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Dr. John A. Izbicki
United States Geological Survey
4165 Spruance Rd
San Diego, CA 92106

Re: Preliminary Comments on United States Geological Survey Draft Proposal titled:
“*Occurrence of Natural and Anthropogenic Cr VI near a Mapped Plume, Hinkley, CA*”

Dear Dr. Izbicki:

On October 22, 2013 representatives of the United States Geological Survey (USGS), Project Navigator (IRP Manager for the Hinkley Community Advisory Committee – CAC), and Pacific Gas and Electric Company (PG&E) met at your office in San Diego to discuss the above-referenced draft proposal. First and foremost, PG&E supports the USGS proposal and looks forward to working with you and your staff to see the project to completion.

The draft proposal is well written; it identifies and details the myriad of tasks required to evaluate multiple lines of evidence for a thorough understanding of background chromium conditions in the groundwater of the Hinkley Valley. This letter provides preliminary comments on the draft proposal. As we discussed, one or more technical meetings are needed in the near future to further our discussions on key items. We will provide additional technical comments to you as appropriate following those discussions.

Interim Deliverables to Answer Key Questions

The draft proposal includes an interim report in USGS fiscal year 2016 (beginning Oct 2015) that would “*present selected preliminary results and how those results contribute to understanding of the movement of water and the occurrence of chromium in the Hinkley Valley near the contamination plume.*” A critical path for the study will be to provide timely answers to key questions as soon as technically feasible. Two specific examples we discussed on October 22nd were: “*What is the probability that chromium present north of Sonoma Road is associated with the PG&E plume?*” and “*What is the probability that chromium west of the current freshwater injection wells in the west is associated with the PG&E plume?*”

PG&E is recommending that the draft proposal be amended to identify the key questions that will be answered by the individual tasks in the study and associated work scope(s) that will be used to develop the multiple lines of evidence needed to answer these questions. Once work begins, PG&E suggests several of the key questions can potentially be answered at a relatively high level of certainty through the presentation of results in technical interim documents that are prepared by the USGS within a 12 to 18 month period.

It will be important that the TWG work collectively up front in the review of the draft proposal to ensure the interim deliverables, study objectives and schedule reflect realistic expectations. We need to clarify the questions that can likely be answered relatively quickly at a relatively high level of certainty while other questions may take a considerably longer time to address. We look forward to working with the USGS and the other TWG members to work through this process in a timely manner.

Task 1

PG&E supports the scope of work presented in Task 1, consisting of data review and statistical evaluation of existing data for domestic and monitoring wells. As we discussed, it is important that the TWG fully understand the purpose of the work scope and what questions will and will not be answered by each task. In this case, the draft proposal should clarify that the Task 1 statistical evaluation will identify statistical trends and not by itself draw conclusions regarding the extent of the chromium plume or the potential for plume migration. The data will simply identify those areas with decreasing, stable, and increasing chromium concentrations and these results may then help guide additional data collection as described in other tasks to better understand the information.

Tasks 2 and 3

The majority of the work scopes in Task 2 (Mineralogy) and Task 3 (Groundwater Geochemistry) appear relatively straight forward and are largely consistent with the technical discussions between PG&E and the USGS over the last several months. PG&E supports prompt implementation of both tasks, and understands that the data collection and evaluation can likely be completed within 12 to 18 months of starting work. We recognize that some of the details are still to be determined, such as what soil cores will be used as part of Task 2 and what wells will be sampled as part of Task 3. To the extent the work is focused on understanding background chromium concentrations, PG&E is supportive of the work. To do this, an overall understanding of geochemical conditions at the site is required, and hence some sampling and analysis of other trace elements is appropriate and justified. Sampling and analysis that is related to questions related to IRZ byproducts should be broken out and included as a separate work scope, to be completed as part of the IRZ review and permitting process. We look forward to working with the USGS to solidify these details.

Tasks 4 and 5

Much of the data collection proposed in Task 4 (Evaluation of Local Conditions) will be integrated into Task 5 (Evaluation of Groundwater Movement). Task 5 basically consists of evaluation, update (as needed), and use of the existing numerical groundwater flow model. Several of the Task 4 work scopes are related to a better understanding of the groundwater flow across the Lockhart Fault (west), Mt. General Fault (east and north), and in areas where groundwater flow may be present in alluvium, weathered rock, and rock (primarily the west but also to the north at Red Hill).

PG&E recommends that additional discussions should be had on the existing flow model and the overall objectives of Task 5 before the specific work scopes for Task 4 are finalized and begun. The model will be an important tool to simulate groundwater flow in the present and provide a better understanding of historic groundwater flow conditions in the Hinkley Valley. We concur that the appropriate level of hydrogeologic data must be available to support the modeling effort. Based on discussions from October 22nd, PG&E understands that the USGS supports near term technical discussions to explore in more detail what data may be needed to support the model and that Task 4 can be modified as necessary to be fully aligned with the objectives of Task 5. We look forward to these discussions, and PG&E will likely provide more detailed comments on both Tasks 4 and 5 as follow-up to the dialogue.

Refine Objectives and Work Scope in the Near Term for Task 7

Much of the studies outlined in Tasks 1 to 6 are intended to provide data to understand the occurrence of naturally occurring chromium in groundwater in the Hinkley Valley and to a lesser extent, where the PG&E chromium plume is present and is not present. Task 7 provides for an estimation of background chromium concentrations; in essence, something to replace the current incorrect calculated background levels for hexavalent chromium (Cr6) and total dissolved chromium (CrT).

The text of Task 7 acknowledges that at this time there is no clear path to meet the stated objective, and that the scope will be refined following completion of the first six tasks. PG&E concurs that, to date, discussion on this topic among the TWG members has been somewhat elusive. It is likely that replacing the 3.1 and 3.2 values will be a critical path forward for many stakeholders that are part of this process, and the first six tasks will likely not be complete for several years. PG&E recommends that discussions be held in the near future to discuss the goals and objectives of Task 7, and identify a series of options. The scope and nature of Task 7 can then be promptly re-evaluated to facilitate a timely implementation schedule.

Move Task 8 outside the Background Studies

PG&E understands that Task 8 (Fate of Chromium during In-Situ Remediation) is an important item for the remediation elements of the project, and significant work on this question has already been undertaken. As we discussed, the work scope proposed is more appropriate outside the context of the background studies as part of the IRZ review and permitting process. PG&E is

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requesting that Task 8 be removed from the draft proposal. We look forward to further discussions with the USGS on the appropriate work scope, timing, and funding vehicle.

We look forward to additional discussions with the USGS in the near future on the technical details of the draft proposal. If you have any questions in the meantime regarding this letter, please feel free to contact me.

Best Regards,



Kevin Sullivan