RO2799

PES Environmental, Inc.
Engineering & Environmental Services

May 20, 2005

241.055.01.005

Ms. Donna Drogos
Environmental Health Services
Alameda County
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Transmittal
Free-Phase Hydrocarbon Product Remediation Plan
EmeryBay Commercial Association
Christie Avenue and 64th Street
Emeryville, California

Dear Ms. Drogos:

In accordance with previous communications on the above referenced project, enclosed please find for your review a copy of the Free-Phase Hydrocarbon Product Remediation Plan. PES intends to commence implementation of the Remediation Plan within approximately 30 days from today's date and looks forward to any comments your office may have in the interim.

Sincerely,

PES ENVIRONMENTAL, INC.

Carl J. Michelsen, P.G., C.HG.
Principal Geochemist

cc: Ignacio Dayrit – City of Emeryville
Cathy Greenwold – EmeryBay Commercial Association

Enclosure: Free-Phase Hydrocarbon Product Remediation Plan, EmeryBay Commercial Association, dated March 7, 2005

24105501L006

PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared for:

EmeryBay Commercial Association
100 Bush Street, 26th Floor
San Francisco, California 94104
Attention: Ms. Cathy Greenwold

FREE-PHASE HYDROCARBON PRODUCT REMEDIATION PLAN EMERYBAY COMMERCIAL ASSOCIATION CHRISTIE AVENUE AND 64TH STREET EMERYVILLE, CALIFORNIA

MARCH 7, 2005

By:

Gerald Harris
Senior Geologist

William W. Mast, P.G.
Associate Engineer

241.055.01.005

1682 Novato Boulevard • Suite 100 • Novato, California 94947-7021 • Tel (415) 899-1600 • Fax (415) 899-1601

1.0 INTRODUCTION

This report addresses the site (the Site) in Emeryville, California (Plate 1), bounded by 64th Street to the south, 65th Street to the north, Christie Street to the west and a neighboring apartment building known as Bay Center Apartments-Phase II to the east (Plate 2).

The Site is developed with a condominium project as further described in that certain Amended and Restated Declaration of Covenants, Conditions and Restrictions Establishing a Plan of Condominium Ownership for EmeryBay, dated July 30, 1992 and recorded August 5, 1992 in the Official Records of Alameda County, California as Series No. 92-255244 (the "CC&Rs"). The condominium project includes, among other things, 424 residential units including a level for parking (currently owned by Bay Center Apartments Owner LLC) and ground level parking (currently owned by Bay Center Office LLC). We are informed that the land underlying the condominium project is deemed to be common property pursuant to the CC&Rs and is maintained by the EmeryBay Commercial Association (EBCA).

PES Environmental, Inc. (PES) has prepared this remediation system work plan (Plan) to address light, non-aqueous phase liquid (LNAPL) at the request of EBCA. The Plan details the proposed work needed to install a LNAPL remediation system to recover LNAPL that is present in subsurface soils beneath the northern portion of the Site.

2.0 SITE HISTORY

The Site is located on historic San Francisco Bay tidal flats (Plate 1). As Emeryville expanded, the tidal flats were filled, predominantly with construction-type debris (e.g. soil, bricks, debris, etc.). Prior to the construction of Bay Center Apartments, the Site was occupied by two trucking businesses (Earth Metrics, 1986). Environmental and geotechnical investigations dating back to approximately 1986 are available for the Site. The current layout of the Site is shown on Plate 2.

During the period of use as a trucking terminal, the subject property had underground storage tank (UST) fields in three areas. Tank Pit TC-1 contained four 12,000-gallon and two 10,000-gallon diesel tanks, and one 6,000-gallon gasoline tank. Tank Pit A and Tank Pit B each contained one 10,000-gallon diesel tank. The approximate locations of the UST fields are shown on Plate 2. The USTs were decommissioned and removed in about 1987 as part of the demolition and Site preparation for construction of Bay Center Apartments (Earth Metrics, 1986).

Data presented in historical environmental and geotechnical investigation reports, as well as PES' recent investigation findings, indicate that LNAPL is present at the Site in an area between Tank Pit TC-1 and recovery well RW-1 (PES, 2004b). A summary of the findings of the historical investigations is found in PES' memorandum dated April 5, 2004. Product level measurements and recovery quantities are summarized in Table A-1 in the Appendix. LNAPL

thicknesses of up to 0.87 feet have been measured in monitoring well RW-1 as recently as April 2004. Manual LNAPL recovery efforts at RW-1 have reduced the average LNAPL thicknesses measured in RW-1 by approximately 75 percent since that time.

Historical information shows that an LNAPL groundwater pump and treat (P&T) system was operated at the Site from July 1990 through March 1991. The system was installed and operated by Groundwater Technology, Inc. (PES, 2004b). During this period, approximately 1,000,000 gallons of groundwater was extracted from recovery well RW-1. The extracted water was treated and discharged under permit to the sanitary sewer system. The P&T system recovered approximately 100 gallons of LNAPL from RW-1 during its operation. According to information obtained from the available P&T system Operation and Maintenance (O&M) reports, the majority of the groundwater was extracted during the period from July to November 1990, at which time corrosion and other mechanical problems caused the system to fail. Apparently LNAPL recovery was continued at RW-1 until March 1991. After March 1991, product recovery was discontinued and the P&T system was removed. In addition to the mechanical problems with the pump, the lack of significant quantities of LNAPL recovery using this system may have contributed to the decision to discontinue product recovery system operation.

Beginning in April 2004, groundwater gauging and manual LNAPL recovery efforts from one recovery well (RW-1; Plate 2) were reestablished at the Site. Since that time, approximately 48 gallons of LNAPL have been recovered from recovery well RW-1 (PES, 2004c).

3.0 CONCEPTUAL DESIGN

The basic conceptual design for the LNAPL remediation system consists of installing two recovery trenches with collection sumps spaced uniformly within each trench. The trenches will be backfilled with high porosity, high permeability gravel to promote LNAPL migration from the surrounding native soils to collection sumps installed within the trench backfill. The project is designed so that manual LNAPL recovery from the sumps can begin immediately upon completion of the project; however, the design is flexible so that more aggressive (i.e., mechanical, automated) forms of LNAPL recovery can easily be added if needed. The project layout is shown on Plate 2 and design details are shown on Plate 3.

3.1 LNAPL Collection and Recovery Trench

Two LNAPL collection and recovery trenches will be installed northeast and east of the existing product recovery well (RW-1). The approximate locations of the trenches are shown on Plate 2. The actual locations will be determined in the field based upon the locations of underground utilities and building foundations, and the results of the engineering evaluation.

To initiate the construction of the trench, the concrete floor will be saw cut. Concrete debris from the sawcutting will be managed as uncontaminated construction debris.

The recovery trenches are anticipated to be approximately 30 to 40 feet long (Plate 2) and 18 to 24 inches wide, with an approximate depth of 11 to 14 feet below ground surface (bgs) (Plate 3; Detail 1-01). The trench depth is based upon the historical depths to groundwater and product in this area, and observations during temporary well installation. Actual construction depth will be determined in the field based upon field conditions and access considerations; however, the minimum depth of the trench is expected to be 11 feet bgs.

During construction of the trenches, access to the entire work area will be restricted with fencing and/or caution tape. Excavation spoils will contained (i.e., in drums, bins, or lined/covered stockpiles) and temporarily stored on the site pending offsite disposal. The excavation work will be managed to prevent liquid from wet excavation spoils from migrating beyond the immediate work area. At the end of each workday, the trench area will be secured with steel plates or fencing.

Temporary shoring may be required to maintain the sidewalls of the trench during construction.

3.2 Sump Installation and Trench Backfill

When the excavation of the trench (or trench segment) has been completed, multiple vertical LNAPL recovery sumps will be installed in the trench as shown in Plate 3. The final number of sumps will be determined in the field based upon field conditions and the final installed length of the trenches.

The sumps will be constructed of slotted Schedule 40 polyvinyl chloride (PVC) casing from the total depth of the trench to approximately 6 feet bgs (Plate 3). From 6 feet bgs to approximately 0.5 foot bgs, blank casing (i.e., no perforations) will be used. The sumps will be set and centered in the open trench. To reduce movement of native soil into the recovery trench, the sidewalls and bottom of the trench will be lined with geotextile fabric prior to backfilling the trench.

The trench will be backfilled around the sumps to 1 foot above the top of the screened interval with ½- to ¾-inch washed river gravel. Geotextile fabric will also be placed over the top of the gravel. The remaining trench void above the geotextile fabric will be backfilled to the base of the existing concrete with sand. Placement, compaction, and density requirements for the sand will be determined based upon the information obtained during excavation of the recovery trenches (Section 3.1).

3.3 Surface Completion

After installation of the sumps and backfilling of the trench, each installed sump will be completed at the surface with a flush-mounted, traffic-rated, locking steel vault, set in concrete (Plate 3, Detail 3-01). The sump casing in each vault will be trimmed to allow a minimum of 12 inches of clearance between the top of casing and the vault lid.

The open trench between vaults will be backfilled with concrete or neat cement to match the existing surface. As determined by the project engineer, the concrete between the vaults may require reinforcement steel bars to reduce differential settlement along the contact with the original surface.

3.4 Management of Construction Wastes

Construction wastes, such as excavation spoils, groundwater removed from the trench, decontamination water, and used personal protective equipment/clothing (PPE) will be managed, characterized and disposed appropriately.

Excavation spoils will be managed to prevent liquid from running onto the garage surface. At the completion of the project, the soil will be characterized and disposed of appropriately. Soil transfers from trenches to roll off bins or stockpiles will be performed in a manner designed to prevent spillage/leakage onto clean soils/surfaces. Temporary stockpile areas will be placed on plastic sheeting with berms at the margins. An estimated 15 to 25 cubic yards of excavated material will be generated during the trench installation.

To facilitate the construction of the recovery trench, it may be necessary to shore the excavation sidewalls and pump groundwater from the trench during excavation and backfilling. Groundwater pumped in this manner will be temporarily stored (i.e., in drums or tanks) at the Site, prior to characterization and offsite disposal.

PPE will be worn during the project per the guidelines of the site-specific HASP (refer to Section 4.1.1, below). Discarded PPE will be collected and disposed of as solid waste.

The following procedures will be used for waste characterization:

- Representative soil samples will be collected from the roll-off bins or stockpiles, and submitted to a California-certified analytical laboratory. Analyses will be performed on the samples based upon the known site contaminants (i.e., total petroleum hydrocarbons quantified as diesel, motor oil, and gasoline; and metals) and as required to obtain disposal facility approval to dispose of the soils;

- Decontamination and purge water will be stored on the Site in temporary holding tanks. As the tanks are filled, or at the completion of the project, the tank contents will be sampled and analyzed for site-specific contaminants and as required to obtain approval to treat or dispose of the water; and

- Disposable PPE will be placed in plastic bags and disposed of as solid waste.

3.5 Future Upgrade Considerations

The system design is intended to immediately increase the capacity for manual LNAPL recovery at the Site. The design of the LNAPL recovery and collection trench is intended to allow the possibility of future upgrades that may include:

- Installation of passive recovery equipment (e.g., floating sumps with hydrophobic screens) in the sumps; and/or
- Installation of skimming pumps or other active pumping devices in the sumps.

The latter would require additional construction work that would likely include constructing an equipment compound, additional trenching from the recovery trenches to the compound for transfer piping, and installing other equipment, as needed, to support electrical and/or automated LNAPL recovery equipment.

The system design can also be expanded/upgraded by installing additional LNAPL recovery and collection trenches. The need for additional trenches or more aggressive LNAPL recovery actions will be evaluated after approximately 3 months of routine manual operation of the product recovery trenches.

4.0 WORK PLAN

On the basis of the gauging data collected to-date, the inferred distribution of LNAPL at the Site (Plate 2 and Table A-1), and the physical access limitations presented by the existing building, a product collection and recovery trench system is expected to be the most viable available method to facilitate LNAPL recovery beyond the apparent radius of influence of the ongoing manual recovery efforts at RW-1.

The scope of work for completing the final design of the proposed system and proceeding with the installation and operation of the recovery system is detailed below.

4.1 Project Tasks

The following tasks are required to complete the final design of the system, construct the system, and begin routine operation and maintenance of the system.

- Update the existing project Health and Safety Plan to address work to be conducted under the scope of the Remediation Plan.
- Initiate permitting as needed to execute project;

- Purchase and install one passive skimming unit in existing recovery well RW-1 and evaluate the performance of the unit under site-specific conditions;
- Perform physical testing of the separate-phase product to evaluate the efficiency of product-only pumps to recover the product present at the Site;
- Obtain and review existing construction plans for the Site in order to develop a building foundation structure map, including the location of structural elements (e.g., footings);
- Obtain and review existing utility plans to determine the location of subsurface utilities. Perform an on-site utility survey to document utility locations;
- Conduct building structural and geotechnical engineering evaluation regarding the remediation design plan to verify that the subsurface element of the design plan does not interfere with the structural and seismic integrity of the building;
- Prepare final design plans, as needed, based upon above findings;
- Submit construction design plans to qualified construction contractors for construction bids. Obtain separate bids for remediation equipment;
- Obtain and review construction and equipment bids, provide recommendations for preferred construction contractor and equipment suppliers to EBCA; and
- Schedule and implement system construction.

These tasks are discussed below. A project timeline for completing the tasks is presented in Plate 4.

4.1.1 Update Existing HASP/Initiate Project Permitting

PES previously prepared a site-specific Health and Safety Plan (HASP) for investigation activities at the Site (PES, 2004a). PES will review the existing HASP and amend it, as appropriate, for activities related to construction of the recovery trench.

Inquiries to local, regional, and state utilities and regulatory agencies will be made to identify the permits needed to proceed with the installation of the LNAPL recovery system at the Site, and to operate the system once installed. Because the system will initially continue to be manually operated (Section 3.0), no discharge permits will be required unless the system is upgraded to active recovery. It is anticipated that permitting will be completed by the time that project bid packages are sent out to prospective contractors and vendors (Plate 4).

4.1.2 Passive Skimming Unit Field Test/Physical Testing of LNAPL

PES will purchase and install a passive skimming unit in recovery well RW-1 to assess whether passive skimming is a viable LNAPL recovery method at the Site. The unit can be installed immediately upon receipt from the supplier. The unit will be checked and emptied 24, 72, and 144 hours after installation to determine shorter and longer term recovery rates. PES should have sufficient information regarding the ability of the passive skimming unit to recovery LNAPL approximately one week after the initial installation of the unit.

Samples of LNAPL product will be obtained and sent to an active recovery pump vendor for bench-scale testing and/or to an analytical testing laboratory for physical parameter testing (specific gravity, viscosity, etc.) as needed to provide information required by pump vendors to specify the proper recovery pump for this project. The results of the bench-scale testing and/or the analytical testing should be available within three weeks.

4.1.3 Foundation and Utility Mapping

A detailed map of existing underground utilities is required prior to final design and construction of the subsurface LNAPL recovery system. PES will review existing as-built drawings of Bay Center Apartments to develop a preliminary subsurface map of the Site and assess the locations of foundations and other building structural components. In addition, a private utility locating service will be retained to identify and mark locatable underground utilities in the project area. This information will be used to prepare a final site map of underground utilities and structures. Prior to any field work associated with the installation of the underground portions of the LNAPL recovery system, PES will request a public utility locate for the proposed site work and will renew these locates as needed to comply with applicable requirements.

4.1.4 Engineering Evaluation/Final Design

The conceptual design of the project (Section 3.0) calls for the installation of two horizontal LNAPL collection trenches with one or more vertical recovery sumps installed along the length of each trench. Trench installation will require cutting the existing concrete floor of the open-air garage along the length of the trench. The trenches will be excavated to a depth of approximately 10 to 12 feet bgs.

To ensure that the integrity of the garage floor and building support columns are maintained during and after the installation of the LNAPL system, an engineering analysis of the floor and subgrade soils will be performed. Therefore, upon completion of the foundation structure and underground utility maps (Plate 4), PES will consult with a structural engineer and a geotechnical engineer to evaluate the design plan. The recommendations of the engineers will be incorporated into the final design plans and construction specifications for the recovery system. The engineering consult and final design tasks will be completed sequentially.

4.1.5 Bid Packages

Upon completion of the final design plans, PES will prepare and send out separate bid packages for construction of the system and procurement of equipment. Bids will be sent out to at least three qualified contractors and vendors.

4.1.6 Bid Review and Contractor/Vendor Selection

The bid packages of qualified contractors and vendors will be reviewed by PES and recommendations for award will be made to EBCA. PES will seek EBCA's approval prior to proceeding with the award of contracts.

4.1.7 System Construction

PES will award contracts for the system construction and equipment. PES will require that the contractor execute PES' standard subcontractor service agreement and schedule construction of the trenches. PES will concurrently procure the needed project equipment from the winning equipment vendor(s). PES is expecting system construction to begin within 15 days of award and has scheduled the project to be completed within 30 days of construction startup.

4.2 System Startup

The recovery of LNAPL from the newly installed sumps can begin immediately upon completion of construction. After construction of the recovery trenches is complete, manual product recovery efforts will be scheduled for the sumps and the skimmer installed in recovery well RW-1 on a weekly basis. As LNAPL is recovered from RW-1 and the newly installed sumps, the schedule will be adjusted as needed based upon LNAPL recovery rates, LNAPL recharge rates, and recovery cost per gallon of LNAPL recovered. PES will periodically review these parameters to determine if upgrades to the LNAPL recovery system are indicated.

4.3 Project Reporting Requirements

At the completion of the trench installation project, PES will prepare a technical memorandum with As-Built drawings. The technical memorandum will provide a summary of the project, a construction narrative, and a discussion of deviations from the original design plans, if any. The As-Built drawings will show:

- The location of identified underground utilities and other construction-related obstacles;
- The location of the trench and collection sumps;
- Construction details for the trench and collection sumps; and
- The results of any testing/monitoring performed during the course of the project.

5.0 SUMMARY

This LNAPL Remediation System Work Plan has been prepared to describe the design, installation, and operation of a LNAPL recovery system to be installed as shown on Plates 2 and 3. A project timeline detailing the schedule of tasks needed to complete the final design of the system, install it, and begin LNAPL recovery operations is shown on Plate 4. The goal of the project is recover LNAPL until stabilized LNAPL thicknesses in Site wells are reduced to acceptable regulatory levels and a No Further Action determination is obtained for LNAPL at the Site.

6.0 REFERENCES

Earth Metrics Inc., 1986. *Soils and Groundwater Contamination Characterization of Bay Center Site in Emeryville, California*. August 20.

PES Environmental, Inc. 2004a. Health and Safety Plan, Bay Center Apartments, Christie Street and 64th Street, Emeryville, California. February 29.

PES Environmental, Inc. 2004b. Status Report, Investigation of Subsurface Petroleum Hydrocarbon Residuals, Bay Center Apartments, Christie Avenue and 64th Street, Emeryville, California. April 5.

PES Environmental, Inc. 2004c. Free-phase Hydrocarbon Product Mitigation Plan, Bay Center Apartments Phase I, Christie Street and 64th Street, Emeryville, California (Draft). April 30.

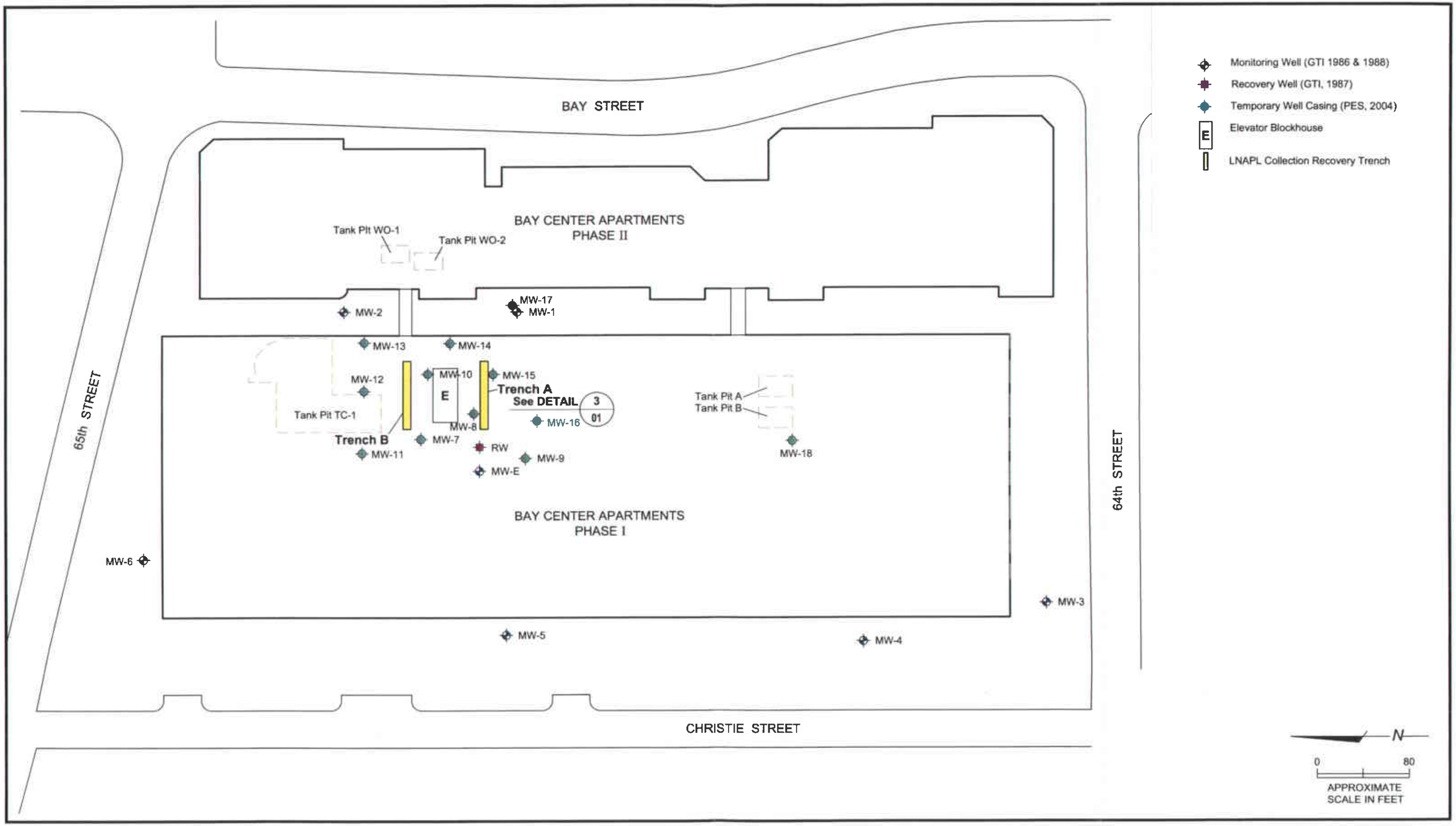
U.S.G.S. Topo Map - Oakland West, California, 7.5-minute quadrangle. Map version1997; current as of 1993

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Remediation Plan
Bay Center Apartments
Emeryville, California

PLATE
1

241.055.01.004	24105501004_1104-01	*WWM*	3/05
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Plan Map
Remediation Plan
Bay Center Apartments
Emeryville, California

PLATE
2

241.055.01.004	24105501004_1104	WWM	3/05
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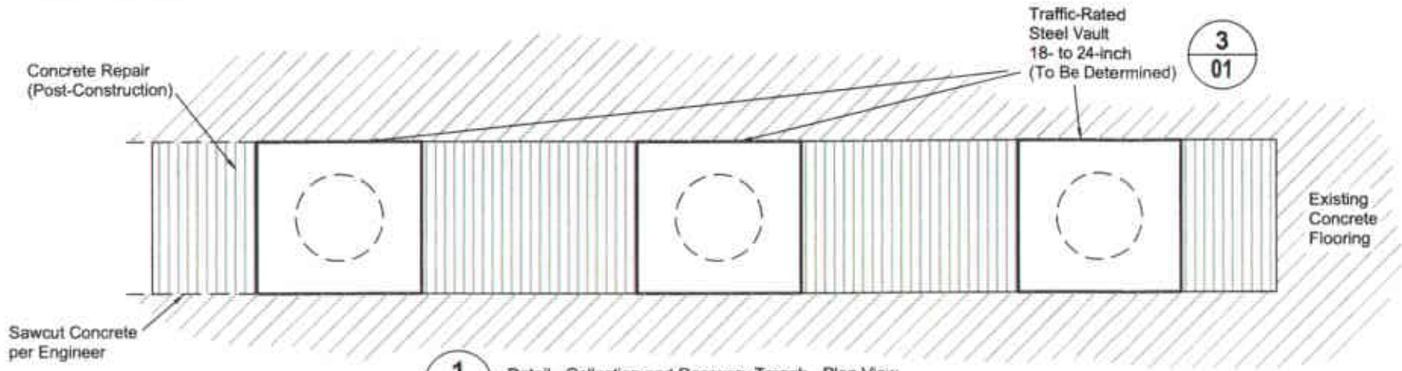
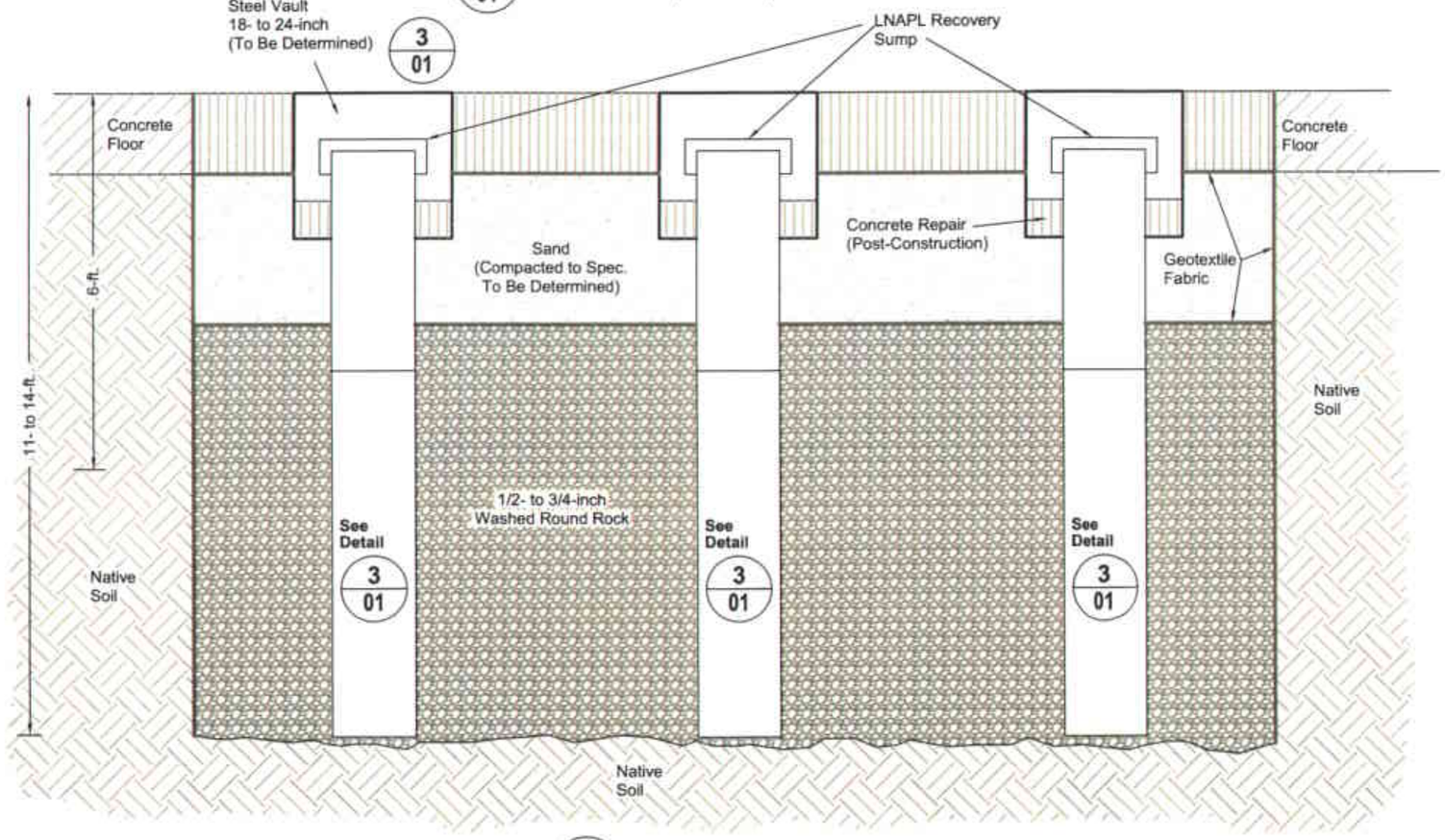
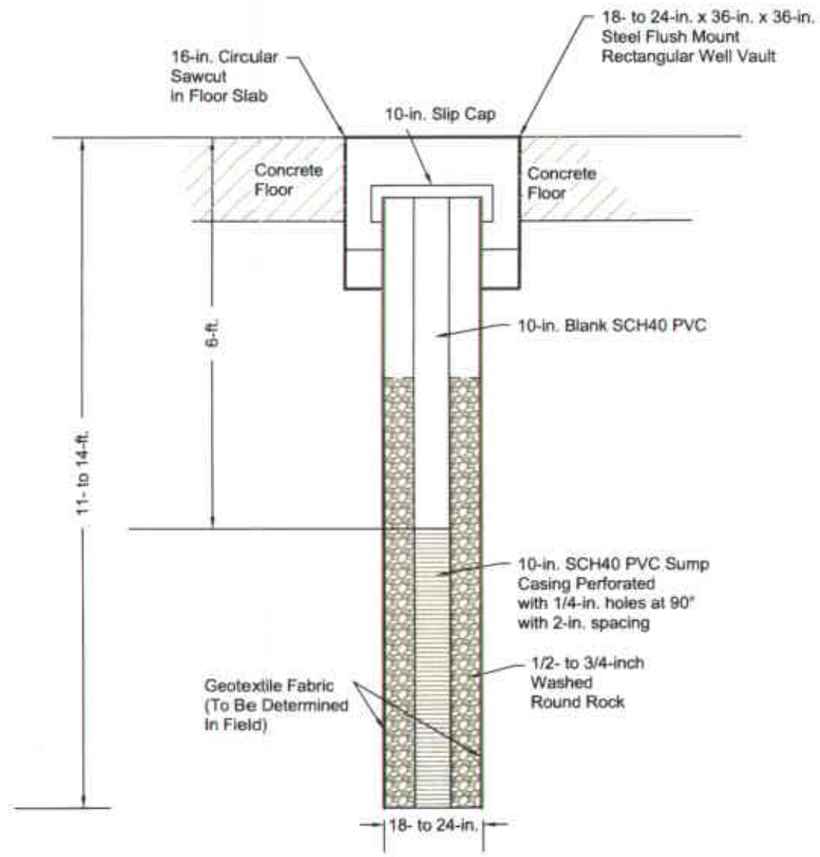


1
01
Detail - Collection and Recovery Trench - Plan View
(Not to Scale)



2
01
Detail - Collection Trench
(Not to Scale)



3
01
Detail - Recovery Sump
(Not to Scale)

PES Environmental, Inc.
Engineering & Environmental Services

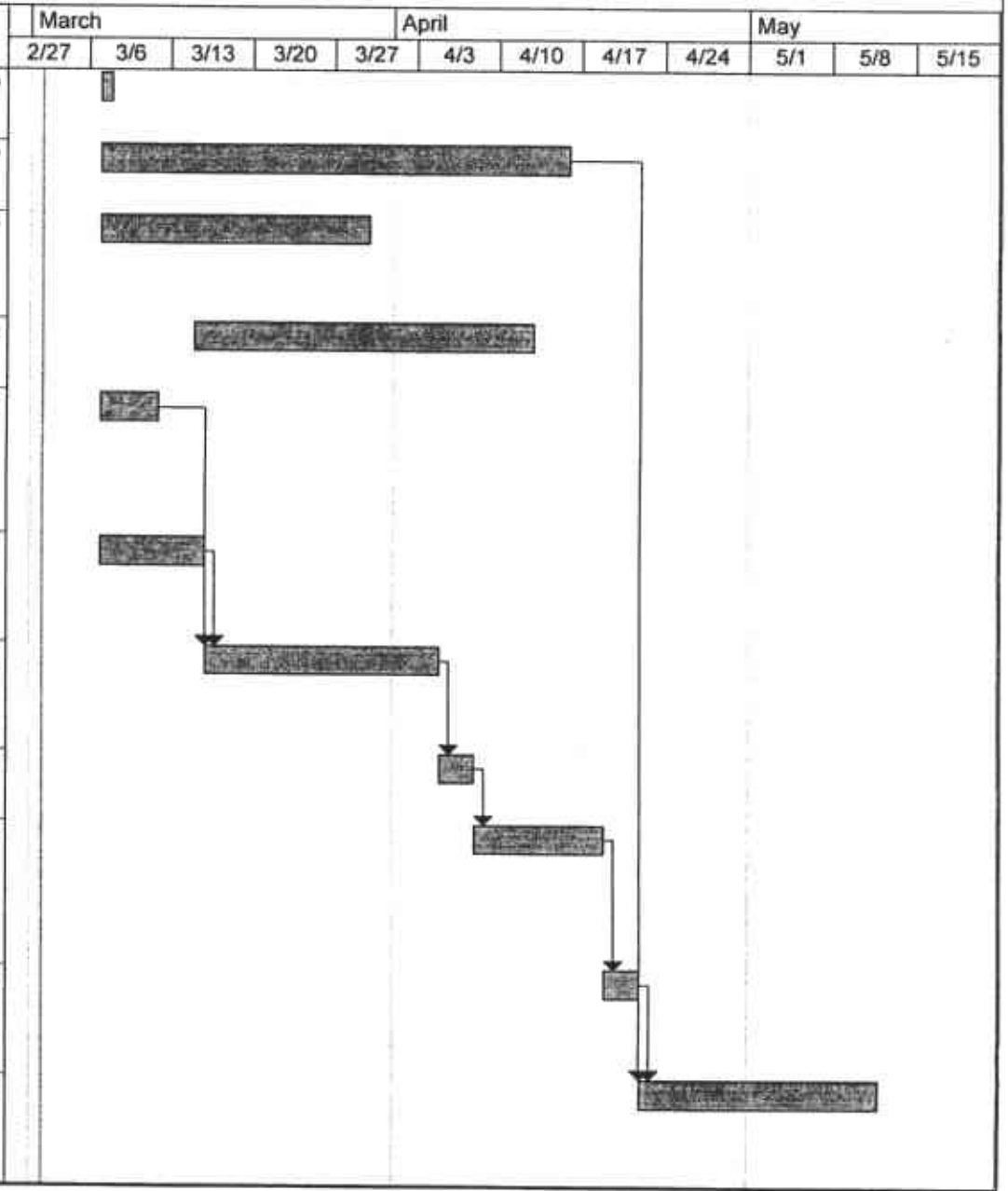
Details
Remediation Plan
Bay Center Apartments
Emeryville, California

PLATE
3

241.055.01.004	24105501004_1104	WWM	3/05
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

Plate 4
Project Timeline
Remediation Plan
Bay Center Apartments
Emeryville, California

ID	Task Name	Duration	Start	Finish
1	Update HASP	1 day	Mon 3/7/05	Mon 3/7/05
2	Project Permitting (Construction Permits)	30 days	Mon 3/7/05	Fri 4/15/05
3	Purchase and install passive skimming unit in RW-01	17 days	Mon 3/7/05	Tue 3/29/05
4	LNAPL Physical Testing	21 days	Tue 3/15/05	Tue 4/12/05
5	Building Construction Plan Review/ Develop a Building Foundation Structure Map	5 days	Mon 3/7/05	Fri 3/11/05
6	Utility Plan Review/ Develop Site Utility Map	7 days	Mon 3/7/05	Tue 3/15/05
7	Consult With Building Structural and Geotechnical Engineers	14 days	Wed 3/16/05	Mon 4/4/05
8	Refine Design Plan	3 days	Tue 4/5/05	Thu 4/7/05
9	Submit Construction Design Plans For Bids/ Obtain Separate Bids for Remediation Equipment	7 days	Fri 4/8/05	Mon 4/18/05
10	Review Bids, Provide Recommendations to JS Bay Center Associates	3 days	Tue 4/19/05	Thu 4/21/05
11	Schedule and Execute System Construction	14 days	Fri 4/22/05	Wed 5/11/05



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Wed 3/2/05

APPENDIX

PRODUCT MEASUREMENT AND RECOVERY

Table A-1
Product Measurement and Recovery
Bay Center Apartments Phase I
Emeryville, California

Date	Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Volume of Product Recovered (gal)	Observations
4/5/2004	MW-10	8.45	9.95	1.5	1	SPH
5/20/2004	MW-10	7.62	8.65	1.03		
8/20/2004	MW-10	8.45	8.70	0.25		
9/22/2004	MW-10	8.39	8.61	0.22		SPH
5/20/2004	MW-13	8.50	NA	NA		SPH
8/20/2004	MW-13	8.20	16.17	7.97		SPH
9/22/2004	MW-13	8.05	16.42	8.37		SPH
5/20/2004	MW-14		8.41	NA		
8/20/2004	MW-14		8.26	NA		SHEEN
9/22/2004	MW-14	8.19	8.21	0.02		SPH
5/20/2004	MW-15		8.45	NA		ODOR
8/20/2004	MW-15		8.25	NA		ODOR
9/22/2004	MW-15	8.16	8.18	0.02		SPH
4/5/2004	MW-8	8.15	10.75	2.6	1	SPH
5/20/2004	MW-8	8.31	10.72	2.41		
8/20/2004	MW-8	8.03	10.91	2.88		
9/22/2004	MW-8	8.01	10.61	2.6		SPH
4/5/2004	RW-1	9.25	10.12	0.87	2	SPH
4/12/2004	RW-1	9.16	9.65	0.49	0.9	YES
4/14/2004	RW-1	9.22	9.71	0.49	1.75	SPH
4/16/2004	RW-1	9.20	10.00	0.8	1.5	SPH
4/16/2004	RW-1	9.28	9.89	0.61		SPH
4/21/2004	RW-1	9.26	9.84	0.58	5	SPH
4/21/2004	RW-1	9.48	9.78	0.3		SPH
4/21/2004	RW-1	9.40	9.80	0.4		SPH
4/21/2004	RW-1	9.38	9.81	0.43		SPH
4/23/2004	RW-1	9.32	9.97	0.65	3.5	SPH
4/23/2004	RW-1	9.60	9.90	0.3		SPH
4/26/2004	RW-1	9.28	9.57	0.29	4	SPH
4/26/2004	RW-1	9.28	9.40	0.12		SPH
4/28/2004	RW-1	9.28	9.57	0.29	0.4	SPH
4/28/2004	RW-1	9.28	9.40	0.12		SPH
4/30/2004	RW-1	9.31	9.63	0.32	0.7	SPH
4/30/2004	RW-1	9.43	9.52	0.09		SPH
5/3/2004	RW-1	9.30	9.45	0.15	4	SPH
5/5/2004	RW-1	9.28	9.43	0.15		SPH
5/5/2004	RW-1	9.33	9.34	0.01	2.5	SPH

Table A-1
Product Measurement and Recovery
Bay Center Apartments Phase I
Emeryville, California

Date	Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Volume of Product Recovered (gal)	Observations
5/7/2004	RW-1	9.75	9.97	0.22	2	SPH
5/10/2004	RW-1	9.31	9.43	0.12	3.5	SPH
5/10/2004	RW-1	9.38	9.39	0.01		SPH
5/14/2004	RW-1	9.31	9.52	0.21	4	SPH
5/14/2004	RW-1	9.80	9.81	0.01		SPH
5/17/2004	RW-1	9.34	9.65	0.31	2.5	SPH
5/17/2004	RW-1	9.47	9.50	0.03		SPH
5/20/2004	RW-1	9.37	9.43	0.06	2	SPH
5/20/2004	RW-1	9.39	9.39	NA		SPH
5/24/2004	RW-1	9.38	9.48	0.1	1.5	SPH
5/28/2004	RW-1	9.50	9.60	0.1	0.5	SPH
8/20/2004	RW-1	9.42	9.60	0.18		SPH
9/22/2004	RW-1	9.50	9.60	0.1	0.32	SPH
9/30/2004	RW-1	9.35	9.48	0.13	0.42	SPH
10/7/2004	RW-1	9.48	9.65	0.17	0.69	SPH
10/15/2004	RW-1	9.45	9.65	0.2	1.5	SPH
10/19/2004	RW-1	9.33	9.40	0.07	0.42	SPH
Estimated Total Product Recovered					47.6	

DISTRIBUTION

FREE-PHASE
HYDROCARBON PRODUCT REMEDIATION PLAN
EMERYBAY COMMERCIAL ASSOCIATION
CHRISTIE AVENUE AND 64TH STREET
EMERYVILLE, CALIFORNIA

MARCH 7, 2005

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QUALITY CONTROL REVIEWER

Robert S. Creps, P.E.
Principal Engineer