF Small Watershed Grants Planning and Technical Assistance Grant for implementation of its Direct Strategic Planning and Technical Support to Community-based Partners for Watershed Restoration Action project.

The Quittapahilla Watershed Association is a small, non-profit organization whose mission is to protect and improve the water quality in the watershed. The group, which includes conservationists and other local activists, has undertaken dozens of projects funded by state and federal grants to improve the watershed and educate its citizens, including an extensive long-term water quality monitoring program. Our efforts help ensure healthy local waterways and a positive future for the Chesapeake Bay. We work with other partners in the watershed such as the county conservation district, the local chapter of Trout Unlimited, and the Swatara Watershed Association.

While we have some technical knowledge and organizational and project management skills, we are a very small all-volunteer organization and would benefit greatly from the direct and targeted support of a consultant to guide our efforts to develop a strategic plan that will include elements related to water quality data management and interpretation, communication, and outreach, as well as volunteer recruitment and retention. We are excited to have the opportunity to translate our water quality monitoring initiative into a sustained and ongoing approach to informing the prioritization and implementation of new restoration projects.

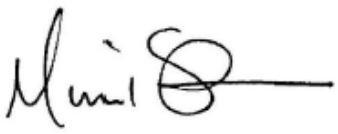
Therefore, we support and commit to fully engaging in POWR's proposed project. We are confident that it will facilitate restoration project prioritization and implementation actions by bringing together local partners, stakeholders, and a strategic planning and communications consultant. This project is critical to achieving goals related to improving water quality and stream health for the benefit of the local communities

while building our internal organizational capacity. POWR's proposed project supports the shared goal of restoring, conserving, and protecting the abundant yet fragile waterways and habitats locally and in the Chesapeake Bay watershed in PA. It is opportunities like this that POWR provides to advance watershed protection that are invaluable to community organizations like ours who are working to restore and protect the "Quittie" and its watersheds as well improve the quality of life for local communities' members.

POWR's leadership and administrative role is a critical component of the success of this project specifically and community-based watershed organizations large and small generally. POWR fills this role effectively, and the Quittapahilla Watershed Association fully supports POWR in this role.

For all of the reasons mentioned above, I trust you will give serious consideration to POWR's application for funding support from NFWF's Small Watershed Grants Planning and Technical Assistance program.

Sincerely,



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