

## INTRODUCTION

For the residents of Hinkley, there has been significant doubt and uncertainty surrounding the extent and eventual cleanup of the plume of hexavalent chromium that has plagued their community. As the board members are often reminded by the residents of Hinkley at the public meetings of Lahontan Regional Water Quality Control Board (Lahontan Water Board), it has been in excess of twenty years since Pacific Gas and Electric Company (PG&E) initially reported that it had discovered a release of hexavalent chromium from its compressor station, one-half mile southeast of Hinkley. Although PG&E has initiated significant remedial actions, these actions have not contained the plume of hexavalent chromium in the groundwater, and in the last few years it has again spread, affecting additional domestic wells within the community.

Hexavalent chromium is now being detected in domestic wells above the naturally occurring *maximum* background levels. Additionally, in domestic wells where hexavalent chromium was previously at non-detect or at very low levels, hexavalent chromium concentrations are now showing an increasing trend. (Groundwater Monitoring Reports, Sitewide Groundwater Monitoring Program, Prepared for PG&E by Ch2MHill, available online at [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=SL0607111288](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0607111288) (specifically Second Quarter 2010, dated 7/30/10; Fourth Quarter 2010, dated 1/28/11; First Quarter 2011, dated 4/29/11, Second Quarter 2011, dated 7/29/11).)<sup>1</sup>

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<sup>1</sup> The Electronic Administrative Record includes both documents identified by Bookmark numbers, which correspond to the index provided, and websites for documents easily accessible on the web. The specific Geotracker sites for the individual reports are also listed in the Administrative Record Index by date.

There is no regulatory certainty for the residents of Hinkley as to how much hexavalent chromium in their wells is too much. This intensifies the concerns surrounding the detection and increasing levels of hexavalent chromium in domestic wells. Although PG&E asserts that the current maximum contaminant level (MCL or “drinking water standard”) for total chromium of 50 micrograms per liter ( $\mu\text{g/L}$ ) addresses hexavalent chromium, that standard is outdated and does not specifically address health risks related to hexavalent chromium, as documented by the recently established public health goal (PHG) for hexavalent chromium ( $0.02 \mu\text{g/L}$ ) set by the Office of Environmental Health and Hazard Assessment (OEHHA). On October 11, 2011, the Lahontan Water Board issued cleanup and abatement order R6V-2011-0005A1 (the Order), requiring, in part, that PG&E provide replacement water that meets the PHG, which is consistent with the best available science.

Although providing bottled water that meets the PHG could be a short-term solution for the residents of Hinkley, it cannot be a permanent solution where, as here, the cleanup of PG&E’s discharge of hexavalent chromium is estimated to take in excess of forty years. To require the residents to rely on bottled water for the next forty years puts a disproportionate share of the negative consequences of PG&E’s unauthorized discharge on the residents and is inconsistent with the principles of environmental justice. Some residents are unable to lift the five-gallon bottles of water provided by PG&E. The concept of having to use bottled water for many years into the future has, along with other factors, led many property owners to sell their homes to PG&E and leave the area. Instead, the Order puts the burden of the inconvenience caused by the groundwater

contamination back on PG&E. The Order requires PG&E to identify and pursue potential methods to bring replacement water to the residents' homes, allowing the residents to use the water that comes out of the faucets in their kitchens and bathrooms in the same way that we all take for granted.

In addition to the lack of certainty about safe levels of hexavalent chromium in drinking water, the residents of Hinkley are also concerned whether the hexavalent chromium in their individual domestic wells is "natural" or is from PG&E's historic discharge. PG&E argues that it should not be held responsible for levels of hexavalent chromium in domestic wells that are below the *maximum* background limit (3.1 µg/L) that was identified by the Lahontan Water Board (Lahontan Water Board Cleanup and Abatement Order No. R6V-2008-0002A1) for the purpose of developing cleanup alternatives, pursuant to State Water Resources Control Board (State Water Board) Resolution 92-49.<sup>2</sup> (Electronic Administrative Record, Bookmark #6.) The Lahontan Water Board, however, recognized that this is a *maximum* level, and should not necessarily be the only criteria used to determine whether hexavalent levels in any particular well are due to background levels or PG&E's historic discharge. First, the *maximum* background levels that it set in R6V-2008-0002A1 were for the entire Hinkley Valley groundwater basin, and therefore should not be used to determine background levels for particular wells, especially when there is data that demonstrates that for specific

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<sup>2</sup> Using maximum background concentrations to set cleanup goals allows concentrations in the groundwater to vary, as long as no location exceeds the maximum. However, the Lahontan Water Board has yet to adopt cleanup goals and has only identified the average and maximum background hexavalent chromium concentrations for purposes of evaluating cleanup strategies. The Lahontan Water Board may set cleanup goals for individual wells or regions within the Hinkley area where data supports lower values of background chromium concentrations.

individual wells, 3.1 µg/L has not been the historical background. Similarly, questions and concerns about the 2007 Background Study, upon which the *maximum* background level in Order No. R6V-2008-0002A1 was based, have been raised by the public, resulting in the Lahontan Water Board directing its staff to have the results of the Background Study peer reviewed. Because of these concerns, and the fact that the PHG is 150 times lower than the *maximum* background level established in Order No. R6V-2008-0002A1, the Lahontan Water Board determined that residents should not be made to wait until the hexavalent chromium levels in their wells are above the *maximum* background levels before they must be provided replacement water, where the source of the hexavalent chromium can be attributed to PG&E's discharge.

#### **THE ORDER**

In October 2011, the Lahontan Water Board issued Order No. R6V-2011-0005A1 (the Order) in response to the numerous water quality problems in Hinkley due to the PG&E discharge. The Order utilized the most recent science on the health effects of hexavalent chromium as expressed in the July 2011 adoption of the first in the nation PHG for hexavalent chromium. The Order required PG&E to provide bottled water to those residences whose well water exceeded the *maximum* background level for hexavalent chromium or where it could be demonstrated that hexavalent chromium levels in a specific domestic well that were above the PHG were due to PG&E's discharge. PG&E was required to propose a method or methods to make the determination that levels above the PHG but below the *maximum* background level were due to its discharge. Additionally, the Order required PG&E to provide bottled water that was at

least as good (specific to hexavalent chromium) as the quality of the domestic well prior to it being affected by the PG&E discharge. The Order further required PG&E to evaluate methods whereby it could, in the future, provide whole-house replacement water to those residences that met the above criteria for replacement water. The Order does not specify the method that PG&E must use to provide whole-house replacement water as that decision will be based on the feasibility of the various methods of providing whole-house replacement water and the public acceptance of the methods.

### **ISSUES FOR REVIEW**

In addressing PG&E's petition of the Order, the State Water Board must address four fundamental policy issues:

- 1) Is the MCL for total chromium or the PHG for hexavalent chromium the appropriate value to determine whether the requirements for ordering a discharger to provide replacement water have been triggered under Water Code section 13304?
- 2) If the State Water Board agrees in #1 above that the PHG is the appropriate value to trigger replacement water, should a regional water board use an area-wide upper tolerance level (UTL or *maximum* background level) or a combination of the UTL and domestic well-specific information to determine if a discharger is partially or completely responsible for constituent levels in a well, particularly when background levels are typically higher than the PHG?;
- 3) If the State Water Board agrees in #1 above that the PHG is the appropriate value to trigger a requirement for replacement water, does it then follow that the

replacement water quality should be the least restrictive of either the PHG or the quality of the water supply before it was affected?

4) If the State Water Board determines that Lahontan Water Board has the ability to require PG&E to provide replacement water, is providing bottled water sufficient, or do the principles of fairness and environmental justice, in this instance, require that PG&E provide water directly to the taps in the residents' homes, at a quality that they had prior to contamination of their wells.

Key to addressing these questions and the issues that PG&E raises in its petition is identifying who should bear the burden of the regulatory and technical uncertainty – PG&E or the residents of Hinkley? The Order puts the burden of that uncertainty on PG&E, which the Lahontan Water Board believes is not only appropriate given the concerns related to public health, but is also consistent with State Water Board precedent that directs that in public health matters “conservatism in the direction of high quality should guide the [regional] board.” (State Water Board Order WQ 2002-0015 at p. 34 (City of Vacaville).)

**I. The 50 µg/L State Standard for Total Chromium Does Not Apply to Determinations for Replacement Water Related to Contamination from Hexavalent Chromium**

PG&E requests that the State Water Board determine “whether or not it is unlawful to require PG&E to provide future replacement water at any level below the MCL...” (Petition at p. 17.) It asserts that because there currently is no regulatory

standard for hexavalent chromium, the MCL of 50 µg/L for total chromium should be the appropriate regulatory standard for triggering replacement water and for the quality of the replacement water. It notes that all of the domestic wells in Hinkley currently meet this level, suggesting that it should have no liability for providing replacement water to Hinkley residents whose domestic wells have been affected by PG&E's plume. To do otherwise, it asserts, would send a message state-wide that water below the MCL for total chromium is unsafe. (Petition at p. 10.)

The State Water Board should not apply the current MCL for total chromium to decisions related to hexavalent chromium because it is outdated and does not specifically address health risks related to hexavalent chromium. Instead, the State Water Board should rely on the PHG for hexavalent chromium when determining PG&E's responsibility for providing replacement water to the residents of Hinkley because it is based on the most recent scientific knowledge and specifically addresses the public health risks related to hexavalent chromium. (Technical Support Document, Final Public Health Goal for Hexavalent Chromium (CrVI) in Drinking Water, prepared by Pesticide and Environmental Toxicology Branch, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (referred to hereafter as "Technical Support Document for PHG"), July 2011, available online at <http://oehha.ca.gov/water/phg/pdf/Cr6PHG072911.pdf>.)<sup>3</sup>

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<sup>3</sup> This document is listed in the Electronic Administrative Record Index by date, but refers the State Water Board to the online site.

In contrast, the current MCL for total chromium was adopted in 1977, and is set to address all forms of chromium. The California Department of Public Health (CA DPH, formerly known as the California Department of Health Services or CA DHS) recognizes that the current MCL for total chromium was established to address the noncancer toxic effects of hexavalent chromium.<sup>4</sup> Since the adoption of the MCL for total chromium, new evidence has demonstrated that hexavalent chromium is carcinogenic via oral exposure, in addition to being carcinogenic via inhalation exposure. This new information about the potentially life threatening effects of hexavalent chromium if it is ingested orally is reflected in the fact that the PHG for hexavalent chromium is very low, set at 0.02 µg/L. (Technical Support Document for PHG, at p. 1 (noting that while hexavalent chromium has long been recognized as potent carcinogen via inhalation, there is now sufficient evidence that hexavalent chromium is also carcinogenic by oral route of exposure), available online at <http://oehha.ca.gov/water/phg/pdf/Cr6PHG072911.pdf>; see also “Notice of Proposed Rulemaking, Title 27, California Code of Regulations, Proposed Amendment to Section 25707(b) Route of Exposure, The Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65), Sept. 16, 2011 (removing reference to hexavalent chromium in Section 25707(b)(4) as posing no significant risk when ingested based on recent scientific findings), available online at [http://www.oehha.ca.gov/prop65/law/pdf\\_zip/091611OAL\\_Cr6Regpack.pdf](http://www.oehha.ca.gov/prop65/law/pdf_zip/091611OAL_Cr6Regpack.pdf).)

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<sup>4</sup> See “Frequently Asked Questions (FAQs): Hexavalent Chromium (Chromium-6) in Drinking Water” July 27, 2011, CA Department of Public Health, <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Chromium6/FAQs-chromium6-07-27-2011.pdf>

In addition to the MCL for total chromium not being based on the most up-to-date scientific information regarding the carcinogenicity of hexavalent chromium via oral ingestion, the MCL for total chromium does not specifically address higher risks where hexavalent chromium makes up a significant percentage of the total chromium. The MCL for total chromium addresses all forms of chromium (based on the science available in 1977). Theoretically, one could meet the MCL of 50 µg/L even if all of the chromium were hexavalent, as opposed to being made up, at least in part, of the less-toxic trivalent chromium. (Declaration of Joshua Hamilton p. 3, ¶ 7, submitted in support of Letter from Thomas C. Wilson, PG&E Director, Environmental Remediation, to Harold Singer, providing comments on draft CAO R6V-2011-0005A1, July 12, 2011, available online at [http://www.waterboards.ca.gov/lahtontan/water\\_issues/projects/pge/cmmnts071211.shtml](http://www.waterboards.ca.gov/lahtontan/water_issues/projects/pge/cmmnts071211.shtml).)<sup>5</sup> The first quarter and second quarter 2011 groundwater monitoring and domestic well sampling reports from PG&E have data showing that 85-100% of the total chromium values are made up of hexavalent chromium. (Groundwater Monitoring Report, First Quarter 2011, April 29, 2011, available online at [http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/2693150341/SL0607111288.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2693150341/SL0607111288.PDF); Groundwater Monitoring Report, Second Quarter 2011, July 29, 2011, available online at [http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/6696073174/SL0607111288.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6696073174/SL0607111288.PDF).) Using the MCL for total chromium to address exposure to hexavalent chromium is, therefore, not sufficient, particularly in light of the more recent PHG specifically for hexavalent chromium. Because of the more recent science identifying the public health risks associated with the oral ingestion of hexavalent chromium, a standard specific to hexavalent chromium should be used.

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<sup>5</sup> This document is part of the PG&E's comments on the draft Order.

PG&E cites to the fact that the DPH website identifies the MCL for total chromium as the current regulatory standard for hexavalent chromium as rationale for the Lahontan Board not being able to require PG&E to provide replacement water to wells that are below that standard of 50 µg/L. (Petition at p. 18.) In addition to the fact that PG&E is already under order by the Lahontan Water Board to provide replacement water for wells whose levels of hexavalent chromium are below the MCL for total chromium,<sup>6</sup> this argument that the water boards must rely on an objective, even when it is not protective of public health, is inconsistent with past holdings of the State Water Board. Specifically, in the City of Vacaville order, the State Water Board upheld the decision by a regional water board to eschew an established regulatory standard because it was not protective of public health, and instead impose requirements that were based upon recommendations by a public health agency and that were more stringent than might be otherwise required. (State Water Board Water Quality Order 2002-0015 (City of Vacaville).)

In that order, the Central Valley Regional Water Quality Control Board (Central Valley Regional Board) imposed bacteriological requirements in waste discharge requirements that were more stringent than limits derived from the applicable current objective for fecal coliform in the basin plan. In upholding that decision, the State Water Board noted that the objective for fecal coliform in the basin plan was outdated and inadequate to protect all beneficial uses. (Vacaville Order at p. 32.) Like the standard for total chromium, which does not specifically address recently identified risks associated

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<sup>6</sup> Electronic Administrative Record, Bookmark #8, Cleanup and Abatement Order No. R6V-2011-0005, requiring interim replacement water supply for wells above 3.1 µg/L.

with exposure to hexavalent chromium, the Central Valley Regional Board's objective for fecal coliform took into account both animal and human fecal coliform sources and therefore potentially underestimated the risk in situations where the great majority of fecal coliform was of human origin. (*Id.*) Because of these concerns, the Central Valley Regional Board sought the recommendation of the CA DHS (now known as DPH) on the appropriate treatment level in lieu of imposing effluent limits based upon the current basin plan objective. A representative of the CA DHS testified at the Central Valley Regional Board's hearing on the waste discharge requirements that the public health risk level on which the current basin plan's objective for fecal coliform was based was very high and is not considered an appropriate risk goal for setting waste discharge requirements. The State Water Board concluded that the Central Valley Regional Board properly relied upon the CA DHS's expertise in establishing the disinfection requirements because it recognized that the CA DHS was the state agency "charged with the statutory responsibility to protect public health," and that in public health matters, "conservatism in the direction of high quality' should guide . . ." (*Id.* at p. 34.)

Because the current MCL for total chromium is inadequate and OEHHA has adopted a PHG for hexavalent chromium that is based upon current scientific understanding and is specific to the risks associated with hexavalent chromium, the State Water Board should uphold the Lahontan Water Board's decision to use the PHG for hexavalent chromium rather than the MCL for total chromium in determining when replacement water should be provided and in setting the quality of the replacement water. PG&E disagrees with the level at which the PHG was set, and submitted information in

its comment on the draft Order to support that position; however, the issue of the appropriateness of the level at which the PHG is set should not be an issue before the water boards. (Letter from Thomas C. Wilson, PG&E Director, Environmental Remediation, to Harold Singer, July 12, 2011, providing comments on draft CAO R6V-2011-0005A1, Declaration of Joshua Hamilton, pp. 3-4, available online with all exhibits at [http://www.waterboards.ca.gov/laontan/water\\_issues/projects/pge/cmmnts071211.shtml](http://www.waterboards.ca.gov/laontan/water_issues/projects/pge/cmmnts071211.shtml))

As the State Water Board recognized in the Vacaville Order, and in the Olin Order, which is discussed below, the Water Boards must rely on the expertise of the public health agencies in establishing levels necessary to protect public health. Although the PHG is a non-regulatory guideline that does not define an acceptable level of a contaminant in public drinking water supplies, it is the only directly applicable standard that has been established by the public health agencies to address public health risk related to exposure to hexavalent chromium. Despite the fact that the MCL may be set at a level greater than the PHG of 0.02 µg/L, there is also little doubt that the MCL for hexavalent chromium will be significantly less than the existing MCL for total chromium.<sup>7</sup> Therefore, as explained in more detail below, even though the State Water Board knows that a final drinking water standard may be higher than the PHG, it requires the regional boards to rely on the PHG established by the OEHHA, as opposed to coming up with some other number on their own. (Olin at p. 5 (stating that although PHG is not

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<sup>7</sup> “Whereas PHGs are to be based solely on scientific and public health considerations, drinking water standards adopted by DPH are to consider economic factors and technical feasibility. Each primary drinking water standard adopted by DPH shall be set at a level that is as close as feasible to the corresponding PHG, with emphasis on the protection of public health. Each primary drinking standard adopted by DPH is required to be set at a level that is as close as feasible to the corresponding PHG, with emphasis on the protection of public health. MCLs established by DPH must be at least as stringent as the federal MCL, if one exists.” (Technical Support Document for PHG, at p. iii, available online at <http://oehha.ca.gov/water/phg/pdf/cr6phg072911.pdf>.)

legally enforceable standard, OEHHA's expertise and conclusions are key to later development of safe drinking water standards by DHS).)

## **II. Because No MCL Exists for Hexavalent Chromium, State Water Board Precedent Requires that the Lahontan Water Board Rely Upon Goals Developed By OEHHA In Setting Trigger for Replacement Water**

Because no MCL for hexavalent chromium exists, the Lahontan Water Board relied on the PHG as the trigger for determining the need for replacement water for domestic wells in Hinkley affected by PG&E's discharge of hexavalent chromium.<sup>8</sup> In the precedential State Water Board Water Quality Order 2005-007 (Olin Order), the State Water Board clarified that an "affected well," for which regional water boards have discretion to require replacement water pursuant to Water Code 13304(a), was one that did not meet the federal, state and local drinking water standards.<sup>9</sup> (Olin Order at p. 6.) Where no federal, state, or local standard yet exists, as is the situation for hexavalent chromium, the State Water Board concluded that "it is appropriate to use goals developed by agencies with expertise for public health determinations in deciding whether replacement drinking water is necessary." (*Id.*) The State Water Board noted that this was necessary because "Any other approach would require regional water boards to make individual, possibly inconsistent public health and toxicological determinations or, in the alternative, to require replacement drinking water whenever there is any detection of a contaminant." (*Id.*)

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<sup>8</sup> The relationship of the standard to background water quality will be described in Section III of this response.

<sup>9</sup> Water Code section 13304 allows the regional water boards in cleanup and abatement orders to require dischargers to provide "uninterrupted replacement water service, which may include wellhead treatment, to each *affected* public water supplier or private well owner." (emphasis added)

PG&E has argued that it is inappropriate to use the PHG to determine whether replacement water should be required because it notes that it is a “non-regulatory guideline that does not define an acceptable level of a contaminant in drinking water.” (Petition at pp. 4-5.) As described above, however, the State Water Board has found that it is appropriate to use “non-regulatory guidelines” enacted by those agencies with expertise in making public health determinations when there is no applicable drinking water standard for the constituent at issue in order to determine when a discharger should supply replacement water to those whose wells have been affected by the discharge. (Olin at p. 8, (finding that it is appropriate to use the PHG as applicable level for determining wells requiring replacement drinking water supply).) The State Water Board, in this context, has approved the use of the PHG where, as here, there is a need to protect the public health, but there exists no applicable drinking water standard. Currently, there is no drinking water standard specifically for hexavalent chromium, and relying on the existing MCL for total chromium does not provide sufficient protection for public health because it does not reflect the most up-to-date scientific evidence regarding the carcinogenic effects of ingesting hexavalent chromium. Therefore, consistent with the State Water Board precedential guidance set forth in the Olin Order, the Lahontan Water Board used the PHG for hexavalent chromium adopted by OEHHA, which is based on that agency’s knowledge and understanding of public health, as the trigger at which replacement water may be required.

**III. Well Owners Should Not Have to Wait Until the Water Quality of Their Well Exceeds the Upper Tolerance Level Established for Cleanup Purposes Before They Can Obtain Replacement Water**

PG&E argues that the Lahontan Water Board was required to use the UTL (*maximum* background level) developed for the entire Hinkley Valley groundwater basin in determining what are natural background levels of hexavalent chromium in wells throughout the Hinkley area, and below which PG&E would not be obligated to provide replacement water.<sup>10</sup> (Petition at p. 13-14.) The Lahontan Water Board agrees that PG&E is not required to provide replacement water to wells whose levels of hexavalent chromium are due to natural background conditions, but the Lahontan Water Board contends that it has discretion to require PG&E to make a more focused analysis for each well to determine background, and not be forced to rely solely on the 3.1 µg/L. (Electronic Administrative Record, Bookmark #74, p. 6 Paragraph 24.)

PG&E asserts that UTL (*maximum* background level) set in Lahontan Water Board Order No. R6V-2008-0002A1 for hexavalent chromium should be used to determine background levels throughout the Hinkley Valley. According to the background groundwater study prepared by PG&E in 2007, hexavalent and total chromium occur naturally in groundwater at variable concentrations. (Groundwater Background Study Report, Hinkley Compressor Station, prepared by CH2MHill for PG&E, February 27, 2007, available online at [http://www.waterboards.ca.gov/lahontan/water\\_issues/projects/pge/docs/2007\\_background\\_study\\_report.pdf](http://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/docs/2007_background_study_report.pdf)) (referred to hereafter as “Background Study”) Based on the findings of the Background Study, in 2008 the Lahontan Water Board adopted amended

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<sup>10</sup> This argument is inconsistent with PG&E’s other argument that it is the MCL for total chromium that should be used as the trigger for determining which domestic wells must be provided with replacement water as the MCL is significantly higher than the UTL. (Petition at p. 18.)

CAO R6V-2008-0002A1, which set the mean (or average) groundwater background level concentrations at 1.19 µg/L for hexavalent chromium and 1.52 µg/L for total chromium. (Electronic Administrative Record, Bookmark #6.) A *maximum* background level concentration, expressed as the 95% upper tolerance limits, was set at 3.09 µg/L for hexavalent chromium and 3.23 µg/L for total chromium.<sup>11</sup> These *maximum* background level concentrations are the values that are estimated to include 95% of the possible detections of naturally occurring chromium with a 95 percent confidence level. (*Id.*)

Concerns about whether the 2007 Background Study accurately identified natural background levels of hexavalent chromium began to emerge with the public around the time that the PG&E's *Second Quarter 2010 Groundwater Monitoring Report* showed hexavalent and total chromium concentrations exceeding the *maximum* background level concentrations in three residential supply wells and four shallow monitoring wells in the north and east of the formerly defined plume boundaries. (Lahontan Board Agenda Item 12, February 16, 2011, Status report on Containment and Remediation Activities at the PG&E Hinkley Chromium Cleanup Project, available online at [http://www.waterboards.ca.gov/lahontan/board\\_info/agenda/2011/apr/item2.pdf](http://www.waterboards.ca.gov/lahontan/board_info/agenda/2011/apr/item2.pdf), Printout of PowerPoint Presentation given by Lisa Dernbach, Lahontan Water Board staff, at March 9 Board Meeting, March 9, 2011, Electronic Administrative Record, Bookmark #9.) Groundwater monitoring reports submitted by PG&E continue to indicate chromium above *maximum* background levels in areas to north, west and east of previously defined plume boundaries. This ongoing expansion of the plume along with

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<sup>11</sup> Lahontan Order R6V-2008-0002A1 also required PG&E to prevent the chromium plume from migrating to locations where hexavalent chromium was below the background levels established in that order. (Electronic Administrative Record, Bookmark #6.)

identified deviations from the 2004 Revised Background Study Plan raised concerns about the background chromium levels and how they were derived. (Electronic Administrative Record, Bookmark #8 (letter from member of public expressing concerns about the Background Study); Lahontan Water Board meeting minutes, March 9, 2011, showing 26 Hinkley residents addressed the Lahontan Water Board, available online at [http://www.waterboards.ca.gov/lahontan/board\\_info/agenda/2011/apr/item2.pdf](http://www.waterboards.ca.gov/lahontan/board_info/agenda/2011/apr/item2.pdf).) In March 2011, the Lahontan Water Board directed its staff to have the results of the 2007 Background Study peer reviewed.<sup>12</sup>

In addition to concerns regarding the accuracy of the Background Study, it became clear that using this UTL or *maximum* background level for the entire Hinkley Valley did not take into account the variability from that *maximum* background level that had been seen at individual wells. Domestic well monitoring data was showing that some wells that had not previously shown detections of hexavalent chromium were now detecting hexavalent chromium. (Groundwater Monitoring Report, First Quarter 2011, April 29, 2011, available online at [http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/2693150341/SL0607111288.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2693150341/SL0607111288.PDF); Groundwater Monitoring Report, Second Quarter 2011, July 29, 2011, available online at [http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/6696073174/SL0607111288.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6696073174/SL0607111288.PDF).) Additionally, in other domestic wells the levels of hexavalent chromium have been

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<sup>12</sup> The Background Study underwent peer review in December 2011. Based on the results of the peer review, the Lahontan Water Board may request PG&E to do additional analysis, and may change the average and maximum background levels for the purposes of developing cleanup requirements. At this time, the Lahontan Water Board has not set a cleanup goal or target to restore groundwater quality in the Hinkley Valley and may consider setting a cleanup goal or separate goals for different areas of the Hinkley Valley based on the existing Background Study or on the results of a future study or analysis.

trending upward over time, though not quite to the 3.1 µg/L *maximum* background level.<sup>13</sup>

In Hinkley, the background water quality has a significant bearing on regulatory requirements for providing replacement water. PG&E argues that the Olin decision has no relationship to Hinkley since in Olin the PHG was above the background levels while in Hinkley the PHG is at or below background levels. This is due to the fact that chromium is naturally occurring around Hinkley while perchlorate, at issue in Olin, is not. The Lahontan Water Board asserts that the Olin decision is applicable to the situation in Hinkley, but recognizes that levels of hexavalent chromium in wells above the PHG, but below natural background, must be excluded from requirements for replacement water. But determining what background hexavalent chromium is in groundwater in Hinkley is complex. Hexavalent chromium existing in wells in Hinkley is due to both natural conditions and PG&E's discharge, and natural levels are variable throughout the area, as was demonstrated in the 2007 Background Study. Similarly, natural levels in individual wells vary over time.

The Lahontan Water Board established the 3.1 µg/L *maximum* background level for the primary purpose of giving PG&E guidance on preparing cleanup alternatives pursuant to State Water Board Resolution No. 92-49. This *maximum* background level

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<sup>13</sup> Currently there are 13 residents whose wells exceed the 3.1 maximum background limit, all of which are being provided bottled replacement water by PG&E. (Ground Water Monitoring Report, Second Quarter 2011, July 29, 2011, available online at [http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/6696073174/SL0607111288.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6696073174/SL0607111288.PDF).) PG&E has purchased a number of the properties where hexavalent chromium in the domestic well exceeds 3.1 ug/L, therefore, the number of residences being provided with bottled replacement water is less than the total number of domestic wells with hexavalent chromium above the 3.1 ug/L.

also has value in the replacement water context in that domestic well values exceeding 3.1 µg/L are more likely due to PG&E's discharge than natural conditions. However, levels of hexavalent chromium in domestic wells less than 3.1 µg/L do not necessarily mean that the cause was completely due to natural conditions, which is what PG&E is arguing.

Because of the concern that using the UTL of 3.1 µg/L was not identifying as PG&E's responsibility the increasing levels of hexavalent chromium in wells where the levels had not yet reached the *maximum* background limit, and where that increase was at concentrations above what is considered natural variation, the Lahontan Water Board rejected using a "one-size-fits-all" *maximum* background level. Instead, it required that instead PG&E evaluate each well in the affected area separately in order to determine whether the hexavalent chromium levels in that well were, partially or completely, due to PG&E's discharge.<sup>14</sup> In order to do that evaluation, the Order requires that PG&E develop a:

method or methods to perform an initial and quarterly evaluation of every domestic or community well in the affected area to determine if detectable levels of hexavalent chromium between the maximum background level and the PHG represent background conditions, or are more likely than not, partially or completely, caused by the discharge of waste by the Discharger,"

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<sup>14</sup> Because these hexavalent chromium levels are above the PHG, even if PG&E is only partially responsible, it is still obligated to provide replacement water. A legitimate, but complicating, factor is the quality of the replacement water. The phrase in Water Code section 13304(f) which requires that the replacement water "have comparable quality to that pumped by the ... private well owner prior to the discharge of waste" requires that the water be of the quality that was enjoyed prior to the contamination.

while taking into consideration:

“changes in hexavalent chromium levels over time, location of well in relationship to the plume and groundwater flow direction, isotopic analysis of hexavalent chromium, and statistical analysis described in title 27, section 20415(e)(8). (Electronic Administrative Record, Bookmark No. 74, at p. 12, Order Paragraph 3.a, and p. 7, Finding 26.)

The intent of this request was to require replacement water for those instances where data indicates an increasing concentration of hexavalent chromium beyond what is considered to be within the normal variability in the area, even where those concentrations are below 3.1 µg/L. Requiring PG&E to develop a method for such a determination has the benefit of addressing the fact that background levels of hexavalent chromium in the Hinkley area are variable, given the geochemical processes that contribute to the formation of hexavalent chromium in groundwater and the fact that hexavalent chromium concentrations in any one well may vary over time and may be affected by PG&E’s discharge over time.

The Lahontan Water Board prosecution team proposed two statistical methods by which to determine if levels of hexavalent chromium in wells that were between the PHG and the 3.1 µg/L *maximum* background level were partially or fully caused by PG&E’s historical discharge. One method required a “retest” for those wells containing hexavalent chromium equal to or greater than 2.06 µg/L in a series of samples tested at

least once every 6 months. If a private or community domestic well sample met or exceeded the retest threshold of 2.06 µg/L hexavalent chromium in a sampling event, then two additional samples were to be taken on an accelerated schedule. If either one of the well retest samples was equal to or greater than 2.06 µg/L hexavalent chromium, the well would be considered an impacted well under the terms of the Order. If both well retest samples were less than 2.06 µg/L hexavalent chromium, the well would not be considered impacted. (Electronic Administrative Record, Bookmark #s 37-39 (Email from Dr. Neil Willits to A. Holden, regarding results of statistical consultation); Bookmarks 53-54 (Statistical consulting/programming report, prepared by Dr. Willits, summarizing meeting of 7/15 regarding chromium groundwater data for the Hinkley area); Bookmarks 60-61 (Email from A. Holden to Water Board's prosecution team, with attachment that was provided as handout at 9/1/11 meeting with PG&E; Revised finding 29).) The Prosecution Team presented an additional statistical method, the Spearman's Rho Test, to assess wells showing increasing concentrations over time. Wells with statistically significant increases of hexavalent chromium concentrations beyond what is seen in the natural variation in the area would be considered impacted by PG&E's discharge. (Electronic Administrative Record, Bookmark #s 60, 61, and 62.)

In issuing the final Order, the Executive Officer did not include the prosecution team's proposal, and instead gave PG&E the opportunity to offer its own proposal. Although the Lahontan Water Board recognizes the difficulties in identifying an appropriate methodology for making a determination of whether levels of hexavalent chromium above the PHG in a particular well are due to PG&E's discharge, the Lahontan

Water Board determined that the burden of the regulatory uncertainty should fall on PG&E, and not the residents of Hinkley. Although using the UTL would make it easier for PG&E to implement the Order, it is not an acceptable alternative, especially where the UTL is 150 times greater than the PHG of 0.02 µg/L for hexavalent chromium. Instead, the Lahontan Water Board determined that it is more appropriate to provide criteria for determining when replacement water service is necessary that is more conservative and protective of public health. (Electronic Administrative Record, Bookmark # 74, p. 6, ¶ 24.) Even though PG&E asserts that 50 µg/L for total chromium is the applicable regulatory standard applied across the state, and, therefore, everything below that level must be safe, when a drinking water standard for hexavalent chromium is finally adopted by the DPH, it will be below what is allowed under the current regulatory standard for total chromium, and will be as close to the PHG as is economically and technically feasible, quite possibly below the maximum background level of 3.1 µg/L. (Technical Support Document for PHG, July 27, 2011, p. iii, available online at <http://oehha.ca.gov/water/phg/pdf/cr6phg072911.pdf>.)

In weighing the burden of the regulatory uncertainty over what the drinking water standard for hexavalent chromium will be, the Lahontan Water Board considered whether it was fair to require residents to continue to use groundwater that had been affected by the PG&E discharge even though the level of hexavalent chromium was below the *maximum* background level of 3.1 µg/L.

#### **IV. Making Residents Rely on Bottled Water for the Next 40+ Years is Not Fair and Does Not Meet the Lahontan Water Board's Commitment to Environmental Justice**

According to the technical documents supporting the development of the PHG for hexavalent chromium, the greatest risk posed by hexavalent chromium is by ingestion. (Technical Support Document, Final Public Health Goal for Hexavalent Chromium (CrVI) in Drinking Water, prepared by Pesticide and Environmental Toxicology Branch, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency at p. 1, available online at <http://oehha.ca.gov/water/phg/pdf/Cr6PHG072911.pdf>) Although the technical documents identified a small risk associated with inhalation, that risk did not increase with the use of swamp coolers, which are frequently used by Hinkley residents during their hot, dry summers.<sup>15</sup> PG&E takes these facts to support the argument that providing bottled water is sufficient for the residents since the exposure risk is primarily through ingestion. It is unfair and inconsistent with the principles of environmental justice for the residents of Hinkley to rely on bottled water from one dispenser in their homes for drinking, cooking, brushing their teeth, and all other incidental uses everyone takes for granted that they will be able to rely on the water from their faucets for. To require temporary reliance on bottled water is one thing, but to propose reliance on bottled water for the 40+ years it will take for PG&E to complete site cleanup is entirely another.

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<sup>15</sup> Concerned about exposure via inhalation from the use of swamp coolers the Lahontan Water Board requested OEHHA to comment upon the potential inhalation exposure from the use of water containing hexavalent chromium. OEHHA determined that the use of swamp coolers does not increase the concentration of airborne CrVI, and therefore, do not constitute an inhalation risk. (Electronic Administrative Record, Bookmark#59.)

The State of California is committed to principles of environmental justice. This means providing fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. (Gov. Code § 65040.12(e).) Fair treatment means that “no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.” (U.S. EPA <http://www.epa.gov/environmentaljustice/basics/index.html>.) The goal of environmental justice is “for everyone to enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.” When communities relying on individual domestic wells for their water are impacted by contamination of drinking water supplies, they are often hit harder than more urban communities served by community water systems. Unlike in communities served by community water systems who often have access to multiple wells and can switch sources if a problem develops in one well, when individual domestic wells become contaminated, there is no other practical source, and the residents are forced to turn off their taps and rely on bottled water. (In certain situations drilling deeper wells in unaffected aquifers or installing whole-house treatment systems can provide replacement water. However, these alternatives are typically quite expensive.) This results in a disproportionate impact of groundwater contamination on rural communities.

Environmental justice requires that bottled water not be the permanent solution for Hinkley. The residents should not have to disproportionately bear the negative environmental consequences of PG&E’s past industrial practices. For the past twenty

years, this community has been living with the repercussions of PG&E's compressor station being in their backyard. To require them to continue to rely on long-term use of bottled water for all consumptive uses for residences when they previously had the ability to consume unlimited water from any household tap interferes with the free use of their property and deprives those persons of prior quality of life expectations. The physical challenge associated with constantly changing out 41-pound containers of bottled water is especially challenging and unfair to people with limited strength. Environmental justice requires that the residents not have to use bottled water for the next forty-plus years that it takes to clean up the groundwater and necessitates that the replacement water service enable the residents to use all their household taps.

The Lahontan Water Board acknowledges PG&E's concern regarding the feasibility of providing whole-house replacement water at the quality required should the State Water Board uphold that aspect of the Order. To address this concern, the Lahontan Water Board has, in the Order, required PG&E to evaluate options to providing whole-house replacement water. This included the evaluation of existing point-of-entry treatment systems to determine their effectiveness in removing hexavalent chromium. After this through evaluation of various alternatives for providing whole-house replacement water and a determination of public acceptance for each of the alternatives identified, PG&E is required to provide its plan for providing permanent replacement water service to the Lahontan Water Board for its acceptance. At that time, PG&E could petition the State Water Board to review the Lahontan Water Board's action or failure to act. The Lahontan Water Board requests that the State Water Board not focus on what

may or may not happen after the completion of the feasibility study, but rather that the State Water Board consider the larger policy issues about whether it is reasonable and appropriate for the Lahontan Water Board to require PG&E to perform such an evaluation, and if not, then who should have that burden to explore the options besides bottled water for the residents of Hinkley.

**V. PG&E Has Failed to Demonstrate that It Cannot Provide Replacement Drinking Water of Comparable Quality to What the Residents were Receiving Before Their Wells Were Contaminated**

Water Code section 13304 subdivision (f) requires that replacement water provided “meet all applicable federal, state, and local drinking water standards, and shall have comparable quality to that pumped by the . . . private well owner prior to the discharge of waste.” Because of this requirement, the Order required that the replacement water not only meet the state primary and secondary drinking water standards, but also meet the level of the PHG for hexavalent chromium - 0.02 µg/L – or a higher level if PG&E demonstrates that the hexavalent chromium level in the affected well was above 0.02 µg/L prior to being impacted by the discharge.<sup>16</sup> (This level automatically defers to the MCL for hexavalent chromium, once adopted.) To require otherwise would potentially put the residents with affected wells in a worse position than they were prior to PG&E’s discharge.

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<sup>16</sup> The Order states that the replacement water must meet levels of hexavalent chromium less than 0.02 µg/L, but because of limitation of laboratory analysis of low levels of chromium, the replacement water must test below the reporting limit of 0.06 µg/L. (Electronic Administrative Record, Bookmark #74, p. 10-11, f.n. 1-3.)

As explained previously, there is regulatory uncertainty regarding what are acceptable levels of hexavalent chromium in drinking water. Because there is no drinking water standard for hexavalent chromium, municipal water purveyors use the standard for total chromium. We know, however, that because this standard is out-dated, is not specific to hexavalent chromium, and is orders of magnitude greater than the PHG, that it is not as protective of public health as the final drinking water standard for hexavalent chromium will be. Until that time, however, municipal drinking water and bottled water could have levels of hexavalent chromium that are much greater than what is currently in the residents' wells. To allow PG&E to provide water that is of worse quality than what the Hinkley residents had in their wells, even after being affected by the PG&E discharge, would not be fair. It is also inconsistent with the Water Code, which requires that the quality of water being provided "have comparable quality to that pumped by the ...private well owner prior to the discharge of waste." (Water Code § 13304(f).)

PG&E reads Water Code 13304 subdivision (f) as not requiring it to provide replacement water that is more pristine than naturally occurring background, which it asserts should be considered 3.1 µg/L for the entire Hinkley Valley. (Petition at pp. 22-23.) The Lahontan Water Board agrees that Water Code section 13304, subdivision (f) requires that the water quality of the replacement water be of "comparable quality" to that which was previously pumped, but believes that this determination should be made on an individual basis, considering the water quality data for each private well. Where the water pumped from an individual well was, prior to it being impacted by the PG&E discharge,

non-detect for hexavalent chromium, the replacement water should also be non-detect for that constituent. (Non-detect hexavalent chromium values are currently greater than the PHG.) However, where PG&E can demonstrate that the level of hexavalent chromium in a specific well was higher than the detection limit prior to being impacted by the PG&E discharge, the replacement water quality would be allowed at that level.

As previously described in Section III, above, to not apply a well-by-well analysis of water quality, and instead to let PG&E rely upon the *maximum* background level to determine the need for replacement water, would be unfair. To then allow PG&E to provide replacement water with hexavalent chromium levels higher than that in the affected well would be a travesty, particularly where there is no current MCL for hexavalent chromium and the PHG, on which the final drinking water standard will be based, is very low.

PG&E claims, however, that it cannot provide water quality at this level because it argues that there is no commercial water provider that can guarantee sufficient supply at the 0.02 µg/L level. (See Declaration of James DeWolfe, Letter from Thomas C. Wilson, PG&E Director, to Harold Singer, providing comments on the draft CAO R6V-2011-005A1, July 12, 2011, available online at

[http://www.waterboards.ca.gov/lahontan/water\\_issues/projects/pge/cmmnts071211.shtml](http://www.waterboards.ca.gov/lahontan/water_issues/projects/pge/cmmnts071211.shtml).)

Although the Lahontan Water Board recognizes that providing water with hexavalent chromium levels at essentially non-detect levels may be difficult and potentially costly, it does not believe that PG&E has demonstrated that providing such water is infeasible. In fact, all three of PG&E's reports on its compliance with the Order indicate that the bottled

water being provided contained less than detectable levels of hexavalent chromium at a detection level of 0.06 µg/L (October 25, 2011, November 10, 2011 and February 13, 2012 reports from PG&E).<sup>17</sup> PG&E also indicated in its October 25, 2011 report that one sample result from a secondary laboratory did detect hexavalent chromium at 0.08 µg/L from a bottled water sample.

PG&E is still in the early phases of identifying potential appropriate methods and technologies to meet the requirements whole house replacement water requirements of the Order, and the Lahontan Water Board recognizes that there are challenges still to overcome. The Lahontan Water Board is willing to consider amending the Order if PG&E can show that, despite its best efforts, it is unable to meet the deadlines within the timeframe set forth in the Order or to overcome technological, economic, or regulatory obstacles. Before an amendment would occur, the Lahontan Water Board expects PG&E to aggressively attempt to meet all of the requirements, and provide documentation of its efforts. The Lahontan Water Board is not intending to be unreasonable in its requirements, but it does want to put the burden of the current regulatory uncertainty onto PG&E, and not the residents of Hinkley.

To date, PG&E's arguments about the requirements of the Order being infeasible have not been supported. For example, PG&E has raised an argument that laboratories

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<sup>17</sup> Pursuant to section 2050.6, of Title 23 of the California Code of Regulations, the Lahontan Regional Board requests that the State Water Board supplement the record to include reports submitted by PG&E since the issuance of the Order, documenting PG&E's efforts at providing bottled water at non-detect levels. This information is relevant because one PG&E's arguments in its petition is that it is infeasible to provide water at the level required by the Order. These documents are listed in Section III of the Administrative Record Index, Bookmark #s 75-87.

are unable to reliably detect hexavalent chromium to the 0.06 µg/L level required in the Order. (Petition at p. 23.) This argument is based on a declaration of Shawn Duffy, which was provided in PG&E's July 11, 2011 comments on the draft Order. (See Declaration of James DeWolfe, Letter from Thomas C. Wilson, PG&E Director, to Harold Singer, providing comments on the draft CAO R6V-2011-005A1, July 12, 2011, available online at [http://www.waterboards.ca.gov/lahtontan/water\\_issues/projects/pge/cmmnts071211.shtml](http://www.waterboards.ca.gov/lahtontan/water_issues/projects/pge/cmmnts071211.shtml).) His declaration concluded that none of the three laboratories he used in his evaluation were capable of reporting accurate results nor were the results across laboratories consistent. The problem with his conclusion, however, is that none of the three laboratories that he used performed their test with most recent testing procedures for hexavalent chromium. The Order specifically requires the use of a modified version of Method SW 218.6. These modifications are specified in Dionex Corp. Application Update 144 "Determination of Hexavalent Chromium in Drinking Water by Ion Chromatography" ([http://www.dionex.com/en-us/webdocs/4242-AU144\\_LPN1495.pdf](http://www.dionex.com/en-us/webdocs/4242-AU144_LPN1495.pdf)) (Electronic Administrative Record, Bookmark #3.) The U.S. Environmental Protection Agency found this method capable of attaining a detection limit as low as 0.02 µg/L and a reporting limit of 0.06 µg/L. (Electronic Administrative Record, Bookmark #2 and online at <http://water.epa.gov/drink/info/chromium/guidance.cfm>) The Order established this 0.06 µg/L reporting limit for the purpose of compliance.

While it is clear that Mr. Duffy used state certified laboratories in his evaluation and that those laboratories used Method SW218.6 in the analysis of the samples provided

by Mr. Duffy, nowhere in his declaration is there any indication that the laboratories used the Dionex Corp. Application Update 144 as specified in the Order. Additionally, the inter-laboratory variability noted by Mr. Duffy is not surprising as this type of variability for many constituents has been noted in many previous studies. Lastly, in a February 13, 2012 report submitted to the Lahontan Water Board by PG&E, the laboratory reported non-detect levels of hexavalent chromium with a reporting limit of 0.06 µg/L and the laboratory achieved all of the quality control / quality assurance requirements.<sup>18</sup> This laboratory was not one of the three that Mr. Duffy used in his evaluation.

#### **VI. PG&E Has Not Met Its Burden In Proving That It Will Suffer Substantial Harm If the Order Is Not Stayed**

PG&E has not met the burden set forth in section 2053 of Title 23 of the California Code of Regulations because it has not shown that it will suffer substantial harm if the stay is not ordered. Currently, it is meeting all of its obligations, which at the moment consist of providing bottled water of a quality that meets the PHG, moving forward exploring methods to determine what wells with hexavalent chromium levels below the 3.1 µg/L maximum background level and above the PHG have been impacted by PG&E's discharge, and investigating methods to bring to the taps of the residences of Hinkley water that meets the PHG or the MCL for hexavalent chromium, when that standard is adopted by the DPH. Nonetheless, the Lahontan Water Board fully expects, and is willing, to work with PG&E to make adjustments to the requirements of the Order to ensure that PG&E is not held liable for its inability to meet requirements that are

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<sup>18</sup> See footnote 17, requesting the State Water Board allow reports issued by PG&E subsequent to the issuance of the Order, demonstrating PG&E's compliance with the Order requirements.

impossible due to technological, economic, or regulatory limitations. However, PG&E is not yet at that point, and to lift the requirements of the Order would cause progress to cease in providing certainty and relief to the residents of Hinkley as to the quality of their domestic water source. Even if the Lahontan Water Board were to issue an administrative civil liability order for PG&E's failure to comply with terms of the Order, PG&E could petition such an order to the State Water Board. Any substantial harm to PG&E is, therefore, hypothetical at this point.

Similarly, PG&E has not demonstrated that the public in general will suffer substantial harm if the stay is not granted. PG&E argues that to not grant the stay will "create a troubling statewide policy precedent with significant ramifications." This argument is obviously an exaggeration, but to the extent that there is any validity in it, the reality is that the adoption of the PHG already created that "troubling statewide policy precedent," putting the public and water purveyors on notice that levels of hexavalent chromium will be drastically reduced from the current requirement allowed under the standard for total chromium.

PG&E has also not demonstrated that interested persons and the public will not experience substantial harm if the stay is granted. To grant the stay will hurt the residents of Hinkley. Without this Order, they will be relying upon PG&E voluntarily providing bottled water, and will not have any certainty regarding the quality of that water and whether it actually has lower levels of hexavalent chromium than that which is in the water coming from their wells, even after it has been affected by the PG&E discharge.

PG&E has also not demonstrated that there are substantial questions of fact or law regarding the disputed action. As noted in the discussion above, all of the issues before the State Water Board are issues of policy. Furthermore, the decision by the Lahontan Water Board is consistent with previous State Water Board precedent, including the Olin Order, which allowed reliance upon the PHG in the absence the existence of an MCL for a constituent for determining if a well had been affected by a discharge under Water Code 13304. In that order the State Water Board also recognized that although the PHG is not a legally enforceable regulatory standard, it represents OEHHA's expertise and conclusions, which are used to develop a safe drinking water standard by DPH. Olin also indirectly supports the Lahontan Water Board's use of the PHG to prescribe the quality the replacement water must meet, absent a showing that the background water quality was something higher than the PHG. The Lahontan Water Board's Order is also consistent with the Vacaville Order, which the State Water Board recognized that in decisions affecting of public health, "conservatism in the direction of high quality should guide." Finally, the Lahontan Water Board's Order requiring whole house replacement water is consistent with the principles of fairness and environmental justice. The residents of Hinkley should be made whole and should be able to drink unlimited amounts of water from the taps in their own homes, as opposed to relying on a single large jug of bottled water.

## CONCLUSION

The issues presented by PG&E in its petition essentially come down to policy issues, and the way that the State Water Board addresses those issues is contingent upon the question of who should bear the risk of the regulatory and technical uncertainty involving hexavalent chromium. Because that risk should be on PG&E and not on the residents of Hinkley, the Lahontan Water Board requests that the State Water Board uphold the Order and require PG&E to continue implementing the Order, and where PG&E is able to demonstrate that it is infeasible to do so, to work with the Lahontan Water Board to identify alternatives that provide the residents of Hinkley a source of water to the taps in the homes that meets all regulatory requirements and is comparable to what they had prior to PG&E's discharge of hexavalent chromium.