

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OCTOBER 17, 2008

ITEM NUMBER: 8

SUBJECT: Staff Closures and Corrective Action Plan Approvals

Staff Closed Cases

**Quik Stop Market No. 41, 2140 Freedom Boulevard, Watsonville, Santa Cruz County,
[John Mijares 805-549-3696]**

Quik Stop Market No. 41 is an operating retail gasoline station and convenience store. In April 1997, Quik Stop Markets, Inc. (Quick Stop), the responsible party, commissioned the removal and replacements of two 10,000-gallon underground storage tanks (UST). During the UST removal process, the contractor observed a 3/4-inch hole under the fill port of one of the tanks and noted soil contamination under the tank. Results of subsequent soil samples collected from the bottom of the UST excavation indicated petroleum hydrocarbon contamination. Quick Stop commissioned the excavation and proper disposal of approximately 500 tons of contaminated soil.

Compliance and Closure, Inc. (CCI), Quick Stop's environmental consultant, supervised the installation of three groundwater monitoring wells (MW-1 through MW-3) in the vicinity of the fuel tank complex, and initiated a quarterly groundwater monitoring and reporting program. Initial groundwater data collected in August 1997 showed methyl tertiary-butyl ether (MTBE) in MW-1 at 240 micrograms per liter ($\mu\text{g/L}$) and 120 $\mu\text{g/L}$ in MW-2. Groundwater samples from MW-3 did not contain MTBE at concentrations above laboratory detection limits. The groundwater cleanup goal for MTBE is 5 $\mu\text{g/L}$. Other petroleum hydrocarbons were either not detected or were below cleanup goals in all three monitoring wells. Subsequent soil and groundwater investigations conducted by CCI detected higher concentrations of petroleum hydrocarbons and MTBE in groundwater and verified the hydrocarbon plume had migrated offsite. The maximum concentrations detected in groundwater were 23,000 $\mu\text{g/L}$ total petroleum hydrocarbons; 850 $\mu\text{g/L}$ benzene; 89,000 $\mu\text{g/L}$ MTBE; and 550 $\mu\text{g/L}$ tertiary butyl alcohol (TBA).

From April 2001 through April 2002, CCI conducted five dual-phase extraction events, removing approximately 10 gallons of vapor phase petroleum hydrocarbons and extracting approximately 6,000 gallons of contaminated groundwater. In May 2002, CCI implemented a Central Coast Water Board-approved corrective action plan through the start up and operation of an ozone sparge system. Ozone is a highly reactive chemical that is very effective in destroying a wide variety of organic compounds. CCI injected ozone into groundwater in the form of micro-fine bubbles under low pressure to degrade petroleum hydrocarbon compounds. By December 2005, petroleum hydrocarbons and fuel oxygenates were not detected above laboratory detection limits in any onsite or offsite monitoring wells. In March 2006, CCI shut down the ozone sparge system to evaluate any rebound in contaminant concentrations in the

groundwater. During the September 2006 sampling event, well RW-2 showed 4,100 ug/L MTBE. The source of this MTBE was unknown. CCI restarted the ozone sparge system and programmed it to inject ozone into sparge wells SP-5 and SP-7, located in the vicinity of well RW-2. All other sparge wells were turned off. By December 2006, the MTBE in RW-2 had been reduced to 7.2 ug/L. No other hydrocarbon compounds were detected in any of the other wells. The ozone sparge system continued to operate for several more quarters and was shut-down on September 28, 2007 to assess any further rebound in contaminant concentrations. CCI continued monitoring for three additional quarters. Petroleum hydrocarbons were either not detected or remained below groundwater cleanup goals and the fuel oxygenates MTBE and TBA were consistently not detected in all seven monitoring wells through the most recent sampling event in May 2008.

Prior to site closure, the RWQCB requested CCI consult with the Santa Cruz County Environmental Health Services (SCCEHS) to see if they had any concerns that needed to be resolved before case closure. A review of site historical soil data indicated soil samples collected in 1997 contained some petroleum hydrocarbon contamination. Based on this data, SCCEHS requested two soil borings be drilled in the area of highest historic soil contamination (S-1 and S-3) to confirm that the soil contamination had been remediated. On July 23, 2008, CCI supervised the advancement of two soil borings in the area of the former UST location. Results of six soil samples collected at 5, 10 and 15 feet below the ground surface at both boring locations showed no petroleum hydrocarbon compounds or fuel oxygenates above laboratory detection limits.

The depth to groundwater at the site is approximately 14 to 21 feet below ground surface and the flow direction to the southeast. The nearest municipal supply well (City of Watsonville Well No. 17) is located approximately 1,100 feet south of the site.

On September 8, 2008, Central Coast Water Board staff notified the property owner, the SCCEHS, and other interested parties of our plan to close this case. Central Coast Water Board staff will close this case and the Executive Officer will issue a final case closure letter after we resolve any comments or objections to the planned closure, and after Quik Stop has submitted a well destruction report documenting the proper destruction of all monitoring and treatment wells.

Corrective Action Plan Approvals

Bardex Corporation, 6338 Lindmar Drive, Goleta, Santa Barbara County (Katie DiSimone 805-542-4638)

On March 20, 2008, The Source Group, Inc. submitted a *Corrective Action Plan* (CAP) on behalf of the Bardex Corporation (Bardex). The CAP proposes a strategy to 1) clean up tetrachloroethene (PCE), trichloroethylene (TCE), and related hazardous compounds discharged to soil and groundwater, and 2) eliminate the discharge to surface water of polluted groundwater originating from the site. The Bardex CAP follows Central Coast Water Board requirements to characterize and clean up groundwater and prevent the discharge of polluted groundwater to surface water. Central Coast Water Board staff detailed these requirements in several previous documents including an October 31, 2007 letter, Cleanup and Abatement Order (CAO) No. R3-2004-0063, and CAO No. R3-2007-0087.

Bardex completed initial site characterization using hand-augers, hydropunch sampling, and the installation of five groundwater monitoring wells. Additionally, Bardex performed limited site cleanup with the excavation of approximately 30 cubic yards of soil from the machine shop sump area (a previously identified "hot spot"), and construction and operation of three sumps for groundwater extraction and treatment. The current system, however, is unable to adequately control the intermittent artesian groundwater conditions across the site and surfacing groundwater has been observed by adjacent property owners and Water Board staff during site inspections. Concentrations of PCE and TCE in groundwater have been as high as 50 and 1,900 µg/L, respectively, at the site.

As outlined in the CAP, Bardex proposes construction of three extraction wells to make the current extraction and treatment system more robust with a larger hydraulic capture area. Bardex will route groundwater extracted from these wells to an activated carbon treatment unit. Bardex plans to discharge treated groundwater to either the Goleta Sanitary District's sewer system, as previously done, or to a nearby storm discharge channel under a general NPDES permit. Additionally, Bardex will install two groundwater monitoring wells to provide more detailed plume delineation. Bardex will obtain the necessary permits prior to any discharge.

On July 1, 2008 the Central Coast Water Board sent a Public Notice and Fact Sheet for the proposed CAP to regulatory agencies and nearby property owners. No public comments were received in response to the notice.

During the last week of September 2008, the Executive Officer approved the CAP and notified Bardex, other involved regulatory agencies, and nearby property owners of this approval. To date, we have not received any additional comments regarding the approved CAP.