California Regional Water Quality Control Board
San Francisco Bay Region

Terry Tamminen
Secretary for Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.swrcb.ca.gov/rwqcb2

Arnold Schwarzenegger
Governor

Date: JUN 2 4 2004
File No. 07S0125 (MEJ)

Certified Mail No.
70033110000265558608
City of Richmond
Attn: Mr. Gary Hembree
City of Richmond Redevelopment Agency
1401 Marina Way South
Richmond, CA 94804

Subject: Site Cleanup Requirements, Order No. R2-2004-0045, Terminal One, 1500 Dornan Drive, Richmond, Contra Costa County

Dear Mr.Hembree:

Please find enclosed a copy of Site Cleanup Requirements, Order No. R2-2004-0045. The Order was adopted by the Regional Board at the June 16, 2004, meeting. The Order sets forth cleanup standards for soil and groundwater and requires the discharger to submit and implement a remedial action plan.

If you have any questions, please contact Mark Johnson at (510) 622-2493, [e-mail mej@rb2.swrcb.ca.gov].

Sincerely,

Bruce H. Wolfe
Executive Officer

encl: Order No. R2-2004-0045
cc: attached list w/encl.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2004-0045

SITE CLEANUP REQUIREMENTS REQUIREMENTS FOR:

City of Richmond

for the property located at:

Terminal One
1500 Dornan Drive
Richmond, Contra Costa County

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

1. **Site Location**: Terminal One (site), which covers approximately 14 acres, is bounded by Brickyard Cove Road to the north, Dornan Drive and San Francisco Bay to the west, the Richmond Yacht Club and San Francisco Bay to the east, and San Francisco Bay to the south (Figure 1). It lies within a mixed industrial, residential, and recreational area of the Richmond shoreline. The site is generally flat and is bounded by riprap on the east, south, and west; a cliff of bedrock outcrops just north of the site. A pier and warehouse structure is present on the southwest portion of the property. Based on review of historical maps, the entire site consists of reclaimed land.

2. **Site History**: Terminal One was built between 1915 and 1918 as a port facility and was used for shipping and industrial activities until the late 1980s. It was used primarily as a storage and warehouse facility and for transfer of cargo and bulk liquids from ships to trucks and rail cars. Site improvements at various times included a total of 68 tanks of various sizes (used primarily for storage of liquid materials), warehouse buildings (used primarily for storage of dry goods), an office building, boilers, an underground fuel storage tank, a truck scale, and a below-grade stormwater system consisting of sumps, clarifiers, and below-grade piping. The former tank farm within the southwestern portion of the site and the adjacent warehouse are referred to as the Southwestern Tank Farm Area. The former tank farm within the northeastern portion of the site is referred to as the Northeastern Tank Farm Area. The remainder of the site extending from the northwestern corner to the southeastern corner is referred to as the Central Area.

   Chemicals likely to have been stored in the tanks on the site include petroleum hydrocarbons, non-petroleum-based hydrocarbons (i.e. vegetable, coconut, and

cottonseed oils), and solvents. Portions of the site have been leased and subleased by a number of tenants. The number and variety of chemicals used and stored at the site has varied over time and detailed records are not available.

Land use in the vicinity of Terminal One has been changing over the past years. A large residential development has been constructed in the adjacent Brickyard Cove. Another residential development is currently being built to the east. Terminal One is currently zoned in a manner which allows for residential use and is in the process of being redeveloped. As the Southwestern Tank Farm area of the site is a significant source of VOC pollution, the City, as the site owner, has decided to restrict the future use of this area to recreational only. A deed restriction will be placed on this portion of the site to insure that sensitive uses do not occur in this area.

3. **Named Dischargers**: The City of Richmond is a named discharger because it is the current owner of the site. While the City of Richmond did not operate at the site, it continuously owned the site during the time of the activities that resulted in the discharges and had general knowledge of the operations that may have caused the discharges. The Board does not currently have adequate information regarding past operators of the site at this time. The Board, based on additional information, may in the future amend or revise this Order to include other parties who caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state.

4. **Regulatory Status**: This site is currently not subject to Board Order. The City's Redevelopment Agency is exercising its authority under Health and Safety Code, Section 33459 (Polanco), to bring about remediation of the property as part of its efforts to alleviate blight.

5. **Site Hydrogeology**: Franciscan bedrock outcrops in a cliff located just to the north of the site and slopes steeply to the south beneath the site. The entire site consists of land reclaimed from the Bay. Shallow sandy to gravelly fill material, bay mud, and deeper silty sediments are deposited over the sloping bedrock surface. The shallow coarse-grained fill material ranges in thickness from less than a foot to approximately 13.5 feet and consists of a mixture of sand and gravel with local silt and clay layers. The coarse-grained fill material overlies bay mud, which ranges in thickness from less than one foot at the northern edge of the site to approximately 39 feet thick along the southern edge. The bay mud is directly underlain by bedrock within the northern portion of the site. Within the southern portion of the site, the bay mud is underlain by a coarse-grained layer at depths ranging from 40 to 60 feet bgs. The coarse layer, which consists of approximately 10 to 15 feet of silt, sand and gravel, is underlain by bedrock.

Groundwater beneath the site generally ranges from approximately 3 to 8 feet below ground surface, which is generally within bay mud. Over most of the site, the coarse-grained fill material is generally unsaturated. In the Northeastern Tank Farm Area, groundwater has been observed to occur within the lowest portion of the coarse-grained fill layer. Groundwater beneath the site is high in total dissolved solids, ranging from 1,300 to 43,000 mg/l, due to the proximity of the San Francisco Bay and is not considered as a potential source of drinking water.

6. **Remedial Investigation**: Soil and groundwater samples have been collected at the site and analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides and polychlorinated biphenyls (PCBs), and/or metals. Flux chamber samples have been analyzed for VOCs, methane, and/or inert gasses.

   The primary chemicals of concern in both soil and groundwater within the former Southwestern Tank Farm Area, are chlorinated VOCs, primarily PCE (with its associated breakdown products: TCE, cis-1,2-DCE and vinyl chloride). Maximum concentrations in groundwater of these constituents included: PCE at 96 mg/l, TCE at 31 mg/l, cis-1,2-DCE at 320 mg/l and vinyl chloride at 14 mg/l. Within the Northeastern Tank Farm Area, benzene, xylenes and other petroleum-based compounds are of primary concern. Benzene concentrations in groundwater within this area were detected at concentrations up to 440 ug/l.

   TPH was detected in soil and groundwater in many areas of the site, at concentrations up to 150,000 mg/kg and in excess of 500 mg/l, respectively. Elevated SVOCs, primarily benzo(a)pyrene, were detected locally in soils in the Central area of the site. Metals were generally within the range of normal background concentrations with the exception of lead. Lead was detected at a concentration above typical background (14.7 mg/kg) in 14 samples collected at the site; lead in these samples ranged from 15 mg/kg to 390 mg/kg. The elevated concentrations of lead were collected near the surface, suggesting that they may result from small randomly located lead-based paint chips or other source in shallow soil. Deeper samples with concentrations exceeding the background value of 14.7 mg/kg were limited to concentrations slightly over background. Insignificant low levels of pesticides were also detected in site soils. No PCBs were detected. Based on the data contained in the remedial investigation, the site has been adequately characterized.

7. **Adjacent Sites**: There are no known polluted sites in the immediate vicinity of this site.

8. **Interim Remedial Measures**: The above ground tanks have been removed from the Site. No other remedial actions have been taken.

9. **Environmental Risk Assessment**:

a. **Screening Level Assessment:** The primary chemicals of concern in groundwater are tetrachloroethylene and related breakdown products (including trichloroethylene, cis-1,2-dichloroethylene and vinyl chloride) and petroleum-related compounds, including Total Petroleum Hydrocarbons (TPH) and polynuclear aromatic hydrocarbons (primarily benzo(a)pyrene (BaP)). Site data were compared to Environmental Screening Levels (ESLs) prepared by Board staff in order to initially identify potential threats to human health and the environment. Soil and groundwater screening levels for residential land use that does not threaten drinking water resources were utilized. A summary of this screening level assessment is provided below.

b. **Soil Assessment:**

Chemicals of Concern	Maximum Reported Concentration (mg/kg)	Results of Screening Assessment				
		Direct Exposure	Vapor Intrusion	Ecotoxicity	Leaching	Nuisances
PCE	2,700	X	X	nv	X	X
TCE	33	X	X	-	X	-
cis-1,2 DCE	87	X	X	nv	X	-
Vinyl Chloride	3.3	X	X	-	X	-
TPH	15,000	X	nv	nv	X	X
BaP	2.6	X	-	-	-	-

* Note: an "X" indicates that respective Environmental Screening Level was exceeded ("nv" = screening level not available). Based on comparison to screening levels in Table B-1 of July 2003 ESL document.

Based on the results of the soil screening level assessment, maximum-reported concentrations of contaminants in soil pose potential human health concerns for direct-exposure to surface soils and vapor intrusion into future buildings. Reported levels of contaminants in soil also suggest potential leaching and groundwater impact concerns. Reported levels of PCE and TPH could also pose potential nuisance concerns in exposed soil (odors, etc.).

c. **Groundwater Assessment:**

Chemicals of Concern	Maximum Reported Concentration (ug/L)	Results of Screening Assessment		
		Potential Vapor Intrusion Concerns	Potential Aquatic Habitat Concerns	Nuisances
PCE	96,000	X	X	X
TCE	31,000	X	X	-
cis-1,2 DCE	320,000	X	X	X
Vinyl Chloride	14,000	X	X	-
TPH	110,000	nv	X	X
BaP	<0.001	-	-	-

* Note: an "X" indicates that respective Environmental Screening Level was exceeded ("nv" = screening level not available). Based on comparison to screening levels in Table F-1b of July 2003 ESL document.

Based on the results of the groundwater screening level assessment, maximum-reported levels of contaminants in groundwater impacts at the site pose potential concerns for vapor intrusion into future, overlying buildings as well as potential impacts to aquatic habitats should the groundwater migrate offsite and discharge into the Bay. Reported levels of PCE, cis-1,2 DCE and TPH could also pose nuisance concerns should the groundwater be exposed during future construction or discharge into a surface water body.

d. **Site-Specific Assessment:** A site-specific environmental risk assessment was prepared. The report identified leaching of chemicals from soil, direct exposure to contaminated soils and vapor emissions from both contaminated soils and groundwater as the principal environmental concerns at the site. Environmental concerns posed by soil and groundwater impacts in the Southwestern Tank Farm area are driven primarily by potential threats to surface water and removal of dense non-adqueous phase liquids (DNAPL). An excess cancer risk for recreational/residential users of 6×10^{-6} and hazard index of 0.09 were estimated for contaminated soil for this area of the site. This risk is driven by vapor emissions to outdoor air. This also assumes that no structures will be permitted over this area of the site. An excess cancer risk for recreational/residential users of 9×10^{-6} and hazard index of 0.8 was estimated for soils in the portion of the site to be redeveloped for residential purposes. This risk is driven primarily by polynuclear aromatic hydrocarbon compounds in surfacial soils, possibly related to degraded asphalt. 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 1×10^{-6} or less (residential scenario) or 1×10^{-5} or less (commercial/industrial scenario). Nuisance issues drive environmental concerns regarding TPH impacts to soil.

Shallow groundwater beneath the site is brackish and will not be used for water supply purposes. Based on the data presented, the clayey nature of shallow soils is inhibiting the migration of contaminated, shallow groundwater into the Bay and the threat to aquatic habitats is considered to be insignificant. The threat to aquatic habitats posed by potentially contaminated, deeper groundwater is also considered to be insignificant, due to the expected discharge of this groundwater well away from shoreline areas and significant dilution upon mixing with surface water. Potential releases of shallow, contaminated groundwater to the Bay could inadvertently occur during future, construction-related activities, however.

e. **Conclusions:** Reported levels of contaminants in soil and groundwater pose an unacceptable risk to human health and the environment given the range of uses currently permitted by the zoning. Remedial action is therefore warranted.

Due to excessive risk and potential nuisance conditions that are likely to be present at the site following full remediation, institutional constraints to manage residual soil and groundwater contamination will be appropriate. Institutional constraints include a deed restriction that notifies future owners of sub-surface contamination, prohibits use of the recreational portion of the site for such purposes as residences and daycare centers, requires proper management of impacted soil and groundwater that may be disturbed or exposed during future redevelopment, and prohibits the use of shallow groundwater beneath the site as water supply.

10. **Feasibility Study**: A feasibility study prepared by the City of Richmond Redevelopment Agency set forth the following remedial action objectives (RAOs): 1) reduce risk to human health and the environment by (a) preventing direct exposure of potential receptors to soil and groundwater which exceeds cleanup standards and (b) preventing exposure of potential receptors to vapor that may emanate from soil and groundwater containing pollutants which exceeds cleanup standards; and 2) reasonable source removal of DNAPL and dissolved-phase VOCs for long-term protection of water quality.

Based on the above criteria, the following remedial alternatives were developed:

1) No action;
2) Subsurface vertical vapor barrier and capping;
3) In-situ thermal treatment/thermal desorption;
4) In-situ thermal treatment/electrical resistivity heating;
5) Subsurface vertical barrier and in-situ thermal desorption; and,
6) Excavation and off-site disposal

11. **Recommended Alternative:** While the feasibility study, prepared by the Redevelopment Agency, has not formally proposed a remedial action plan (RAP) for the site, it does recommend alternative 5. above, as the preferred remedy. The Redevelopment Agency will be submitting a draft RAP, to the Board, consistent with Task 1 of this Order. After review by Board staff and presentation to the public for their comment, a final RAP will be prepared for consideration and approval by the Executive Officer.

Alternative 5. above, is considered to provide the best overall protection of human health, the environment and long-term effectiveness. The in-situ thermal desorption allows for significant source removal of VOCs in the Southwestern Tank Farm area. Remediation of groundwater outside this area would be by natural attenuation. The subsurface barrier would eliminate lateral migration of pollutants into future residential areas of the site, thereby eliminating the residential indoor air pathway. The thermal treatment of soil and groundwater would achieve cleanup standards for both soil and groundwater and prevent exposure of future residents of the site to unacceptable levels of VOCs in ambient air.

A post-remediation groundwater-monitoring program would be implemented to verify that further significant migration of pollutants was not occurrring. A deed restriction would also be required to ensure that the Southwestern Tank Farm area be restricted to recreational use and the vertical barrier be maintained. This alternative also calls for the removal and offsite disposal of SVOC impacted soils, which exceed cleanup standards that are found locally within the Central area of the site. The recommended alternative proposes a soil/risk management plan to address TPH impacted soil.

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 exceedence of applicable water quality objectives. The previously-cited feasibility study 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 the site is high in total dissolved solids and does not qualify 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 Industrial process water supply
o Industrial service water supply
o Agricultural water supply
o Freshwater replenishment to surface waters

At present, there is no known use of groundwater underlying the site for industrial or agricultural purposes.

The existing and potential beneficial uses of San Francisco Bay include:

o Industrial process supply or service supply
o Water contact and non-contact recreation
o Wildlife habitat
o Fish migration and spawning
o Commercial and sport fishing
o Navigation
o Estuarine habitat
o Shellfish harvesting
o Preservation of rare and endangered species

c. **Basis for Groundwater Cleanup Standards**: The groundwater cleanup standards for the site are based on applicable water quality objectives (acute surface water criteria) as well as vapor migration and gross contamination concentrations. Cleanup to this level will protect beneficial use of groundwater, adjacent surface waters 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.2 below. Cleanup to this level is intended to abate nuisance conditions, protect groundwater and prevent unacceptable risk posed by vapor emissions into outdoor air and direct exposure to soil.

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 Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

19. **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 discharger (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. CLEANUP STANDARDS

1. **Groundwater Cleanup Standards**: The following groundwater cleanup standards shall be met in all wells identified in the Self-Monitoring Program:

Constituent	Standard (ug/l)	Basis
PCE	1,000	acute surface water criteria
TCE	2,000	acute surface water criteria
cis-1,2-DCE	50,000	gross contamination
vinyl chloride	2,100	vapor emissions (outdoor)

2. **Soil Cleanup Standards**: The following soil cleanup standards shall be met in all on-site vadose-zone soils, except for TPH.

Constituent	Standard (mg/kg)	Basis
PCE	2.0	groundwater protection
TCE	2.0	groundwater protection
cis-1,2-DCE	17	groundwater protection
vinyl chloride	.23	vapor emissions (outdoor)
TPH*	2,300* Gross Contamination**	ESL-direct exposure Source Removal
benzo(a)pyrene***	0.38	ESL-direct exposure

* Average concentration for soil 0-3 feet below ground surface in uncapped areas, with no sample to exceed 5,000 mg/kg. Nuisance concerns must be addressed separately (see Task 3 below).

** All capped areas and soil deeper than 3' below finished surface, but not deeper than 3' above groundwater. Nuisance concerns must be addressed separately (see Task 3 below). "Gross Contamination" will be defined to include all soil that contains evidence of free-phase TPH. This will be determined in the field by the presence of residual hydrocarbon staining on excavation equipment (i.e., backhoe bucket or shovel) or by the presence of visible free phase product.

** * Does not apply to asphalt or soil containing asphalt.

C. TASKS

1. **PROPOSED REMEDIAL ACTION PLAN**
COMPLIANCE DATE: July 19, 2004

Submit a technical report acceptable to the Executive Officer containing a Proposed Remedial Action Plan (Proposed RAP) for the site. The Proposed RAP shall contain the following components:

a. Results of the remedial investigation
b. Feasibility study evaluating alternative final remedial actions
c. Risk assessment for current and post-cleanup exposures
d. Recommended final remedial actions consistent with cleanup standards
e. Implementation tasks and time schedule
f. Public participation plan (i.e. fact sheet, community meeting and public comment period at a minimum)*
g. Self monitoring program

Item b should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a and b should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

* In order to allow for adequate public input, the Executive Officer will allow for a 30 day public comment period on the proposed RAP, prior to considering approval. Depending on the comments received, the Executive Officer may either approve the proposed RAP or bring it to the Board for consideration.

2. **REMEDIAL DESIGN REPORT**
COMPLIANCE DATE: 60 days after approval by the Executive Officer of Task 1. above.

Submit a technical report acceptable to the Executive Officer containing the remedial design for the approved RAP submitted pursuant to Task 1. The report should describe all significant implementation steps and should include an implementation schedule.

3. **SOIL MANAGEMENT PLAN FOR PETROLEUM PETROLEUM IMPACTED SOIL**
COMPLIANCE DATE: 60 days after approval by the Executive Officer of Task 1. above.

Submit a technical report acceptable to the Executive Officer containing a soil mangement plan for petroleum impacted soil at the site. The plan shall

distinguish between capped and uncapped areas, discuss soil re-use criteria and best management practices for underground utility placement and backfilling.

4. **IMPLEMENTATION REPORT**
COMPLIANCE DATE: 90 days after completion of remedial activities, but no later than January 15, 2006.

Submit a technical report acceptable to the Executive Officer documenting the completion of remedial measures set forth in the Remedial Design report.

5. **PROPOSED INSTITUTIONAL CONSTRAINTS**
COMPLIANCE DATE: 90 days after completion of remedial activities, but no later than January 15, 2006.

The discharger shall 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 contamination prior to meeting cleanup standards. Such procedures may include an appropriate deed restriction, risk management plan, fact sheet, etc.

6. **IMPLEMENTATION OF INSTITUTIONAL CONSTRAINTS**
COMPLIANCE DATE: 60 days after Executive Officer approval of Task 5 above.

The discharger shall submit a technical report acceptable to the Executive Officer documenting that the proposed institutional constraints have been implemented.

7. **FIVE-YEAR STATUS REPORT**
COMPLIANCE DATE: May 19, 2009

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, if any
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.

8. **EVALUATION OF NEW HEALTH CRITERIA**
COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer, if requested, 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.

9. **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.

10. **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 approved Self-Monitoring Program contained in Task 1. 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 Richmond
   b. County of Contra Costa

   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 occupancy or ownership associated with the property described in this Order.

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. **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 June 16, 2004.

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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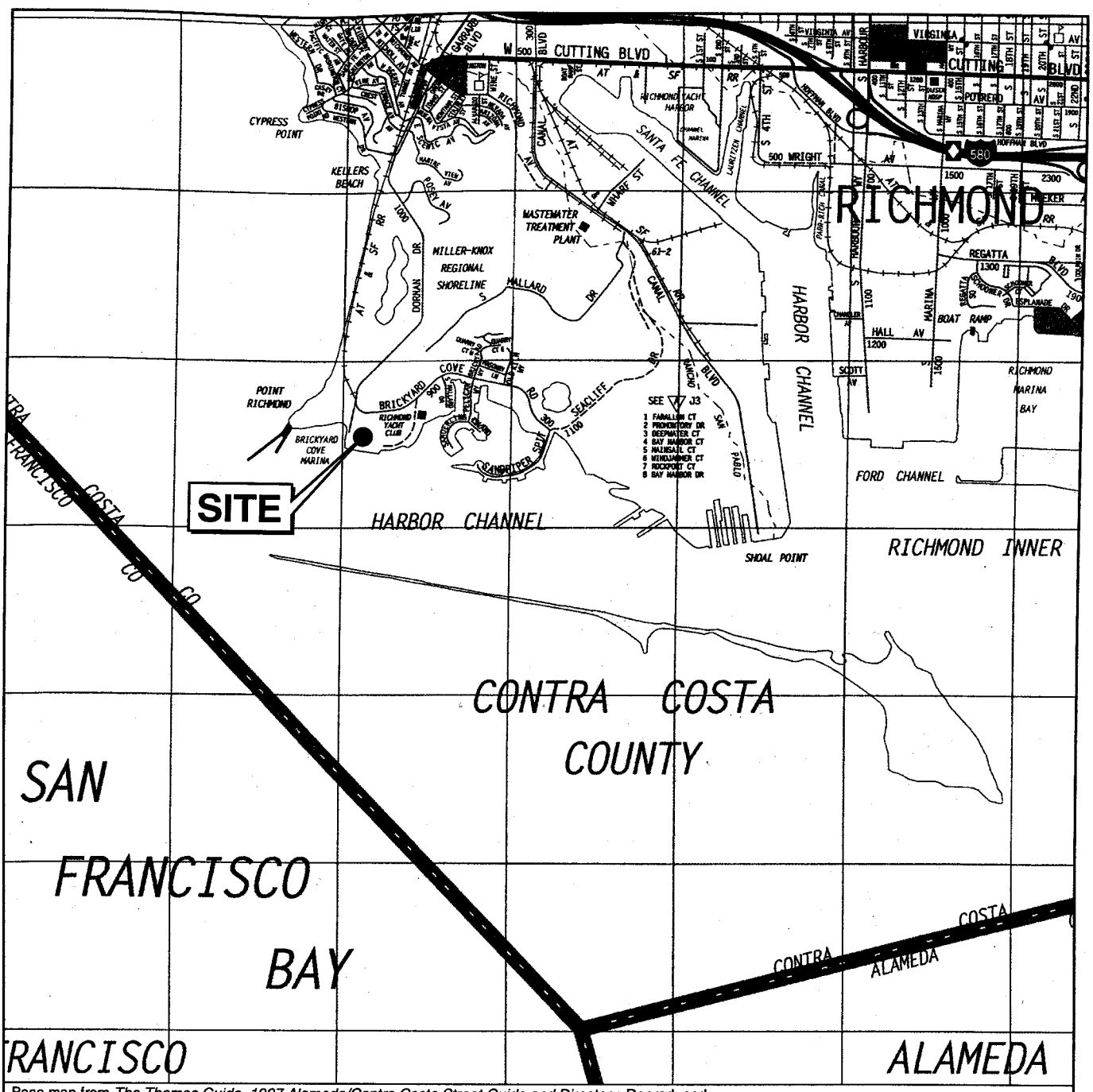
Attachment: Site Map



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0 0.5 Mile

S:\6200s\6293\6293.002\site location map_fig_01(01).ai

GEOMATRIX

SITE LOCATION MAP
Terminal One Site
Richmond, California

Project No.
6293.002

Figure
1