November 15, 2019

Dear Data Integrity Workgroup committee members:

The next meeting of the Data Integrity Workgroup (DI) of the Chesapeake Bay Program Scientific and Technical Analysis and Reporting (STAR) will be Tuesday, November 19, 2019. This meeting will be held at the new NOAA Offices in Annapolis, MD (200 Harry S Truman Pkwy Suite 460, Annapolis MD). The directions are on the calendar invitation. Information about the meeting is listed below.

Conference Line: 929-205-6099
Meeting ID: 724-083-180
Webinar: https://zoom.us/j/724083180
CBP calendar web page:
https://www.chesapeakebay.net/what/event/data_integrity_workgroup_november_2019_meeting

The meeting will be held from 10:00 AM to 3:00 PM. A draft agenda is attached. If you have any additions to the agenda, please bring them to the meeting.

Sincerely,

Bruce Michael
Cindy Johnson
DI Workgroup Co-Chairs

AGENDA
Data Integrity Work Group (DI)

New NOAA Chesapeake Bay Program Offices
200 Harry S Truman Pkwy Suite 460,
Annapolis, MD

Tuesday, November 19, 2019
10:00 - 3:00

Action Items:

- ✓ Bruce will ask Chris from Aquatic Information, Inc. to come and give a presentation at the next meeting.
- ✓ Durga will reach out to James Berkley to help edit the Field Audit videos.
- ✓ Dough Chambers will share the USGS Office of Employee Development proposal. He will keep the workgroup informed on how the proposal proceeds.
- ✓ This workgroup will consider submitting a proposal through GIT funding in April to acquire more funding for the Field Audit videos.
- ✓ In the next two to three months if each lab goes through their QAPP, they can form a table on the difference between what they are doing and what is in the QAPP.
- ✓ Durga at the next meeting will go through some of the differences between the QAPP and the lab's methods.
- ✓ Bruce will invite Jeremey to one of the next meetings to discuss Carbonate Chemistry Monitoring for Ocean Acidification.

Announcements, Meetings, Conferences:

- Maryland Water Monitoring Council Annual Conference, Dec 6, 2019. Linthicum, Maryland. Early registration ends on Nov 18th.
- Turning a New Leaf Conference, December 6, 2019. Harrisburg, PA
- Ocean Sciences Meeting, February 16 – 21, 2020. San Diego, CA.
- National Watershed and Stormwater Conference, April 14-17, Austin Texas
- Chesapeake Research Symposium (ChesR20), June 8 – 10, 2020, Annapolis, MD.
- The National Conference on Ecosystem Restoration (NCER), August 2 – 6, 2020. Portland, Oregon.
- World Seagrass Conference & International Seagrass Biology Workshop, August 9 – 14, 2020. Annapolis, MD. Session and Workshop abstracts due December 1, 2019.
- A Community on Ecosystem Services (ACES), December 14-17, 2020. Bonita Springs, FL.

USGS FFY 2019 Record High Flows to the Bay **Michael**

- Impacts on Hypoxia
- Impacts on Living Resources

USGS recorded the highest amounts of freshwater flows for coming into the Bay Water Year 2019 since 1937. When looking at the monthly averages, October, November, and December where in the top 10 so the high flows seen in 2018 during the summer continued into the winter. There was a drought during the summer of 2019, but even with these dry months, there was a tremendous amount of flow for 2019.

The high freshwater flows impacted the salinity levels causing record low salinity levels. The forecasts were predicting a worse than average hypoxia record. They were predicting a fourth worst record, but for the MD portion of the Chesapeake Bay, it was the third worst record. Marjy Friedrichs conducts a daily modeled forecast for the whole Bay which is different from the monitored results collected by DNR during the summer. When this information was overlaid with the monitored results, overall there were similar results.

Oyster deaths occurred in the upper Potomac River and upper Bay associated with shifts in suitable habitat from extended exposure to fresher water conditions. The low salinities also slowed some of the oyster restoration projects in tidal waters. However, reduced salinities suppressed the prevalence of the oyster disease Dermo.

Other impacts due to the freshwater flow is turbidity from the sediment coming down which impacts the submerged aquatic vegetation (SAV). The SAV wasn't as impacted as expected with the amount of sediment that came down from the watershed. In 2018, they were not able to survey all of the Bay due to weather. Satellite imagery was used to fill the gaps of areas not able to get surveyed. In 2019, all the over flights were able to be completed, but using satellite imagery will be continually investigated.

Data Processing and Management – Future Presentation from Aquatic Informatics, Inc.

Chris would like to come and talk to the Data Integrity workgroup due to all of the different agencies and laboratory participants in the workgroup. He would like to discuss what Aquatic Information can offer with data processing and management. Chris already met with Brian Burch at the Chesapeake Bay Program, and it wasn't going to be a good fit with his data. Bruce is hoping the lessons from Chris can help more internal data management for the workgroup members. Next meeting in the spring he might come and talk about pros and cons of going to a different system, and they could customize it depending on the person and system.

Feedback on Transition into the new MDL Procedure **Ghosh**

Durga asked the group for any feedback on the transition into the new MDL Procedure or if anything different needed to be addressed. Jay stated that they cannot collect the filtered parameters on a quarterly basis. He said they took a sample and diluted it down to a range where they could take seven replicates of it. They do not use the field blanks because that is not a part of VA's process. They use what they determine as reagent

blanks. Suzanne commented this is different than what they are doing. She stated that she should look at her field blanks.
Cindy and Laura have been trying out the new MDL process for their drinking water tests, but they are thinking they will stick with the old procedure. An issue with this procedure that they have discussed with EPA is with the standard deviation of the blank's vs the standard deviation of the low standard. The blanks would be more variable ending up with higher MDL b's then MDL s's. They were wondering if anyone had suggestions on how to collect every blank result for the year so that they can use the 99 percentile to calculate MDL b's. Jay asked if they have a centralized control charting program for their laboratory. He stated his laboratory has a control charting program from North West Analytics. It is used as a repository for all of their blanks.
Jay wanted to confirm that MDH had to use the old MDL Procedure for the drinking water test. Cindy commented that they have the option of using the old or new procedure. They went through the EPA audit, and discussed with them this option and how they are having issues with the standard deviation of the blanks.
Laura said with drinking water MDL b's should be less than MDL s's without exceptions. Jay said this sounds contradictory to what is in the MDL procedure. Cindy said it should be stated in the addendum to the new procedure.

Progress on the Training Modules for Field Audits Ghosh
To supplement the Field Audit program, videos were made to show sampling methods for different parameters. Dough Chambers has a nice introduction of the sampling methods used within CBP. Durga has the field videos, but they are unedited. Cindy was able to reach James Beckley who offered to edit the videos.

Doug Chambers submitted a proposal to the USGS Office of Employee Development for funds to develop a training video on how to collect an EWI sample. It seems that USGS wants to support this effort in part. Doug can share the proposal to the workgroup. Doug commented it is tailored towards USGS methods, but those methods are pretty much foundational for Bay monitoring.
Bruce suggested the workgroup submit this proposal through CBP GIT Funding. Bruce asked if he felt the proposal will get fully funded by the USGS. Doug is confident in partial funding but open to additional funding.
Doug Moyer agrees with pulling all the funding possible and presenting this to the CBP. Other funds would strengthen this product. The videos that DEQ filmed are old but may be of use. They just need to be gathered to see if they just need to be edited into a finished product. Then the workgroup would need to figure out an outlet for these video products and have people be able to provide feedback on them.

Bruce asked what the timeframe was for the proposal Doug submitted to the USGS. They are targeting to have this completed by the end of the federal fiscal year.

TOC Discussion Armstrong
Jay asked if people are doing TOC. Nancy said they are doing DOC at the living resource stations, and they do weekly. UMCES does daily. Jay is looking to move to weekly, not daily. Jay asked the question of if the process is maintained for a weekly basis, but the

blanks are meeting the criteria day to day then what is the difference between that and when it is attached to a calibration curve that is run every 24 hours. A trouble he might run into is if the conditions are constantly changing. Also at UMCES, they supply fresh blank water every day, and their salt concentrations are a lot higher because of open ocean.
Suzanne stated there are a lot of different things in the QAPP then what they do. She thinks this is because of a rush to get it published.

Durga asked how frequently Suzanne uses her instrument for TOC. She said a few days a month. Durga also asked if she ran a calibration every time she used it. She said yes. Durga asked Nancy how frequently she used her instrument. She will set up a run every afternoon, and it runs at night. Durga commented that these are different scenarios, but as long as CRMs and CCVs run for each single run at the start, in the middle, and at the end then everything should be covered. Durga stresses that what is written in the QAPP should be what each lab does.

Jay is not looking to change anything at the moment but make an informed decision. They also need to reach out to their customers for their data to make sure they are okay with it before they make a change.

In the next two to three months if each lab goes through their QAPP, they can form a table on the difference between what they are doing and what is in the QAPP. They will send this to Durga. Durga at the next meeting will go through some of the differences between the QAPP and the lab's methods. She will not go through all of them. Cindy mentioned a matrix that Mary Ellen kept in a file that described what each lab was doing and how it was different.

Kristen will send 50 and 51 she has from Bill to Durga to help with the DAITS issues.

Lunch

Carbonate Chemistry Monitoring for Ocean Acidification All
There is more interest is in oyster aquaculture and oyster restoration, so more states are creating taskforces to study and monitor ocean acidification. The CBP has not done a lot with the carbonate chemistry. NOAA stated at a meeting that they are monitoring ocean acidification with investing a few thousand dollars into large buoys. Bruce has been talking with Jeremy Testa, and UMCES has received a few grants to study it. However this is a short-term solution, but they could add this to their current long-term monitoring stations which would mean adding only one out of the four carbonate chemistry parameters because everyone already collects pH.
Bruce asked if MDH does total alkalinity. They said yes.
If MD collected carbonate chemistry at every station, it would be $65,000 for all year long, but need to evaluate where they need it.
Jay asked if Bruce would want a filtered or an unfiltered sample. Bruce said he would need to talk with Jeremy. Jeremy thought he could work with CBL and what alkalinity they are already collecting. Bruce said he would like to move forward and find funding

with an entire bay wide effort because no state has stepped up to offer funding for it.

The main problem Nancy has had with doing TIC and carbonate alkalinity is it is lower than total alkalinity. She has also had trouble with her CRM picking up CO2 in an unopen bottle.

Bruce asked if it would be helpful for Jeremey to come in and talk about the process and analysis. The workgroup agrees it would be helpful since he knows more about the topic and what would be needed.

Coordinated Split Sample Program

- August 2019 Mainstem Results **Mallonee**
- June and September 2019 Tributary Results **Mallonee**

For the Mainstem Results, VIMS was a little higher for the PC Split Sample, and they didn't have the May concentration. Suzanne mentioned that they get them, but she thinks there was an issue.

Mike needs to get in contact with Katie Kline of Appalachian for the Tributary Results.

Blind Audit Program Update **Frank**

USGS Reference Sample Update **Sullivan**

For Nitrogen Low Concentration, the NWML lab had a very high z score. For Nitrite and Nitrate High Concentration, Fairfax z values are higher than satisfactory. Since Bruce is going to talk to Fairfax Department of Public Works, Jay suggested Bruce ask them what is their normal load. For most of the parameters, the labs are doing well.

EPA Chesapeake Bay Program Budget for Monitoring **All**

Both the house and senate have approved an increase in the CBP budget. Historically $73 million is given to the CBP, but the approved increase is to $83 million.
The workgroup asked where the increase is going? Bruce stated he is pushing for an increase in both MD and VA for the monitoring budget because there has not been an increase in about a decade. MD will probably use the extra money to aquire more stations and more cruises. They want to be more robust so that is why an increase is needed.

As long as there is a continuing resolution, there is no budget so there will be no further details until a budget is decided. Bruce and Cindy have been in contact with Peter Tango, the CBP Monitoring Program Coordinator, to discuss getting additional funding for the Monitoring Program through this increased CBP budget.

Topics for Next DI Meeting **All**

Labs are going to send methodology points to Durga where they are seeing discrepancies from the QAPP. Durga will discuss a few of these in the next meeting.
Bruce will ask Jeremey to discuss ocean acidification, but this presentation might wait for the June meeting at CBL.

Bruce will ask Chris from Aquatic Information, Inc. to come and give a presentation at the next meeting.

Next meeting in late March, in VA.

Participants: Bruce Michael, Mike Mallonee, Durga Ghosh, Breck Sullivan, Cynthia Stevenson, Laura Phillips, Betty Niekirk, Doug Moyer, Dough Chambers, Tammy Zimmerman, Kevin Mingo, Kathy Knowles, Becky Monahan, Caroline Donovan, James Shallenberger, Nancy Kaumeyer, Suzanne Doulton, Jay Armstrong, Cindy Johnson, Kristen Heyer, Ruth Cassilly