

MINUTES OF MEETING NO. 10
State Water Resources Control Board Division of Drinking Water
Advisory Group for Expert Panel on Direct Potable Reuse
April 8, 2016

Chair Garry Brown called to order the tenth meeting of the Advisory Group for the Expert Panel on Direct Potable Reuse (DPR), held on behalf of the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW), at 10:30 a.m. on April 8, 2016, at Orange County Water District (OCWD) in Fountain Valley, California. The meeting was facilitated by the National Water Research Institute (NWRI).

Advisory Group Members Present:

- Garry Brown, Chair, Orange County Coastkeeper
- Randy Barnard, California State Water Resources Control Board
- Amy Dorman, City of San Diego
- Conner Everts, Environmental Justice Coalition for Water
- Jim Fiedler, Santa Clara Valley Water District
- Julie Labonte, San Diego Regional Chamber of Commerce
- Al Lau, Padre Dam Municipal Water District
- Bruce Macler, U.S. EPA
- Traci Minamide, City of Los Angeles, Bureau of Sanitation
- Keith Solar, San Diego County Taxpayers Association
- Ray Tremblay, Los Angeles County Sanitation Districts
- Francis Spivy-Weber, California State Water Resources Control Board
- Andria Ventura, Clean Water Action
- Michael Wehner, Orange County Water District

Advisory Group Members Participating Remotely from a Public Location:

- Edward Moreno, California Conference of Local Health Officers

Others Present:

- Mark Bartson, California State Water Resources Control Board
- Annette Caraway, California State Water Resources Control Board
- Jing Chao, California State Water Resources Control Board
- Suzanne Faubl, National Water Research Institute
- Serge Haddad, LADWP
- Jeff Mosher, National Water Research Institute
- Adam Olivieri, DDW Expert Panel
- Phil Oshida, US EPA - OGWDW
- Tom Richardson, RMC
- Shannon Roback, UC Irvine
- Toby Roy, SDCWA
- Sherly Rosilela, California State Water Resources Control Board
- Dawn Taffler, Kennedy/Jenks
- Anthony Tew, LADWP
- Jim Vickers, Separation Processes, Inc.
- Tim Worley, AWWA CA-NV Section

- Azita Yazdam, Energy Systems, Inc.

Remote Participants (via GoToMeeting webinar and/or teleconference):

- Con Arrieta, SBMWD
 - Takashi Asano, UC Davis
 - Wendy Broley, CUWA
 - James Crook, DDW Expert Panel
 - Gina Dorrington
 - Tom Hall, EOA Inc.
 - Eric Hansen, SVCW
 - Cindy Hunt, EBMUD
 - Greg Jaquez
 - Alec Mackie, CWEA
 - Peter E. Miller
 - Cyndi Moore
 - Toni Pezzetti, DWR
 - Patsy Root
 - Kevin Ryan, EPA
 - Kurt Souza, SWRCB
 - Peter Wanberg
 - David Williams
 - Erica Wolski, SWRCB
 - Kathleen Yurchak, City of Pleasanton
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1. WELCOME, INTRODUCTIONS, AND REVIEW OF AGENDA

Garry Brown, Chair of the Advisory Group, called the meeting to order and acknowledged members of the public participating via teleconference and webinar. He reviewed the agenda and asked the Advisory Group for comments on the agenda. No comments were offered.

Jeff Mosher of NWRI reviewed the Advisory Group Objective from California Water Code section 13565(b)(1), including the following:

- That the department shall convene an Advisory Group to advise the Expert Panel regarding the development of uniform water recycling criteria for direct potable reuse.
- DDW has asked the Advisory Group to reorganize the recommendations into two categories: those that are specifically related to the criteria and those that are not. The final report to DDW will be organized in this manner as well.
- The final meeting of the Advisory Group will be June 15, 2016, at SWRCB headquarters in Sacramento.
 - The goal of that meeting is to finalize the recommendations for the report.
 - A full draft of the final report will be provided in advance of the meeting for review.
 - NWRI will work with the Advisory Group to get revisions completed for the draft report.

- A template for this report has been developed. Recommendations will be inserted into the report format in the May timeframe.

QUESTION from Jim Fiedler: The final meeting will be in June and the Expert Panel will submit their report in July. The state will issue a public draft in the fall. Should the Advisory Group comment on the report that is released by the state? Do we have a role?

RESPONSE from Mark Bartson: Garry Brown and others from the Advisory Group will attend a September 2016 DDW-sponsored workshop to discuss the Advisory Group. However, DDW does not see a specific need for the Advisory Group to comment officially on the report. It would be useful for individual agencies and organizations to submit comments on the report.

2. REVIEW AND APPROVAL OF MINUTES FROM PREVIOUS MEETING

The minutes of Advisory Group Meeting #9, held on March 3, 2016, were presented to the Advisory Group. A motion was made to approve the minutes. The motion was seconded and approved unanimously, except by those Advisory Group members who did not attend the meeting, and therefore abstained from voting: Keith Solar, Fran Spivy-Weber, Andria Ventura, and Mike Wehner.

3. PUBLIC COMMENTS, INCLUDING ON MATTERS NOT ON THE AGENDA

Toby Roy requested that the Advisory Group continue to allow public comments throughout the meeting.

4. UPDATE ON DDW PROGRESS AND DEADLINES

Mark Bartson, Supervising Sanitary Engineer with the SWRCB Division of Drinking Water (DDW), presented an update on the activities of DDW related to the Expert Panel on DPR. A summary of his presentation is provided below:

DDW Legislative Mandates (Deadlines)

- By December 31, 2016, DDW must investigate and report to the legislature on the feasibility of developing uniform water recycling criteria for DPR [(Water Code section 13563(a)(1)].
- A draft DPR criteria feasibility report is due September 1, 2016, for public review.
- The final DPR criteria feasibility report is due December 31, 2016, to the legislature and to the public.

Report to Legislature Process

- Typically DDW needs to be submit information at least 90 days prior to their deadline.
 - SWRCB Office of Legislative Affairs (OLA) will conduct a review.
 - A review by CalEPA will be conducted.
 - A review by Governor's Office will be conducted.

Keep Board Members informed (i.e., briefings)

Advisory Group Recommendations to DDW

- DDW has requested that the AG provide written recommendations regarding the feasibility of developing regulations that are protective of public health to DDW before June 30, 2016.
- The AG should prioritize issues that are most relevant to the feasibility of developing criteria for DPR.

- The AG should provide rationale for each recommendation. Explain how each recommendation is relevant to the feasibility of developing criteria (for DPR) that is protective of public health.

Advisory Group Meeting Goals

- By end of April 8 Meeting: Final draft of essential “feasibility of developing criteria” recommendations and rationale.
 - Reach general consensus on recommendation content and rationale.
 - Develop final draft recommendations.
- Between April and June meetings
 - Work by Advisory Group committees on revising recommendation language.
 - DDW will review and provide any clarifying questions to Advisory Group via NWRI and Garry Brown, the Advisory Group chair.
- June 15 Meeting (final meeting)
 - Finalize Advisory Group recommendations.
- After June 15 Meeting
 - DDW will review the Advisory Group’s recommendations.
 - The Advisory Group’s report will be included as an attachment DDW’s Feasibility Report.

QUESTION from Mike Wehner: It was mentioned that topics not related to the feasibility of developing DPR criteria will not be given equal weight in DDW’s deliberations. I assume you are talking about topics such as public outreach?

RESPONSE from Mark Bartson: DDW will take the Advisory Group’s recommendations on public outreach under consideration. Part of our process includes briefing our engineers on the Expert Panel’s work and their briefing papers. Our district and regional engineers, who work on potable reuse, will be working on all of these topics.

COMMENT from Jeff Mosher: In the final report to DDW, we will organize the recommendations according to which are related to developing the criteria and which are not. The recommendations that we are reviewing today were compiled by NWRI so you should consider it a “draft.” The Advisory Group should have a say in what the most relevant topics are and they also need to determine that these are in the correct category.

QUESTION from Julie Labonte: At the SWRCB public workshop that will be held in September 2016, will you address the feasibility of developing criteria for DPR and also the regulations for Surface Water Augmentation? Or will these regulations be addressed separately? Is there a need for a public meeting when you release the regulation?

RESPONSE from Mark Bartson: The meeting for the SWA regulations will be separate. But the timeline is similar.

COMMENT from Julie Labonte: The same people will be interested in both meetings. So if you can have them at the same time it would be helpful.

QUESTION from Tom Richardson: As DDW is taking input from the Expert Panel and the Advisory Group for the feasibility study for DPR, are they also following the discussion related to SWA? There are potential influences relative to SWA draft regulation and the DPR criteria feasibility assessment.

RESPONSE from Mark Bartson: This discussion is related to the continuum of DPR that has been discussed by the Expert Panel, which explains how SWA plays into DPR (i.e., a small reservoir) and how the two options are related.

RESPONSE from Randy Barnard: DDW staff is small, so the same people are working on both projects. Everyone is aware of what is going on in both sides.

5. EXPERT PANEL'S PROGRESS ON DPR BRIEFING PAPERS

Adam Olivieri, Co-Chair of the Expert Panel, attended the meeting to provide an update on the Expert Panel's progress on the DPR Briefing Papers. The Panel last met on March 30-31, 2016. The main points from the presentation are summarized below.

- March Panel Meeting Focus
 - Status of Briefing Papers/Chapters
 - Reliability Briefing Paper/Chapter Review
 - Pathogen Monitoring Briefing Paper
 - Chemical Monitoring Briefing Paper
 - Panel Feasibility Report Outline
- Outline of Panel Report
 - Executive Summary
 - Introduction
 - Overview of Potable Reuse
 - Public health Considerations as a condition of Potable Reuse
 - NRC Report on Potable Reuse
 - Defining Tolerable Level of Public Health Risk
 - Recycled Water as a Potable Water Source/Supply
 - Potential Hazards for Potable Reuse
 - Monitoring Potential Hazards
 - DPR System Performance
 - Management Controls
 - Panel Findings and Recommendations
- Feasibility Analysis Potable Reuse Configurations - Example
 - Comparative Approach
 - Tolerable Pathogen Goal: 10^{-4} ppy, annual risk of infection (based on safe drinking water regulations)
 - Relative comparison
 - Baseline: Sacramento-San Joaquin River (Delta) source water quality and IPR alternatives (GWR and SWA)
 - Source Water Supply – reduced environmental buffer (i.e., small reservoir)
 - DPR Alternatives
 - Probabilistic approach
 - Log Removal Values (LRV) criteria for *Cryptosporidium* relative to DPR performance (covers *Giardia* as well).
 - ✓ Discussed use of *norovirus*, but there is a lot of uncertainty surrounding this organism.
 - ✓ They are not as worried about bacteria in these systems.
 - ✓ Unit process performance and mechanical reliability
 - Diagram showing Potential Water Supply Options for Potable Reuse
 - ✓ IPR – Surface Source Water Supply – reduced retention time
 - ✓ DPR – Advanced treated water as approved raw water supply

- ✓ DPR – Advanced treated water as approved finished drinking water
- CDF vs LRV chart – meet 10⁻⁴ risk of infection
 - ✓ Look at different cases to judge feasibility.
 - ✓ Compare back to SDWA goals and say what alternatives are feasible from a performance standpoint.
 - ✓ Interesting part is the bottom – what are the differences here?
 - Panel constructed three alternatives [ideal, best (design 1% of time processes randomly fail), and worst (things vary 5-10% of time)]
 - Modeled these options and shown in chart
 - Need to go back and put in dual trains and practical assumptions.
 - This chart shows we can see the differences in risk within the variation.
 - ✓ Meeting Schedule update:
 - Wrap up Chemical and Pathogen Monitoring sections.
 - Need to complete a full round of editing at the May meeting.
 - June 29-30 will be final meeting of the Panel.
 - July 1-2 a subgroup will work to finalize and submit to NWRI for editing and formatting.

COMMENT from Mark Bartson: DDW will receive the draft final briefing papers in advance of the feasibility report. So DDW staff will see the draft recommendations in the final report.

QUESTION from Mike Wehner: The WateReuse Foundation Project, WRRF 15-01, is underway. Are you waiting for results from that project? The PAC members are reviewing draft write-ups.

RESPONSE from Adam Olivieri: The Expert Panel has received all but one chapter. Each panel member is focusing on the ones that are related to their sections. We are going to use some examples to illustrate what is feasible, but we cannot go through every possible combination.

RESPONSE from Jeff Mosher: We should have that final chapter this week. The EP members have access to all of the WateReuse Foundation final reports. If the WRF has a draft report that's not published yet, the Panel is still getting those too.

6. ADVISORY GROUP DISCUSSION – RECOMMENDATIONS TO DDW

C01: Advanced Treatment Operator Training and Certification

Item 1. Ray Tremblay noted that this is not applicable to Title 22 spreading projects.

Item 2. No Comments.

Item 3. Discussion in Ad Hoc Committee was that to sit for the exam, operators should have both work experience and coursework. A specific threshold was not recommended.

- **QUESTION from Mike Wehner:** Do operators who are already working need to go back and complete the coursework? In the future we want to develop operators who have both hands-on and book knowledge, but if we have someone operating already, do we want to grandfather them in?

- **RESPONSE from Jeff Mosher:** You can recommend that this issue needs to be addressed.

Item 4. Continuing education credits.

- **QUESTION from Keith Solar:** Would everyone need CEUs? What about those who may be grandfathered in?
- All operators will need to complete CEUs.

Item 5. Potable reuse certification is not currently specified in the California Water Code. Requirements for certification should be included as a permit condition issued for each facility.

- **COMMENT from Mike Wehner:** As potable reuse facilities become more regulated by DDW and less by the Regional Board, then you will be able to impose requirements on source protection and other issues.
 - **COMMENT from Randy Barnard:** This recommendation should read “Water Recycling,” not “Water Reuse”.

Item 6. Program should be administered by SWRCB; trade associations may assist with developing the program with DDW involvement.

- **COMMENT from Jeff Mosher:** This is not an interim program; it will just be done in the interim by the trade associations.
- **QUESTION from Andria Ventura:** Why not assume that DDW would oversee this with input from trade associations and other stakeholders?
 - **RESPONSE from Randy Barnard:** We are not funded for this, and we do not know if we will get the funding. That is why the proposal suggests that the trade associations start the effort.
- **QUESTION from Mike Wehner:** Should the Advisory Group make the recommendation for legislation to get passed to allocate the funding?
 - **RESPONSE from Randy Barnard:** I don’t know that you want to advocate for funding. But you can recommend that funding be provided.
 - **COMMENT from Bruce Macler:** This is a complex issue. We do not know if the state will recognize the certification. There is no reciprocity for some programs. That might require legislation to allow this to occur. If AWWA CA-NV sets up a program, can you accept it?
 - **RESPONSE from Annette Carraway:** Reciprocity as it stands applies to regulations as with other states. As a result, we cannot grant it to other associations.
 - **RESPONSE from Jeff Mosher:** I’m not sure it would need to be state sponsored. At any time the state can decide to take this on and take the program over. The discussion point is, does the AG recommend that SWRCB do this now and lead the effort to develop the program? This would be in contrast to what is being suggested here, i.e., having a program developed by trade associations and then the state will determine if they will do the program or not.
 - **COMMENT from Andria Ventura:** We are saying here that SWRCB would ideally manage the program. This is a recommendation and there are always challenges; the funding is a challenge. So we need to respond to that. But if we come up with an

interim process, it's going to be potentially difficult for the state to come back and say this doesn't meet our standards and then change what has already been done.

- **COMMENT from Randy Barnard:** The operator certification process can be developed more quickly if a trade organization begins the process. The industry can build up a baseline for the State to build on. But it's up to the AG to make a recommendation. If the AG recommends that SWRCB does it, only, then it will take longer.
- **COMMENT from Garry Brown:** In the last decade we've seen many industries come up with their own certifications. Every trash hauler has changed their name to "environmental". From the public's standpoint there is a suspicion of industries regulating themselves. This is an important issue because we are talking about public safety. It seems either the state does it or the state enters a partnership. But the state should have a presence.
 - **RESPONSE from Randy Barnard:** That's a good point. We can word it that way.
- **COMMENT from Traci Minamide:** If we are implementing a program right now, and it's something that is put in the permit, then to me it must be recognized by the state. Otherwise any vendor could provide a certification. But what would that really mean?
 - **RESPONSE from Jeff Mosher:** This is not going to occur in permits until there is a certification program.
 - **COMMENT from Traci Minamide:** But once there is a program it must be accepted by the state. An operator cannot just say "I have a certification," and it can be anywhere.
 - **COMMENT from Tim Worley:** You are right to question to validity and rigor of certification programs. This follows a historic pattern. On the drinking water side, the state basically adopted a program based on the certification AWWA originally developed, so this is not new. AWWA is getting ready to spend resources on this.
 - **COMMENT from Andria Ventura:** Not only does it need to be collaboration with the state, but we must collaborate with the industry in developing this. It would be foolish not to include the people who are doing to work. But the State needs to be the lead. What is unique is the trust issue on this particular water source.
 - **COMMENT from Bruce Macler:** The certifications would have to meet the approval of the state. There are issues of how this would get done and how the state would accept this. Certification has to be at the pleasure of the state.
 - **QUESTION from Jeff Mosher:** Does that get back to the issue of reciprocity? The city is saying that they cannot accept it unless it is another state.
 - **RESPONSE from Randy Barnard:** That's where wording comes in. If it is collaboration, I can get on a panel and participate. But if DDW is the lead then I need to get permission first.
- **COMMENT from Julie Labonte:** The problem with DDW is having the resources they need. So maybe the idea is that DDW has to sanction the

program. They need to approve the curriculum and review it every year. This would still require resources, but not as much as to develop the program.

- **COMMENT from Fran Spivy-Weber:** The best example I have is the lab certification. You can use third-party or in-house certifiers. We are trying to get better at this. Randy and I will go back and look at that language and use that. If we do third party, we will not lose control.
- **COMMENT from Andria Ventura:** This is how DTSC did it with the alternatives assessment program.
- **COMMENT from Garry Brown:** I think we should retain the word “partnership.”
- **COMMENT from Bruce Macler:** Wastewater facilities don’t have the kind of requirements that are specified in the drinking water regulations. If you talk to WEF and the practitioners, they are not interested in this.
- **COMMENT from Mike Wehner:** We are talking about content here.
- **COMMENT from Jim Fiedler:** The certification reinforces the need for the training.
- **COMMENT from Fran Spivy-Weber:** Regulation is another component of this.

C02: Phasing of the Potable Use Regulations

Item 1. Include a clause in the SWA to allow an alternative. (If a project does not fit into SWA, then it will fall under DPR).

- **QUESTION from Jeff Mosher:** Will the AG make a recommendation to consider alternatives to the reservoir? This is a question out there regarding the alternatives provision. The current draft does not include an alternatives clause.
- **COMMENT from Julie Labonte:** We understand that clause is not there. This topic will come up during the public comment period after the draft regulation is released. We were looking at a similar model to GW replenishment. We understand there is a difference between Title 17 and Title 22. Having an alternative to propose to the retention time has to do with how to deal with the smaller environmental buffer.
 - **COMMENT from Randy Barnard:** For the AG charge, I don’t think we should include #1. We’re already looking at this on the SWA issue and it’s not necessary to include it here.
 - **COMMENT from Jeff Mosher:** For things that have a surface water barrier, the issue is that the project may get kicked into the DPR category.
 - **COMMENT from Julie Labonte:** Items 1 and 2 address the issue related to the reservoir. It’s unclear at this point whether we would have to wait for formal regulations to do the “one-off” permitting effort.
 - **COMMENT from Randy Barnard:** As it is now, SWRCB we can permit DPR projects on a case-by-case basis.
 - **QUESTION from Julie Labonte:** So you would not need a clause in SWA right now to allow you to permit a project with a reservoir that doesn’t meet the six month retention time?
 - **RESPONSE from Randy Barnard:** The way we are set up now, we can do it. But we can’t do it until after December 2016. We have to wait for the Expert Panel to submit their panel report.
 - **QUESTION from Ray Tremblay:** Adam was talking about the pathogen log removal requirements, but he put up three treatment trains. The question is, how will it work out

with the timing? Anything not covered by SWA will fall under DPR. But the SWA criteria are not in place yet

- **QUESTION from Jim Fiedler:** Is the intent to encourage DDW to give consideration to this projects that may need to move forward in advance of the formal regulations? On a case-by-case basis?
- **COMMENT from Fran Spivy-Weber:** If you put in an alternative approach, then we will get many alternative approach requests.
 - **RESPONSE from Toby Roy:** In fact, what you will get are the same projects that would have been proposed under the alternative, but they'll all be on a case-by-case basis. So why bother to adopt the regulations?
- **COMMENT from Jeff Mosher:** DDW is looking at their current options right now. So the draft is subject to change.
- **COMMENT from Tom Richardson:** A number of agencies would like to move forward with these projects, but they are nervous about moving forward without a regulation and they are concerned they will be considered DPR.
- **COMMENT from Andria Ventura:** I would suggest that you do not play the semantics game with the public. You want people to understand what these are. If you don't want to call it DPR because of a public perception issue, don't do that. Public transparency is key.
 - **RESPONSE from Jeff Mosher:** Andria is right, the concept of drinking treated wastewater is provocative. However, the difference between IPR and DPR is not as big an issue to the public as it may be to us.

ACTION ITEM: Julie Labonte will rewrite Item #1 and incorporate some of the comments that were presented at the meeting. The new version will allow consideration of various pathways etc., and encourage DDW to use that pathway for this project.

Item 2: Reinforce what DDW is already doing.

- **COMMENT from Randy Barnard:** What you are suggesting are things that DDW are already doing. If you want to reiterate it to us, that's fine.
- **QUESTION from Keith Solar:** Did you consider all treatment barriers for all projects?
- **REPOSENSE FROM Randy Barnard:** For a specific treatment, it's almost a cookie cutter off the shelf and we look at them all the same. But we look at the entire project on a case-by-case basis.

Item 3: Incremental regulatory approach.

- **COMMENT from Julie Labonte:** This reinforces the sense of urgency. I'm not a fan of distinguishing between SWA and DPR. Need to further clarify the need for a sequential approach.
- **QUESTION from Tom Richardson:** Isn't the issue to separate that subset? That way they would move through the regulatory process more quickly than flange-to-flange.
 - **RESPONSE from Jeff Mosher:** The Expert Panel does not have anything on that yet.
- **COMMENT from Randy Barnard:** We need to be careful. Item #3 contradicts Item #1. This depends on how it is interpreted and how the legislation is written. If they say we cannot move forward until an Expert Panel approves it, then we can't do anything.
- **QUESTION from Jim Fiedler:** Isn't Item #3 predicated on the Expert Panel saying that the regulations are, in fact, feasible?
 - **RESPONSE from Randy Barnard:** If we have to move forward with formal regulations, right now SWA needs to be reviewed and approved by an EP. How can we tell the public that we wrote DPR without an Expert Panel looking at it? It's even more complicated than the SWA issue. I'm worried about the wording.

C03: Optimization of Wastewater Treatment for DPR

- **COMMENT from Ray Tremblay:** The recommendation is an oversimplification. The wastewater treatment plant and the DPR plant need to function as one unit. DDW already has those same requirements in their groundwater recharge regulations in terms of optimization. At a minimum, what they have is a good start. So I cited Title 22. Brian Bernados' comments are similar to what we heard Dr. Tchobanoglous say.
- **QUESTION from Jeff Mosher:** I don't know if this needs to be dealt with by regulation. DDW already did that for surface water. Does Brian's comment capture anything that's not already in there?
- **QUESTION from Bruce Macler:** I'm concerned with what George Tchobanoglous talked about, including the inconsistency between primary and secondary treatment. Also, the wastewater industry is switching from treatment to resource recovery, including methane for fuel etc. Is that going to be incorporated, this changing wastewater world? If they are not considering this, we should address it. This could have a huge impact on these systems.
 - **RESPONSE from Jeff Mosher:** They may change their treatment for any reason. Resource recovery is just one change.

COMMENT from Jim Fiedler: One factor is that with increased conservation we will have increased loading in these wastewater systems. So it's all part of the discussion, we need to know what is happening upstream of the advanced purification systems. I like the way he articulated this in his write-up.

C04. Research on Emerging Contaminants, including Low Dose Chemical Exposure to COCs/CECs

- **COMMENT from Andria Ventura:** When you are looking at contaminants, what are the potential public health effects? And there are policy decisions.
- **COMMENT from Mark Bartson:** We need something more specific than "study" in the recommendation. It needs to be discussed in the feasibility report. We are hearing the same thing from our board.
- **QUESTION from Dawn Taffler:** Would this open the door that drinking water sources will need to be tested for CECs and report the results?
- **QUESTION from Audience Member:** It may be an oversight in wording, but shouldn't this be in potable reuse water? We know that there are potentially higher levels of CECs/COCs in wastewater than in other sources. But the water coming out of the potable reuse facilities is of higher quality than other source waters. It shouldn't be "wastewater," it should be "treated effluent."
 - **RESPONSE from Jeff Mosher:** It's more than likely that the potable reuse water will be of higher quality than the other source waters.
- **QUESTION from Mike Wehner:** Are we talking about the secondary effluent that is feeding the advanced treatment plant?
 - **RESPONSE from Ray Tremblay:** The SWRCB is already dealing with this; there's a blue ribbon panel. The recycled water policy was adopted in January 2013.

C05. DPR Research Priorities for California

- **COMMENT from Mike Wehner:** There are other processes under way to collect this information and we would like to support those. The survey that is underway will identify what is of the highest priority.
- **QUESTION from Jim Fiedler:** Do we want to use this to inform other foundations like WateReuse Foundation? Should the SWRCB consider other sources?

- **Jeff:** WaterReuse was involved in the State Board's process.
- **QUESTION from Andria Ventura:** Does this happen solely with the board? The prioritization of research topics? Because I was wondering if CalEPA had a part in this.
- **COMMENT:** We should encourage opportunities to work with other water research foundations.
- **QUESTION:** What is the role of OEHHA?
- **COMMENT from Fran Spivy-Weber:** The technologies need to be a component of the research considerations.
- **COMMENT from Jim Fiedler:** There is a lack of innovation in water as compared with other sectors. And there's talk of establishing an office of Water Innovation at the state level. So this is an important issue.

C06. Use of Bioassays to Evaluate CECs and Unknowns in Recycled Water

- **COMMENT from Mike Wehner:** There were several questions on Claire Waggoner's questionnaire regarding bioassays; we will see what the response is.
- **QUESTION from Keith Solar:** Does this conflict with the earlier question on CECs/COCs?
- **QUESTION from Andria Ventura:** Does this help us characterize families of chemicals?
 - **RESPONSE from Mike Wehner:** Potentially.

C07. Building Capacity (TMF)

- **COMMENT from Ray Tremblay:** DDW already has TMF requirements in the GW recharge regulations. There are some sections of SDWA that have a financial component that are not appropriate for GW but that may need to be considered for the DPR.
- **COMMENT from Randy Barnard:** The only change I would make would be to change "recycled water" to "advanced treated" or something similar.
- **COMMENT from Andria Ventura:** Despite SDWA, we have agencies in the state that do not have capacity. We are going to guard against situations where we are causing more problems. How would small systems be addressed?
 - **RESPONSE from Jeff Mosher:** This program is not designed to say "no." It is set up to provide evaluation and indicate what is needed to move forward with a project.
- **COMMENT from Toby Roy:** For small systems it should be a bar that they have to meet to get a project permitted.

C08. Monitoring and Outreach Related to Public Health and Safety of DPR

- **COMMENT from Garry Brown:** This really puts a public face on monitoring. We have to do everything possible to secure the public's trust that this is a safe process. It serves us better to make this public and have sites the public can access.
- **COMMENT from Bruce Macler:** It's about transparency. Some agencies have real-time water quality data available to the public. This isn't so much about doing more monitoring but rather allow the public to access the information.
- **QUESTION from Jeff Mosher:** This is a mix of regulatory requirements and public outreach exposure. Should these be teased apart? Will DDW address CCRs from a regulatory perspective?
 - **RESPONSE from Mark Bartson:** I'm fine with the way it's written.
- **COMMENT from Garry Brown:** I have no problem with this being a part of the criteria. It is essential to the success of the project.
- **COMMENT from Jim Fiedler:** This needs to be incorporated into the context of getting information out to the public. What additional information are we going to give to the public that we are not already including in the information we release. It may be confusing.

- **QUESTION from Andria Ventura:** When it comes to reporting, what's the difference? Isn't this covered under the SDWA under the rule that CCRs need to inform the public about the source of their drinking water? They will need to add recycled water as a source. The monitoring get to the point about criteria.
- **COMMENT from Phil Oshida:** One of the real challenges is the perception of the public that there's nothing in drinking water other than oxygen and hydrogen. The measurements of COCs will cause concern and will need explanation. There is an expectation that you will provide an explanation of what these numbers mean. That's a large issue. We are running into this on a daily basis, trying to explain these numbers. Any time something shows up in drinking water we get questions, even if the level is two orders of magnitude below the level where you would expect to see chronic health effects.

C09. Changes to the Consumer Confidence Report (CCR)

- **COMMENT from Bruce Macler:** To specify requirements for DPR, whatever you deem important to bring forward to the public. It would include baseline stuff and whatever you need to report in case of a failure. Your annual CCR or failure mode public notice; the previous topic dealt with real-time monitoring.
- **COMMENT from Mike Wehner:** The cities don't mention the sources of GWRS etc. They just say "groundwater." A city may have twelve different wells, and they must report the quality from each well.
- **COMMENT from Jeff Mosher:** For a DPR scenario, there would be some information included in the CCR. But if you are saying "all potable reuse," then I'm not sure the recs should be for groundwater replenishment.
 - **QUESTION from Mike Wehner:** It gets complicated. Do you need to reconstruct what was happening 20 years ago if that's how long it takes the groundwater to get to the well where it is extracted?
 - **RESPONSE from Jeff Mosher:** The charge of the group is not SWA, so we're not going to make a recommendation.
 - **RESPONSE from Bruce Macler:** If the SWRCB or DDW decides they should include something in the CCR having to do with surface water that's been augmented with treated wastewater, that's fine. We don't need to say that here.

C10. Permitting for DPR Projects Prior to SWRCB's Finalization of the DPR Regulations

- Should be combined with C02.

C11. Regulatory Approach to Environmental Impacts (i.e., concentrate disposal)

- **COMMENT from Jim Fiedler:** If the ocean is the receiving water, it's not necessarily a problem.
- **COMMENT from Bruce Macler:** Agencies get so siloed. Something could be beneficial to one agency but a problem for someone else. We could go to the regional board level in order to have this discussion.
- **COMMENT from Francis Spivy-Weber:** When the drinking water agencies start putting water into streams, then sometimes that put stuff in that doesn't work. So be careful what you ask for.
- **COMMENT from Bruce Macler:** The brine streams would have a beneficial purpose for some parts of the bay, where the salinity matched and there was a shortage of water.
- **QUESTION from Jeff Mosher:** Is this a state board issue or not? This issue is complex; we can make the recommendation and recognize that we need to chase this down in a separate process.

- **RESPONSE from Fran Spivy-Weber:** The closest example I have is wetlands. We have federal wetland requirements and state requirements that are different. We are working to align those, but it's not integrated. And you cannot make the federal government conform to the state. We are trying to not duplicate efforts and apply for ten permits.
- **COMMENT from Bruce Macler:** When the requirements for arsenic came out, it was difficult to permit the waste stream.
- **QUESTION from Andria Ventura:** Is this regional and is there a pathway for a policy recommendation? It was written into a mercury TMDL that the state, the regional board, and the feds had to discuss who was responsible for what. Is this something we could write in under certain circumstances, "thou shall" coordinate with other entities on the environmental endpoints?
- **COMMENT from Mike Wehner:** Look at selenium. It flows into Newport Bay from groundwater sources in the watershed. Diversion of discharge from dewatering wells into the sewer has been proposed. Those wells can feed into the source water for GRWS, and we can take the selenium out of the drinking water just fine, but now it's going to end up in the ocean. We're below the toxic level but it's still a complication.
- **COMMENT from Fran Spivy-Weber:** I'm concerned about the phrase "integrated approach."
- **QUESTION from Phil Oshida:** Can you move forward with the recommendation that someone look into a way to coordinate this effort? I don't know the words, but you need a mechanism to get there.

N01. Potable Reuse Terminology

- **COMMENT from Julie Labonte:** Randy said that DDW likes the terminology, but they are already bound to keep the terminology that's in the regulations. We need to make sure that what the Advisory Group has done is consistent.

N02: Need for Research/Briefing papers to be Published in Peer-Reviewed Journals

- **COMMENT from Bruce Macler:** It is not feasible to recommend that they be published in peer-reviewed journals. But they can be made available to the public.
- **COMMENT from Fran Spivy-Weber:** Some peer reviewed journals are not very good, and some of the gray literature is excellent.
- **COMMENT from Andria Ventura:** Maybe add "to the degree feasible."
- **COMMENT from Mike Wehner:** NWRI panels provide scientific overview. Like reports that are developed by a project team. There's a number of ways that we can approach this. The Pomona Virus study was not peer reviewed. A number of peer-reviewed publications came out of it though.
- **COMMENT from Jeff Mosher:** According to EPA, the peer review process requires three independent experts to evaluate the work.
- **COMMENT from Phil Oshida:** There is a very cumbersome process that we are using now.
- **COMMENT from Bruce Macler:** In Region 9 the peer review is specific to the nature of the work. If it's for decision making it undergoes one level of review, etc.
- **COMMENT from Jeff Mosher:** If something is published in the peer review literature after the fact then it would be helpful for researchers and other regulators.
- **Note:** Replace "peer review" with "scientific review."

N-03. Communications – Public Outreach

- **COMMENT from Garry Brown:** There has not been a meeting at which we have not discussed this topic. Mark Millan talks about the work he has done, and David Metz was at the last meeting to talk about the public's response to that work. Our point is, instead of trying to reinvent the wheel, MET and WRF 13-02 developed a document that deals with this issue at a state level. It's a comprehensive document developed in 2013. We may want to include this document as an addendum.
 - **RESPONSE from Jeff Mosher:** It's copyrighted so we cannot include it, but we can reference it in the recommendation.
- **COMMENT from Traci Minamide:** I'm not sure that DDW cannot write the public outreach into the regulation. Like for stormwater.
- **COMMENT from Andria Ventura:** But in that case you're trying to get the public to help protect the stormwater. So that's a different issue. The NGO community will have a part in implementing this. I would add something to public outreach.
- **COMMENT from Randy Barnard:** We can't write something to persuade the public to accept a DPR project, because we have to be neutral on that.

N-04. Determining Feasibility of a Project (Triple Bottom Line)

- **COMMENT from Jeff Mosher:** This recommendation is more of a message for agencies.
- **COMMENT from Jim Fiedler:** Disadvantaged communities will need to do this to determine if they are capable of implementing the project.
- **COMMENT from Toby Roy:** I'd remove the reference to "profit" in the rationale. Public agencies don't make a profit.

N-05. Environmental Justice

- **COMMENT from Andria Ventura:** I used the word "study" because I was thinking in terms of research. We need to address these issues down the line; the state needs to look at this. We have the CEQA process for looking at the effects of building infrastructure. We need to understand, are there environmental impacts? This came up with the desalination plant and the effects on the local community. If you look at the areas where water is needed, a lot of those areas in the state are struggling now. We would need to figure out a way to do these projects so that disadvantaged communities will have access to these projects down the line.
- **QUESTION from Garry Brown:** Isn't a big selling point of DPR that you don't need a lake or an underground aquifer?
 - **RESPONSE from Andria Ventura:** Yes, but you have to be able to support the program (with technical, managerial, and financial resources).

N-06. Differences Among Applications of DPR, Ocean Desalination, and Other Source Waters

- **COMMENT from Garry Brown:** The public is going to hear about DPR and desalination, and right now desalination has easier hurdles to clear. When this filters to the legislative staff, it would be a good place to have a discussion to talk about the differences. They are going to be asked to weigh in. There's a role for the feasibility report to discuss what the benefits are.
- **COMMENT from Keith Solar:** I disagree that DPR is always the preferred water source. You do a good job point out the differences between the two. The last sentence in the first paragraph of "rationale" should be removed (it says that DPR should be California's preferred new water supply source.)
- **QUESTION from Andria Ventura:** CalRecycle has a hierarchy on how to deal with solid waste. Why can't SWRCB have a hierarchy that doesn't throw anything out, but recommends

conservation, which water sources are more sustainable in a given situation, etc., to ensure water supplies for the future?

- **RESPONSE from Jeff Mosher:** “Hierarchy” may not be the best word. But perhaps the “pros” and “cons.” It will all be worked out on a case-by-case basis.
- **COMMENT from Andria Ventura:** The advantage of the hierarchy is that it doesn’t take anything off the table. It’s not a policy that says “we would never do ocean desalination.”
- **COMMENT from Julie Labonte:** So you want the state to set the requirements? Every site will be different. The economics are different based on the conditions at the site.
 - **RESPONSE from Keith Solar:** I don’t agree with the hierarchy approach. It speaks to my original objection.
 - **Jim Fiedler:** Garry provides a compelling argument as to why DPR is the preferred alternative. But it comes down to each agency looking at all of the options available.

ACTION ITEM: Garry Brown and Keith Solar will work together on this topic.

N07. Stakeholder Participation in DPR Regulatory Development

- **COMMENT from Ray Tremblay:** A group of key stakeholders participated with (CDPH/DDW) staff informally for development of Groundwater Recharge Regulations. That process could be replicated for DPR.
 - **RESPONSE from Jeff Mosher:** Maybe this should just say “a stakeholder process”
- **COMMENT from Mark Bartson:** There is a value in an informal process and a value in a formal process. We certainly would have a stakeholder process.
- **COMMENT from Jim Fiedler:** This should be combined with N10, where we were talking about the role of the Advisory Group. It would be worthwhile for this group or a similar group to participate.
 - **RESPONSE from Ray Tremblay:** The AG might be too formal, but maybe we want to recommend something between this and the ad hoc approach. The people who wanted to be on this group may not want to participate in something less formal.

N08. Change Legislation Adopted in SB918

- **COMMENT from Ray Tremblay:** This topic is covered in C02. We should combine.

N09. Increasing Public Acceptance and/or Building Support for DPR Projects

- **COMMENT from Ray Tremblay:** I had a meeting on the Hertzberg legislation. I don’t know what process will be out there to get public acceptance. This should be combined with N03. Maybe we should just meld all of the public acceptance pieces into one item.
- **COMMENT from Mark Bartson:** We will always think in terms of public education. There’s a lot of experience with that aspect of outreach.
- **COMMENT from Mike Wehner:** We can get some benefit in communities that have been slower to embrace the possibility of potable reuse.
- **COMMENT from Jim Fiedler:** We could recommend an office of potable reuse. That’s different than water recycling.
 - **RESPONSE from Toby Roy:** I wonder if this belongs in DWR. It’s more bureaucracy to add another office.
- **COMMENT from Andria Ventura:** I don’t want to see the specific idea of the bottled water (DPR demonstration) in there. We were asked to support the bill and we made the decision to stay neutral. It’s hard for an environmental group trying to educate people to drink bottled water. We

also work on other issues related to plastic pollution. While I get that this is part of the discussion, for the sake of consensus, I ask that we don't use that language related to advocating for the bottled water. We get the point of the bottled water and we are not trying to get in anyone's way.

N10. Role of the Advisory Group and the Expert Panel in Developing Criteria

- **QUESTION from Mark Bartson:** Should Garry begin drafting the cover letter so that others can see what the group's thoughts are on this?
 - **RESPONSE from Jeff Mosher:** There will be an executive summary.

N11. Effects of DPR on Environmental Flows

- **COMMENT from Andria Ventura:** I'm working on nutrients in the Delta. When we have competing uses of water, yes there are laws that will make decisions on whether the DPR program is viable, but what does not putting water back in the system mean? Ray and Traci gave feedback on this.
- **COMMENT from Ray Tremblay:** It's a major concern and I've raised this issue at research needs meetings. But there's a process if an agency wants to change their discharge. It's pretty rigorous.

N12. Effects of DPR Projects on Water Rates

- **COMMENT:** Recommendation should be rewritten to say that agencies should include a triple bottom line ("TBL-type") analysis in determining feasibility of a potable reuse project.

ACTION ITEM: NWRI will update the master recommendation file and distribute to the Advisory Group next week.

ACTION ITEM: Lead authors will edit their recommendations to incorporate the changes discussed today, and will submit revisions to NWRI for compilation and distribution to the Advisory Group.

7. UPDATE ON THE STATUS OF THE REPORT FORMAT

The report format is still being developed. DDW has requested that the Expert Panel and Advisory Group reports follow the same formatting conventions so that it is obvious that they are a set. After the Advisory Group members rewrite their recommendations to incorporate the changes discussed today, NWRI will insert the updated recommendations into the report format.

8. MEETING ADJOURNMENT

The meeting adjourned at 3:20 pm. The next meeting of the Advisory Group will take place on Wednesday, June 15, 2016, at SWRCB headquarters in Sacramento, California.