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October26 1999

Ms. Evelyn Johnson
Project Manager
Fuitvale Development Corporation, Inc.
1900 Fruitvale Avenue, Suite 2A
Oakland, CA 94601

Subject: Site Mitigation and Soil Removal Work Plan
Union Pacific Railroad Site
Western Edge of 33rd Avenue to the Western Edge of 37th Avenue, Oakland, California

Dear Evelyn:

Per your request, Applied Remedial Services, Inc. ("ARS") is pleased to present this proposed Site Mitigation and Soil Removal Work Plan ("WP") for the Union Pacific Railroad Site, between the Western edge of 33rd Avenue to the Western Edge of 37th Avenue, Oakland, California. The proposed activities are based on information provided to ARS by FDC and current Site conditions and use.

It is ARS' understanding that all soils scheduled for removal from the subject Site are based on construction and grading requirements. Accordingly, as detailed in the attached WP, the Site conditions will be assessed subsequent to completion of removal activities, and a health risk assessment and long term management plan will be formulated to address any potentially remaining contaminants.

Do not hesitate to call should you require any further assistance.

Sincerely,

Michael Kara

Michael F. Kara
Manager, Remedial Services

Site Mitigation and Soil Removal Work Plan

Union Pacific Railroad Site
East Side of Fruitvale Avenue to West Side of 33rd Avenue
Oakland, California

Prepared for:
FRUITVALE DEVELOPMENT CORPORATION, INC.
1900 Fruitvale Avenue, Suite 2A
Oakland, CA 94601

Prepared by:
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October 26, 1999

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Certification Statement

We, Michael F. Kara, Elias A. Rashmawi and Samir K. Abudayeh, P.E, certify under penalty of law that this document entitled "Site Mitigation and Soil Removal Work Plan," prepared for the Union Pacific Railroad Site, between the Western Edge of 33rd Avenue to the Western Edge of 37th Avenue, Oakland, California, dated October 26, 1999, was personally researched and prepared in accordance with a system designed to assure that the information submitted was properly gathered and evaluated.

This information and analysis are, to the best of our knowledge and belief, true, accurate, complete and satisfy the scope of work prescribed by the Client. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Elias A. Rashmawi, REA (No. 07321)
Project Manager & Principal Hydrogeologist

10/26/99
Date

Michael F. Kara, REA (No. 07137)
Manager, Remedial Services

10/27/99
Date

Samir K. Abudayeh, P.E. (No. 36032)
Principal Engineer

10/27/99
Date

SITE MITIGATION AND SOIL REMOVAL WORK PLAN

Union Pacific Railroad
Between Western Edge of 33rd Avenue to the Western Edge of 37th Avenue, Oakland, California
Oakland, California

1.0 INTRODUCTION

At the request of the Fruitvale Development Corporation, Inc. ("FDC") Applied Remedial Services, Inc. ("ARS") has prepared this Work Plan to address environmental concerns during Site mitigation and soil removal activities that are scheduled for implementation at the Union Pacific (UP) Railroad tracks, between the Western Edge of 33rd Avenue to the Western Edge of 37th Avenue, Oakland, California (the "Site", Figure 1).

FDC plans to purchase the subject property to develop the Site as part of an overall development of the general area, which will involve the construction of a parking garage for BART patrons, a senior center, a housing development, a health care facility, and a child care facility. Construction activities associated with Site development may involve the handling of surficial soils that may potentially be impacted with hazardous substances.

2.0 SITE BACKGROUND

The subject Site is under consideration for purchase as part of the Fruitvale Transit Village development. FDC plans to purchase the Site to be provided to BART as part of the Fruitvale BART Station in exchange for BART property that will be transferred to FDC. According to FDC, the entire UP track property constitutes approximately 67,000 square feet extending from Fruitvale Avenue to 37th Avenue, excluding the UP property between Derby and Fruitvale Avenues. The subject Site, therefore, is limited to a portion of the UP property between the Western edge of 33rd Avenue to the Western Edge of 37th Avenue, Oakland, California.

Construction activities associated with Site development will involve handling of soil that may be affected with hazardous substances as a result of past activities. Field construction activities have the potential to expose Site workers and surrounding community to chemicals in the subsurface. Available records indicate that the Site has been used mainly as a Union Pacific railroad track. Following a period of inactivity, UP recently removed the tracks leaving the Site vacant.

3.0 INVESTIGATIVE ACTIVITIES PREVIOUSLY COMPLETED BY ARS

ARS' activities detailed in this section were presented in a report dated July 8, 1999, and entitled "Limited Phase II Environmental Site Assessment Report". The completed scope of work was conducted in accordance with ARS' final proposal titled "Final Proposal for a Limited Phase II Environmental Site Assessment," dated April 27, 1999. In accordance with ARS' proposal, an agreement was executed between ARS and FDC that included a Permit to Enter the Site by Union Pacific. All field activities that are described in this report were completed following a transmittal of "intent to enter" the Site and conduct the approved activities. The subject "intent to enter" was communicated to UP by ARS and FDC. Site

Field activities were conducted by ARS on June 24, 1999. The site, as investigated by ARS, was at that time defined to be located between Derby Avenue and 37th Avenue.

In accordance with FDC's request, ARS provided the following investigative activities:

- Completion of a detailed records and documents review for the subject Site and surrounding properties
- Development and implementation of a Site-specific Health and Safety Plan
- Completion of an underground structures and utilities survey of accessible areas under investigation
- Advancement of soil test pits and collection of soil samples for laboratory analyses

The completed scope of work includes the following specific tasks:

Task 1: Development of a Site Health and Safety Plan
Task 2 Geophysical and Underground Utilities Survey
Task 3: Characterization of Subsurface Conditions
Task 4: Laboratory Analyses
Task 5: Final Report Preparation

These tasks are described in more details below.

3.1 Development and Implementation of a Site Health and Safety Plan

In accordance with Occupational Safety and Health Administration (OSHA) guidelines, the ARS Health and Safety Director developed a Site-specific HSP that included an analysis of hazards that may be encountered by on-site workers conducting the proposed work and precautions to mitigate the identified hazards. The provisions of the subject HSP were presented to on-site workers and implemented throughout the duration of the project. Field activities were completed without any incidents.

3.2 Geophysical and Underground Utilities Survey

An underground structures and utilities survey was performed utilizing a variety of non-intrusive magnetometer and electromagnetic instruments. The survey was conducted by downUnder Technologies, a California licensed surveyor, under the direct supervision of ARS. In addition to avoiding subsurface damage to utility lines, the magnetometer survey was utilized to investigate the potential presence of underground storage tanks (UST), vaults, and metallic containers such as buried drums or product delivery lines in the immediate area of the test pits to be excavated.

The field surveys completed by downUnder Technologies included a utility survey and a magnetometer and an electromagnetic survey. An instrument that consists of a signal transmitter and a receiver was used in conducting the utility survey. The transmitter generates a radio frequency (signals) onto a conductive (metallic) pipe or cable by connecting the transmitter directly to the exposed utility or by induction. Once the signal is applied to the desired utility it is located with a hand held receiver tuned into the frequency of the transmitter.

downUnder also performed a magnetometer survey of the subsurface. This survey entailed the use of a metal detector that, depending on ground composition and object size, is capable of finding subsurface anomalies to a depth of several feet below ground surface (bgs). A radiodetection RD300 Trufflehound was utilized to locate small metal objects.

3.3 Characterization of Subsurface Conditions

3.3.1 General Geologic and Lithologic Formation of Surficial Soils

The area of the Site is immediately adjacent to the Fruitvale BART Station ("BART Station") and has a similar geologic and lithologic formation.

General area-wide geotechnical information available for the BART station indicates that the overall surficial soils at the Site are Younger Alluvial Fan Deposits. The Aerial and Engineering Geology Map of the Oakland East Quadrangle by Radbruch indicated that the Site is underlain by undivided Quaternary deposit that is comprised of alluvial soils consisting of interfingered lenses of clayey gravel, sandy silty clay and sand/clay/silt mixtures.

Site-specific information obtained during geotechnical investigations at the BART Station indicate that the native soils at the Site are mostly alluvial deposits of alternating layers of clays and sands. The surficial native soil layer in the upper 1 ½ to 5 feet generally consist of clay of with high plasticity, i.e. fat clay. This gray/black fat clay is mostly stiff to very stiff in consistency. The surficial fat clay layer is underlain by alternating layers of lean clay (i.e. clays with low to medium plasticities) and sand/gravel. These layers extend to the formerly investigated depth at the BART Station of approximately 50 bgs. The lean clay layers encountered are generally stiff to very stiff. These layers contain significant amount of sand and gravel at many locations. Their contact with sand/gravel layers appear to be gradational.

The following is a lithologic description of borings that were advanced within the BART Station in the immediate vicinity of the UP tracks:

need to see logs

2"-3.5'	Dark gray FAT Clay, stiff, moist
3.5'-9'	Yellow with rust mottling SANDY LEAN CLAY WITH GRAVEL, hard, moist, gravel up to 2", subangular to angular
9'-16.5'	Yellow/brown, LEAN CLAY with pockets of sand/gravel, very stiff, moist, gravel up to 1", subangular
16.5'-24'	Brown/gray LEAN CLAY with pockets of medium to coarse sand/gravel, gravel up to ½", moist to wet, petroleum odors were detected
24'-29'	Yellow/brown SANDY LEAN CLAY, stiff wet
30'	Groundwater observed at 30' below ground water surface

In summary, the type of surficial soils that were encountered throughout the former UP railroad tracks are mostly dense expansive clays with excessively low hydraulic conductivities due to their fine particle distribution. The fine particle size and high organic content of the clay-silt composition of expansive clays generally hold migrating water in negative capillary pressure thus significantly retarding any potential transport. Surface infiltration and contaminant transport into deeper soils past the existing clay layer are expected to be minimal at best.

This is particularly true since the potential presence of on-site contaminants is limited mostly to heavy metals constituents that are highly insoluble in water at normal conditions and are not likely to migrate within the process of mass transport.

3.3.2 Overview of Field Investigative Activities

As a result of previous Site use as a railroad track, surface soil at the Site may have undergone extensive grading (cut and fill) as well as exposure to surficial contaminants resulting from the historical activities associated with railroad tracks. Shallow surficial soils (between 1 - 2 feet bgs) were expected to consist of fill material that may have been imported from off-site locations.

Accordingly, ARS excavated 21 Test Pits ("TP") to a depth of 2 to 3 feet below ground surface utilizing conventional construction equipment in the form of a Case 580 backhoe. Test pits excavating activities were conducted by SEMCO/HK2, a State-licensed general engineering contractor with Hazardous Materials Certification and earth-work license. All field activities were completed under the immediate supervision of ARS field engineers in accordance with ARS' standard operating procedure, terms of the HSP, and the scope of work prescribed by the Client.

The TPs were excavated along the extent of the area of the subject Site in a manner that would reflect Site conditions as well as particular areas of interest within the Site. The depth of 2 to 3 feet was selected for investigation because the proposed development of the parking lot area would involve grading activities that may infringe upon the upper 2 feet of soil at the Site.

One to two composite soil samples were collected from each TP. The samples were collected in accordance with applicable protocols and in accordance with ARS' Standard Operating Procedures) SOP under a strict chain of custody. The samples were subsequently delivered to State certified laboratories for analysis. Several samples were obtained from the clay layer that underlies the loose fill material that appears to have been emplaced in the past. These clay samples were identified by ARS with a "B" notation (Pit 2-B, Pit 3-B, and Pit 4-B).

Soil samples obtained for organic analysis were collected in brass tubes that were sealed with pre-cut Teflon tape, capped with plastic end caps, and sealed with inert tape at each end. All soil samples were placed on dry ice and sent to a state certified laboratory for analysis. Samples obtained for heavy metal analysis only were collected in plastic zip-lock bags, clearly identified and placed in a chilled cooler pending delivery to a State-certified laboratory.

As the soil samples were collected, ARS field engineers documented the presence of soil conditions and signs of visible or odorous potential contamination. The samples were also screened in-situ for volatile organic compound contamination using a set of Organic Vapor Analyzer (OVA) instruments equipped with a Photo Ionization Detector and a Flame Ionization Detector. TP Locations are presented on Figure 2.

The soil samples were analyzed for selected chemicals in order to provide a better understanding of chemical constituents that may be present and quantify potential costs associated with transport and disposal of the exported fill in accordance with Federal, State, local regulations and the requirements of landfill disposal facilities. Soil samples were also obtained at depths where a change in lithology was observed, or when field observations and/or field detectors indicated the potential for environmental concerns. All pits were backfilled and appropriately compacted following termination of sample collection.

3.4 Laboratory Analytical Results

As previously indicated, the collected samples were analyzed at off-site State-certified analytical laboratories for a variety of suspected contaminants. The analytical methods utilized were as follows:

1. Total Extractable Petroleum Hydrocarbon via EPA method 8015 modified – for identification of turpentine, paint thinner, mineral spirit, diesel, motor oil, and kerosene.
2. Title 22 CAM 17 heavy metals via EPA Method 6010/7470/7471
3. Herbicides via EPA method 8150
4. Semi volatile organic compounds via EPA method 8270A
5. Selective heavy metal analysis (lead and arsenic) via EPA Method 6010/7420
6. CAM 17 heavy metal analysis via EPA Method 6010/7420 — dup.
7. CAL WET Extraction on lead and arsenic via EPA Method 6010/7420 ← not representative

The following tables present the respective laboratory analytical findings:

Table 1

CONCENTRATIONS OF LEAD & ARSENIC IN SOIL SAMPLES
(Concentrations expressed in mg/Kg)

Sample ID	Lead	Arsenic
Pit 1	41	50
Pit 2-A	34	54
Pit 2-B	18	12
Pit 3-A	341	194
Pit 3-B	19	8.9
Pit 4-A	111	240
Pit 4-B	15	115
Pit 5	687	127
Pit 6	66	57
Pit 7	1,495	198
Pit 8	144	100
Pit 9	41	199
Pit 10	66	70
Pit 11	43	28
Pit 12	145	195
Pit 13	105	167
Pit 14	59	57
Pit 15	339	127
Pit 16	250	12
Pit 17&18	980	71
Pit 19	630	NA
Pit 21	443	<2.5
Sample Size	**22**	**21**
Maximum Value	**1,495**	**240**
Mean	**276**	**99**
Standard Deviation	**376**	**75**
95% Confidence Interval	**157**	**32**
95% UCL	**433**	**131**

North of Fruitvale

NA: *Not analyzed*

TABLE 2
SOLUBLE LEAD & ARSENIC CONCENTRATIONS IN SOIL SAMPLES
(Concentrations expressed in mg/L)

Composite Sample	Lead	Arsenic
Pit 3-A,5,15,21	24	NA
Pit 10,12,13,14	6.8	NA
Pit 3-A,4-A,5,7,9,17&18	NA	71

NA: *Not analyzed*

TABLE 3
CONCENTRATION OF HEAVY METALS IN SOIL SAMPLES
(Concentrations expressed in mg/Kg)

Analyte	Pit-4A	Pit Composite (6,7,12,13,14)	Pit-16	Pit Composite (3-A,4-A,5,7,9,17,18)	Average Analyte Concentration[1]	USGS Survey[4] Background Levels
Antimony	ND<2.0	ND<2.0	ND<2.0	19	5.5[2]	<2.0[5]
Arsenic	170	95	12	210	**122**[3]	9
Barium	110	180	250	230	193	700
Beryllium	ND	ND	ND	ND	ND	<1
Cadmium	ND<0.5	ND<0.5	0.59	0.65	0.44	–[6]
Chromium	49	56	42	65	53	125
Cobalt	9.4	9.5	9.6	13	10.4	18
Copper	30	41	63	140	68.5	62
Lead	40	78	250	450	**205**[3]	46
Molybdenum	ND	ND	ND	ND	ND	<3
Nickel	65	65	71	80	70	43
Selenium	ND<2.0	ND<2.0	ND<2.0	4.6	1.9	<0.5
Silver	ND	ND	ND	ND	ND	–
Thallium	ND	ND	ND	ND	ND	–
Vanadium	28	31	33	ND<1.0	23.1	168
Zinc	59	89	610	1,000	440[3]	185
Mercury	1.4	0.17	6.5	8.0	4[3]	.18

[1] Non Detect values were counted as one half of the method detection limit for calculation of Average Analyte Concentration.
[2] Level indicated is slightly higher than background concentrations.
[3] Level indicated is more elevated than background concentrations.
[4] Average concentrations for the San Francisco Bay Area (measured in mg/Kg) of the respective analytes calculated by ARS from data presented in the United States Geological Survey Professional Paper 1270, entitled "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States."
[5] Less than the indicated value.
[6] Data not available.

Table 4

TOTAL EXTRACTABLE PETROLEUM HYDROCARBON LEVELS IN SOIL SAMPLES
(Concentrations expressed in mg/Kg)

Sample ID	TEPH *(Kerosene)*	TEPH *(Motor Oil)*	TEPH *(Diesel)*	TEPH *(Paint Thinner)*	TEPH *(Mineral Spirits)*
Pit-4A	ND	ND	11	ND	ND
Pit-16	ND	22,000	6,300	ND	ND
Pit-19	ND	6,000	2,800	ND	ND

Total Extractable Petroleum Hydrocarbons (TEPH) presented in Table 4 were analyzed via 8015M preparation Method 3550/8015M. Phenols were analyzed via GC/MS 8270A and were not detected above their respective detection limits.

3.5 LSI Discussion

Based on ARS' Site inspection, investigation, and laboratory analytical results, the following issues were identified about which conclusions can be reached with the limited existing information and for which further more definitive investigative testing will be required at the time of field remedial activities. The issues of concern are as follows:

1. Chemical constituent analytical data of surficial soil samples collected at the Site indicate the presence of elevated levels of lead and arsenic. The average lead and arsenic levels detected were 276 mg/Kg and 99 mg/Kg, respectively (Table 1, Figure 3 and 4). The highest levels of lead and arsenic detected during this investigation were 1,495 mg/Kg and 240 mg/Kg respectively. The primary source of lead in this surficial soil may be from urban runoff due to deposition of lead onto surface of the soil from lead added in the past to gasoline as a lubricant, and/or from contaminants present within the imported fill material previously placed at the railroad track beneath the ballast. The primary source for arsenic in the surficial soil is likely due to previous application of sodium arsenate as a sterilant herbicide or sodium arsenite for soil treatment against termites. The application of arsenicals to soil have been superceded because of the hazards to man and animals.

2. Laboratory analytical results of soluble lead (CAL-Wet Extraction) from composite samples Pit 3A-5-15-21 and Pit 10-12-13-14 indicated the presence of lead at 21 mg/L and 6.8 mg/L respectively. Laboratory analytical results of soluble arsenic (CAL-Wet Extraction) from composite sample Pit 3-A,4-A,5,7,9,17&18 indicated the presence of arsenic at 71 mg/L. The California Code of Regulations, Title 26 Division 22, Section 66261.24 "Characteristics of Toxicity" requires that soil containing concentrations of these constituents at or above their respective STLC limits of 5 mg/l must be managed as hazardous waste if it were disturbed, excavated or moved during Site development activities. Accordingly, upon excavation of the soil in the subject Site for grading purposes, it would be necessary to appropriately characterize all soils scheduled for off-site disposal for the purposes of identifying and segregating soils into appropriate groups in preparation for off-site transport and disposal at permitted Class I Hazardous Waste or Modified Class II non-hazardous landfill facilities.

3. The northwestern corner of Hansen's Windows, located at 3600 San Leandro Blvd., appears to be affected with elevated levels of petroleum hydrocarbon related compounds and heavy metal contaminants. Visible

discoloration and petroleum hydrocarbon odors were noted in Pits 16, 17, 18, and 19. Clear indications of improper discharge onto the ground surface exist at this location (Figure 2). It is noteworthy that the discoloration and odors appeared to be limited to the upper 2 feet below the ground surface. The affected area may extend 50 feet from the corner of Hansen's building parallel to the railroad tracks and 30 feet parallel to 36th Avenue; this area comprises approximately 1,500 square feet. Although ARS was able to identify the northern, southern, and eastern boundary of the affected area, the western boundary that extends beneath Hansen's building in a direction towards San Leandro Blvd. could not be investigated due to the presence of the building. Soils within this area should be removed, isolated, appropriately characterized and loaded onto trucks for off-site disposal at an appropriate disposal facility. Confirmatory clearance samples should be collected from the sidewalls and floor of the excavated area in order to document that removal activities were thorough and complete.

4. The area extending between 35th Ave. and 37th Ave. appears to contain a preponderance of a small variety of containerized chemicals (paints, oils & grease). Various other types of discarded debris were encountered in quantities that appeared to be greater than the remaining portions of the tracks.

5. Laboratory analytical results did not indicate the presence of phenolic compounds above their respective method detection limits. Laboratory analytical results for chlorinated herbicides are pending.

6. With the exception of lead and arsenic, all metals listed in Title 22 CAM 17 were not detected above hazardous waste levels. Mercury and zinc were detected at levels higher than USGS background values for the San Francisco Bay Area (measured in mg/Kg) calculated by ARS from data presented in the United States Geological Survey Professional Paper 1270, entitled "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States."

3.6 Recommendations

ARS recommended the following:

1. An accurate account of the location, depth, extent of the soils that will be removed from the Site should be determined from surveyor's maps detailing the existing topography and extent as well as from the proposed design criteria that may be clearly depicted on structural plans. Once the cuts and fills are appropriately defined laterally and vertically, an estimate of amount and type of soils to be disposed of off-site can be quantified by ARS.

2. All soils scheduled for off-site removal should be properly characterized at the time of transport for appropriate classification and disposal.

3. ARS does not expect the gravel base that was formerly utilized as ballast for the railroad tracks to be affected with elevated levels of Site contaminants. Accordingly, the existing surface gravel may be recycled or reused so long as it is not co-mingled with the underlying soil layer.

4. As was previously mentioned, the northwestern corner of Hansen's Windows is affected with elevated levels of petroleum hydrocarbons and heavy metal contaminants. The existing contamination extends to 2 feet below the ground surface, 50 feet from the corner of Hansen's building parallel to the railroad tracks and 30 feet parallel to 36th Avenue, a total area of approximately 1,500 square feet. Although ARS was able to identify the northern, southern, and eastern boundary of this affected area, the western

boundary which may potentially extend beneath Hansen's building towards San Leandro Blvd. has not been defined. In addition to the recommendation that soils within this area should be appropriately characterized and excavated for off-site disposal at either a Class I or a Class II landfill, ARS also recommends that FDC consult with legal counsel regarding potential liability to and from Hansen's Windows, if any.

5. Since the area extending between 35th Ave. and 37th Ave. is impacted with a variety of containerized chemicals such as old leaded paint and various other types of discarded debris, ARS recommends the appropriate containerization of existing chemicals for off-site disposal at appropriate facilities.

6. Due to the involvement of UP, BART and FDC in determining disposition of the subject Site, ARS strongly recommends that the concerned parties determine the extent of regulatory agency involvement desired. The potential regulatory agency that will oversee the cleanup and final disposition of the subject Site will, in all likelihood will set cleanup criteria and long term management plans.

4.0 SITE MITIGATION AND SOIL REMOVAL PROPOSED SCOPE

The activities described in this Scope of Work are proposed to address the environmental concerns that are present or may arise at the subject Site during future proposed development of the Site as a street level parking lot for BART patrons. The work described herein is of a preliminary nature and may be amended as the project progresses. The activities presented herein were prepared to address the following issues:

- Health and safety of onsite workers
- Air surveillance & monitoring to insure a safe and compliant work environment
- The appropriate classification and profiling of affected soils
- Removal, transport & disposal of heavy metal affected soils from the Site
- Post-removal soil sample collection & analytical testing for the potential completion of Health Risk Assessment(s) (HRA) to assess health effects to workers' exposure during foundation construction activities, and quantify future exposure levels to the Site occupants as a result of exposure to residual heavy metal concentrations; and
- Completion of all relevant appropriate documents and reports

The proposed Scope of Work includes the following specific tasks:

Task 1: Preparation of a Site Specific Health and Safety Plan & Regulatory Agency Interface
Task 2: Soil Characterization
Task 3: Monitoring of Fugitive Dust Emissions
Task 4: Disposal Site Interface and Coordination
Task 5: Soil Remediation
Task 6: Soil Transportation and Disposal
Task 7: Laboratory Analyses
Task 8: Report Preparation
Task 9: Preparation of a Health Risk Assessment and Long Term Site Management Plan

These Tasks are described in more detail below:

Task 1: Preparation of a Health and Safety Plan & Regulatory Agency Interface

In accordance with Occupational Safety and Health Administration (OSHA) guidelines, mandates of the Regional Water Quality Control Board (RWQCB) and Alameda County Department of Environmental Health, a Health and Safety Plan (HSP) will be drafted in preparation for implementation at the site during soil removal activities. The HSP will include an analysis of hazards that may be encountered by on-site workers conducting the proposed soil removal activities and Site construction. Precautions to minimize the identified hazards will be addressed. All required permit applications will be filed with the appropriate agencies.

ARS will inform all relevant contractors as to the appropriate protective measures that should be instituted to insure a safe work environment.

Task 2: Soil Characterization

Available data on geo-chemical composition of subsurface soils, which was previously obtained by ARS at the Site, will be utilized to classify the soil. In addition, ARS will collect all necessary samples per disposal facilities requirements. Upon receipt of laboratory analytical results, ARS will profile the soils into appropriate permitted disposal facilities. Clean soils with background residual contaminant levels may be recycled as onsite backfill by the Site's contractor or may be transported to an offsite location for disposal/recycling.

Task 3: Monitoring of Fugitive Dust Emissions

In accordance with applicable regulations, ARS will prepare and implement an air monitoring program at the Site, and will utilize methods to prevent the generation of dust during site excavation activities. Four air monitoring stations will be situated at the site during field activities and while soil loading activities are being conducted. The stations will be in place during peak field activities for the duration of the soil removal activities.

The collected air samples will be analyzed for the chemicals of concern by a state certified testing laboratory. Proper chain of custody procedures will be followed. One set of four air samples will be collected each day during peak site excavation activities. The air samples obtained will be immediately analyzed on a rush 24-hour turnaround basis to immediately assess worker exposure and site conditions. All samples will be retained and preserved for 30 days in the event a need arises for the analysis of these samples. For purposes of this proposal we have assumed 5 days of total air surveillance that would be required at the Site.

Task 4: Disposal Site Interface and Coordination

ARS will analyze the soil as per disposal site requirements. Upon receipt of the appropriate identification numbers from the State Board of Equalization-Environmental Assessment Unit, the Environmental Protection Agency and laboratory analytical results, ARS will properly profile the soil's chemical composition to appropriate disposal facilities. Depending on the chemical profile of the respective soil, the affected soil will be disposed off at a Modified Class-II and a Hazardous Waste Class I secure landfill. ARS will prepare all necessary transport and disposal documents.

Task 5: Soil Remediation

Site preparation prior to excavation activities will include the removal and off-site disposal/recycling of the gravel layer that currently exists on-site. Activities associated with the excavation and loading of gravel should be conducted under ARS' supervision.

Additionally, ARS will institute dust suppression measures including wetting the surface of the soil to be excavated as necessary to control airborne dust. Based upon available current data, and the data that will be collected by ARS during the performance of activities described previously, the approximate extent of hazardous waste levels of heavy metal-affected soils will be determined.

Soils will then be removed from the designated areas using an excavator operated by a licensed contractor permitted by the state of California to handle hazardous waste under the direct supervision of ARS' staff. The selected contractor must have a Hazardous Substance Remedial Action Certification endorsement to its license.

The excavation of heavy metal affected soils at hazardous waste levels will cease when laboratory analytical results indicate that elevated levels of the subject heavy metals have been excavated or upon attainment of proposed soil grades set by construction requirements, whichever comes first.. The general contractor at the site will be responsible for setting soil grades and locations of soil cuts.. Impacted soils affected with non-hazardous waste heavy metal levels will be loaded and transported to an off-site Class II Modified landfill facility.

In the event soil at the proposed excavation depth contains residual heavy metal concentrations above background levels, ARS will discuss the matter with the Client and the Site's general contractor in order to formulate the appropriate institutional and engineering controls. A post-remedial HRA and a long term site management plan will be prepared in accordance with regulatory agency mandates.

Task 6: Soil Transportation and Disposal

The excavated soil will be loaded onto end-dump trucks for disposal at landfill disposal facilities. Prior to leaving the Site, all trucks will be brushed clean and tarped to isolate the contaminated soil from the environment during transportation. Hazardous waste soils will be disposed of at a Class I landfill. Contaminated soils will be disposed of at a Class II/modified landfill. Clean soils and gravel with background residual contaminant levels may be recycled by the Site's contractor.

Task 7: Laboratory Analyses Soil samples will be analyzed by a state-certified laboratory within 1-7 days from the day the samples are collected for the following analytes:

- TTLC-CCR 17 metals utilizing EPA methods 6010/7000
- TCLP extraction utilizing EPA method 1311, on individual components listed in CFR 40, Subpart B section 261.24, Table 1 (Toxicity Characteristic)
- One composite sample to be analyzed for Reactivity, Corrosivity and Ignitability
- STLC-lead and arsenic utilizing California Assessment Manual extraction procedure
- Selected soil samples may be analyzed using EPA methods 3550 and 5030 (8015 Modified) to identify possible petroleum hydrocarbon components

Task 8: Report Preparation

This task will include evaluating the field and laboratory analytical data. A written report will be prepared following completion of the soil removal and foundation construction activities. The report will describe the field investigation and removal activities, laboratory analytical results, and will include conclusions and recommendations. Laboratory data sheets, summary tables of the sample results will be included. This report shall only be submitted to the client within two weeks following receipt of final laboratory analytical results.

Task 9: Health Risk Assessment and Long Term Site Management Plan

In the event residual levels of chemicals remain at the Site at the completion of final soil removal and foundation construction activities, a Health Risk Assessment ("HRA") and a Long Term Site Management Plan will be prepared for the Client in accordance with regulatory mandates and stipulations. The objectives of the HRA would be to evaluate potential human health risks associated with exposure to residual chemicals that are detected in the subsurface soils at the Site during and after the completion of foundation construction activities.

The HRA will evaluate potential risks to future BART patrons at the Site in the completed parking area. Exposure pathways such as inhalation, incidental ingestion and dermal contact with residual chemically affected soils will be evaluated and the resulting risks, if any, will be quantified.

The objective of the Long Term Site Management Plan would be to provide institutional and engineering measures that would mitigate any remaining concerns at the Site, including the implementation of a cap management plan, and a deed restriction for the Site.

ARS' SOIL SAMPLING PROCEDURES

Sampling Procedures

Soil sampling will be conducted to provide data to evaluate the extent of chemicals in the soils at the Site. Soil samples will be used for chemical analysis. The methodology used for this sampling purpose is discussed in the following section.

Soils may be collected for chemical analysis by directly driving precleaned brass or stainless steel tubes into the soil to assess surface/subsurface level conditions. The samples must completely fill the tubes to minimize headspace and consequent loss of volatile contaminants, if present. These tubes shall be lined with aluminum foil or Teflon, capped with airtight plastic lids, and taped around the caps to prevent possible moisture and chemical loss. Duct tape will be used to seal the caps of brass tubes containing the soil samples. Disturbed soil samples will be collected in 250-ml jars with taped, airtight lids. Each jar will be completely filled with soil to minimize headspace and consequent loss of volatile contaminants, if present.

After being sealed and labeled, soil samples will be maintained placed in an ice chest containing dry ice at a temperature of 4°C or lower. Water samples will be placed in an ice chest containing ice and maintained at a temperature of 4°C during delivery to the laboratory and prior to analysis by the laboratory.

Sample Preservation Methods and Containers

- Samples will be collected in pre-cleaned brass tubes. Both ends will be lined with aluminum foil or Teflon, capped with airtight plastic lids, and taped around the caps to prevent possible moisture and chemical loss. Samples will be placed in a chilled cooler and transported to the laboratory via hand or overnight delivery. The temperature of the samples will be noted on the chain-of-custody form upon receipt at the laboratory. Samples will be analyzed at the laboratory within 14 days.

Documentation

- The following information will be entered on the sample collection data form at the time of sampling:

- project name and number
- site location
- sampler's name
- time and date of sampling
- sampling location
- sampling method
- sample number
- sample depth
- sample condition (disturbed/undisturbed)
- laboratory analyses requested

Each sample will be packaged and transported appropriately, as described in the following protocol.

- o Collect samples in appropriately-sized and prepared containers
- o Properly seal and package sample containers.
- o Fill out field sample log and chain-of-custody and analyses request forms.
- o Separate and place samples into coolers according to laboratory destination. Samples will be packaged so that the potential for shipping damage is minimized.
- o Chill samples to approximately 4° C or less. Regular dry ice used in the coolers will be sealed in a plastic bag other than the one in which it was purchased.
- o Seal the top two copies of the chain-of-custody form inside a zip-lock bag. Use strapping tape to hold the packet on the inside of the cooler.
- o Seal cooler with several strips of strapping tape.

Decontamination Procedures

Equipment Decontamination

All equipment used for collecting samples during this investigation which might come into contact with contaminated materials will be properly decontaminated before and after each use, and before initial use at the Site. This will be accomplished through steam cleaning and/or washing with Alconox (a laboratory-grade detergent) and rinsing with deionized, distilled, or fresh water. Decontamination procedures will allow for disposal of cleaning fluids in the manner described below.

Disposal Procedures

The cleaning fluids will be collected and placed into appropriate containers to be analyzed and disposed by Evergreen Environmental of Newark, California, an oil recycler. The non-hazardous waste, such as cardboard boxes, scrap paper, etc., will be disposed at a Class III landfill.

Sample Custody

In order to check and link each reported datum with its associated sample, sample custody and documentation procedures were established. Three separate, interlinking documentation and custody procedures--for field, office, and laboratory--can be described. The chain-of-custody (COC) forms, which are central to these procedures, are attached to all samples and their associated data throughout the tracking process.

Field Custody Procedures

Field documentation will include sample labels, daily field activities logbook, and chain-of-custody and analyses request forms. These documents will be filled out in indelible ink. Any corrections to the document will be made by drawing a line through the error and entering the correct value without obliterating the original entry. Persons correcting the original document will be expected to initial any changes made. The documents are as follows.

Sample Labels

Labels will be used to identify samples. The label is made of a waterproof material with a water-resistant adhesive. The sample label, to be filled out using waterproof ink, will contain at least the following information: sampler's name; sample number, date, time, location, depth; boring number; and preservative used.

Field Log of Daily Activities

A field log will be used to record daily field activities. The field geologist is responsible for making sure that a copy of the field log is sent to the project file as soon as each sampling round is completed. Field log entries will include the following:

- field worker's name;
- field log number;
- date and time data are entered;
- location of activity;
- personnel present on-site;
- sampling and measurement methods;
- total number of samples collected;
- sample numbers;
- sample distribution (laboratory);
- field observations, comments;
- sample preservation methods used, if any.

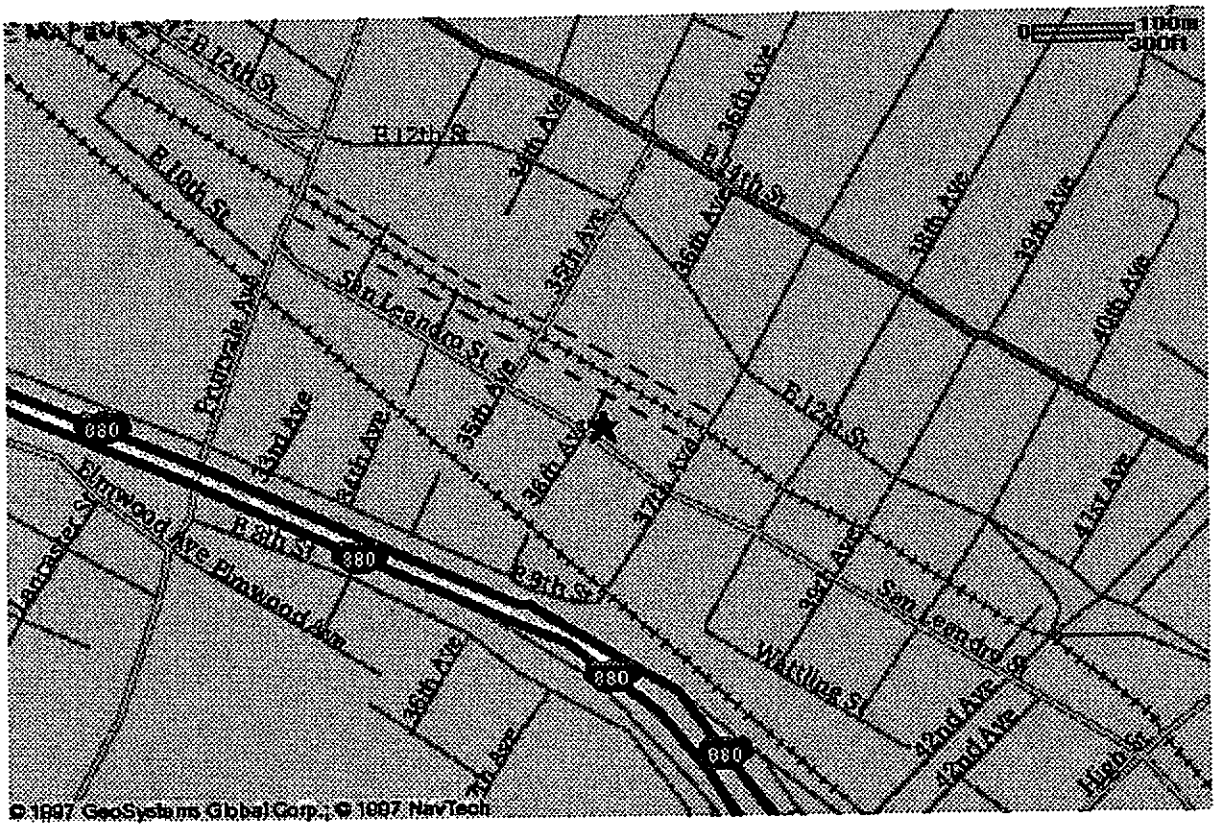
Chain-of-Custody (and Analysis Request) Form

The chain-of-custody (COC) form is filled out for groups of samples collected at a given location on a given day. The COC will be filled out in quadruplicate for, and will accompany, every shipment of samples to the respective analytical laboratories.

Two copies (white and green copies) accompany the samples to the analytical laboratory. The yellow copy is kept in the Applied Remedial Service's QA/QC file, while the pink copy is retained for the sampler's record. The COC makes provision for documenting sample integrity and the identity of any persons involved in sample transfer. Other information entered on the COC includes:

- project name and number;
- field logbook number;
- COC serial number;
- project location;
- sample number;
- sampler's/recorder's signature;
- date and time of collection;
- collection location;
- sample type;
- number of sample containers for each sample;
- analyses requested;
- results of laboratory's inspection of the condition of each sample and the presence of headspace, upon receipt by the laboratory;

- inclusive dates of possession;
- name of person receiving the sample;
- laboratory sample number;
- date of sample receipt;
- address of analytical laboratory; and
- temperature of sample upon receipt at laboratory.



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Benicia, CA 94510

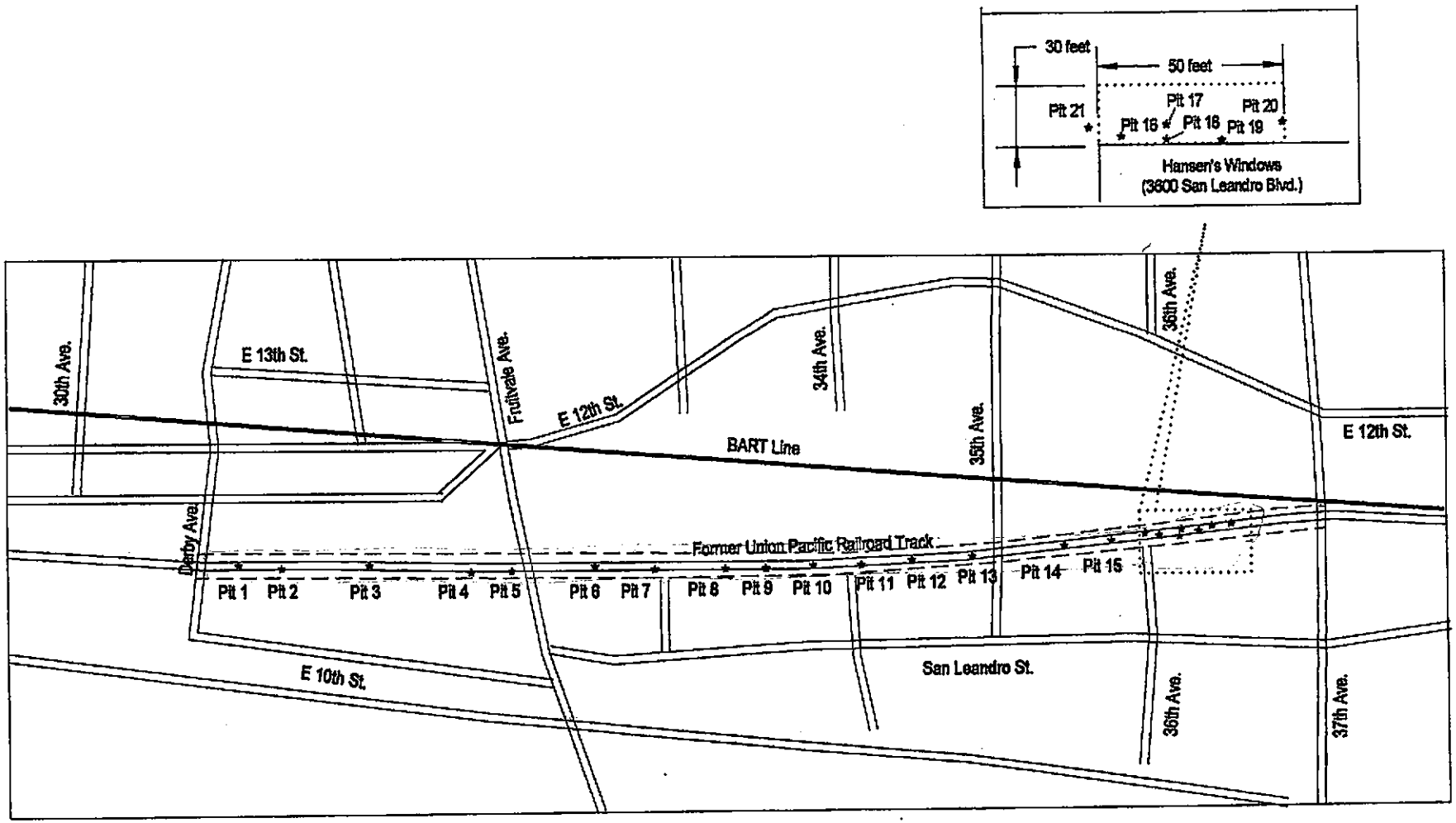
Figure 1

Date: July 8, 1999

Project #: ARS-99-269

Site Location

Union Pacific Railroad - Fruitvale BART Transit Village
Oakland, California



Approximate area surrounding Union Pacific Railroad Track

* Approximate Test Pit Location

ARS, INC *Applied Remedial Services, Inc.* *701 Southampton Rd., Suite 103* *Benicia, CA 94510*	Figure 2 Date: July 8, 1999 Project #: ARS-99-269	**Test Pits Locations** Union Pacific Railroad - Fruitvale BART Transit Village Oakland, California

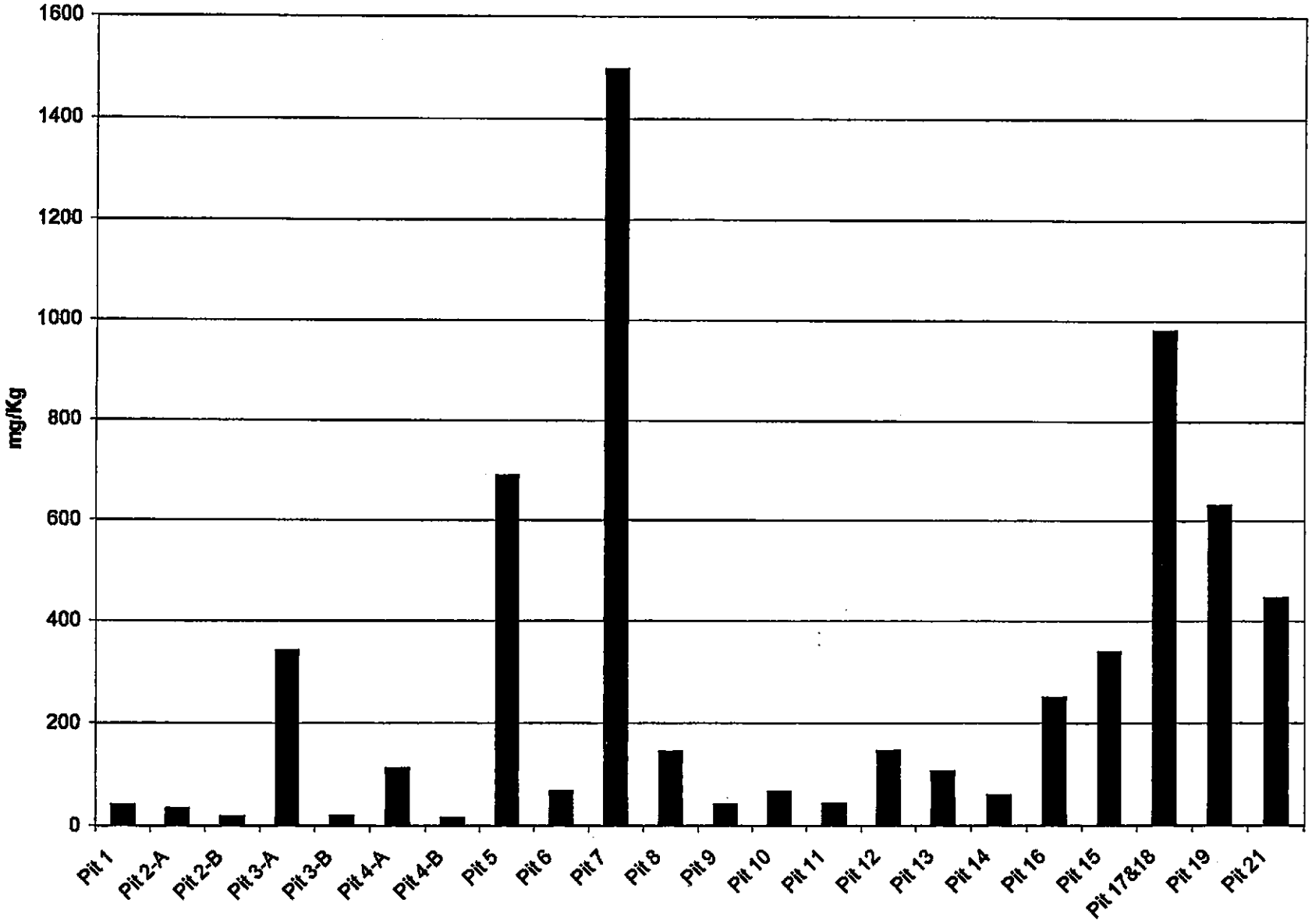


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Figure 3

Date: July 8, 1999

Project #: ARS-99-269

Concentration of Lead in Surficial Soils

Union Pacific Railroad - Fruitvale BART Transit Village
Oakland, California

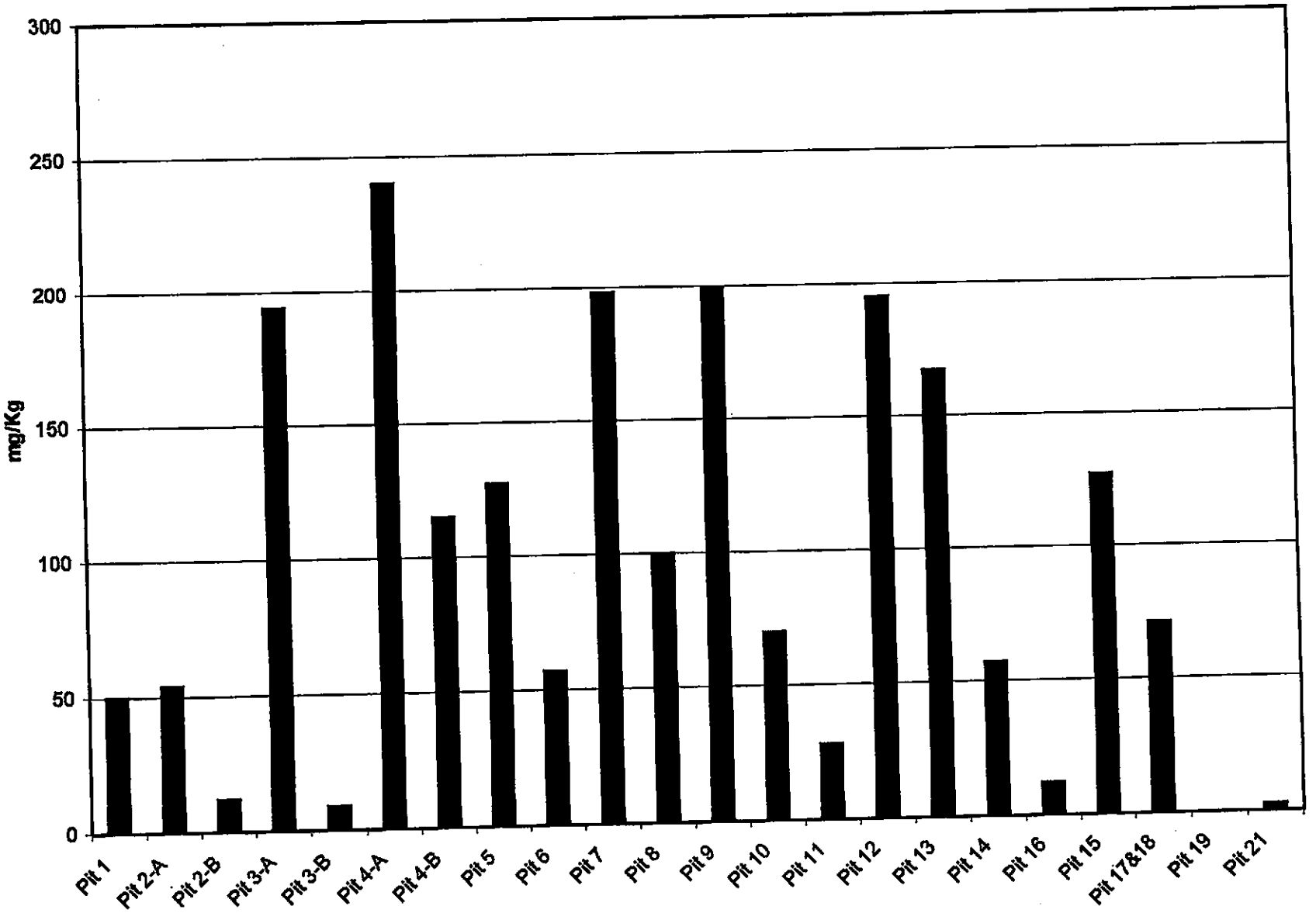

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Figure 4

Date: July 8, 1999

Project #: ARS-99-269

Concentration of Arsenic in Surficial Soils

Union Pacific Railroad - Fruitvale BART Transit Village
Oakland, California