California Regional Water Quality Control Board
North Coast Region

MONITORING AND REPORTING PROGRAM NO. R1-2010-0064
(Replacing Monitoring and Reporting Program No. R1-2004-0091)

FOR

TALMADGE WOOD TRUST, AND
SEBASTOPOL HOSPITAL CORPORATION

OLD DRY CLEANERS SITE
250 South Main Street
Sebastopol, California

Sonoma County

This Monitoring and Reporting Program is issued pursuant to California Water Code Section 13267(b) and requires periodic monitoring of groundwater and submission of technical reports. Reports are required on a quarterly basis. The objective of monitoring conducted under this monitoring program is to provide representatives of the Old Dry Cleaners site (hereinafter referred to as the Dischargers) and the Regional Water Board with information concerning groundwater quality following the injection of permanganate at the Old Dry Cleaners site and at an off-site location in Sebastopol. Monitoring and Reporting Program No. R1-2010-0064 supersedes Monitoring and Reporting Program No. R1-2004-0091 issued by the Executive Officer on September 27, 2004.

Under the authority of the California Water Code Section 13267(b), the Discharger is required to comply with the following:

Monitoring

1. The Old Dry Cleaners site has impacted the City of Sebastopol's Municipal Well No. 5. Well No. 5 is sampled on a quarterly basis, and PCE is routinely detected in the well. The City of Sebastopol is interested in placing Well No. 5 back on-line and plans are proceeding to place Well No. 5 on-line concurrent with cleanup.

2. In-situ chemical oxidation has been identified as a remedy for cleanup of the Site groundwater for volatile organic compounds (VOCs) on and near the site. Further downgradient of the Site, VOCs are comingled with petroleum hydrocarbon releases (including MTBE) at the J&W Foreign Automotive site located at 401 South Main Street in Sebastopol. Different treatment processes (persulfate injections) have been identified to cleanup the comingled VOC and petroleum hydrocarbon plume at this location. It is the intent of the Site groundwater monitoring program to sample the wells for the chemical oxidant (permanganate), byproducts of the oxidation process (metals), petroleum hydrocarbons (including MTBE), and VOCs.

3. The depth to groundwater in each monitoring well shall be determined to at least 0.01-foot increments quarterly. Groundwater elevation(s) shall be computed by subtracting the measured depth from the well top elevation reference point, both of which should be reported. The data generated from the elevation readings must be referenced to mean sea level. The data will be used to generate potentiometric surface maps which show groundwater flow direction(s) and vertical hydrologic gradient(s).

4. Groundwater monitoring wells shall be sampled for the analytical constituents in accordance with Table 1. Each well shall be measured in the field (or by a certified laboratory) for parameters including dissolved oxygen, pH, groundwater temperature, oxidation-reduction potential, conductivity, and specific conductance during purging activities, and sampling shall occur once parameter variance is within 5-10% difference.

5. Sampling of all wells and constituents identified in Table 1 shall occur prior to injection of sodium permanganate. In addition, select Monitoring Wells No. EMMW-8, MW-2A, MW17, MW-14, MW-10, and MW-9 shall also be sampled prior to injection and semiannually following injection for dissolved metals including: Antimony, Barium, Beryllium, Cadmium, Cobalt, Copper, Iron, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Uranium, and Zinc using appropriate U.S. EPA methodology.

Contingency Plan

The injection of Permanganate is expected to mobilize metals. Dissolved chromium and arsenic are expected to mobilize in the low part per billion range (< 5 ug/l), and ultimately return to preexisting conditions within one year. To evaluate the effectiveness of the treatment process, monitoring wells have been classified into three categories: (1) Treatment Zone Wells (TZW), Performance Wells (PWs), and Contingency Wells (CWs). Treatment Zone Wells are located within the area of injection and will monitor the effectiveness of the chemical oxidation process. Performance Wells are located downgradient of the treatment zones and will monitor the migration of sodium permanganate and the treatment process. Contingency Wells are near the Performance Wells and also further downgradient. Contingency Wells will be used to implement a contingency plan in the event dissolved metals and/or other byproducts migrate to those areas.

Each monitoring well will be sampled in accordance with Table 1, attached to this Monitoring and Reporting Program. Should dissolved metals and/or other byproducts mobilized by the injection of sodium permanganate be detected over background concentrations in contingency wells, the discharger shall report to the Executive Officer within 48 hours of receiving the laboratory results. Within 7 days, the discharger is required to resample the groundwater monitoring wells to confirm the presence of dissolved metals and/or other byproducts. The results of the resampling shall be submitted within 48 hours following receipt of the laboratory data from the lab.

If the analytical laboratory data confirms that dissolved metals have reached the contingency wells, a workplan to reduce the dissolved metals is due to the Executive Officer within 14 days of receipt of the confirmed laboratory analytical data. The workplan shall be submitted to the Executive Officer for review and concurrence prior to implementation. The workplan is required to be implemented within 14 days of concurrence of the workplan by the Executive Officer.

The Discharger has indicated that injection of reducing agents such as polysulfides, sugars (cheese whey, sodium lactate) or emulsified oils would be injected into the subsurface to revert the dissolved metals to pretreatment conditions. The workplan would identify the selected reducing agent along with a specific plan for injection such as depths, locations, reductant solution percentages and quantities, etc.

Reporting

6. Groundwater elevation contour map(s) shall be submitted for each set of measurements and include the facility groundwater flow pattern including the groundwater flow direction(s) and hydraulic gradient magnitude(s). The scaled maps shall show the location of the wells measured and relevant cultural features.

7. Groundwater monitoring well sampling data shall be submitted quarterly and include map(s) of the facility indicating the groundwater flow direction(s) and the location of all monitoring wells. The analytical data sheets shall be summarized in tabular form illustrating the date, the analytical constituents, the monitoring well elevation, and the concentrations of the constituents.

8. Instrument calibration records, field logs, and an evaluation of Quality Assurance/Quality Control of data shall be included in each groundwater monitoring report.

9. Groundwater monitoring data and reports shall be submitted electronically to the State Water Resources Control Board's Geographic Environmental Information Management System database (GeoTracker) as required by Title 23, Division 3, Chapter 30, Article 2, Sections 3890-3895 of the California Code of Regulations).

Ordered by: _____
Catherine Kuhlman
Executive Officer

August 31, 2010

Table 1

Well ID Nos. Identified Use Treatment Zone Well (TZW) Performance Well (PW) Contingency Well (CW)	VOCs U.S. EPA* Method 8260 (1)	Dissolved Metals (2)	Permanganate as Manganese (3)	TDS, COD, Sulfate Sodium Bromate Chloride (4)	TPH as Gas BTEX & MTBE (5)
EMMW-8 (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
MW-2 (TZW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-2A (TZW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-4 (PW)	Quarterly	Quarterly	Semiannual	Semiannual	Quarterly
MW-5 (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
MW-6 (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
MW-9 (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
MW-10 (CW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-14 (CW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-15 (PW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-16 (PW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-17 (TZW)	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
City Well No. 5	Quarterly	Quarterly	Quarterly	Semiannual	Quarterly
MW-2@501 South Main Street (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
Alliance Service Station MW-11 (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual
Alliance Service Station MW-12 (CW)	Semiannual	Semiannual	Semiannual	Semiannual	Semiannual

Table 1* U.S. EPA means the United States Environmental Protection Agency

(1) VOCs full scan and including PCE and its breakdown products. PCE means tetrachloroethene. Breakdown products include trichloroethene, cis- and trans-1,2-Dichloroethene, and vinyl chloride

(2) Dissolved metals include: Dissolved Arsenic and Total Dissolved Chromium using EPA Method 6010, Hexavalent Chromium using U.S. EPA Method 7199

(3) Permanganate as Manganese using U.S. EPA Method 6010

(4) TDS is Total Dissolved Solids, COD is Chemical Oxygen Demand.

(5) Total Petroleum Hydrocarbons as Gas, Benzene, Toluene, Ethylbenzene, Xylenes,and MTBE using EPA 8015 and 8260