UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
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February 4, 2010

Steve Slaten
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Subject: EPA Review of NASA JPL's Response to Pasadena Water and Power's report titled: *NASA/JPL Perchlorate Contamination of Ground Water in the Raymond* Basin prepared by Geoscience Support Services, Inc. and Williams-McCaron Inc.

Dear Steve:

Thank you for providing the US EPA with a copy of NASA's responses regarding the report, *NASA/JPL Perchlorate Contamination of Ground Water in the Raymond Basin*; prepared by Geoscience Support Services, Inc, and Williams-McCaron, Inc. for the City of Pasadena Water and Power (PWP). This report will be henceforth referred to as the 2009 Geosciences Report. EPA regards these responses from NASA/JPL as constructive steps to resolve the differences between PWP and NASA/JPL in their efforts to determine the extent to which perchlorate has migrated from the JPL Superfund site to the water supply wells used by PWP. At this time, the EPA sees two major areas of discussion:

Groundwater Modeling Results: NASA/JPL's responses to Geoscience Findings 1 through 3 (corresponding to three summary statements in Section 1.3.1 of the 2009 Geosciences Report) and the expected subsequent responses from PWP/Geosciences will be constructive for all parties to understand how the models and modeling results are practically different. As we have discussed, EPA does not have a working knowledge of the details of the respective models used by NASA/JPL and PWP/Geosciences, but EPA expects that such written exchanges between the two parties can resolve some differing interpretations, and the two parties along with EPA can then focus on the outstanding differences that may remain during the planned meeting in the next few months.

Interpretation of Perchlorate Isotope and Degradation Information: NASA/JPL's responses to Geoscience Findings 4 to 9 correspond to six summary statements in Sections 1.3.2 through 1.3.4 of the 2009 Geosciences Report. EPA's review of the NASA/JPL responses and the 2009 Geosciences Report finds Geoscience's interpretation of the isotope data related to source attribution and perchlorate degradation is qualitatively plausible, but it lacks any quantitative evidence that JPL is a major source of the perchlorate present in the PWP water supply wells. Importantly, the existence of geochemical conditions that indicate the potential for biotransformation of perchlorate does not necessarily demonstrate that biotransformation has indeed occurred. The

isotopic information developed by JPL indicating other sources of perchlorate are also reasonably present in the basin further confounds Geoscience's conclusion that the JPL Superfund site is the only source of perchlorate in the downgradient supply wells. If possible, these interpretations should be reviewed by the principal analysts during the upcoming meeting because EPA believes they are too complex to be resolved in a teleconference.

EPA encourages further written exchanges regarding clarifications and interpretations of site conditions by NASA/JPL and the PWP consultants, and the unresolved interpretations and conclusions will then be the basis for the agenda in the upcoming meeting.

If you have any questions or comments, please do not hesitate to call me at (415) 972-3681 or e-mail me at huang.judy@epa.gov.

Sincerely,

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