

**STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 10, 2006**

Prepared on January 20, 2006

**ITEM NUMBER: 19**

**SUBJECT: Cessation of Bottled Water Service, Olin Corporation, Morgan Hill,  
Santa Clara County**

**THIS ACTION: Adopt Proposed Resolution No. R3-2006-0014**

**DISCUSSION**

This item presents proposed Resolution No. R3-2006-0014, which allows Olin Corporation to stop providing interim alternative water supply to 168 users (some wells have multiple connections) of 78 water supply wells. In addition, we provide background information, a summary of the most recent monitoring data leading to this proposed Resolution, and our responses to public comments.

**Background**

Olin Corporation (hereafter "Olin") has been supplying interim uninterrupted replacement water, in the form of bottled water, to private well owners since October 22, 2002. Up to and until April 7, 2004, Olin had agreed to supply interim uninterrupted replacement water to well owners with perchlorate results at four parts per billion (ppb) and to a set of well owners with detections below 4 ppb. On April 7, 2004, Olin requested that Regional Board staff reconsider the 4 ppb interim uninterrupted replacement water supply level since the Department of Health Services (DHS) Action Level (now called "Notification Level" by the DHS) was changed to 6 ppb. The DHS Notification Level change was based on the Office of Emergency Health Hazard Assessment's (OEHHA) recently released perchlorate Public Health Goal of 6 ppb. In a written response dated April 29, 2004, the Regional Board Executive Officer determined it necessary to maintain the 4 ppb level for interim uninterrupted replacement water supply. Consequently, the Discharger was

directed to keep providing bottled water, on an interim basis, to people whose wells contained perchlorate above 4 ppb.

Olin subsequently appealed the Executive Officer's letter to the State Water Resources Control Board (State Water Board). The State Water Board determined that letter did not cite the correct California Water Code section and therefore was not enforceable as a replacement water order.

On July 6, 2004, in response to the State Water Board's determination, the Executive Officer issued Cleanup or Abatement Order (CAO) No. R3-2004-0101 pursuant to Water Code Section 13304. Cleanup or Abatement Order No. R3-2004-0101 required Olin and Standard Fusee Corporation (Standard Fusee was co-named discharger at that time with no direct involvement with interim alternative water supply) to supply interim uninterrupted alternative water supply to well owners with perchlorate concentrations at and above 4 ppb, thus denying Olin's request to use 6 ppb as the trigger. The Order also required Olin to supply interim alternative water supply to well owners with detections below 4 ppb (also called trace detections). However, Olin was allowed to request cessation of interim alternative water supply if Olin could demonstrate four continuous quarters of less than 4 ppb results.

On August 5, 2004, Olin petitioned CAO No. R3-2004-0101 to the State Water Board and

requested that the interim alternative water supply trigger level be changed to 6 ppb.

On May 19, 2005, the State Water Board issued Water Quality Order WQO 0007 (Order WQ 2005-0007), which amended Central Coast Water Board CAO No. R3-2004-0101. Order WQ 2005-0007 modified the alternative water supply trigger level from 4 ppb to greater than 6 ppb, modified the criteria for ending interim alternative water supply, and included monitoring requirements agreed to by Central Coast Regional Water Quality Control Board (Central Coast Water Board) and Olin Corporation. The monitoring requirements were subsequently incorporated into Order WQ 2005-0007 by the State Water Board.

Order WQ 2005-0007 modified interim alternative water supply cessation requirements and included a new Ordering Paragraph 2a as follows:

*"Notwithstanding other requirements, for well owners currently receiving replacement water service, no discontinuation of that service shall occur, unless approved by the Central Coast Water Board, until four prospective quarters of monitoring show perchlorate concentrations equal to or less than 6 ppb."*

The word "Prospective" refers to four continuous quarters of monitoring data collected *after* Order WQ 2005-0007 was adopted. However, Olin requested to stop providing alternative water based in part on data collected prior to adoption of State Board WQO No. 0007. Therefore, for this well and data set, Olin must obtain approval from the Central Coast Water Board before ending interim alternative water supply for the 78 wells users. The State Water Board was clear that only the Central Coast Water Board, and not the Executive Officer, could approve this request. In the future, where there are four prospective quarters of sampling, Board action will not be required.

On September 15, 2005, Olin submitted a list of 78 wells that were sampled for at least four

continuous quarters, and the sampling data confirmed perchlorate levels were below 4 ppb. The submitted results are not prospective to Order WQ 2005-0007 and therefore Olin is requesting that the Central Coast Water Board allow cessation of alternative water supply to the users of these 78 wells (168 total users).

Olin's list of 78 wells is included in Attachment 1 of Resolution R3-2005-0014. The monitoring results for these wells are typically non detect at a practical quantification limit of 4 ppb or are trace detections that fall between the method detection limit and the practical quantitation limit (typically 2.0 to 3.0 ppb depending on the laboratory). The list also includes six wells that are within 500 feet of a 6 ppb well. Olin is required to monitor these six wells according to the monitoring requirements contained in Order WQ 2005-0007.

Central Coast Water Board staff reviewed Olin's monitoring data by checking each individual laboratory data point for each well. The laboratory data sheets indicated that none of the wells had detections at or above 4 ppb (for the last four continuous quarters) and all results were from a California certified laboratory. Regional Board staff has no reason to believe the data is invalid at this time. In addition, the data check was corroborated by the Santa Clara Valley Water District as discussed below in the Response to Comment Section. Central Coast Water Board staff is confident that the sample results are accurate based on the submitted information. Therefore, staff is recommending adoption of Central Coast Water Board Resolution No. R3-2006-0014, which allows Olin to cease the supply of alternative water to the 168 users of 78 specific wells.

The proposed Resolution also requires Olin to perform semi annual monitoring of six wells that are within 500 feet of a well that has a 6 ppb perchlorate detection in accordance with the monitoring requirements attached to Order WQ 2005-0007.

#### **COMMENTS**

**(Comments are abridged. Comment letters are attached to the staff report)**

**Robert Method [Gilroy Resident]**

*We have raised four children who are now adults. Two have thyroid problems that require daily medication and my wife and I have no history of this illness in our families. It seems to me that more time is needed to study the long-term effects perchlorate has on people. Keep in mind that before Olin contaminated our water supply there was no need to buy bottled water and my family is not convinced that the standards established by the state are safe over an extended period. The bottom line is that before Olin contaminated our water supply we had clean water. I strongly feel that Olin should supply free bottled drinking water until they remove all the perchlorate from our water supply.*

**Staff Response** – Central Coast Water Board staff agrees with Mr. Method. Additional research related to perchlorate's health effects should be conducted and a conservative approach should be followed. The National Academy of Sciences also recommended that additional research on perchlorate be conducted as part of the Academy's comprehensive perchlorate health review. This was one of the arguments that staff put forth to the State Water Board to justify 4 ppb as an appropriate alternative water supply trigger level. The State Water Board disagreed with Central Coast Water Board staff's argument and deferred to OEHHA's Public Health Goal (PHG), because OEHHA is the agency charged with conducting health risk assessments. However, until additional research is conducted and the OEHHA number changes, the Central Coast Water Board must follow the State Water Board's order, which established the alternative water supply trigger level of 6 ppb.

**Mrs. Elaine Jelsema [Gilroy Resident]**

*I am writing to protest Olin's plan to stop supplying bottled water to those of use whose wells are contaminated by the perchlorate for which they [Olin] are responsible. Olin has stated that they are responsible for the perchlorate contamination and according to state law, they are responsible to pay for the*

*results of the pollution and the cleanup. At first, Olin cooperated, but over time, they have clammed up and are back-peddling on their promise. The State Water Board has set a limit of 6 ppb and has told Olin that it need not provide water to people whose wells test at or below that number. Where did the State Water Board get that number? The truth is that no one knows what a safe limit is. Because someone at the State Water Board decided 6 ppb was a good number, we will have to pay for bottled water, since we can't afford to install a decontamination system if one is invented. We didn't poison our water-- Olin did. Olin is the company that knowingly dumped perchlorate in our water source and they have the moral and ethical responsibility to pay the price for their imprudent and irresponsible actions. Please override the State Water Resources Control Board.*

**Staff Response** – The State Water Board deferred to the OEHHA's Public Health Goal of 6 ppb as the level which perchlorate is safe to drink. According to OEHHA, 6 ppb is the level at which perchlorate will have no effect on infants, unborn children and pregnant women (the most sensitive populations). The State Water Board deferred to the OEHHA's health risk analysis expertise and established a replacement water trigger of 6 ppb. In addition, the State Water Board required Olin to continue to supply interim alternative water supplies, to well owners at and below 6 ppb, until at least four quarters of continuous data showed concentrations at and below 6 ppb. Order WQ 2005-0007 cannot be amended by the Central Coast Water Board or it's staff.

Collin L. Pearce, Duane Morris LLP,  
[On behalf of seventeen well owners]

*We oppose the discontinuation of alternative water supply to the seventeen properties served by the wells listed in this letter. We request that the Central Coast Water Board consider the following in connection with the Draft Resolution:*

- 1. It is premature and inappropriate to discontinue alternative water supply when Olin has not yet characterized the perchlorate plume. A background*

*perchlorate level and cleanup level have not been established. Until these steps have been accomplished, it is premature to discontinue the alternative water supply to wells users. In addition, one of the Draft Resolution findings indicates that "a majority of wells are located outside the main plume area..." It is unclear what "the main plume area" means and that term is not defined in the Draft Resolution. We request clarification of this point.*

2. *There is a great deal of variability in the perchlorate concentrations in our clients' wells. All of our clients have had more than one detection. Given the wide fluctuation shown alternative water supply should continue.*
3. *Despite having four quarters of <4 ppb results, perchlorate has been detected in all the wells in question. Five of the wells have had results in excess of 4 ppb with six others exceeding 3.5 ppb. At a minimum, bottled water should continue for each well with at least one result greater than 4 ppb.*

**Staff Response** – Central Coast Water Board staff agree that plume characterization and cleanup levels are not yet completed or established, respectively. State Water Board Order WQ 2005-0007 is clear that final cleanup levels may be less than alternative water supply triggers and cleanup levels are not appropriate replacement water triggers.

Central Coast Water Board staff has reviewed Finding 7. Finding 7 states, "A majority of wells are located outside the main plume area shown on Attachment 1. However, a small subset of wells are located within the main plume." Central Coast Water Board staff's intent was to describe the wells in relation to what is currently known about the plume's extent. This finding should not be interpreted to mean that the plume has been adequately characterized by Olin. Central Coast Water Board staff included the finding to describe the general location of the subject wells. Central Coast Water Board staff have modified Finding 7, as follow:

7. A majority of the subject wells are located on the periphery of ~~outside~~ the main plume area as currently defined, as shown on Attachment 1. However, a small subset of wells are located within the currently defined main plume. The lateral and vertical extent of the plume have not yet been determined.

Central Coast Water Board staff reviewed Mr. Pearce's sampling results and determined that the subject wells meet the criteria for ending alternative water supply. We agree that some wells appear to exhibit concentration variability. However, most of the results are in the trace range where variability cannot be determined on a statistical basis. Trace results indicate that perchlorate is merely present and the number given is a laboratory estimate. Central Coast Water Board staff's review of Mr. Pearce's data indicates that well 09S03E35P014 had a 4.4 ppb sample result in November 2005 and, according to Order WQ 2005-0007, this well should be monitored at the frequency specified in the monitoring requirements attached to Order WQ 2005-0007. Central Coast Water Board staff has added a finding to the proposed Resolution reflecting this change. Central Coast Water Board staff provided this data to Olin on January 19, 2006.

Central Coast Water Board staff acknowledges that some of the wells in question have had results at four ppb and higher prior to the four continuous quarters of <4ppb results. However, staff believes that is appropriate to cease water supply to these wells since the request complies with the requirements of Order WQ 2005-0007 for ending alternative water supply.

**John Laird, Assembly Member 27<sup>th</sup> District**

*I am concerned that the proposed resolution does not specifically require continued monitoring of 72 of the 78 wells. The 72 wells may have recently tested below the PHG, but the nature and extent of the contamination are still uncertain. The Santa Clara Valley Water District staff has publicly acknowledged that Llagas Subbasin groundwater can move more than 3 feet per day. This equates to 1000 feet per year of groundwater movement and it is*

*unclear how the 500-foot criterion set as a boundary for public health concerns relates to the dynamic nature of perchlorate movement towards drinking water wells. The required Llagas Subbasin Characterization Report is months away from completion and a comprehensive view of groundwater flow will not be known until that time. Because of these uncertainties, I ask that your Board consider adding a monitoring requirement to any approval to stop alternative water supply. Both the State Water Board and Central Coast Water Board Orders require consecutive testing leading up to a decision to cease alternative water supply, but this does not protect individuals from future contamination. State Water Board Water Quality Order No. 0007 even states:*

*"Nothing in this Order shall be read to prevent a regional water board from issuing a water replacement order directing future actions preparatory to providing timely replacement water in the event that the appropriate standard is met or exceeded in the future...Where water quality data exhibits trends indicating the likelihood of future exceedances, it is prudent and appropriate for regional water boards to take such action before actual well exceedances occur."*

**Staff Response** – As discussed above, Central Coast Water Board staff modified the draft resolution to reflect the current plume characterization status. We also agree that the Central Coast Water Board has the discretion to require additional sampling consistent with Water Code Section 13267.

The Order WQ 2005-0007 language referenced above refers to actions that a discharger must take to prepare for timely water replacement when it appears that replacement will likely be necessary in the future. For example, a discharger needs significant lead-time to replace a municipal supply well. Waiting until a municipal reaches 6 ppb to begin the planning and financing process would not adequately protect public health. In Olin's case, short-term replacement water consists of delivered bottled water or the equivalent. Other than

monitoring, no preparatory action is necessary since Olin can commence bottled water supply with no lead-time.

The only way to establish perchlorate trends is by monitoring. As Assemblyman Laird states, the proposed Resolution does not require additional testing for wells currently receiving replacement water that are less than 4 ppb for four consecutive quarters and that are greater than 500 feet from a 6 ppb well. These monitoring requirements are from Order WQ 2005-0007, Attachment A. Since the Water Board can only require replacement water where wells exceed 6 ppb, monitoring is not required where past data or other available information do not suggest that a particular well is threatened. The monitoring requirements in Order WQ 2005-0007 require trend analyses before monitoring is discontinued for wells with detections above 4 ppb, and three additional samples of wells below 4 ppb that are near wells above 6 ppb. Water Board staff and Olin developed these requirements to ensure that wells taken out of the replacement water program were not likely to have concentrations above 6 ppb based on what was known at the time.

Many wells are not subject to the monitoring requirements of the Order because they were not receiving replacement water. For those wells, Water Code Section 13267 allows the Water Board to impose monitoring requirements where there is a technical basis to suspect that a particular well may be above 6 ppb, and there is a high enough likelihood of that to justify the cost of monitoring. For example, sampling a well that has not been sampled for a period of years could be appropriate if nearby wells are trending upward or there is other reason to suspect that the well may be threatened.

The issue under consideration in the Resolution is whether the Central Coast Water Board should allow early termination of replacement water for these 78 wells in accordance with Order WQ 2005-0007. The Resolution applies the monitoring requirements approved by the State Water Board in that Order. Central Coast Water Board staff and Olin are developing a

comprehensive monitoring and reporting plan to address all cleanup and replacement water sampling in a single plan. Development of the monitoring plan will include community input. The number of tested wells is in excess of 800, and it would be more efficient to address monitoring requirements for all these wells and not just the current 78. If more frequent monitoring of particular domestic wells is necessary for any reason, that issue will be addressed in the comprehensive monitoring plan or other comprehensive order.

**Thomas Mohr, Santa Clara Valley Water District**

*We have reviewed the data and agree with Central Coast Water Board staff that 78 wells have four continuous quarters of <4 ppb results and meet the requirements for alternative water supply cessation. We have concerns with how the monitoring requirements in Attachment A of WQO 2005-0007 are being applied, the lack of monitoring wells in and near the plume, and the uncertainty of private well monitoring requirements related to discontinuing replacement water and reinstating or initiating replacement water.*

*Thirteen of the 78 wells have had perchlorate results above 4 ppb in tests performed one to three years ago. These wells should be assigned to a higher monitoring scheme. The draft Resolution only requires that two of the 13 wells even be monitored.*

*Several of the 78 wells appear to be in the plume, based on the map provided by Olin. We believe that some of these wells should continue to be monitored. Fortunately, Olin's data as of the 3<sup>rd</sup> quarter 2005 show an apparent decreasing trend in most of the monitored wells. However, plume characterization is incomplete and additional monitoring of some wells within the plume is warranted.*

*It is unclear whether monitoring requirements are based on the most recent data, the highest concentration detected, or trends in individual wells. It is also unclear if monitoring requirements related to water replacement*

*vary depending on the purpose of the monitoring. Monitoring and Reporting Program 2001-161 and Order WQ 2005-0007 monitoring requirements conflicts since one requires monitoring of wells and the other does not, respectively. Lastly, it appears that Olin is not formally required to monitor water supply wells with unknown concentrations (untested wells) or concentrations above 4 ppb that are not being considered for replacement water termination. The State Water Board stated that nothing in WQO 2005-0007 prevents a regional water board from directing future actions preparatory to providing timely replacement water in the event that the 6 ppb trigger is exceeded. We believe that the community would be well served by a single, clear statement of monitoring requirements for private wells.*

**Staff Response** - Central Coast Water Board staff agrees that historic data is very useful and should be considered when determining monitoring frequencies. As discussed above, the proposed Resolution is not the place to require additional monitoring, and there is currently no new data that staff is aware of that necessitate a change in monitoring requirements. Central Coast Water Board staff believes it is more appropriate to review data collected as part of Olin's ongoing groundwater characterization work and Order WQ 2005-0007 to decide if a change in monitoring requirements is appropriate.

Monitoring requirements are based on the last four quarters of monitoring data. For instance, this request deals with wells that have tested below 4 ppb for four continuous quarters. Should the Central Coast Water Board allow Olin to end interim alternative water supply, those wells will be monitored according to the schedule contained in Order WQ 2005-0007 for wells less than 4 ppb. If the request was based on four continuous quarters between 4 and 4.9 ppb, and it was approved, Olin would have to monitor those well according to the 4 ppb to 4.9 ppb monitoring schedule. Unless Olin wants to make a request to end interim alternative water supply, Olin is not required to monitor any of the wells. However, Olin must supply interim alternative water to those well users in perpetuity or until they have

collected four continuous quarters of data and have either secured Central Coast Water Board or Executive Officer approval to end interim alternative water supply. The requirements to sample untested wells is included in the various investigation orders (phases 1 through 5) provided to Olin. However, Regional Board staff will review this requirement and require Olin to sample untested wells, if there are any.

### **RECOMMENDATION**

Adopt Central Coast Water Board Resolution No. R3-2006-0014, with amendments.

Staff will provide a future status update to the Board regarding the adequacy of all of Olin's monitoring requirements. The update will be based on data collected pursuant to Order WQ 2005-0007, Olin's March 30, 2006 Characterization Report and additional data that are reported pursuant to Olin's Monitoring and Reporting Programs. Staff will provide the update in latter half of 2006 to allow for semiannual data collection and reporting from the wells that are within 500 feet of a six ppb well. Should subsequent data indicate a urgent need for additional monitoring requirements, the Executive Officer will order Olin to perform additional monitoring and will report that action to the Board.

### **ATTACHMENTS**

1. Proposed Resolution R3-2006-0014
2. Comment letters cited above

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