

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

STAFF REPORT FOR REGULAR MEETING SEPTEMBER 8, 2006

Prepared August 2, 2006

ITEM NUMBER: 5

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. *Today's report includes a status report for the leaking underground storage tank cleanup oversight program for the fiscal year 2005/06.*

The UST cleanup oversight program performed near or above the level of workplan commitment. Our greatest success this year was cleaning up and closing 21 of a projected 20 cases. The request and review of initial workplans task (note: this is the task that represents new cases) counts were down to four this year, which is good news. The unit reviewed 245 workplans, technical reports, and corrective action plans and 844 monitoring reports, which resulted in 173 formal enforcement letters (Water Code Section 13267) in response. A program summary is provided below.

<i>Request/review initial workplan (new cases)</i>	<i>4 of 18 = 22%</i>
<i>Review workplan, reports, and CAPs</i>	<i>245 of 235 = 104%</i>
<i>Review monitoring reports</i>	<i>844 of 675 = 125%</i>
<i>Conduct site inspections</i>	<i>42 of 70 = 60%</i>
<i>Close case</i>	<i>21 of 20 = 105%</i>
<i>13267 Letters</i>	<i>173 of 175 = 99%</i>

The underground storage tank cleanup oversight unit consists of five caseworkers, a student intern, and a senior. Program resources for fiscal year 2006/07 are similar to last year's at approximately 6.2 personnel years and \$900,000. Program staff will remain focused on completing workplan tasks, and have committed to cleaning up and bringing more low-risk cases to closure. Cases with contaminant concentrations above cleanup goals will be recommended for closure on a site-by-site basis, when case specific risk analyses indicate that closure is protective of water quality.

Non-workplan related tasks will include providing technical assistance to local agencies, and re-initiation of a local implementing agency/local oversight program roundtable to improve coordination and communication with local environmental health and fire department staff. Water Board staff will continue to incorporate the use of environmental screening levels and the State Water Resource Control Board's guidelines for public participation into our standard business processes.

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.

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 August 2, 2006.

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 threatened 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 operate continuously, except for periodic system upgrade, mechanical breakdowns, and system maintenance activities. Extracted and treated groundwater is stored in an onsite 15,000-gallon tank until being 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, CCSD representatives, and Chevron representatives), the CCSD indicated the new temporary high school well was connected to the municipal drinking water supply. The CCSD's high school well is needed as an alternative water supply and the wellhead treatment system CCSD installed on their Santa Rosa Creek wells will enable its 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 CCSD with alternative water supply due to loss of CCSD's Well Nos. 1 and 3. The settlement agreement (\$8.4 M) of a civil lawsuit explicitly resolves all of CCSD's claims against Chevron, including claims for an alternative water supply.

Since the Last Staff Report:

The second Quarter 2006 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 6,100 $\mu\text{g/L}$. 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.
- The high-vacuum dual phase extraction (HVDPE) system operated intermittently during this reporting period as a result of ongoing repairs, troubleshooting, maintenance, power outages, and low influent vapor concentrations. As of June 6, 2006, the HVDPE system has cumulatively extracted and removed 4,909 pounds of petroleum hydrocarbons and 189 pounds of MTBE.

Approximately 165,000 gallons of groundwater were extracted, treated, and transported offsite during the second quarter of 2006.

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 sizes, (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 that 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 that 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 staff will reevaluate the Cleanup and Abatement Account funding application if the DHS funding is not available to CWSC.

The CWSC informed Water Board staff on July 24, 2006, that they do not have the resources to pursue the DHS funding or the groundwater investigation. Water Board staff is now re-contacting State Board staff to see if its possible to get the Cleanup and Abatement Account funding for the Monterey County Water Resources Agency to conduct the groundwater investigation.

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 to remediate the MTBE plume. Chevron continued 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.

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 a maximum concentration of 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 the General NPDES Permit, Order No. 01-134.

First Quarter 2006 groundwater samples collected on January 30, 2006, indicate a maximum concentration of 41 µg/L MTBE in Tosco's onsite well MW-15. Maximum concentrations of 4.5 µg/L MTBE and 650 µg/L TBA were detected in offsite monitoring well CEMW-6, showing a

significant decrease in MTBE concentrations from previous quarters. MTBE concentrations in downgradient offsite wells CEMW-6 and CEMW-16 have been reduced from 13,300 µg/L in May 1999 to 4.3 µg/L, and 3,500 µg/L in October 2002 to 1.5 µg/L, respectively. These results suggest that the downgradient remediation system is effective in removing the contaminants.

The downgradient offsite remediation system has removed approximately 18.4 million gallons of water, 322 pounds (lbs) of TPH, 11 lbs of benzene, 66 lbs of MTBE, and 24 lbs of TBA 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.

Second Quarter 2006 groundwater samples were collected on June 6, 2006. A maximum concentration of 720 µg/L MTBE was detected in onsite extraction well MW-4R and a maximum concentration of 1,700 µg/L tert-butyl alcohol (TBA) was detected in onsite extraction well RW-2. MTBE and TBA were not detected in any offsite monitoring wells downgradient of the site. The total petroleum hydrocarbons as gasoline, 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 show that the plume continues to decrease 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 June 6, 2006, with a maximum concentration of 2.0 µg/L in Sample B.

Groundwater extraction pumps continue to operate in extraction wells RW-2, RW-3, and MW-4R 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]

Southern California Water Company (Los Olivos No. 3) and the Los Osos Community Services District (10th Street) municipal water wells are located near the site. Los Olivos No. 3 continues to be sampled monthly, while the 10th Street well sampling has been reduced to the minimum required by the California Department of Health Services.

Groundwater analytical results from the first semi-annual 2006 groundwater monitoring event (post-remediation system shut down verification) indicate that natural attenuation processes continue to reduce contaminant levels.

Groundwater samples collected on January 17, 2006, from selected A-Zone and B-Zone chambers detected maximum contaminant levels in the Zone B at 340 micrograms per liter ($\mu\text{g/L}$) total petroleum hydrocarbons as gasoline (well ML-2-C3), and 23 $\mu\text{g/L}$ methyl tertiary-butyl ether (pilot test well PT-2). Tertiary-butyl alcohol was not detected. In addition, the report recommends the use of low-viscosity grout for future destruction of multi-level monitoring wells when it is appropriate to permanently take them out of service.

The second verification groundwater monitoring event has been rescheduled from the 4th quarter 2006 to April 2007; monitoring and Reporting Program No. 95-87 was revised on June 30, 2006. This will allow natural attenuation processes to continue, and will provide additional post treatment verification of plume stability. An additional groundwater sampling event was added for July 2006. This sampling event will include key multi-level monitoring well chambers, and the monitoring data will be used to evaluate whether it is appropriate to remove the off-site treatment system prior to closing the case.

The 10th Street well has been temporarily shut down since November 2005 for repair and 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 July 26, 2006); MTBE has not been detected since June 2003. Los Olivos No. 3 was also sampled and analyzed for the full suite of volatile

organics (including fuel oxygenates) and the results indicate that all constituents are below reporting limits, including MTBE and TBA. Sample results for the 10th 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. The next scheduled sampling event is September 2007.

Activities anticipated for Water Board staff during 2006 include:

- Review municipal water well monitoring results,
- Review groundwater monitoring results for July 2006 sampling event,
- Evaluate the need to re-start operation of the off-site treatment system, or whether removal of the system is appropriate, 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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