STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of: University of California Richmond Field Station 1301 South 46th Street Richmond, CA 94804 Respondents: The Regents of the University of California 1111 Franklin Street, 12th Floor Oakland, California 94607 Zeneca, Inc., successor to ICI Americas, Inc. 1800 Concord Pike Wilmington, DE 19850-5438 Bayer CropScience Inc., successor to Stauffer Chemical Company 2 TW Alexander Drive Research Triangle Park, NC 27709	Docket No. I/SE-RAO 06/07-004 SITE INVESTIGATION AND REMEDIATION ORDER Health and Safety Code Sections 25355.5(a)(1)(B), 25358.3(a), 58009 and 58010

I. INTRODUCTION

1.1 Parties. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) issues this Site Investigation and Remedial Action Order (Order) to the Regents of the University of California, Zeneca, Inc., a Delaware corporation doing business in California, and Bayer CropScience, Inc., a New York corporation (Respondents).

1.2 Property/Site. This Order applies to the property located at 1301 South 46th Street, Richmond, Contra Costa County, California 94804. The property consists of approximately 152 acres and is identified by Assessor's Parcel numbers 560060008 and 560060007 (Exhibit A-1). A

map showing the Property is attached as Exhibit A-2. This Order applies to the property and the areal extent of contamination that resulted from activities on the property (hereinafter, the "Site").

1.3 Jurisdiction. This Order is issued by DTSC to Respondents pursuant to its authority under Health and Safety Code sections 25358.3(a), 25355.5(a)(1)(B), 58009 and 58010.

Health and Safety Code section 25358.3(a) authorizes DTSC to take various actions, including issuance of an order, upon DTSC's making certain determinations because of a release or a threatened release of a hazardous substance.

Health and Safety Code section 25355.5(a)(1)(B) authorizes DTSC to issue an order establishing a schedule for removing or remedying a release of a hazardous substance at a site, or for correcting the conditions that threaten the release of a hazardous substance. The order may include, but is not limited to requiring specific dates by which the nature and extent of a release shall be determined and the site adequately characterized, a remedial action plan prepared and submitted to DTSC for approval, and a removal or remedial action completed.

Health and Safety Code section 58009 authorizes DTSC to commence and maintain all proper and necessary actions and proceedings to enforce its rules and regulations; to enjoin and abate nuisances related to matters within its jurisdiction which are dangerous to health; to compel the performance of any act specifically enjoined upon any person, officer, or board, by any law of this state relating to matters within its jurisdiction; and/or on matters within its jurisdiction, to protect and preserve the public health.

Health and Safety Code section 58010 authorizes DTSC to abate public nuisances related to matters within its jurisdiction.

II. FINDINGS OF FACT

DTSC hereby finds:

2.1 Liability of Respondents. Respondents are responsible parties or liable persons as defined in Health and Safety Code section 25323.5.

2.1.1 The Regents of the University of California (UC) currently own and operate the Site, and have owned the Site since 1950.

2.1.1.1 From approximately 1870 to 1950, various companies owned and produced chemicals and explosives at the Site. Some or all of the operations included production of black powder, mercury fulminate, blasting caps and shells. Facilities for testing and storing explosives were also present. Production of explosives ceased in

1948, prior to UC purchasing the property in 1950.

2.1.1.2 Spent pyrite cinders generated during the historical industrial operations at the adjacent Zeneca Site were used as fill material on the Richmond Field Station. The spent cinders contained hazardous substances, including but not limited to mercury, lead, copper, selenium, zinc and arsenic.

2.1.1.3 UC has sponsored various types of research at the Site including a Forest Products Laboratory, seismic engineering, fire testing, hydraulic modeling, soil mechanics, sanitary engineering, transportation, environmental health, and library storage facilities. Some of these research activities and other activities may have included the use of hazardous substances.

2.1.2 Bayer CropScience, Inc. is the corporate and legal successor to Stauffer Chemical Company, Inc., and its successors in interest, which owned a portion of the Lower Keystone Blocks Section and Southeastern Section from 1920 to 1949, the adjacent Former Stauffer Chemical site from approximately 1897 to January 3, 1986, and operated at the Zeneca site from approximately 1897 to 1987. During that time hazardous substances, including spent cinders from the production of sulfuric acid were disposed at the Site by Stauffer Chemical.

2.1.3 Zeneca, Inc. owned and operated the former Stauffer Chemical site (in its own name), and as successor in interest to ICI Americas, Inc. from 1987 to December 31, 2002.

2.2 Physical Description of Site. The Site consists of a total of approximately 152 acres, with approximately 100 acres of upland, industrial-zoned land, approximately 6 acres of coastal terrace prairie, and 46 acres of marsh and tidal mudflat. Meade Street and Hoffman Boulevard off Interstate 580 bound the Site to the north, Meeker Slough/Regatta Boulevard to the west, South 46th Street to the east, and the East Bay Regional Park District (EBRPD) Bay Trail to the south. The Zeneca/Former Stauffer Chemical Site is located to the east of the property boundary.

2.2.1 The Bay Trail is located on a raised berm created originally as a rail spur by the Santa Fe Land Development Company in 1959, and forms the southern boundary of the inner portion of Western Stege Marsh. Establishment of the railroad spur, breakwaters, and dock altered the local hydrology such that sediments began to accrete inboard and outboard of the railroad grade and forming Western Stege Marsh.

2.2.2 Meeker Slough is located on the western edge of the marsh and is the only conduit for tidal exchange from the San Francisco Bay to Western Stege Marsh.

2.2.3 The California Clapper Rail (*Rallus longirostris obsoletus)*, an endangered species, has been observed in Western Stege Marsh.

2.2.4 The coastal terrace prairie contains native grasses and forbs, including a patch of very rare slender wheatgrass (*Elymus trachycaulus*).

2.2.5 Cinders generated by the Stauffer Chemical Company were disposed at various locations at the Site, including Western Stege Marsh, as backfill for utility lines and various locations in the upland areas.

2.2.6 Land uses of the upland portion of the Site include: the Northern Regional Library Facility, the Earthquake Engineering Research Center, the Environmental Engineering and Health Sciences Laboratory, and the Forest Products Laboratory. The Site also includes experimental facilities for the Institute of Transportation Studies and other UC campus-based research in engineering and the natural sciences. Some research space is also leased to private and government entities, including the U.S. Environmental Protection Agency.

2.3 Site History.

2.3.1 The property was part of a land grant from the Spanish Governor of Alta California to Francisco Maria Castro in 1823. The property was later conveyed to Wilhelmina (M.C.C.) Stege and then portions to Edith Stege.

2.3.2 By 1891, the western most portion of the Site was conveyed from Edith Stege to George and Stella Leviston. This portion was later conveyed to William Leviston and then to Stella C. Lovegrove, who created the Inner Harbor subdivision (Exhibit A-3). In 1950, this subdivision was conveyed to the California Cap Company and then to the Regents of the University of California (UC Regents) in 1950.

2.3.3 The northern most portion of the Site was known as the Upper Keystone Blocks Section (Exhibit A-3). Edith Stege conveyed the property in 1903 to R. Lee Barnes, who then sold the property in 1905 to the California Powder Works. In 1906, California Powder Works conveyed the property to E.I. DuPont de Nemours Powder Company (DuPont). DuPont conveyed this property to James Brown, who created the Keystone Business Blocks Subdivision. In 1950 the Contra Costa County Title Company conveyed the property to the California Cap Company, who then sold the property to the UC Regents.

2.3.4 To the south of the Upper Keystone Blocks Section was the Lower Keystone Blocks Section (Exhibit A-3). Edith Stege conveyed this property to R. Lee

Barnes in 1903, who then conveyed the property in 1905 to the California Powder Works. In 1906, California Powder Works conveyed the property to DuPont. DuPont then conveyed the property the California Cap Company in 1907. The California Cap Company conveyed a portion of this property to Stauffer Chemical Company in 1920 and Stauffer Chemical Company conveyed the property back to California Cap Company in 1949. In 1950, the California Cap Company conveyed the property the UC Regents.

2.3.5 The Southeastern Section lies to the south of the Lower Keystone Blocks and is further divided into sections A, B, C and D (Exhibit A-3).

2.3.5.1 Section A is a 6.524-acre portion of the Southeastern Section. M.C.C. Stege conveyed this property to the California Cap Company in 1892. In 1920, the California Cap Company conveyed an undivided one third interest of a 0.813-acres portion of this property to Stauffer Chemical Company. Also in 1920, the California Cap Company conveyed an undivided one third interest of a 0.813 acre portion of this property to the Union Superphosphate Company. In 1949, Stauffer Chemical Company conveyed an undivided two-thirds of a 0.813 portion of the property to California Cap Company. California Cap Company then conveyed this property to the UC Regents in 1950.

2.3.5.2 Section B is a 15.31-acre portion of the Southeastern Section. M.C.C. Stege conveyed the property to the Tonite Powder Company in 1890. In 1891, the Tonite Powder Company conveyed the property to the California Cap Company, who then conveyed the property to the UC Regents in 1950.

2.3.5.3 Section C is a 3.949-acre portion of the Southeastern Section. M.C.C. Stege conveyed the property to the Tonite Powder Company in 1890, and in 1891, the property was conveyed to American Lucol Company. In 1905, American Lucol Company conveyed the property to Richard Hotaling, who then sold the property to B.P. Oliver in 1919. In 1920, the property was conveyed to the California Cap Company, who then conveyed the property the UC Regents in 1950.

2.3.5.4 Section D is the southern most portion of the Site, and is to the north of the existing EBRPD Bay Trail. In 1875, Romaldo Pacheco, Governor, Robert Gardner, Surveyor General, and Controller, of the State Board of Tide Land Commissioners conveyed the property to Wilhelmina C.C. Stege. M.C.C. Stege conveyed the property to William Oliver in 1890, and in 1891 the property was conveyed to the California Cap Company. In 1950, the California Cap Company sold the property the UC Regents.

2.3.6 California Cap Company produced mercury fulminate, blasting caps and shells. Facilities for testing and storing explosives were also present. Production of

explosives ceased in 1948.

2.3.7 The Regents of the University of California purchased the Site from California Cap Company in 1950 to accommodate research programs sponsored by the University of California at Berkeley (UC Berkeley).

2.3.8 Stauffer Chemical Company generated pyrite cinders as a byproduct of their sulfuric acid manufacturing operations from approximately 1919 through approximately 1970 at the adjacent Stauffer Chemical Company/Zeneca site. The use of pyrite ore in the production of sulfuric acid ceased in approximately 1963. Sometime during this period, pyrite cinders were deposited at the Site. UC Berkeley constructed roads, utilities and research ponds on, or using the pyrite cinders that were deposited in this area.

2.3.9 On or about September 19, 2001, the San Francisco Bay Regional Water Quality Control Board issued to the University of California Berkeley and Zeneca, Inc. a Site Cleanup Requirements Order No. 01-102. Order No. 01-102 identifies the Site as Meade Street Operable Unit, Subunit 2 and further subdivides Subunit 2 into Subunits 2A and 2B. Subunit 2A consists of the cinder fill area located in the southeastern portion of the upland area of the site and the eastern portion of the Western Stege Marsh. Subunit 2B consists of the remainder of the upland portion of the Site and the western portion of Western Stege Marsh. Zeneca and the UC Berkeley were named as discharges in Subunit 2A and the UC Berkeley was named as the discharger for Subunit 2B. Order No. 01- 102 required technical evaluations and implementation of various remedial measures for soil, groundwater, and sediment contamination that had been identified at the Site. These remedial measures included excavation and backfilling of a portion of the marsh and adjacent upland area, installation of a biologically active permeable barrier wall, and replacement of the eastern storm drain line and outfall. The activities conducted are more fully described in the implementation reports listed in Exhibit G.

2.3.10 Subsequent to the California Environmental Protection Agency designating DTSC as the lead environmental agency for the Site in May 2005, Order No. R2-2005-0055 was adopted in October 2005 by the RWQCB to rescind RWQCB Order No. 01-102.

2.3.11 Various reports were prepared and submitted to the RWQCB pursuant to Order No. 01-102 documenting site investigations and/or previous remediation activities for the Site. Exhibit G includes a list and summary of certain documents produced under the oversight of the RWQCB that describe the work conducted at the Site from 1999 to 2005. (Note: By acknowledging receipt of these reports, DTSC does not intend to imply that it is in agreement with the contents or conclusions set forth in these reports or otherwise approves of them.)

2.4 Hazardous Substances Found at the Site.

2.4.1 Pursuant to section 102 of CERCLA, 42 U.S.C. section 9602, and Health and Safety Code section 25316, a substance is a "hazardous substance" if it is listed in Title 40, Code of Federal Regulations ("CFR"), Section 302.4. The following substances, listed in 40 CFR section 302.4, have been detected in the soil at the Site at levels exceeding hazardous waste criteria: arsenic, copper, lead, mercury, and polychlorinated biphenyls (PCBs). The following substances, listed in 40 CFR section 302.4, have been detected in the groundwater at the Site above Basin Plan requirements: arsenic, beryllium, cadmium, copper, mercury, nickel, carbon tetrachloride, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride and PCBs.

2.4.2 Attached hereto as Exhibit B and incorporated herein by this reference is a table setting forth hazardous substances detected in Site soil and the associated hazardous waste criteria concentrations for those substances.

2.5 Health Effects.

2.5.1 Arsenic. Arsenic is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. It is a confirmed human carcinogen producing liver tumors. It is a poison by subcutaneous, intramuscular, and intraperitoneal routes, and is an experimental teratogen. It causes human systemic skin and gastrointestinal effects by ingestion. Arsenic causes other experimental reproductive effects.

2.5.2 Beryllium. Beryllium is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking water and Toxic Enforcement Act of 1986. Beryllium can cause acute beryllium disease by inhalation. Persons can also develop a hypersensitivity or allergy to beryllium which can lead to chronic beryllium disease. This disease can occur long after exposure (10-15 years) to small amounts of either soluble or insoluble forms of beryllium. Both acute and chronic diseases can be fatal. Long periods of exposure to beryllium have been reported to cause cancer in laboratory animals. Some studies of workers reported an increased risk of lung cancer. The U.S. Department of Health and Human Services and the International Agency for Research on Cancer have determined that beryllium and beryllium compounds are human carcinogens. EPA has determined that beryllium is a probable human carcinogen.

2.5.3 Cadmium. Cadmium is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking water and Toxic Enforcement Act of 1986. Cadmium can cause severe damage to the lungs and death if inhaled at high levels. Ingestion of very high levels severely irritates the stomach, leading to vomiting and diarrhea. Long-term exposure to lower levels through inhalation or ingestion can lead to

a buildup of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones.

2.5.4 Carbon Tetrachloride. Carbon tetrachloride is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. High exposures via ingestion, inhalation and possibly dermal contact can cause liver, kidney and central nervous system damage. If exposure is very high, the nervous system, including the brain, is affected. Symptoms may include a feeling of intoxication, headaches, dizziness, sleepiness, and nausea and vomiting. These effects may subside if exposure is topped, but in severe cases, coma and death may occur.

2.5.5 Copper. The carcinogenicity of copper has not been adequately studied. However, it causes experimental teratogenic and reproductive effects, and causes human systemic effects by ingestion including nausea and vomiting.

2.5.6 Cis-1, 2-dichloroethene. Cis-1, 2-dichloroethene has anesthetic properties at high concentrations. Humans inhaling high concentrations may display symptoms of nausea, vomiting, and cramps, followed by unconsciousness.

2.5.7 Lead. Lead is listed as a chemical known to the State to cause cancer and reproductive toxicity pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. Short-term exposure to lead can cause fatigue, sleep disturbance, headache, aching bones and muscles, constipation, abdominal pains, decreased appetite and reversible kidney damage. Chronic lead exposure can lead to irreversible vascular sclerosis, irreversible brain damage, tubular cell atrophy, interstitial fibrosis, and glomerular sclerosis. Prolonged exposure at high concentrations may result in progressive kidney damage and possibly kidney failure. Anemia is an early sign of lead poisoning. Exposure to lead can produce neurobiological defects in children such as learning disabilities and behavioral problems.

2.5.8 Mercury. Mercury is listed as a chemical known to the State to cause reproductive toxicity pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. Highly toxic by skin absorption and inhalation of fume or vapor, absorbed by respiratory and intestinal tracts. Acute effects of exposure to mercury include vomiting, abdominal pain, bloody diarrhea, kidney damage, and death. Chronic effects include inflammation of mouth and gums, excessive salivation, loosening of teeth, kidney damage, muscle tremors, jerky gait, spasms of extremities, personality changes, depression, irritability, and nervousness.

2.5.9 Nickel. Nickel and certain nickel compounds are listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. Nickel can cause dermatitis, pulmonary asthma, and

conjunctivitis.

2.5.10 Polychlorinated Biphenyls (PCBs). PCBs are listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. PCBs have been shown to cause a number of health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. People exposed directly to high levels of PCBs through dermal contact, ingestion or inhalation have experienced irritation of the nose and lungs, skin irritations such as severe acne (chloracne) and rashes, and eye irritation. PCBs can also affect the neurological development of children. EPA has found clear evidence that PCBs have significant toxic effects in animals, including effects on the immune system, the reproductive system, the nervous system and the endocrine system.

2.5.11 Tetrachloroethene (Perchloroethene, "PCE"). PCE is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. Short-term exposure to PCE through ingestion and inhalation may cause nausea, vomiting, headache, dizziness, drowsiness, and tremors. Skin contact with PCE causes irritation and blistering. Liver and kidney toxicity are long-term effects.

2.5.12 Trichloroethene ("TCE"). TCE is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. Acute exposure to TCE causes headache, dizziness, vertigo, tremors, irregular heartbeat, fatigue, nausea, vomiting, and blurred vision. TCE vapors may cause irritation of the eyes, nose, and throat. Long-term effects may include liver and kidney damage.

2.5.13 Vinyl Chloride. Vinyl chloride is listed as a chemical known to the State to cause cancer pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986. Inhalation of vinyl chloride causes headache, dizziness, abdominal pain, numbness, and tingling of the extremities. Vinyl chloride vapors cause eye irritation and may cause skin irritation. Long-term effects of vinyl chloride exposure include liver damage and liver cancer. There is evidence that vinyl chloride causes mutagenicity.

2.6 Routes of Exposure

2.6.1 People working at the Site could be exposed to contaminants via dermal contact or via inhalation of volatile or dust-borne contaminants. Excavation of soil in the areas where contamination exists or sediments from the adjacent marsh could expose workers, nearby residents and/or business employees to contamination via dermal contact or via inhalation of contaminants, either from soil or groundwater.

2.6.2 Contaminated groundwater or surface water runoff could migrate to adjacent properties, including the adjacent marsh. Sensitive species may be exposed to

contaminants via contact, inhalation, and/or ingestion of contaminated water, sediment and/or plants

2.7 Public Health and/or Environmental Risk

2.7.1 The property is currently used for educational and research purposes and open space. The public at risk includes those people who work at, conduct scientific research at or visit the Site, those who excavate into contaminated soil or groundwater, and/or persons who otherwise come into contact with, inhale or ingest contaminated air, soil or groundwater. Other persons who could potentially come into contact with contamination at the Site include recreational users of the San Francisco Bay Trail and adjacent residents of the Marina Bay complex. The Marina Bay complex is approximately 200 feet to the southwest of the Site.

2.7.2 A portion of the Site is located up-gradient from Western Stege Marsh. The potential exists for contamination from the upland areas to discharge via groundwater or surface water runoff into the marsh. Portions of the marsh are also known to contain contaminated sediments. The risk to the environment includes sensitive species (which may include threatened or endangered species) that may reside in these areas.

2.7.3 The coastal terrace prairie is located on the western boundary of the Site. The potential exists for contamination from adjacent upland areas to discharge via surface water runoff into this area. The risk to the environment includes sensitive species that may reside in this area.

III. CONCLUSIONS OF LAW

3.1 Each of the Respondents is a "responsible party" as defined by Health and Safety Code section 25323.5.

3.2 Each of the substances listed in Section 2.4 is a "hazardous substance" as defined in Health and Safety Code section 25316.

3.3 There has been a "release" and/or there is a "threatened release" of hazardous substances listed in Section 2.4 at the Site, as defined in Health and Safety Code section 25320.

3.4 The actual and threatened release of hazardous substances at the Site present the conditions set forth in Health and Safety Code section 25358.3(a).

3.5 Response action is necessary to abate a public nuisance and/or to protect and preserve the public health.

IV. DETERMINATION

4.1 Based on the foregoing findings of fact and conclusions of law, DTSC hereby determines that response action is necessary at the Site because there has been a release and/or there is a threatened release of a hazardous substance presenting the conditions set forth in Health and Safety Code section 25358.3(a).

4.2 Based on the foregoing findings of fact and conclusions of law, DTSC hereby determines that further investigation is required because of the release and/or the threatened release of the hazardous substances at the Site.

V. ORDER

Based on the foregoing FINDINGS, CONCLUSIONS, AND DETERMINATIONS, IT IS HEREBY ORDERED THAT Respondents conduct the following response actions in the manner specified herein, and in accordance with a schedule specified by DTSC as follows:

5.1 All response actions taken pursuant to this Order shall be consistent with the requirements of Chapter 6.8 (commencing with section 25300) of Division 20 of the Health and Safety Code and any other applicable state or federal statutes and regulations.

5.1.1 Site Investigation and Remediation Strategy. The purpose of this Order is to require for the Site: implementation of any appropriate removal actions, completion of a Remedial Investigation (RI), Baseline Human Health and Ecological Risk Assessment, preparation of a Feasibility Study (FS), Remedial Action Plan (RAP) or Removal Action Workplan (RAW), preparation of California Environmental Quality Act (CEQA) documents, and Design and Implementation of the remedial actions approved in the RAP. An overall Site investigation and remediation strategy shall be developed by Respondents in conjunction with DTSC which reflects program goals, objectives, and requirements. Current knowledge of the Site contamination sources, exposure pathways, and receptors shall be used in developing this strategy.

An objective of the Site investigations shall be to identify immediate or potential risks to public health and the environment and prioritize and implement response actions using removal actions and operable units, if appropriate, based on the relative risks at the Site. Respondents and DTSC shall develop and possibly modify Site priorities throughout the course of the investigations. If necessary for the protection of public health and the environment, DTSC will require additional response actions not specified in this Order to be performed as removal actions or separate operable units. Removal actions shall be implemented in accordance with a workplan and implementation schedule submitted by Respondents and approved by DTSC.

For operable unit remedial actions, DTSC will specify the separate and focused remedial phase activities to be conducted as RI/FS, RAP or RAW, Design, and Implementation. The focused activities shall be conducted in accordance with the corresponding remedial phase requirements specified in this Order, but shall only address the area or problem of the operable unit.

5.1.2 Remedial Action Objectives. Based on available information, DTSC has preliminarily determined that the remedial action objectives for the Site shall include:

(a) The reasonably foreseeable future land use of the Site is commercial/educational and open space. Therefore, remedial action objectives for contaminated media shall be developed that are protective of adults and children in a commercial/education scenario and as recreational users of open space.

(b) Western Stege Marsh is a sensitive habitat for the California Clapper Rail, an endangered species. Therefore, remedial action objectives for contaminated media shall be developed that are protective of endangered and threatened species that have been identified at the Site and their habitat.

(c) The coastal terrace prairie is a sensitive habitat for native grasses and forbs. Therefore, remedial action objectives for contaminated media shall be developed that are protective of sensitive species and their habitat.

5.1.3 Removal Actions. Respondents shall undertake removal actions if, during the course of the RI or FS, DTSC determines that they are necessary to mitigate the release of hazardous substances at or emanating from the Site. DTSC may require Respondents to submit a removal action workplan that includes a schedule for implementing the workplan for DTSC's approval. Either DTSC or Respondents may identify the need for removal actions. Respondents shall implement the following removal actions. Workplans for implementing the following removal actions shall be submitted by the specified dates:

(a) Fence and Post.

(1) Within 60 days of the effective date of this Order, Respondents shall install a fence in the area around Building 102 containing mercury contamination in accordance with the specifications attached as Exhibit C. The fence shall secure, at a minimum, the areas specified on the Site map (Exhibit D-1). The existing 4 foot no-climb fence surrounding the southern boundary of Western Stege Marsh (Exhibit D-2) shall be maintained in accordance with the specifications attached as Exhibit C.

(2) Within 60 days of the effective date of this Order, Respondents shall install signs which are visible from the area surrounding the contaminated Site and posted at each route of entry into the Site, including those

routes likely to be used by unauthorized persons. Such routes of entry include: access roads leading to the Site, and facing rivers, creeks, lakes or other waterways which may provide a route of access to the Site. The signs shall be in accordance with the specifications attached as Exhibit E. Signs shall be posted on the fence along the southern boundary of Western Stege Marsh. The signs shall be in accordance with the specifications attached as Exhibit E.

(3) The fence and signs shall be constructed of materials able to withstand the elements and shall be continuously maintained for as long as DTSC determines it to be necessary in order to protect public health and safety and the environment.

5.1.4 Surface Water Monitoring. Respondents previously prepared for the RWQCB the *Final Report, Groundwater, Surface Water, and Sediment Monitoring Plan, Subunit 2, Meade Street Operable Unit, University of California, Berkeley Richmond Field Station Richmond, California (Tasks 2b,3b,4a, and 5a of RWQCB Order No. 01-102), Blasland, Bouck & Lee, Inc., December 3, 2004,* which describes a surface water monitoring plan. Respondents shall immediately continue interim monitoring of surface water and stormwater in Meeker Slough, and stormwater at the outfalls of the eastern and western storm drain systems and the concrete drainage ditch along the western property boundary in accordance with the previously approved plan which is further described in Exhibit F.

5.1.5 Groundwater Monitoring. Respondents previously submitted the *Final Report, Groundwater, Surface Water, and Sediment Monitoring Plan, Subunit 2, Meade Street Operable Unit, University of California, Berkeley Richmond Field Station Richmond, California (Tasks 2b,3b,4a, and 5a of RWQCB Order No. 01-102), Blasland, Bouck & Lee, Inc., December 3, 2004* to the RWQCB. Additional site characterization is being conducted at the adjacent site to the east. Respondents shall consider the information conducted from the adjacent site and submit a revised groundwater monitoring plan for the Site at the same time as the Field Sampling Workplan discussed in Section 5.3.

5.1.6 Site Investigation and Remediation Strategy Meeting. Respondents, including the Project Coordinator (Section 6.1) and Project Engineer/Geologist (Section 6.2), shall meet with DTSC within 30 days from the effective date (and concurrent with the development of the Current Site Conditions Report of this Order to discuss the Site investigation and remediation strategy. These discussions will include prior Site investigations and remedial activities, Site risks and priorities; project planning, phasing and scheduling, further remedial activities, remedial action objectives, remedial technologies, and data quality objectives. Results of the discussions will be included in the Current Conditions Report, Section 5.2.2 of this Order.

5.2 Current Site Conditions. DTSC acknowledges that site activities have occurred in the past as documented in the reports described in Section 2.3.10. Previous removal actions conducted under the oversight of the RWQCB were conducted in phases and encompass different portions of the Site. For these areas, there is no single report that identifies the current site conditions site wide or by phase. Furthermore, additional phases of work identified by the RWQCB still remain to be completed.

5.2.1 The objectives of the Current Conditions Report are to:

(a) Provide historical information regarding previous uses of the site, including the use, storage, disposal, and release of hazardous substances.

(b) Determine the nature and full extent of hazardous substance contamination of air, soil, surface water, and groundwater at the Site.

(c) Identify all actual and potential exposure pathways and routes through environmental media; and

(d) Determine the magnitude and probability of actual or potential harm to public health, safety, or welfare or to the environment posed by the threatened or actual release of hazardous substances at or from the Site.

5.2.2 Current Conditions Report Within 120 days of the effective date of this Order, Respondents shall prepare and submit to DTSC for review and approval a Current Conditions Report that:

(a) summarizes all investigations conducted at the Site to date;

(b) summarizes all removal and remedial actions taken to date;

(c) provides an inventory of chemicals used on the Site (by name and volume) and identifies all pollution sources on the Site, including chemical storage areas, sumps, underground tanks, utility lines, process lines, and related facilities;

(d) identifies surface and subsurface human-made conduits at the Site that may allow contaminants to migrate laterally off the site or vertically into deeper aquifers;

(e) compiles data collected in previous investigations, along with all removal and remedial actions taken to date, to provide a comprehensive summary of current conditions at the Site;

(f) includes figures that:

(1) identifies all sample locations along with the type of chemical analysis (e.g., metals, PCBs, VOCs, etc) identified in a pie chart for each sample location;

(2) compares sample concentrations to residential, commercial, recreational and/or ecological screening levels (depending on current and anticipated future use of the area) or appropriate background values for surface and samples collected at depth;

(3) identifies all areas that were previously excavated (on a single

map) that can be overlain on the figures prepared for (2) above; and

(4) identifies confirmation sample data for all excavated areas.

(g) identifies all response actions required under the RWQCB's Order that have not been completed;

(h) identifies data gaps taking into account all reasonably foreseeable land uses,

(i) identify potentially suitable remedial technologies and recommendations for treatability studies, if applicable; and

(j) provides historical information regarding previous uses of the Site.

5.3 Field Sampling

5.3.1 Field Sampling Workplan. Within 60 days of the date of DTSC's request, Respondents shall prepare and submit to DTSC for review and approval a detailed Workplan and implementation schedule that addresses data gaps identified in (h) above. The workplan shall include all the sections and address each component listed below.

(a) The Field Sampling Plan, if applicable, shall include:

(1) Sampling objectives, including a brief description of data gaps and how the field sampling plan will address these gaps;

(2) Sample locations, including a map showing these locations, and proposed frequency;

(3) Sample designation or numbering system;

(4) Detailed specification of sampling equipment and procedures;

(5) Sample handling and analysis including preservation methods, shipping requirements and holding times; and

(6) Management plan for wastes generated.

(b) Quality Assurance Project Plan. The plan shall include:

(1) Project organization and responsibilities with respect to sampling and analysis;

(2) Quality assurance objectives for measurement including accuracy, precision, and method detection limits. In selecting analytical methods, Respondents shall consider obtaining detection limits at or below potentially applicable legal requirements or relevant and appropriate standards, such as Maximum Contaminant Levels (MCLs) or Maximum Contaminant Level Goals (MCLGs);

(3) Sampling procedures;

(4) Sample custody procedures and documentation;

(5) Field and laboratory calibration procedures;

(6) Analytical procedures;

(7) Laboratory to be used certified pursuant to Health and Safety Code section 25198;

(8) Specific routine procedures used to assess data (precision, accuracy, and completeness) and response actions;

(9) Reporting procedure for measurement of system performance and data quality;

(10) Data management, data reduction, validation, and reporting. Information shall be accessible to downloading into DTSC's system; and

(11) Internal quality control.

(c) Health and Safety Plan. A site-specific Health and Safety Plan shall be prepared in accordance with federal (Title 29 CFR 1910.120) and state (Title 8 California Code of Regulations,Section 5192) regulations. This plan must include, at a minimum, the following elements:

(1) Site Background/History/Workplan;
(2) Key Personnel and Responsibilities
(3) Job Hazard Analysis/Summary;
(4) Employee Training;
(5) Personal Protection;
(6) Medical Surveillance;
(7) Air Surveillance;
(8) Site Control;
(9) Decontamination;
(10) Contingency Planning;
(11) Confined Space Operations;
(12) Spill Containment;
(13) Sanitation;
(14) Illumination; and
(15) Other applicable requirements based on the work to be performed.

DTSC's *Interim Draft Site Specific Health and Safety Plan Guidance Document for Site Assessment/Investigation, Site Mitigation Projects, Hazardous Waste Site Work Closure, Post Closure, and Operation and Maintenance Activities (DTSC, December 2000)* may be used as a reference tool.

All contractors and all subcontractors shall be given a copy of the Health and Safety Plan prior to entering the Site. Any supplemental health and safety plans prepared by any subcontractor shall also be prepared in accordance with the regulations and guidance identified above. The prime contractor will be responsible for ensuring that all subcontractor supplemental health and safety plans will follow these regulations and guidelines.

(d) Other Activities. A description of any other significant activities, which

are appropriate to address data gaps and information needed so that a baseline risk assessment can be prepared, shall be included.

(e) Schedule. A schedule that provides specific time frames and dates for completion of each activity and report conducted or submitted under the Field Sampling Workplan including the schedules for removal actions and operable unit activities.

5.3.2 Field Sampling Implementation. Respondents shall implement the approved field sampling Workplan per the approved schedule found in the Field Sampling Workplan.

5.4 Remedial Investigation (RI) Report. An addendum to the Current Site Conditions Report incorporating the results of the Field Sampling shall be prepared. This report will serve as the Final RI Report for the Site. The RI may be performed as a series of focused RIs, if appropriate, based on Site priorities. The purpose of the RI is to collect data necessary to adequately characterize the Site for the purposes of defining risks to public health and the environment and developing and evaluating effective remedial alternatives for foreseeable land uses. Site characterization may be conducted in one or more phases to focus sampling efforts and increase the efficiency of the investigation. Respondents shall identify the sources of contamination and define the nature, extent, and volume of the contamination. Using this information, the contaminant fate and transport shall be evaluated. The RI Report shall contain:

(a) Site Physical Characteristics. Data on the physical characteristics of the Site and surrounding area shall be collected to the extent necessary to define potential transport pathways and receptor populations and to provide sufficient engineering data for development and screening of remedial action alternatives.

(b) Sources of Contamination. Contamination sources (including heavily contaminated media) shall be defined. The data shall include the source locations, type of contaminant, waste characteristics, and Site features related to contaminant migration and human exposure.

(c) Nature and Extent of Contamination. Contaminants shall be identified and the horizontal and vertical extent of contamination shall be defined in soil, groundwater, surface water, sediment, air, and biota. Spatial and temporal trends and the fate and transport of contamination shall be evaluated.

5.5 Baseline Health and Ecological Risk Assessment. Within 30 days of the submission of the Final RI Report, Respondents shall perform health and ecological (if applicable) risk assessments for the Site that meet the requirements of Health and Safety Code section 25356.1.5(b). Respondents shall submit a Baseline Health and Ecological Risk Assessment Report. The report shall be prepared consistent with U.S. EPA and California Environmental Protection Agency guidance and regulations, including as a minimum: Risk Assessment Guidance for Superfund, Volume 1; Human Health Evaluation Manual, December 1989; Superfund Exposure Assessment Manual, April 1988; Risk Assessment

Guidance for Superfund, Volume 2, Environmental Evaluation Manual, March 1989; Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (DTSC, September 1993); and all other related or relevant policies, practices and guidelines of the California Environmental Protection Agency and policies, practices and guidelines developed by U.S.EPA pursuant to 40 CFR 300.400 et seq. The Baseline Health and Ecological Risk Assessment Report shall include the following components:

(a) Contaminant Identification. Characterization data shall identify contaminants of concern for the risk assessment process.

(b) Environmental Evaluation. An ecological assessment consisting of:

(1) Identification of sensitive environments and rare, threatened, or endangered species and their habitats; and

(2) As appropriate, ecological investigations to assess the actual or potential effects on the environment and/or develop remediation criteria.

(c) Exposure Assessment. The objectives of an exposure assessment are to identify actual or potential exposure pathways, to characterize the potentially exposed populations that are likely to come into contact with contaminants at the Site, and to determine the extent of the exposure. Exposed populations may include industrial workers, residents, and subgroups that comprise a meaningful portion of the general population, including, but not limited to, infants, children, pregnant women, the elderly, individuals with a history of serious illness, or other subpopulations, that are identifiable as being at greater risk of adverse health effects due to exposure to hazardous substances than the general population.

(d) Toxicity Assessment. Respondents shall evaluate the types of adverse health or environmental effects associated with individual and multiple chemical exposures; the relationship between magnitude of exposures and adverse effects; and related uncertainties such as the weight of evidence for a chemical's potential carcinogenicity in humans.

(e) Risk Characterization. Risk characterization shall include the potential risks of adverse health or environmental effects for each of the exposure scenarios derived in the exposure assessment.

5.6 Interim Screening and Evaluation of Remedial Technologies. If requested by DTSC, Respondents shall submit an interim document which identifies and evaluates potentially suitable remedial technologies and recommendations for treatability studies.

5.7 Treatability Studies. Treatability testing will be performed by Respondents if requested by DTSC to develop data for detailed remedial alternatives. Treatability testing is required to demonstrate the implementability and effectiveness of technologies, unless Respondents can show DTSC that similar data or documentation or information exists. The required deliverables are: a workplan, a sampling and analysis plan, and a treatability evaluation report. To the extent practicable, treatability studies will be proposed and implemented during

the latter part of Site characterization.

5.8 Feasibility Study (FS) Report. If, after review and approval of the Remedial Investigation Report and Baseline Health and Ecological Risk Assessment Report, DTSC determines that remedial measures are necessary at the Site, Respondents shall prepare and submit a FS Report to DTSC for review and approval. If a Removal Action Workplan (RAW) is prepared for a subarea or portion thereof (Section 5.10), a stand-alone FS Report may not be required. DTSC shall inform the Respondents whether a FS Report is required. The FS Report shall be submitted no later than 60 days after a request is made in writing by DTSC. The FS Report shall summarize the results of the FS including the following:

(a) Documentation of all treatibility studies conducted.

(b) Development of medium specific or operable unit specific remedial action objectives, including legal requirements and other promulgated standards that are relevant.

(c) Identification of screening of general response actions, remedial technologies, and process options on a medium and/or operable unit specific basis.

(d) Evaluation of alternatives based on the criteria contained in the NCP including:

Threshold Criteria:

(1) Overall protection of human health and the environment.

(2) Compliance with legal requirements and other promulgated standards that are relevant.

Primary Balancing Criteria:

(1) Long-term effectiveness and permanence.

(2) Reduction of toxicity, mobility, or volume through treatment.

(3) Short-term effectiveness.

(4) Implementability based on technical and administrative feasibility.

(5) Cost.

Modifying Criteria:

(1) State and local agency acceptance.

(2) Community acceptance.

(e) Proposed remedial actions.

5.9 California Environmental Quality Act (CEQA). DTSC will comply with CEQA

for all activities required by this Order that are projects subject to CEQA. Upon DTSC request, Respondents shall provide DTSC with any information that DTSC deems necessary to facilitate compliance with CEQA. The costs incurred by DTSC in complying with CEQA are response costs and Respondents shall reimburse DTSC for such costs pursuant to Section 6.19.

5.10 Removal Action Workplan (RAW). If DTSC determines a removal action is appropriate, Respondents will prepare and submit no later than 45 days after DTSC's approval of the FS, a draft Removal Action Workplan (RAW) in accordance with Health and Safety Code sections 25323.1 and 25356.1. The Removal Action Workplan will include:

(a) A description of the onsite contamination;
(b) The goals to be achieved by the removal action;
(c) An analysis of the alternative options considered and rejected and the basis for that rejection. This should include a discussion for each alternative which covers its effectiveness, implementability and cost;
(d) Administrative record list;
(e) A description of the techniques and methods to be used in the removal action, including any excavating, storing, handling, transporting, treating, and disposing of material on or off the site;
(f) Sampling and Analysis Plan with corresponding Quality Assurance Plan to confirm the effectiveness of the RAW, if applicable;
(g) A brief overall description of methods that will be employed during the removal action to ensure the health and safety of workers and the public during the removal action. A detailed community air monitoring plan shall be included if requested by DTSC.

In conjunction with DTSC, Respondents shall implement the public review process specified in DTSC's Public Participation Policy and Guidance Manual and Public Participation Plan. DTSC will prepare a response to the public comments received. If required, the Respondents shall submit within fifteen (15) days of the request the information necessary for DTSC to prepare this document.

Following DTSC's finalization of the Responsiveness Summary, DTSC will specify any changes to be made in the RAW. Respondents shall modify the document in accordance with DTSC's specifications and submit a final RAW within 15 days of receipt of DTSC's comments.

If the proposed removal action does not meet the requirements of Health and Safety Code section 25356.1(h), the Respondents shall prepare a Remedial Action Plan (RAP) in accordance with Health and Safety Code section 25356.1(c) for DTSC review and approval.

5.11 Remedial Action Plan (RAP). No later than 60 days after DTSC approval of the FS Report, Respondents shall prepare and submit to DTSC a draft RAP, if applicable. The draft

RAP shall be consistent with the NCP and Health and Safety Code section 25356.1. The draft RAP public review process may be combined with that of any other documents required by CEQA. The draft RAP shall be based on and summarize the approved RI/FS Reports, and shall clearly set forth:

(a) Health and safety risks posed by the conditions at the Site.

(b) The effect of contamination or pollution levels upon present, future, and probable beneficial uses of contaminated, polluted, or threatened resources.

(c) The effect of alternative remedial action measures on the reasonable availability of groundwater resources for present, future, and probable beneficial uses.

(d) Site specific characteristics, including the potential for offsite migration of hazardous substances, the surface or subsurface soil, and the hydrogeologic conditions, as well as preexisting background contamination levels.

(e) Cost-effectiveness of alternative remedial action measures. Land disposal shall not be deemed the most cost-effective measure merely on the basis of lower short-term cost.

(f) The potential environmental impacts of alternative remedial action measures, including, but not limited to, land disposal of the untreated hazardous substances as opposed to treatment of the hazardous substances to remove or reduce their volume, toxicity, or mobility prior to disposal.

(g) A statement of reasons setting forth the basis for the removal and remedial actions selected. The statement shall include an evaluation of each proposed alternative submitted and evaluate the consistency of the removal and remedial actions proposed by the plan with the NCP.

(h) A schedule for implementation of all proposed removal and remedial actions.

In conjunction with DTSC, Respondents shall implement the public review process specified in DTSC's Public Participation Policy and Guidance Manual. DTSC will prepare a response to the public comments received. If required, the Respondents shall submit within fifteen (15) days of the request the information necessary for DTSC to prepare this document

Following DTSC's finalization of the Responsiveness Summary, DTSC will specify any changes to be made in the RAP. Respondents shall modify the document in accordance with DTSC's specifications and submit a final RAP within 15 days of receipt of DTSC's comments.

5.12 Remedial Design (RD). Within 60 days after DTSC approval of the final RAP, Respondents shall submit to DTSC for review and approval a RD describing in detail the technical and operational plans for implementation of the final RAP which includes the following elements, as applicable:

(a) Design criteria, process unit and pipe sizing calculations, process diagrams, and final

plans and specifications for facilities to be constructed.
(b) Description of equipment used to excavate, handle, and transport contaminated material.
(c) A field sampling and laboratory analysis plan addressing sampling during implementation and to confirm achievement of the performance objectives of the RAP.
(d) A transportation plan identifying routes of travel and final destination of wastes generated and disposed.
(e) For groundwater extraction systems: aquifer test results, capture zone calculations, specifications for extraction and performance monitoring wells, and a plan to demonstrate that capture is achieved.
(f) An updated health and safety plan addressing the implementation activities.
(g) Identification of any necessary permits and agreements.
(h) An operation and maintenance plan including any required monitoring.
(i) A detailed schedule for implementation of the remedial action consistent with the schedule contained in the approved RAP including procurement, mobilization, construction phasing, sampling, facility startup, and testing.
(j) A community Air Monitoring Plan.

5.13 Public Participation Plan (Community Relations). Respondents shall work cooperatively with DTSC in providing an opportunity for meaningful public participation in response actions. Any such public participation activities shall be conducted in accordance with Health and Safety Code section 25356.1 and 25358.7 and DTSC's most current Public Participation Policy and Guidance Manual, and shall be subject to DTSC's review and approval.

A baseline community survey was previously completed. Respondents shall assist DTSC in developing a revised Public Participation Plan (PPP) for the Site, which describes how, under this Order, the public and adjoining community will be kept informed of activities conducted at the Site and how Respondents will be responding to inquiries from concerned citizens.

DTSC with assistance of the Respondents shall prepare a revised PPP within 90 days of the effective date of this Order.

Respondents shall implement any of the public participation support activities identified in the PPP, at the request of DTSC. DTSC retains the right to implement any of these activities independently. These activities include, but are not limited to, development and distribution of fact sheets; public meeting preparations; and development and placement of public notices.

5.14 Land Use Covenant. If the approved remedy in the final RAP or final RAW includes land use covenants or land use restrictions, pursuant to California Code of Regulations, title 22, section 67391.1, or if a previous remedial action conducted under the oversight of the RWQCB does not meet unrestricted land use standards and DTSC agrees with the remedy, the current owner(s) of the Site shall sign a land use covenant approved by DTSC within 90 days of

DTSC's approval of the final RAP or DTSC's concurrence in writing of the remedial action approved by the RWQCB.

5.15 Implementation of Final RAP or Final RAW. Upon DTSC approval of the RD or final RAW, Respondents shall implement the final RAP or final RAW in accordance with the approved schedule in the RD or final RW. Within 60 days of completion of field activities, Respondents shall submit an Implementation Report documenting the implementation of the Final RAP and RD or final RAW.

5.16 Operation and Maintenance (O&M). Respondents shall comply with all O&M requirements in accordance with the final RAP and approved RD, final RAW or approved RWQCB plans. Within 30 days of the date of DTSC's request, Respondents shall prepare and submit to DTSC for approval an O&M plan that includes an implementation schedule. Respondents shall implement the plan in accordance with the approved schedule. Respondents shall continue to implement the Wetland Restoration Monitoring Plan found in the Western Stege Marsh Restoration Project Monitoring Plan (Blasland, Bouck & Lee 2004), the Feral Animal Management Program (Blasland, Bouck & Lee 2004), and the Invasive/Exotic Vegetation Management Program (Blasland, Bouck & Lee 2004).

5.17 Five-Year Review. Respondent shall review and reevaluate the remedial action after a period of five years (unless otherwise specified by DTSC) from the completion of construction and startup, and every 5 years thereafter until such time that DTSC relieves Respondents from this obligation. The review and reevaluation shall be conducted to determine if human health and the environment are being protected by the remedial action. Within thirty 30 calendar days before the end of the time period approved by DTSC to review and reevaluate the remedial action, Respondents shall submit a remedial action review workplan to DTSC for review and approval. Within sixty 60 days of DTSC's approval of the workplan, Respondents shall implement the workplan and shall submit a comprehensive report of the results of the remedial action review. The report shall describe the results of all sample analyses, tests and other data generated or received by Respondents and evaluate the adequacy of the implemented remedy in protecting public health, safety and the environment. As a result of any review performed under this Section, Respondents may be required to perform additional Work or to modify Work previously performed.

5.18 Changes During Implementation of the Final RAP or Final RAW. During the implementation of the final RAP and RD or final RAW, DTSC may specify such additions, modifications, and revisions to the RD or final RAW as DTSC deems necessary to protect public health and safety or the environment or to implement the final RAP or final RAW.

5.19 Stop Work Order. In the event that DTSC determines that any activity (whether or not pursued in compliance with this Order) may pose an imminent or substantial endangerment to the health or safety of people on the Site or in the surrounding area or to the

environment, DTSC may order Respondents to stop further implementation of this Order for such period of time needed to abate the endangerment. In the event that DTSC determines that any site activities (whether or not pursued in compliance with this Order) are proceeding without DTSC authorization, DTSC may order Respondents to stop further implementation of this Order or activity for such period of time needed to obtain DTSC authorization, if such authorization is appropriate. Any deadline in this Order directly affected by a Stop Work Order, under this Section, shall be extended for the term of the Stop Work Order.

5.20 Emergency Response Action/Notification. In the event of any action or occurrence (such as a fire, earthquake, explosion, or human exposure to hazardous substances caused by the release or threatened release of a hazardous substance) during the course of this Order, Respondents)shall immediately take all appropriate action to prevent, abate, or minimize such emergency, release, or immediate threat of release and shall immediately notify the Project Manager. Respondents shall take such action in consultation with the Project Manager and in accordance with all applicable provisions of this Order. Within seven days of the onset of such an event, Respondents shall furnish a report to DTSC, signed by Respondents' Project Coordinator, setting forth the events which occurred and the measures taken in the response thereto. In the event that Respondents fail to take appropriate response and DTSC takes the action instead, Respondents shall be liable to DTSC for all costs of the response action. Nothing in this Section shall be deemed to limit any other notification requirement to which Respondents may be subject.

5.21 Discontinuation of Remedial Technology. Any remedial technology employed in implementation of the final RAP or final RAW shall be left in place and operated by Respondents until and except to the extent that DTSC authorizes Respondents in writing to discontinue, move or modify some or all of the remedial technology because Respondents have met the criteria specified in the final RAP or final RAW for its discontinuance, or because the modifications would better achieve the goals of the final RAP or final RAW.

5.22 Financial Assurance. Respondents shall demonstrate to DTSC and maintain financial assurance for operation and maintenance and monitoring. Respondents shall demonstrate financial assurance prior to the time that operation and maintenance activities are initiated and shall maintain it throughout the period of time necessary to complete all required operation and maintenance activities. The financial assurance mechanisms shall meet the requirements of Health and Safety Code Section 25355.2. All financial assurance mechanisms are subject to the review and approval of DTSC.

VI. GENERAL PROVISIONS

6.1 Project Coordinator. Within 10 days from the date the Order is signed by DTSC, Respondents shall submit to DTSC in writing the name, address, and telephone number of a Project Coordinator whose responsibilities will be to receive all notices, comments, approvals,

and other communications from DTSC. Respondents shall promptly notify DTSC of any change in the identity of the Project Coordinator. Respondents shall obtain approval from DTSC before the new Project Coordinator performs any work under this Order.

6.1.1 Communication and Coordination Plan (CCP). Within thirty (30) days from the date this Order is signed by DTSC, Respondents shall submit to DTSC for its approval a CCP which specifies the requirements and procedures by which Respondents will communicate and coordinate with one another in carrying out the requirements of this Order.

6.2 Project Engineer/Geologist. The work performed pursuant to this Order shall be under the direction and supervision of a qualified professional engineer or geologist in the State of California, with expertise in hazardous substance site cleanups. Within 15 calendar days from the date this Order is signed by DTSC, Respondents must submit: a) The name and address of the project engineer or geologist chosen by Respondents; and b) in order to demonstrate expertise in hazardous substance cleanup, the résumé of the engineer or geologist, and the statement of qualifications of the consulting firm responsible for the work. Respondents shall promptly notify DTSC of any change in the identity of the Project Engineer/Geologist. Respondents shall obtain approval from DTSC before the new Project Engineer/Geologist performs any work under this Order.

6.3 Monthly Summary Reports. Within 30 days from the date this Order is signed by DTSC, and on a monthly basis thereafter, Respondents shall submit a Monthly Summary Report of its activities under the provisions of this Order. The report shall be received by DTSC by the 15th day of each month and shall describe:

(a) Specific actions taken by or on behalf of Respondents during the previous calendar month;
(b) Actions expected to be undertaken during the current calendar month;
(c) All planned activities for the next month;
(d) Any requirements under this Order that were not completed;
(e) Any problems or anticipated problems in complying with this Order; and

6.4 Quality Assurance/Quality Control (QA/QC). All sampling and analysis conducted by Respondent(s) under this Order shall be performed in accordance with QA/QC procedures submitted by Respondent(s) and approved by DTSC pursuant to this Order.

6.5 Submittals. All submittals and notifications from Respondents required by this Order shall be sent simultaneously to:

Barbara J. Cook, P.E.
Regional Branch Chief

Attention: Lynn Nakashima [two copies and one compact disc]
Site Mitigation Branch
DTSC of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710

Note: The compact disc shall be in searchable portable document format (PDF).

6.6 Communications. All approvals and decisions of DTSC made regarding submittals and notifications will be communicated to Respondents in writing by the Site Mitigation Branch Chief or his/her designee. No informal advice, guidance, suggestions or comments by DTSC regarding reports, plans, specifications, schedules or any other writings by Respondents shall be construed to relieve Respondents of the obligation to obtain such formal approvals as may be required.

6.7 DTSC Review and Approval.

(a) All response actions taken pursuant to this Order shall be subject to the approval of DTSC. Respondents shall submit all deliverables required by this Order to DTSC. Once the deliverables are approved by DTSC, they shall be deemed incorporated into, and where applicable, enforceable under this Order.

(b) If DTSC determines that any report, plan, schedule or other document submitted for approval pursuant to this Order fails to comply with this Order or fails to protect public health or safety or the environment, DTSC may:

(1) Modify the document as deemed necessary and approve the document as modified; or

(2) Return comments to Respondents with recommended changes and a date by which Respondents must submit to DTSC a revised document incorporating the recommended changes.

(c) Any modifications, comments or other directives issued pursuant to (a) above, are incorporated into this Order. Any noncompliance with these modifications or directives shall be deemed a failure or refusal to comply with this Order.

6.8 Compliance with Applicable Laws. Nothing in this Order shall relieve Respondents from complying with all other applicable laws and regulations, including but not limited to compliance with all applicable waste discharge requirements issued by the State Water Resources Control Board or a California Regional Water Quality Control Board. Respondents shall conform all actions required by this Order with all applicable federal, state and local laws and regulations.

6.9 Respondent Liabilities. Nothing in this Order shall constitute or be construed as a satisfaction or release from liability for any conditions or claims arising as a result of past,

current or future operations of Respondents. Nothing in this Order is intended or shall be construed to limit the rights of any of the parties with respect to claims arising out of or relating to the deposit or disposal at any other location of substances removed from the Site. Nothing in this Order is intended or shall be construed to limit or preclude DTSC from taking any action authorized by law to protect public health or safety or the environment and recovering the cost thereof. Notwithstanding compliance with the terms of this Order, Respondents may be required to take further actions as are necessary to protect public health and the environment.

6.10 Site Access. Access to the Site and laboratories used for analyses of samples under this Order shall be provided at all reasonable times to employees, contractors, and consultants of DTSC. Nothing in this Section is intended or shall be construed to limit in any way the right of entry or inspection that DTSC or any other agency may otherwise have by operation of any law. DTSC and its authorized representatives shall have the authority to enter and move freely about all property at the Site at all reasonable times for purposes including, but not limited to: inspecting records, operating logs, sampling and analytic data, and contracts relating to this Site; reviewing the progress of Respondents in carrying out the terms of this Order; conducting such tests as DTSC may deem necessary; and verifying the data submitted to DTSC by Respondents.

To the extent the Site or any other property to which access is required for the implementation of this Order is owned or controlled by persons other than Respondents, Respondents shall use best efforts to secure from such persons access for Respondents, as well as DTSC, its representatives, and contractors, as necessary to effectuate this Order. To the extent that any portion of the Site is controlled by tenants of Respondents, Respondents shall use best efforts to secure from such tenants, access for Respondents, as well as for DTSC, its representatives, and contractors, as necessary to effectuate this Order. For purposes of this Section, "best efforts" includes the payment of reasonable sums of money in consideration of access. If any access required to complete the Work is not obtained within forty-five (45) days of the effective date of this Order, or within forty-five (45) days of the date DTSC notifies Respondents in writing that additional access beyond that previously secured is necessary, Respondents shall promptly notify DTSC, and shall include in that notification a summary of the steps Respondents has taken to attempt to obtain access. DTSC may, as it deems appropriate, assist Respondents in obtaining access. Respondents shall reimburse DTSC in obtaining access, including, but not limited to, attorneys fees and the amount of just compensation.

6.11 Site Access for Respondents. The Site owner Respondent shall grant access to other Respondents who are in compliance with this Order for the purpose of conducting activities pursuant to this Order or for activities deemed necessary by DTSC to meet the objectives of this Order.

6.12 Sampling, Data and Document Availability. Respondents shall permit DTSC and its authorized representatives to inspect and copy all sampling, testing, monitoring or other data

generated by Respondents or on Respondents' behalf in any way pertaining to work undertaken pursuant to this Order. Respondents shall submit all such data upon the request of DTSC. Copies shall be provided within 7 days of receipt of DTSC's written request. Respondents shall inform DTSC at least 7 days in advance of all field sampling under this Order, and shall allow DTSC and its authorized representatives to take duplicates of any samples collected by Respondents pursuant to this Order. Respondents shall maintain a central depository of the data, reports, and other documents prepared pursuant to this Order.

6.13 Record Retention. All such data, reports and other documents shall be preserved by Respondents for a minimum of ten years after the conclusion of all activities under this Order. If DTSC requests that some or all of these documents be preserved for a longer period of time, Respondents shall either comply with that request or deliver the documents to DTSC, or permit DTSC to copy the documents prior to destruction. Respondents shall notify DTSC in writing at least six months prior to destroying any documents prepared pursuant to this Order.

6.14 Government Liabilities. The State of California shall not be liable for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or related parties specified in Section 6.26, Parties Bound, in carrying out activities pursuant to this Order, nor shall the State of California be held as party to any contract entered into by Respondents or its agents in carrying out activities pursuant to this Order.

6.15 Additional Actions. By issuance of this Order, DTSC does not waive the right to take any further actions authorized by law.

6.16 Extension Requests. If Respondents are unable to perform any activity or submit any document within the time required under this Order, Respondents may, prior to expiration of the time, request an extension of the time in writing. The extension request shall include a justification for the delay. All such requests shall be in advance of the date on which the activity or document is due.

6.17 Extension Approvals. If DTSC determines that good cause exists for an extension, it will grant the request and specify a new schedule in writing. Respondents shall comply with the new schedule incorporated in this Order.

6.18 Liability for Costs. Respondents are liable for all of DTSC's costs that have been incurred in taking response actions at the Site (including costs of overseeing response actions performed by Respondents) and costs to be incurred in the future.

6.19 Payment of Costs. DTSC may bill Respondents for costs incurred in taking response actions at the Site prior to the effective date of this Order. DTSC will bill Respondents quarterly for its response costs incurred after the effective date of this Order. Respondents shall pay DTSC within sixty (60) days of receipt of any DTSC billing. Any billing not paid within

sixty (60) days is subject to interest calculated from the date of the billing pursuant to Health and Safety Code section 25360.1. All payments made by Respondents pursuant to this Order shall be by check made payable to "DTSC," and shall bear on the face the project code of the Site (Site 201605) and the Docket number of this Order. Payments shall be sent to:

Department of Toxic Substances Control
Accounting/Cashier
1001 I Street, 21st Floor
P.O. Box 806
Sacramento, California 95812-0806

6.20 Severability. The requirements of this Order are severable, and Respondents shall comply with each and every provision hereof, notwithstanding the effectiveness of any other provision.

6.21 Incorporation of Plans, Schedules and Reports. All plans, schedules, reports, specifications and other documents that are submitted by Respondents pursuant to this Order are incorporated in this Order upon DTSC's approval or as modified pursuant to Section 6.7, DTSC Review and Approval, and shall be implemented by Respondents. Any noncompliance with the documents incorporated in this Order shall be deemed a failure or refusal to comply with this Order.

6.22 Modifications. DTSC reserves the right to unilaterally modify this Order. Any modification to this Order shall be effective upon the date the modification is signed by DTSC unless otherwise indicated and shall be deemed incorporated in this Order.

6.23 Time Periods. Unless otherwise specified, time periods begin from the effective date of this Order and "days" means calendar days.

6.24 Termination and Satisfaction. Except for Respondents obligations under Sections 5.16 Operation and Maintenance (O&M), 5.17 Five-Year Review, 5.22 Financial Assurance, 6.13 Record Retention, 6.18 Liability for Costs, and 6.19 Payment of Costs, Respondents obligations under this Order shall terminate and be deemed satisfied upon Respondents receipt of written notice from DTSC that Respondents have complied with all the terms of this Order.

6.26 Parties Bound. This Order applies to and is binding upon Respondents, and its officers, directors, agents, employees, contractors, consultants, receivers, trustees, successors and assignees, including but not limited to, individuals, partners, and subsidiary and parent corporations. Respondents shall provide a copy of this Order to all contractors, subcontractors, laboratories, and consultants which are retained to conduct any work performed under this Order, within 15 days after the effective date of this Order or the date of retaining their

services, whichever is later. Respondents shall condition any such contracts upon satisfactory compliance with this Order. Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Order and for ensuring that its subsidiaries, employees, contractors, consultants, subcontractors, agents and attorneys comply with this Order.

6.27 Change in Ownership No change in ownership or corporate or partnership status relating to the Site shall in any way alter Respondents' responsibility under this Order. No conveyance of title, easement, or other interest in the Site, or a portion of the Site, shall affect Respondents' obligations under this Order. Unless DTSC agrees that such obligations may be transferred to a third party, Respondents shall be responsible for and liable for any failure to carry out all activities required of Respondents by the terms and conditions of this Order, regardless of Respondents' use of employees, agents, contractors, or consultants to perform any such tasks. Respondents shall provide a copy of this Order to any subsequent owners or successors before ownership rights or stock or assets in a corporate acquisition are transferred.

VII. NOTICE OF INTENT TO COMPLY

7. Not later than fifteen (15) days after the effective date of this Order, Respondents shall provide written notice, in accordance with paragraph 6.5, Submittals of this Order, stating whether or not Respondents will comply with the terms of this Order. If Respondents, or any one of them, do not unequivocally commit to perform all of the requirements of this Order, they, or each so refusing, shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Respondents' written notice shall describe, using facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondent(s) under Health and Safety Code sections 25358.3(a) and 25355.5(a)(1)(B) or CERCLA section 107(c)(3), 42 U.S.C. section 9607(c)(3).

VIII. EFFECTIVE DATE

8. This Order is final and effective five days from the date of mailing, which is the date of the cover letter transmitting the Order to you.

IX. PENALTIES FOR NONCOMPLIANCE

9. Each Respondent may be liable for penalties of up to $25,000 for each day out of compliance with any term or condition set forth in this Order and for punitive damages up to three times the amount of any costs incurred by DTSC as a result of Respondents' failure to comply, pursuant to Health and Safety Code sections 25359, 25359.2, 25359.4, and 25367(c). Health and Safety Code section 25359.4.5 provides that a responsible party who complies with this Order, or with another order or agreement concerning the same response actions required by this Order, may seek treble damages from Respondents who fail or refuse to comply with this Order without sufficient cause.

DATE OF ISSUANCE: 9-15-2006

Barbara J. Cook, P.E.
Regional Branch Chief
Department of Toxic Substances Control

cc: Site Mitigation Program
Headquarters, Planning & Policy
Office of Legal Counsel

Exhibit A-1
Assessor's Parcel Map
Parcel Numbers 560060008 and 560060007

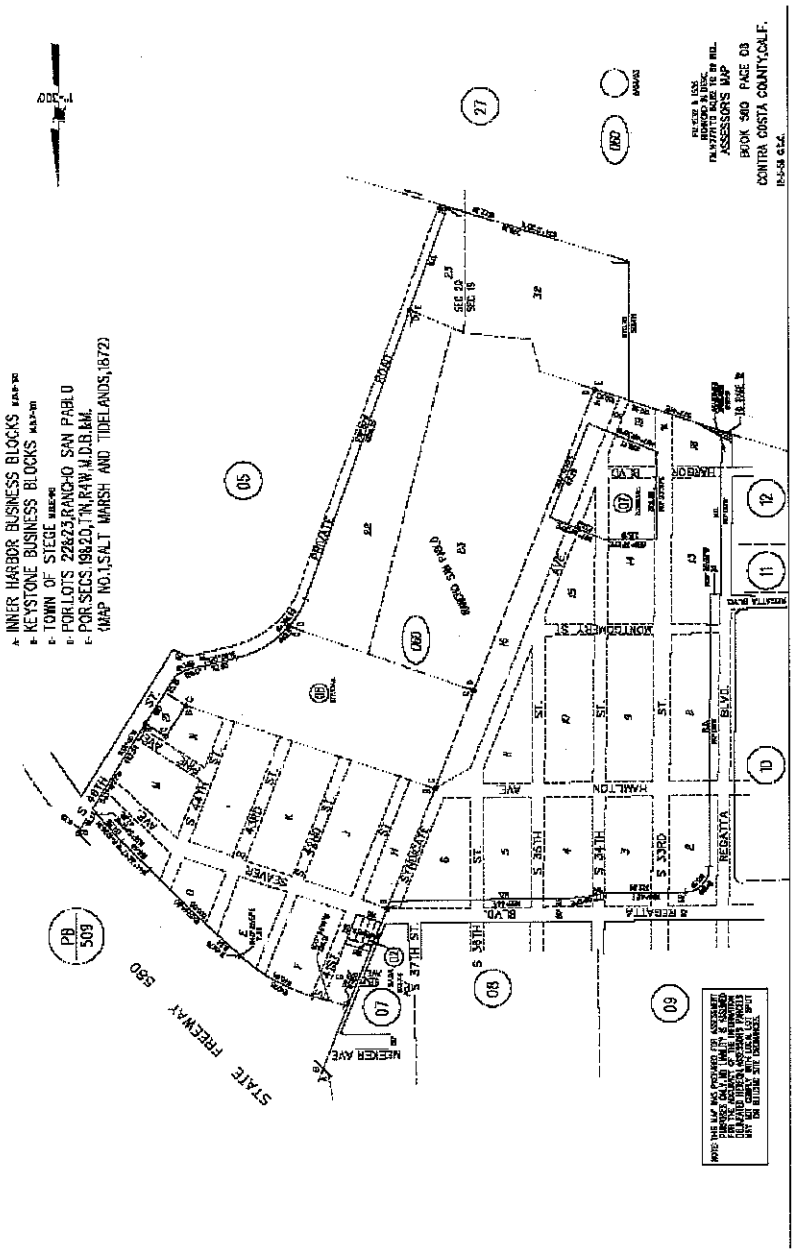

Exhibit A-2
Site Location

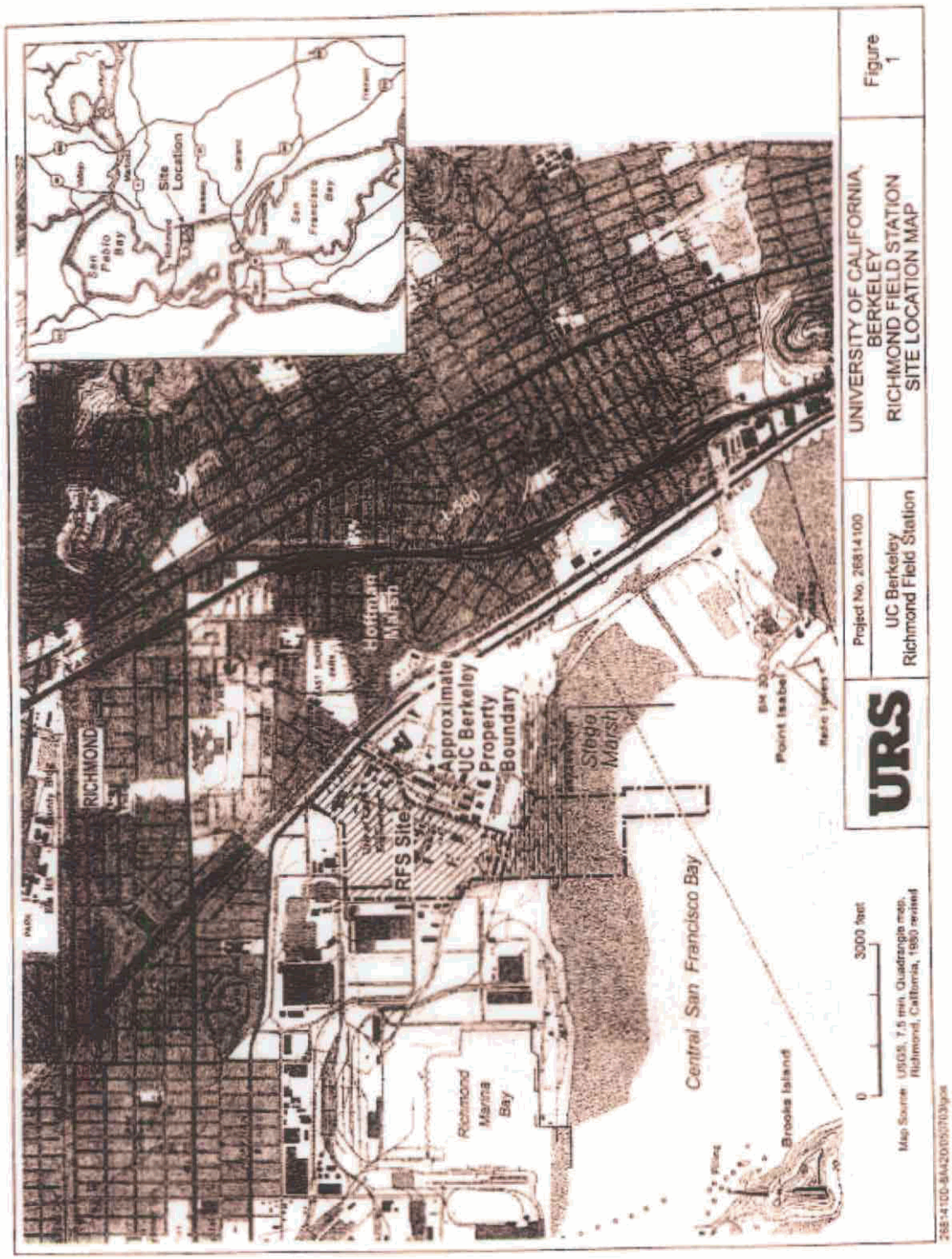

Exhibit A-3
Site History Map

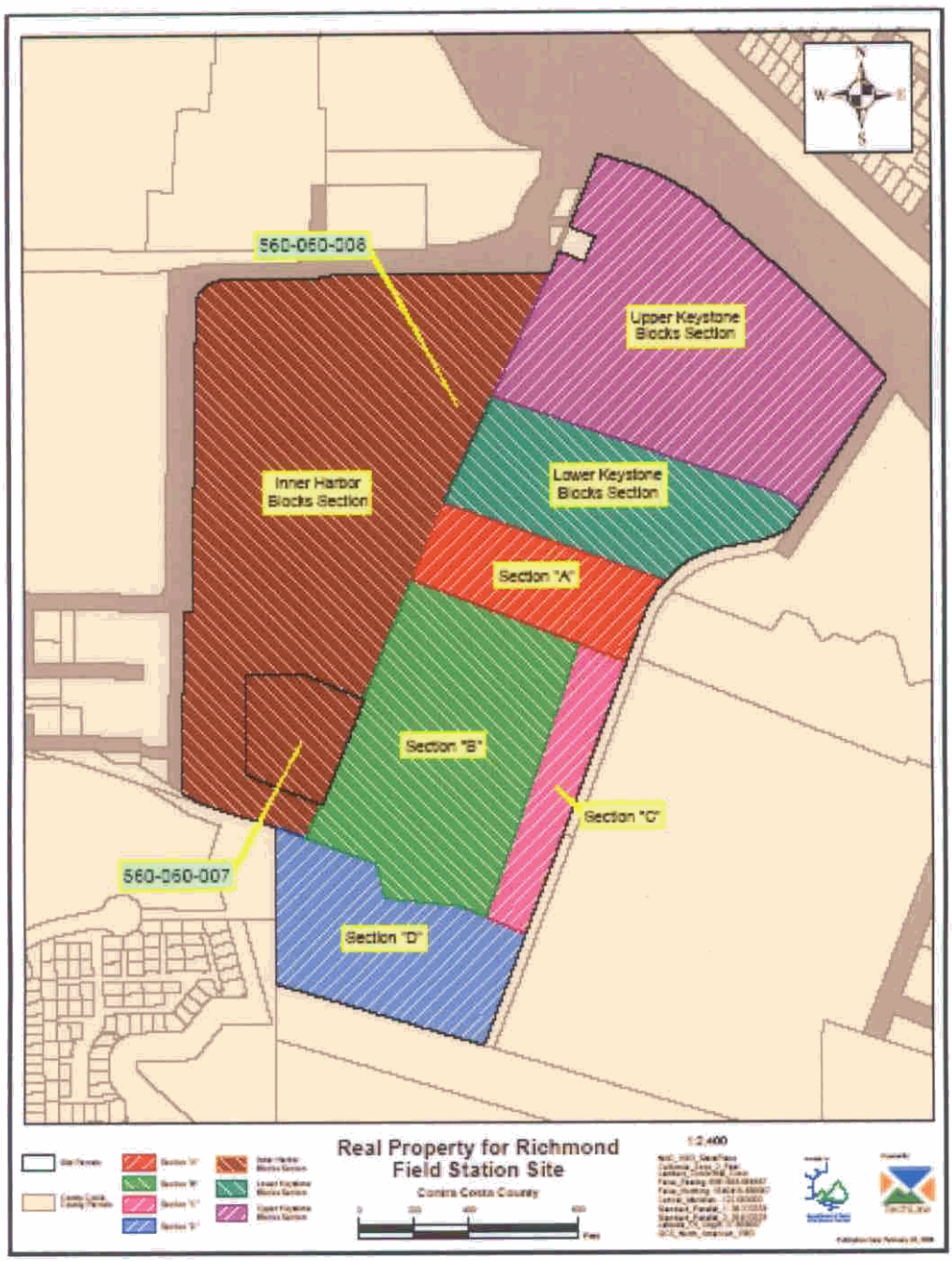

EXHIBIT B
SUBSTANCES DETECTED
UC Richmond Field Station Site

Table 1 lists hazardous substances detected in Site soil that require remediation.

Table 1

Substances Detected in Soil	Range of Concentrations in mg/kg.	Hazardous Waste Criteria in mg/kg
Arsenic	Up to 540	500
Cadmium	Up to 437	100
Copper	Up to 3,300	2,500
Lead	Up to 4,000	1,000
Mercury	Up to 260	20
PCBs	Up to 65	50

Table 2 lists hazardous substances detected in Site groundwater above Basin Plan requirements

Table 2

Substances Detected in Groundwater	Range of concentrations in ug/L	Maximum Contaminant Levels
Arsenic	32	10
Beryllium	6.6	4
Cadmium	6.5	5
Copper	4,100	1,300
Mercury	5.9	2
Nickel	780	100
Carbon Tetrachloride	53	5
Cis-1,2-Dichloroethene	10	5
Tetrachloroethene	14	5
Trichloroethene	120	5
Vinyl chloride	3.4	0.5
PCBs	1.3	0.5

EXHIBIT C
STANDARD FENCE SPECIFICATIONS

The fence shall be a standard chain link fence with a height of six feet. The fence shall be similar in construction and material to the main line fences located on the site. In general, replacement fencing shall consist of a minimum of 11-gauge, woven into an approximately two-inch mesh. The fencing should have a knuckled finish on the top and bottom edges. The posts are to be made of galvanized metal and shall be placed no more than fifteen feet apart. Any access gates are to be of the same material as the fence. Gates shall be secured with a padlock unless alternative measures approved by DTSC are in place to prevent access to unauthorized personnel.

The 4-foot no-climb fence shall be made of 10 gauge galvanized wrapped wire. An 8-guage top wire shall be added in high use areas to further stiffen the fence. The fence shall be installed using pressure treated "peeler core" posts or steel T-Bar posts if wood is not suitable. T-Bar posts shall be driven to at least 2 feet below ground surface, while "peeler core" posts shall be driven to four feet. Corner and end posts shall be Schedule 40 steel pipe with 3-inch nominal diameter. Brace posts shall be Schedule 40 steel pipe with 1.315 –inch outside diameter. Fabric ties shall be 11-guage galvanized steel wire. When necessary, concrete footings 12 inches in diameter and 2 feet deep shall be installed at the fence posts.

Exhibit D-1
Area to Be Fenced

Note: existing fencing designated by "x"s. Temporary fencing is shown as a solid red line (approximate locations).

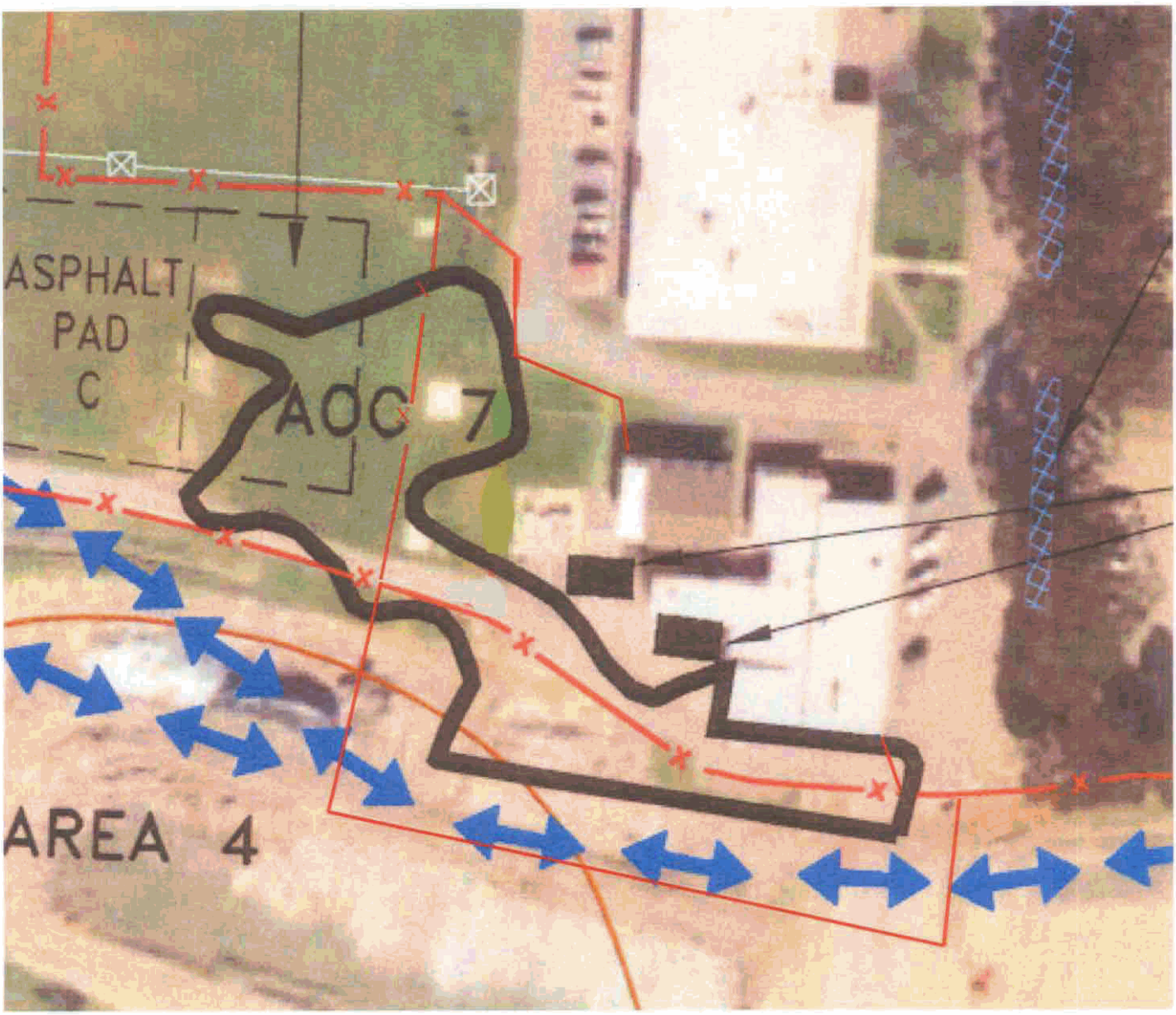

Exhibit D-2
Area to be Fenced

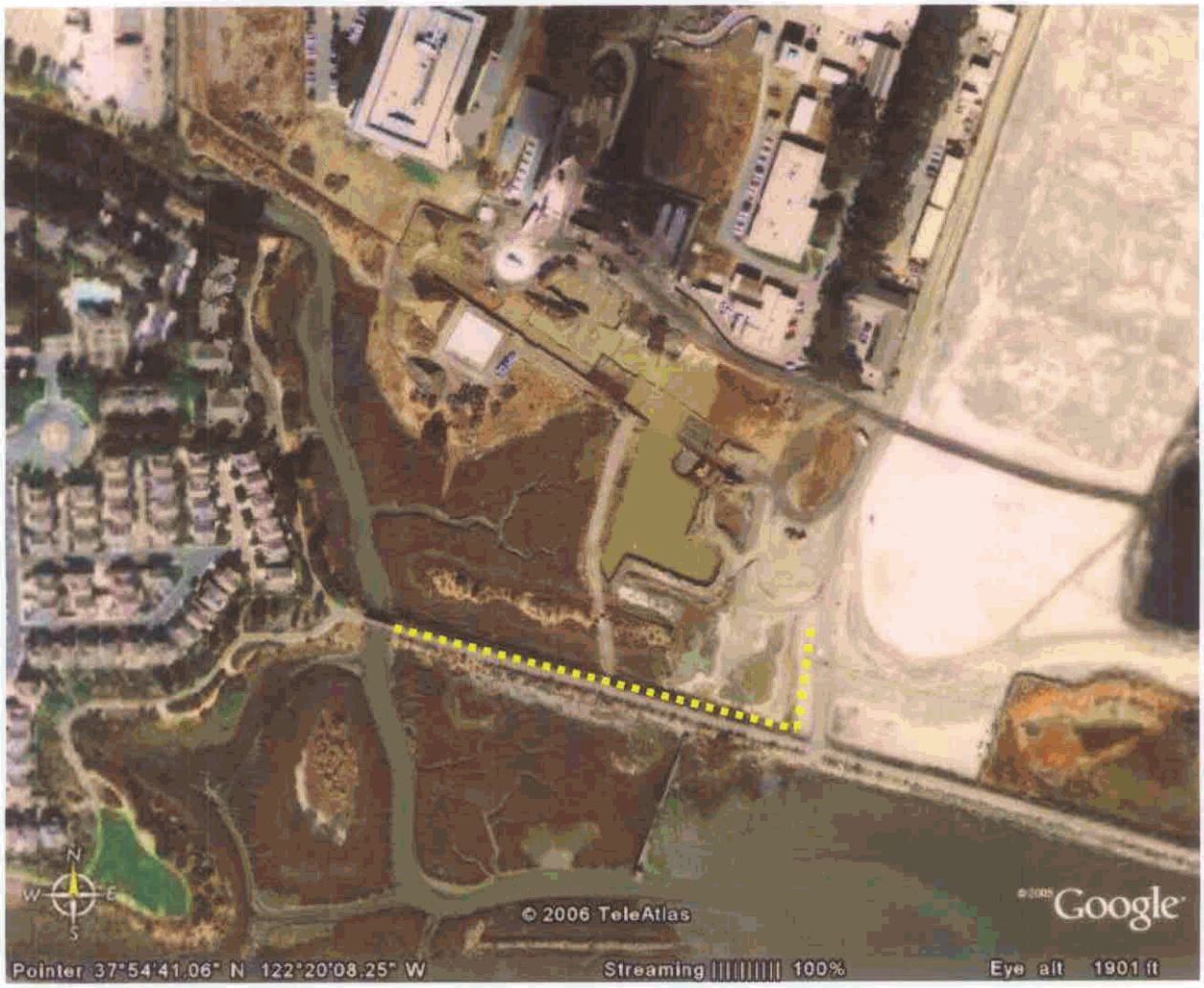

EXHIBIT E
SIGN SPECIFICATIONS

Signs shall be posted with lettering legible from a distance of at least 25 feet which states, "Caution: Hazardous Substance Area, Unauthorized Persons Keep Out", in English. The signs shall include the name of the Department and the telephone number 510-540-2122. The Department also recommends that the Respondents attach "do not enter" international symbol signs at appropriate intervals to the fence to prevent injury to individuals who cannot read the sign. Signs along the 4-foot no climb fence shall meet East Bay Regional Park District requirements and shall state, "Resource Protection Area, Keep Out". These signs shall be placed at a minimum of every 250 feet.

The signs shall be visible from the area surrounding the contaminated area and posted at each route of entry into the Site, including those routes likely to be used by unauthorized persons, access roads leading to the Site, and facing rivers, creeks, lakes or other waterways where appropriate.

The fence and signs shall be continuously maintained to minimize the risk of unauthorized entry. The signs shall be of a material which resists the elements and shall be replaced when necessary.

Exhibit F
Surface-Water and Sediment Monitoring Program

A semi-annual monitoring program will be conducted for a minimum of five years, depending on the results of the five-year review.

The surface-water and sediment samples from the eastern portion of West Stege Marsh, as well as the Meeker Slough sample from below the EBRPD Bay Trail bridge (locations SED 101 through SED 103 and SW101 through SW104) will be collected during an outgoing tide.

The stormwater samples from the storm drain outfalls, concrete ditch, and upper Meeker Slough (locations SW105 through SW108) will be collected during the first fall rainfall event producing surface runoff (i.e., the "first flush"). An additional sample will be collected from the outfalls in the spring (late in the rainy season in March or April).

Sample collection and analysis will follow the methods identified in the *Final Report, Groundwater, Surface Water, and Sediment Monitoring Plan, Subunit 2, Meade Street Operable Unit, University of California, Berkeley Richmond Field Station Richmond, California (Tasks 2b,3b,4a, and 5a of RWQCB Order No. 01-102), Blasland, Bouck & Lee, Inc., December 3, 2004.*

EXHIBIT G

PREVIOUS SITE DOCUMENTATION

1. University of California, Berkeley Richmond Field Station, Field Sampling and Analysis Plan and Tiered Risk Evaluation, URS Corp., December 10, 1999.
Sampling plan to identify potential sources, delineate the extent of COPCs, and perform a risk evaluation based on the results of the sampling program.

2. Conceptual Remediation and Risk Management Plan, Upland Portion of the Zeneca Inc. Richmond Facility. Richmond, California, LFR. November 15, 2000.
With respect to this Site, the plan describes the remedial measures that will be implemented to neutralize excavated cinders, installation of a biologically active permeable barrier (BAPB), and installation of a temporary cap to prevent direct exposure to affected soils placed on the former Zeneca site.

3. Treatability Study Report, Zeneca Inc. Richmond Facility, Richmond, California, LFR, December 8, 2000.
This report discusses the results of bench-scale experiments for (1) neutralizing the acid-generating cinders and the acid-affected soil and groundwater, and (2) ability of a Biologically Active Permeable Barrier (BAPB) to immobilize and reduce concentrations of dissolved inorganic contaminants.

4. Field Sampling and Analyses Results, University of California, Berkeley Richmond Field Station/Stege Marsh, URS Corp., December 2000.
Report discusses the results of the field sampling investigation and results of the risk screening evaluation. Includes identification of potential onsite and offsite sources of COPCs.

5. Conceptual Remediation and Risk Management Plan for Upland Portion of Subunit 2A, Meade Street Operable Unit, Richmond California, LFR December 17, 2001.
The Conceptual Remedial Plan includes the following components: removal of cinders from Subunit 2A (UC Richmond Field Station); treatment of those cinders on Subunit 1 (Former Zeneca site) and subsequent placement and capping of the treated cinders in a designated area on Subunit 1; extension of the biologically active permeable barrier onto Subunit 2A; preparation of a soil management plan; and preparation of a health and safety plan. The soil management plan would be developed to monitor the long-term effectiveness of the proposed remedial plan and to ensure that potential future risks at the former Zeneca site are managed appropriately.

6. Biological Assessment of Remediation. Meade Street Operable Unit, Richmond California LFR. December 20, 2001
The Biologic Assessment (BA) was prepared to facilitate review of potential impacts on threatened or endangered species (California red-legged frog, California clapper rail and salt marsh harvest mouse) pursuant to Section 7 of the Endangered Species Act, as amended, from the remediation of the Former Zeneca site and the UC Richmond Field Station Site. The BA was requested by the US Army Corps of Engineers (ACOE) pursuant to 33 CFR Section 325.2(a). Following completion of the BA, U.S. Fish and Wildlife initiated a Section 7 consultation with ACOE. The BA states that the remediation project would not cause any direct affects to listed species, but has the potential for non-lethal direct affects to the California clapper rail during remedy implementation. The BA also proposed measures to avoid or minimize those effects.

7. Remedial Design Details, Upland Remediation, Meade Street Operable Unit LFR, January 31, 2002.
Remedial design details for the former Zeneca Site (Subunit 1) and portions of the UC Richmond Field Station and East Bay Regional Park District properties (Subunit 2A). Design details relevant to this Site includes performance-based design drawings and technical specifications for the removal of cinders from Subunit 2A, treatment of those cinders on Subunit 1, and subsequent placement and capping of the treated cinders in designated areas on Subunit 1. Also includes the extension of the BAPB to be installed on Subunit 1 west onto Subunit 2A, and replacement of the sanitary and storm drain system.

8. Biologically Active Permeable Barrier (BAPB) Design and Treatability Study Report, Meade Street Operable Unit, Richmond, California, LFR September 26, 2002.
This report documents the final results of the biologically active permeable barrier (BAPB) tests which evaluated biologically mediated reduction of sulfate and dissolved metal removal in longer-term BAPB experiments (224 days). The report also contains BAPB design considerations based upon the treatability studies conducted.

9. Implementation Report for Upland Remediation, Subunit 1 and Subunit 2A, Meade Street Operable Unit, Richmond, California. LFR, October 3, 2003)
With respect to the Site, this report documents excavation of cinders and sediments from Subunit 2A; treatment of cinders with crushed limestone; excavation of a mixture of alum waste and cinders and conditioning with cement kiln dust; conditioning of West Stege Marsh cinder and/or mercury-affected sediments with cement; excavation and treatment of mercury-affected cinders

with powdered activated carbon and limestone; backfilling of certain excavated areas; placement of alum waste material, marsh sediments not contaminated with cinders but that did contain metals, and mercury-affected cinders onto Subunit 1. Installation of the biologically active permeable barrier was also completed on the upland portion of Subunit 2A.

10. Human Health and Ecological Tiered Risk Evaluation, University of California, Berkeley, Richmond Field Station/Stege Marsh, URS Corp., November 2001. The report presents the findings of a multi-tiered risk assessment that was conducted to evaluate the potential risks to human health and the environment posed by chemicals of potential concern. Also includes the development of site-specific target levels (SSTLs) for soil and groundwater.

11. Results of Additional Soil and Groundwater Investigations and Groundwater Monitoring Plan, Upland Portion of Subunit 2A, Richmond Field Station, Richmond, California (URS Corp. November 2001)
This report discusses for the Upland Portion of Subunit 2A, the field activities involving the collection of soil, sediment and groundwater samples; results of sampling activities; and conclusions and recommendations for additional characterization. The report also includes a ground water monitoring plan for the upland area of Subunit 2A.

12. Phase 1 Remedial Design Details – Addendum Subunit 2A Meade Street Operable unit Richmond Field Station, Richmond, California (Tasks 2D and 3D, RWQCB Order No. 01-102), URS Corp., August 16, 2002. Describes the results of additional investigations conducted within Subunit 2A, proposes remedial action objectives and excavation, treatment and disposal plan for cinders and sediment for Subunit 2A, and installation of a slurry wall along a portion of the boundary between Subunit 1 and 2.

13. Phase 1 Remedial Design Details – Addendum 2 Mercury Treatability Study Subunit 2A Meade Street Operable Unit Richmond Field Station, Richmond, California (Tasks 2D and 3D), URS Corp., November 6, 2002.
Describes supplemental information on the results of a treatability study performed for sediment and cinders containing elevated concentrations of mercury.

14. Conceptual Remedial Action Plan, Marsh Portion of Subunit 2B, Richmond Field Station, Richmond, California (Tasks 5B, RWQCB Order No. 01-102), URS Corp., December 17, 2002
Presents a conceptual remedial action plan for the cleanup of the portion of Western Stege Marsh located in Subunit 2B, Meade Street Operable Unit, and

includes the results of environmental field investigations, compilation of sampling data collected to date, and identification of areas requiring remedial action.

15. Remedial Action Plan, Phase 2 Subunits 2A and 2B, Marsh, Meade Street Operable Unit, University of California Berkeley, Richmond Field Station, Richmond, California (Task 5C, RWQCB Order No. 01-102), URS Corp, April 15, 2003.
Contains the remedial design details for the 2003 cleanup activities for the portion of Subunit 2A that was not completed as part of the Phase I work conducted in 2002, and portions of Subunit 2B.

16. Richmond Field Station Remediation Project Initial Study, California Environmental Quality Act, URS Corp., May 28, 2003
Notice of Intent to adopt a Mitigated Negative Declaration and Initial Study Checklist. The proposed project is to remediate known contaminated soil and sediments at the Richmond Field Station property and Western Stege Marsh.

17. Remedial Action Plan – Phase 3 Upland Portion of Subunit 2B Meade Street Operable Unit, University of California Berkeley, Richmond Field Station, Richmond, California (Task 4B and 4C, RWQCB Order No 01-102), BBL, July 13, 2004.
This report describes the Phase 3 remedial activities to be conducted in 2004. The areas include excavation of six upland areas, and additional excavation and grading in the Subunit 2 portion of West Stege Marsh.

18 Final Implementation Report, Phase 1 – Subunit 2A, Meade Street Operable Unit, University of California, Berkeley, Richmond Field Station, Richmond (Tasks 2E and 3E, RWQCB Order No. 01-102), URS Corporation, September 4, 2003.
Describes remedial action conducted in 2002. Areas include Area 1, eastern portion of Area 2 and Area 3.

19. Feral Animal Management Program, BBL, January 2004.
This plan details a program to address potential impacts of predation on the California clapper rail that may occur due to remediation and restoration of wetlands areas at the Site. The program is required as a condition of the Army Corps of Engineers Nation Wide Permit 38.

20 Invasive/Exotic Vegetation Management Plan, BBL, January 2004.
This plan presents an invasive/exotic vegetation management program that is required as a condition of the Army Corps of Engineers Nation Wide Permit 38.

21. Western Stege Marsh Restoration Monitoring Plan, BBL, August 2004.

The Western Stege Marsh Restoration Project (WSMRP) site consists of areas remediated during Phases 1 and 2 of the RFS remediation. The plan contains a monitoring plan to document post-remediation conditions.

22. Final Implementation Report Phase 2 – Subunit 2A & 2B, Meade Street Operable Unit, University of California, Berkeley, Richmond Field Station, Richmond (Tasks 2E, 3E, and 5D, RWQCB Order No. 01-102), URS Corp., December 3, 2004.
Describes remedial activities conducted in Area 4 and sanitary sewer line, miscellaneous Upland soil with cinders, western portions of area 2 (subunit 2A Marsh), area M3 of Subunit 2B Marsh located adjacent to Area 2, and area M1a of subunit 2B Marsh (PCB impacted area located at western storm drain outfall).

23 Draft Technical Report, Conceptual Remedial Action Plan – Addendum Marsh Portion of Subunit 2B, Richmond Field Station, University of California Berkeley, Richmond, California, BBL, June 3, 2005.
This report is an addendum to the Conceptual Remedial Action Plan, Marsh portion of Subunit 2B, Richmond Field Station, Richmond, California, URS 2002 and presents a conceptual approach to developing the Remedial Action Plan for remediation activities proposed in the western portion of Stege Marsh.