

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

STAFF REPORT FOR REGULAR MEETING FEBRUARY 9-10, 2006

Prepared January 09, 2006

ITEM NUMBER: 16

SUBJECT: Low Threat and General Discharge Cases

DISCUSSION

General Permit for Discharge of Highly Treated Groundwater

Gavilan College, 5055 Santa Teresa Boulevard, Gilroy, Santa Clara County [Tom Sayles (805) 542-4640]

Gavilan College submitted a Notice of Intent to comply with the Water Board's Order No. 01-134, NPDES No. CAG993002, General Permit for Discharges of Highly Treated Groundwater to Surface Waters (General Permit). The discharge is the result of groundwater extraction from seven extraction wells that are being used to remediate the site. Groundwater will be extracted from the wells and stored on the site before being treated using three, 2,000-pound, granular activated carbon canisters arranged in a series, and then discharged to the Uvas River via the storm drain. Discharge to surface water will be completed via an underground pipe connecting the treatment system to the storm drain located on the college property.

As part of the enrollment process, Water Board staff required Gavilan College to comply with specific permit conditions, which included notification of nearby property owners. In a November 8, 2005 letter, Water Board staff notified property owners within a 300-foot radius of the proposed discharge location, allowing for public comment. Water Board staff received two public comments that were related to the on-going cleanup efforts at the subject site. The two people that provided comments agree with the proposed discharge and cleanup efforts at the site.

In a November 28, 2005 letter, the Executive Officer enrolled Gavilan College under the General Permit and authorized the discharge to begin. The discharger must comply with General Permit standards, prohibitions, and requirements to protect water quality. Gavilan College is also required to comply with Monitoring and Reporting Program No. R3-2005-0148. Treatment system redundancy, routine inspections, maintenance and confirmation sampling will ensure the discharge will not pose a threat to water quality. Extracted groundwater will be treated to drinking water standards prior to discharge and adverse effects to the environment are not expected.

Staff Closed Cases

Shell Service Station, 1600 Canyon Del Rey Boulevard, Seaside, Monterey County [Tom Sayles 805-542-4640]

Three underground storage tanks (USTs) were replaced in October 2002. Soil and groundwater samples collected from the tank excavation contained methyl tertiary-butyl ether (MTBE) and tert-butyl alcohol (TBA) in soil at a maximum concentrations of 3.7 milligrams per kilograms (mg/kg) and 1.6 mg/kg, respectively; total petroleum hydrocarbons as gasoline (TPH-g) and benzene were not detected. A groundwater sample collected from the tank excavation contained MTBE, TBA and tert-amyl-methyl-ether (TAME) at 23,000 micrograms per liter ($\mu\text{g/L}$), 17,000 $\mu\text{g/L}$, and 120 $\mu\text{g/L}$, respectively. Approximately 400 gallons of hydrocarbon-impacted groundwater were pumped from the excavation and properly

disposed of. An additional 17,000 gallons of groundwater were extracted from well EW-1 during the month of December 2002 and an additional extraction well was installed.

On May 13, 2003, two more groundwater monitoring wells were installed to evaluate the gradient and flow direction, and to define the extent of groundwater contamination at the site. The initial groundwater sample results detected maximum concentrations of 130 µg/L MTBE and 18 µg/L TBA in monitoring well MW-2. All other groundwater sample results were below this Central Coast Water Board's cleanup goals; TPH-g, benzene and TAME were not detected.

A quarterly groundwater monitoring program was implemented in the third quarter 2003 to confirm the initial results from the monitoring wells. In addition, monthly batch extraction of hydrocarbon-impacted groundwater were conducted using MW-2. Samples collected on June 1, 2005 and August 4, 2005, indicate that all hydrocarbon constituents were below cleanup goals and/or laboratory detection limits.

The depth to underlying groundwater is approximately 6 to 12 feet below ground surface. Groundwater flow is generally to the north with a gradient of 0.001 feet per foot. The nearest water supply well is located more than one mile from the site.

Based on the results of the groundwater cleanup and the quarterly groundwater monitoring results, there is no threat to groundwater quality and no further investigation or cleanup is necessary. The Monterey County Department of Health agrees with this determination. The property owner/site operator has been notified of case closure and the responsible party has been directed to destroy all monitoring wells. Water Board staff will close this case, and the Executive Officer will issue a final case closure letter, upon receipt of a well destruction report documenting the proper destruction of all monitoring wells.

Cases Recommended for Closure

Akio Miura Property, 565 Tatum Avenue, Gilroy, Santa Clara County; [Tom Sayles 805-542-4640]

Staff recommends closure of this underground storage tank (UST) case where groundwater sample results indicate groundwater pollution remains in groundwater at a concentration greater than the Central Coast Water Board's cleanup goal for benzene at 26 micrograms per liter (µg/L) in one monitoring well. Other hydrocarbon constituents have been analyzed and have not been detected or are below cleanup goals.

Two 300-gallon gasoline USTs were removed in October 1993. Soil samples collected from below the USTs indicated maximum concentrations of 2,800 milligrams per kilograms (mg/kg) total petroleum hydrocarbons as gasoline (TPH-g) and 8.8 mg/kg benzene. A "grab" groundwater sample collected from boring EB-1 near the removed USTs on May 1, 1996, detected 1,100,000 µg/L TPH-g and 23,000 µg/L benzene.

Three groundwater monitoring wells were subsequently installed to evaluate the extent of soil and groundwater contamination. Groundwater sample results collected on March 18, 1998, indicated maximum concentrations of 50,000 µg/L TPH-g, 1,730 µg/L benzene, and less than 200 µg/L methyl tertiary-butyl ether (MTBE) in monitoring well MW-1 near the removed USTs. Following the initial sampling results, a quarterly groundwater monitoring program was implemented to monitor the contaminant concentrations with respect to time.

On June 5, 2000, five Geoprobe® borings were advanced to assess the vertical and lateral extent of contaminants underlying the site. All soil and groundwater sample results from this investigation were below this Water Board's cleanup goals for TPH-g, benzene, and MTBE, indicating that the contaminants were confined to a small, localized area. Quarterly groundwater monitoring continued to confirm that the extent of contamination has been laterally defined, is only present in one

monitoring well, and to show that natural attenuation is reducing the contaminant levels near the removed USTs. The most recent sampling data collected on September 28, 2005, indicate a maximum concentration of 670 µg/L TPH-g, 26 µg/L benzene, and less than 5.0 µg/L MTBE in MW-1.

The site lies within the Santa Clara Valley Subarea of the Pajaro River Hydrologic Unit, which the "Water Quality Control Plan, Central Coast Region" (Basin Plan) designates groundwater as having beneficial uses for domestic and municipal supply, agricultural supply, and industrial supply. Therefore, cleanup goals for common hydrocarbon constituents are as follows: 1,000 µg/L – total petroleum hydrocarbons (TPH), 1 µg/L – benzene, and 5 µg/L – MTBE. Cleanup goals for MTBE and TPH have been established based on taste and odor thresholds.

Depth to underlying groundwater is approximately 26 feet below ground surface. Groundwater flow is generally to the east with a gradient of 0.002 feet per foot. The nearest water supply well is located greater than one mile from the site.

The recommendation for closure is based on the following:

- 1) The source of the leak, the former USTs, have been removed,
- 2) The extent of contamination remaining above the cleanup goal is localized in extent, confined to the site, and contained in only one monitoring well,
- 3) Historic groundwater monitoring trends indicate that natural attenuation processes have been successful in reducing benzene concentrations to levels that are approaching the cleanup goal (from a maximum of 1,730 µg/L benzene in MW-1 in March 1998, to 26 µg/L in September 2005),
- 4) The remaining benzene is unlikely to reach a drinking water supply well,
- 5) Closure is consistent with Section III.G. State Board Resolution No. 92-49, allowing consideration of cost

effective abatement measures for a site where attainment of reasonable objectives less stringent than background water quality does not unreasonably affect present or anticipated beneficial uses of groundwater, and will not result in water quality less than prescribed by the Basin Plan.

In addition, Water Board staff has evaluated remaining groundwater concentrations with respect to possible indoor air impacts, and soil concentrations with respect to direct human exposure, indoor air impacts, and potential leachability to groundwater. Comparison of these soil and groundwater concentrations with corresponding environmental screening levels for residential land use and construction worker direct exposure scenarios indicate no significant threat to human health or the environment.

Based on the results of the tank removal, the decreasing trend in benzene concentrations and the recent groundwater monitoring data, there is no threat to groundwater quality and no further groundwater investigation or cleanup is necessary. The responsible party and fee titleholder has been notified of this proposed case closure. Unless the Water Board objects, and pending proper monitoring well destruction, the Executive Officer will issue a formal case closure letter.

Former Mobil Service Station 10-HMG,
1203 Mission Street, Santa Cruz, Santa Cruz
County; [Tom Sayles 805-542-4640]

Staff recommends closure of this underground storage tank (UST) case where groundwater sample results indicate groundwater pollution remains in groundwater at a concentration greater than the Central Coast Water Board's cleanup goal for benzene at 5.07 micrograms per liter (µg/L) and 7.42 µg/L detected in monitoring wells MW-2 and MW-4, respectively. No other petroleum hydrocarbon constituents, including MTBE, were detected or were above this Water Board's cleanup goals.

Six groundwater monitoring wells were installed in January 1989, to assess soil and groundwater conditions at the subject site. January 12, 1989 groundwater results indicated maximum concentrations of 260,000 µg/L total petroleum hydrocarbons as gasoline (TPH-g) and 71,000 µg/L benzene in MW-4.

In July 1990, three 10,000-gallon gasoline USTs and one 1,000-gallon used oil UST were removed. Soil samples and a "grab" groundwater sample were collected from the tank excavation. Analytical results indicated maximum concentrations of 6.3 milligrams per kilograms (mg/kg) TPH-g and 0.84 mg/kg benzene in soil. Concentrations of 30,000 µg/L TPH-g and 1,600 µg/L benzene were detected in the groundwater sample.

Quarterly groundwater monitoring and remedial actions were subsequently implemented. Approximately 2,700 cubic yards of impacted soil were excavated, transported and disposed at a local Class III landfill by the responsible party. Between July 1991 and August 1996, approximately 2,160,000 gallons of hydrocarbon contaminated groundwater were pumped, treated, and discharged under permit to the local sanitary sewer system. The combination of active cleanup and natural attenuation has reduced benzene concentrations from a maximum of 71,000 µg/L in January 1989 to the current maximum level of 7.42 µg/L in August 2005. No other petroleum hydrocarbon constituents, including MTBE, were detected or were above this Water Board's cleanup goals.

The site lies within the Santa Cruz Hydrologic Unit, which the "Water Quality Control Plan, Central Coast Region" (Basin Plan) designates groundwater as having beneficial uses for domestic and municipal supply, agricultural supply, and industrial supply. Therefore, cleanup goals for common hydrocarbon constituents are as follows: 1,000 µg/L -TPH, 1 µg/L - benzene, 1, and 5 µg/L - MTBE.

Depth to underlying groundwater is approximately 3 to 6 feet below ground surface. Groundwater flow is generally to the east with a gradient of 0.03 feet per foot. The

nearest water supply well is located more than ½ mile north of the site.

The recommendation for closure is based on the following:

- 6) The source of the leak, the former USTs, have been removed. Approximately 2,700 cubic yards of impacted soil were excavated from the source area, and approximately 2,159,347 gallons of groundwater were treated and discharged under permit to the local sanitary sewer system,
- 7) The extent of contamination remaining above the cleanup goal is localized in extent, confined to the site, and contained in only two monitoring wells,
- 8) Historic groundwater monitoring trends indicate that active cleanup and natural attenuation processes have been successful in reducing benzene concentrations to levels that are approaching the cleanup goal,
- 9) The remaining benzene is unlikely to reach a drinking water supply well,
- 10) Closure is consistent with Section III.G. State Board Resolution No. 92-49, allowing consideration of cost effective abatement measures for a site where attainment of reasonable objectives less stringent than background water quality does not unreasonably affect present or anticipated beneficial uses of groundwater, and will not result in water quality less than prescribed by the Basin Plan.

In addition, Water Board staff has evaluated remaining groundwater concentrations with respect to possible indoor air impacts, and soil concentrations with respect to direct human exposure, indoor air impacts, and potential leachability to groundwater. Comparison of these soil and groundwater concentrations with corresponding environmental screening levels for residential land use and construction worker direct exposure scenarios indicate no significant threat to human health or the environment.

Water Board staff has notified all current fee titleholders of properties impacted by releases from the USTs, allowing for public comment prior to case closure. To date, Water Board staff received two telephone calls regarding the proposed closure and addressed the caller's concerns regarding liability for cleanup of potential residual soil contamination.

Based on the results of the tank removal, cleanup actions, and groundwater monitoring, there is no threat to groundwater quality and

no further groundwater investigation or cleanup is necessary. The Santa Cruz County Environmental Health Services Agency agrees with this determination. The responsible party and fee titleholder has been notified of this proposed case closure. Unless the Water Board objects, and pending proper monitoring well destruction, the Executive Officer will issue a formal case closure letter.

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