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## Lahontan Regional Water Quality Control Board

January 13, 2016

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### **Response to Comments on Draft Updated Requirements for In-situ Remediation Zones and Northwest Freshwater Injection System, Pacific Gas and Electric Company, Hinkley, San Bernardino County**

Thank you for your comment letter on the draft *Updated Notice of Applicability for In-situ Remediation Zones and Freshwater Injection System*, circulated for public review and comment on July 13, 2015. We appreciate that you conducted several briefings with the Hinkley Community Advisory Committee and other key community members to help them gain understanding of and support for the goals of the draft NOA.

Responses to your comments and questions are provided below.

- 1. IRP Comment, regarding setting pre-remedial reference level for water supply wells:** We agree with the collection of four samples within a year, but suggest when possible that eight samples should be collected within two years, to derive an improved “statistical understanding” of the data.

**Response:** We agree. In 2014, PG&E staff proposed methods to analyze baseline data to set pre-remedial reference levels at individual water supply wells near remediation areas, consistent with mitigation measure requirements specified in the EIR. Water Board staff circulated PG&E's proposals for a 3-week comment period. In our December 16, 2014 letter to PG&E summarizing comments received, Water Board staff supported the use of a larger dataset, if available for a given well. For example, if eight quarterly chromium data points from within the last two years are available for a well, PG&E should consider using that larger dataset to determine baseline.

- 2. IRP Question:** Will other groundwater parameters be sampled such as pH, ORP, temperature and dissolved oxygen for IRZ water supply wells monitoring?

- 2 -

**Response:** Those field parameters are measured in each water supply well. They are not required to be reported in quarterly reports. PG&E maintains the data and it can be provided upon request.

3. **IRP Question:** Does the modeling consist of only providing forecasted three-year groundwater particle tracking results?

**Response:** PG&E submits an annual groundwater modeling report by February 20 of each year as a part of the annual Environmental Impact Report (EIR) mitigation monitoring report (see Appendix C of the Feb 19, 2015 report submitted to Geotracker at:

[http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/5566049933/SL0607111288.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5566049933/SL0607111288.PDF)).

The report provides a discussion and results of groundwater modeling projected for the upcoming 3 years of operation of remediation systems. The report also outlines the operational assumptions used for the modeling, a description of the particle tracking approaches used, and a discussion of the modeling results. Figures are included to illustrate results.

4. **IRP Question:** Will Cr6 solute three-year forecast maps be provided in annual reports?

**Response:** Yes, chromium particle tracking maps are included in the annual EIR mitigation compliance report discussed above, due February 20 of each year and submitted to Geotracker.

5. **IRP Question:** Will byproducts three-year forecast maps be provided in annual reports?

**Response:** Yes, byproducts particle tracking maps are included in the annual EIR MMRP compliance report discussed above, due February 20 of each year and submitted to Geotracker.

6. **IRP Question:** Were the threshold values of arsenic (new 0.01 ppb, current 0.013 ppb), dissolved iron (new 0.42 ppm, current 0.47 ppm) and chloride (new 29 ppm, current 289 ppm) based on updated information collected since the EIR? The new threshold concentration of chloride is set at 29 ppm is an order of magnitude lower than the current threshold, set at 289 ppm? Is 29 ppm a typo?

**Response:** Only one byproduct threshold (for manganese) was updated based on information collected during the development of the EIR. We note there are several typographical errors in Monitoring and Reporting Program Table A-4, Threshold Concentrations for IRZ Byproducts, Well Rehabilitation Compounds, and Tracers in Groundwater. These will be corrected in the final version as follows:

- 3 -

- The threshold value of arsenic should be shown as 0.013 milligrams per liter (mg/L or ppm). This is a rounding error.
- The threshold value of iron should be 0.471 mg/L (the baseline value shown in the table is incorrect, should be 0.377 mg/L, not 0.337 mg/L)
- The threshold value of chloride should be 289 mg/L, not 29 mg/L.

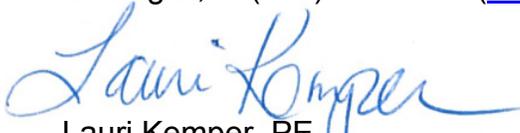
7. **IRP Question:** What is the maximum yearly volume of ethanol that is permitted to be injected into the IRZs?

**Response:** There is no maximum limit on ethanol volumes contained in the draft updated NOA, and General Waste Discharge Requirements for IRZ operations (Board Order No. R6V-2008-0014) do not contain a limit on ethanol injection volumes.

Background on previous ethanol injection limits: Previous WDRs for the Source Area IRZ (Board Order No. R6V-2006-0054) contained discharge volume limits for the various carbon-source reducing agents allowed at the Source Area, including lactate, whey, and emulsified vegetable oil, and allowed ethanol volumes of up to 15,000 gallons for 5 years after pilot testing. Pilot testing indicated that ethanol is a better carbon source for promoting in-situ remediation over the other carbon sources, and so PG&E proposed to use the permitted volume of carbon substrate allowed as ethanol only, in lieu of other carbon discharges. The August 17, 2009, NOA issued to PG&E contained a limit on ethanol volumes discharged to the Source Area IRZ at 173,000 gallons as the maximum amount for the Source Area. This limit was included because the Source Area IRZ WDRs (R6V-2006-0054) were not formally rescinded until October 13, 2010.

This updated NOA rescinds all previous NOAs, so that the discharge limit for the Source Area IRZ (based on the now-rescinded WDRs R6V-2006-0054) will be rescinded as well. PG&E is required, however, to report on volumes of ethanol discharged to each IRZ area in quarterly monitoring reports. Sampling for total organic carbon (TOC) is included in the monitoring and reporting program for both monitoring and domestic wells. There is no regulatory limit or standard for TOC.

We appreciate your assistance to the Hinkley community in reviewing and understanding these technical issues. Please contact Lisa Dernbach, Senior Engineering Geologist, at (530) 542-5424 ([Lisa.Dernbach@waterboards.ca.gov](mailto:Lisa.Dernbach@waterboards.ca.gov)) or Anne Holden, Engineering Geologist, at (530) 542-5450 ([Anne.Holden@waterboards.ca.gov](mailto:Anne.Holden@waterboards.ca.gov)) with any questions.

  
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January 13, 2016

- 4 -

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AH/ma/T: PGE IRZ NOA IRP RTC (final)