

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

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 7, 2007
Prepared on October 16, 2007

ITEM NUMBER: 13

SUBJECT: Status Report, Scotts Valley Dry Cleaners, 272-A Mount Hermon Road, Scotts Valley, Santa Cruz County

KEY INFORMATION

Type of Discharge: Unauthorized Release of Tetrachloroethene (PCE)
Existing Orders: Cleanup or Abatement Order (CAO) No. R3-2005-0081
Monitoring and Reporting Program (MRP) No. R3-2005-0082
Waste Discharge Requirements Order No. R3-2006-0067 National
Pollutant Discharge Elimination System (NPDES) Permit No.
CAG993002 General Permit for Discharges of Highly Treated
Groundwater to Surface Waters
MRP No. R3-2006-0067

This Action: Status Report Only

DISCUSSION

New information is shown in italics

Water Board staff provides regulatory oversight of the Scotts Valley Dry Cleaners site in Santa Cruz County. The dry cleaner building is located on a property with other commercial buildings and a parking lot in Scotts Valley. The Scotts Valley Water District's Well No. 10A is located approximately 450 feet south of the dry cleaner building.

Background

In 1996, the responsible parties started site remediation of tetrachloroethene (PCE) initially by performing excavation (trenching) and vapor extraction in the source area. In March 1998, Water Board staff required the responsible parties to submit a corrective action plan. Since 1998, the responsible parties conducted several remediation pilot tests/interim remedial actions, including air sparging, aquifer pump testing, and injection of hydrogen releasing compounds and cheese whey. The responsible parties revised the corrective action plan several times based on pilot test results.

The responsible parties implemented high vacuum, dual-phase extraction in March 2004 for PCE plume containment. In July 2004, the responsible parties submitted a revised Interim Remedial Action Plan proposing additional groundwater monitoring and extraction well installations and a permanent groundwater extraction and treatment system.

The Water Board permitted the treated groundwater discharge from the proposed system under the General National Pollutant Discharge Elimination System (NPDES) Permit for

Discharge of Highly Treated Groundwater to Surface Waters on May 5, 2005. The groundwater extraction system was fully operational by August 10, 2005.

On May 25, 2005, the Water Board issued Cleanup or Abatement Order No. R3-2005-0081 (CAO) and Monitoring and Reporting Program No. R3-2005-0082 to the responsible parties. CAO No. R3-2005-0081 required the responsible parties to commence operation of a groundwater extraction system, submit a work plan to install wells to further investigate the extent of waste discharges off-site, and submit a corrective action plan according to the Executive Officer's schedule.

Our subsequent July 19, 2006 letter required implementation of both proposed off-site and on-site investigative work, report submittal summarizing the investigative work, submittal of an updated site conceptual model, submittal of a more detailed pilot study work plan, and repair or destruction and replacement of the missing/damaged monitoring wells. By October 31, 2006, Secor, on behalf of the responsible parties, submitted a cluster well installation report, a third quarter monitoring report, and a pilot test work plan complying with all of these directives.

On February 7, 2007, the Executive Officer approved the chemical-oxidation pilot test work plan, with a few conditions. The responsible parties injected potassium permanganate solution into MW-4 and are monitoring nearby monitoring wells to evaluate effectiveness. Our letter requires the responsible parties to submit quarterly progress reports and a proposal for a Correction Action Plan in their final pilot test report due July 30, 2008.

Recent Progress

Since the last staff report, we have received the following reports: (1) July 25, 2007 Second Quarter Groundwater Monitoring, Extraction System, and Chemical Oxidation Pilot Test Report; (2) August 13, 2007 Monthly Groundwater Monitoring Report; (3) September 7, 2007 Groundwater Monitoring Report; and (4) October 12, 2007 Three Month Post Chemical Oxidation Injection Progress Report and Third Quarter Groundwater Monitoring Report.

On May 17 and 18, 2007, the responsible parties performed the chemical-oxidation pilot test injection event. During the pilot test, the responsible parties injected approximately 1,500 gallons of 5% potassium permanganate solution at an average rate of 8.3 gallons per minute. Potassium permanganate is a strong oxidizing chemical that reacts with the chlorinated solvent waste constituents to produce non-toxic by-products (water, carbon dioxide, manganese dioxide, etc.). The injection well (MW-4) and a well located directly north of MW-4 (MW-14) continue to contain potassium permanganate (see Attachment 1 for site map). We do not understand the groundwater gradient very well in this area; however, based on recent data, the groundwater appears to be flowing north. MW-16, which is located south of the injection well, has never contained potassium permanganate. The initial post-injection reports indicate that in-situ chemical-oxidation may be a viable remedial action technology because the responsible parties were able to inject the material easily, and the material has persisted in the groundwater for over three months. Subsequently, since the pilot test, the chlorinated solvent concentrations in wells MW-4 and MW-14 have decreased significantly to 13 ppb PCE and <0.5 ppb PCE, respectively. We still need to determine whether there will be a significant "rebound" effect (where concentrations increase). As required in our February 7, 2007 letter, the responsible parties are required to determine whether to implement in-situ chemical-oxidation as a site-wide remedy by June 30, 2008.

The Third Quarter 2007 Groundwater Monitoring Report indicates that the deep-zone sentry wells MW-13B and MW-23 continue to contain no detectable PCE, and the pump and treat

system appears to be containing the plume. The most recent (September 17 and 18, 2007) concentrations of PCE in groundwater ranged from less than 0.5 ppb (non-detect) to 630 ppb. During the previous quarter (June 4 and 5, 2007), concentrations overall were higher and ranged from <0.5 to 1,300 ppb PCE. The deeper-zoned monitoring well (MW-22A), screened from 82 to 87 feet below ground surface (bgs), contained PCE at 210 parts per billion (ppb) in a groundwater sample taken on September 17, 2007. In the previous three quarters, MW-22A had an average concentration of 145 ppb PCE; thus, it appears the PCE concentration is slightly increasing in that well. Staff is still determining what the next steps shall be and will likely be requiring further groundwater characterization near to and at a similar depth as MW-22A.

Scotts Valley Water District (Water District) used their damaged Well No. 10 from June 11, 2007 to August 6, 2007 while they were constructing the replacement Well No. 10A. (Well No. 10A is located about 60 feet north of Well No. 10.) Well No. 10A began production on August 7, 2007 at 400 gallons per minute, and the well is still in operation. The Water District sampled both Well No. 10 and Well No. 10A in June 2007. Both samples did not contain detectable concentrations of volatile organic compounds. In addition, on June 5 and 6, 2007, the Water District performed a pump test on MW-23. The pump test involved measuring the change in depth to groundwater in MW-23 when the Water District turned Well No. 10A on in order to determine the hydraulic connectivity between MW-23 and Well No. 10A. The results from the test show a clear connection between the two wells; this indicates that MW-23 is a representative monitoring well located between the Scotts Valley Dry Cleaner's site and Well No. 10A.

Future Board Updates

We will next update the Board at the meeting scheduled for May 9, 2008. This update will include information regarding waste constituent concentration trends since the in-situ chemical oxidation pilot test began, as well as any information from the additional characterization in the intermediate zone near MW-22A. In addition, we will provide an update at the September 5, 2008 meeting after receiving the final chemical-oxidation pilot test data by June 30, 2008.

Attachment

Secor's Figure 4: PCE and TCE Concentrations in Groundwater (September 2007)

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