CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD DISCLOSURE FORM EX PARTE COMMUNICATIONS REGARDING PENDING GENERAL
please send your materials to: Kiran.Lanfranchi-Rizzardi@waterboards.ca.gov Use of this form is not mandatory.

1. Pending General Order that the communication concerned: WDR for oil field dischargers to land, Tulare Lake Basin

2. Name, title and contact information of person completing this form: Keith Nakatani, knakatani@cleanwater.org

3. Date of meeting, phone call or other communication: 8/4/16
Time: 10 AM
Location: Rancho Cordova

4. Type of communication (written, oral or both): Oral

5. Names of all participants in the communication, including all board members who participated:
Karl Longley
Denise Kadara
Pamela Creedon
Clay Rodgers
Dale Harvey
Ron Holcomb
Hossein Aghazeynali
Patrick Palupa
Stephanie Yu
Keith Nakatani
Bill Allayaud
Tanja Srebotnjak
Andrew Grinberg
Alvaro Casanova
Tasha Stoiber
Barbara Sattler

6. Name of person(s) who initiated the communication: Keith Nakatani

7. Describe the communication and the content of the communication. Include a brief list or summary of topics discussed at the meeting, any legal or policy positions advocated at the meeting, any factual matters discussed, and any other disclosure you believe relevant. The Office of Chief Counsel recommends that any persons requesting an ex parte meeting prepare an agenda to make it easier to document the discussion properly. Attach additional pages, if necessary.

a. General Orders for oil wastewater disposal pits, including the relevance of CEQA reviews.
b. Irrigation with oil wastewater and the Food Safety Expert Panel protocols.

8. Attach a copy of handouts, PowerPoint presentations and other materials any person used or distributed at the meeting. If you have electronic copies, please email them to facilitate web posting.
Attachments in this email

July 11, 2016

Chair Karl Longley
Central Valley Regional Water Quality Control Board
1020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

RE: Comments on the Tentative WDR General Order for Oil Field Discharges to Land

Dear Chair Longley:

On behalf of the undersigned organizations, we submit these comments regarding the "Tentative Waste Discharge Requirements General Order[s] for Oil Field Discharges to Land" (hereinafter called the Orders). We appreciate the Central Valley Regional Water Quality Control Board (hereinafter the Board) undertaking an effort to prevent ground and surface water contamination from oil and gas wastewater disposal pits. It demonstrates that the Board recognizes that the current practice of disposing of produced water into unlined and open percolation pits is problematic. However, much work remains, as these orders do not fully achieve the stated goals of protecting water quality. Based on the available scientific consensus and available data, the only way for the Board to ensure water quality protection is to prohibit the disposal of produced water into open pits and onto land.

Since our comments were largely dismissed, many of the points below are repeated from our May 27 comments. We are hopeful that the lack of responsiveness to our recommendations was a result of the short amount of time between receiving our comments and the release of the Tentative Orders, and that substantive changes will be reflected in the Orders prior to adoption.

Through its staff, the Board has identified numerous disposal sites, such as the Fee 34, Racetrack Hills and McKittrick facilities, which are known to have issues resulting from historically inadequate oversight and inherently risky activities. Staff inspections of these sites, and in some cases Board decisions have identified leaking or ineffective liners, a massive plume of produced water migrating underground, and the likely migration of chemicals into an aquifer. The Racetrack Hills facility continues operating despite having an unpermitted spray field where

Board staff determined that a plume of contamination is likely percolating into an aquifer, and contaminant build up presents surface runoff risks. All of these facilities continue to operate despite problematic operations. We also recall the Starr Farms/Aera Energy case where a waste pond polluted adjoining irrigation wells. This demonstrated poor track record of operating disposal pits safely furthers our opposition to this method and adds urgency to the Board's adoption of orders that provide real protections for water quality.

We suggest the following recommendations apply generally to all orders and/or to supporting activities and/or documents pursuant to this entire process.

General Recommendations

1. First, the Board should issue emergency orders that mandate the immediate halt to discharge until operators demonstrate compliance with the Basin Plan and the Water Code. To allow discharge to continue while the orders are being developed means that it is likely that facilities are operating in violation of the goals and objectives of these orders. The Board should take a more precautionary approach.

2. We believe the way the Board is proposing to handle CEQA is inadequate. The time to address this shortcoming is now, through the General Order, which is in effect the initial permitting for many of these projects.

   The Orders assert that all existing ponds are all categorically exempt, and for new ponds, the discharger must provide evidence of compliance with CEQA in the form of a certified EIR, Mitigated Negative Declaration, or Negative Declaration. For the latter, the Board should indicate who the lead agency would be in these cases. Is the Discharger complying with CEQA through a local government or through the Board?

   For existing ponds, it appears the Board is proposing to grandfather-in all existing ponds within its jurisdiction. We see this action as having a potential significant environmental impact that must be addressed through the application of CEQA to the General Order before the Board can approve it. Grandfathering in all of the existing ponds has significant implications for air and water quality and for land use. Clearly, some of the existing facilities have impacts on the degraded air quality of Kern County due to emission of VOCs, and the cumulative impact on air and water from the discharges is not being addressed by the Orders. Also, as addressed in a paragraph above, some of the water from the ponds is already reaching groundwater or will reach groundwater and this impact must be addressed.

   We bring to your attention 14 CCR 15300.2(c) (CEQA regulations) which states that a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances. We suggest that using pits, whether lined or unlined, to dispose of industrial wastewater that contains hydrocarbons, heavy metals, large quantities of salts, and various chemicals used in the oil drilling and production process is not a usual circumstance.

Furthermore, 14 CCR 15300.2(b) states that a categorical exemption cannot be used when the cumulative impact of successive projects of the same type in the same place is significant. This could exactly be the case for the situation that these Orders are attempting to address. Without a CEQA analysis as part of these Orders, we do not believe that the Board can find that cumulative impacts are not significant, and therefore the Categorical Exemption cannot be used.

The Board has acknowledged that many of these ponds were never properly permitted, that is, they do not have valid WDRs. Therefore, environmental review either in the form of an EIR of Mitigated Negative Declaration was never done for those ponds. Now, the Board proposes to call them "existing" and therefore "exempt" from CEQA. This appears to be a work-around of the issue of a bona fide CEQA analysis for hundreds of ponds that may have significant environmental effects, individually and cumulatively.

3. The Board must clarify additional situations where discharge to land or ponds is not permissible. The three orders specify general scenarios where discharge into pits may be allowed, however the Board should specify circumstances that do not fit any of the general orders and are therefore not allowed. For example:
    a. The Orders should establish mandatory setbacks from water wells, beneficial use aquifers, surface water ways, homes, schools, businesses, roads, etc.
    b. The orders should prohibit discharge if the Board cannot rule out the presence of harmful chemicals in the wastewater, either as a result of naturally occurring constituents in the formation fluid or because harmful fluids have been used as additives and may be present in the waste stream. The orders correctly prohibit waste from stimulated wells from being discharged to land or pits. However the orders must also consider chemicals related to other oil and gas processes, beyond well stimulation. The California Council on Science and Technology (CCST), has recommended:

> **"Recommendation 4.1. Ensure safe disposal of produced water in percolation pits with appropriate testing and treatment or phase out this practice.**
>
> "Agencies with jurisdiction should promptly ensure through appropriate testing that the water discharged into percolation pits does not contain hazardous amounts of chemicals related to hydraulic fracturing as well as **other phases of oil and gas development.** (Bold added for emphasis) If the presence of hazardous concentrations of chemicals cannot be ruled out, they should phase out the practice of discharging produced water into percolation pits." [1]

[1] California Council on Science and Technology "An Independent Scientific Assessment of Well Stimulation in California" July 2015, Executive Summary p. 8

4. All three of the general orders contain a note, in the "Statutory and Regulatory Considerations" section, on the findings of the CCST study. The Orders correctly state that CCST concluded that produced water from stimulated wells may contain well stimulation chemicals. The findings should also include that CCST concluded that produced water may contain chemicals from other phases of oil and gas production, not just well stimulation. If the orders include findings from that study, the most directly relevant recommendation (which appears above) must be included. We request adding this finding into the "Background Information" section of each of the orders.

5. The Board should expand its inventory of all pits to specify which general order applies to each existing facility, based on the data already collected under previously issued 13267 orders. The inventory should also specify which facilities do not fit any of the orders, based on current information about wastewater quality and the presence and quality of underlying groundwater.

6. The Orders should include enforcement provisions that violations or failure to comply with the orders would result in immediate shut down.

7. The Orders should specify that Board staff or contractors of the Board are authorized to enter facilities without advance notification, to conduct inspections, take water samples and/or conduct other business as needed in order to enforce the orders.

"Information Needs Sheets" Recommendations

1. We strongly object to how the orders handle Resolution 68-16 (State Anti-degradation Policy). The information sheet appears to give blanket license for operators to degrade groundwater up to Basin Plan maximum salinity limits. Under Resolution 68-16, degradation of waters with beneficial uses must be "consistent with maximum benefit to the people of the State." The economic arguments listed in the information sheet are wholly inadequate to make that determination. They do not address anything related to the benefit of discharging wastewater into open pits. If the orders are an attempt to justify oil production benefits to the people of the state, then it must provide an actual cost benefit analysis that considers the many costs oil production, such as degraded air quality, water quality, health impacts and associated medical costs, destruction of farmland, nuisance to neighbors, and contribution to climate. The information sheet of a WDR General Order is not the appropriate venue to make a judgment about the entire oil industry. Instead, operators must conduct an anti-degradation analysis that shows the costs and benefits of a specific discharge if they intend to degrade waters with beneficial uses.

   Additionally, the Anti-degradation section envisions degradation up to the water quality objective. This proposal does not consider other activities that may cause additional

degradation. We object to the Orders' allocating the full assimilative capacity of these aquifers to the oil and gas industry.

2. While we support the collection of significant information as specified in the "Information Needs Sheets", we urge the Board to strengthen the disclosure requirements for chemicals used in each oil field. Without enhanced chemical disclosure, it is impossible to ensure protection of water quality.
    a. Senate Bill 4 (Public Resources Code 3160) established strong and appropriate disclosure requirements for chemicals used well stimulation treatments. The orders should require chemical disclosure requirements that are consistent with the SB 4 requirements for <u>all</u> chemicals used in oil fields where any produced water is sent to disposal pits. SB 4 requires reporting within 60 days of chemical use. We recommend that timeline as opposed to quarterly reporting.
    b. The trade secret provisions in SB 4 (PRC 3160 (j)) should be replicated for all chemicals used in fields where produced water may be discharged to land or pits. Trade secret provisions such as those in SB 4 are necessary to ensure operators do not hide the identities of chemicals that could enter the waste stream, and eventually impact water quality.
    c. Operators should submit additional information about the fate and transport, testing and detection methods, and health impacts of each chemical used. Based on this information, the Board should limit land applications for wastewater that contain certain chemicals as a result of their use in production or maintenance. The following chemical disclosure information should be used as criteria that would prohibit land or pit discharge:
        i. If chemicals are used that do not have established detection methods.
        ii. If chemicals that are hazardous to human health or the environment are used, and cannot be reasonably shown to have NOT entered the waste stream.

Monitoring and Reporting Programs (MRP) Recommendations

We support the robust effort to characterize water quality, detect groundwater impacts and gather information. We recommend the following changes in order to make the MRP's more effective:

1. The MRP's groundwater monitoring section should include more specific requirements about baseline testing in order to measure the quality of groundwater. The baseline testing should occur prior to any discharge for any new or expanded facilities.
2. The orders should specify an approval process for the groundwater monitoring plans that gives the Board the ability to require changes to the monitoring program design prior to approval. This process should be consistent with the current practice used for well stimulation treatments' monitoring plans mandated by SB 4. Until the monitoring plan is approved, discharge must cease.

3. The orders should specify Board staff or contractors' rights to conduct independent monitoring and testing of samples in order to verify accuracy and completeness of operator submitted monitoring results, as well as protocols for requesting split samples and observing sampling collection.

General Order Comments

General Order 1

1. The contaminant thresholds for qualifying for this order must be expanded. Simply using EC, Chloride, and Boron is inadequate. In order to qualify under General Order 1, produced water must contain below safe harbor limits for Proposition 65 chemicals, and also contain below long-term Effects Screening Levels for any other harmful chemical, either those added in production and maintenance or naturally occurring in the formation fluid.
2. It appears that this aspect was weakened since the Administrative draft. The Discharge Specifications were amended to remove prohibitions on discharging organic chemicals, including BTEX as well as a maximum oil and grease concentration. We strongly object to this change and it is exactly the opposite of our recommendation above.

General Order 2

1. The Board must not permit produced water that exceeds Basin Plan limits, or the chemical thresholds described above (in our recommendation for General Order 1), to be discharged onto land or into pits. This change would result in the orders being consistent with CCST's recommendation that produced water containing harmful chemicals not be stored or disposed of into unlined pits or discharged to land.
2. Dust control with contaminated wastewater must also be prohibited.

General Order 3

1. The order does not adequately define "first encountered" groundwater. In order for a discharge facility to qualify for GO 3, the operator must demonstrate that any underground migration from the facility cannot and will not enter groundwater that may have beneficial uses. This analysis should not simply rely on the characterizing the groundwater (or claiming an absence of groundwater) directly beneath the discharge site, but should also consider horizontal migration, naturally occurring or human-made pathways, and changes in groundwater movement that could result from discharge. The operator should have to demonstrate complete isolation/confinement of any fluids discharged on the site. Any such claims must be supported with adequate geologic modeling and verified by the Board with an explicit approval process. Until such approval is granted, discharge must be prohibited.
2. The order outlines a process for de-designating groundwater from beneficial uses. We agree that in order to claim that underlying groundwater is low quality this process must occur. We object to the option of de-designating groundwater with less than 10,000 total

dissolved solids. The 3,000 TDS limit is arbitrary and does not meet federal standards for an Underground Source of Drinking Water (USDW). Additionally, we strongly object to operators being allowed to continue to discharge while that process is occurring. The timeline provided could allow for up to five years of discharge before the denial of a de-designation application. The order must specify that no discharge can occur while the de-designation process is ongoing.

Thank you for the opportunity to provide comments.

Sincerely,

Bill Allayaud
California Director of Gov't Affairs
Environmental Working Group

Dan York
Vice President
The Wildlands Conservancy

Tanja Srebotnjak, PhD
Hixon Center for Sustainable Env. Design
Harvey Mudd College (no logo at top)

Jennifer Krill
President
Earthworks

Jason R. Flanders
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Barbara Sattler
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Paul Ferrazzi
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CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

21 July 2016

Mr. Bill Allayaud and Interested Persons

Response to Letter Concerning the Food Safety Expert Panel and Reuse of Produced Water

Thank you for your letter of 8 June 2016, which expressed concerns regarding both the use of oil field produced water to supplement agricultural irrigation supplies in Kern County and the work of the Food Safety Expert Panel (Panel). Your letter has been distributed to all members of the Central Valley Water Board (Board), and we have provided the letter to the State Water Board's administrative staff for distribution to the State Water Board members.

I am responding to your letter at the request of our Board Chair, Dr. Karl Longley. We appreciate your concerns and recommendations. However, based on the reasons provided in more detail below, at this time Board staff will not recommend placing a moratorium on the use of produced wastewater for crop irrigation and will not recommend rescinding the orders issued to the Chevron/Cawelo Water District and the CRC/North Kern Water District.

As you are aware, water supplies are critically short in Kern County, which is also one of the most agriculturally productive areas in the state. To help meet agricultural water supply needs, produced water of acceptable mineral quality from the oil fields in eastern Kern County has been treated and used to supplement agricultural supplies, reportedly for more than 40 years. The Cawelo Water District project you reference in your letter has operated in essentially the same configuration since 1996 under waste discharge requirements (WDRs) prescribed by the Board. The Board has also required monitoring of these discharges since the WDRs were issued. Though past monitoring did not include all possible constituents that could be in the discharge, the Board recently increased the monitoring and reporting requirements for not only the produced water from Chevron and CRC, but also for all other oil field produced water discharges throughout the Central Valley.

Due to the ongoing drought, decreasing groundwater supplies and an increasing demand for alternative water supplies in the valley, there may be increased interest in using produced water to supplement irrigation supplies. Prompted by recent public concern regarding the safety of this practice, Board staff convened a Food Safety Expert Panel (Panel) to evaluate the risks involved with irrigating food crops with produced water, and to make recommendations regarding how to regulate or whether to prohibit this practice. The Panel includes members from the California Department of Public Health (CDPH) and the California Department of Food and Agriculture (CDFA), which are the state agencies directly responsible for the safety of food produced by California farmers. The members from CDPH and CDFA have reviewed the current produced water data. Based on their review, they do not recommend placing a moratorium on the use of produced water for irrigating crops for human consumption at this time. The Panel will continue to evaluate the data as it is received. If CDPH or CDFA should

determine a moratorium is needed, the Board will take steps to prohibit the use of produced water for irrigation of crops.

Below we provide our detailed responses to the specific concerns listed in your 8 June 2016 letter. We summarize your concerns and then provide our response shown *in italics*:

1. Place a moratorium on new WDR permits for irrigation with produced water.

Your letter states that there is currently not enough information to adequately determine the risks associated with the use of produced water for irrigation. Until it is proven to be a safe practice, you contend that the existing projects should be shut down.

The practice of using produced water to supplement irrigation supplies has been ongoing for more than 40 years, with no information to indicate that there have been any adverse effects to human health or the environment. At this time, based on review of available data by CDPH and CDFA representatives, the Panel does not recommend placing a moratorium on this practice. The Panel is continuing to analyze data and studies, and will make recommendations regarding where additional studies could provide useful information for further evaluating any risks that this practice could pose.

Board staff will continue to evaluate the issues on a case-by-case basis. Their evaluations will be based on site-specific circumstances and conditions. Should additional data or studies evaluated by the Panel or Board staff reveal that the use of produced water poses a significant risk to public health, Board staff will recommend that the Board require the discharges to be modified to eliminate such risks, or will recommend that the Board require these discharges to cease.

2. Ensure an objective scientific review and exclude panel members that have clear conflicts of interest.

Your letter indicates you are concerned that one of the Panel members is a paid consultant retained by California Resources Corporation (CRC) – an entity that you believe has a clear conflict of interest in the research results of this panel. You believe the panel should be composed of individuals without conflicts of interest and who are free of an appearance of partiality. You urge the Central Valley Water Board to follow the model of the California Council on Science and Technology's (CCST) SB 4 Independent Scientific Assessment of Well Stimulation in California and have all panel members disclose financial and conflicts of interests on forms that are made public.

Board staff modeled the Panel composition after the State Water Board's Irrigated Agriculture Expert Panel. Board staff solicited panel members with a wide range of personal and professional experience, because including potentially diverse viewpoints would enable the Panel to provide well-reasoned recommendations to the Board. Although the panel members are affiliated with various organizations, in participating on this panel, they have been asked to contribute their individual judgment to the discussion, rather than simply voice the views of their affiliated organizations, and they have been asked to base their scientific conclusions on an objective assessment of all relevant evidence. Two members on the Panel, Drs. Will Stringfellow and Seth Schonkoff, were members of the CCST independent study group. In addition to the experts on the Panel, Dr. Longley the Board Chair, Denise Kadara the Board

Vice Chair, Assistant Executive Officer Clay Rodgers and Board staff actively participate in Panel meetings and communication to ensure oversight of the Panel and that its activities are properly monitored.

Mark Jones, the panel member specific to your concern, is a toxicologist that was employed by ERM, which was contracted to conduct a study for CRC. He is no longer employed by ERM and recently went to work for the U.S. Army Corps of Engineers. Mr. Jones is an expert in food safety toxicology and his expertise is value added to the Panel. The Board would like Mr. Jones to remain on the Panel provided his new employer will allow him to participate.

3. <u>Ensure a complete data gaps assessment</u>.

A brief summary of the comment is that there are wide data gaps that compromise the ability to make responsible policy decisions. One of the biggest data gaps is the lack of information about the chemical additives that are being used by the oil companies, the volumes, concentrations, and frequency of their use, and their threat to the environment.

Board staff is working to address many of the issues you have raised. In May 2016, the Board issued monitoring and reporting orders under Water Code section 13267 (Orders) to oil field operators that are discharging produced water for reuse on crops for human consumption. The Orders required the operators to submit technical reports by 17 June 2016 that include:

- *All chemicals and additives used in petroleum production, treatment, and transportation processes that generate produced water for irrigation;*
- *The total volume of produced water provided for irrigation since 2014;*
- *The total volumes of chemicals and additives used and the frequency of use; and*
- *A description of each chemical or additive and an explanation of how it has been used.*

The information has been received, is being reviewed by Board staff, and has been provided to the Panel.

In addition, all monitoring and reporting programs (MRPs) developed for enforcement orders, updated WDRs , and proposed in the tentative general orders for Board consideration include requirements to monitor for all chemical being added during oil field operations. Radionuclides have also been added to the monitoring programs.

Information that has been submitted by the oil industry in response to the orders has been provided to the Panel for review. Some responses included only MSDS forms, instead of the specific chemicals as requested. In response, the Board has sent a second 13267 Order requiring specific information be provided. Board staff will pursue enforcement of dischargers that fail to submit the required information.

Some dischargers are claiming that specific information related to their production activities is considered a trade secret, and thus may not be disclosed to the public by the Board. All such trade secret claims will be evaluated and handled accordingly with support from the Office of Chief Counsel (OCC). If OCC determines that certain information is protected as a trade secret, that information cannot be made publicly available, but may still be used by the Board to ensure that the discharges comply with applicable regulations.

4. <u>Develop and implement a strategy to ensure research efforts are adequately resourced</u>.

Your letter states that you are concerned that absent adequate state funding the final product and conclusions may be limited, and skewed by entities that have invested resources in the support of individual panel members. You believe it is critical that funding for these research activities be secured and deployed.

The Panel is not charged with conducting research. However, the Panel is charged with identifying the types of data, information and research that are needed to more fully understand the possible risks associated with the use of produced water for food crop irrigation. While Board staff agree that there are areas in which additional research could contribute to the Board's understanding of these risks, Board staff do not suggest postponing any preliminary recommendations by the Panel until all relevant research is completed.

Drs. Stringfellow and Shonkoff have prepared a draft outline of the studies that will help augment the Board's understanding of the universe of risks posed by irrigating food crops with produced water. Though this draft outline has not yet been reviewed by the full Panel, Board staff note that it contains a fairly comprehensive list of projects and their associated costs. This helps the Board and interested parties as we move forward to fund the research.

The Board has generally required that those who are responsible for discharging wastes bear the burden of paying for any special studies or monitoring efforts needed to demonstrate that their discharges do not violate any applicable water quality laws or regulations. Such studies are conducted with the full oversight of Board staff to ensure the studies are designed properly and reported accurately. In the case of produced water for irrigation of crops, this overview will also include the Panel. The Board is reluctant to advocate shifting the burden of paying for special studies or monitoring efforts from the dischargers to the state. However, Board staff is investigating alternate ways for dischargers to fund additional studies and research to address your concerns. In addition, Board staff is working with the State Water Board and other state agencies and departments to fund studies that will investigate those issues that would ordinarily fall outside of the scope of the Boards' regulatory oversight.

5. <u>Develop independent monitoring protocols for existing projects instead of using Cawelo's limited monitoring scheme</u>.

Your letter states that monitoring must be as comprehensive as possible, and that the quick study conducted for the Cawelo Water District is an example of how monitoring should not be done. Your letter advocates for soil sampling within the project areas over time, and that root crops, such as carrots, be tested in addition to tree and vine crops.

While Board staff agrees there were some missteps in the Cawelo Water District study, staff does believe the study provides useful information. As stated above, the Panel is reviewing existing data, which includes the Cawelo Water District study, and is examining additional study/research protocols and needs. Evaluating existing protocols for monitoring produced/irrigation water, soils, groundwater, and plant/crop testing falls within the purview of the Panel, and we look forward to the recommendations that will be provided by the group.

6. <u>Increase public participation in meetings</u>.

Your letter states that the format of the Panel meetings should be broadened so that the public can interact with the Panel more easily and at much greater length. There should be designated intervals during the meetings where the public can address the Panel with questions or comments, rather than remain limited to comments at the end of meetings. You believe this format will encourage the exchange of ideas and necessary discussion that will facilitate objective, robust outcomes.

We agree that the format of the Panel meetings could be changed to better facilitate public participation. To address this issue, Board staff has arranged for the Center for Collaborative Policy (Center) to provide a professional, technical facilitator to help better manage the Panel meetings. Dave Ceppos, with the Center, is now the Panel's technical facilitator, and has become fully engaged in the process. We will bring your concerns to Mr. Ceppos, who can then help advise the Panel on how to better engage the public while making progress in its actions.

7. <u>Include an inventory of where produced water is currently being used, including use for livestock and aquaculture, as these are food safety issues</u>.

Your letter states that as the Central Valley Water Board is legally required to protect the environment, public health, and all beneficial uses of water resources. You recommend that the Panel broaden its scope to address potential impacts to livestock, aquaculture, and farmworker safety.

The desire to fulfilling the Board's regulatory mission is the key reason why Board staff convened the Panel. Food safety does not fall within the expertise of Board staff, so we looked beyond the Board to convene experts to examine whether the use of blended oil field produced water on crops for human consumption poses a threat to public health.

However, the Panel's primary focus is on food safety. While we appreciate that there may be additional concerns related to the use of blended oil field produced water on crops for human consumption, expanding the scope of the Panel at this time would compromise the ability of the Panel to address its primary mission in a reasonable amount of time. Furthermore, an expanded scope of inquiry would likely require soliciting input from additional experts (adding weeks or months to this undertaking), since the additional issues that you suggest investigating may fall outside the expertise of the Panel as it is currently constituted.

The Board is not ignoring the other issues that may arise regarding the use of produced water. It is anticipated that the Panel will consider a variety of potential exposure pathways within the scope of its work. To address these potential exposure pathways, the Board is working collaboratively with our sister agencies including, but not limited to, the Department of Public Heath, Department of Food and Agriculture, and Department of Fish and Wildlife. For those issues outside of the Board's regulatory purview, Board staff will notify the appropriate regulatory agency.

8. <u>Provide an analysis of potential environmental and health impacts, including occupational health impacts</u>.

Your letter states the use of oil wastewater for watering crops and for groundwater recharge presents a number of potential exposure pathways affecting wildlife, workers, and communities. A comprehensive evaluation of health threats will address each of these routes, including but not limited to, dermal contact, inhalation of volatile components, ingestion of contaminated water, and migration of contaminated dusts. Additionally, this assessment must include assessment of threats from the mixture of constituents present in the wastewater, including degradation and break-down products. You believe the Board should consider having the Office of Environmental Health Hazard Assessment review the evaluation, as they have personnel familiar with the effects of chemical exposure.

Board staff reached out to the Office of Environmental Health Hazard Assessment (OEEHA) and requested its participation on the Panel. To date, OEEHA has not identified an individual to participate on the Panel. We will reach out to OEEHA again. While we have not been successful regarding OEEHA, we have added a new member to the Panel – Dr. Bruce Macler with the U.S. Environmental Protection Agency (USEPA) is a toxicologist and a national microbial risk assessment expert with the Drinking Water Office of USEPA Region IX. We are pleased to have Dr. Macler as part of the Panel.

9. <u>Add groundwater and surface water quality impacts to the scope of the investigation</u>.

Your letter states that potential impacts to groundwater and surface water quality are critical issues, therefore, assessing potential impacts to them should be included. You state the waste discharge requirements for the Chevron/Cawelo Water District and the CRC/North Kern Water Storage District projects set limitations only for arsenic, boron, chloride, sodium, and electrical conductivity for groundwater where produced water is supplied for recharge. This short list of constituents is likely not protective of groundwater and should be expanded to include additional potential contaminants from chemicals additives used in the oil fields.

The Board has been revising monitoring and reporting programs (MRPs) associated with discharges to land, including those that require reporting information related to the use of produced water for irrigation. The new MRPs require dischargers to report on all chemicals used in the oil fields, monitor for a wide range of chemical constituents in addition to all chemicals being added in their discharge, and monitor for the same list of chemicals in groundwater around any areas used to discharge the produced water, such as areas of irrigation and impoundments. While the Board's waste discharge requirements establish numeric groundwater limitations for specific constituents, it is important to note that the waste discharge requirements also require compliance with all applicable water quality objectives (numeric and narrative) contained in the Water Quality Control Plan for the Tulare Lake Basin. Board staff are evaluating the results of the groundwater monitoring and, if needed, will pursue appropriate enforcement actions in accordance with the Enforcement Policy if water quality limits and/or objectives are violated.

Again, we thank you for your letter. We are scheduled to meet with you and your constituents on August 4, 2016 to discuss these matters further. In the meantime, if you have any questions or need additional information please contact Clay Rodgers at (559) 445-5102 or Dale Harvey at (559) 445-6190.

Pamela C. Creedon
Executive Officer

Enclosure: Interested Persons List

cc: Tom Howard, Executive Director, State Water Resources Control Board
John Borkovich, State Water Resources Control Board
Patrick Pulupa, Office of Chief Counsel, State Water Resources Control Board
Stephanie Yu, Office of Chief Counsel, State Water Resources Control Board
Dr. Karl Longley, Chair, Central Valley Water Board
Denise Kadara, Vice Chair, Central Valley Water Board
Carmen L. Ramirez, Board Member, Central Valley Water Board
Bob Schneider, Board Member, Central Valley Water Board
Jon Costantino, Board Member, Central Valley Water Board
Clay Rodgers, Assistant Executive Officer, Central Valley Water Board

Enclosure
Interested Persons List

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