

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2005-0015

ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS REQUIREMENTS AND
RESCISSION OF ORDER NO. 99-077 FOR:

LIKA ENGINEERING, INC., LIKA CORPORATION, GOLDEN TECHNOLOGY, INC.,
EH INTERNATIONAL, INC., POLLACK AND POLLACK GENERAL PARTNERSHIP,
ROBERT S. POLLACK, MICHAEL A. POLLACK, MILAN MANDERIC, GORDANA
MANDERIC, VED KHOSLA, and SANTOSH KHOSLA

for the property located at

472 NELO STREET, 482 NELO STREET, 3459 EDWARD AVENUE, 3461 EDWARD
AVENUE, 3465 EDWARD AVENUE, 3475 EDWARD AVENUE, 3479 EDWARD
AVENUE, 3485 EDWARD AVENUE, 451 ALDO AVENUE, AND 455 ALDO AVENUE
SANTA CLARA
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location:** The site is located at 3465 and 3475 Edward Avenue between Highway 101 and the Montague Expressway in Santa Clara as shown in Figure 1. This area is used primarily for commercial and light industrial purposes, with nearby residential use. The Guadalupe River is about 1000 feet to the east. As shown in Figure 2, the site consists of two parcels bounded by Nelo Street to the north, Edward Avenue to the west, Aldo Avenue to the south, and other industrial buildings to the east. The northern building is subdivided into five units consisting of 472 Nelo Street, 482 Nelo Street, 3485 Edward Avenue, 3479 Edward Avenue, and 3475 Edward Avenue. The southern building is also subdivided into five units consisting of 3465 Edward Avenue, 3461 Edward Avenue, 3459 Edward Avenue, 455 Aldo Avenue, and 451 Aldo Avenue.
2. **Site History:** The site was agricultural prior to 1970, as indicated by aerial photography. In about 1971, the buildings that occupy the site were constructed under the ownership of Help Development Company. The property was sold to Milan and Gordana Manderic in about 1972. The Mandarics sold the property to Ved and Santosh Khosla in about 1981. Pollack and Pollack General Partnership bought the property from the Khoslas in October 1986. Pollack and Pollack General Partnership currently owns the property.

From about 1972 to 1974, Lika Engineering Inc., which changed its name on September 6, 1973 to Lika Corporation (hereinafter Lika), operated a printed circuit board manufacturing facility in both buildings. From about 1974 to 1985, Golden Technology Inc. (hereinafter Golden Technology) also operated a printed circuit board manufacturing facility in both buildings. Golden Technology merged with EH International, Inc. (hereinafter EH International) in about 1980, and continued to manufacture printed circuit boards until EH International went bankrupt in about 1985.

Lika and Golden Technology's known operations included etching, plating, stripping scrubbing/deburring, ink mixing, and photo developing. According to available records, process waste water was discharged to various floor drains and sumps located in the wet process areas of the building. Acid wastes were also stored in an above ground storage tank in the courtyard area between the two buildings prior to neutralization and discharge to the City's sanitary sewer system. This courtyard area also had various sumps, tanks, underground piping, troughs, and a chemical storage and mixing area. During the time periods that Lika and Golden Technology operated at the site, solvent use, including tetrachloroethylene (PCE) and trichloroethylene (TCE), was prevalent in the printed circuit board manufacturing industry.

Since about 1986, the site has been leased to various commercial and light industrial businesses. Known uses include machine shops, graphic productions, medical equipment sales, carpet sales, rubber bumper manufacturing, a glass shop, and ceramic machining. No significant solvent use has been identified at the site since 1986.

3. **Named Dischargers:** Lika Engineering Inc., Lika Corporation, Golden Technology, Inc., and EH International, Inc. are named as dischargers because of substantial evidence that they discharged pollutants to soil and groundwater at the site, including their use of chlorinated solvents in printed circuit board manufacturing operations, the presence of these same pollutants in soil and groundwater in the courtyard area, and the presence of these same pollutants in groundwater down gradient of the courtyard area.

Milan and Gordana Mandaric and Ved and Santosh Khosla are named as dischargers because they owned the property during or after the time of the activity that resulted in the discharge, had knowledge of the discharge or the activities that caused the discharge, and had the legal ability to prevent the discharge.

Pollack and Pollack General Partnership, Robert S. Pollack, and Michael A. Pollack are named as a dischargers because they owned the property after the time of the activity that resulted in the discharge, currently have knowledge of the discharge or the activities that caused the discharge, and have the legal ability to prevent the discharge.

Robert S. Pollack, and Michael A. Pollack are the owners of Pollack and Pollack General Partnership.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding those parties' names to this order.

4. **Regulatory Status:** This site is subject to the following Board order:

Site Cleanup Requirements (Order No. 99-077) adopted September 15, 1999

5. **Site Hydrogeology:** The native soils underlying the area have a complex stratigraphy due to the depositional history: alluvial flow, basin marshland and shallow bay mud. In general, the thicker and coarser grained sands are present in the courtyard area. Silts and clays predominate beneath much of the area north of the courtyard, whereas on the southern side there is more of a mixture. Native surface soils (3 to 5 feet below grade) are clayey throughout the area, with poorly graded sand beginning at a depth of 13-15 feet below grade. This predominantly fine-grained sand contains up to 30-40% of silt/clay fines and has been found to extend to a depth of 17-27 feet below grade, depending on location. Underlying the sand is lean clay, extending to the maximum depth explored at this site (32 feet below grade).

The site lies in the "confined aquifer" area of the Santa Clara Valley as defined by the Water District. Regionally, there is a thick clay aquitard that separates the shallow aquifer from the deeper high-quality aquifer currently used for drinking water. Static groundwater elevations in the shallow aquifer are generally about 8 feet below grade, but have been unusually shallow in the courtyard area, with depths less than 6 feet measured in March 1997 and April 2000. The prevailing regional groundwater direction is north-northeasterly. However, local groundwater flow at the site is not completely consistent with the regional flow. Groundwater elevations indicate an irregular flow pattern, with a high elevation ridge centered near the courtyard area and groundwater flowing away from the ridge to the north on one side and to the west and northwest on the other side. Hydraulic conductivity was measured in the monitoring wells, and varies from about 8.3-9.1 ft/day to about 55-73 ft/day, depending on the well.

6. **Remedial Investigation:** Remedial investigations have been performed, and the extent of contaminated soil and groundwater has been determined both on site and off site as described in D&M Consulting Engineer's January 10, 2001 Remedial Investigation report. These investigations have identified tetrachloroethylene (PCE), trichloroethylene (TCE) and cis-1,2-dichloroethylene (cis-1,2-DCE) contamination in the soil and groundwater. The highest soil concentrations are 260 micrograms per

kilograms (ug/kg) for PCE, 4300 ug/kg for TCE, and 720 ug/kg for cis-1,2-DCE. For comparison, Environmental Screening Levels¹ (ESLs) for soil are 250 ug/kg for PCE, 460 ug/kg for TCE and 190 ug/kg for cis-1,2-DCE, based on indoor air concerns and leaching to groundwater concerns. Contaminated groundwater has migrated off site, and extends across Nelo Street about 400 feet from the source area. The highest groundwater concentrations from the most recent monitoring event in May 2004 are 150 micrograms per liter (ug/l) for PCE, 15,000 micrograms per liter (ug/l) for TCE, and 1500 ug/l for cis-1,2-DCE. Maximum contaminant levels considered safe for drinking water are 5 ug/l for PCE, 5 ug/l for TCE and 6 ug/l for cis-1,2-DCE.

7. **Adjacent Sites:** The two adjacent properties, 460 Nelo Street owned by Clancy Tools and 441-445 Aldo Avenue owned by Electro Structures, have been impacted by off-site groundwater migration from the Edward Avenue site. While there is some evidence that VOC releases could have occurred in the past at the Aldo and Nelo properties, groundwater migration from the Edward Avenue property is the most likely explanation for contaminated groundwater on the Clancy Tools and Electro Structures properties, and that volatilization from the contaminated groundwater is the most likely explanation for the contaminated soils on those properties. Regional Board staff issued a "no further action" for 460 Nelo Street and 441-445 Aldo Avenue because there is a lack of substantial evidence that any operators at either of these properties discharged contaminants.
8. **Interim Remedial Measures:** Groundwater monitoring wells were installed down gradient of the source area as documented in the May 2001 Interim Remedial Action report by D&M Consulting Engineers. Subsequent monitoring of these wells indicates that the contaminant plume is stable and that contaminants are not migrating significantly beyond the most down gradient wells. Natural attenuation parameters have been measured for three semi-annual monitoring events. Information from these events was used to develop the final remedial action plan.
9. **Environmental Risk Assessment:** A site-specific risk assessment was performed as documented in the October 1, 2001 Draft Final Remedial Action Plan by D&M Consulting Engineers. This risk assessment was supplemented by the February 16, 2004 letter report from D&M Consulting Engineers. The assessment evaluated risks to human health from contaminated soils and groundwater for on-site commercial receptors, off-site commercial receptors, and nearby residential receptors. The site conceptual model did not consider direct exposure (e.g. drinking water), but focused on secondary pathways (e.g. migration to indoor air) because these are the most likely exposure pathways at the site. Chemicals evaluated in this risk assessment were PCE, TCE, cis-1,2-DCE, 1,1-dichloroethylene, and

¹ Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final July 2003. San Francisco Bay Regional Water Quality control Board.

trans-1,2-dichloroethylene. The criteria used for an acceptable risk level were 10^{-6} risk for carcinogenic effects and a hazard index of 0.2 for noncarcinogenic effects. For comparison, the Board considers the following risks to be acceptable at remediation sites: a cumulative hazard index of 1.0 or less for non-carcinogens and, for carcinogens, a cumulative excess cancer risk of 10^{-6} or less (residential scenario) or 10^{-5} or less (commercial/industrial scenario). The risk assessment did not identify any significant risks to human health from secondary pathway exposures. Ecological risks were not considered because of the lack of potential migration of chemicals of concern to nearby surface water bodies based on groundwater modeling. No significant health risks were identified from indoor air exposure due to vapor intrusion from soil or groundwater. The site specific risk assessment did not address impacts from direct exposure, leaching to groundwater, or drinking water exposure. Therefore, ESLs will be used to address these exposure pathways.

- a. **Screening Levels:** Screening levels for groundwater are based on the lowest of toxicity-based standards (e.g., promulgated Primary Maximum Contaminant Levels (MCLs) or equivalent) and standards based on taste and odor concerns (e.g., Secondary MCLs or equivalent). Chemical-specific screening levels for other human health concerns (i.e., direct-exposure) are based on a target excess cancer risk of 1×10^{-6} for carcinogens and a target Hazard Quotient of 0.2 for noncarcinogens. The Board considers a cumulative excess cancer risk of 1×10^{-5} and a target Hazard Index of 1.0 to be generally acceptable for human health concerns at commercial and industrial properties. Soil screening levels for potential leaching concerns are intended to prevent impacts to groundwater above target groundwater goals (e.g., drinking water standards). Soil screening levels for nuisance concerns are intended to address potential odor and other aesthetic issues.
- b. **Soil Assessment:** Soil ESLs were exceeded for TCE and cis-1,2-DCE, based on leaching to groundwater concerns. Soil ESLs for TCE and cis-1,2-DCE for soil leaching are 460 ug/kg and 190 ug/kg, respectively. The site specific risk assessment did not identify any threats to indoor air exposure from contaminated soil or groundwater.
- c. **Groundwater Assessment:** Groundwater ESLs were exceeded for PCE, TCE, and 1,2-cis-DCE, based on potential drinking water concerns only. Groundwater ESLs are 5 ug/l for PCE, 5 ug/l for TCE and 6 ug/l for cis-1,2-DCE

Chemicals of Concern	Maximum Groundwater Concentration (ug/L)	Maximum Soil Concentration (ug/kg)	Results of Screening Assessment *		
			Potential Drinking Water Concerns	Potential Soil to Indoor Air Concerns	Potential Soil Leaching Concerns
PCE	150	260	X		
TCE	15,000	4,300	X		X
cis-1,2-DCE	1,500	720	X		X
vinyl chloride	0	0			

* Note: an "X" indicates that respective Environmental Screening Level was exceeded

- d. **Conclusions:** Due to risk that may be present at the site pending full remediation, institutional constraints are appropriate to limit on-site exposure to acceptable levels. Institutional constraints include a deed restriction that notifies future owners of sub-surface contamination and prohibits the use of shallow groundwater beneath the site as a source of drinking water until cleanup standards are met. Deed restrictions may also include land use restrictions, such as prohibitions against residential use or use by sensitive receptors (e.g. day care centers, schools, and hospitals).
10. **Feasibility Study:** A draft feasibility study was performed as documented in the October 1, 2001 Draft Final Remedial Action Plan by D&M Consulting Engineers. The remedial options considered were monitored natural attenuation, in-situ oxidation, accelerated degradation, and pump and treat. Evaluation factors considered were relative costs, effectiveness, benefits, and public health, welfare and the environment. Monitored natural attenuation was selected as the preferred remedial option, but subsequent evaluations determined that monitored natural attenuation by itself may not be effective in achieving cleanup goals in a reasonable time period.
11. **Remedial Action Plan:** A draft remedial action plan was proposed according to the October 1, 2001 Draft Final Remedial Action Plan by D&M Consulting Engineers, as amended by the January 8, 2004 letter report. Proposed final remedial actions include the installation five Dual-Phase (vapor and groundwater) Extraction (DPE) wells in the areas with the highest VOC concentrations. DPE will be performed as long as significant VOC removal is continuing. The goal of this phase of remediation is to reduce hot spot concentrations to less than 1,000 parts per billion in soil and groundwater. Once the DPE phase of remediation is complete, Hydrogen Releasing Compound (HRC) will be injected into the groundwater to accelerate natural degradation of VOCs. A Monitored Natural Attenuation (MNA) program will then be implemented to complete remediation. These measures are likely to be successful in achieving cleanup goals in a reasonable period of time.

12. **Basis for Cleanup Standards**

- a. **General:** State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. The previously-cited remedial action plan confirms the Board's initial conclusion that background levels of water quality cannot be restored. This order and its requirements are consistent with Resolution No. 68-16.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b. **Beneficial Uses:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the site:

- o Municipal and domestic water supply
- o Industrial process water supply
- o Industrial service water supply
- o Agricultural water supply

While the shallow aquifer is currently not used for any purpose, the deeper regional aquifer (below 200 feet) in the general area is currently used as a major drinking water supply source. At present, there is no known use of shallow groundwater underlying and adjacent to the site for the above purposes.

- c. **Basis for Groundwater Cleanup Standards:** The groundwater cleanup standards for the site are based on applicable water quality objectives and are the more stringent of EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to humans.
 - d. **Basis for Soil Cleanup Standards:** The soil cleanup standards for the site are shown in section B.3 below. Cleanup to this level is intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to humans.
13. **Future Changes to Cleanup Standards:** The goal of this remedial action is to restore the beneficial uses of groundwater underlying and adjacent to the site. Results from other sites suggest that full restoration of beneficial uses to groundwater as a result of active remediation at this site may not be possible. If full restoration of beneficial uses is not technologically nor economically achievable within a reasonable period of time, then the discharger may request modification to the cleanup standards or establishment of a containment zone, a limited groundwater pollution zone where water quality objectives are exceeded. Conversely, if new technical information indicates that cleanup standards can be surpassed, the Board may decide that further cleanup actions should be taken.
14. **Reuse or Disposal of Extracted Groundwater:** Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.
15. **Basis for 13304 Order:** California Water Code Section 13304 authorizes the Board to issue orders requiring a discharger to cleanup and abate waste where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

16. **Cost Recovery:** Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
17. **CEQA:** This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.
18. **Notification:** The dischargers and all interested agencies and persons have been notified of the Board's intent, pursuant to California Water Code 13304, to prescribe site cleanup requirements for the discharge and the opportunity for public participation.
19. **Public Participation:** The Board afforded interested agencies and persons ample opportunity to publicly participate in the decisions made regarding the Site's environmental investigation, analysis and selection of appropriate remedial alternatives, and other matters related to the Site and this Order. The opportunities for public participation provided by the Board included, but were not limited to the following items, and are in substantial compliance with the public participation requirements identified in the 1990 National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR §300.400 et seq.):
 - a. Established a Public Record in a location that is accessible to the public
 - b. Established an Information Repository near the site, which includes the Public Record and all other pertinent documents, which is easily accessible by the public, with evening and weekend hours and that has copy machines available for the public's use
 - c. Established a Mailing List of agencies and persons that are mailed information regarding the project
 - d. Mailed Information Letter to those on the Mailing List, which included information regarding the historical uses of the Site, regulatory status, detailed establishment of the Information Repository and outlined future opportunities for Public Comment
 - e. Mailed Fact Sheet, to those on Mailing List, containing more detailed site information:

- f. Published Public Notices, in a major newspaper, regarding the Board's oversight process, availability of key documents for public comment, and Board meetings. A Public Notice was published in the San Jose Mercury News on August 3, 2004 to announce, among other items, a Public Meeting.
 - g. Conducted a properly noticed Public Meeting where public comments were heard A Public Meeting was held on August 24, 2004 at Montague Park, which is located at 3595 MacGregor Lane in Santa Clara, to collect comments from the public regarding the proposed Remedial Action Plan. No comments were received by the Regional Board.
 - h. Considered all public comments.
20. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Dischargers (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

- 1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
- 2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
- 3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. REMEDIAL ACTION PLAN AND CLEANUP STANDARDS

- 1. **Implement Remedial Action Plan:** The Dischargers shall implement the remedial action plan described in Finding 11.
- 2. **Groundwater Cleanup Standards:** The following groundwater cleanup standards shall ultimately be met in all wells identified in the Self-Monitoring Program:

Constituent	Standard (ug/l)	Basis
PCE	5	EPA primary MCL
TCE	5	EPA primary MCL
cis-1,2-DCE	6	EPA primary MCL
vinyl chloride	0.5	EPA primary MCL

3. **Soil Cleanup Standards:** The following soil cleanup standards shall be met in all on-site vadose-zone soils.

Constituent	Standard (mg/kg)	Basis
PCE	0.250	ESL
TCE	0.460	ESL
cis-1,2-DCE	0.190	ESL
vinyl chloride	0.019	ESL

C. TASKS

1. **FEASIBILITY OF REUSE OR DISCHARGE TO POTW**

COMPLIANCE DATE: June 1, 2005

Submit a technical report acceptable to the Executive Officer evaluating the feasibility of reusing extracted, treated groundwater or discharging such groundwater to a publicly-owned treatment works, to comply with Board Resolution No. 88-160. The report should discuss technical feasibility, cost, regulatory constraints, and potential effects on soil and groundwater remediation.

2. **DUAL-PHASE EXTRACTION WORKPLAN**

COMPLIANCE DATE: June 1, 2005

Submit a workplan acceptable to the Executive Officer providing details of the dual-phase extraction wells proposed in D&M Consulting Engineer's January 8,

2004 letter report. This should include proposed construction details, locations, methods of operation (anticipated rates of vapor and groundwater to be extracted), and treatment and disposal of extracted groundwater.

3. DUAL-PHASE EXTRACTION WELLS INSTALLATION REPORT

COMPLIANCE DATE: September 1, 2005

Submit a technical report acceptable to the Executive Officer documenting the installation of the dual phase wells proposed in Task C.2. This should include as-built construction details, and the results any well development testing and initial VOC concentrations.

4. HYDROGEN RELEASING COMPOUND (HRC) INJECTION WORKPLAN

COMPLIANCE DATE: February 1, 2006

Submit a workplan acceptable to the Executive Officer proposing HRC injection proposed in D&M Consulting Engineer's January 8, 2004 letter report. This should include proposed injection points and the volume of HRC to be injected at each point.

5. HYDROGEN RELEASING COMPOUND (HRC) INJECTION COMPLETION REPORT

COMPLIANCE DATE: April 1, 2006

Submit a technical report acceptable to the Executive Officer documenting the completion of the HRC injection proposed in Task C.4. This should include actual injection points and the volume of HRC injected at each point.

6. PROPOSED INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: May 1, 2005

Submit a technical report acceptable to the Executive Officer documenting procedures to be used by the discharger to prevent or minimize human exposure to soil and groundwater at or beneath the site of the contamination prior to meeting cleanup standards. Such procedures shall include a deed restriction prohibiting the use of shallow groundwater as a source of drinking water, and prohibiting the site for residential use or other sensitive uses.

7. IMPLEMENTATION OF INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: 60 days after Executive Officer approval

Submit a technical report acceptable to the Executive Officer documenting that the proposed institutional constraints have been implemented.

8. FIVE-YEAR STATUS REPORT

COMPLIANCE DATE: April 1, 2010

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved remedial action plan. The report should include:

- a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment
- b. Comparison of contaminant concentration trends with cleanup standards
- c. Comparison of anticipated versus actual costs of cleanup activities
- d. Performance data (e.g. groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted)
- e. Cost effectiveness data (e.g. cost per pound of contaminant removed)
- f. Summary of additional investigations (including results) and significant modifications to remediation systems
- g. Additional remedial actions proposed to meet cleanup standards (if applicable) including time schedule

If cleanup standards have not been met and are not projected to be met within a reasonable time, the report should assess the technical practicability of meeting cleanup standards and may propose an alternative cleanup strategy.

9. PROPOSED CURTAILMENT

COMPLIANCE DATE: 30 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to discontinue the dual phase extraction system. Curtailment may include system closure (e.g. well abandonment), system suspension (e.g. cease extraction but wells retained), or significant system modification (e.g. major

reduction in extraction rates, closure of individual extraction wells within extraction network). The report should include the rationale for curtailment. Proposals for final closure should demonstrate that curtailment objectives identified in the RAP have been met, contaminant concentrations are stable, and contaminant migration potential is minimal.

10. IMPLEMENTATION OF CURTAILMENT

COMPLIANCE DATE: 60 days after Executive Officer approval

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 9.

11. EVALUATION OF NEW HEALTH CRITERIA

COMPLIANCE DATE: 90 days after requested
by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising one or more cleanup standards in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

12. EVALUATION OF NEW TECHNICAL INFORMATION

COMPLIANCE DATE: 90 days after requested
by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved remedial action plan and cleanup standards for this site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup standards.

- 13. Delayed Compliance:** If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).
2. **Good O&M:** The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Cost Recovery:** The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.
4. **Access to Site and Records:** In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:
 - a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the requirements of this Order.
 - c. Inspection of any monitoring or remediation facilities installed in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
5. **Self-Monitoring Program:** The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor / Consultant Qualifications:** All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.
7. **Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).
8. **Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:
 - a. City of Santa Clara
 - b. County of Santa Clara
 - c. Santa Clara Valley Water District

The Executive Officer may modify this distribution list as needed.

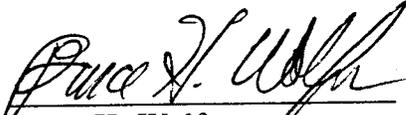
9. **Reporting of Changed Owner or Operator:** The discharger shall file a technical report on any changes in site ownership.
10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order:** This Order supercedes and rescinds Order No. 99-077.
12. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 20, 2005.


Bruce H. Wolfe
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT
YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO:
IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE
SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR
INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY
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Attachments: Figure 1. Site Location
Figure 2. Site Map
Self-Monitoring Program

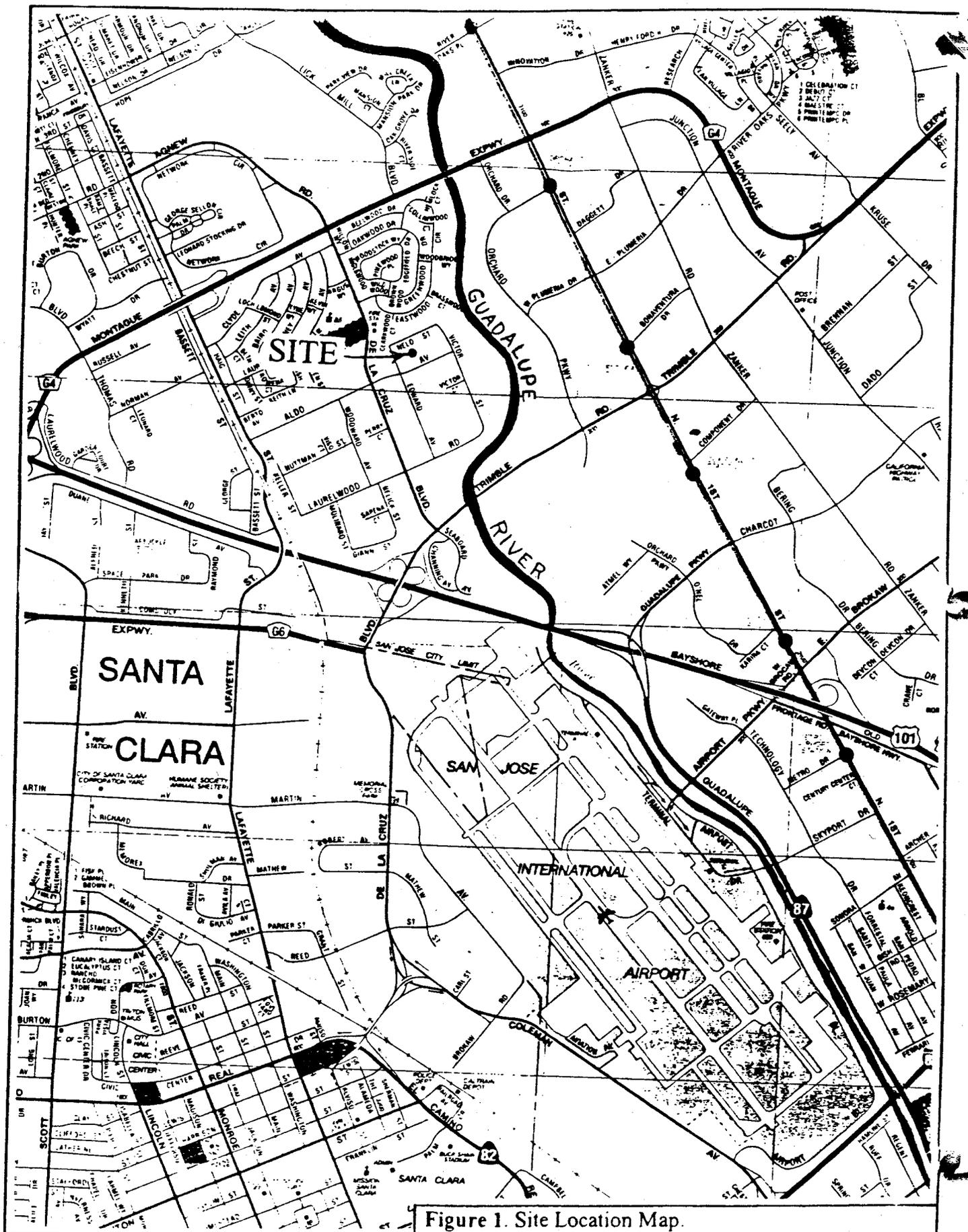
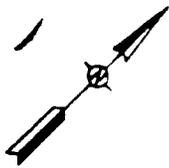
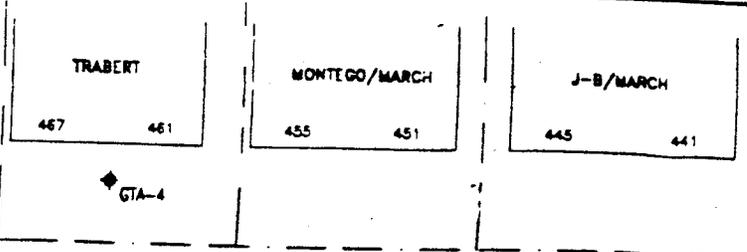


Figure 1. Site Location Map.



APPROXIMATE SCALE
0 40 80
1" = 80'



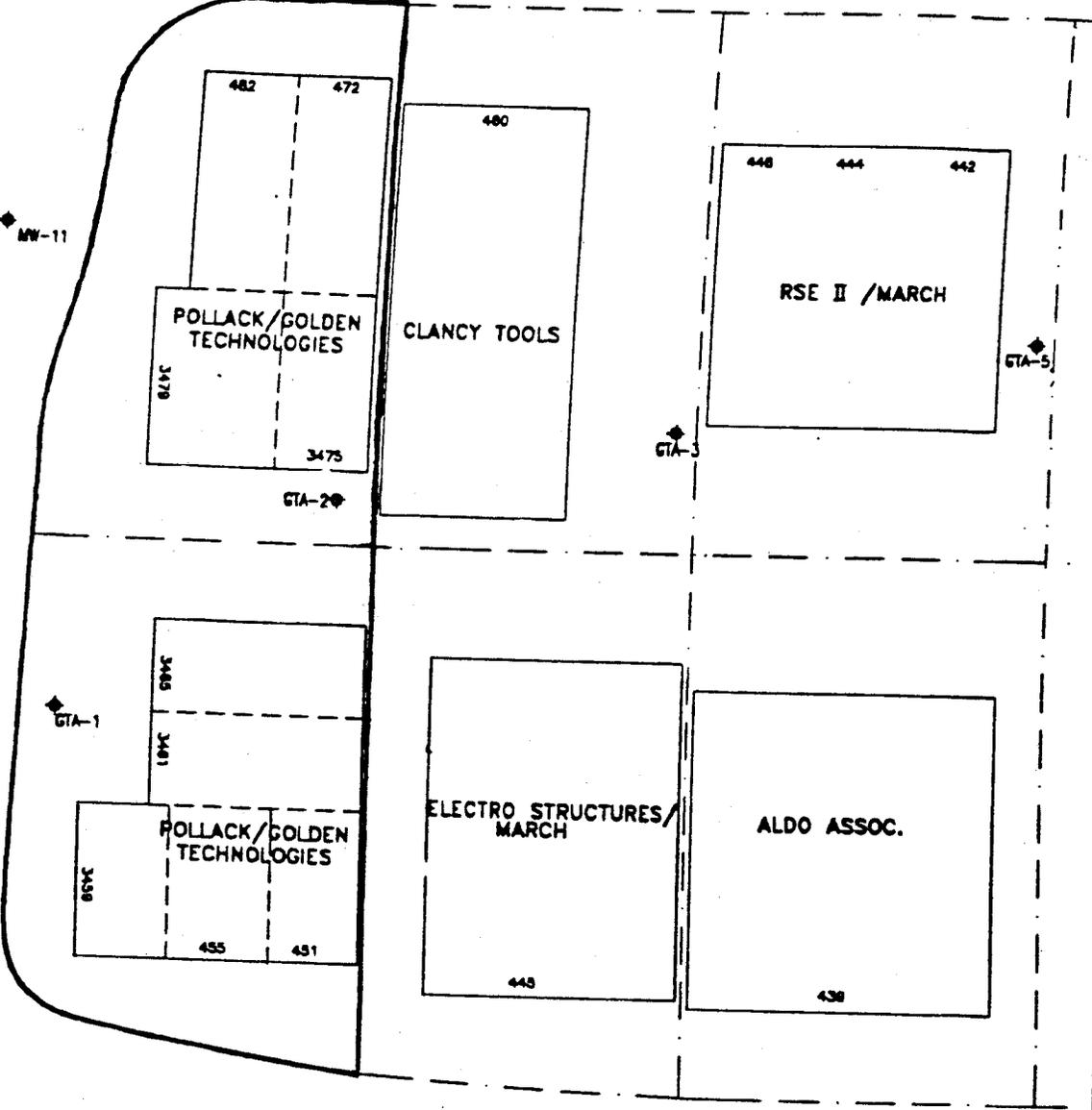
Site Boundary

NELO STREET

DLC ASSOC.

EDWARD AVENUE

GAHRAHMAT



ALDO

AVENUE

Figure 2. Site Map. 3465-3475 Edward Avenue, Santa Clara.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

LIKA ENGINEERING, INC., LIKA CORPORATION, GOLDEN TECHNOLOGY, INC.,
EH INTERNATIONAL, INC., POLLACK AND POLLACK GENERAL PARTNERSHIP,
ROBERT S. POLLACK, MICHAEL A. POLLACK, MILAN MANDERIC, GORDANA
MANDERIC, VED KHOSLA, and SANTOSH KHOSLA

for the property located at

472 NELO STREET, 482 NELO STREET, 3459 EDWARD AVENUE, 3461 EDWARD
AVENUE, 3465 EDWARD AVENUE, 3475 EDWARD AVENUE, 3479 EDWARD
AVENUE, 3485 EDWARD AVENUE, 451 ALDO AVENUE, AND 455 ALDO AVENUE
SANTA CLARA
SANTA CLARA COUNTY

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. R2-2005-0015 (site cleanup requirements).
2. **Monitoring:** The discharger shall measure groundwater elevations quarterly in all monitoring wells (GTA-1, GTA-2, GTA-3, GTA-4, GTA-5 & MW-11), and shall collect representative groundwater samples from these wells quarterly and analyze them for VOCs (EPA Method 8260) and natural attenuation parameters (dissolved oxygen, nitrate, ferrous iron, ferric iron, sulfate, sulfide, redox potential, pH, temperature, carbon dioxide, alkalinity chloride, total organic carbon, methane, ethene, and ethane).

The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

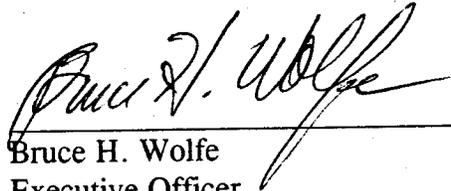
3. **Quarterly Monitoring Reports:** The discharger shall submit quarterly monitoring reports to the Board no later than 30 days following the end of the quarter (e.g. report for first quarter of the year due April 30). The first quarterly monitoring report shall be due on August 1, 2004. The reports shall include:
 - a. **Transmittal Letter:** The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under

penalty of perjury, that the report is true and correct to the best of the official's knowledge.

- b. **Groundwater Elevations:** Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.
 - c. **Groundwater Analyses:** Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).
 - d. **Groundwater Extraction:** If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.
 - e. **Status Report:** The quarterly report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following quarter.
5. **Violation Reports:** If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.
6. **Other Reports:** The discharger shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

7. **Record Keeping:** The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.
8. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Bruce H. Wolfe, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on April 20, 2005.



Bruce H. Wolfe
Executive Officer