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

STAFF REPORT FOR REGULAR MEETING OF OCTOBER 22, 2004
Prepared on September 29, 2004

ITEM NUMBER: 7

SUBJECT: Perchlorate Sites

DISCUSSION:

New information is shown in ***italics***. Please refer to the July, 9, 2004 staff report for additional background information.

Olin Corporation Facility, 425 Tennant Avenue, Morgan Hill, Santa Clara County [David Athey 805-542-4644]

Current milestones in the investigation of perchlorate contamination on and offsite of the former Olin facility include:

Onsite Groundwater Treatment and Containment:

On November 18, 2003, Regional Board staff approved the installation and operation of the Onsite Groundwater Containment and Perchlorate Removal System (System). The System's purpose is to provide hydraulic containment and removal of perchlorate through onsite groundwater extraction and treatment. The System began operation on February 23, 2004. By April 7, 2004, System startup was completed and has been operated continuously since that time.

On July 30, 2004, Olin Corporation (Olin) submitted the Second Quarter 2004 *On-Site Groundwater Containment & Perchlorate Removal System Performance and Discharge Monitoring Report.* Olin is required to submit these reports quarterly and highlights include:

- Total groundwater extraction from April 1 to June 29 was 14,276,305 gallons.
- Based on an average concentration of 46 µg/l, approximately 5.5 lbs. of perchlorate was removed from onsite groundwater.
- Samples collected at the midpoint and discharge pipe sample ports were consistently less than 4 ppb.

On and Off-site Groundwater Monitoring and Reporting:

On April 30th, Olin submitted the 1st Quarter, 2004 groundwater monitoring report. This report includes information related to groundwater monitoring activities, including greater detail on groundwater flow conditions, and provides Olin's justification for their proposed groundwater monitoring system. Regional Board staff is currently reviewing the proposed groundwater monitoring system justification and will be providing comments to Olin shortly. Regional Board staff will be reviewing and incorporating, where appropriate, comments from the Cities of Morgan Hill and Gilroy, the Santa Clara Valley Water District and PCAG.

Northeast Groundwater Flow Assessment:

Regional Board staff met with Olin and their consultants on May 17th to discuss their preliminary findings. Olin verbally presented findings related to regional groundwater flow conditions and a simplified model of upgradient municipal well capture zones. However, Olin did not present any information on local groundwater conditions including groundwater elevations.

Olin has verbally indicated that they intend to submit the final written report prior to the July 31, 2005 deadline. Recently, Olin indicated that they would be submitting the report on

September 10, 2004. However, Olin is still negotiating with the City of Morgan Hill to obtain groundwater extraction records and municipal well logs and is evaluating other private well logs and information. Olin has recently indicated that this information is critical to their report and is needed to complete their evaluation. Regional Board staff met with the City of Morgan Hill and they indicated that this information will be provided to Olin soon. Olin has also agreed to meet with the City of Morgan Hill, the Santa Clara Valley Water District, and us to discuss their final findings. We are attempting to schedule this meeting prior to the September 23, 2004 Perchlorate Community Advisory Group Meeting.

Olin submitted the Northeast Groundwater Flow Assessment Report on September 10, 2004. Regional Board staff met with Olin, the City of Morgan Hill, and Santa Clara Valley Water District on September 22, 2004 to discuss the report's findings. Regional Board staff is currently reviewing the report and will be responding to Olin in the next few weeks. Regional Board staff will provide its response to the Regional Board as part of the December Perchlorate update.

Onsite Ex Situ and In Situ Soil Treatment:

Olin has proposed to treat onsite perchlorate impacted soils using both ex situ and in situ methods. The two main components of the treatment option include: ex situ anaerobic bioremediation of perchlorate-contaminated soils greater than 7,800 µg/kg, the United States Environmental Protection Agency (USEPA) residential Preliminary Remedial Goal, and in situ bioremediation of soils above the site-specific soil screening level of 50 µg/kg. The site specific soil remediation goal is derived from the methods described in the

USEPA's *Soil Screening Guidance*: *Users Guide* and is the calculated concentration of perchlorate that would not result in groundwater impacts above 4 µg/kg.

Regional Board staff conditionally approved *Olin's Remedial Action Work Plan & 90% Design Report For Soil Remediation* on June 10, 2004. Olin subsequently responded to comments and Regional Board staff provided final approval on August 3, 2004. Olin has begun In Situ system construction and has completed the Ex Situ Soil treatment pile. Figures 1 and 2 show the completed Ex Situ pile without the final cover.

Figure 1 - Ex Situ soil pile with irrigation tubing installed and prior to installation of impermeable cover.

Figure 2 – Ex Situ soil pile showing wetting front.

Olin continues to construct the In Situ system and will initiate operation at the conclusion of Ex Situ soil treatment.

City of Morgan Hill Water - Tennant Well:

In a letter dated March 17, 2004, Regional Board staff requested that Olin comment on whether the Tennant well can or cannot be operated based on updated site hydrogeologic information. The City of Morgan Hill has voluntarily shut down the Tennant well because of perchlorate detections. The City has now requested that the City be allowed to

restart the well, based on an anticipated water shortage in the coming months. Olin has previously objected to the operation of the Tennant well based on their belief that it could potentially pull perchlorate into deeper aquifer zones. Regional Board staff requested that Olin review the City's report and respond by April 30, 2004.

Olin Corporation responded to Regional Board staff's request with a letter dated April 30th, 2004. The response outlined their technical and non-technical position on why the Tennant well should not be operated. Staff has reviewed the response and does not agree with Olin's technical response. In a letter dated May 19th, staff requested Olin supply additional technical data to support Olin's position. Olin responded to the May 19th letter on June 21, 2004. After careful review, Regional Board staff does not believe Olin's response includes any additional information. In response, Regional Board staff sent a letter to the City of Morgan Hill informing them that Regional Board staff has no objection to Tennant well operation. In addition, a letter was sent to Olin directing them to closely monitor their groundwater containment and treatment system if the Tennant well is operated. If impacts are shown, Olin is required to show the impacts extent and propose remedies. If Olin can adequately demonstrate that remedies cannot be proposed, Regional Board staff will ask the city to shut down the well. However, any request to stop Tennant well pumping will only be sent upon careful review and concurrence with Olin data. *We understand the City of Morgan Hill may begin operation of the Tennant well by the end of September.*

Cleanup or Abatement Order No. R3-2004-101:

This July 9, 2004 Order, directs Olin and Standard Fusee to supply uninterrupted replacement water to well owners with perchlorate-contaminated wells. The Order requires Olin and Standard Fusee to provide interim uninterrupted water to well owners whose wells meet two important criteria. The first criteria is for wells that test at or higher than 4 ppb. Well owners with wells that test at or higher than 4 ppb shall be supplied interim uninterrupted water service (currently bottled water). The Order also establishes a mechanism for stopping bottled water supply to these wells and includes follow up monitoring. The second criterion is for wells that test less than 4 ppb. For those wells, Olin and Standard Fusee may cease supply of uninterrupted water service if, after four quarters of testing, the results remain less than 4 ppb. However, the Order requires additional testing to monitor perchlorate groundwater concentrations.

On August 5, 2004, Olin petitioned the State Water Resources Control Board (State Board) to review the Order. The State Board is currently reviewing the petition and will be issuing a determination on completeness shortly. In the meantime, Olin is continuing to comply with the requirements of R32004-0101. Wellhead treatment for the West San Martin Water Company and the San Martin County Water District wells will not be affected by Olin's appeal. Olin has made individual agreements with these water purveyors and perchlorate will continue to be removed from those supply sources. Staff is working on the response to the Olin Petition. The NE Flow Assessment Report is due in on September 10, the NE Flow Technical Meeting is scheduled for September 22, and the PCAG meeting is September 23. The December report to the Board will discuss the results from these meetings as well as providing more detailed information about assessment and remediation.

Regional Board staff submitted their response to the Olin petition on September 20, 2004. Support for the Cleanup and Abatement Order No. R3-2004-0101 was also provided to the State Board from Stan Williams and Sylvia Hamilton on behalf of the Perchlorate Working Group and the Perchlorate Community Advisory Group. (see Attachment 1) and from Assemblyman John Laird (see Attachment 2). The State Water Resources Control Board has up to 270 days to review and act on the response. On September 22, 2004, the State Board denied Olin's stay request that sought to hold Cleanup and Abatement Order R3-2004-0101 in abeyance (see Attachment 3) until the petition is acted on by the State Board.

Southern Plume Area and Gilroy Wells:

During the Second Quarter, Olin tested 42 southern area wells near the City of Gilroy. Of these 42 wells, six were sampled for the

first time. Twenty-six wells did not contain perchlorate above the reporting limit of 4 ppb. Sixteen wells had perchlorate concentrations ranging from 4 to 6.6 ppb. According to Olin, these results define the southern most detections of perchlorate above the Department of Health Services's 6 ppb action level.

As of the Second Quarter, the City of Gilroy supply wells have not had detections of perchlorate above 4 ppb. Regional Board staff will continue to monitor the southern plume area and work with Olin to ensure the southern plume area is properly delineated.

Perchlorate Community Advisory Group (PCAG)

Regional Board staff provided an update at the September 23, 2004 PCAG meeting. Olin and their consultant MACTEC presented a summary of the 2nd Quarter Report, the Groundwater Flow Assessment Report, and Point of Entry for perchlorate-impacted well treatment.

McCormick Selph, 3601 Union Road, Hollister, San Benito County

On July 12, 2004, PES submitted the Second Quarter 2004 Groundwater Monitoring Report. The report outlines the Discharger's activities related to ongoing groundwater monitoring and pilot scale hydrogen releasing tests. The site will continue to monitor both the chemically reducing conditions and perchlorate concentrations in nearby wells in order to establish concentration trends. Regional Board staff has not performed an in depth report review at this time. However, a cursory review indicates that reducing conditions favorable to perchlorate removal have been established in the coarser grain aquifer material. This is confirmed by a decline in coarser grain aquifer perchlorate concentrations from 1,200 µg/l to less than the laboratory reporting limit of 4 µg/l. Establishment of reducing conditions in finer grain deposits has still not been observed. McCormick Selph's consultant believes the slower fine grain deposits' groundwater movement is delaying establishment of reducing conditions. Regional Board staff will continue to monitor the status of the Pilot Scale Injection as quarterly reports are submitted.

Whittaker Ordnance Facility, 2751 San Juan Road, Hollister, San Benito County

On August 13 2004, Regional Board staff visited the Whittaker Ordnance facility to discuss site activities and observe site cleanup areas. Remediation efforts continue in the Waste Storage Pad Area, Ex Situ Soil Bioremediation test pad, and Former Building 22A. Whittaker is still collecting data in these areas and will be submitting the following reports shortly:

- ***First Semi-Annual 2004 Groundwater Monitoring Report*** – This report covers monitoring activities from January 1, 2004 to June 30, 2004. *This Report was received on August 30, 2004 and is currently being reviewed by Regional Board staff.*
- ***Groundwater Monitoring Well Installation Report*** – This report outlines Whittaker's recent well installation activities related to additional onsite and offsite groundwater characterization.
- ***Deep Aquifer Analysis Report*** – This report will discuss the best options for offsite groundwater containment. Currently, three offsite wells have been impacted. *This Report was received on September 17, 2004, and is currently being reviewed by Regional Board staff.*
- ***Final Waste Storage Pad Demonstration Report*** – This report will outline in situ soil testing results and provide final soil remediation recommendations.
- ***Former Building 22A Ethanol Infiltration Pilot-Test Status Report Addendum*** – This report will present additional testing information collected by Whittaker. *This Report was received on September 13, 2004, and is currently being reviewed by Regional Board staff.*
- ***Ex Situ Bioremediation Pilot-Test Status Report*** – This report will present the current test status and recommendations for additional work. *This report was received on September 15, 2004, and is currently being reviewed by Regional Board staff.*
- ***Sampling and Analysis Plan*** - This report will be submitted in response to Regional Board staff's request for a comprehensive review of on and off site groundwater monitoring. Regional Board staff

anticipates updating Whittaker's Monitoring and Reporting Program once the report is reviewed and approved.

- ***Monitoring Well Installation Report and Revised Hydrostratigraphic Interpretation Report –*** *This Report was received on September 20, 2004. The report details well installation activities performed to better define groundwater conditions downgradient. Regional Board staff is currently reviewing this report.*

United Defense, 900 John Smith Road, Hollister, San Benito County

***Site Investigation Update*:**

As reported at the July 9, 2004 Regional Board meeting, United Defense is proceeding with additional site investigations. Regional Board staff approved the additional investigation work items in a July 30, 2004 letter. The recommendations set forth within the Report include:

- Continued research and analysis of local hydrogeology and geology to determine the fate and transport of site contaminants.
- Ranch well groundwater sampling.
- Surface water sampling in the Santa Ana Creek up and down stream of the pond and up and down stream of Arena 2.
- Further evaluation of the lateral and vertical extent of perchlorate and nitrate including the implementation of additional monitoring wells, cone penetration test borings, and soil borings at Arena 1 and Building 6.
- Attainment of United Defenses' non-drinking water well's construction log.

United Defense is required to submit this information by September 30, 2004. Regional Board staff anticipates providing an update in the December 3, 2004 Regional Board Status Report.

ATTACHMENTS

1. Letter from Stan Williams and Sylvia Hamilton, dated September 17, 2004 Re: Support for the Central Coast Regional Water Quality Control Board's Cleanup and Abatement Order No. R3-2004-0101.
2. Letter from John Laird to Art Baggett, dated September 13, 2004.
3. Letter From Celeste Cantu – Denial of Stay Request, dated September 22, 2004.

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