California Regional Water Quality Control Board

Central Coast Region

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Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

June 29, 2006

Mr. Richard W. McClure
Olin Corporation
Environmental Remediation Group
P.O. Box 248
Charleston, TN 37310-0248

Dear Mr. McClure:

SLIC: 425 TENNANT AVE, MORGAN HILL; LLAGAS SUBBASIN CHARACTERIZATION REPORT

We have reviewed the March 29, 2006 "Llagas Subbasin Characterization, Santa Clara County, Olin/Standard Fusee, Morgan Hill, California" (Characterization Report), submitted by MACTEC Engineering and Consulting, Inc. on Olin Corporation's behalf. The Characterization Report was submitted in accordance with Task D of Cleanup or Abatement Order R3-2005-0014 (Cleanup Order) issued on March 10, 2005.

The Characterization Report documents activities conducted between March and December 2005, including the scope of work presented in the approved Revised Characterization Work Plan, dated February 3, 2006, and previous revisions of the approved Characterization Work Plan. In accordance with the Cleanup Order, the Characterization Report documents the results of assessment activities performed to characterize the vertical and lateral extent of groundwater pollution in the Llagas Subbasin directly beneath the Olin Site and south of Tennant Avenue. The Characterization Report also presents an evaluation of other suspected perchlorate sources throughout the Llagas Subbasin. In summary, the Characterization Report evaluates and reports the efforts, data, and results from previous and ongoing investigation activities and addresses the following elements:

1. Evaluation of background perchlorate concentrations for the Llagas Subbasin (i.e., whether any naturally occurring perchlorate is present) and whether there are other anthropogenic sources of perchlorate.
2. A refined conceptual model of hydrogeologic conditions, geology, groundwater flow pattern, and perchlorate distribution.
3. Description of activities undertaken to characterize the offsite perchlorate groundwater plume.

4. Presentation and analysis of Llagas Subbasin and aquifer-specific data including maps and figures showing perchlorate iso-concentration and groundwater elevation contours for each aquifer zone.
5. Aquifer specific information for remedial feasibility study development.
6. Results of the statistical evaluation to determine perchlorate concentration trends in each aquifer zone.
7. Proposed changes to the Monitoring and Reporting Program based on the updated Llagas Subbasin hydrogeologic conceptual model.
8. An evaluation of newly installed wells in the Llagas Subbasin (e.g., Water District wells, Gilroy test borings, etc.).
9. An evaluation of the suitability of existing water-supply wells within the Llagas Subbasin for the long-term monitoring of perchlorate in groundwater.

Water Board staff appreciates the tremendous effort that Olin put forth to prepare the Characterization Report. We are pleased with the assessment performed to date and the updated hydrogeologic conceptual model for the Llagas Subbasin. The Characterization Report is well written and provides information that goes beyond what was required in the Cleanup Order. Nonetheless, given the complexity of hydrogeologic conditions, it is clear that additional characterization activities are needed to completely delineate the lateral and vertical extent of perchlorate impacts throughout the Llagas Subbasin.

The following are general and specific comments intended to discuss and clarify our position on the work Olin has done and the additional work Olin needs to perform to fully address the perchlorate plume. The general comments address cleanup alternatives that Olin must consider during preparation of the feasibility study and the long-term cleanup plan. The comments also address our general concerns and expectations regarding pertinent characterization and cleanup activities. The specific comments focus on specific sections of the Characterization Report.

GENERAL COMMENTS:

1. As addressed by Cleanup or Abatement Order No. R3-2005-0014 and our March 21, 2006 correspondence concerning the approved Revised Characterization Work Plan, the investigation and cleanup at this facility must be consistent with the State Water Resources Control Board's Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup or Abatement pursuant to Water Code Section 13304* (Resolution No. 92-49). Resolution No. 92-49 requires that all cleanup and abatement actions conform to the provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-Degradation Policy) and to applicable provisions of Title 27, California Code of Regulations (Section III.F.1).

   As you know, our primary goal is to protect and restore water quality, and to ensure that all beneficial uses of the water are maintained. To ensure water quality protection, dischargers must adequately investigate all known or suspected pollution source areas and implement appropriate remedial actions. Based on our review of information presented in the Characterization Report and prior investigation reports,

we understand that Olin has identified several other potential sources of perchlorate, which Olin believes may be contributing to the perchlorate detected in groundwater. According to the Characterization Report, it is Olin's position that the identified potential perchlorate sources are viable and warrant further evaluation. We do not disagree that other sources of perchlorate may be contributing or may have contributed to the existing groundwater impacts. However, to date, it has not been confirmed that any of the identified potential perchlorate sources are viable contributors to the detected groundwater impacts. Further, in accordance with Cleanup Order No. R3-2005-0014, we consider Olin the discharger that caused or permitted the discharge of perchlorate containing wastes to soil and to groundwater underlying, downgradient to the south, and possibly to the north and east of the Site. Thus, at this time and until data are presented demonstrating that another source(s) of perchlorate is a viable contributor to the detected groundwater impacts, we must consider Olin as solely responsible for any required investigation and implementation of any necessary remedial actions.

It is our understanding that the Santa Clara Valley Water District (Water District) will perform a scientific study to determine if there are background concentrations of perchlorate and other sources of perchlorate in the Llagas Subbasin. While the Water District does not provide any assurances concerning the study's effectiveness, the study will attempt to distinguish different anthropogenic sources of perchlorate. The results of the study may identify perchlorate sources other than the Olin Site, but will not be available for at least a year.

2. The Characterization Report proposes the implementation of additional site assessment activities including several additional groundwater-monitoring wells. As previously discussed with Olin staff and consultants, we intend to revise the existing monitoring and reporting program to incorporate all approved changes since issuance of the Cleanup Order. Changes would include Olin's proposed revisions to the monitoring and reporting program (MRP) in January 2006, any other previously approved MRP revisions, and other monitoring requirements determined necessary as a result of new information. As you know, site assessment activities performed during the last two years have provided a greater understanding of hydrogeologic conditions south of the Olin Site. Several monitoring points have already been installed and others are planned to monitor the migrating plume within the various aquifer zones south of the Olin Site. There is now greater understanding of site-specific conditions and we intend to revise the existing monitoring and reporting program to accurately reflect the site's existing conditions and monitoring protocols. We intend to coordinate all monitoring program revisions with Olin and will provide Olin and its consultants an opportunity to review any proposed changes in draft form prior to finalization. In the interim, until the monitoring and reporting program is formally revised, Olin must continue with the implementation of the existing monitoring program(s).

   Further, we understand that monitoring associated with replacement water will soon be reduced significantly. The establishment of an effective groundwater-monitoring

program is critical due to the termination of replacement water to a significant number of private well owners. To address concerns regarding the potential for fluctuations (concentration rebounds) in perchlorate concentrations at well locations where monitoring will cease, we are evaluating the entire groundwater monitoring program (assessment monitoring network and replacement water monitoring) closely to ensure that any concentration rebounds are adequately monitored and identified by the appropriate wells.

Please provide, for Executive Officer consideration, any proposed changes to the existing monitoring and reporting program(s) in the second quarter 2006 monitoring report, due July 30, 2006. Keep in mind that we aim to establish a conservative monitoring and reporting program designed to monitor the potential for fluctuation in perchlorate concentrations.

3. While we fully support implementation of the proposed additional characterization tasks, Olin must proceed towards evaluating and implementing (if applicable) all necessary remediation activities of all impacted water-bearing zones. As discussed in our March 21, 2006 correspondence concerning the February 3, 2006 Revised Characterization Work Plan, and in accordance with task D of the Cleanup Order, by **June 30, 2006**, Olin must perform a feasibility study for corrective action and submit a cleanup feasibility study report (Cleanup Feasibility Report). The Cleanup Feasibility Report must address soil and groundwater remediation alternatives for the Olin Site, including all perchlorate-impacted groundwater within each water-bearing zone beneath and adjacent to the Site.

   For clarification purposes and as discussed with your consultant, the Cleanup Feasibility Report must propose for Water Board approval, a groundwater cleanup level for perchlorate. This proposed groundwater cleanup level must be appropriately justified and substantiated. At a minimum, the Cleanup Feasibility Report shall contain a detailed description of the corrective action measures needed to achieve the proposed groundwater cleanup level for perchlorate within each impaired water-bearing zone. The Cleanup Feasibility Report must address and screen alternative groundwater remedial technologies for perchlorate on the basis of relative efficacy and cost. It must address the expected time frame each feasible alternative will take to achieve the proposed groundwater cleanup level for perchlorate. The Cleanup Feasibility Report must evaluate the feasibility of preventing, controlling, or minimizing impacts to underlying ground water. Specifically, the study must evaluate and compare the feasibility of implementing various remedial alternatives for groundwater cleanup within each impacted water-bearing zone.

   We understand the Plume Migration Control Feasibility Study Report will also address the feasibility and effectiveness of hydraulic control measures within each impacted water-bearing zone. As discussed with your consultant, we anticipate the final cleanup plan for the Llagas Subbasin will combine a plume-migration control strategy with the preferred (and approved) groundwater remedial alternative(s). We

will provide specific comments concerning plume migration control as part of our review of the upcoming Plume Migration Control Addendum (Due by June 30, 2006) and Plume Migration Control Feasibility Study.

SPECIFIC COMMENTS:

1. **Section 7.0 Background Evaluation (Task 3):** This section indicates that the establishment of a background perchlorate concentration requires extensive sampling both within and beyond the Llagas Subbasin. The Water District's Work Plan for the Perchlorate Source and Background Study of the Llagas Subbasin is being implemented to address the background issue. According to the Water District's work plan report, "the geographic extent of investigation to determine origins of perchlorate in the Morgan Hill area exceeds the scope that the Regional Board can reasonably or legally require Olin to complete." Nonetheless, Olin intends to include the Water District's work plan results as one of the sources of information by which Olin will evaluate and propose a background level, including natural and anthropogenic sources of perchlorate, in future cleanup level reports.

   While we understand the complexities associated with the establishment of a background perchlorate concentration for the Llagas Subbasin, it remains the Water Board's position that Olin is responsible for the implementation of groundwater cleanup in accordance with State Board Resolution No. 92-49. When establishing a cleanup level, the first goal is to achieve background water quality. We understand that when proposing a cleanup level greater than background, Resolution No. 92-49 allows consideration of the existing quality of groundwater, including other sources of degradation, contamination or pollution and their cumulative impact on groundwater quality. Thus, we understand that Olin must evaluate the plausible existence of natural and anthropogenic sources of perchlorate. We believe it is Olin's responsibility, not the Water District's, to evaluate and establish what the natural or anthropogenic background conditions are within the Llagas Subbasin. Thus, it is our position that unless Olin demonstrates that background perchlorate concentrations in groundwater are greater, we assume that background is "non-detect" at the method detection limit.

   For the record, we attached a copy of recent correspondence we received from the Water District concerning the expectations of the Water District's Perchlorate Background and Source Study.

2. **Conclusions Section 10.0:** While we understand that additional characterization activities remain necessary, we agree with the report conclusion that the recent characterization activities have provided a much better understanding of the geology and hydrogeology of the Llagas Subbasin. A substantial amount of work was performed, including the installation of ten multi-level monitoring wells southeast of the Olin Site, samples from which now provide high-quality depth-discrete analytical data. Based on the results of the various investigations and evaluation activities performed to date, we concur that domestic supply wells with known well-screen intervals are suitable for monitoring the perchlorate distribution within the Llagas

Subbasin at the distal end of the plume. In conjunction with the multi-level monitoring well results, supply wells with known screen intervals may be used to assess perchlorate distribution beneath San Martin and Gilroy.

3. **Conclusions Section 10.1.3 Water Chemistry:** This section states, "The lateral extent of perchlorate in the shallow aquifer is not yet known, except immediately south of the Site, because so much of the aquifer was dry during the winter 2005/2006 sampling period." Further, the Characterization Report suggests that, "although other sources may be responsible, the observed shallow aquifer perchlorate detections were likely caused by irrigation with water originating from the intermediate aquifer."

   While we agree that it is plausible that other sources and recirculation of irrigation water may be responsible for the observed detections, Water Board staff recommends further evaluation of this hypothesis. Thus, Olin remains responsible for completing its task of thoroughly characterizing the lateral extent of perchlorate detections in the shallow aquifer, particularly between Well MW-21, MW-40 and MW-44. Olin must make a good faith effort to delineate groundwater impacts within the shallow aquifer zone in this area.

4. **Conclusions Section 10.1.3 Water Chemistry:** This section concludes that the lateral distribution of perchlorate in the intermediate aquifer appears to extend from the Site to approximately MW-21 (approximately 1-1/4 miles) at concentrations above the public health goal (PHG). Perchlorate concentrations in groundwater between well MW-21 and central San Martin are non-detect or below the PHG. However, perchlorate concentrations east of Highway 101 are above the PHG. The Characterization Report suggests that it is possible that the perchlorate detected east of Highway 101 originates from a source other than the Site.

   As discussed above, while other sources of perchlorate may be contributing to the groundwater impacts, it is necessary to complete additional investigation confirming that other potential sources have impacted groundwater. Until confirmation, using analytical data showing that alternative perchlorate sources are responsible, we must take the position that Olin is the source and solely responsible for the perchlorate detections.

5. **Conclusions Section 10.1.3 Water Chemistry:** This section indicates that the lateral distribution of perchlorate in the deep aquifer extends south of the Site to at least MW-21. However, groundwater results from two deep wells (10S03E11H001 and 10S03E01M002) indicate that that perchlorate possibly extends continuously from the Site to the area west of San Martin at concentrations above the PHG.

   Based on information reported, additional characterization must be conducted between Well MW-21 and Well 10S03E11H001, which is located adjacent to the San Martin winery, west of the San Martin Airport and Well 10S03E01M002, which is located north of MW-26, east of Highway 101. Please include the results of the

additional characterization work in the upcoming quarterly monitoring reports or in the next update to the Characterization Report.

6. **Conclusions Section 10.1.3 Water Chemistry:** This section concludes that migration of perchlorate from the intermediate aquifer into the deep aquifer occurs when the Tennant Well is in operation.

   Upon careful consideration of this possibility, we believe that while the migration of perchlorate from the intermediate aquifer to the deeper aquifer may occur via the Tennant Well, the benefits of extracting perchlorate-impacted groundwater for treatment and hydraulic containment may outweigh the negative impacts associated with the potential migration of perchlorate-impacted groundwater to the deeper aquifer zone. We recommend that you evaluate whether it is more beneficial (from a water quality perspective) to operate the Tennant Well or to shut it down indefinitely. We encourage you to work closely with the City of Morgan Hill and the Water District on this issue.

7. **Conclusions Section 10.1.3 Water Chemistry:** We agree with the Characterization Report's conclusion that additional data are needed to further delineate the lateral extent of perchlorate in the intermediate and deep aquifers. Perchlorate must be delineated in the intermediate aquifer immediately south of the Site and in the deep aquifer from the Site to the area west of San Martin. Please include the results of the additional characterizations activities in the upcoming quarterly monitoring reports or in the next update to the Characterization Report.

8. **Conclusions Section 10.3 Background Evaluation:** The last paragraph of this section states, "While no natural perchlorate has yet been identified in cores from the new boreholes or rainfall, significant concentrations of perchlorate have been detected in other samples collected in the Subbasin that clearly indicate the current anthropogenic use of perchlorate-containing materials a variable background of perchlorate in groundwater that is unrelated to releases from the Site."

   This statement is unsupported. While other potential sources of perchlorate have been identified (e.g., bleach use by food processing facilities and in well disinfection, highway safety flares, fertilizers, and a nearby rocket motor manufacturer), a link between the identified potential sources and underlying groundwater has not been established. Until these sources are confirmed (with analytical data) as viable contributors to existing groundwater impacts, our position is that Olin is the responsible source of the perchlorate detections in groundwater known to have been impacted by the Olin Site.

9. **Conclusions Section 10.4 Shallow Aquifer Evaluation:** This section concludes that the detections of perchlorate in the shallow multi-level wells northeast of Gilroy may be due to the re-distribution of perchlorate via irrigation wells from the intermediate or deep aquifers to the shallow aquifer or an additional nearby source of perchlorate.

As stated above, any assertion that the detected perchlorate concentrations may be caused by other sources or by other means must be substantiated with analytical data.

10. **Conclusions Section 10.5 Southern Groundwater Flow Assessment:** This section states, "Perchlorate migration towards the municipal wells in Gilroy is unlikely given the groundwater-flow pattern in the area and the absence of groundwater with perchlorate concentrations exceeding the PHG to the northeast and east of the City's well-field (i.e., the closest well exceeding the PHG is north of Buena Vista Avenue). Therefore, the supply wells northeast and east of the City's well-field are performing the role of a distant sentry-well system. None of these wells is exhibiting perchlorate at concentrations exceeding the PHG."

    Based on our review of the groundwater data and associated evaluation performed, we concur with the Characterization Report's conclusions and recommendations concerning this matter. However, as previously discussed, evaluation of groundwater conditions is an ongoing process. Thus, if future monitoring data indicate that the perchlorate-impacted groundwater is migrating or threatening to migrate in the direction of any of the City of Gilroy municipal wells, we may require installation of additional sentry wells.

11. **Recommendations Section 11.1 Background Perchlorate Evaluation:** This section asserts that perchlorate sources other than the Olin Site have been and continue to be present within the Llagas Subbasin and have contributed to a background perchlorate concentration.

    As addressed above, until sources other than the Olin Site are confirmed (with analytical data) our position remains that the background concentration of perchlorate within the Llagas Subbasin is "non-detect." Thus, at this time and until proven otherwise, we take the position that there is no measurable natural or anthropogenic background concentration of perchlorate above the method detection limit in the Llagas Subbasin.

12. **Recommendations Section 11.2.1 CPT Borings:** We concur with the recommendation to conduct further delineation and data gathering of the following two specific areas: (1) the western and southern extent of perchlorate concentrations south of the site in the shallow and upper portions of the intermediate aquifer and (2) north and east of the Site in the intermediate and deep aquifers. We concur with the recommended boring locations as depicted in Figure 11.1. However, considering the recent perchlorate detections immediately east of the Site, we believe that perchlorate delineation immediately east of the Olin Site and north of Tennant Avenue must not be limited to the shallow and intermediate aquifer zones. Characterization must include the deep aquifer zone. As you know, the characterization activities in the area immediately east and northeast of the Site have been limited to the installation of a few wells. Recent perchlorate detections in

this area warrant further investigation in all aquifer zones (shallow, intermediate, deep). In the Characterization Report, you postulate that another source of perchlorate may be responsible for the perchlorate detections in this area. Considering the proximity of perchlorate detections to the Olin site, it is highly probable that the source of these detections could be the Olin Site (at least immediately adjacent, and possibly beyond). Pending data supporting the contention that an alternate source of perchlorate is responsible, we consider Olin responsible for fully characterizing the extent (laterally and vertically) and degree of contamination in this area and evaluating whether the perchlorate detections emanate from the Olin Site. Irrespective of the Cleanup Order conditions (focusing on southern areas), Olin must delineate the extent and degree of groundwater impacts immediately east of the Olin Site and north of Tennant Avenue. Thorough characterization is required to establish whether any perchlorate detections north and northeast of the Site are related to the Olin site. We will provide detailed comments, recommendations and specific requirements concerning the area north and northeast of the Olin Site, as part of our review of Olin's *Northeast Groundwater Flow Assessment – Update*, which is included as Appendix E to the First Quarter 2006 Monitoring Report.

13. **Recommendations Section 11.2.1 Aquitard Pore Water Samples:** We concur with the Characterization Report's recommendation to collect additional data to delineate perchlorate within the A/B1 aquitard immediately south of the Site.

14. **Recommendations Section 11.2.3 Monitoring Wells:** We agree with the Characterization Report's assessment of data gaps and data needs south of the Site. We concur with all of the proposed additional characterization activities in the shallow and intermediate aquifer zones west of well MW-17, and in the deep aquifer between the Site and MW-26. We agree with the proposed monitoring well locations as illustrated on Figure 11.2. We understand that the need for additional monitoring wells will be evaluated following the continued collection and review of data from the quarterly monitoring program and from the proposed new monitoring wells. We understand the objective for installing the proposed monitoring well MW-53 is to define the extent of perchlorate impacts west of existing well MW-17. We suggest you consider, depending on the perchlorate concentrations detected in the proposed new well (Well MW-53), that further delineation of the lateral extent of perchlorate impacts might be deemed necessary.

15. **Recommendations Section 11.2.4 Mass Flux Estimation South of Site:** We concur with the report's recommendation to calculate the mass flux of perchlorate migrating within the individual aquifer units south of the Olin Site.

16. **Recommendations Section 11.3 Revision to the Monitoring & Reporting Program:**
We concur that additional data is required from the multi-level monitoring wells to evaluate possible trends in concentration over time. This section states that Olin

proposed a revision to the MRP in January 2006 and will implement the revision as proposed.

For clarification purposes, we remind you that any revisions to the monitoring and reporting program must be authorized by the Executive Officer. As described in a previous section, it is our intention to revise the existing monitoring and reporting program. We have received Olin's proposed revised MRP and have discussed the proposed MRP revisions with Olin's consultant (MACTEC). In the meantime, Olin must continue to monitor and submit monitoring reports in compliance with the current MRP. Water Board staff is working cooperatively with Olin staff to consolidate monitoring requirements to develop a comprehensive monitoring and reporting program for the entire Site. It is our intent to continue evaluating the existing monitoring network and evaluate the need for changes. Presently, additional characterization activities are being implemented, which will prompt additional modifications to the MRP. Thus, we would like to wait until some of these characterization activities are completed before we implement any significant changes to the MRP. In the interim, we expect all newly added monitoring wells are incorporated to the MRP.

17. **Recommendations Section 11.4 Simulation of Perchlorate Transport and Fate:** We fully agree that a calibrated groundwater flow model can provide useful illustration of capture zones for pumping wells that remove perchlorate from groundwater. As such, the Characterization Report recommends that a numerical model be constructed with a domain that includes the area with perchlorate concentrations above the PHG and sufficiently distant from pumping wells of interest to avoid boundary affects. In general, we agree with this approach. However, instead of the PHG (6 ppb), we recommend that a concentration of 4 ppb be used. Water Board suggests 4 ppb because it is the practical quantitation limit for the analytical method being used to define the extent of perchlorate plume boundaries.

    While we fully agree with the outlined characterization goals, it is our position that site characterization activities are an ongoing process and will be continuously evaluated and modified as deemed necessary, based on investigation findings, site-specific conditions, and other pertinent factors.

We find that the Characterization Report adequately addresses all comments and concerns as outlined in our March 21, 2006 comment letter. We understand that many of the proposed additional characterization activities and tasks proposed in the Characterization Report are in the process of being implemented or are near completion. Olin is required to evaluate additional hydrogeologic and perchlorate data collected, evaluate the monitoring system's performance in the past year, and evaluate and make recommendations based on the revised hydrogeologic conceptual model. The proposed additional characterization activities are consistent with our goals and expectations for completing the required site characterization and remediation activities.

Although additional site characterization activities are clearly necessary to thoroughly characterize hydrogeologic conditions within the Llagas Subbasin, we fully concur with all of the Characterization Report's findings and conclusions concerning the additional investigation activities performed to date, and hereby agree with and approve of the immediate implementation of all proposed additional characterization activities, as discussed above. With this approval and pending complete implementation of all proposed characterization activities, Olin has achieved compliance with Task D of the Cleanup Order. As such, further revisions of this Characterization Report are not necessary. We expect completion and submittal of all additional data collected and evaluated in subsequent quarterly monitoring reports and future annual updates to the Characterization Report (due annually on January 31st).

We appreciate your continued cooperation and proactive approach to conduct additional site assessment activities. We look forward towards successful completion of all remaining characterization tasks, establishment of a groundwater cleanup level, selection and implementation of an appropriate groundwater cleanup strategy. If you have any questions, please contact **Hector Hernandez at: (805) 542-4641** or via e-mail at Hhernandez@waterboards.ca.gov, or Eric Gobler at (805) 549-3467.

Sincerely,

Roger W. Briggs
Executive Officer

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Enclosure:

May 11, 2006 Correspondence from Santa Clara Valley Water District Concerning Clarification of Role of Districts Perchlorate Background and Source Study

cc via E-mail:

Ms. Lori Okun
Office of the Chief Counsel
State Water Resources Control Board

Olin Technical Contacts IPL
cc via U.S. Mail:

Olin Correspondence IPL

Santa Clara Valley Water District

May 11, 2006

Mr. Roger Briggs, Executive Officer
California Regional Water Quality Control Board
Central Coast Region
895 Aero Vista Drive, Suite 101
San Luis Obispo, CA 93401

Subject: Clarification of Role of District's *Perchlorate Background and Source Study*

Dear Mr. Briggs:

The Santa Clara Valley Water District wishes to offer the following clarifications regarding aspects of the Regional Board's May 2nd letter to Morgan Hill City Manager Ed Tewes pertaining to the District's *Perchlorate Background and Source Study* (Study):

1. It is anticipated that the sampling and analysis phase of the Study will be completed at the earliest in summer of 2007. A variety of factors could require more time to complete the Study; however, we are optimistic that a draft report will be available by the end of 2007.

2. The geographic scope of the study is the entire Llagas groundwater subbasin; the Study will not focus only on the Morgan Hill area. The data collected could be useful for establishing a groundwater subbasin background level for perchlorate. It is also expected that application of isotope methods will be successful in differentiating anthropogenic from natural sources of perchlorate. The Study will attempt to distinguish different anthropogenic sources of perchlorate; however, there are a number of factors that could complicate the interpretation of forensic data to allow definitive determination of one anthropogenic source vs. another. The expert panel convened to advise the Study will help to apply the most robust methods available, but the District cannot at this point assure the Regional Board that the Study will answer all the questions discussed in the May 2nd letter.

The District is at this time committed to perform a scientific study of perchlorate background and sources for the entire Llagas groundwater subbasin provided that funding and resources remain available. The Study will follow EPA's quality protocols, and is subject to approval by EPA's Quality Assurance Officer.

Sincerely,

ORIGINAL SIGNED BY

Behzad Ahmadi, P.E.
Manager, Groundwater Management Unit

Cc: Ed Tewes, City of Morgan Hill
Melanie Richardson, Walt Wadlow, Thomas Mohr