California Regional Water Quality Control Board
Central Coast Region

Alan C. Lloyd, PhD.
Secretary for Environmental Protection

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Arnold Schwarzenegger
Governor

August 3, 2005

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

Dear Mr. McClure:

SLIC: LLAGAS SUBBASIN MONITORING WELL INSTALLATION WORK PLAN, 425 TENNANT AVENUE FACILITY, MORGAN HILL, SANTA CLARA COUNTY

Regional Water Board (Water Board) staff has reviewed the Llagas Subbasin Monitoring Well Installation Work Plan (Work Plan), dated July 5, 2005, which documents proposed well installation activities. The Work Plan is similar to the northeast perchlorate monitoring well installation work plan and details monitoring well installation at nine locations. Olin is proposing to install nine monitoring well pairs starting just south of the site and continuing down the valley to just north of Highway 152, near Gilroy. The well pairs will include a Continuous Multi-Channel Tube (CMT) well and a single or double screen standpipe well in separate borings at each monitoring location. The single or double standpipe well will be used in borings greater than 300 feet deep. The CMT wells will be used for monitoring groundwater aquifer zones to 300 feet below ground surface.

Water Board staff provided Work Plan comments to Olin on July 14, 2005, seeking additional details related to the monitoring well installation and testing. Additionally, Work Plan comments were provided to the Water Board by the Santa Clara Valley Water District on July 13, 2005, and the City of Gilroy on July 14, 2005. Regional Board staff reviewed both sets of comments and incorporated a number of them into our July 14, 2005 comments.

Water Board staff have considered Olin's responses to the July 14, 2005 Water Board comments. The responses were provided in a meeting held on July 27, 2005, between Water Board staff, Olin, Santa Clara Valley Water District and City of Gilroy representatives. We hereby approve the Work Plan with the following clarifications and changes:

1. Olin plans to sample select fine-grained strata for vertical hydraulic conductivity after the soil core has been removed from the sonic drill casing. Water Board staff understand that it is difficult to determine what type of soil material the drill head is encountering during drilling since the drill head down pressure is not as distinguishable as it would be if mud

rotary or another method were used. Typically, more resistance is encountered in clay or rock strata during mud rotary drilling but this is not the case for vibrasonic drilling. Therefore, Olin plans to sample the core with 2.5-inch brass tubes pushed in to the 4-inch soil cores center.

2. Water Board staff understands from Olin that lithology will guide the depth of drilling and screening of each borehole. Olin's consultant, MACTEC, believes that the 450-foot depth is about 50 percent deeper than they actually need to drill. MACTEC also believes that since the investigation will be an ongoing, iterative process that additional wells will be proposed if perchlorate appears to have migrated deeper into the aquifer.
3. The CMT pipe includes a groove along channel one for port designation purposes. All other channels are numbered clockwise; therefore channel designations can be easily determined should the cap be lost or replaced incorrectly.
4. Olin will be performing the same well development process that was approved in the Water Board's March 22, 2005 letter. This includes turbidity testing.
5. Olin will now be submitting latitude and longitude coordinates with sub centimeter horizontal accuracy to eight decimal places.
6. Olin will be collecting as many samples as are necessary to adequately characterize specific hydraulic properties of aquifer zones. At a minimum, three samples will be collected from each well and analyzed as stated in the Work Plan. The number of zone-specific samples will depend on aquifer homogeneity and lithology as the investigation proceeds in a southerly direction.
7. Olin believes that geophysical testing is not needed since the entire core will be removed and examined. Olin will also be using additional tests including petrophysical (clay/rock typing) and micro fossil analysis to characterize aquifer and aquitard zones. The aforementioned data will be used to correlate aquifer zones in the southern perchlorate area.

Water Board staff approves the Piezometer Work Plan, with the aforementioned changes and clarifications, in accordance with Cleanup or Abatement Order (CAO) R3-2005-0014 requirements. The piezometers shall be installed according to the schedule outlined in the Work Plan as required by CAO R3-2005-0014. A letter report shall be submitted detailing piezometer installation as required by CAO R3-2005-0014,5Ordering Paragraph C. We request that the Dischargers provide Water Board staff with weekly well installation updates via email to dathey@waterboards.ca.gov. We look forward to the successful completion of this project.

If you have any questions, please contact **David Athey at (805) 542-4644** or Eric Gobler at (805) 549-3467.

Sincerely,

for Roger W. Briggs
Executive Officer

cc via E-mail:
Olin Interested Party List

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