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June 2, 2014

CalEnviroScreen
c/o John B. Faust, Ph.D., Chief, Community Assessment & Research Section
Office of Environmental Health Hazard Assessment
1515 Clay Street, Suite 1600
Oakland, CA 94612

Re: ACWA's Comments regarding the Draft CalEnviroScreen 2.0 Drinking Water Quality Indicator

Dear Dr. Faust:

The Association of California Water Agencies ("ACWA") appreciates the opportunity to comment on the California Environmental Protection Agency's ("CalEPA") and the Office of Environmental Health Hazard Assessment's ("OEHHA") draft CalEnviroScreen 2.0 screening tool ("draft CES 2.0"). As explained below, ACWA has significant concerns with the draft CES 2.0 Drinking Water Quality Indicator and urges CalEPA and OEHHA to take time to improve this new indicator before releasing it as part of the CalEnviroScreen screening tool.

I. INTRODUCTION

ACWA represents nearly 430 public water agencies that collectively supply 90% of the water delivered in California for domestic, agricultural and industrial uses. Many of ACWA's public agency members are entrusted with the responsibility of supplying the public with safe, high-quality drinking water. Ensuring the safety of drinking water supplies by complying with all relevant state and federal standards is the highest priority of these agencies.

ACWA appreciates CalEPA and OEHHA's continued focus on carrying out their duties and responsibilities in a manner that protects and benefits all Californians. CalEPA and OEHHA

have indicated that the draft CES 2.0 has been "primarily designed to assist the Agency in carrying out its environmental justice mission to conduct its activities in a manner that ensures the fair treatment of all Californians, including minority and low-income populations."[1] The draft CES 2.0 differs from prior versions of the screening tool in that it includes a Drinking Water Quality Indicator for the first time. This Indicator is intended to reflect a statewide ranking of census tracts based on a "toxicity-weighted drinking water quality index for selected contaminants."[2]

ACWA has significant policy, technical and process concerns related to the draft CES 2.0 Drinking Water Quality Indicator. ACWA is concerned that the public agencies and other water systems responsible for providing safe drinking water to the public were not consulted in the development of the draft Indicator. Additionally, as explained in more detail below and in the attached Technical Memorandum, ACWA is concerned that the draft Indicator is based on a methodology that does not accurately characterize the quality of drinking water delivered to consumers. Finally, ACWA is very concerned that the draft Indicator does not reflect the critical fact that over 98% of Californians are served safe drinking water that meets all standards established by the federal Safe Drinking Water Act and the California Health & Safety Code, sending inconsistent messages to regulators, water systems and the public they serve.[3]

ACWA encourages CalEPA and OEHHA to carefully consider the policy considerations, technical issues and constructive suggestions outlined below, and to take more time to improve the draft CES 2.0 Drinking Water Quality Indicator.

II. THE DRAFT CES 2.0 DRINKING WATER QUALITY INDICATOR CAN BE IMPROVED WITH INPUT FROM THE WATER COMMUNITY

ACWA understands that CalEPA and OEHHA are proposing to release the final CES 2.0 as early as June 20, 2014, only 14 working days after the June 2, 2014 comment deadline, and less than two months after the initial public release of the draft CES 2.0 on April 21, 2014. ACWA is concerned that this expedited timeline for the review of public comments and finalization of the CES 2.0 will not provide sufficient time to make necessary changes to the draft CES 2.0 Drinking Water Quality Indicator. ACWA urges CalEPA and OEHHA to consider incorporating the Drinking Water Quality Indicator in a future version of CalEnviroScreen, and only after the critical issues identified in this comment letter have been resolved.

ACWA is concerned that the draft CES 2.0 Drinking Water Quality Indicator was developed without critical input from water systems. ACWA and other water community stakeholders did

[1] CalEPA/OEHHA, DRAFT CALIFORNIA COMMUNITIES ENVIRONMENTAL HEALTH SCREENING TOOL, VERSION 2.0 (CALENVIROSCREEN 2.0) (April 2014) ("Draft CES 2.0 Report"), at i.
[2] *Id.*, at p. 31.
[3] California Department of Public Health, SMALL WATER SYSTEM PROGRAM GOAL IMPLEMENTATION PLAN (May 1, 2013), at p. 1.

not have an opportunity to provide input on the development of the draft Indicator prior to the release of the draft CES 2.0 on April 21, 2014. Additionally, ACWA and its member agencies were unable to adequately review the draft Indicator until after the release of the "Draft Methodology for Statewide Drinking Water Quality Indicator for CalEnviroScreen 2.0" document on May 6, 2014. The follow up meeting between CalEPA/OEHHA staff and ACWA member agencies in Los Angeles on May 15, 2014 was very helpful as an additional opportunity to learn more about the draft Indicator. However, at present, significant unanswered questions remain regarding the draft Indicator's treatment of the selected datasets and how the methodology produces its results. Without further input from the water community that is responsible for providing drinking water to the public, the Indicator's results are unlikely to accurately reflect drinking water quality statewide.

III. THE DRAFT CES 2.0 DRINKING WATER QUALITY INDICATOR DOES NOT ACCURATELY CHARACTERIZE DRINKING WATER QUALITY

ACWA is concerned that the draft CES 2.0 Drinking Water Quality Indicator uses its selected datasets in a manner that does not accurately characterize the quality of drinking water delivered to consumers, and relies on a water quality metric calculation methodology that produces skewed results.

a. *The Data Inputs to the draft CES 2.0 Drinking Water Quality Indicator Are Not Representative of Drinking Water Consumed by Californians*

In selecting data sources for the draft CES 2.0 Drinking Water Quality Indicator, OEHHA staff indicated that "[t]he goal was to identify water quality data that are most representative of water that is delivered to residents in a service area."[4] The current draft Indicator does not meet that goal. The draft Indicator's use of the California Department of Public Health's ("CDPH") Water Quality Monitoring ("WQM") and Permits, Inspection, Compliance, Monitoring and Enforcement ("PICME") databases results in an inaccurate representation of drinking water quality. The draft Indicator uses water quality data drawn from the WQM database and matches it with water system and source designation information taken from the PICME database, giving equal weight to all sources within the source type used in the analysis ("treated"/"untreated," or "raw"). This approach is problematic because it does not reflect the actual operational conditions of most water systems; not all water sources in these databases are used equally to produce drinking water, and in some cases, they may not be used at all. More troubling, however, is the fact that for up to 15% of water systems, drinking water quality was characterized using only "raw" water quality data.[5] OEHHA has acknowledged that raw sources

[4] OEHHA, DRAFT METHODOLOGY FOR STATEWIDE DRINKING WATER QUALITY INDICATOR FOR CALENVIROSCREEN VERSION 2.0 (undated) ("Draft Methodology"), at p. 13.
[5] *Ibid.*

are "[s]ources of water that will be subsequently treated,"[6] and that the use of raw water data may "overestimate contaminant concentrations" in these systems.[7] The inclusion of raw water data clearly results in incorrect results in the draft Indicator.

b. *The Draft CES 2.0 Drinking Water Quality Indicator Methodology is Flawed*

The draft CES 2.0 Drinking Water Quality Indicator methodology produces skewed results due to the use of toxicity ratios calculated using public health goal ("PHG") values. ACWA has also identified a number of issues related to the contaminants selected for analysis in the draft Indicator.

1. Use of PHG-Based Toxicity Ratios

The draft CES 2.0 Drinking Water Quality Indicator methodology produces its drinking water quality metric for most contaminants by calculating a time-weighted average of monitoring results, which is then divided by the contaminant's PHG to produce a "toxicity ratio" for that contaminant. The toxicity ratios for the carcinogenic and non-carcinogenic contaminants are then averaged separately to produce two "toxicity-weighted drinking water indices." For each census tract, these indices are then ranked to produce a relative ranking of all census tracts for both carcinogenic and non-carcinogenic contaminants. Finally, these relative rankings are combined to produce the "drinking water quality metric" used to produce the statewide relative ranking of census tracts.[8]

ACWA is concerned that the draft CES 2.0 Drinking Water Quality Indicator methodology's use of PHG values in calculating toxicity ratios skews the results of the draft Indicator due to wide variations between the non-enforceable PHGs, the enforceable maximum contaminant levels ("MCL"), and the detection limits for purposes of reporting ("DLR") of the selected contaminants. The WQM database is designed to inform compliance determinations based on MCLs. It uses DLRs to provide a baseline for monitoring data reliability. In many cases, the DLR for a contaminant is set at a value that is orders of magnitude greater than the corresponding PHG for that contaminant. This fact has significant implications for PHG-based toxicity ratios because contaminant concentrations below the DLRs are reported to the WQM database as "non-detects," and under the draft Indicator methodology, non-detects are assigned a value of zero. [9]

The following examples demonstrate how the wide variations between the non-enforceable PHGs, the enforceable MCLs and the DLRs skew the toxicity ratios used to rank census tracts

[6] *Id.*, at p. 5.
[7] *Id.*, at p. 17.
[8] Draft CES 2.0 Report, at pp. 33-34.
[9] Draft Methodology, at p. 17.

in the draft CES 2.0 Drinking Water Quality Indicator. Consider the following carcinogenic contaminants and their associated PHGs, MCLs and DLRs:

Contaminant[10]	**PHG**	**MCL**	**DLR**
Arsenic	.004	10	2
MTBE	13	13	3

Under the draft CES 2.0 Drinking Water Quality Indicator methodology, the baseline toxicity ratio value—the lowest possible value for a toxicity ratio—for any contaminant can be calculated by taking the DLR and dividing it by the PHG. For arsenic, the baseline toxicity ratio is ***500*** (2 ÷ .004). In contrast, the baseline toxicity ratio value for MTBE is ***0.23*** (3 ÷ 13). To produce the toxicity-weighted drinking water index for carcinogens, the toxicity ratio values for all carcinogens are summed and then used to produce a relative ranking. The impact of the disparate baseline toxicity ratios between the draft Indicator's contaminants is that any detection of a contaminant like arsenic, even at values far below the enforceable MCL, will vastly outweigh detections of a contaminant like MTBE, even if they are in excess of the MCL. Accordingly, not only is compliance with MCLs not reflected in the draft Indicator results, in some cases it might be masked due to the disparities in toxicity ratio baselines. The draft Indicator methodology weighs certain contaminants more than others, while providing no explanation of the significance of the relative weighting of the various contaminants.

The draft CES 2.0 Drinking Water Quality Indicator methodology also produces unrepresentative results of relative drinking water quality because it produces vast disparities in toxicity ratios for individual contaminants in spite of de minimis differences in actual contaminant concentrations when monitoring results at or near DLRs. For example, consider two systems with arsenic concentrations at 2.1 and 1.9 parts per billion ("ppb"), respectively. The system with arsenic concentrations at 2.1 ppb would have a toxicity ratio for arsenic of ***525*** (2.1 ÷ .004), while the system with arsenic concentrations at 1.9 ppb would have a toxicity ratio of ***zero*** due to the 2 ppb DLR for arsenic and the draft Indicator methodology's handling of non-detects.

In both of these cases, the wide variations between the PHGs and DLRs for different contaminants skew the PHG-based toxicity ratios used to rank census tracts in the draft CES 2.0 Drinking Water Quality Indicator.

ACWA encourages CalEPA and OEHHA to consider the use of MCL-based toxicity ratios, but only in instances where monitoring results for a source are in excess of the MCL. Many contaminants, including several contaminants selected for inclusion in the draft CES 2.0 Drinking Water Quality Indicator, have DLRs which are equal or close to their corresponding

[10] All contaminant concentrations are listed in µg/L, or "parts per billion."

MCLs. Accordingly, the complications presented by DLRs in the calculation of toxicity ratios cannot be resolved unless toxicity ratios are only calculated in instances where monitoring results are in excess of the MCL. In addition to solving the problems identified above, calculating toxicity ratios exclusively for monitoring results above the MCL would highlight the communities and areas of the state with actual compliance challenges. By incorporating the use of MCLs, the enforceable standards used to measure compliance, the draft Indicator could be used to more effectively target resources towards solving the state's most pressing drinking water problems.

2. Selection of Contaminants

ACWA has a number of concerns related to the contaminants selected for inclusion in the draft CES 2.0 Drinking Water Quality Indicator. The draft Indicator analyzes 12 carcinogenic and eight non-carcinogenic contaminants, selected based on "frequency of testing and detection in California drinking water."[11] These 20 contaminants represent a fraction of the total number of contaminants currently regulated by MCLs in California. As a result, the draft Indicator's results are not relevant to areas of the state with concerns related to contaminants not included in the draft Indicator.

Additional concerns related to the draft CES 2.0 Drinking Water Quality Indicator methodology are set forth in the attached Technical Memorandum.

IV. THE DRAFT CES 2.0 DRINKING WATER QUALITY INDICATOR SENDS INCONSISTENT MESSAGES REGARDING DRINKING WATER SAFETY

The draft CES 2.0's Drinking Water Quality Indicator sends inconsistent messages to three key audiences of the screening tool: regulators, water systems and the public they serve. ACWA encourages CalEPA and OEHHA to utilize existing resources to provide a more accurate picture of drinking water quality statewide. Additionally, it is critical that any drinking water quality information presented in CES 2.0 include clear and comprehensive statements and disclaimers that provide the screening tool's audiences with information regarding the purpose, relevance and significance of the results.

a. *The Draft CES 2.0 Drinking Water Quality Indicator Does Not Serve its Intended Use for Regulators*

State regulators have been identified as the primary intended audience for CES 2.0. Specifically, CalEPA and OEHHA have said that the intended uses of CES 2.0 by CalEPA and its agencies include, "administering environmental justice grants, promoting greater compliance with

[11] Draft CES 2.0 Report, at p. 33.

environmental laws, prioritizing site-cleanup activities and identifying opportunities for sustainable economic development in heavily impacted neighborhoods."[12]

Compliance with drinking water standards is determined using MCLs established by the U.S. Environmental Protection Agency and the California Department of Public Health. The draft CES 2.0 Drinking Water Quality Indicator does not include any consideration of MCLs or compliance with drinking water standards in its methodology. Accordingly, the results of the draft CES 2.0 Drinking Water Quality Indicator are not relevant to the promotion of greater compliance with drinking water quality laws. A compliance-based approach, such as the use of toxicity ratios calculated using MCLs when monitoring results are higher than the MCLs, would be relevant to the promotion of compliance.

ACWA encourages CalEPA and OEHHA to survey the many resources currently available that provide more targeted and reliable information on communities and areas of the state that lack safe drinking water. These resources incluce including CDPH's Annual Compliance Reports and forthcoming Safe Drinking Water Plan for California, and the State Water Resources Control Board's January 2013 report "Communities That Rely on a Contaminated Groundwater Source For Drinking Water." Additionally, CalEPA and OEHHA should consider the inclusion of information from the system-specific Consumer Confidence Reports prepared by public water systems.[13] These Consumer Confidence Reports provide the most comprehensive and reliable sources of information available on drinking water quality for these systems. All of these resources provide information that is directly relevant to the intended uses of CES 2.0 identified by CalEPA and OEHHA, and provide more reliable information than the draft CES 2.0 Drinking Water Quality Indicator.

b. *The Draft CES 2.0 Drinking Water Quality Indicator May Undermine Confidence in Drinking Water Regulations*

The draft CES 2.0 Drinking Water Quality Indicator is labeled as displaying statewide "Drinking Water Quality" using a "[t]oxicity-weighted drinking water quality index for selected contaminants."[14] However, the current draft Indicator makes it appear that many areas of the state have relatively poor drinking water quality, even though drinking water in those areas is in full compliance with all health-based drinking water quality standards set under the federal Safe Drinking Water Act and the California Health & Safety Code. This "mixed message" regarding drinking water safety has the potential to undermine confidence in state and federal drinking water standards. Illustrating this potential, many ACWA member agencies received calls from their customers asking whether their water was safe to drink after the publication of a number of articles presenting the draft CES 2.0 results in newspapers statewide.

[12] *Id.*, at ii.
[13] Health & Safety Code §116470(a).
[14] *Id.*, at p. 35.

c. *The Draft CES 2.0 Drinking Water Quality Indicator Does Not Contribute to the Public's Understanding of Drinking Water Safety*

Over 98% of Californians are served drinking water that complies with all drinking water standards.[15] ACWA is concerned that the draft CES 2.0 Drinking Water Quality Indicator has already, and may continue to have the potential to, negatively influence public perception of drinking water safety without a reasonable relationship to any risk to public health.[16] Looking at the statewide map of "Drinking Water Quality" included in the draft CES 2.0 most observers would conclude that most Californians do not have access to high-quality drinking water.[17] That is a false conclusion.

The draft CES 2.0 Report explains that the "CalEnviroScreen score is not an expression of health risk" and that "the results do not provide a basis for determining when differences between scores are significant in relation to human health or the environment."[18] Turning to the Drinking Water Quality Indicator section, however, the report states that "drinking water contamination has the potential for widespread effects on health." The draft CES 2.0 Report does not explain that, like the CalEnviroScreen score, the Drinking Water Quality Indicator is not an expression of cumulative contaminant impacts or health risk. In the absence of clear and specific statements regarding the significance (or lack thereof) of the results of the Drinking Water Quality Indicator on human health, the Indicator has the potential to confuse and mislead the public.

Public water systems are currently required to prepare annual Consumer Confidence Reports that provide detailed, system-specific information on water quality and health impacts.[19] Additionally, many water systems are required to provide additional information in triennial public health goal reports.[20] These existing resources provide focused, reliable and understandable drinking water quality information directly to the public. Given the wide-spread public availability of this information, CalEPA and OEHHA can and should take time to improve the Drinking Water Quality Indicator before adding it to CalEnviroScreen.

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[15] California Department of Public Health, *supra* note 3.
[16] *See* Jason Hoppin, *Report knocks Santa Cruz County water quality: Results a surprise to locals*, SANTA CRUZ SENTINEL, Apr. 26, 2014, *and* Arin Mikailian, *Report: Burbank's water has high levels of arsenic*, THE BURBANK LEADER, Apr. 26, 2014.
[17] See Attachment 2, CalEPA/OEHHA, Map: "Drinking Water Quality," Draft CalEnviroScreen 2.0 Report (April 2014).
[18] Draft CES 2.0 Report, at iii.
[19] Health & Safety Code §116470(a).
[20] Health & Safety Code §116470(b).

d. ***Any Drinking Water Quality Indicator Must Provide Adequate Explanations of the Significance and Limitations of Any Drinking Water Quality Information Presented***

When CalEPA and OEHHA add a Drinking Water Quality Indicator to CalEnviroScreen, it will be critical that the drinking water quality information presented include statements and disclaimers that provide clear and comprehensive guidance for the benefit of all audiences. Significantly, other than the general statements provided in the Secretary's Guidance in the draft CES 2.0 Report under "General Notes and Limitations," no information is provided to any of CES 2.0's audiences regarding the limitations, relevance or significance of the draft CES 2.0 Drinking Water Quality Indicator's results. Examples of the types of "assumptions" and "data gaps and limitations" that should be included in any Drinking Water Quality Indicator have already been documented by OEHHA staff.[21] CalEPA and OEHHA should work with the water community to develop appropriate statements and disclaimers as work on the Drinking Water Quality Indicator continues.

Moreover, any Drinking Water Quality Indicator must acknowledge the fact that drinking water is fundamentally different than the pollution burden indicators presented in the draft CES 2.0. Drinking water is essential to public health, and presenting a relative ranking of drinking water quality statewide that does not simultaneously reflect the reality that over 98% of Californians are provided with reliably safe drinking water does a disservice to regulators, water systems and the public they serve.[22]

V. CONCLUSION

ACWA appreciates CalEPA and OEHHA's continued focus on carrying out their duties and responsibilities in a manner that protects and benefits all Californians. ACWA also appreciates the constructive meetings that CalEPA and OEHHA have had with ACWA since the release of the draft CES 2.0 Drinking Water Quality Indicator. ACWA hopes CalEPA and OEHHA will carefully consider the suggestions set forth in this letter, including the use of currently available information that is directly related to compliance with drinking water standards, and the development of additional language that clearly explains the significance and limitations of any drinking water quality information presented. Finally, ACWA urges CalEPA and OEHHA to take time to improve the Drinking Water Quality Indicator and address the critical issues identified in this comment letter. Taking the time to improve the Indicator will cause no harm. Prematurely finalizing the draft Indicator, however, presents the risks identified in these comments.

If you have any questions regarding this matter, please contact me at AdamW@ACWA.com or (916) 441-4545.

[21] Draft Methodology, at pp. 6-9, 16-19.
[22] California Department of Public Health, *supra* note 3.

Sincerely,

Adam Walukiewicz
Regulatory Advocate

cc: The Honorable Matthew Rodriquez
The Honorable George Alexeeff
Mr. Gordon Burns
Dr. Gina Solomon
Mr. Arsenio Mataka
Mr. Tim Quinn
Ms. Cindy Tuck
Ms. Wendy Ridderbusch

Attachments

1. ACWA Technical Memorandum (June 2, 2014).
2. CalEPA/OEHHA, Map: "Drinking Water Quality," Draft CalEnviroScreen 2.0 Report (April 2014).

Attachment 1

ACWA Technical Memorandum regarding the draft CalEnviroScreen 2.0 Drinking Water Quality Indicator (June 2, 2014).

TECHNICAL MEMORANDUM

DRAFT CALENVIROSCREEN 2.0 DRINKING WATER QUALITY INDICATOR

1. *The Data Inputs to the Draft CES 2.0 Drinking Water Quality Indicator Are Not Representative of Drinking Water Consumed by Californians*

In selecting data sources for the draft CES 2.0 Drinking Water Quality Indicator, OEHHA has indicated that "[t]he goal was to identify water quality data that are most representative of water that is delivered to residents in a service area."[1]

ACWA is concerned that the draft CES 2.0 Drinking Water Quality Indicator's use of the California Department of Public Health's (CDPH) Water Quality Monitoring (WQM) and Permits, Inspection, Compliance, Monitoring and Enforcement (PICME) databases results in an inaccurate representation of drinking water quality. Specifically, ACWA is concerned with:

- The use of source designations from PICME. PICME is not publically available for review, and bears an uncertain relationship to water systems' actual operational parameters.
- The draft Indicator's use of WQM data without incorporating critical operational considerations, such as the relative amounts of water delivered from the various sources in the database and whether sources identified as "treated" or "untreated" are actually used to supply drinking water. Based on two examples produced by OEHHA staff demonstrating how the data was used to produce the draft Indicator results, it is clear that water quality in larger water systems with relatively complex system hydraulics and treatment and delivery scenarios is not accurately characterized by the draft Indicator. In both cases, substantial unanswered questions remain regarding the accuracy of source water data selection.
- The draft Indicator's use of "raw" water data to characterize drinking water quality in up to 15% of water systems, which OEHHA acknowledges may "overestimate contaminant concentrations."[2] As explained by OEHHA, raw sources are "[s]ources of water that will be subsequently treated."[3] The inclusion of raw water data inevitably results in incorrect results in the draft Indicator.
- The fact that sampling frequency for individual sources is not reflective of frequency of use.

[1] OEHHA, DRAFT METHODOLOGY FOR STATEWIDE DRINKING WATER QUALITY INDICATOR FOR CALENVIROSCREEN VERSION 2.0 (undated) ("Draft Methodology"), at p. 13.
[2] *Id.*, at p. 17.
[3] *Id.*, at p. 5.

ACWA is also concerned with the use of data drawn from the GAMA Domestic Wells Survey. Specifically, in many cases:

- The GAMA survey may utilize different detection limits than the WQM database, resulting in unequal baselines for data drawn from the different databases.
- Sources labeled as "domestic" in the GAMA survey may not be used as drinking water sources.

2. *The Drinking Water Quality Indicator Methodology is Flawed*

The draft CES 2.0 Drinking Water Quality Indicator methodology produces skewed results due to its questionable use of toxicity ratios. ACWA has also identified a number of issues related to the contaminants selected for analysis in the draft Indicator.

(a) Use of PHG-Based Toxicity Ratios Results in Skewed Results

The draft CES 2.0 Drinking Water Quality Indicator methodology produces its drinking water quality metric for most contaminants by calculating a time-weighted average of monitoring results, which is then divided by the contaminant's public health goal ("PHG") value to produce a "toxicity ratio" for that contaminant. The toxicity ratios for the carcinogenic and non-carcinogenic contaminants are then averaged separately to produce two "toxicity-weighted drinking water indices." For each census tract, these indices are then ranked to produce a relative ranking of all census tracts for both carcinogenic and non-carcinogenic contaminants. Finally, these relative rankings are combined to produce the "drinking water quality metric" used to produce the statewide relative ranking of census tracts.[4]

ACWA is concerned that the draft CES 2.0 Drinking Water Quality Indicator methodology's use of PHG values in calculating toxicity ratios skews the results of the draft Indicator due to wide variations between the non-enforceable PHGs, the enforceable maximum contaminant levels ("MCL"), and the detection limits for purposes of reporting ("DLR") of the selected contaminants. The WQM database is designed to inform compliance determinations based on MCLs, and uses DLRs to provide a baseline for monitoring data reliability. In many cases, the DLR for a contaminant is set at a value that is orders of magnitude greater than the corresponding PHG for that contaminant. This fact has significant implications for PHG-based toxicity ratios because contaminant concentrations below the DLRs are reported to the WQM database as "non-detects," and under the draft indicator methodology, non-detects are assigned a value of zero. [5]

The following examples demonstrate how the wide variations between the non-enforceable PHGs, the enforceable MCLs and the DLRs skew the toxicity ratios used to rank census tracts in the draft CES 2.0

[4] CalEPA/OEHHA, DRAFT CALIFORNIA COMMUNITIES ENVIRONMENTAL HEALTH SCREENING TOOL, VERSION 2.0 (CALENVIROSCREEN 2.0) (April 2014) ("Draft CES 2.0 Report"), at pp. 33-34.
[5] Draft Methodology, at p. 17.

Drinking Water Quality Indicator. Consider the following carcinogenic contaminants, and their associated PHGs, MCLs and DLRs:

Contaminant[6]	**PHG**	**MCL**	**DLR**
Arsenic	.004	10	2
MTBE	13	13	3

Under the draft CES 2.0 Drinking Water Quality Indicator methodology, the baseline toxicity ratio value—the lowest possible value for a toxicity ratio—for any contaminant can be calculated by taking the DLR and dividing it by the PHG. For arsenic, the baseline toxicity ratio is ***500*** (2 ÷ .004). In contrast, the baseline toxicity ratio value for MTBE is ***0.23*** (3 ÷ 13). To produce the toxicity-weighted drinking water index for carcinogens, the toxicity ratio values for all carcinogens are summed and then used to produce a relative ranking. The impact of the disparate baseline toxicity ratios between the draft Indicator's contaminants is that any detection of a contaminants like arsenic, even at values far below the enforceable MCL, will vastly outweigh detections of contaminants like MTBE, even if they are in excess of the MCL. Accordingly, not only is compliance with MCLs not reflected in the draft Indicator results, in some cases it might be masked due to the disparities in toxicity ratio baselines. The draft Indicator methodology weighs certain contaminants more than others, while providing no explanation of the significance of the relative weighting of the various contaminants.

The draft CES 2.0 Drinking Water Quality Indicator methodology also produces unrepresentative results of relative drinking water quality because it produces vast disparities in toxicity ratios for individual contaminants in spite of de minimis differences in actual contaminant concentrations when monitoring results at or near DLRs. For example, consider two systems with arsenic concentrations at 2.1 and 1.9 parts per billion ("ppb"), respectively. The system with arsenic concentrations at 2.1 ppb would have a toxicity ratio for arsenic of ***525*** (2.1 ÷ .004), while the system with arsenic concentrations at 1.9 ppb would have a toxicity ratio of ***zero*** due to the 2 ppb DLR for arsenic and the draft Indicator methodology's handling of non-detects.

In both of these cases, the wide variations between the PHGs and DLRs for different contaminants skew the PHG-based toxicity ratios used to rank census tracts in the draft CES 2.0 Drinking Water Quality Indicator.

(b) Toxicity Ratios Should Only Be Used Where Monitoring Results Are in Excess of the MCL

The concerns with the use of PHG-based toxicity ratios in the draft CES 2.0 Drinking Water Quality Indicator methodology identified above can be addressed through the use of MCL-based toxicity ratios, but only where monitoring results are in excess of the MCL. Critically, the complications presented by DLRs in the calculation of toxicity ratios cannot be resolved unless

[6] All contaminant concentrations are listed in µg/L, or "parts per billion."

the toxicity ratio is only calculated in instances where monitoring results are in excess of the MCL. Many contaminants, including several contaminants selected for inclusion in the draft CES 2.0 Drinking Water Quality Indicator, have DLRs which are equal or close to their corresponding MCLs.

(c) Selection of Contaminants for Inclusion in Drinking Water Quality Indicator

ACWA has a number of concerns related to the contaminants selected for inclusion in the draft CES 2.0 Drinking Water Quality Indicator. The draft Indicator analyzes 12 carcinogenic and eight non-carcinogenic contaminants, selected based on "frequency of testing and detection in California Drinking water."[7] These 20 contaminants represent a fraction of the total number of contaminants currently regulated by MCLs in California. As a result, the draft Indicator's results are not relevant to areas of the state with concerns related to contaminants not included in the draft Indicator.

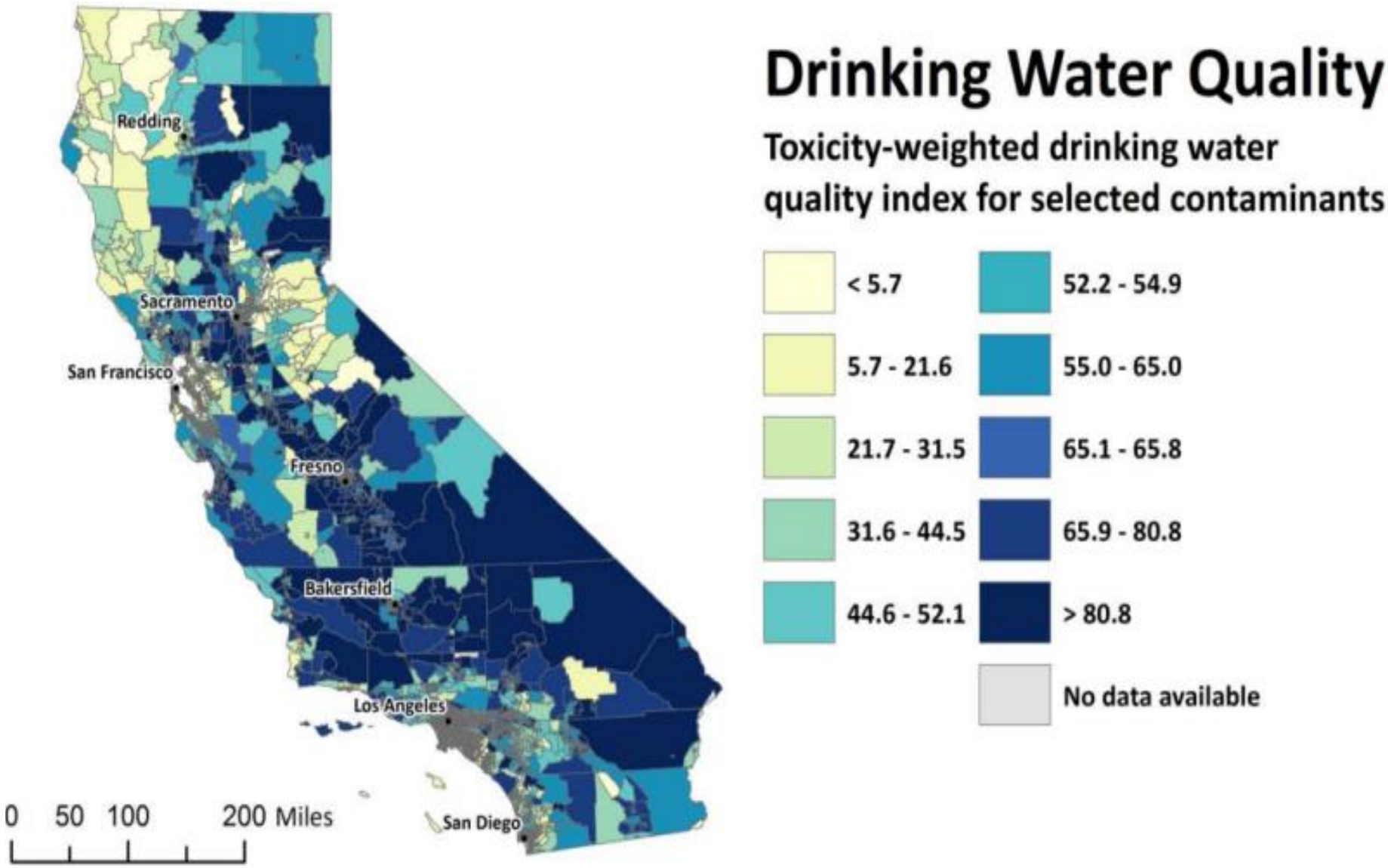
(d) Contaminant-Specific Concerns

- Lead – It is inappropriate to use lead as a contaminant in the draft CES 2.0 Drinking Water Quality Indicator due to the unique reporting requirements of the Lead and Copper Rule.
- Total Coliform Rule violations (TCR) – The use of TCR violations with a multiplier as a contaminant input into the draft CES 2.0 Drinking Water Quality Indicator methodology lacks sufficient explanation or justification. Additionally, the availability of TCR results may be limited in the future due to changes in microbial contaminant regulations.
- Total trihalomethanes (THM) – Use of the proposed PHG for THMs is inappropriate when toxicity ratios for all other contaminants are calculated relative the contaminant's PHG.

[7] Draft CES 2.0 Report, at p. 33.

Attachment 2

Map: Statewide “Drinking Water Quality,” draft CalEnviroScreen 2.0 Report, (April 2014).



Source: CalEPA/OEHHA, DRAFT CALIFORNIA COMMUNITIES ENVIRONMENTAL HEALTH SCREENING TOOL, VERSION 2.0 (April 2014), at p. 35.