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Alameda County Environmental Health

#### 1001 42<sup>nd</sup> Street Property, Emeryville/Oakland, California Initial Site Conceptual Model (11-14-08)

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Environmental H		DESCRIPTION	Data Tables	Graphics	Reference	Data Gaps	Work Necessary to fill data gap	Comments
Description  S Ti Oby w  S Ti bi m in E (C) th C Ti w ui oby ai ta cl si	Dakland, Calify the Emeryovestern portion of the Site contained operating and the Site was of the Company.  Inderground the releases of the Emeryound operation of the releases of the the investinder ground operations and operations of the removes of the releases of the	ess is 1001 42 <sup>nd</sup> Street, in fornia. The parcel is bisected ville/Oakland border, and the on of the Site is in Emeryville.		ERM Site Location Map	U.S.G.S. 7.5- Minute Topographic Map, Oakland West Quadrangle, Scale: 1:24,000			

	DESCRIPTION	Data Tables	Graphics	Reference	Data Gaps	Work Necessary to fill data gap	Comments
Regional Geology	Geology/Stratigraphy The geologic history of the Bay Area is characterized by seismic activity block faulting, climate and sea level changes and Pleistocene glaciations. Rocks of the Franciscan Group and Knoxville Formation were laid down in a geosyncline during Jurassic and Cretaceous times. The San Francisco Bay trough formed during the Pliocene by downward movement and eastward tilting of a fault block west of the Hayward Fault. In Pleistocene time, the trough was nearly filled with sediments derived from the adjacent hills which are referred to as the Alameda Formation. In the area of the subject site, the thickness of the Alameda Formation exceeds 550 ft. After the deposition of the Alameda Formation and before the deposition of the sediments of the Temescal Formation, portions of the surficial deposits were eroded by streams and surface runoff, creating a depositional unconformity between the two formations. The subsequently deposited Temescal Formation consists of typical alluvial fan deposits including paleochannel deposits, probably formed in a rather dry climate with infrequent, torrential rains.		Section of Radbruch Geol. Map	Radbruch, D.H. 1969, Aereal and Engineering Geology of the Oakland East Quadrangle, CA, USGS Quad Map GQ- 769, Scale 1:24,000			

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Regional Hydrogeology	Regional Hydrogeology The groundwater aquifers beneath the area of the subject site are considered to be part of the Central Bay Area Groundwater Basin. The subject site occurs at the southern boundary of this Basin, directly adjacent to the East Bay Basin, to the south. The basins are managed by the RWQCB, Region 2. The groundwater beneath the area of the subject site flows, in general, in westerly to southwesterly direction, from the Berkeley Hills towards the San Francisco Bay. Site-specific subsurface conditions, include buried gravel channels (paleochannels). Fill material or deep utility corridors locally influence the groundwater flow environment beneath the subject site and adjacent properties.		Central Basin Map  East Bay Basin Map  GW Map by ERM		Regional Groundwater depth and flow direction maps missing.	Locate maps and include in SCM.	

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Subject	Site Geology		SCHUTZE	ERM Draft CAP			See
Site	The sediments across much of the site		Section A-A'	for Subject Site			paleochannel
Geology	within the uppermost 30 feet bgs tended to			Geology			map in
Geology	be relatively low permeability sediments		<u>SCHUTZE</u>	Section			Preferrential
	(i.e., clayey silt and silty clay). Soils at		Section B-B'				Pathway
	depths from 3 to 8 ft bgs (beneath asphalt						Section
	paving or concrete) were dark brown sandy		SCHUTZE				
	silts (ML), with variable sand content and		Section C-C'				
	occasional areas of increased clay content.						
	Beneath this uppermost fill layer, clay		SCHUTZE				
	(CH/CL) was typically encountered, with		Section D-D'				
	variable sand and silt content, and		001111775				
	occasional stringers (layers less than 2 feet		SCHUTZE				
	thick) of clayey gravels and silty sand.		Section				
	However, in the southeast corner of the		Location Map				
	property, thicker intervals of coarser-grained		and Legend				
	sediments were encountered, including		ACE Cross				
	gravelly sand (SW), clayey sand (SC), and		ASE Cross-				
	silty sand (SM).		Sections for				
			Subject Site	1		1	

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Subject Site	Local Hydrogeology	ERM GW	ERM Crowndwater	ERM Draft CAP			
Hydrogeology	The groundwater beneath the area of the subject site flows, in general, in westerly to southwesterly direction, from the Berkeley Hills towards the San Francisco Bay.  Groundwater is typically encountered from 6 to 9 feet below grade. The interpreted groundwater flow is to the west. This flow direction is consistent with the regional flow direction toward the San Francisco Bay. The flow direction is also consistent with the general westward sloping of sediments at the site. The flow direction may be locally influenced by buried paleochannels and/or by fluctuating groundwater depths over time.	Elevations Table	Groundwater Contour Map	Subject Site			

	DESCRIPTION	Data Tables	Graphics	Reference	Data Gaps	Work Necessary to fill data gap	Comments
Source Areas	Primary On-site Source Areas Boysen Paint and Ameritone Paint operated on the subject site from the 1930s to the 1981. The releases are believed to be associated with two USTs that previously stored mineral spirits. Although another UST, two sumps and various ASTs formerly existed on the site, these are not believed to have significantly contributed to the onsite release.  UST #1: Capacity 10,000 gal used for mineral spirits and diesel. Located beneath the loading dock near southern property boundary. Removed in 1987. Despite low levels of TPH detected in groundwater during 1987 sampling, free product was observed at the site at the installation of a monitoring well immediately adjacent to the tank. In January 2000, levels of 630,000 ppb of mineral spirits were noted in the well. ACEH has not issued a "no further action" letter for this UST.  UST #2: Capacity 8,000 gal used for mineral spirits. Located beneath the 41 <sup>st</sup> Street sidewalk adjacent to the southern property boundary. In January 1988, Grow Group sampling around the tank shows TPH at levels of 610 mg/l and Grow notes that free product is believes to be present adjacent to the western edge of the tank. Closed in place 1993 When tank closed in place, signs of weakness and holes detected in piping. ACEH has not issued a "no further action letter" for this tank.				MW-1 was paved over after closing in place of UST#2.	Cut sidewalk and find well.	

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Subject Site Source Areas (continued)	UST #3: Capacity 300 gallon use unknown. Located beneath neutralization room of the office and printing building. No pipes were detected leading to or from the tank. Contents of the tank were sampled and did not contain hazardous waste constituents. Underlying soils were sampled about 4 feet below ground surface of TPH, VOCs, and oil and grease and were non-detect for all constituents. The tank was filled with cement and closed in place in 1996. In April 1996, ACEH issued a closure letter for this tank indicating so significant release was associated with this tank. ATS: Approximately ten ASTs, containing paint formulations, were apparently located on the southwest west corner of the property near etching room between 1959 and 1982. They had been removed in 1990. (ERM Ph. I, 2006). As these USTs are not known to have stored mineral spirits, they are not believed to be associated with the mineral spirit releases that have been detected at the site.  Sumps: Two small sumps were used by Rockridge Antiques during their occupancy from 1980s to 1993. Sumps were lined with .5 inches of steel and encased by three feet of concrete. Wastewater from sumps indicated high levels of methlyene chloride and some TCE. Both sumps were abandoned in 1995. (ERM Ph. I, 2006). There is no history indicating that the sumps were used for the storage of mineral spirits.						

	DESCRIPTION	Data Tables	Graphics	Reference	Data Gaps	Work Necessary to fill data gap	Comments
Subject Site	Soil Contamination	<u>ERM</u>	<u>ERM</u>	ERM CAP,		-	
Soil	Only TPH was detected at concentrations	Summary	Summary	June 2007			
Contamination	in excess of its screening level. TPH-ms	Table for	Map for Soil	405 0005			
	results exceeded the ESL in six soil	Soil Results	Results	ASE, 2005.			
	samples, and TPH-gasoline results exceeded the ESL in three soil samples.			Report of Soil and Gw			
	These exceedances were associated with			Assessment			
	fewer than ten percent of the samples. The			Assessment			
	maximum TPH detection was 1,100 mg/kg			ASE, 2005.			
	(location BH-AA, in the extreme southeast			Report of			
	corner of the Site, beneath the building). It			Additional Soil			
	should be noted that TPH ranges other			and GW			
	than mineral spirits were not widely			Assessment			
	analyzed in soil samples collected as part						
	of the investigations discussed above,			ASE, 2006.			
	because mineral spirits was known to have			Semi-Annual			
	been associated with historical site			GW Monitoring			
	activities, and its presence had been confirmed in site soils and ground water.			Report, and 2006 GW			
	Regardless, for completeness, a broader			Sampling at			
	range of TPH was included in analyses			Kozel Property,			
	within samples collected from five locations			rtozori roporty,			
	(B-1 through B-5). Although gasoline			ERM, 2006,			
	range detections greater than the ESL			Limited Soil			
	were associated with samples collected			and			
	from two of these locations (B-1 and B-2,			Groundwater			
	off-site and adjacent to the 1020 41st Street			Investigation			
	property), results were flagged as atypical			Report.			
	and ERM concluded were more consistent with mineral spirits.						
	Soil contamination is not believed to be a significant issue at the site.						

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Subject Site	Groundwater Contamination	ERM	<u>ERM</u>	ERM CAP,			
Groundwater	According to ERM, "Ground water samples	Summary	Summary	June 2007			
Contamination	were collected from eleven wells in the Site	Table for	Map for GW	405 0005			
	vicinity. In addition, grab ground water	GW Results	Results	ASE, 2005.			
	samples were collected from 37 soil			Report of Soil and GW			
	borings. These samples were submitted for analysis for TPH (various fractions,			Assessment			
	primarily mineral spirits range) and/or			Assessment			
	VOCs. The results of these analyses are			ASE, 2005.			
	summarized in ERM's Summary Table. As			Report of			
	seen in the Summary Table, with the			Additional Soil			
	exception of TPH-ms and butyl benzene,			and GW			
	none of these constituents have been			Assessment			
	routinely detected in recent ground water						
	samples (i.e., samples collected in 2004 or			ASE, 2006.			
	later). In addition, the TPH-ms results are			Semi-Annual			
	posted on ERM's Figure, including			GW Monitoring			
	notations of the two monitoring wells with			Report			
	measurable free product (BES-1 and MW-						
	B1). In the interest of thorough lateral			ASE, 2006 GW			
	coverage, this figure contains data			Sampling at			
	associated with: 1) Grab ground water samples collected from borings during the			Kozel Property,			
	December 2004, August 2005, and			ERM, 2006,			
	May/June 2006 sampling events; and 2)			Limited Soil			
	Samples collected during the last reported			and			
	monitoring event for each monitoring well			Groundwater			
	(representing a range of dates from 2003 to			Investigation			
	2006). Because the posted data were			Report.			
	collected over a 4-year period, the results						
	cannot be meaningfully contoured to						
	represent a one-time depiction of TPH						
	occurrence. Instead, the data were used to						
	outline an outermost extent of impacts,						
	which is the presumed Area of Concern for						
	remediation purposes."						

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Preferential	Well Survey: A 1/2-mile well survey identified	SCHUTZE,	SCHUTZE,	SCHUTZE, Well		•	Impact to
Pathways:	two cathodic protection wells, three industrial wells and 28 monitoring wells. Cathodic Protection Well: One of these wells	Well Survey Summary	Well Location Map	Survey Letter report			nearby wells unlikely
Well		<u>Table</u>		DWD Wall Los			
Well Survey	is located approximately 750 feet to the north of the subject site at the intersection of 44th Street and Adeline Street, and the other is located approximately 1,500 feet to the southeast at the intersection of Market Street and Apgar Street.  Industrial Wells: One of these wells is located approximately 1,000 ft to the southeast of the subject site at 899 40th Street, and the other two are approximately 2,200 feet to the southwest at 3516 Adeline Street.  Monitoring Wells (MWs): The well survey identified 28 monitoring wells. The mws identified are at the following locations:  3 MWs are located approximately 500 ft to the SE of the subject site at 989 41st St.  8 MWs are located approximately 2,500 ft to the SE at 731 West MacArthur Blvd.  12 MWs are located approximately 2,500 ft to the S at 3420 San Pablo Ave.  3 MWs are located approximately 2,200 ft to the SW at 3516 Adeline St.  Conclusion of Well Survey: The industrial wells at 899 40th St. was installed in 1928, one year before the Mokelumne Aqueduct started to provide water to the East Bay. It is likely that other, unrecorded commercial wells existed. Boysen Paint operated from the 1930s to 1980			DWR, Well Log Images 01s/04w sec 23, 5/19/08	The onsite well logs are missing in the SCHUTZE cross-sections and in the	Obtain on-site well records, include in SCHUTZE cross-sections and submit to	

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Preferential	Utility Survey		SCHUTZE	SCHUTZE			
Pathways	Utilities on adjacent sidewalks and streets		<u>Utility</u>	Utility Survey			
(continued):	were found at the following depths: Trenches for the sewer, sanitary sewer, 6-inch diameter, approximately 5 to 7 ft bgs.		location map	Report			
Utility	Low pressure natural gas, 2-inch diameter,						
Survey	approximately 3 to 4 ft bgs. Water, 2- and/or 4-inch diameter, approximately 3 to 4 ft bgs, and Telephone lines, 4-inch diameter, approximately 3 to 4 ft bgs.						
	Conclusion of Utility Survey Since the groundwater level, with potentially existing free floating product is up to 5 ft bgs, there is a potential that TPH-ms has migrated into the sewer lines, especially along 41 <sup>st</sup> Street.				No information if TPH-ms has impacted deep sewer line trenches.	Deep sewer trenches along 41 <sup>st</sup> Street should be tested for contamination	

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Preferential Pathways (continued): Paleo Channels	SCHUTZE & Associates, Inc. identified permeable layers on the boring logs and recorded these layers on the cross-sections and on the attached map. Sandy and gravelly layers were identified on the southern ends of cross-sections AA', BB' and CC', approximately beneath 41st Street (Figure 1). The layers were identified in borings BH-N and BH-JJ on Cross-Section AA', in BH-P on BB' and in BH-R and BH-Q on CC'. The top of these layers appear to be approximately 10 ft bgs. The lower limit was not identified, and there is a potential that they continue to the bottom of the Temescal Formation which is estimated to be at 30 ft bgs.  In addition to the paleo-channel, there is a circular (approximaley 100 ft diameter) area which is underlain by thin (6" to 2 ft) gravel lenses. These gravel lenses occur at shallower depths than the paleo channel. The area identified as a paleo channel combined with the circular area underlain by the gravel-lenses coincides with the plume of TPH-ms in groundwater.		Paleo Channel Map  Paleo Channel Overlay on ERM Plume Map	ERM Draft CAP			Area of groundwater plume correlates well with geology. No further work recommended

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Preferential Pathways (continued): Subject Site Risk Evaluation	Screening-Level Risk Evaluation "Geomatrix Consultants, Inc. has prepared this memorandum on behalf of McGrath Properties to evaluate the potential migration of total petroleum hydrocarbons quantified as mineral spirits (TPHms) and volatile organic compounds (VOCs) in the subsurface to indoor air of enclosed structures (i.e., vapor intrusion pathway). For this screening-level risk evaluation, risk-based screening levels (RBSLs) for indoor air and soil gas were developed for TPHms and VOCs. RBSLs were calculated using the methodologies outlined by the California Environmental Protection Agency (Cal-EPA), Office of Environmental Health Hazard Assessment (OEHHA). Based on the data collected to date and the results of this screening-level risk evaluation, there is no apparent unacceptable health risk posed by the vapor intrusion pathway at the site, and further characterization of the vapor intrusion pathway is not recommended at this time."			Geomatrix Memorandum, June 29, 2007, Screening- Level Risk Evaluation			No further characterization of vapor intrusion pathways recommended

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Nearby Release Sites	Former Dunne Paints(1007 41st Street, Oakland/Emeryville and 4050 Adeline Street, Emeryville, California)  Central and western portions: residential from at least 1903 to approximately 1952. From 1952 to 2003 paint manufacturing and retail. Eastern portion: From at least 1903 to 1923 residential. From 1923 to 2003 paint manufacturing and retail. From 2003 to present: Green City Lofts.  The former Dunne Quality Paint manufacturer caused significant soil and groundwater contamination by TPH-ms. The design of the Green City Lofts included significant soil excavation to accommodate the construction of the partial underground parking garages. This soil excavation, associated groundwater pumping and installation of subterranean concrete walls doubled as an effective environmental remedial action. The Dunne Quality Paint site obtained case closure for remediation of their on-site contamination. However, no case closure was issued by ACH for contamination that had migrated in groundwater to down-gradient locations.		Clayton's Paleo Channel Map Former UST Map  Map with TPH conc. Along 41 <sup>st</sup> Street	Alameda County files Case # RO 0000073  Clayton, 12/23/2002 Predevelopment Investigation, Dunne Paints			

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Nearby Release Sites (continued)	Ennis Property (located at 1069 to 1073 - 41st Street): The site is located on the west side of Adeline Street, between 41st and 40th Streets. The site is currently developed by a multi-tenant apartment building. Based on the results of the report review, this site was not the location of historical manufacturing or industrial facilities. Contamination at the Ennis Property was discovered in 2003 by Clayton. The contamination was found in groundwater and consisted of TPH-ms with concentrations of up to 47,000 μg/L. Groundwater was found at depths between 10 and 15 ft bgs. Given the lack of on-site history of historical or manufacturing facilities, the contamination is presumed from an off-site source.		Map with Dunne Paleo Channels and Ennis Lab Results	Section from Workorder by Clayton  Clayton, 1/17/2007, Workplan for Off-site Groundwater Investigation	Distribution of TPH-ms in groundwater beneath Ennis Property not completely known.	Implement Clayton Workplan	Since vapor intrusion appears to be of low concern, this study might not be required.

Nearby Release Sites (continued)  Oak Walk Redevelopment Project (AKA the 4090 San Pablo Avenue Property, or J. Tibbets Project): The Oak Walk property was formerly occupied by single family residences. In June 2008, they were being demolished. History: 1911: residences, 1950s: San Francisco French Bread Company (Two 10,000 gallon USTs). Proposed development: Three buildings, one to four story residential condos. No records for onsite releases.  The following soil and groundwater contamination was discovered beneath the Oak Walk Site: A portion of the property was formerly occupied by a gasoline service station (Celis Service Station) which had leaking tank(s). In  Paleo Channel Map County files Case # RO 0002733  CAP by The San Joaquin Company Inc. (SJC) April 2006.  CAP Section on Boysen and Dunne  NS Cross-	Comments
Sites (continued)  J. Tibbets Project): The Oak Walk property was formerly occupied by single family residences. In June 2008, they were being demolished. History: 1911: residences, 1950s: San Francisco French Bread Company (Two 10,000 gallon USTs). Proposed development: Three buildings, one to four story residential condos. No records for onsite releases.  The following soil and groundwater contamination was discovered beneath the Oak Walk Site: A portion of the property was formerly occupied by a gasoline service station (Celis  J. Tibbets Project): The Oak Walk property was formerly and many property was formerly occupied by a gasoline service station (Celis  incl. Dunne Andante Celis and Oak Port.  EW Cross-Section (C'C) for above Map from Adeline to San Pablo  CAP Section on Boysen and Dunne	
demolished. History: 1911: residences, 1950s: San Francisco French Bread Company (Two 10,000 gallon USTs). Proposed development: Three buildings, one to four story residential condos. No records for onsite releases.  The following soil and groundwater contamination was discovered beneath the Oak Walk Site: A portion of the property was formerly occupied by a gasoline service station (Celis  CAP by The San Joaquin Company Inc. (SJC) April 2006.  CAP Section on Boysen and Dunne	
condos. No records for onsite releases.  The following soil and groundwater contamination was discovered beneath the Oak Walk Site: A portion of the property was formerly occupied by a gasoline service station (Celis  Section (CC) for above Map from Adeline to San Pablo  CAP Section on Boysen and Dunne	
contamination was discovered beneath the Oak Walk Site: A portion of the property was formerly occupied by a gasoline service station (Celis  Adeline to San Pablo Boysen and Dunne	
<u> </u>	
addition, fuels were released from tanks at the former railroad yard (SFFBC) that was formerly  Bay Rock  Section (H'H)  Along Adalina  Residential LLC	
located beneath what is today the boundary line, that separates the north side of 40th Street from the Oak Walk Site. In addition, free and dissolved-phase mineral spirits were discovered	
in the groundwater beneath the Oak Walk property. Oak Walk contends that there were no on-site sources for the mineral spirit	
contamination and postulates that up-gradient releases are the likely source of the mineral spirit contamination, including Dunne Quality Paints	
and Boysen Paint Company. No conclusive study has been prepared, however, tying the releases and migration flow from Dunne Quality	
Paints and Boysen Paint to the Oak Walk site.  The potential on-site or off-site sources for the Oak Walk contamination have not been	
independently evaluated, and it appears that such an investigation would not be cost-effective or productive.	
Based on recent agency correspondence (June 2008) the site is an active SLIC site with ongoing remediation consisting of soil and groundwater removal and long term groundwater monitoring.	

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Celis Service Station, 4000 San Pablo			SJC CAP			
Avenue: A gasoline service station was formerly located on this property, along San Pablo Avenue. Celis Service Station 4000 San Pablo Avenue. Part of Andante Site  The City of Emeryville has acquired this site and a portion of the contaminated area was remediated, down to, but not deeper than, some 9 ft bgs. A limited amount of groundwater pumping was also performed. Most of the former Celis site is beneath today's 40 St., adjacent to San Pablo Avenue. The case is active, but seems to be limited to monitoring.			Section on Celis  URS, 5/31/2006, Additional Subsurface Investigation, Celis Site			
SNK Andante Project, 3992 San Pablo Avenue: Site was occupied by residences in 1800s. 1950s to 70s railroad tracks, 1970s to 90s parking for King Midas Club (closed 1990s). Paved parking lot at time of CAP (2003). Currently residential redevelopment site. Onsite contamination originating from former Celis gasoline service station, and two former leaking USTs removed in 2003. 1,500 gal and 100 gal bunker fuel. Up to 2003, SNK Andante concluded that only on-site sources were responsible for the contamination. In 2003, SNK Andante started to claim that Dunne Quality Paints and Boysen Paint Company were the source of contamination. No conclusive study has been prepared, however, tying the releases and migration flow from Dunne Quality Paints and Boysen Paint Company to the SNK Andante project. The potential on-site or off-site sources for the SNK Andante contamination have not been independently evaluated, and it appears that such an investigation would not be cost-effective or productive.		Paleo Channel Map	Alameda County Case #RO0002529 CAP by SJC dated August 2003			

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California Linen Rental Company, 989 41st Street, Oakland, CA: Nursery from 1911 to 1920, commercial laundry and contractor's corporation yard 1920 to 1955. 1955 to 2007 linen cleaning, now vacant. Releases: 3 LUSTs on western portion. 10,000 gal gasoline, 550 gal gasoline, 2,500 gal fuel oil. Removed 1989. Remediation: Dual Phase Extraction since 2006, 13,000 pounds of hydrocarbons were removed. Status: Low risk groundwater case. Excavation of 224 cu yds of metal- contaminated and 234 cu yds of TPH/PAH contaminated soil has been scheduled.  Based on the southwesterly trend of the plume of TPH contamination in groundwater, there is no evidence at present to establish that California Linen Rental Company is a source of the contamination on the O.N.E. property. It should be noted, however, that the flow direction can be locally influenced by buried paleo channels and/or fluctuating groundwater depths over time, or by groundwater pumping in the area. The potential on-site or off-site sources for the California Linen contamination have not been independently evaluated, and it appears that such an investigation would not be cost-effective or productive.		CA Linen Plume Map	Alameda County File # RO0000337  Zemo Associates LLC, Final Site Characterization report, February 29, 2008	No paleo channel map located		

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Conclusion of SCM	Release of Contamination Release of TPH-ms occurred in the vicinity of the paleochannel beneath 41 <sup>st</sup> Street. The time of the release is unknown, however, based on the periods of operations of the paint factories, potential spills and leaks could have occurred between the 1930s and 1980s. Due to potential historical groundwater fluctuations of the groundwater level, it is possible that free product migrated downward to depths below the currently observed groundwater level.      Redistribution of Contamination As the free product was forced upward by rising groundwater levels, it was trapped against clays on the ceilings of sand and gravel stringers and lenses below the current groundwater level.      Current Location of Contamination As the result of the trapping of the rising free product, pockets of submerged free product developed.					J-1	

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Praft CAP: Remediation at Subject Site	Remediation According to ERM's Draft CAP,"Based on the results of this evaluation, vacuum enhanced skimming emerged as the recommended remedial alternative for the impacted soil and ground water at the site. Under this alternative, active free-product skimmers are used with the addition of a low vacuum, which increases the rate of free-product removal from the ground water surface. Volatile constituents are removed in the vapor phase, which will reduce the mass of hydrocarbons in soil. In addition, the increased airflow in the subsurface created by the vacuum would provide additional oxygen to enhance biodegradation of organic constituents in the subsurface. Selection of this alternative is based primarily on its demonstrated effectiveness, consistency with future land use, cost-effectiveness, and ease and speed of implementation. This alternative meets the proposed target cleanup goals for the site."			ERM Draft CAP 2007	Additional work requested by ACHCS before final CAP approval	SCM, Pilot study of vapor enhanced skimming.	If a well is installed and pockets of trapped free product are encountered, free product will accumulate at the water level in the well. The thickness of the free product in the well does not represent the thickness of free product on the shallow aquifer beneath the site. Instead it represents the amount of TPH-ms that was able to escape from the submerged trap into the well. Calculations of the total amount of free product existing beneath the site are, therefore, not possible. The usefulness of remediation by free product removal remains to be investigated in the pilot study.

#### Certification

This SCM was prepared for 1001 42nd Street, LLC by Schutze & Associates, Inc. At the request of the ACDEH, this SCM includes summaries of, excerpts from, and links to reports, data, and schematics prepared by consultants other than Schutze & Associates, Inc. and by consultants who were not retained by 1001 42nd Street, LLC. Schutze & Associates and McGrath Properties do not necessarily endorse or concur with the data, narratives, or conclusions contained in these other reports and in no way attest to the accuracy of such other reports. In particular, the Perjury Statement required by ACDEH does not apply to any reports, data, schematics, or conclusions referred to or summarized in this SCM except to the extent such data, schematics, or narratives were prepared by Schutze & Associates, Inc.

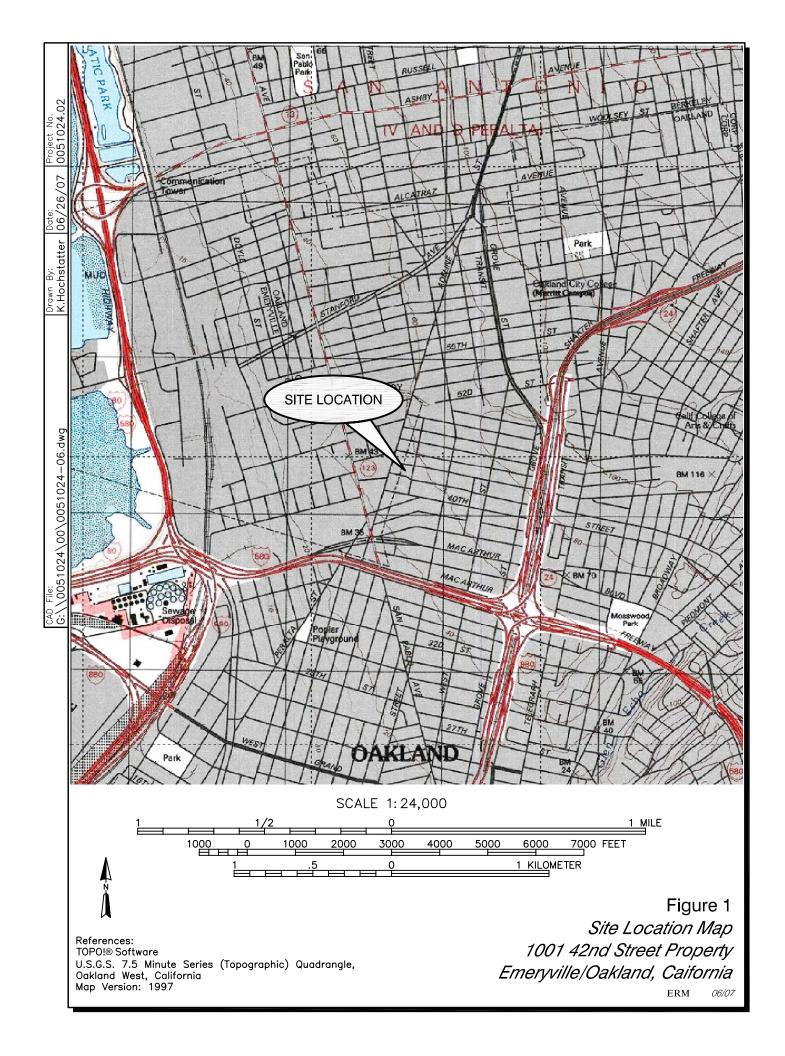
This SCM was prepared under the direction of the Professional Geologist whose seal and signature appear below. The work was performed in accordance with generally accepted standards of the geological and environmental practice, based on information available to us at the time of its preparation and within the limits of the scope of work directed by the client. SCHUTZE & Associates, Inc. believes that the information contained herein is reliable, but cannot guarantee the accuracy of information provided by others. No other representation, express or implied, and no warranty or guarantee is included or intended as to professional opinions, recommendations, or field or laboratory data provided.

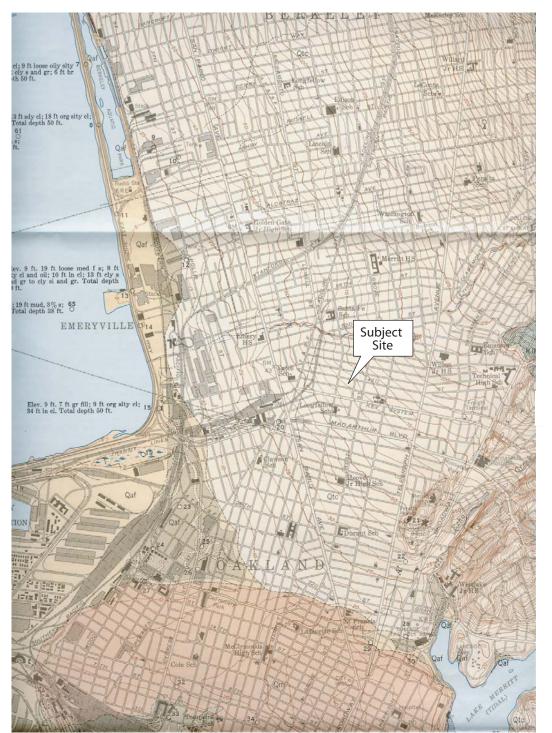
I declare, under penalty of perjury, that the information and/or recommendations contained in this document are true and correct to the best of my knowledge.

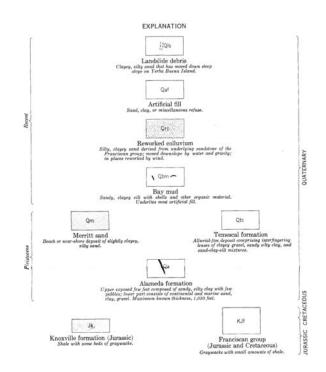
Sincerely,

SCHUTZE & Associates. Inc.

Jan Schütze, P.G., M.Sc.

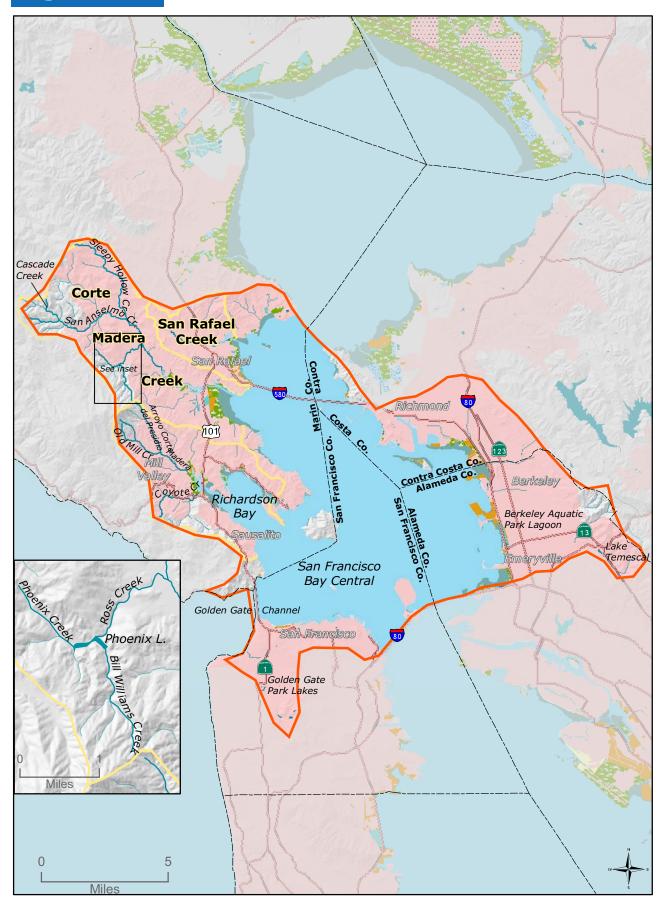




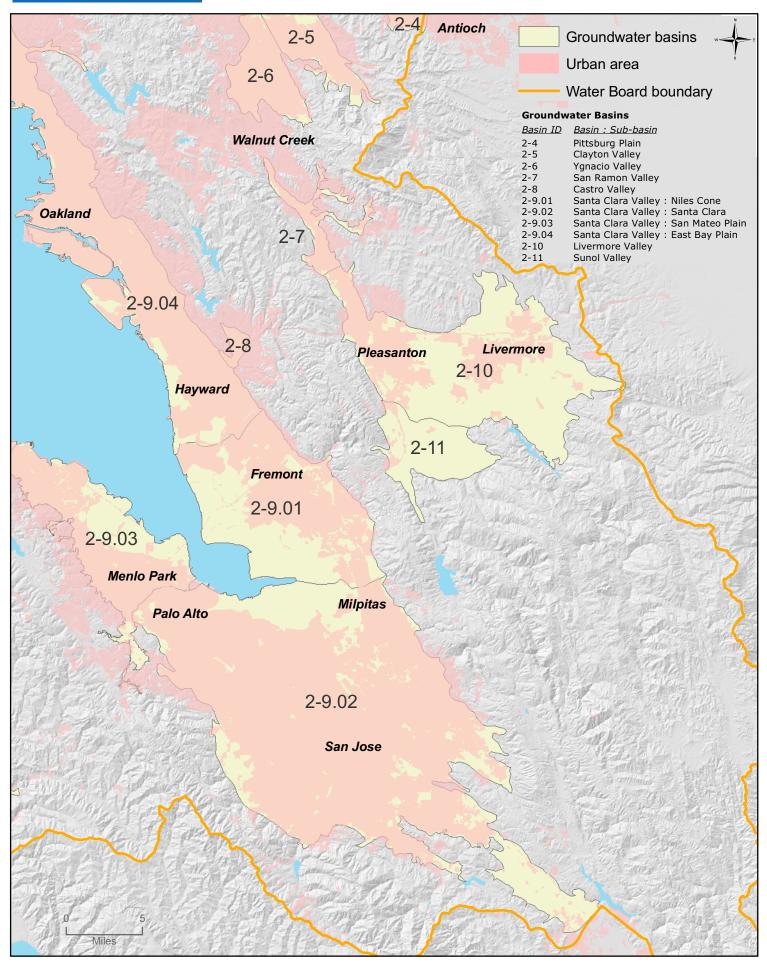


Temescal formation Qtc	Gravel, clayey; clay, sandy, silty; and sand-clay-silt mixtures. Pale yellowish-orange to dark yellowish-orange. Pebbles in gravel consist largely of quartz, sandstone (most very soft), chert from the Franciscan, shale, white banded chert from the Claremont, and miscellaneous igneous rocks. In some places beds of differing composition (as gravel and clay) grade into each other laterally and vertically; in other places the contact between beds is sharply defined. Some crossbedding. Most is coherent; may be crumbled between the fingers. Grades laterally into Merritt sand; overlies the Alameda formation.
Alameda formation Qa	Upper exposed part is clay, sandy, silty, with few pebbles. Formation includes several hundred feet of sediments underlying the bay and coastal plain, comprising continental and marine gravels, sands, silts, and clays, with some shells and organic material in places. Olive-gray to moderate yellowishbrown. Consolidation increases with depth, except that upper portion has been preconsolidated, possibly by desication (Trask and Rolston, 1951, p. 1082). Borings indicate soil zones within the Alameda; in places an old soil is exposed at the top of the formation. Overlain by Temescal formation, Merritt sand, or bay mud.

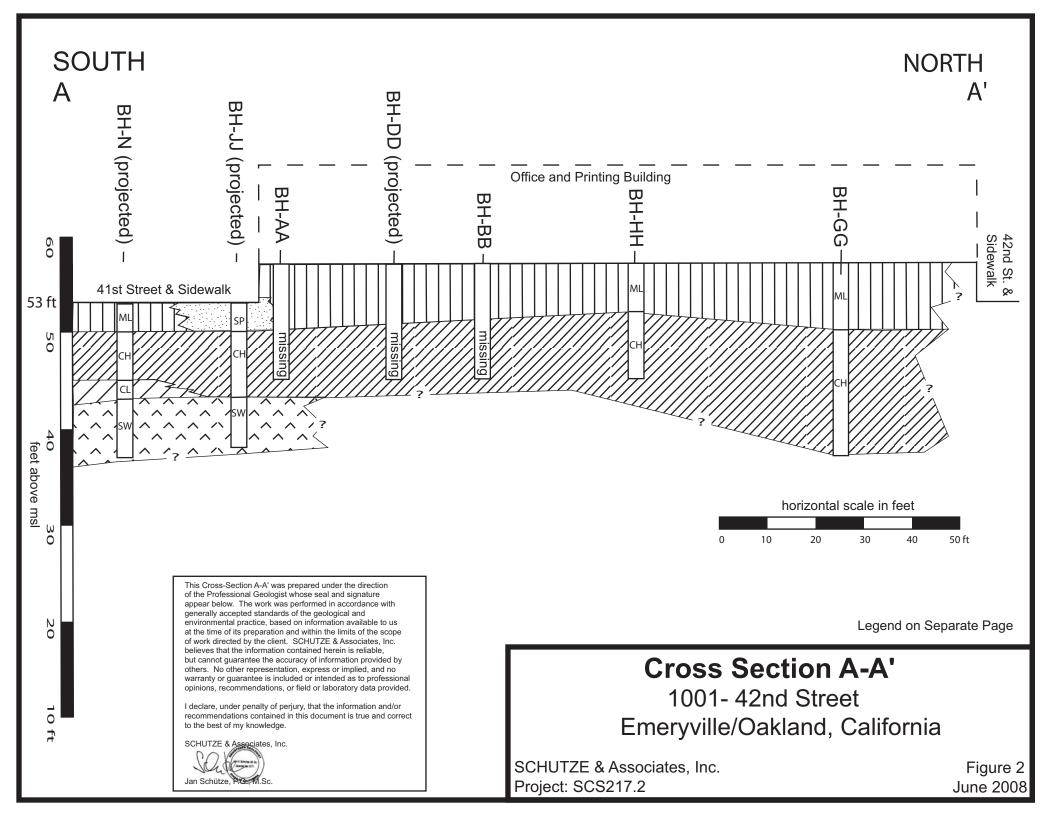
### Figure 2-5 Central Basin

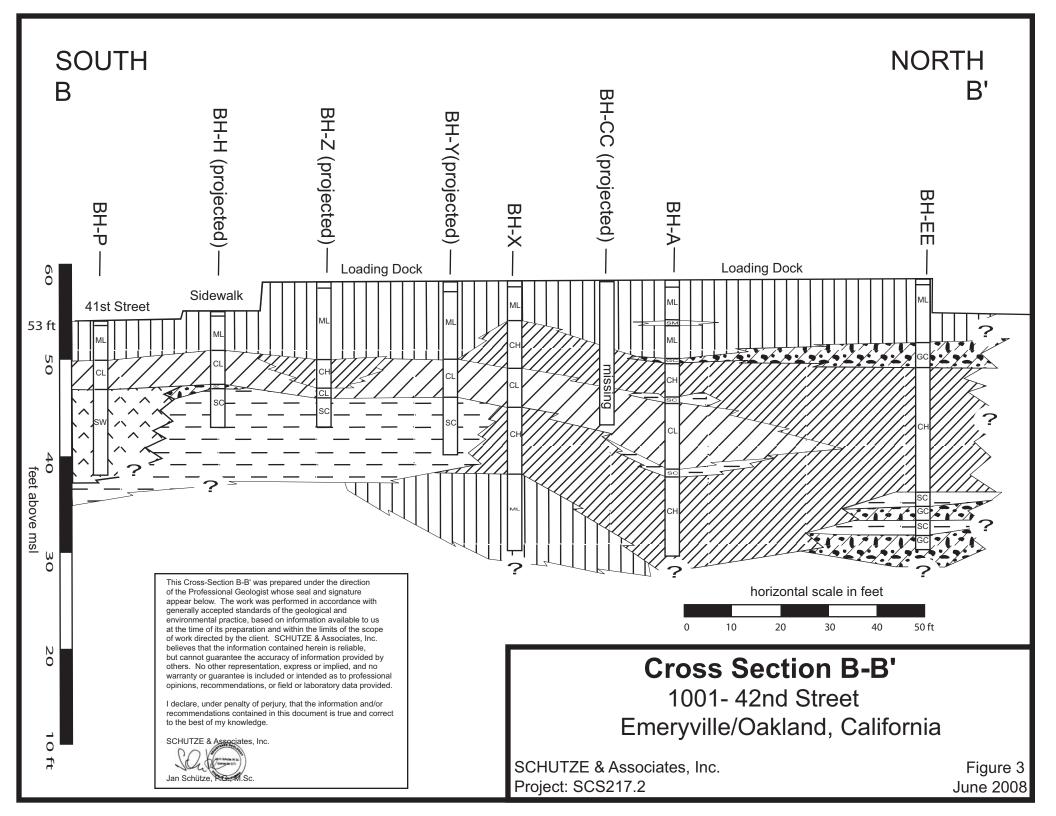


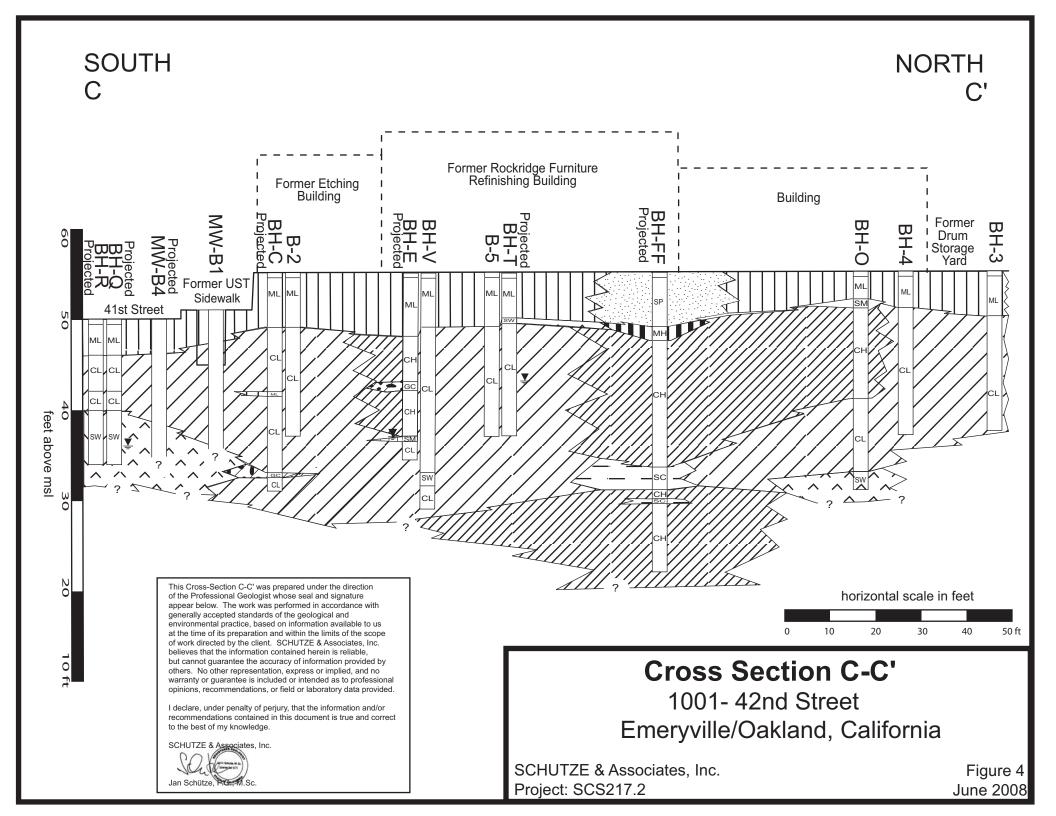
# Figure 2-10D Groundwater Basins: East and South Bay

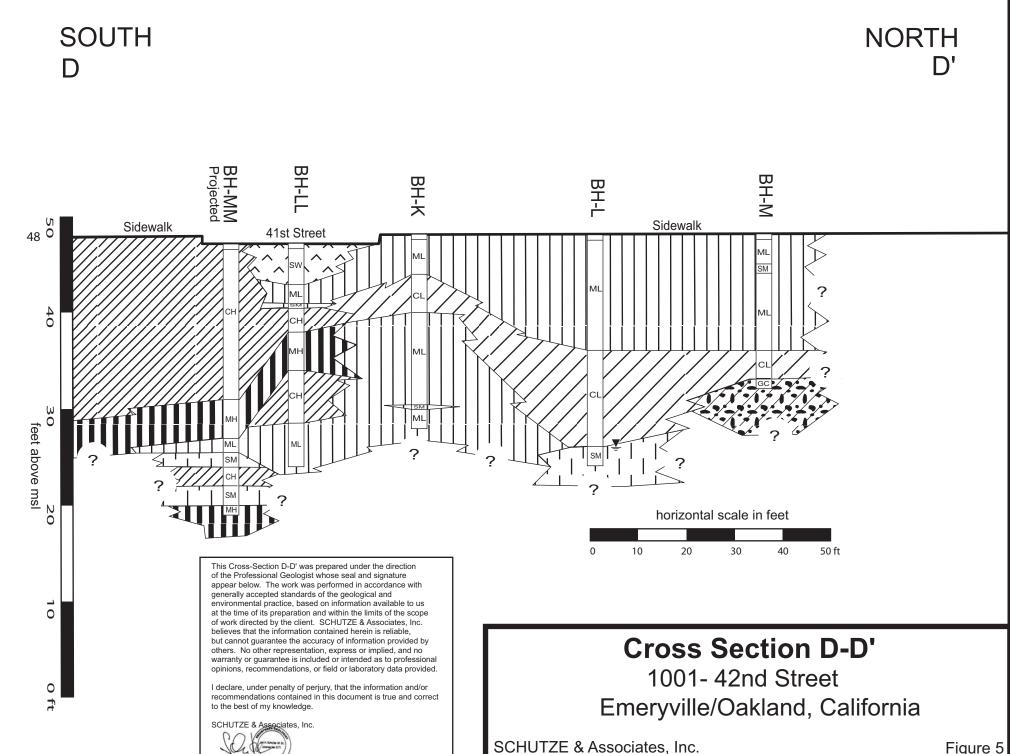












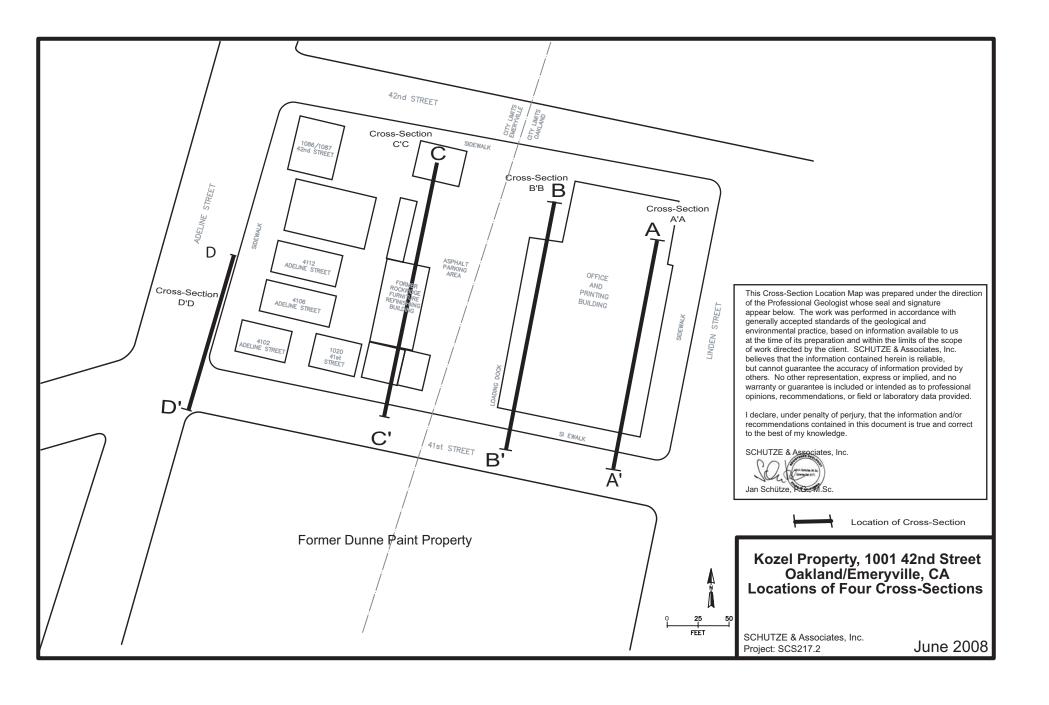
Project: SCS217.2

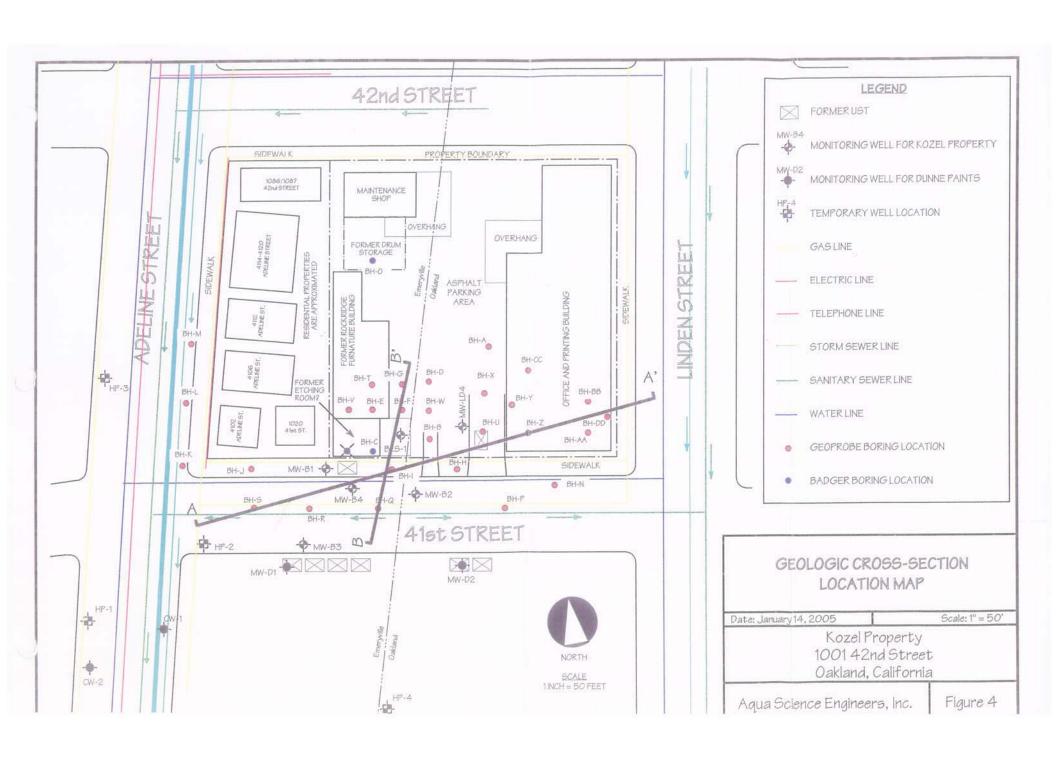
Figure 5 June 2008

#### **Legend for Geological Map Units**

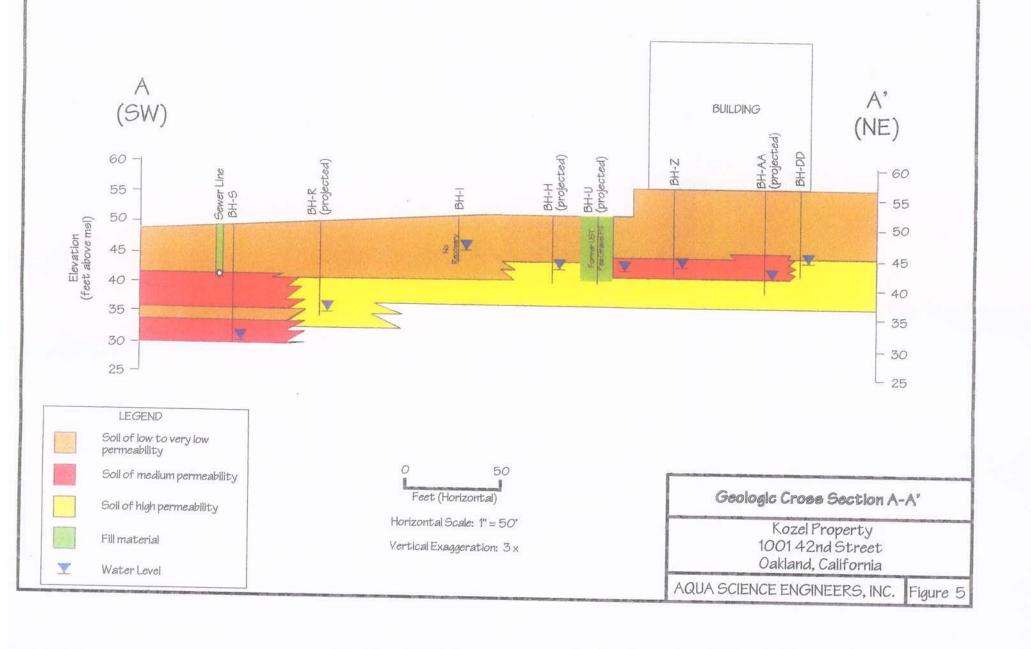
Group symbols, descriptions and graphic patterns correspond with those of the Unified Soil Classification system.

**GW** Well graded gravel or gravel-sand. Little fines. **GP** Poorly graded Gravels, gravel-sand mixtures, no fines. GM Sandy Gravels, gravel-sand mixtures (More than 1/2 of coarse fraction is > No. 4 sieve size GC Clayey Gravels, gravel-sand-clay mixtures **SW** Well graded sands or gravelly sands, little fines **SP** Poorly graded sand, gravelly sand, very little or no fines 1 (More than 1/2 of coarse fraction is > No. 4 sieve size (J) **SM** Silty sands, sand-silt mixtures (More than 1/2 of coarse fraction is < No. 4 sieve size **SC** Silty or clayey very fine sands (More than 1/2 of coarse fraction is > No. 200 sieve size **ML** Inorganic silty or clayey fine sands or clayey silts with slight plasticity (More than 1/2 of coarse fraction is < No. 200 sieve size **CL** Inorganic clays, gravelly, silty or sandy clays (More than 1/2 of material is < than No. 200 sieve size) and MH Inorganic silts and organic silts-clays, low plasticity **OH** Organic clays, silty or sandy clays (More than 1/2 of material is < than No. 200 sieve size) **CH** Inorganic clays, high plasticity (fat clays)

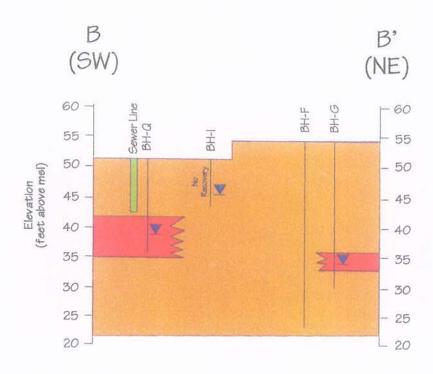


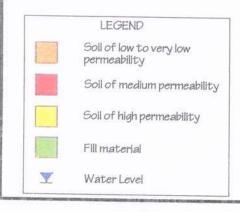


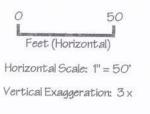
## GEOLOGIC CROSS-SECTION A- A'



## GEOLOGIC CROSS-SECTION B-B'







# Geologic Cross Section B-B° Kozel Property 1001 42nd Street Oakland, California

AQUA SCIENCE ENGINEERS, INC.

Figure 6

Table 1 Historical Ground Water Elevation Data 1001 42 <sup>nd</sup> Street Property Emeryville/Oakland, California

Well ID	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Depth to Product (feet)	Ground Water Elevation (msl
BES-1	12/10/1998	Not surveyed	10.18	-	-
	12/14/1999	-	10.98	-	-
	6/15/2004	-	9.95	9.94	_
	9/14/2004	-	10.28	10.21	-
	12/16/2004	54.27	7.94	7.92	46.35*
	3/30/2005	-	7.15	7.12	47.14*
	6/27/2005	_	9.1	9.12	45.186*
CW-1	11/12/2003	47.55	8.93	-	38.62
CVV-1	3/12/2003	±7.55	-	-	40.70
	6/15/2004	- -	-	- -	39.70
		-			
CT11.0	9/14/2004	-	-	-	39.17
CW-2	11/12/2003	47.59	9.25	-	38.34
	3/12/2003	-	7.22	-	40.37
	6/15/2004	-	8.40	-	39.19
	9/14/2004	-	8.98	-	38.61
CW-3	11/12/2003	46.39	8.30	-	38.09
	3/12/2003		6.04	-	40.35
	6/15/2004		7.74	-	38.65
	9/14/2004		8.65	-	37.74
MW-B1	6/10/1993	49.92	6.14		43.78
	7/8/1993		6.64		43.28
	8/24/1993		6.69		43.23
	9/29/1993		8.46		41.46
	10/20/1993		6.69		43.23
	11/23/1993		6.65		43.27
	12/10/1998		-		=
	12/14/1999		-	E 05	-
	6/15/2004		6.00	5.85	44.04*
	9/14/2004		6.18	6.14	43.77*
	12/16/2004		5.14	5.12	44.80*
	3/30/2005		3.54	3.50	46.41*
			Well covered with		
			new concrete		
	6/27/2005		sidewalk		
MW-B2	6/10/1993	50.77	6.75		44.02
	7/8/1993		6.91		43.86
	8/24/1993		7.22		43.55
	9/29/1993		8.80		41.97
	10/20/1993		7.25		43.52
	11/23/1993		7.26		43.51
	12/10/1998		6.43		44.34
	12/14/1999		6.50		44.27
	6/15/2004		6.40		44.37
	9/14/2004		6.56		44.21
	12/16/2004		5.88		44.89
	3/30/2005		5.27		45.50
	6/27/2005		5.99		44.78
MW-B3	6/10/1993	49.02	6.85		42.17
	7/8/1993		6.05		42.97
	8/24/1993		6.21		42.81
	9/29/1993		7.74		41.28
	10/20/1993		6.24		42.78
	11/23/1993		6.18		42.84
	12/10/1998		4.94		44.08
	12/14/1999		5.08		43.94
	6/15/2004		5.43		43.59
	9/14/2004		5.63		43.59
	12/16/2004		4.67		44.35
			4.67 3.92		44.35 45.10

Table 1 Historical Ground Water Elevation Data 1001 42 nd Street Property Emeryville/Oakland, California

Well ID	Date of Measurement	Top of Casing	Depth to Water	Depth to Product	Ground Water
		Elevation (msl)	(feet)	(feet)	Elevation (msl
MW-B4	6/10/1993	49.74	6.00		43.74
	7/8/1993		6.14		43.60
	8/24/1993		6.34		43.40
	9/29/1993		7.97		41.77
	10/20/1993		6.11		43.63
	11/23/1993		6.38		43.36
	12/10/1998		6.20		43.54
	12/14/1999		6.05		43.69
	6/15/2004		5.58	sheen	44.16
	9/14/2004		5.95		43.79
	12/16/2004		5.24		44.50
	3/30/2005		4.42		45.32
	6/27/2005		5.24		44.50
MW-D1	6/10/1993	50.56	5.29		45.27
	7/8/1993		5.67		44.89
	8/24/1993		6.01		44.55
	9/29/1993		7.69		42.87
	10/20/1993		6.20		44.36
	11/23/1993		6.08		44.48
	12/14/1999		4.60		45.96
	11/12/2003	49.32	5.98		43.34
	3/12/2003		5.97		43.35
	6/15/2004		6.07		43.25
	9/14/2004		5.86		43.46
MW-D2	6/10/1993	50.56	6.25		44.31
	7/8/1993		6.37		44.19
	8/24/1993		6.47		44.09
	9/29/1993		7.96		42.60
	10/20/1993		6.48		44.08
	11/23/1993		6.44		44.12
	12/10/1998		5.68		44.88
	12/14/1999		5.80		44.76
	11/12/2003	50.52	9.52		41.00
	3/12/2003		8.94		41.58
	6/15/2004		5.89		44.63
	9/14/2004		6.01		44.51
MW-LD4	6/10/1993	51.51	6.98		44.53
	7/8/1993	01.01	7.18		44.33
	8/24/1993		7.31		44.20
	9/29/1993		7.43		44.08
	10/20/1993		7.37		44.14
	11/23/1993		7.32		44.19
	12/10/1998		6.14		45.37
	12/14/1999		6.52		44.99
	6/15/2004		Well abandoned		44.77

Notes:

Adjusted ground water elevation = Top of casing elevation - depth to groundwater

+ (0.8 x free-floating hydrocarbon thickness)
Reproduced from "Report of Additional Soil and Groundwater Assessment ASE

Job No. 3976 at Kozel Property, 1001 42nd Street, Oakland, California"

(Aqua Science Engineers, Inc., October 2005)

 $<sup>\</sup>mbox{\ensuremath{*}}$  = Ground water elevation adjusted for free-floating hydrocarbons by the equation:

Table 2 Summary of Analytical Results for Soil Samples 1001 42nd Street Property Emeryville/Oakland, California

Boring ID	Sample Depth	Date Sampled	TPH Diesel <sup>1</sup>	TPH Gasoline <sup>2</sup>	TPH Motor	TPH Mineral	Benzene (μg/kg)	Toluene (μg/kg)	Ethyl Benzene	Total Xylenes	Acetone (μg/kg)	n-Butyl Benzene	sec-Butyl Benzene	tert-Butyl Benzene	1,1-DCA (μg/kg)	cis-1,2-DCE (μg/kg)	trans-1,2- DCE	p-Isopropyl- toluene	MEK (μg/kg)	Naphthalene (μg/kg)	n-Propyl- benzene	1,1,1-TCA (μg/kg)	TCE (μg/kg)	1,2,4-TMB (μg/kg)	Vinyl Chloride
	(feet)		(mg/kg)	(mg/kg)	Oil <sup>3</sup> (mg/kg)	Spirits <sup>2</sup> (mg/kg)	V 0, 0,		(µg/kg)	(μg/kg)	V 0/ 0/	(μg/kg)	(μg/kg)	(μg/kg)	(10)	(10)	(μg/kg)	(μg/kg)	W 67 67	W 67 67	(μg/kg)	(10)	( 0, 0,	W 07 07	(µg/kg)
ESL			100	100	500	100	180	9300	32000	11000	500	240000 (PRG)	220000 (PRG)	390000 (PRG)	320	1600	3100	NE	13000	460	240000 (PRG)	7800	260	52000 (PRG)	6.7
ВН-А	15.5	10/18/2004	na	na	na	8.3	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
ВН-В	11.5	10/18/2004	na	na	na	130	< 5	< 5	< 5	< 5	86	< 5	< 5	27	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-C	14.5	10/18/2004	na	na	na	13	< 5	< 5	< 5	< 5	52	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-D	15.5	10/18/2004	na	na	na	5.4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
ВН-Е	15.5	10/19/2004	na	na	na	2	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-F	19.5	10/19/2004	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-G	19.5	10/19/2004	na	na	na	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
ВН-Н	7.5	10/20/2004	na	na	na	14	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-I	1	10/20/2004	na	na	na	6.6	< 5	< 5	< 5	< 5	< 5	< 5	40	15	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-J	11.5	10/20/2004	na	na	na	2.3	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
ВН-К	15.5	10/20/2004	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-L	19.5	10/20/2004	na	na	na	1.2	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
ВН-М	11.5	10/20/2004	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-N	11.5	10/21/2004	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-O BH-P	20.5 7.5	10/21/2004	na	na	na	< 1	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 <b>85</b>	< 5 < 5	< 5 < 5	< 5 7.4	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 10 < 10	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5
	7.5		na	na	na	140				< 5	< 5										< 5		<u> </u>		< 5
BH-Q BH-R	11.5	10/21/2004	na	na	na	27 14	< 5 < 5	< 5 < 5	< 5 < 5	< 5	130	< 5 < 5	< 5 < 5	< 5 10	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 10 < 10	< 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5
BH-S	11.5	10/21/2004	na	na	na na	42	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5.6	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-T	11.5	10/21/2004	na	na		6.6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-U	7.5	10/21/2004	na na	na na	na na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-V	11.5	10/21/2004	na	na	na	12	< 13	< 13	< 13	< 13	< 130	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 130	< 25	< 13	< 13	< 13	< 13	< 13
D11 1	25.5	10/22/2004	na	na	na	3.3	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-W	7.5	10/22/2004	na	na	na	24	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
ВН-Х	11.5	11/9/2004	na	na	na	5.8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-Y	8.5	11/9/2004	na	na	na	44	< 5	< 5	< 5	< 5	67	< 5	< 5	17	< 5	< 5	< 5	36	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-Z	11.5	11/9/2004	na	na	na	51	< 5	< 5	< 5	< 5	100	< 5	< 5	12	< 5	< 5	< 5	26	< 5	28	< 5	< 5	< 5	< 5	< 5
BH-AA	11.5	12/14/2004	na	na	na	1,100	< 19	< 19	< 19	< 19	< 190	< 19	< 19	< 19	< 19	< 19	< 19	58	< 190	< 38	< 19	< 19	< 19	< 19	< 19
BH-BB	11.5	12/14/2004	na	na	na	320	< 17	< 17	< 17	< 17	< 170	< 17	< 17	< 17	< 17	< 17	< 17	17	< 170	< 34	< 17	< 17	< 17	< 17	< 17
BH-CC	11.5	12/14/2004	na	na	na	31	< 20	< 20	< 20	< 20	< 200	< 20	< 20	< 20	< 20	< 20	< 20	32	< 200	< 39	< 20	< 20	< 20	< 20	< 20
	19.5	12/14/2004	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
BH-DD	11.5	12/14/2004	na	na	na	< 1	< 20	< 20	< 20	< 20	< 200	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 200	< 41	< 20	< 20	< 20	< 20	< 20
BH-EE	3.5	8/15/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	23.5	8/15/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-FF	3.5	8/15/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	27.5	8/15/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-GG	2.5	8/16/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	19.5	8/16/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
ВН-НН	5.5	8/16/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	11.5	8/16/2005	na	na	na	7.1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-II	14.5	8/16/2005	na	na	na	19	< 5	< 5	< 5	< 5	56	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	24.5	8/16/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-JJ	34.5 11.5	8/16/2005	na	na	na	< 1	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 50 < 50	< 10 < 10	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5
DET-JJ	15.5	8/16/2005 8/16/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
1	10.0	0/10/2005	na	na	na	` 1	<b>\</b> 5	<b>\</b> 0	<b>\</b> 5	<b>\</b> 5	<b>\</b> 3	\ b	<b>\</b> 5	<b>\</b> 5	<b>\</b> 5	<b>\</b> 0	<b>\</b> 5	<b>\</b> 5	× 50	< 10	<b>\</b> 5	< 5	<b>\</b> 3	<b>\</b> 5	< 3

Boring	Sample	Date Sampled	TPH	TPH	TPH	TPH	Benzene	Toluene	Ethyl	Total	Acetone	n-Butyl	sec-Butyl	tert-Butyl		cis-1,2-DCE	trans-1,2-	p-Isopropyl-	MEK	Naphthalene	n-Propyl-	1,1,1-TCA	TCE	1,2,4-TMB	Vinyl
ID	Depth (feet)		Diesel <sup>1</sup>	Gasoline <sup>2</sup>	Motor Oil <sup>3</sup>	Mineral	(μg/kg)	(μg/kg)	Benzene	Xylenes	(μg/kg)	Benzene	Benzene	Benzene	(μg/kg)	(μg/kg)	DCE	toluene	(μg/kg)	(μg/kg)	benzene	(μg/kg)	(μg/kg)	(μg/kg)	Chloride
	(reet)		(mg/kg)	(mg/kg)	(mg/kg)	Spirits <sup>2</sup> (mg/kg)			(μg/kg)	(μg/kg)		(μg/kg)	(μg/kg)	(μg/kg)			(μg/kg)	(μg/kg)			(µg/kg)				(μg/kg)
ESL			100	100	500	100	180	9300	32000	11000	500	240000 (PRG)	220000 (PRG)	390000 (PRG)	320	1600	3100	NE	13000	460	240000 (PRG)	7800	260	52000 (PRG)	6.7
BH-KK	11.5	8/17/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	23.5	8/17/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-LL	11.5	8/17/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
	23.5	8/17/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-MM	11.5	8/17/2005	na	na	na	56	< 250	< 250	< 250	< 500	< 25000	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 25000	< 250	< 250	< 250	< 250	< 250	< 250
	15.5	8/17/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
BH-NN	11.5	8/17/2005	na	na	na	15	< 250	< 250	< 250	< 500	< 25000	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 25000	< 250	< 250	< 250	< 250	< 250	< 250
	15.5	8/17/2005	na	na	na	< 1	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 10	< 5	< 5	< 5	< 5	< 5
B-1	11.5	5/30/2006	< 2.5	390	< 10	55	< 5000	< 5000	< 5000	< 10000	< 100000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 40000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000
	14	5/30/2006	< 5	480	< 20	110	< 5000	< 5000	< 5000	< 10000	< 100000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 40000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000
B-2	7	5/30/2006	< 2.5	620	< 10	< 2.5	< 5000	< 5000	< 5000	< 10000	< 100000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 40000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000
	15	5/30/2006	< 0.05	0.12	< 0.2	< 0.05	< 0.5	0.52	< 0.5	< 0.5	20	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5	< 5	< 20	< 5	< 5	< 0.5	< 0.5	< 5	< 0.5
B-3	7	5/30/2006	< 2.5	0.6	< 10	< 2.5	< 5	< 5	< 5	< 10	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 40	< 5	< 5	< 5	< 5	< 5	< 5
B-4	7	5/30/2006	< 2.5	< 0.1	< 10	< 2.5	< 5	< 5	< 5	< 10	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 40	< 5	< 5	< 5	< 5	< 5	< 5
B-5	7	5/30/2006	< 2.5	< 0.1	< 10	< 2.5	< 5	< 5	< 5	< 10	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 40	< 5	< 5	< 5	< 5	< 5	< 5
SVP-5	12.5	3/28/2007	na	na	na	< 2.5	na	na	na	na	na	na	na	na	< 5	< 5	< 5	na	na	na	na	< 5	< 5	na	< 5
	14	3/28/2007	na	na	na	130	na	na	na	na	na	na	na	na	< 5	< 5	< 5	na	na	na	na	< 5	< 5	na	< 5

#### Notes

This table includes results for only those compounds detected in at least one soil sample, and additional selected compounds detected in ground water and/or soil gas samples. Analysis for VOCs was performed by EPA Method 8260B.

Analysis for TPH was performed by EPA Method 8015M with silica gel cleanup (2004, 2005), EPA 8015B (2006), and EPA 8015B(M) (2007).

Non-detections noted by the less than sign (<) followed by the laboratory reporting limit.

"na" = not analyze

ESL = the Environmental Screening Level for residential soil in areas where groundwater is not a current or potential source of drinking water established by the California Regional Water Quality Control, San Francisco Bay Region as presented in the "Screening for Environmental Concerns at Sites with Contamined Soil and Groundwater" document dated February 2005. TPH ESL categorization based on carbon ranges.

PRG = The United States Environmental Protection Agency IX Preliminary Remediation Goal for residential soil; presented for compounds where an ESL has not been established.

NE = Not Established (ESL or PRG)

<sup>1</sup> TPH (middle distillates) ESL value

<sup>2</sup> TPH (gasolines) ESL value

<sup>3</sup> TPH (residual fuels) ESL value

Chemicals:

DCA = Dichloroethane

DCE = Dichloroethene

MEK = Methyl Ethyl Ketone

TCA = Trichloroethane

TCE = Trichloroethylene

TMB = Trimethylbenzene

TPH = Total Petroleum Hydrocarbons

Table 3 Summary of Analytical Results for Ground Water Samples 1001 42nd Street Property Emeryville/Oakland, California

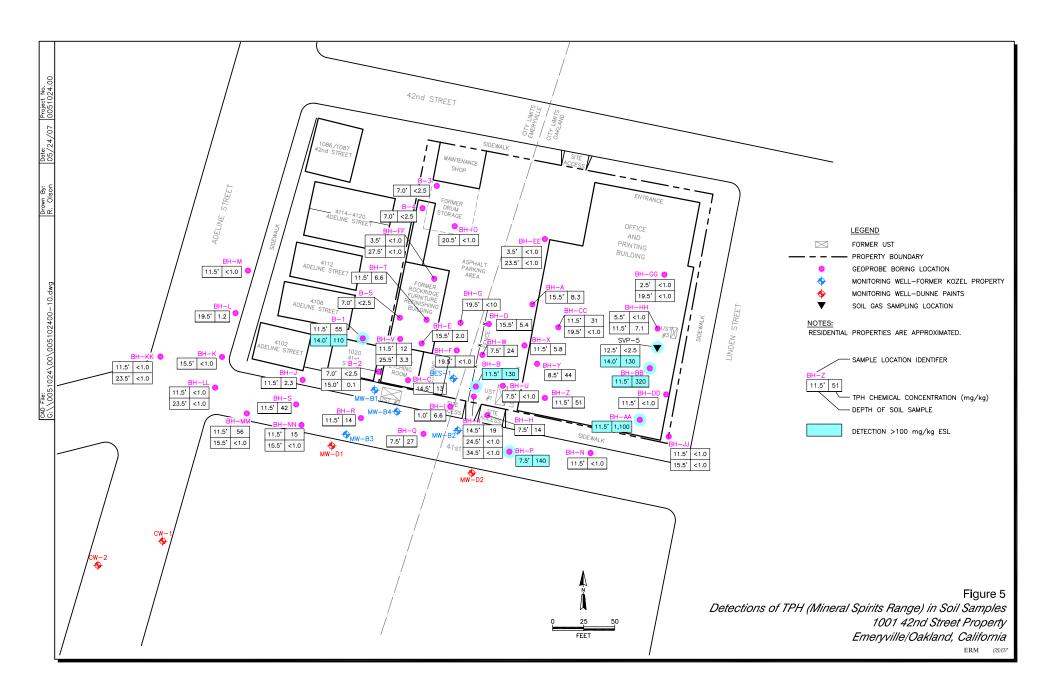
Boring or Well	Date Sampled	TPH Diesel	TPH	TPH	TPH Mineral	TEPH	TPPH	Kerosene	Benzene	Toluene	Ethyl	Total	Acetone	n-Butyl	sec-Butyl	tert-Butyl	1,1-DCA	cis-1,2-DCE	trans-1,2-	p-Isopropyl	MEK (μg/L)	Naphthalene	n-Propyl	1,1,1-TCA	TCE	1,2,4-	Vinyl
ID	•	(mg/L)	Gasoline	Motor Oil	Spirits	(Non-	(Non-	(mg/L)	(µg/L)	(µg/L)	Benzene	Xylenes	(µg/L)	Benzene	Benzene	Benzene	(µg/L)	(µg/L)	DCE	toluene	(10)	μg/L)	benzene	(µg/L)	(µg/L)	TMB	Chloride
			(mg/L)	(mg/L)	(mg/L)	Diesel)	Gasoline)				(µg/L)	(µg/L)		(µg/L)	(µg/L)	(µg/L)			(µg/L)	(μg/L)			(µg/L)			(µg/L)	(µg/L)
POT		0.648	o eb	0.646	o mh	(mg/L)	(mg/L)	0.648		400	200	400	4500	) TP	) TP	) III		Eoo	EOO		4.4000	2.1	) TT		0.00	) III	
SOIL BORING	2	0.64ª	0.5 <sup>b</sup>	0.64 <sup>c</sup>	0.5 <sup>b</sup>	0.64 <sup>c</sup>	0.64 <sup>c</sup>	0.64ª	46	130	290	100	1500	NE	NE	NE	47	590	590	NE	14000	24	NE	62	360	NE	3.8
D 1	5/31/2006	< 0.11	0.46	< 0.44	< 0.11	na	na	na	< 0.5	0.65	< 0.5	2.7	47	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5	< 5	< 20	< 5	< 5	< 0.5	< 0.5	< 5	< 0.5
D-1	6/7/2006	na	na	na	na	na	na	na	< 0.5	< 0.5	< 0.5	< 0.5	< 20	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5	< 5	< 20	< 5	< 5	< 0.5	< 0.5	< 5	< 0.5
BH-A	10/18/2004	na	na	na	0.054	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-B	10/18/2004	na	na	na	1700	na	na	na	< 2	< 2	< 2	< 4	< 200	9	< 4	7.9	< 2	< 2	< 2	< 4	< 200	< 4	< 4	< 2	< 2	< 2	< 2
BH-C	10/19/2004	na	na	na	0.23	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	2.2	3.1	< 0.5	4.7	< 0.5	< 1	< 50	<1	< 1	< 0.5	< 0.5	< 0.5	0.51
BH-E	10/19/2004	na	na	na	3.6	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	1.3	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-F	10/19/2004	na	na	na	IW	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-G	10/19/2004	na	na	na	IW	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	0.57	< 0.5	< 0.5
BH-H	10/20/2004	na	na	na	1200	na	na	na	< 2	< 2	< 2	< 4	< 200	< 4	56	48	< 2	< 2	< 2	< 4	< 200	< 4	< 4	< 2	< 2	< 2	< 2
BH-I	10/20/2004	na	na	na	57	na	na	na	< 2	< 2	< 2	< 4	< 200	< 4	35	13	< 2	< 2	< 2	< 4	< 200	< 4	20	< 2	< 2	< 2	< 2
BH-I	10/20/2004	na	na	na	1600	na	na	na	< 2	< 2	< 2	< 4	< 200	< 4	< 4	20	< 2	< 2	< 2	< 4	< 200	< 4	< 4	< 2	< 2	< 2	< 2
BH-K	10/20/2004	na	na	na	1.3	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-L	10/20/2004	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-M	10/20/2004	na	na	na	0.072	na	na	na	< 0.5	0.64	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-N	10/21/2004	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-O	10/21/2004	na	na	na	< 0.05	na	na	na	1.6	26	2.4	13	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-P	10/21/2004	na	na	na	0.69	na	na	na	< 0.5	0.57	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-Q	10/21/2004	na	na	na	110	na	na	na	< 2	< 2	< 2	< 4	< 200	< 4	< 4	6.1	< 2	< 2	< 2	< 4	< 200	< 4	< 4	< 2	< 2	< 2	< 2
BH-R	10/21/2004	na	na	na	880	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	4.9	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-S	10/21/2004	na	na	na	0.52	na	na	na	< 0.5	0.64	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-T	10/21/2004	na	na	na	11	na	na	na	0.7	12	1.2	6.8	< 50	< 1	< 1	2	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	0.9	< 0.5
BH-U	10/21/2004	na	na	na	1.6	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-W	10/21/2004	na	na	na	870	na	na	na	< 1	< 1	< 1	< 2	< 100	< 2	< 2	26	< 1	< 1	< 1	< 2	< 100	2.6	< 2	< 1	< 1	4	< 1
BH-X	11/9/2004	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-Y	11/9/2004	na	na	na	1400	na	na	na	< 5	12	< 5	12	< 500	< 10	< 10	46	< 5	< 5	< 5	< 10	< 500	41	< 10	< 5	< 5	< 5	< 5
BH-Z	11/9/2004	na	na	na	59	na	na	na	< 1	11	< 0.5	7.3	< 100	< 2	< 2	< 2	< 1	< 1	< 1	< 2	< 100	< 2	< 2	< 1	< 1	< 1	< 1
BH-AA	12/14/2004	na	na	na	2000	na	na	na	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 10	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 5	< 5	< 5	< 5
BH-BB	12/14/2004	na	na	na	1100	na	na	na	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 10	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 5	< 5	< 5	< 5
BH-DD	12/14/2004	na	na	na	0.97	na	na	na	< 0.5	2.9	0.58	3.8	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	0.8	< 0.5
BH-EE	8/15/2005	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-FF	8/16/2005	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-II 16-20'	8/16/2005	na	na	na	0.16	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-II 23-27'	8/16/2005	na	na	na	0.056	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-II 46-50'	8/16/2005	na	na	na	0.068	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-JJ	8/16/2005	na	na	na	0.52	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-KK	8/17/2005	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-LL	8/17/2005	na	na	na	< 0.05	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-MM	8/17/2005	na	na	na	3.5	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
BH-NN	8/17/2005	na	na	na	< 0.05	na	na	na	IW	IW	IW	IW	IW	IW	IW	IW	IW	IW	IW	IW	IW						
MONITORING																											
BES-1	4/21/1994	18	na	na	12	na	na	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	12/10/1998	< 1	na	na	78	na	na	< 1	< 100	< 100	< 100	< 100	< 2500	na	na	na	< 100	na	na	na	< 5000	na	na	< 100	< 100	na	< 250
	12/14/1999	na	na	na	72	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	5/28/2003	19	84	na	60	na	na	na	DU	< 0.5	< 0.5	< 0.5	DU	< 0.5	< 0.5	4.4	1.5	17	2.1	DU	DU	DU	DU	DU	DU	DU	20
	6/18/2003	DU	DU	DU	120	DU	DU	na	DU	< 0.5	< 0.5	< 0.5	DU	< 0.5	< 0.5	< 0.5	< 0.5	14	< 0.5	DU	DU	DU	DU	DU	DU	DU	18
	6/15/2004			1			Due to Free																				
<u> </u>	9/14/2004			<b> </b>			Due to Free																				
1	12/16/2004			1			Due to Free									1	1										
	3/30/2005				Not Sa:	mpled Due	to Free Prodi	uct (0.03-feet)	)								I			l	l						

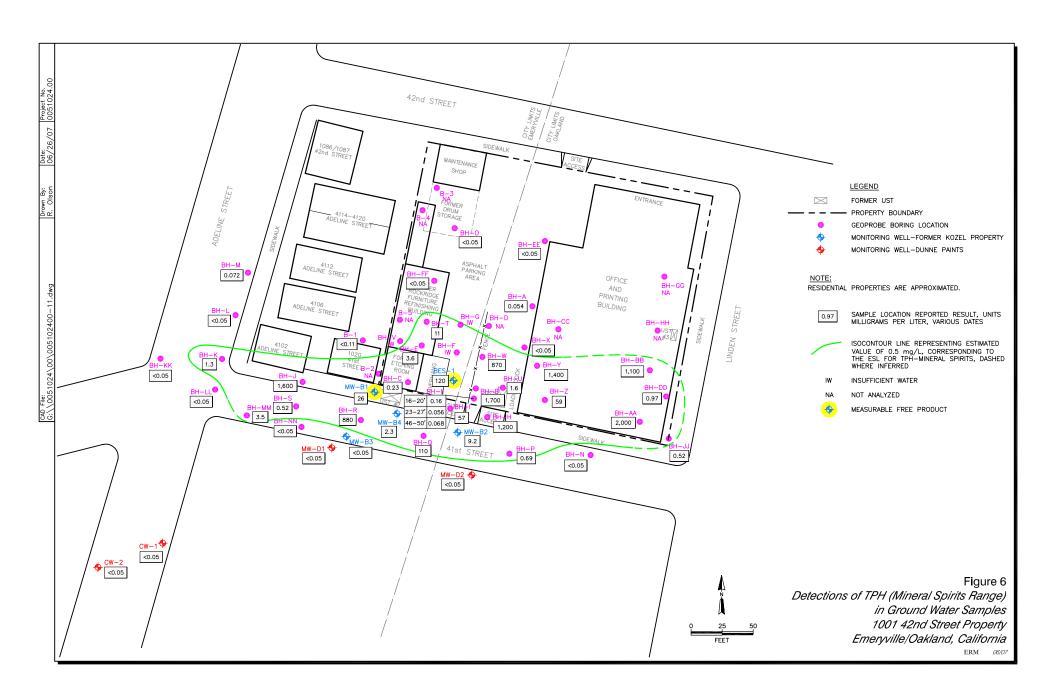
Table 3 Summary of Analytical Results for Ground Water Samples 1001 42nd Street Property Emeryville/Oakland, California

Boring or Well	Date Sampled	TPH Diesel	TPH	TPH	TPH Mineral	TEPH	TPPH	Kerosene	Benzene	Toluene	Ethyl	Total	Acetone	n-Butyl	sec-Butyl	tert-Butyl	1,1-DCA	cis-1,2-DCE	trans-1,2-	p-Isopropyl	MEK (μg/L)	Naphthalene	n-Propyl	1,1,1-TCA	TCE	1,2,4-	Vinyl
ID		(mg/L)	Gasoline	Motor Oil	Spirits	(Non-	(Non-	(mg/L)	(µg/L)	$(\mu g/L)$	Benzene	Xylenes	(µg/L)	Benzene	Benzene	Benzene	(µg/L)	(µg/L)	DCE	toluene		(μg/L)	benzene	(µg/L)	(µg/L)	TMB	Chloride
			(mg/L)	(mg/L)	(mg/L)	Diesel)	Gasoline)				(µg/L)	(µg/L)		(µg/L)	(µg/L)	(µg/L)			(µg/L)	(µg/L)			(µg/L)			(µg/L)	(μg/L)
DCT		0.642	0.5b	0.64°	0.5 <sup>b</sup>	(mg/L)	(mg/L)	0.64ª	46	130	200	100	1500	NIE	NIE	NIE	47	500	500	NIE	14000	24	NIE	62	260	NIE	3.8
ESL	6/27/2005	0.64	0.5	0.64 <sup>c</sup>		0.64°	0.64°	0.64 <sup>a</sup> ict (0.02-feet)	40	150	290	100	1500	NE	NE	NE	4/	590	590	NE	14000	24	NE	62	360	NE	3.0
	6/2//2005				Not Sal	пріец Due t	o riee riout	ict (0.02-reet)																		+	
CW-1	11/12/2003	na	na	na	0.085	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	3/12/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	6/15/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
-	9/14/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 10	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 0.05
	3/11/2001	710.	110	- 1111	. 0.00	110	11.1	110	50			- 10	20							50	De	- 50	- 50	50	50	100	. 0.00
CW-2	11/12/2003	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	3/12/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	6/15/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	9/14/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 10	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 0.05
																[											
CW-3	11/12/2003	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	5.1	DU	< 10
	3/12/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	6/17/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	9/14/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 10	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 0.05
MW-B1	9/30/1991	< 0.05	18	na	na	na	na	29	5	6	250	980	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
MIVV-DI	6/10/1993	na	na	na na	na	na 27	na 57	na 29	ND	ND	ND ND	ND 980	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	9/29/1993	na na	na	na na	43	na 27	na	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	5/28/2003	1100	37	na na	26	na na	na na	na na	DU	< 2.5	< 2.5	< 2.5	DU	< 2.5	< 2.5	23	< 2.5	< 2.5	na	DU	DU	DU	DU	DU	DU	DU	< 2.5
	6/15/2004	1100	37	114			Due to Free		DU	~ Z.J	~ Z.J	~ Z.J	DU	~ Z.J	\ Z.J	23	~ 2.3	~ Z.J	114	DU	DC	De	DU	DU	DU	- 00	\ Z.J
	9/14/2004						Due to Free																			+	
-	12/16/2004						Due to Free																			+	
	3/30/2005							ict (0.04-feet)																		+	
	6/27/2005							valk Poured (	Over Well																	1	
	.,,																									1	
MW-B2	6/10/1993	na	na	na	na	3.8	1.4	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	9/29/1993	na	na	na	290	na	na	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	12/10/1998	< 1	< 0.05	na	150	na	2.4	< 1	< 100	< 100	< 100	< 100	< 2500	na	na	na	< 100	na	na	na	< 5000	na	na	< 100	< 100	na	< 250
	12/14/1999	na	na	na	0.63	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	5/28/2003	22	1.6	na	1.1	na	na	na	DU	< 0.5	< 0.5	< 0.5	DU	< 0.5	3.2	3.2	< 0.5	< 0.5	na	DU	DU	DU	DU	DU	DU	DU	< 0.5
	6/15/2004	na	na	na	3	na	na	na	< 5	< 5	< 5	< 10	< 500	33	< 10	< 10	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 5	< 5	< 5	< 5
	9/14/2004	na	na	na	0.41	na	na	na	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 10	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 5	< 5	< 5	< 5
	12/16/2004	na	na	na	0.48	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	1.4	1.8	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
	3/30/2005	na	na	na	14	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	4.1	5.8	< 0.5	0.57	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	2.2
	6/27/2005	na	na	na	4.3	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	4.7	5.9	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	2.2
	3/2/2006	na	na	na	9.2	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	1.8	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
L																								L		<b></b>	
MW-B3	6/10/1993	na	na	na	na	1.7	0.51	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	9/29/1993	na	na	na	2.4	na	na	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	12/10/1998	< 0.05	< 0.05	na	0.12	na	0.83	< 0.05	< 2.0	< 2.0	< 2.0	< 2.0	< 50.0	na	na	na	< 2.0	na	na	na	< 100.0	na	na	< 2.0	< 2.0	na	< 5.0
	12/14/1999	na	na	na	< 0.05	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na ==
1	5/28/2003	na	na	na	ND 100	na	na	na	DU	< 0.5	< 0.5	< 0.5	DU	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	na na	DU	DU	DU	DU	DU	DU	DU	< 0.5
	6/15/2004	na	na	na	< 0.05	na	na	na	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 1	< 50 < 50	< 1	< 1	< 0.5 < 0.5	< 0.5	< 0.5 < 0.5	< 0.5 < 0.5
<b></b>	9/14/2004 12/16/2004	na	na	na	< 0.05 < 0.05	na	na	na na	< 0.5	< 0.5	< 0.5	< 1	< 50 < 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50 < 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
	3/30/2005	na na	na na	na na	< 0.05	na na	na na	na na	< 0.5	< 0.5	< 0.5	< 1	< 50 < 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50 < 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
<b> </b>	6/27/2005	na na	na na	na na	< 0.05	na na	na na	na na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	0.5	3.4	< 0.5	< 0.5
	3/2/2006	na na	na	na na	< 0.05	na na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5
	3/2/2006	па	na	па	< U.U3	па	na	na	< 0.5	<b>►</b> 0.5	< 0.5	<u> </u>	\ 50	<u> </u>	<u> </u>	<u> </u>	\ 0.5	\ 0.5	<b>\</b> 0.5	<u> </u>	\ 30	<u> </u>	\ 1	\ 0.5	< 0.5	\ U.5	<b>►</b> 0.5

Table 3 Summary of Analytical Results for Ground Water Samples 1001 42nd Street Property Emeryville/Oakland, California

	Date Sampled	TPH Diesel	TPH	TPH	TPH Mineral	TEPH	TPPH	Kerosene	Benzene	Toluene	Ethyl	Total	Acetone	n-Butyl	sec-Butyl	tert-Butyl	1,1-DCA	cis-1,2-DCE	trans-1,2-	p-Isopropyl	MEK (μg/L)	Naphthalene	n-Propyl	1,1,1-TCA	TCE	1,2,4-	Vinyl
ID		(mg/L)	Gasoline	Motor Oil	Spirits	(Non-	(Non-	(mg/L)	(µg/L)	(µg/L)	Benzene	Xylenes	(μg/L)	Benzene	Benzene	Benzene	(µg/L)	(µg/L)	DCE	toluene		(μg/L)	benzene	(µg/L)	(µg/L)	TMB	Chloride
			(mg/L)	(mg/L)	(mg/L)	Diesel) (mg/L)	Gasoline) (mg/L)				(μg/L)	(μg/L)		(μg/L)	(μg/L)	(μg/L)			(μg/L)	(µg/L)			(µg/L)			(μg/L)	(μg/L)
ESI.		0.64 <sup>a</sup>	0.5 <sup>b</sup>	0.64°	0.5 <sup>b</sup>	0.64°	0.64°	0.64 <sup>a</sup>	46	130	290	100	1500	NE	NE	NE	47	590	590	NE	14000	24	NE	62	360	NE	3.8
MW-B4	6/10/1993	na	na	na	na	36	36	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	9/29/1993	na	na	na	1.4	na	na	na	ND	ND	ND	ND	DU	ND	ND	ND	ND	ND	ND	DU	DU	DU	DU	ND	ND	DU	ND
	12/10/1998	1	< 0.05	na	7.5	na	2.7	< 0.05	< 20	< 20	< 20	< 20	< 500	na	na	na	< 20	DU	DU	DU	< 1000	DU	DU	< 20	< 20	DU	< 50
	12/14/1999	na	na	na	5.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	5/28/2003	7	14	DU	0.99	na	na	na	DU	< 0.5	< 0.5	< 0.5	DU	< 0.5	< 0.5	2.8	< 0.5	< 0.5	na	DU	DU	DU	DU	DU	DU	DU	1.8
	6/15/2004	na	na	na	1.3	na	na	na	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 10	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 5	< 5	< 5	< 5
	9/14/2004	na	na	na	0.4	na	na	na	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 10	< 5	< 5	< 5	< 10	< 500	< 10	< 10	< 5	< 5	< 5	< 5
	12/16/2004	na	na	na	0.45	na	na	na	< 1	< 1	< 1	< 2	< 100	< 2	< 2	4.6	< 1	< 1	< 1	< 2	< 100	< 2	< 2	< 1	< 1	< 1	< 1
	3/30/2005	na	na	na	3	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	2	6.5	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	1.3
	6/27/2005	na	na	na	2.8	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	3	7.1	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	1.9
	3/2/2006	na	na	na	2.3	na	na	na	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	3.5	< 0.5	< 0.5	< 0.5	< 1	< 50	< 1	< 1	< 0.5	< 0.5	< 0.5	0.86
MW Di	0 /2/ /1000				1										l		l							l	1	l	
MW-D1	8/26/1988 1/18/1989	na na	na na	na na	< 1	na na	na na	na na	na DU	na 2	na ND	na 1.8	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na
	4/24/1989	na na	na na	na na	< 1	na na	na na	na na	DU	ND 2	ND	1.8	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na
1	2/21/1990	na	na	na	< 0.1	na	na	ND	DU	ND	0.4	1.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1	6/10/1992	na	na	na	< 0.05	na	na	ND	DU	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	6/10/1993	na	na	na	na	0.22	0.23	na	DU	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	9/24/1993	na	na	na	< 0.05	na	na	na	DU	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	9/29/1993	na	na	na	0.11	na	na	na	DU	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	12/14/1999	na	na	na	< 0.05	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	11/12/2003	na	na	na	0.085	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	3/12/2004	na	na	na	0.26	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	6/15/2004	na	na	na	0.1	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	9/14/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 10	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 5
MW-D2	8/26/1988	na	na	na	1.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	1/18/1989	na	na	na	< 1	na	na	na	DU	6.3	ND	12	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	4/24/1989	na	na	na	< 1	na	na	na	DU	ND ND	ND	7.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2/21/1990 6/10/1992	na	na	na	0.3	na	na	na	DU DU	ND	0.3 ND	1.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	6/10/1992	na	na	na	0.076	na 0.1	na 6.2	na	DU	ND	ND	ND ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	9/24/1993	na na	na na	na na	na < 0.05	9.1 na	na	na na	DU	ND	ND	ND	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na	na na
	9/29/1993	na	na	na	0.22	na	na	na	DU	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	12/10/1998	< 0.05	< 0.05	na	0.18	na	0.095	< 0.05	< 2	< 2	< 2	< 2	< 50.0	na	na	na	< 2.0	na	na	na	< 100	na	na	< 2.0	< 2.0	na	< 5.0
	12/14/1999	na	na	na	0.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	11/12/2003	na	na	na	1.4	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	3/12/2004	na	na	na	0.33	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	6/15/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 5	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 10
	9/14/2004	na	na	na	< 0.05	na	na	na	DU	< 5	< 5	< 10	DU	< 5	< 5	< 5	< 5	< 5	< 5	DU	DU	DU	DU	DU	DU	DU	< 5
MW-LD4	9/30/1991	na	na	na	na	na	na	na	2	3.1	9	24	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU
	6/10/1993	na	na	na	na	21	1.1	na	DU	ND	ND	ND	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU
	9/29/1993	na	na	na	0.7	na	na	na	DU	ND	ND	ND	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU	DU
	12/10/1998	0.17	< 0.05	na	0.13	na	0.083	< 0.05	< 2.0	< 2.0	< 2.0	< 2.0	< 50	DU	DU	DU	< 2.0	DU	DU	DU	< 100	DU	DU	< 2.0	< 2.0	DU	< 5.0
	12/14/1999	na	na	na	440	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	1/13/2000*	na	na	na	630	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	6/15/2004					Ab	andoned					I			l	l .	1	J									







436 14<sup>th</sup> Street, Suite 1216 ● Oakland, CA 94612 ● Tel (510) 625-8175 ● Fax (510) 625-8176 ● js@schutze-inc.com

June 12, 2008 Project No. SCS217

Ms. Catherine W. Johnson Wendel Rosen Black & Dean LLP 1111 Broadway, 24<sup>th</sup> Floor Oakland, CA 94607

Reference: Former Kozel Property

1001 42<sup>nd</sup> Street

Emeryville/Oakland, California

Subject: Well Survey Report

Dear Ms. Johnson:

SCHUTZE & Associates, Inc. is pleased to submit this Well Survey Report to Wendel Rosen Black & Dean LLP. The purpose of the survey was to identify and evaluate all wells that may have the potential to act as preferential conduits for groundwater migration for the property located at 1001 42nd Street in Emeryville/Oakland, California (subject site).

The subject site is bounded by 42nd Street to the north, 41st Street to the south, Linden Street to the east, and various residential properties to the west. The subject site is developed with three commercial structures. The buildings are currently vacant. Previous activities on the subject site included paint and varnish manufacturing, print production and furniture refinishing.

# A. WELLS

SCHUTZE & Associates, Inc. submitted a Well Completion Report Release Agreement to the California Department of Water Resources on May 12, 2008. A ½-mile well survey identified two cathodic protection wells, three industrial wells and 28 monitoring wells. A list of these wells is attached as Table 1. The location of these wells is also depicted in Figure 1.

#### A.1 Cathodic Protection Wells

The well survey identified two cathodic protection wells. One of these wells is located approximately 750 feet to the north of the subject site at the intersection of 44th Street and Adeline Street, and the other is located approximately 1,500 feet to the southeast at the intersection of Market Street and Apgar Street.

### A.2 Industrial Wells

The well survey identified three industrial wells. One of these wells is located approximately 1,000 ft to the southeast of the subject site at 899 40th street, and the other two are approximately 2,200 feet to the southwest at 3516 Adeline Street.

# A.3 Monitoring Wells

The well survey identified 26 monitoring wells. The monitoring wells identified are at the following locations:

- Three monitoring wells are located approximately 500 feet to the southeast of the subject site at 989 41<sup>st</sup> Street.
- Eight monitoring wells are located approximately 2,500 feet to the southeast at 731 West MacArthur Boulevard.
- Twelve monitoring wells are located approximately 2,500 ft to the south at 3420 San Pablo Avenue.
- Three monitoring wells are located approximately 2,200 ft to the southwest at 3516 Adeline Street.

# B. EVALUATION OF WELLS AS POTENTIAL PREFERENTIAL PATHWAYS

Based on available groundwater data, it appears that the gradient of the water table slopes to the west. Based on this information, none of the identified wells appear to be located down-gradient from the subject site.

The closest cathodic protection well is located approximately 750 feet to the north of the subject site at the intersection of 44th Street and Adeline Street. This well was completed in 1973 and extends to 120 ft bgs. Based on information provided by the California Department of Water Resources, a surface sanitary seal was provided and the appropriate strata were sealed to block pollution. This well is located crossgradient from the subject site and is unlikely to be acting as a preferential pathway.

The nearest three monitoring wells are located approximately 500 feet to the southeast of the subject site at 989 41<sup>st</sup> Street. These monitoring wells are up-gradient from the subject site and are unlikely to be acting as preferential pathways.

The nearest industrial well is located approximately 1,000 ft to the southeast of the subject site at 899 40th street. This well was completed in 1928 and extends to 108 ft bgs. This well was installed in 1928. It is likely that other, unrecorded agricultural and residential wells existed and the water level was significantly below today's level. Boysen Paint operated from the 1930s to 1980 and Dunn Paint operated from 1923 to 1991.

# C. EVALUATION OF POTENTIAL IMPACT TO WATER SUPPLY WELLS

The nearest water supply well is the referred to industrial well located approximately 1,000 ft to the southeast of the subject site at 899 40th street. This well was completed in 1928 for use by the Toscani Bakery. The well extends to 108 ft bgs. No other relevant data was provided by the California Department of Water Resources. Based on the depth and up-gradient location of the well, it is unlikely to be impacted by the contamination plume located at the subject site.

The other two water supply wells are the referred to industrial wells located approximately 2,200 feet to the southwest at 3516 Adeline Street. These wells are not located down-gradient from the subject site and are unlikely to be impacted by the contamination plume located at the subject site.

# D. PROFESSIONAL CERTIFICATION

This Utility Survey was prepared under the direction of the Professional Geologist whose seal and signature appear below. The work was performed in accordance with generally accepted standards of the geological and environmental practice, based on information available to us at the time of its preparation and within the limits of the scope of work directed by the client. SCHUTZE & Associates, Inc. believes that the information contained herein is reliable, but cannot guarantee the accuracy of information provided by others. No other representation, express or implied, and no warranty or guarantee is included or intended as to professional opinions, recommendations, or field or laboratory data provided.

I declare, under penalty of perjury, that the information and/or recommendations contained in this document are true and correct to the best of my knowledge.

Please call Jan Schutze at (510) 625-8175 (office) or (415) 517-8100 (cell phone), if you need further information.

Cordially,

SCHUTZE & Associates, Inc.

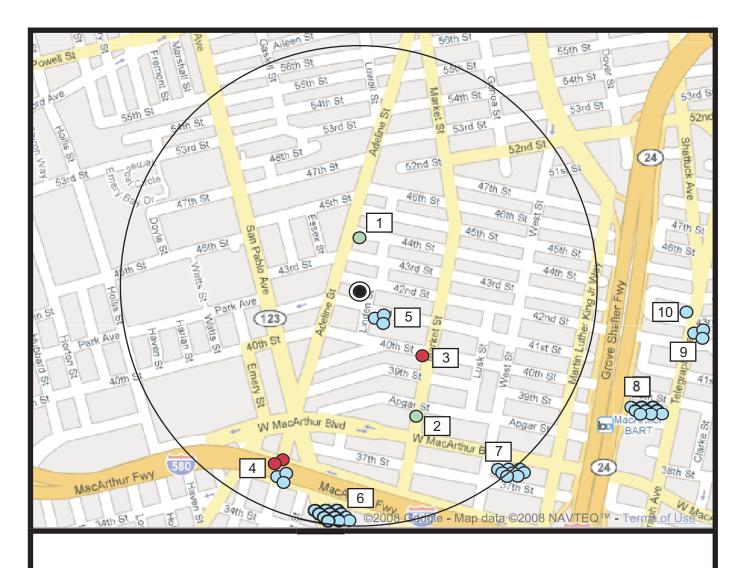
Jan Schütze, P.G., M.Sc., President

Attachments: Table 1: ½ Mile Radius Well Survey,

Figure 1: ½ Mile Radius Well Survey Map

Table 1/2Mile Radius Well Survey, 1001 - 42<sup>nd</sup> Street, Oakland

Location #	Well ID	Address	Туре	Depth (ft bgs)
1	91502	44 <sup>th</sup> Street and Adeline Street	Cathodic Protection	120
2	120159	Market Street and Apgar Street	Cathodic Protection	120
3	01-738	899 40 <sup>th</sup> Street	Industrial	108
	01-737		Industrial	295
	01-746		Industrial	42
4	01-533P	3516 Adeline Street	MW	30
	01-533Q		MW	30
	01-533PR		MW	30
	01-445G		MW	22
5	01-445H	989 41st Street	MW	22.9
	01-445I		MW	21.5
	01-442P		MW	25
	01-442Q		MW	20
	01-442R		MW	20
	01-442S		MW	20
	01-442T		MW	20
6	201220	2420 Can Dable Avenue	MW	25
6	304814	3420 San Pablo Avenue	MW	19
	304813		MW	21.5
	01-217W		MW	25
	01-217X		MW	19
	01-217Y		MW	27.5
	01-217Z		MW	31.5
	01-261A		MW	40
	01-261B		MW	30
	01-261C		MW	30
7	01-261D	731 West MacArthur Boulevard	MW	30
	423771		MW	30
	579407		MW	28
	579411		MW	30
	01-434P		MW	20
	01-434Q		MW	19
	01-434R		MW	15.5
	01-452Z		MW	20
8	01-465Y	500 40 <sup>th</sup> Street	MW	44
	01-465Z		MW	44
	01-530F		MW	20
	01-530G		MW	20
	01-530H		MW	21.5
	495481A		MW	23
9	495481B	490 43 <sup>rd</sup> Street	MW	22
	495481C		MW	22
10	01-422J	4400 Telegraph Avenue	MW	35



# 1/2 Mile Radius Well Survey 1001 - 42nd Street, Oakland, California

Data provided by the California Department of Water Resources



1 Location #

Subject Site

Monitoring Well

Cathodic ProtectionIndustrial

otection 0

Approximate scale (feet)
0 500 1000

Figure 2 June 2008



436 14<sup>th</sup> Street, Suite 1216 ● Oakland, CA 94612 ● Tel (510) 625-8175 ● Fax (510) 625-8176 ● js@schutze-inc.com

June 9, 2008 Project No. SCS217

Ms. Catherine W. Johnson Wendel Rosen Black & Dean LLP 1111 Broadway, 24<sup>th</sup> Floor Oakland, CA 94607

Reference: Former Kozel Property

1001 42<sup>nd</sup> Street

Oakland/Emeryville, California

Subject: Utility Survey

Dear Ms. Johnson:

SCHUTZE & Associates, Inc. is pleased to submit this Utility Survey to Wendel Rosen Black & Dean LLP. The purpose of the survey was to identify and evaluate underground utilities that may have the potential to act as preferential conduits for groundwater migration for the property located at 1001 42<sup>nd</sup> Street in Emeryville, California (subject site).

The subject site is bounded by 42<sup>nd</sup> Street to the north, 41<sup>st</sup> Street to the south, Linden Street to the east, and various residential properties to the west. The subject site is developed with three commercial structures. The buildings are currently vacant. Previous activities on the subject site included paint and varnishing manufacturing, print production and furniture refinishing.

# A. UNDERGROUND UTILITIES

The utilities in the area of the subject site were owned and operated by various local agencies. SCHUTZE & Associates, Inc. requested that Underground Services Alert (USA) marked the utility locations surrounding the subject site, contacted various agencies and reviewed utility surveys performed by Clayton Group Services (Clayton)<sup>1</sup>.

SCHUTZE & Associates, Inc. obtained utility information from the following agencies:

- AT&T Transmissions California
- City of Emeryville Engineers
- City of Oakland Construction Department

<sup>1</sup> Clayton Group Services, May 18, 2004, Preferential Pathway/Utility Survey, Former Dunne Paint Facility.

1001 42<sup>nd</sup> Street June 9, 2008 Page 2

- Comcast Oakland
- County of Alameda
- East Bay Municipal Utility District Wastewater
- East Bay Water
- M-Power Communications
- Pacific Bell Hayward
- PGE Distribution Oakland
- SPRINT
- Time Warner

The utilities identified within 41<sup>st</sup> Street between Adeline and Linden Street appear to be as follows:

- Low pressure natural gas, 2-inch diameter, approximately 3 to 4 ft bgs,
- Water, 2- and/or 4-inch diameter, approximately 3 to 4 ft bgs, and
- Telephone lines, 4-inch diameter, approximately 3 to 4 ft bgs.

The utilities identified within 42<sup>nd</sup> Street between Adeline and Linden Street appear to be as follows:

- Sanitary sewer, 6-inch diameter, approximately 5 to 7 ft bgs,
- Water, 2- and/or 4-inch diameter, approximately 3 to 4 ft bgs,
- Low pressure natural gas, 2-inch diameter, approximately 3 to 4 ft bgs, and
- EBMUD storm drain

The utilities identified within Linden Street between 41<sup>st</sup> and 42<sup>nd</sup> Streets appear to be as follows:

- Sanitary sewer, 6-inch diameter, approximately 5 to 7 ft bgs,
- Water, 2- and/or 4-inch diameter, approximately 3 to 4 ft bgs,
- Low pressure natural gas, 2-inch diameter, approximately 3 to 4 ft bgs, and
- EBMUD storm drain

The utility locations surrounding the subject site are depicted on Figure 1.

# B. EVALUATION OF THE UTILITY TRENCHES AS POTENTIAL PREFERENTIAL PATHWAYS

Based on available depth to groundwater data collected on the subject site and nearby sites, it appears that the groundwater surface fluctuates between 6 and 9 ft bgs with occasional high levels of up to 5 ft bgs. Therefore, there is a potential that utilities with permeable backfills with depths exceeding 5 ft bgs could be migration pathways for groundwater. Based on agency information, utility trenches deeper than 5 ft bgs exist for the sanitary sewer and storm drainage systems.

The sanitary sewer trenches beneath 41<sup>st</sup> and 42<sup>nd</sup> Streets had a depth that could have acted as a preferential pathway. According to City of Oakland maps, the sewer lines on the Oakland side drain to the east, and on the Emeryville side to the west. The sanitary sewer on 41<sup>st</sup> Street is located down-gradient from the subject site and there is a moderate potential that mineral spirits originating from the former Boysen Paint Factory and the former Dunne Paint Facility have entered the utility trench. The sanitary sewer on 42<sup>st</sup> Street is located up-gradient from the subject site and there is a low potential that mineral spirits originating from the former Boysen Paint Factory have entered the utility trench.

# C. PROFESSIONAL CERTIFICATION

This Utility Survey was prepared under the direction of the Professional Geologist whose seal and signature appear below. The work was performed in accordance with generally accepted standards of the geological and environmental practice, based on information available to us at the time of its preparation and within the limits of the scope of work directed by the client. SCHUTZE & Associates, Inc. believes that the information contained herein is reliable, but cannot guarantee the accuracy of information provided by others. No other representation, express or implied, and no warranty or guarantee is included or intended as to professional opinions, recommendations, or field or laboratory data provided.

I declare, under penalty of perjury, that the information and/or recommendations contained in this document are true and correct to the best of my knowledge.

Please call Jan Schutze at (510) 625-8175 (office) or (415) 517-8100 (cell phone), if you need further information.

Cordially, SCHUTZE & Associates, Inc.

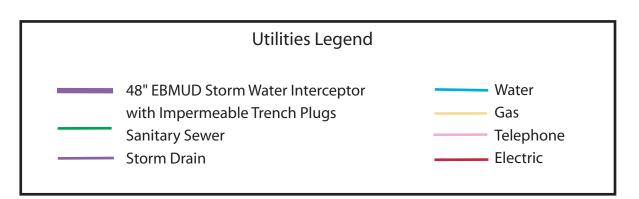


Jan Schütze, P.G., M.Sc. President

Attachments: Figure 1: Utility Map

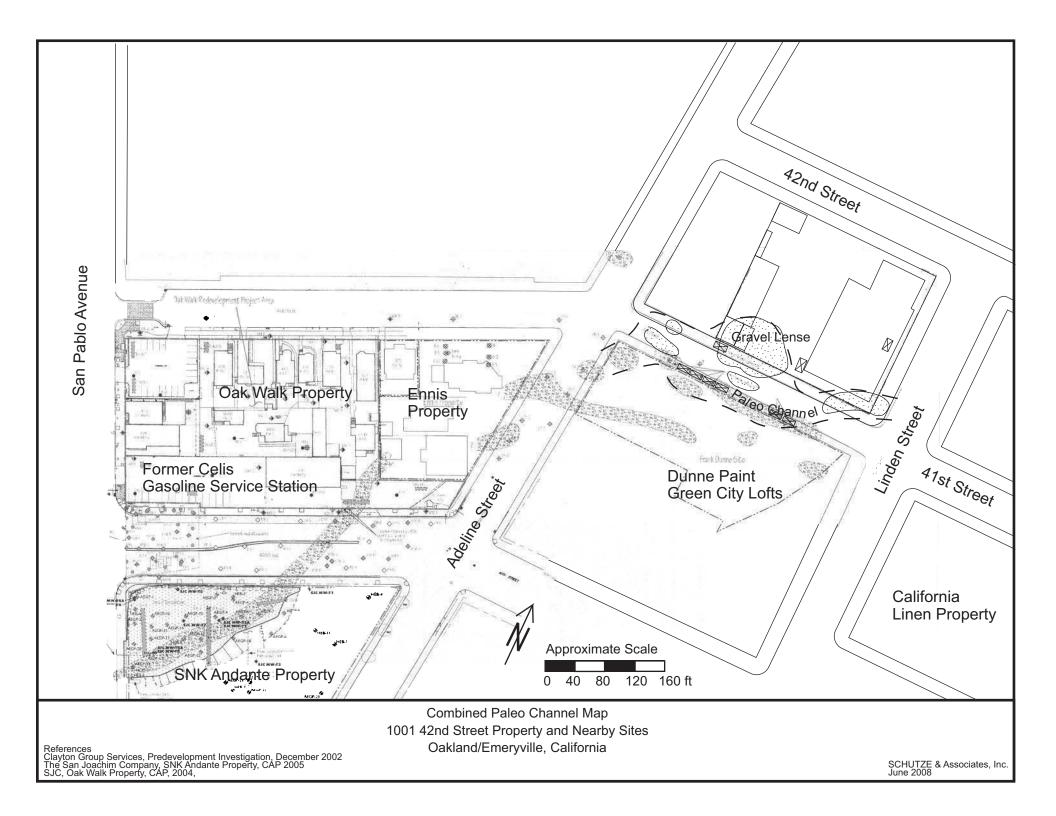


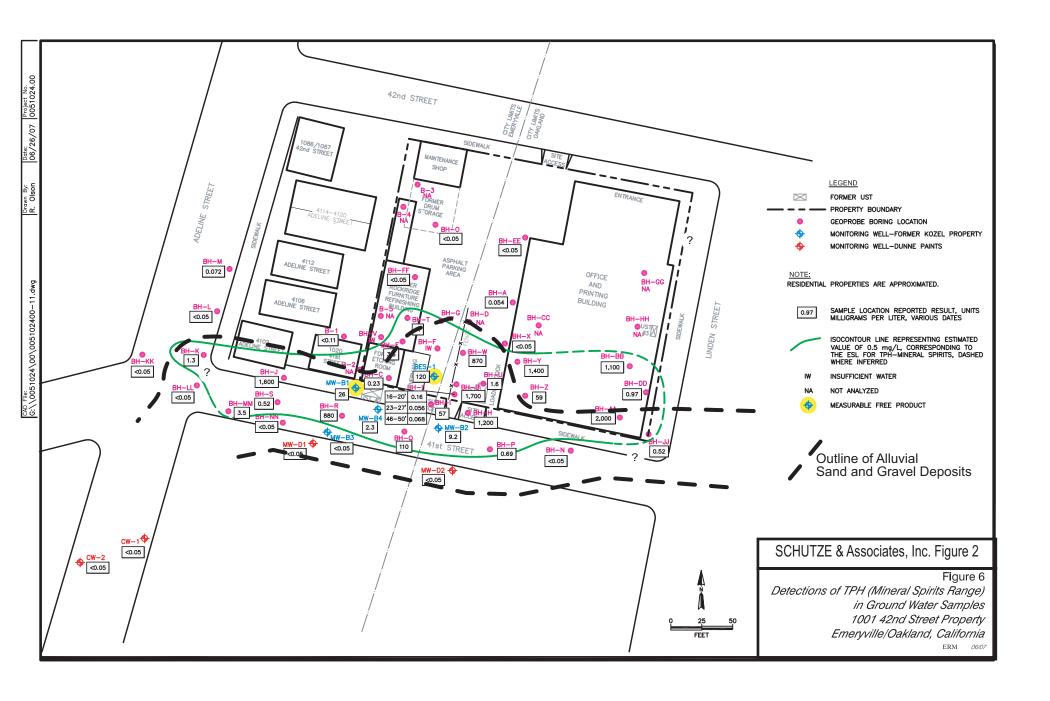
# Utility Survey Map 1001 - 42nd Street, Oakland, California

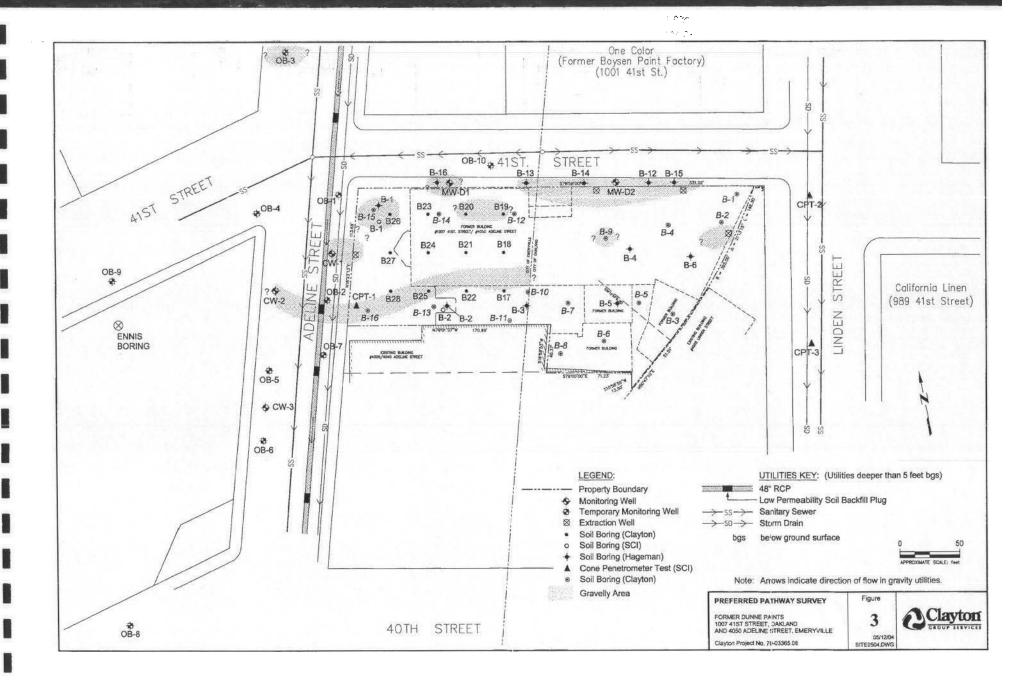


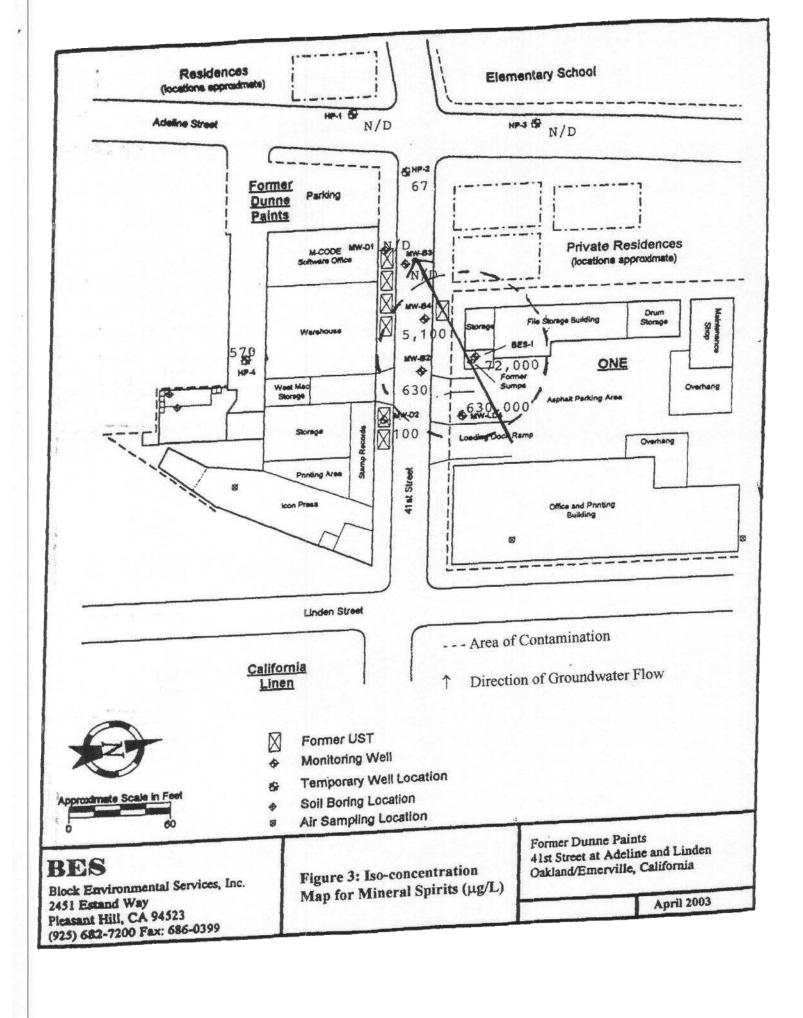
SCHUTZE & Associates, Inc.

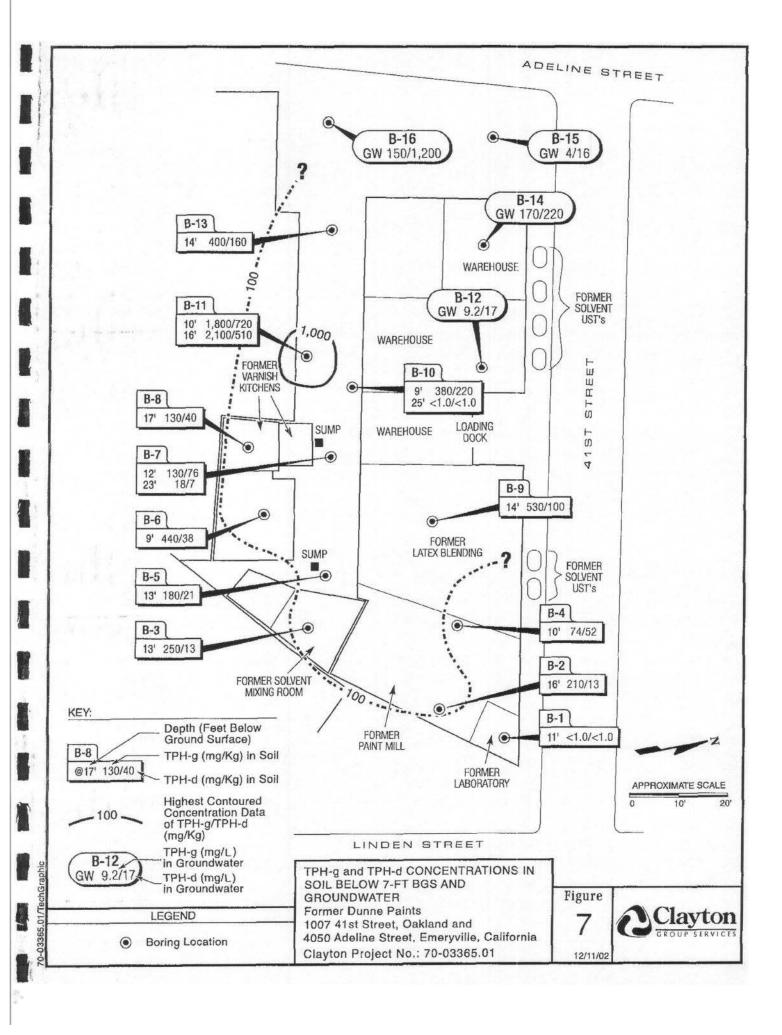
Figure 1 June 2008

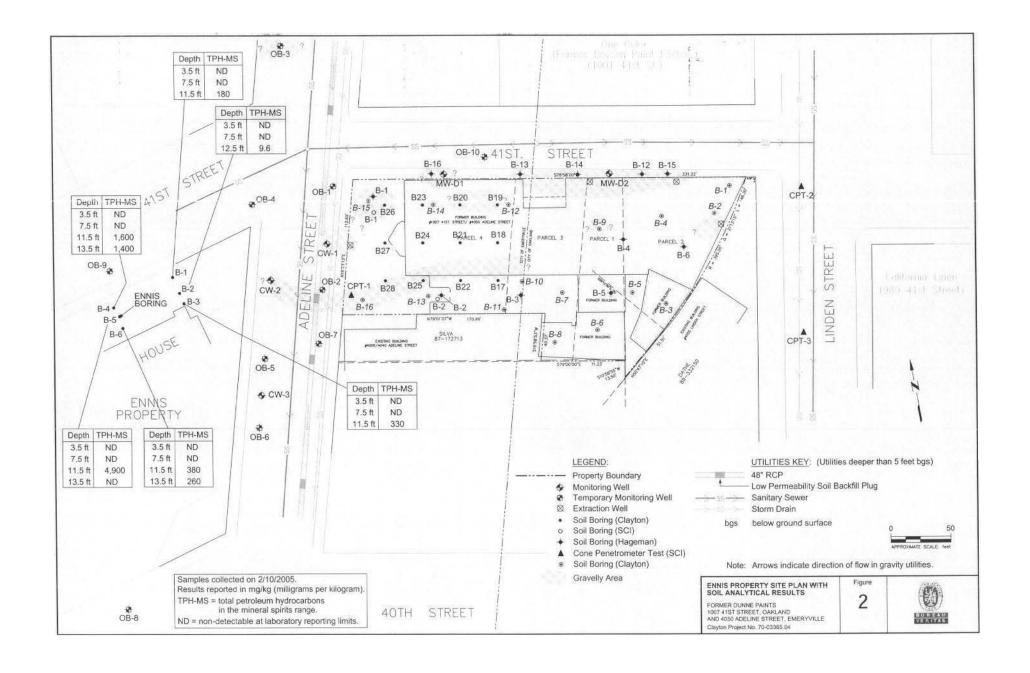














January 17, 2007

Mr. Barney Chan
Hazardous Materials Specialist
ALAMEDA COUNTY HEALTH CARE SERVICES
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Clayton Project No. 33103-003365.09

Subject:

Workplan for Offsite Groundwater Investigation

**Former Dunne Quality Paints** 

1007 41<sup>st</sup> Street Oakland, CA 94608

Dear Mr. Chan:

On behalf of Green City Lofts (GCL) and McGrath Properties (McGrath), Clayton Group Services (Clayton), a Bureau Veritas company, is pleased to present this joint workplan to conduct an offsite groundwater investigation in association with the GCL property located at 1007 41<sup>st</sup> Street in Oakland, Alameda County, California (Figure 1 – "the Site"). This workplan has been prepared in response to the Alameda County Health Care Services (ACHCS) letters to GCL and McGrath dated October 12, 2006.

The purpose of this joint investigation is to delineate the extent of TPH-ms impacted groundwater within the Ennis property. Oak Walk is separately addressing issues raised in your letter to them, but Oak Walk has been asked by GCL and McGrath to cooperate in its own investigation with respect to certain aspects of the work proposed in this letter.

The site background and scope of work are described in the following sections of this workplan.

#### SITE BACKGROUND

In February 2005, Clayton performed an investigation at the Ennis property to evaluate the extent of impacted soil and groundwater. The results of this work were presented in a report entitled *Investigation at Ennis Property, 1069-1073 41<sup>st</sup> Street, Emeryville, California*, dated April 19, 2005. The investigation was focused around an existing boring at the Ennis property where impacted subsurface conditions reportedly were observed. The scope of work for the investigation included the drilling of two (2) transects, which included a total of six (6) soil borings (B-1 through B-6). Each transect was oriented in a generalized north-south alignment. The easternmost transect, which included Borings B-1 through B-3, was positioned halfway between Adeline Street and the Ennis boring. The westernmost transect, which

Clayton Group Services, Inc.

- I *Bar, o. 4., rhus Compae*) 6920 Koli Center Parkway, Suite **21**6 Pleasanton, California **945**66 Mani: 7925) 426-2600 Fax: (925) 426-0496 www.us.bureauveritas.com



Mr. Barney Chan ALAMEDA COUNTY HEALTH CARE SERVICES January 17, 2007

Page 2 Clayton Project No. 33103-003365.09

included Borings B-4 through B-6, was positioned adjacent to the Ennis boring. The borings were continuously sampled and drilled to depths between 14 and 16 feet below ground surface (bgs). Soil samples were obtained at approximate depths of 3.5, 7.5, 11.5, and 13.5 feet bgs for laboratory analyses. Temporary well casings were installed in each boring for the collection of grab groundwater samples. A total of twenty-one (21) soil samples and six (6) grab groundwater samples were submitted for laboratory analyses. The locations of the borings are shown on Figure 1.

The results of the investigation showed that the Ennis property is underlain by alluvial soils consisting of silts and clays to depths between 8 and 11 feet bgs, which were further underlain by silty and gravelly sands to the maximum depths explored in each boring with the exception of Boring B-6, where no coarse-grained soils were encountered. Groundwater was first encountered at depths between 11 and 15 feet bgs. Static water levels noted upon completion of drilling varied between 8 and 9.5 feet bgs with the exception of Boring B-5, which was noted to be approximately 15 feet bgs. Impacted soils were first encountered within the sand units at depths between 11 and 13 feet bgs. Concentrations of TPH-ms impacted soils ranged between 9.6 and 4,900 milligrams per kilogram (mg/kg). Lower and non-detect concentrations of TPH-ms generally were detected at the 12.5- to 13-foot depths in Borings B-4, B-5, and B-6. Groundwater analytical results reported concentrations of TPH-ms between 220 and 47,000 micrograms per liter ( $\mu$ g/L). Soil analytical results are shown on Figure 2. Groundwater analytical results are shown on Figure 3.

The results of the previous off-site investigation showed that TPH-ms impacted soils were limited to depths between 11.5 and 13 feet bgs. The highest concentrations of TPH-ms in soil were detected at the 11.5-foot depth coinciding with the top of the alluvial sands (channel-type feature) encountered during drilling.<sup>1</sup> Below this depth, concentrations of TPH-ms in soil progressively decreased. Impacted soils were generally not detected above 11.5-foot depth. The TPH-ms most likely migrated through the alluvial sediments during periods of low groundwater elevations and subsequently became "trapped" within the upper section of the alluvial sands when groundwater levels rose.

In October 2003, monitoring wells CW-1 and CW-2 were installed by Clayton within a similar channel-like feature along Adeline Street. The locations of the existing monitoring wells are shown on Figure 1. During drilling, organic vapor meter (OVM) readings were measured at about 10 feet bgs, which roughly coincides with the interface between the alluvial sands and overlying clayey soils. Lower OVM readings were detected at 13 feet bgs. Soil samples obtained from this distinct and relatively thin layer showed TPH-ms concentrations up to 2,000 mg/kg. Wells CW-1 and CW-2 were installed within these channel-type features with the wells screened across the zone of the TPH-ms impacted soil. Groundwater samples were collected from these two wells during four (4) quarterly monitoring events. Analytical testing of the groundwater from these wells showed non detection of TPH-ms with the exception of the initial TPH-ms detection in Well CW-1 during the first quarterly event. This situation suggests that the TPH-ms is generally insoluble. We believe that TPH-ms detected in grab groundwater samples obtained

As you know, similar sand channel features have been documented upgradient of the Ennis property, at both the GCL and McGrath sites.



Mr. Barney Chan ALAMEDA COUNTY HEALTH CARE SERVICES January 17, 2007

Page 3 Clayton Project No. 33103-003365.09

from the borings advanced on the Ennis property may be biased because of TPH-ms impacted sediment falling into the grab groundwater samples. To determine if this is the case, we propose to install three properly-constructed groundwater monitoring wells to accurately investigate the potential presence of TPH-ms in the groundwater at the Ennis property.

#### **SCOPE OF WORK**

The scope of work for this investigation will include the drilling of three (3) soil vapor sampling points (SVB-1 through SVB-3) and installation of three (3) groundwater monitoring wells (EPMW-1 through EPMW-3). The approximate locations of the proposed soil vapor points and groundwater monitoring wells are shown on Figure 4. Various tasks to be performed as part of this scope of work are described in the following sections of this workplan.

#### PROPERTY ACCESS AGREEMENT

A property access agreement will need to be established between Mr. David Ennis and Clayton prior to starting work on the property.

#### **PERMITTING**

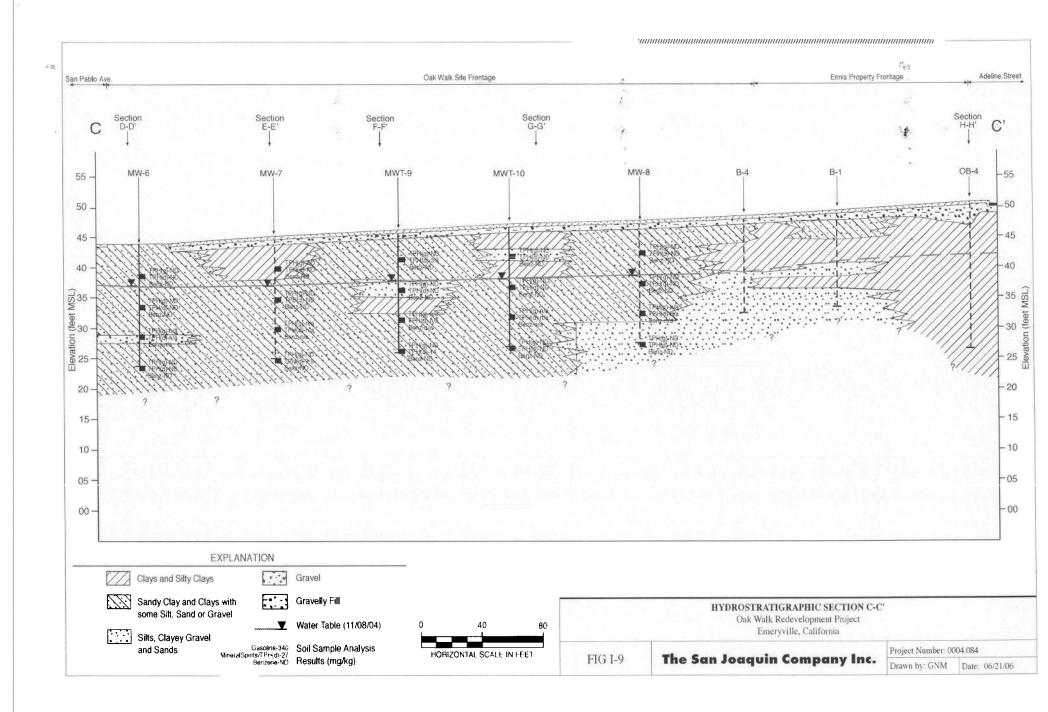
Drilling permits for soil vapor points and monitoring wells will be obtained from Alameda County Public Works Agency (ACPWA). Field activities will begin upon confirmation from ACPWA that the necessary permits have been issued. In accordance with their permit requirements, ACPWA will inspect the grouting procedures for the monitoring wells.

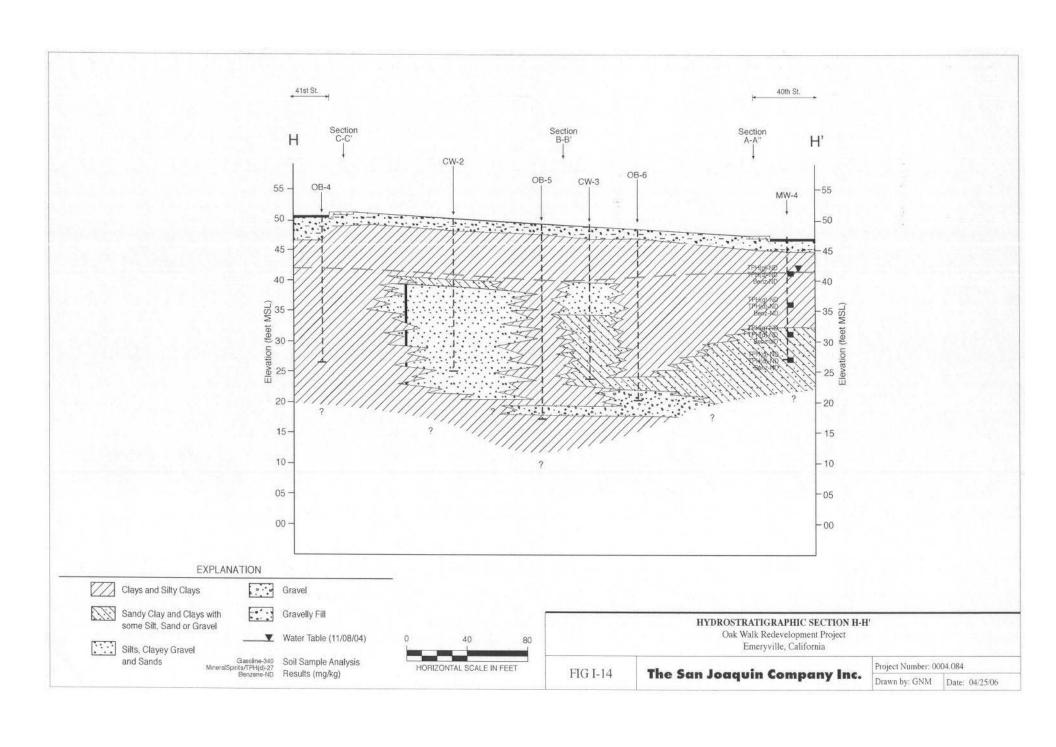
#### **UTILITY CLEARANCE**

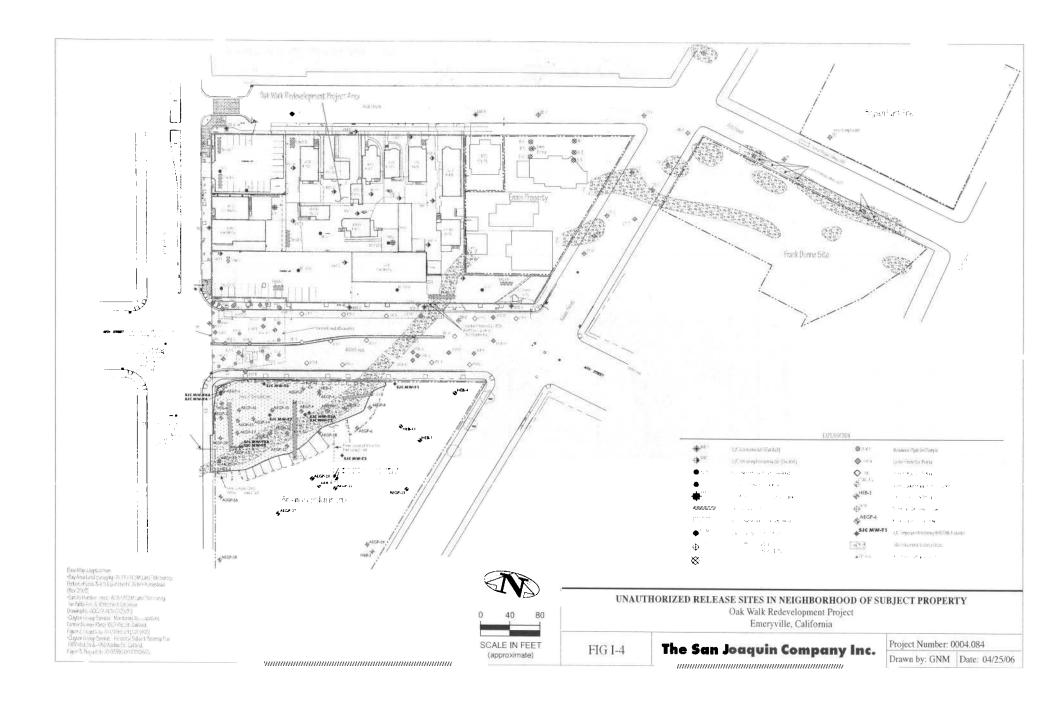
The proposed investigation locations will be marked with white paint or staked prior to contacting Underground Services Alert (USA) and conducting a utility clearance. Upon contacting USA, local utility companies will be notified by USA regarding the upcoming subsurface investigation in order for their utility locations to be marked along the ground surface, as appropriate. After the utility locations are marked, an experienced underground utility locating company under subcontract to Clayton will perform a detailed utility clearance to confirm the presence of underground utilities around the proposed investigation locations. If underground utilities are found to be present directly underneath or in close proximity to the investigation locations, then the locations will be shifted, as necessary.

# **HEALTH AND SAFETY PLAN PREPARATION**

Clayton will prepare a site specific Health and Safety Plan (HASP) for the work proposed at the site in accordance with the requirements of the State of California General Industry Safety Order (GISO) 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). The HASP will describe in detail the work to be performed, safety precautions, emergency response procedures, nearest hospital information, and on-site personnel responsible for managing emergency situations. A copy of the HASP will be kept onsite during field activities.







were no known streams that existed during the historical period in the vicinity of the Oak Walk Site closer than Temescal Creek. Today, substantially all precipitation running from roofs and paved areas on the site flows to storm water drains that are part of the City of Emeryville's storm water management system. That system drains to San Francisco Bay.

### 2.4 Regional Hydrogeology

The depth to the groundwater table in the area of the subject property reflects long term weather cycles as well as seasonal variations in local precipitation in the San Francisco Bay Area. Depending upon those factors, the piezometric level of the regional groundwater may be at elevations that vary between approximately 4 and 12 ft. below the ground surface (BGS) (The San Joaquin Company Inc. 2005).

In May, 2004, the depth to groundwater measured in wells installed at the Oak Walk Site varied from approximately 4.5 to 10 feet below the existing ground surface. By November of 2004, the water table beneath the site had, on average, risen about 0.4 ft from its May 2004 elevation.

Regionally, the general direction of groundwater flow is west toward San Francisco Bay. However, at any given location the direction of groundwater flow can be substantially different because it is influenced by the local presence of high-permeability facies in the subsurface that were deposited by paleo streambeds and other geomorphologic processes typical of those that influence the depositional environment of alluvial fans.

# 2.5 Sources of Contamination Affecting the Oak Walk Site

The program of environmental site characterization that has been completed at the Oak Walk Site has shown that soil and groundwater beneath the property is affected by both fuel hydrocarbons and paint thinners (solvents) (The San Joaquin Company Inc. 2005). Those materials were released into the subsurface at three separate locations. Two of the sources, one where paint solvents were released and one where fuel hydrocarbons were released, are located off the Oak Walk Site, while the third, at which a release of fuel hydrocarbons occurred, is today partially outside and partially inside the site boundary. Each of those sources is discussed below.

## 2.5.1 The Former Dunne and Boysen Paint Sites

These sites are in close proximity to each other and are situated to the east of the Oak Walk Site beyond the adjacent Ennis property and Adeline Street. Their locations are shown on Figure I-4. Paint was manufactured and paint solvents were stored in underground tanks at both of these facilities. In the case of the former Boysen Paint Site, contamination is also known to have been released from a sump on that property. Both are cited in regulatory records as sources of releases of regulated materials to the subsurface. With the currently available information it is not possible to know precisely whether the solvents released at Boysen Paint commingled with solvents released at the

SJC

Dunne Paint Site and are a contributor to the plume of paint solvents found to be affecting the subsurface beneath the Oak Walk Site. Therefore, for the purposes of this report, those two release sites will be treated as if they are a single source.

Petroleum hydrocarbons in the gasoline and middle distillate ranges, including compounds in the diesel and mineral spirits range, which can be ascribed to releases of solvents at the Dunne Paint Site and possibly at the Boysen Paint Site, have been detected over essentially the whole area of the Oak Walk Site. There is also clear evidence that those materials are present at high concentrations in soil and groundwater under the Ennis property, which is adjacent to the Oak Walk Site and lies between it and the former paint manufacturing sites.

The ACEHCS has assigned the case number RO72/RO73 to the Dunne Paint Site and the case number RO79 to the Boysen Paint/Oakland One Site.

#### 2.5.2 The Former Celis Alliance Automobile Service Station

The location of the former Celis service station, which is today beneath the 40th Street right-of-way and adjacent to the Oak Walk Site, is also shown on Figure I-4. Large quantities of fuel hydrocarbons were released from underground storage tanks on that site. The releases contaminated soil and groundwater over a wide area that is, today, occupied by the 40th Street right-of-way, a portion of the Andante condominium housing site south of the former Celis Site, and a significant portion of the Oak Walk Site to the north. After the City of Emeryville Redevelopment Agency acquired the Celis Site by eminent domain for the purpose of extending 40th Street west from Adeline Street, a portion of the area of the subsurface affected by the release at that site was remediated by removal of contaminated soil down to, but not deeper than, some 9 ft. BGS and by a limited program of groundwater pumping. Some limited areas beneath the 40th Street right-of way to the east of, and up the hydrogeologic gradient from, the tanks were also partially remediated by excavation and off-site disposal of contaminated soil.

The Celis Site is recorded in California regulatory databases with the identifiers shown below:

The California State Water Resources Control Board (SWRCB) has established the following Global ID for the Celis Site: T0600101794

The California Regional Water Quality Control Board - San Francisco Bay Region (**RWQCB**) has been assigned the following case number to the Celis Site: 01-1938

The ACEHCS Local Oversight Program (LOP), which is the lead agency for the site, has assigned the following case number to the Celis Site: RO453/RO567

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Releases of fuel hydrocarbons and, to limited extent, motor oil from the Celis Site commingled beneath the Oak Walk Site with the paint solvents released at the Boysen and Dunne Paint Sites to the east.

#### 2.5.3 The Former San Francisco French Bread Site

As was described in Section 1.1.2, the San Francisco French Bread Company (SFFBC) formerly occupied a part of the Oak Walk Site that fronts onto 40th Street. The company used the building that remains extant on the site at the address 4070 San Pablo Avenue. SFFBC installed two ten thousand-gallon underground storage tanks at what was then their facility. One tank stored diesel and the other stored gasoline for use in the bread company's fleet of distribution vehicles. The former locations of the tanks are shown on Figures I-2 and I-4.

When the extension of 40th Street between Adeline Street and San Pablo Avenue was constructed by the City of Emeryville, soil was remediated by excavation to a depth of 10 ft. over an approximately 20 ft. by 18 ft. rectangular area at a location coincident with the southern half of the former SFFBC tank pit. However, no further remediation of the SFFBC tank site was performed at that time.

The SFFBC is recorded in California databases with the identifications shown below.

The SWRCB has established the following Global ID for the SFFBC Site: T0600101186

The RWQCB has been assigned the following case number to the SFFBC Site: 01-1289

The ACEHCS LOP, which is the lead agency for the site. has assigned the following case number to the SFFBC Site: RO171

#### 2.5.4 Oak Walk Site

With the exception of the small area of the former SFFBC property that is included in the Oak Walk Site, there are no known sources of contamination on the subject property. However, in order to provide oversight of the site characterization and remediation of the Oak Walk Site, the ACEHCS has assigned the following case number to the Oak Walk Site: RO2733.

