

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING MAY 11-12, 2006

Prepared April 12, 2006

ITEM NUMBER: 11

SUBJECT: Underground Tank Program and MTBE Priority Sites

DISCUSSION

*New information is shown in italics.*

This is a continuing report (every other Regional Board meeting) on the status of Central Coast Water Board MTBE sites.

Water Board staff members are working on numerous petroleum underground storage tank (UST) cleanup cases involving MTBE. Some high profile sites or "worst case" problems are discussed below. Also attached to this report is a list of sites with MTBE in groundwater that gives an overall perspective of the regionwide problem. Staff uses this report to answer questions from previous Regional Board meetings, and to provide the Regional Board with any new information pertaining to the UST program.

Attached is an updated Regionwide MTBE Listing and High Priority Sites table. The list shows site names and addresses as well as the priority listing (Rank A, B, or C) based on State Board MTBE guidelines. Staff has required accelerated cleanup at some higher priority Rank A sites. Interim cleanup action is required as soon as technically feasible until full-scale cleanup activity can begin.

MTBE cleanup goals are typically set at the secondary maximum contaminant level (MCL) for drinking water of 5 micrograms per liter ( $\mu\text{g/L}$ ), which is a taste and odor threshold. The primary MCL, based on threat to public health, is 13  $\mu\text{g/L}$ .

*The Regionwide MTBE Listing and High Priority Sites list, included as Attachment 1, contains the latest information provided by*

*Santa Barbara County as of April 13, 2006.* Beginning in late March 2002, Santa Barbara County obtained the ability to update information in the MTBE report by way of the statewide GeoTracker database system.

HIGH PRIORITY SITES STATUS

**Chevron Service Station, 2194 Main Street, Cambria San Luis Obispo County [John Mijares 805/549-3696]**

Chevron Cambria service station, located on the corner of Main Street and Burton Drive in Cambria, has been a Regional Board-lead groundwater investigation and cleanup case since December 1993.

Background:

In 1995 the underground storage tank (UST) system was removed and service station ownership/operation was transferred from Chevron Products Company (Chevron) to an independent owner/operator who installed a new UST system.

Chevron is cleaning up a petroleum hydrocarbon discharge from the original UST system, including the fuel additive methyl tertiary-butyl ether (MTBE). The discharge threatens groundwater in two Cambria Community Service District (CCSD) Wells, Nos. 1 and 3, which provide supplemental water to the Community of Cambria.

As part of interim corrective action beginning in May 2000, Chevron continuously pumped

MTBE contaminated water from four onsite wells. Currently, there are 15 shallow groundwater extraction wells. Beginning in November 2000, Chevron began full operation of a groundwater extraction and high vacuum dual phase extraction system. Both systems operated continuously, except for periodic system upgrade, mechanical breakdowns, and system maintenance activities. Extracted, treated groundwater is stored in an onsite 15,000-gallon tank until trucked offsite for disposal at the Santa Maria Wastewater Treatment Plant.

Alternative Water Supply:

During the November 2001 technical work group meeting (with Regional Board staff, CCSO representatives, and Chevron representatives), the CCSO indicated the new temporary high school well was connected to the municipal drinking water supply. The CCSO's high school well is needed as an alternative water supply and the wellhead treatment system CCSO installed on their Santa Rosa Creek wells will enable their use in the event of an emergency.

On May 18, 2004, the Regional Board's Executive Officer rescinded Cleanup or Abatement Order (CAO) No. 00-28. The CAO required Chevron to provide CCSO with alternative water supply due to loss of CCSO's Well Nos. 1 and 3. The settlement agreement (\$8.4 M) of a civil lawsuit explicitly resolves all of CCSO's claims against Chevron, including claims for an alternative water supply.

Since the Last Staff Report:

*The fourth Quarter 2005 Groundwater Monitoring and Remediation Status Report indicates the following:*

- *The monitoring wells within the plume boundaries continue to exhibit MTBE concentrations exceeding the 5 micrograms per liter ( $\mu\text{g/L}$ ); however, current concentrations have decreased significantly compared to historical maximum values. The current maximum MTBE*

*concentration is 3,600  $\mu\text{g/L}$ . The shallow-zone MTBE isoconcentration map is shown on Attachment 2.*

- *Monitoring wells historically known to be located beyond the plume boundaries continue to exhibit non-detectable concentrations of MTBE.*
- *Neither petroleum hydrocarbons nor fuel oxygenates were detected in any of the samples collected from Santa Rosa Creek (three sampling stations) and shallow groundwater samples from the northern bank of Santa Rosa Creek (three sampling stations) during this quarter. Sampling stations are located approximately upstream, adjacent to, and downstream of the identified lateral extent of the MTBE plume in groundwater.*
- *The high-vacuum dual phase extraction (HVDPE) system operated intermittently during this reporting period as a result of blower and motor replacements, and power outages. Between January 26, 2001, and December 30, 2005, the HVDPE system has extracted and removed approximately 4,900 pounds of petroleum hydrocarbons and 190 pounds of MTBE.*
- *Approximately 192,000 gallons of groundwater were extracted, treated, and transported offsite during the fourth quarter of 2005.*

**California Water Service Company  
Supply Wells, Pajaro Street and  
Bridge Street, Salinas, Monterey  
County [John Goni 805/542-4628]**

Water Board staff was notified by a Salinas water purveyor, California Water Service Company (CWSC), that two supply wells in the Salinas area showed detections of the fuel oxygenate MTBE. Water Board staff's review of known leaking underground tank cases near the wells indicated that there are no active cases with high concentrations of MTBE. Further investigation revealed a gasoline distributor (with 100,000 gallons of fuel products storage) close to the well, but a

subsequent site investigation showed no evidence of a fuel release in underlying groundwater. Staff continued its investigation and directed other permitted underground tank facilities without previously reported leaks to perform groundwater investigations. These investigations failed to find a release of MTBE of significant size to account for the contaminant in the supply wells.

Surface water samples from the Salinas Reclamation Ditch, collected by Water Board staff, near the CWSC supply wells showed non-detectable concentrations of gasoline constituents or MTBE. As suggested by Water Board members, staff investigated a former packing plant near the CWSC supply wells. A joint investigation by the Monterey County Environmental Health Department (MCEHD) and Water Board staff concluded former packing houses in this area are not likely the source of MTBE contamination because (1) of the small tank size, (2) the dates of tank closures precedes significant use of MTBE, and (3) hydrocarbons were not found in soil beneath the removed tanks.

Water Board staff continued to coordinate the investigation with other agencies in search of the source of MTBE. A review of the State Water Resources Control Board's implementation of enhanced leak detection testing requirements for all underground tank facilities within 1000 feet of water supply wells did not identify any new potential sources of MTBE. The MCEHD agreed to increase inspections of all nearby permitted underground and aboveground tank facilities to ensure compliance; no operational violations were found. The Monterey County Water Resources Agency performed additional groundwater analytical testing from nearby production wells up and cross gradient of the CWSC wells, and did not detect any MTBE. CWSC information and Water Board staff inspections confirmed gasoline has not been stored at their supply well locations. CWSC performed depth discrete sampling of Well Station 13-02 in December 2004. The sampling results indicate the shallower/180-foot aquifer contains the highest concentrations of MTBE.

In an effort to expand the investigation, Water Board staff assisted the Monterey County Water Resources Agency in applying to the State Water Resources Control Board for Cleanup and Abatement Account money to fund additional groundwater sampling. State Board staff is currently holding the application in abeyance until all other sources of possible funding have been exhausted. The California Department of Health Services (DHS) has funds available from the Drinking Water Treatment and Research Fund specifically for water purveyors to investigate drinking water sources impacted by MTBE releases. State Board will reevaluate the Cleanup and Abatement Account funding application if the DHS funding is not available to CWSC.

*Water Board staff is working with the CWSC to see if an investigation can be performed using the DHS funding. As of March 17, the CWSC has not made a decision whether to apply for the DHS funds*

**Camp Evers Combined Site (Four Gasoline Service Stations) Mount Hermon Road at Scotts Valley Drive, Scotts Valley, Santa Cruz County [Wei Liu 805/ 542-4648]**

Petroleum hydrocarbons including benzene, 1,2-DCA and MTBE have been detected in groundwater beneath the Tosco, Shell, BP and Chevron service stations located at the intersection of Mount Hermon Road and Scotts Valley Drive.

Onsite corrective actions at the Tosco, Shell, and BP sites included soil vapor extraction, air sparging, dual phase extraction, and/or groundwater extraction. Chevron has been excluded from MTBE remediation, but continues remediation of the benzene plume. The onsite corrective actions have successfully removed MTBE and other gasoline constituents from groundwater directly beneath the service station sites; therefore, onsite remediation has been discontinued at all four sites.

Currently, the MTBE plume mass appears to have "detached" from the original plume, and migrated to a downgradient offsite location

beneath the King's Village Shopping Center with maximum concentrations up to 38,300 µg/L detected in well CEMW-6 in May 1999. In addition, the Manana Woods water supply well was impacted by benzene and MTBE and extracted water is being treated using a wellhead treatment facility to remove the contaminants.

A permanent groundwater pumping and treatment system was installed in the King's Village Shopping Center in November 2002, to remediate and hydraulically control the detached plume. Treated groundwater is discharged to surface water under Order No. 01-134, General NPDES Permit.

*Fourth Quarter 2005 groundwater samples collected on October 31, 2005, indicate a maximum concentration of 96 µg/L MTBE in Tosco's onsite well MW-15. A maximum concentration of 87 µg/L MTBE and 1,100 µg/L TBA were detected in offsite monitoring wells CEMW-6 and CEMW-16, respectively, showing a significant decrease in prior concentrations. MTBE concentrations in wells CEMW-6 and CEMW-16 have been reduced from 13,300 µg/L in May 1999 to 87 µg/L, and 3,500 µg/L in October 2002 to 12 µg/L, respectively. These results suggest that the downgradient remediation system is effective in removing the contaminants.*

*The downgradient remediation system has removed approximately 17,700,000 gallons of water, 319 pounds (lbs) of TPH, 11 lbs of benzene, 66 lbs MTBE, and 23 lbs of TBA from the impacted downgradient area since November 26, 2002.*

**Quik Stop Market No. 78, 5505 Soquel Drive, Soquel, Santa Cruz County [Tom Sayles 805-542-4640]**

Quik Stop Market No. 78 (Quik Stop) is an operating gasoline service station located on the corner of Soquel Drive and Hardin Way in Soquel. The site has been a Regional Board lead groundwater investigation and cleanup case since June 1999.

The approved corrective action plan consisting of a permanent dual-phase (soil vapor and

groundwater) treatment system has been operating since July 5, 2002. The treated groundwater is discharged to the sanitary sewer under a County of Santa Cruz Permit (No. 00002829) and the Catalytic Oxidizer treatment system operates under a Monterey Bay Unified Pollution Control District air permit (No. 11054).

Three additional vapor extraction wells were installed in December 2003, in the vicinity of MW-3, to enhance cleanup system effectiveness. In addition, MW-3 was overdrilled and converted into a 4-inch diameter well to enhance groundwater extraction efficiency. The highest concentration of MTBE was 230,000 µg/L in monitoring well MW-4 (near the source area) on March 2, 2000.

*First Quarter 2006 groundwater samples were collected on March 9, 2006. A maximum concentration of 770 µg/L MTBE and 2,500 µg/L tert-butyl alcohol (TBA) were detected in onsite extraction well MW-4R. A maximum concentration of 7 µg/L MTBE was detected in offsite monitoring well MW-5. The total petroleum hydrocarbon as gasoline (TPH-g), benzene, and MTBE concentration contour maps show the highest concentrations to be near the fuel tank complex which is consistent with past quarters, and a comparison with past concentration contour maps shows that the plume appears to be decreasing in size. Quik Stop continues to sample Nobel Creek on a monthly basis at four downgradient locations. Low concentrations of MTBE were detected in the creek samples collected on March 9, 2006, with a maximum concentration of 3.2 µg/L in Sample A.*

*Groundwater extraction pumps continue to operate in extraction wells RW-1, RW-2, and RW-3 and cleanup is ongoing.*

**Los Osos Valley Garage, Former Bear Valley Chevron Service Station, 1099 Los Osos Valley Road, Los Osos, San Luis Obispo County, [Corey Walsh 805/542-4781]**

Funding for site investigation and cleanup activities is (reimbursed) through the State

Water Resources Control Board UST Cleanup Fund (Fund). Projection of remaining UST Fund budget for the site indicates Fund monies will run out in 2007. Water Board staff is investigating other possible cleanup funding sources in the event Cleanup Fund money runs out before water quality goals are reached..

Southern California Water Company (Los Olivos No. 3) and the Los Osos Community Services District (10<sup>th</sup> Street) municipal water wells are located near the site. Los Olivos No. 3 continues to be sampled monthly, while sampling of the 10<sup>th</sup> Street well has been reduced to a quarterly monitoring frequency.

*The first verification groundwater monitoring (post-remediation system shut down) event was conducted on January 17, 2006, and a second is scheduled to occur during the 4<sup>th</sup> quarter 2006. Monitoring was conducted using selected monitoring well chambers identified in Revised Monitoring and Reporting Program No. 95-87 (revised in April 1, 2005).*

*Draft analytical results for the First Semi-Annual 2006 Groundwater Monitoring and Corrective Action Report indicate that natural attenuation processes continue to reduce contaminant levels. The final report is due by April 20, 2006, and will present results and recommendations. Based on the draft results, groundwater samples were collected on January 17 from selected A-Zone and B-Zone chambers and all monitoring wells were gauged for depth to groundwater. Sample results detected maximum contaminant levels in Zone B at up to  $\mu\text{g/L}$  total petroleum hydrocarbons as gasoline (TPH-g) in multi-level well ML-2-C3, and 23  $\mu\text{g/L}$  methyl tertiary-butyl ether (MTBE) in pilot test well PT-2. Tertiary-butyl alcohol (TBA) was not detected.*

*The 10<sup>th</sup> Street well is temporarily shut down for maintenance. Water production from the Los Olivos No. 3 well continues to run at normal production rates. Monitoring results for the Los Olivos No. 3 well continue to be  $<0.5 \mu\text{g/L}$  for MTBE (last sampled March 15, 2006); MTBE has not been detected since June 2003. Sample results for the 10<sup>th</sup> Street well (last sampled February 7, 2006) continue to remain below detection limits ( $<0.2 \mu\text{g/L}$ ) for MTBE and ( $<2.0 \mu\text{g/L}$ ) for TBA.*

*Activities anticipated for Water Board staff during 2006 include:*

- *Review municipal water well monitoring results,*
- *Review groundwater monitoring results for (final) first and fourth quarter 2006, and*
- *Evaluate necessity for operation of the cleanup system and, or removal of system equipment and destruction of remaining monitoring wells, and*
- *Investigate alternative funding sources for continued operation of cleanup system, if necessary.*

## ATTACHMENTS

1. Region wide MTBE Listing and High Priority Sites
2. MTBE Plume Map, Cambria Chevron

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