

Stakeholder Meeting #2
2018 Assessment Methodology Review
Thursday December 15, 2016 1:00 pm to 4:00 pm

- 1:00** **Welcome and Introduction**
- 1:10** **Presentation: “An Evaluation of Continuous Monitoring Data for Assessing Dissolved-Oxygen in the Boston Mountains” by Billy Justus and Luke Driver with USGS**
- 1:30** **Presentation Question and Answer**
- 1:40** **Break**
- 1:50** **Discussion of Continuous Monitoring Data**
 3.2.1 Tiered Approach to Qualifying Data
 6.2 Turbidity
 6.3 pH
 6.4 Dissolved Oxygen
- Discussion of Assessment Methodology Sections**
- 3:00** **Break**
- 3:10** **Discussion of Assessment Methodology Sections**
- 3:30** **Outstanding Topics and Future Discussions**
- 4:00** **Dismiss**

Our discussions today will work through the following Assessment Methodology Sections based on input received during the listening session period. We will work through as many sections as possible today and pick up at the next meeting.

6.9 Nutrients Assessment
5.1 Biological Integrity
6.6 Bacteria

**Assessment Methodology Stakeholder Workgroup
MEETING MINUTES
1 December 2016, 9:00am-12:00pm
ADEQ Commission Room**

Stakeholders present: Caleb Osborne (ADEQ), Ryan Benefield (ANRC), Colene Gaston (BWD), Stan Suel (AWWMA – Wastewater), Randy Easley (AWWMA – Drinking water), Jack Critchner (Arkansas Municipal League), Teresa Turk (BRWA), Bob Allen (Arkansas Canoe Club), John Pennington (BWA), Alice Andrews (Ozark Society, sitting in for David Peterson), Darcia Routh (ADH), Arnold Hameister (Arkansas Agriculture Department), Luke Driver (USGS), Justin Stroman (AGFC), Melissa Lombardi (USGS), Mike Armstrong (APPP), Jim Malcolm (AEF), Vince Blubaugh (AEF), Shawn Hodges (NPS), Matt McNair (ADPT), Mary Barnett (ADEQ), Dara Hall (Arkansas Attorney General’s Office), Sarah Clem (ADEQ), Selena Medrano (USEPA, phone), Teri Nehls (NRCS, phone), Tim Snell (TNC, phone), Debbie Moreland (AACD, phone)

9:08-9:25 - Sarah Clem – Introductions and Welcome Presentation

9:25-9:38 - Questions following presentation:

RYAN BENEFIELD – Asked if the 2016 Assessment Methodology that was used during the 2016 biennial assessment was mutually agreed upon between EPA and ADEQ.

SARAH CLEM – Replied the use of that particular language [mutually agreed upon] was not used and do not know that EPA would use the particular language “mutually agreed upon.”

RYAN BENEFIELD – Asked if there were unresolved comments from EPA from the last one 303(d)/305(b) submission.

SARAH CLEM – Replied that there were some from Stacy Dwyer.

MARY BARNETT- Commented that Stacy Dwyer’s comments were not included in the stakeholder packet.

COLENE GASTON – Asked Mary Barnett what the differences were in the email sent out yesterday, called “revised compilation”, compared to the version that was sent out previously.

MARY BARNETT – Replied the revised document includes ADEQ’s revisions and some comments that were previously included under general comments, but after further consideration those were moved under specific sections. It was also noted that a request has been submitted to update documents on the website.

MIKE ARMSTRONG - Asked what the expectations were for the group. If it was to make recommendations in regards to content and whether ADEQ was looking for a consensus from the group.

SARAH CLEM - Replied that ADEQ is trying to capture the opposing views and recommendations that will then be reviewed internally and presented to the Director to make a final decision.

MIKE ARMSTRONG – Inquired whether the stakeholder workgroup was expected to discuss changes in depth considering there are only two dates completely set for the workgroup, as the January dates are considered tentative.

SARAH CLEM – Replied that the group is expected to “dig in”.

COLENE GASTON – Expressed concern about the ambitious timeline and inquired if there could be a process to submit written input after this meeting, such as through email, given that a lot of the issues raised may need to require further consultation or literature review before making a sound decision.

SARAH CLEM – Replied that there was time allocated to revisit those in the agenda.

ALICE ANDREWS – Requested reiteration that email was the preferred way to provide additional comments.

SARAH CLEM – Replied “yes, please”.

RYAN BENEFIELD – Commented that before going through each section it would be important to see the comments provided from EPA in order to note those to ensure we aren’t wasting time changing things that EPA will not accept.

MARY BARNETT – Made copies of Stacey Dwyer’s March 10, 2016 draft review of the 2016 303(d) list and provided them to the stakeholders.

9:38-9:50- Addressing: FORWARD

SARAH CLEM – Explained that groundwater is not included in the Assessment Methodology because Reg. 2 only specifically addresses surface water. It was also noted that if it comes to the surface, such as from a spring, then those criteria would apply.

RANDY EASLEY – Noted that in lakes and reservoirs there is often significant input from groundwater, not necessarily from a spring, but contributions from groundwater. The question was then brought up about how removing that term would affect pollutants that might still migrate to the surface water.

SARAH CLEM – Explained it is just an explanatory sentence. ADEQ is monitoring the groundwater, although not comprehensively, but we try to monitor certain aquifers, such as the Fayetteville shale, on a roving basis.

RANDY EASLEY – Reiterated that his point was just that it shouldn't be excluded from needing monitoring.

COLENE GASTON – Commented that releasing the 305(b) report simultaneously with the 303(d) report would help address some concerns about groundwater information.

SARAH CLEM – Replied that ADEQ hears those comments and the Planning section is considering how to logistically respond to these comments.

TERESA TURK – Questioned whether excluding this term [subsurface] changes anything that ADEQ is doing or has been doing in the past?

SARAH CLEM – Replied “absolutely not”.

JIM MALCOLM – Noted 30 minutes were spent on the first sentence and it was unnecessary to answer every single question or comment brought up in these meetings, that compiling to address later might be a better approach.

9:50 – Addressing: 1.0 ASSESSMENT BACKGROUND COMMENT

SARAH CLEM – Commented “I assure you we are following those rigorously” in regard to the Assessment Methodology being in accordance with 40 CFR Parts 122, 130, and 131.

9:5-10:15 – Addressing: 2.0 INTEGRATED REPORTING CATEGORIES

SARAH CLEM – Noted the commenter is concerned ADEQ isn't adequately categorizing impaired waters. It was explained these categories are provided by the integrated reporting guidelines by EPA. While in the past ADEQ has called them 5a, 5b, 5c, etc., which we could go back to but, the TMDL Prioritization is directly from EPA and has been done this way by ADEQ for over a decade.

MIKE ARMSTRONG – Explained he thought ADEQ had created it. Mentioned the definitions are a bit vague and leaves ADEQ with a lot of discretion. It was also noted it would help if there were descriptions about how priorities are assigned. The point was brought up that an outside viewer questions when ADEQ is going to address these (i.e. develop a TMDL) issues since descriptions are very general.

SARAH CLEM – Requested clarification that some description of a protocol for when a TMDL will be developed is what is necessary.

MIKE ARMSTRONG – Replied “yes” and mentioned he can see the commenters problems and a little more transparency would be helpful.

SELENA MEDRANO – Commented the 2016 Integrated Report Guidance p. 63 might help explain; however, timelines for states are going to be dependent on funding.

SARAH CLEM – Mentioned the intent of assigning a medium or low priority is to address a listing with an effluent limitation or a permit.

DARCIA ROUTH – Suggested a simple clarification with a cited reference would really help here and throughout the whole document.

MIKE ARMSTRONG – Reiterated that the real issue is it seems to put waterbodies in a limbo state, which gets to the core of antidegradation and the fact that ADEQ can’t leave issues unresolved indefinitely. That’s what needs to be corrected.

RANDY EASLEY – Suggested it would be beneficial for ADEQ to include hyperlinks to referenced documents.

TERESA TURK – Mentioned a better description of each priority is necessary, as “Truly impaired” seems misleading since they are all “truly impaired” if in Category 5.

RYAN BENEFIELD – Stated in defense to this language, just because something is assessed as impaired, doesn’t necessarily mean it is impaired, because the process is flawed due to sampling frequency. But it still comes down to TMDL prioritization. There are 13 years to get a TMDL done once a waterbody is listed. He also noted he would expect ADEQ to decide a TMDL is necessary if after one cycle a permit limit does not result in the delisting for impairment of concern.

SELENA MEDRANO – Noted Ryan is correct, that the prioritization is specifically for TMDL development over the next two years.

MIKE ARMSTRONG – Mentioned that only clarification is then needed, as it currently leaves the impression things are in limbo.

SARAH CLEM – Noted it was a good recommendation.

TERESA TURK – Commented the Ozark River Society had recommended a hierarchy for prioritizing be included, as it seems like a Tier III designated waterbody should get preferential treatment for a TMDL.

COLENE GASTON – Seconded this idea and stated she believes drinking water sources should receive a higher prioritization.

JOHN PENNINGTON – Commented that just because something shows up as impaired for two years doesn't mean it really is. Seconded Ryan's earlier comments that an impairment listing could be due to the number of samples collected. An example was given about Beryllium impairment on Beaver Lake that showed up for a few years, but stated it was ephemeral. Mentioned that maybe it really was impaired or but maybe it wasn't, but the reason it was listed was due to not enough data.

SARAH CLEM – Mentioned the reason for the beryllium listing was due to the WQS changing. Also noted that the designated use for dissolved oxygen could suggest the aquatic life designated use is impaired; however, you can have situations where a biological survey would reveal the aquatic community is fine even though the dissolved oxygen isn't meeting WQS.

JOHN PENNINGTON- naturally occurring issues, we don't always know the difference between what is naturally occurring. According to a healthy dataset, just because something shows up as impaired, doesn't mean it actually is.

10:15-10:25 - Break

Note: Sarah Clem left for remainder of meeting and Mary Barnett took her place.

10:25-10:29 - Addressing: 2.0 INTEGRATED REPORTING CATEGORIES (cont..)

SHAWN HODGES – Reiterated that Selena's reference to the IR guidance seems to answer a lot of these questions, so if that could be shared to the group before the next meeting that would be helpful.

10:29-10:52 – Addressing: 3.2 DATA QUALITY CONSIDERATIONS

MARY BARNETT – Mentioned there were questions during the 2016 comment period about how ADEQ data are used compared to how outside data are used. She clarified ADEQ looks at data as a whole package if multiple entities are sampling in the same reach, so ADEQ is trying to clarify as this section didn't seem to properly address that beforehand.

3.2.1 Tiered Approach to Qualifying Data

JIM MALCOLM – Noted as a general comment for 3.2, need to make sure considerations are really clear and statistics are sound since permit limits come

out of impaired listings. Regarding data quality, mentioned there is a basic premise of making decisions that data are qualified beforehand and the discussion is really light in terms of precision and accuracy of QA/QC data that are allowed. Stated some document out there needs to have clear reference of data review before a lot of this is done, meaning listed as impaired. Also mentioned there is a lot of very subjective wording in this section that needs to be better specified.

RANDY EASLEY – Agreed with Jim and noted there are some concerns there are a lot of data ADEQ doesn't use, so there would be great to have some clarity of decisions that are made to utilize data or not.

MARY BARNETT – Replied ADEQ requests a QAPP when requesting outside data.

JIM MALCOLM – Commented that the existence of a QAPP plan is one thing, but then there needs to be validation of the data. The "validation process" needs to be better described.

COLENE GASTON – Mentioned there is a role for unqualified data to be utilized, and we have to recognize how much data can practically be collected. Mentioned she wouldn't want the message to go out that some data, citizens data, are not even looked at and that non-qualifying data should be used to some degree.

MARY BARNETT – Noted ADEQ agrees there will be some useful data that don't meet requirements but still indicate a problem, and as resources allow ADEQ does further studies to address those.

JIM MALCOLM – Commented he wouldn't advocate data be thrown out, but it could be used as a general screening; however, quantitative review of data needs to be clear.

RYAN BENEFIELD – Mentioned that data collected for a particular purpose of a study isn't always representative of a particular stream.

MARY BARNETT – Replied "that is why we want to clarify" this section.

MIKE ARMSTRONG – Commented (in regard to Table 1, Tier IV) that sampling frequency is important, but acknowledges ADEQ doesn't want a rigid sampling regime be required. However, if the study design is focused on capturing infrequent events, there is a greater possibility of type 1 and 2 error. It was noted that bimonthly sampling for assessment decisions should never be used according to an Arkansas Public Policy Panel white paper by Burkholder in 2016; at minimum monthly sampling is necessary as the sample number is going to dictate outcome.

MARY BARNETT – Replied ADEQ can look into that.

MIKE ARMSTRONG – Responded he didn't have a specific recommendation to make it better, but maybe a sampling design based on probability of flows.

Maybe a statistician should be consulted to determine the amount of uncertainty when using particular data.

COLENE GASTON – Asked if ADEQ will make all the data available utilized for assessment purposes on our website.

MARY BARNETT – Replied that although it is something we are trying to address, we don't have a clear path at the moment and might just have links to particular spreadsheets.

SHAWN HODGES – Recommended ADEQ incorporate the use of continuous data for 2018.

MARY BARNETT – Responded that was definitely one of the main topics last year; however, we don't quite know how to handle that in the confines of our current assessment methodology.

MARY BARNETT – Mentioned it didn't seem we had quite wrapped up whether quarterly or bimonthly is adequate, so commented that we would delve into that further and provide information on the validity of that.

TERESA TURK – Recommend a statistician look at minimum number of samples required for a tight coefficient of variation. The number of samples is way inadequate.

MARY BARNETT – Responded we could definitely look at how other states review those.

JIM MALCOLM – Commented that Table 1 is a great example – as there is not a quantitative term in it (likely referring to high, moderate, low precision and sensitivity), which makes it impossible to know when to switch from row to row. Mentioned the information is likely out there, and Table 1 wouldn't even stand up if ADEQ were reviewing a QAPP.

10:52-11:03 – Addressing: Sections 3.2 through 3.7

MARY BARNETT – Noted the purpose of those sections being in here was that ADEQ is trying to clarify these.

STAN SUEL – Asked if these comments were only distributed yesterday.

MARY BARNETT – Responded they were sent a week earlier, as an attachment (second document).

RYAN BENEFIELD – Asked if the stakeholders were going to be able re-evaluate these after ADEQ makes their changes, and commented that making sure an adequately spread out sample population be required is important to ANRC.

MARY BARNETT – Responded that at end of this stakeholder group all of the recommendations will go out for public comment.

RYAN BENEFIELD – Asked if stakeholders were going to get to discuss the changes, and mentioned if ADEQ were to change it to weaken the data considerations, he would want to comment.

MARY BARNETT – Replied if stakeholders agree a section needs to be revised or not, we do want that input.

RYAN BENEFIELD – Responded that it's not that they necessarily agree it needs to be changed, but concerned with how it will be changed.

MARY BARNETT – Replied our intent would never be to weaken it, just to clarify, for example, that data needs to be evenly distributed.

JIM MALCOLM – Suggested maybe the best way to approach it would be to identify if organizations had issue with how sections are written or not.

RYAN BENEFIELD – Noted the ADEQ comment just says ADEQ will re-evaluate it, but ANRC would rather work through those issues rather than through a formal public comment to a sister agency.

MARY BARNETT – Replied will have to talk with some others at ADEQ about that and noted we don't want to make a commitment we will have that out in a certain time period.

COLENE GASTON – Agreed it would be nice to see that information if possible, but mentioned a danger needs to be recognized that if ADEQ is *very* specific in requirements there is a danger of never having data that qualifies. It's necessary to consider the finances and availability of how data can be collected by agencies and organizations.

MARY BARNETT – Assured that ADEQ's intent is not to make it more cumbersome.

MIKE ARMSTRONG – Acknowledged the goal here is to have representative data, but need to determine if design is adequate. Currently very general description of how one moves from one tier to the next. Also need to acknowledge variation in a dataset as sampling should mimic natural variability of the system. If it doesn't then you have a high chance of false positive or false negative. Statistical review should help address whether we are capturing the infrequent, but significant events adequately.

11:03-11:13 – Break.

MARY BARNETT – Clarified the group would like further clarification of specific changes to be addressed in these sections and stated Planning would have an internal discussion about that and let stakeholders know.

11:14 – Addressing: 3.7 ADEQUATE DATA SETS FOR ATTAINMENT DETERMINATIONS

MIKE ARMSTRONG – Stated we can move on as they are the same comments as before.

11:15-11:17 – Addressing: 3.10 WQAR

MARY BARNETT – Noted this section needs some updates based on standards revision and any changes in the document will need to be made in our assessment program.

TERESA TURK – Stated she could not find any reference to that program and asked what parameters are used, is there a citation, and whether other states are using it.

MARY BARNETT – Replied that at this time nothing is out there on our website discussing the WQAR program. Explained it was used in the 2014 and 2016 cycles, it is used by ADEQ only and currently only accepts ADEQ data, but we are working on getting it to accept outside data.

TERESA TURK – Asked for clarification whether we can't assess outside data or whether it has to be done by hand.

MARY BARNETT – Replied we still receive outside data and look at it by hand.

TERESA TURK – Noted it would be helpful to provide a document about WQAR.

11:17-11:25 – Addressing: 4.1 ANTIDegradation

TERESA TURK – Stated there was clearly a deficiency the antidegradation policy and asked whether it was a priority of ADEQ's to be added in this cycle.

MARY BARNETT – Replied we do have the Antidegradation policy in Regulation 2. And EPA has provided additional guidance (2015, 40 CFR 131 Revisions, 80 FR 51019).

TERESA TURK - Asked whether anything besides EPA's recommendations would be added.

MARY BARNETT – Responded she thought details could be added here if they aren't contradictory to Reg. 2.

TERESA TURK – Replied the regulation doesn't really say much, but BRWA is asking for more procedures to be put in place.

RANDY EASLEY – Asked what the context of the EPA guidance was.

MARY BARNETT – Responded it was a nationwide policy, not specific to Arkansas.

COLENE GASTON – Asked if the EPA guidance could be made available.

ALICE ANDREWS – Requested more information regarding ADEQ’s lack of numeric criteria.

MARY BARNETT – Replied the addition of numeric criteria would be handled under the triennial review of Reg. 2.

MELISSA LOMBARDI – Asked if there any way to add things specific to T&E species when assessing biological integrity, such as community or population assessments, when assessing aquatic life designated use.

MARY BARNETT – Replied we could work towards that

STAN SUEL – Back to antidegradation – Asked whether the stakeholders were provided that information from EPA and asked if what ADEQ has currently meets EPA’s requirements for antidegradation.

MARY BARNETT – Replied “yes it does”.

JIM MALCOLM – Commented that by not just referencing some of these priority documents, ADEQ runs risk of contradicting, so if may be better off to just reference those documents.

11:25-11:35 – Addressing: 5.0 General Standards

MARY BARNETT – Inquired whether there were any thoughts on how an assessment methodology could be developed to address Reg. 2.402 - nuisance species.

MELISSA LOMBARDI – Commented other states have likely developed something similar and mentioned this would be important to USFWS for this to be added.

JOHN PENNINGTON – Commented there needs to be a distinction to something that would be attributable to point or nonpoint source rather than to other anthropogenic disturbances.

MIKE ARMSTRONG – Mentioned the state of Arkansas does have an aquatic nuisance plan that has been signed off by the governor. Referencing the current plan may be suitable. Coming from AGFC, realizes the impacts of nuisance species but has always been leery of saying it is a source of pollution, although some say it is a source of biological pollution.

DARCIA ROUTH – Brought up the prevalence of cyanobacteria and impacts to public drinking water. I know some of this will more appropriately need to be address in triennial review. Referenced the horsehair algae bloom in the Buffalo River this summer as something the drinking water side is concerned with. Mentioned EPA has some pretty low level numbers they have put out in their advisory and there was not a lot stakeholder input before those came out, and drinking water utilities already have a lot of work to provide safe drinking water.

RYAN BENEFIELD – Asked about the other assessments of other macroinvertebrates and fish and whether ADEQ already assess that.

MARY BARNETT- Replied we don't have resources to do biological sampling everywhere.

RANDY EASLEY – Mentioned in relation to HABS, it's really a nutrient issue, so maybe a little point of clarity of how that ties in to other sections would be beneficial.

11:35-11:37 – Addressing: Reg. 2.408

MARY BARNETT – Mentioned we don't have a current assessment for this.

MELISSA LOMBARDI – Commented that from a T&E standpoint, there are primary drivers, such as excessive sedimentation, that definitely has a negative effect on listed aquatic species. Noted Arizona has a great protocol if we need to adapt from theirs.

MIKE ARMSTRONG – Noted he supports what Melissa Lombardi said, sedimentation is one of the leading problems of degraded waters across the US. Stated it is worth looking at Arizona to see if it could be adapted or to help the current assessment methodology for deposited sediment.

11:37-11:50 - Recap

MARY BARNETT – Asked whether anyone else has any additional comments on something already covered.

ALICE ANDREWS – Stated some information would be helpful, on p.18 where discussing the six major basins, etc.... to know how many streams are actually monitored, whether or not they are monitored monthly, are they equally distributed, how are they chosen, etc. Requested more information on that be made available by the next time, as well as more information on the roving network, if that could be expanded on.

JIM MALCOLM – Inquired about Table 6 (p. 24) – how ADEQ ended up with these key parameters to determine attainment of those designated uses. Specifically questioned why secondary standards were being used over primary standards for domestic water supply.

DARCIA ROUTH – Mentioned primary standards were SDWA requirements and things not included in Reg. 2 get put on ADH and water resources.

COLENE GASTON – Commented she had assumed this was not an exclusive list and then inquired whether it was in fact an exhaustive list.

MARY BARNETT – Replied is it a general list.

COLENE GASTON – Mentioned she interpreted this as things that are not removed by drinking water treatment plants.

MARY BARNETT- Noted will revisit some of the topics that we tabled in the December 15th meeting as well as address the assessment of continuous monitoring data.

TERESA TURK – Commented she understood from previous conversations that ADEQ has been working with USGS and whether information on that could be provided beforehand.

LUKE DRIVER – Replied USGS does have some of that data and will be presenting on next time.

TERESA TURK – Inquired if we are going to start again at 5.0 for the next meeting.

MARY BARNETT – Replied we will start with continuous monitoring and then resume with 5.0.