Edd Clark & Associates, Inc.
Environmental Consultants
Serving the North Bay for Over 20 Years

July 21, 2014
Job No.: 0459,001.03

Mr. Dick Cochran
C&C Property Management
P.O. Box 20327
Oakland, CA 94620

Focused Conceptual Site Model & Data Gap Work Plan
Salle's Paint & Auto Body
1049 9th Avenue
Oakland, CA
Fuel Leak Case No.: RO0000308

Dear Mr. Cochran:

Please accept this as Edd Clark & Associates, Inc.'s (EC&A's) response to Alameda County Health Care Services's (ACHCS) letter of April 7, 2014, that requested a *Focused Conceptual Site Model* and a *Data Gap Work Plan* for Salle's Paint and Auto Body located at 1049 9th Avenue (Site) in Oakland, California. The site location is shown on Figure 1; general site features are shown on Figure 2.

The primary concerns expressed by ACHCS were that free product may be present in the gasoline and/or waste-oil UST excavations because highly contaminated soil may have been used to backfill the excavations. EC&A addressed these concerns in our June 27, 2014, report entitled: *Soil Disposal Documentation, Salle's Paint & Auto Body, 1049 9th Avenue, Oakland, CA, Fuel Leak Case No.: RO0000308.*

Low-Threat Underground Storage Tank Case Closure Policy
The California State Water Resources Control Board's August 17, 2012, *Low-Threat Underground Storage Tank Case Closure Policy* (LTCP) identified the following three media-specific criteria (Groundwater, Soil Gas, and Direct Contact/Outdoor Air Exposure):

The Site appears likely to satisfy groundwater-specific criteria:

1. Groundwater-Specific Criteria
(1) a. The contaminant plume that exceeds water quality objectives is less than 100 feet in length
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 250 feet from the defined plume boundary.

Items "a" and "b" are satisfied by the available data (Figures 3 and 4 and Table 4); item "c" will need to be addressed by a search in the Department of Water Resources and Alameda County Public Works Agency water-well data bases.

P.O. Box 3039, Rohnert Park, CA 94927-3039
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August 12, 2014

Mark Detterman
Program Manager
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Focused Conceptual Site Model & Data Gap Work Plan
Salles's Paint & Auto Body
1049 9th Avenue
Oakland, CA
RO #0000308

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

Sincerely,

Dick Cochran, C&C Property Management

The Site will satisfy the low-threat indoor-air vapor-intrusion criteria when groundwater criterion (1 c) is satisfied by a domestic well search of the site vicinity:

2. Petroleum Vapor Intrusion to Indoor Air
Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor-intrusion-to-indoor-air pathway if:

a Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenario 4 as applicable; or

The Site satisfies direct-contact and outdoor-air exposure criteria:

3. Direct Contact and Outdoor Air Exposure
This policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatized to outdoor air poses a low threat to human health. Release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any of the following:

a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs). The concentration limits for 0 to 5 feet bgs protect from ingestion of soil, dermal contact with soil, and inhalation of volatile soil emissions and inhalation of particulate emissions. The 5 to 10 feet bgs concentration limits protect from inhalation of volatile soil emissions. Both the 0 to 5 feet bgs concentration limits and the 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial/ Industrial) shall be satisfied. In addition, if exposure to construction workers or utility trench workers are reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied;

For the former gasoline UST location, benzene and ethylbenzene concentrations reported in soil sample TS (0.086 mg/kg and 0.016 mg/kg, respectively) are well below their respective 5 ft depth (1.9 mg/kg and 21 mg/kg) and 10 ft depth (2.8 mg/kg and 32 mg/kg) residential limits (Table 1) (Table 1 in the LTCP, Appendix C).

For the former waste-oil UST location, concentrations reported in soil of benzene (0.91 mg/kg at 8.5 ft bg), ethylbenzene (0.093 mg/kg at 3 ft bg and 26 mg/kg at 8.5 ft bg), napthalene (9.0 mg/kg at 8.5 ft) and poly-aromatic hydrocarbon (ND) are below their respective 5 ft depth (1.9 mg/kg and 21 mg/kg) and 10 ft depth (2.8 mg/kg and 32 mg/kg) residential limits (Table 2) (Table1 in the LTCP, Appendix C).

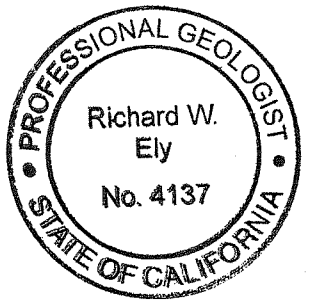
Recommendations
EC&A recommends that a search be done for domestic water wells within 250 feet of the former UST locations. If none are found, the site can be considered for closure under the LTCP.

EC&A does not recommend an investigation in the vicinity of the former UST for gasoline excavation because only low concentrations of Fuel Hydrocarbons were reported in one of five samples from the excavation, and the excavation was backfilled with clean pea gravel, not contaminated soil as the ACHCS had postulated.

Thank you for allowing EC&A to provide environmental services to you on this project. Please call Richard Ely, Project Manager, at (707) 792-9500 if you have any questions.

Sincerely,

Richard Ely PG #4137
Principal Geologist



Attachments

Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Groundwater Elevation Map, 08 December 2011
Figure 4 - TPHg Concentration in Groundwater, 08 December 2011

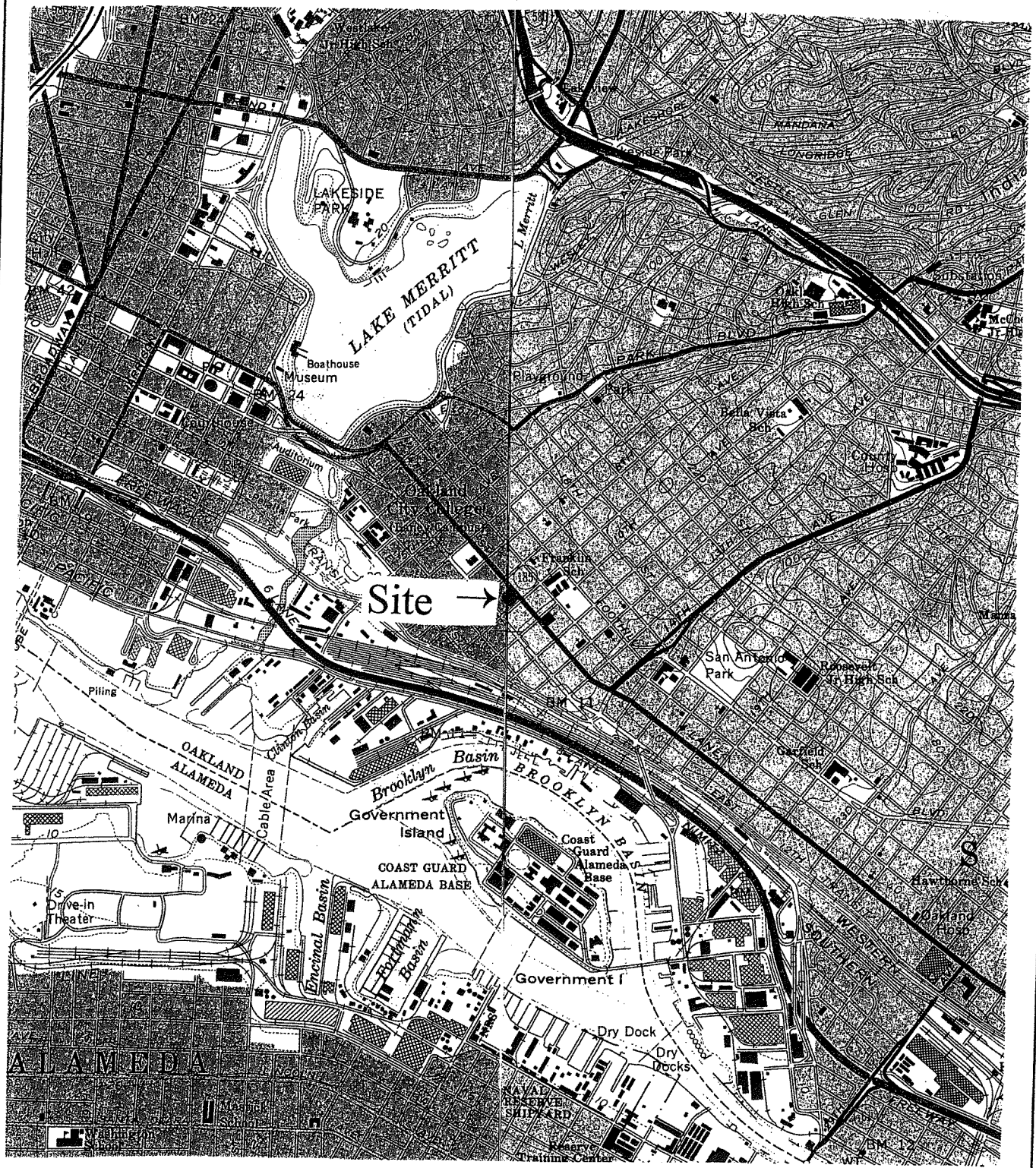
Table 1 - Analytical Results - Soil Samples from Gasoline UST Excavation & Well Borings
Table 2 - Analytical Results - Soil Samples for UST for Waste Oil Removal - July 20, 1994
Table 3 - Groundwater Elevation Data
Table 4 - Analytical Results - Groundwater Samples from Monitoring Wells

CSM Table 1 - Initial Conceptual Site Model
CSM Table 2 - Data Gaps and Proposed Investigations

Appendix A - Monitoring Well Boring Logs
Appendix B - Touchstone Developments Site Plans & Sample Locations
Appendix C - LTCP Table 1, Petroleum Constituents in Soil

cc: Mark Detterman, Alameda County Environmental Health Services Agency (electronic copy)
Barbara Jakub, Alameda County Environmental Health Services Agency (electronic copy)
Leroy Griffin, Oakland Fire Department

0459\CSM cover letter



From USGS 1:24,000 Topographic map series, Oakland West & East Quadrangles

EDD CLARK & ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

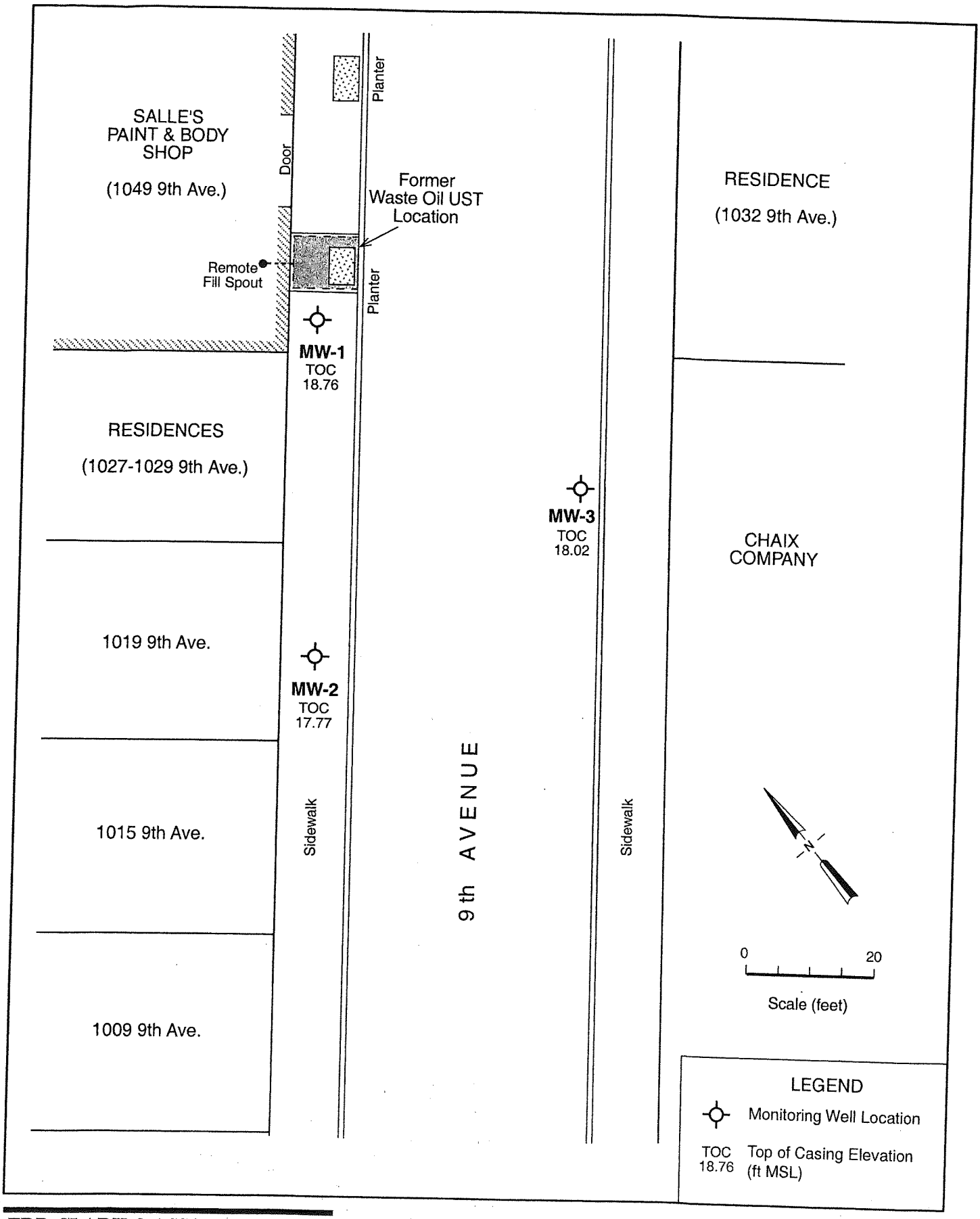
SITE LOCATION MAP

1049 9th Avenue
Oakland, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0459, 001.03	EC&A, Richard Ely	June 2003		1 of 1

(TRACE #383/RG/24Jun03)



EDD CLARK & ASSOCIATES, INC.
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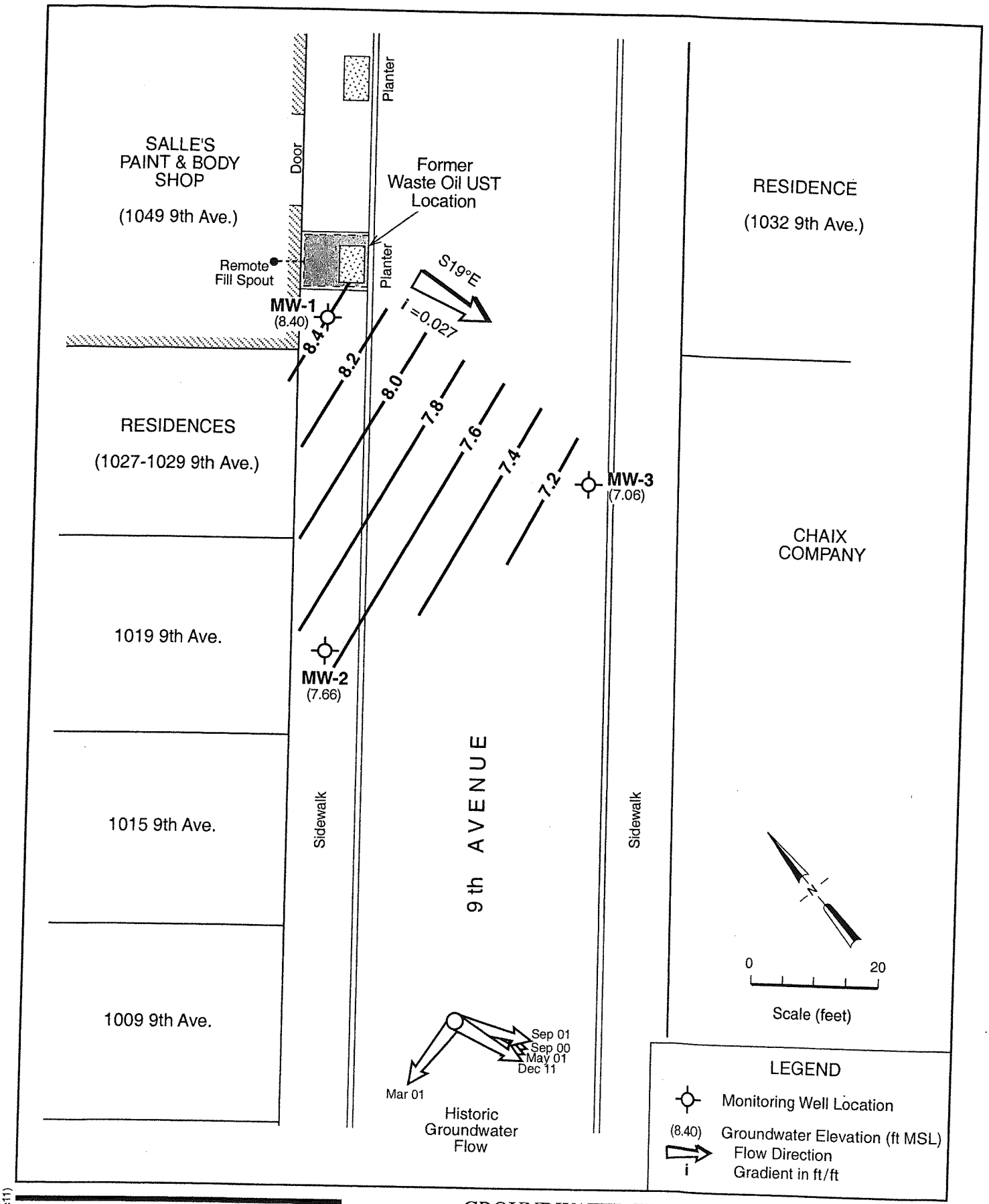
SITE PLAN
1049 9th Avenue
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0459, 001.03	EC&A, Richard Ely	October 2000	December 2011	1 of 1

(TRACE #383/RG/20Dec11)



(TRACE #383/RG/20Dec11)

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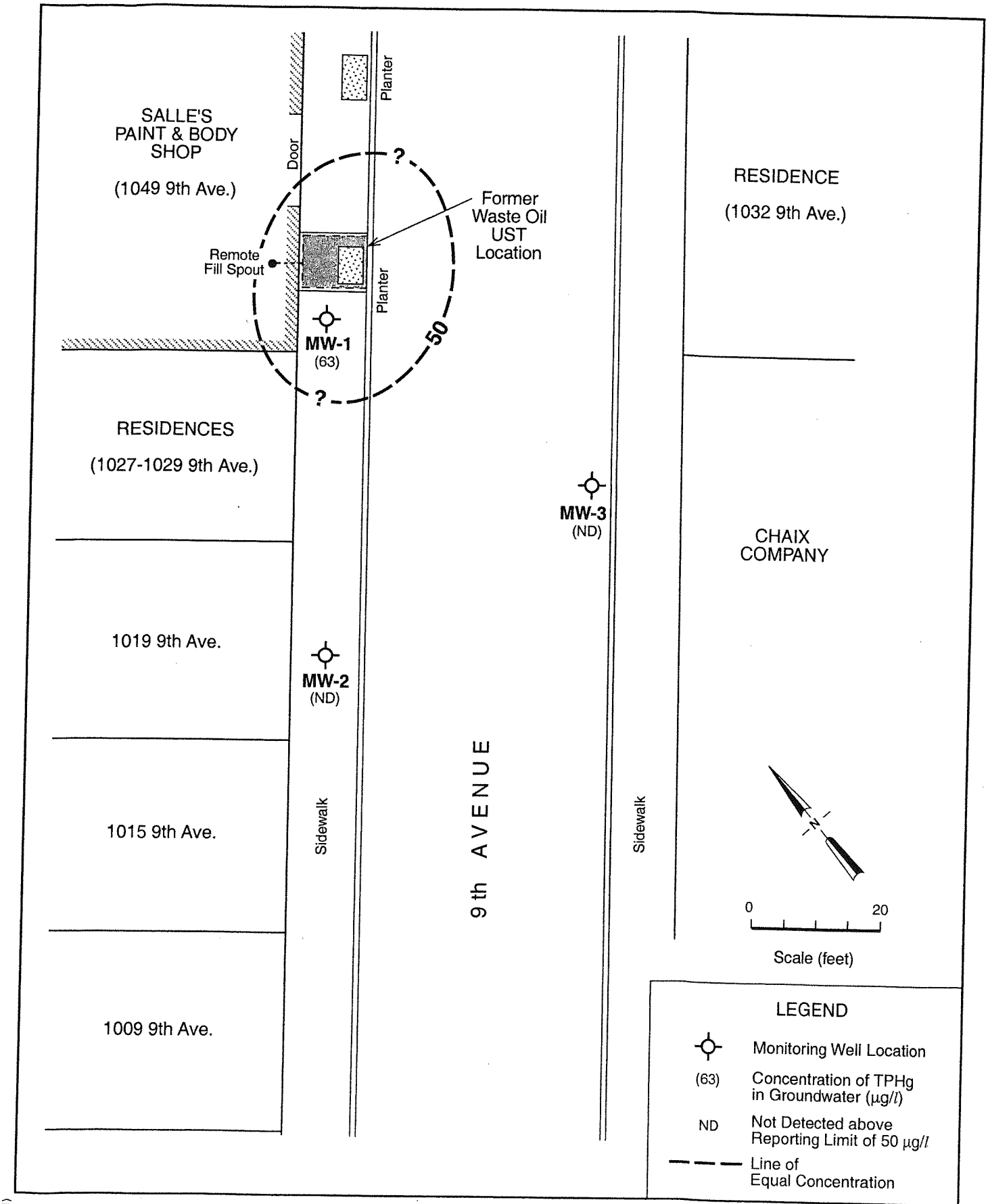
GROUNDWATER ELEVATION MAP,
08 December 2011
1049 9th Avenue
Oakland, California

FIGURE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0459, 001.03	EC&A, Richard Ely	April 2001	December 2011	1 of 1



EDD CLARK & ASSOCIATES, INC.
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TPHg CONCENTRATION IN GROUNDWATER,
08 December 2011

1049 9th Avenue
Oakland, California

FIGURE
4

(TRACE #383/RG/20Dec11)

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0459, 001.03	EC&A, Richard Ely	October 2000	December 2011	1 of 1

Table 1. **Analytical Results - Soil Samples from Gasoline UST Excavation & Well Borings**
1049 9th Avenue, Oakland, California

Sample ID (Excavation)	Date	TPHg mg/kg	TPHd mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes mg/kg	Total Lead mg/kg
TS 5.5'	12/29/93	**1.0**	NA	**0.086**	**0.16**	**0.016**	**0.11**	ND<5.0
TN 5.5'	12/29/93	ND<1.0	NA	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<5.0
TE 5.5'	12/29/93	ND<1.0	NA	ND<0.005	ND<0.005	ND<0.005	ND<0.005	**6.0**
TW 5.5'	12/29/93	ND<1.0	NA	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<5.0
TB 13.5'	12/29/93	ND<1.0	NA	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<5.0
SP-1*	12/29/93	**550**	NA	ND<0.5	**0.69**	**3.9**	**14**	ND<2.0†
P1+P2+P3*	08/23/94	ND<1.0	NA	NA	NA	NA	NA	NA
P4+P5+P6*	08/23/94	ND<1.0	NA	NA	NA	NA	NA	NA
P7+P8*	08/23/94	ND<1.0	NA	NA	NA	NA	NA	NA
ESLs	Dec 2013	100	100	0.044	2.9	3.3	2.3	80
Sample ID (Monitoring Wells)	**Date**	**TPHg mg/kg**	**TPHd mg/kg**	**O&G mg/kg**	**BTEX mg/kg**	**MTBE mg/kg**	**Chlorinated Solvents mg/kg**	**SVOCs mg/kg**
MW-1-6'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-1-11'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-1-16'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-2-6'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-2-11'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-3-16'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-3-6'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-3-11'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND
MW-3-16'	09/08/00	ND<1.0	ND<5.0	ND<10	ND<0.005	ND<0.025	ND<1.0	ND

Table 1. **Analytical Results - Soil Samples from Gasoline UST Excavation & Well Borings**
1049 9th Avenue, Oakland, California

Notes:

Second number in Sample ID is sample depth in feet below ground surface

TPHg:	Total petroleum hydrocarbons as gasoline
TPHd:	Total petroleum hydrocarbons as diesel
O&G:	Oil and grease
BTEX:	Benzene, toluene, ethylbenzene and xylenes; reporting limit for xylenes is 0.015 mg/kg
MTBE:	Methyl tert-butyl ether
SVOCs:	Semi-volatile organics; reporting limits are 0.33 mg/kg and 1.6 mg/kg
mg/kg:	Milligrams per kilogram
ND:	Not detected above the respective reporting limit
ESL:	San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for soils where groundwater IS a potential drinking water source, December 2013.
†	Organic lead
*	Spoil pile sample

Table 2. Analytical Results - Soil Samples for UST for Waste Oil Removal - July 20, 1994
1049 9th Avenue, Oakland, California

Sample ID	TPHg	TPHd	O&G	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Napthalene	2-methylnapthalene	Trichloroethene	Tetrachloroethene	Chlorobenzene	Cadmium	Chromium	Nickel	Lead	Zinc
Results reported in mg/kg																		
RF-3'	**34** [1]	**210** [2]	**770**	NA	ND<0.025	**0.16**	**0.093**	**1.9**	ND<3	ND<3	ND<0.005	ND<0.005	ND<0.005	ND<0.5	**54**	**35**	**16**	**31**
WO-1-8.5'	**590** [1]	**3400** [2]	**6000**	NA	**0.91**	**2.8**	**3.0**	**26**	**9.0**	**12**	**0.016**	**0.058**	**0.48**	ND<0.5	**42**	**37**	**13**	**23**
WSP-1 (A-D)	**200** [1]	NA	NA	**12,000**	**0.08**	**0.31**	**0.52**	**3.9**	NA	NA	NA	NA	NA	ND<0.5	**34**	**31**	**110**	**58**
ESLs 12/2013	100	100	---	---	0.044	2.9	3.3	2.3	1.2	0.25	46	55	1.5	---	1000	150	80	600

TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
O&G: Oil and grease
TPH: Total petroleum hydrocarbons
mg/kg: Milligrams per kilogram
ND: Not detected above the respective reporting limit
NA: Not analyzed
WSP Soil Stockpile #2
ESL: San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for soils where groundwater IS a potential drinking water source, December 2013.
1: Does not match typical gasoline pattern. Pattern is typical of mineral spirits
2: Does not match typical diesel pattern. Pattern is typical of a mixture of mineral spirits
Second number in Sample ID is sample depth in feet below ground surface

Table 3. Groundwater Elevation Data
1049 9th Avenue, Oakland, California

Sample ID	Date	TOC Elevation feet	DTW feet	Groundwater Elevation feet
MW-1	09/29/00	18.76	11.35	7.41
MW-2		17.77	10.92	6.85
MW-3		18.02	12.09	5.93
Gradient: S30°E, 0.033 ft/ft				
MW-1	03/05/01	18.76	9.35	9.41
MW-2		17.77	9.13	8.64
MW-3		18.02	8.54	9.48
Gradient: S77°W, 0.019 ft/ft				
MW-1	05/31/01	18.76	10.18	8.58
MW-2		17.77	9.83	7.94
MW-3		18.02	10.91	7.11
Gradient: S24°E, 0.031 ft/ft				
MW-1	09/18/01	18.76	11.65	7.11
MW-2		17.77	11.13	6.64
MW-3		18.02	12.50	5.52
Gradient: S35°E, 0.031 ft/ft				
MW-1	12/08/11	18.76	10.36	8.40
MW-2		17.77	10.11	7.66
MW-3		18.02	10.96	7.06
Gradient: S19°E, 0.027 ft/ft				

September 2000 through September 2001 data from Harris & Lee's October 25, 2000, *Soil and Groundwater Investigation Report. Table 1 Groundwater Elevations*. December 2011 data by Edd Clark & Associates, Inc.

TOC: Top of casing elevation measured relative to mean sea level (msl)
DTW: Depth to water from TOC

Table 4. Analytical Results - Groundwater Samples from Monitoring Wells
1049 9th Avenue, Oakland, California

Sample ID	Date	TPHg µg/l	TPHd µg/l	O&G µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	VOCs µg/l	SVOCs µg/l
MW-1	09/29/00	**280**	ND<50	ND<500	**1.4**	ND<0.5	**2.5**	**4.5**	ND<2.5	**1.1** (1)	ND
	03/05/01	**300**	**170** (2)	NA	**1.7**	**2.1**	**1.4**	**2.6**	ND<2.5	ND<0.5	NA
	05/31/01	**380**	**70** (2)	NA	**1.0**	**4.5**	**3.5**	**9.8**	ND<2.5	ND<0.5	NA
	09/18/01	**250**	**63**	NA	ND<0.5	**3.1**	**3.3**	**3.4**	ND<2.5	ND<0.5	NA
	12/08/11 (3) ji	**63** d7	**87** e2	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**0.82** (1)	NA
MW-2	09/29/00	ND<50	ND<50	ND<500	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<2.5	**0.57** (4)	ND<10 to <50
	03/05/01	ND<50	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<2.5	ND<0.5	ND
	12/08/11 (3) ji	ND<50	ND<50	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
MW-3	09/29/00	ND<50	ND<50	ND<500	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<2.5	ND<0.5 to <500	ND<10 to <50
	03/05/01	ND<50	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<2.5	ND<0.5	ND
	12/08/11 (3) ji	ND<50	ND<50	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
ESL	Dec 2013	100	100	100	1.0	40	30	20	5.0	ND<0.5 to <500	ND<10 to <50
										25 (1)	---

Data from September 2000 through September 2001 from Harris & Lee's October 25, 2000, *Soil and Groundwater Investigation Report, Table 2 Groundwater Sample Analytical Results.* December 2011 data by Edd Clark & Associates, Inc.

TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
O&G: Oil and grease
MTBE: Methyl tert-butyl ether
VOCs: Volatile organic compounds
SVOCs: Semi-volatile organic compounds
µg/l: Micrograms per liter
ND: Not detected above the respective reporting limit
NA: Not analyzed
ESL: SFBRWQCB Environmental Screening Level for shallow soils where groundwater IS a potential drinking water resource, revised December 2013
(1): Chlorobenzene; all other Method 8010 compounds were ND
(2): Analytical Sciences annotated the result as follows: "the chromatogram does not exhibit a chromatic pattern characteristic of diesel. Higher boiling point components of gasoline are present in the early boiling range for diesel."
(3): Samples collected on 12/08/11 also were analyzed for VOCs, basic target list including benzene, toluene, ethylbenzene and xylenes (BTEX), by Method SW8260B and for SVOCs by Method SW8270C. All results not reported above were ND.
(4): Isopropylbenzene; no ESL has been established for this compound
d7: Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2: Diesel range compounds are significant; no recognizable pattern
ji: Reporting limit raised for methylene chloride due to a suspected elevated concentration in the sample container

0459\table 4 MWs

CSM Table 1. **Initial Conceptual Site Model, Salle's Paint & Auto Body, 1049 9th Avenue, Oakland, California**

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	The Subject Site (Site) is located on the East Bay Plain in an area mapped as Late Pleistocene marine terrace deposits (Graymer, R.W, 2000: *Geologic map and map database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California*. United States Geological Survey Miscellaneous Field Studies Map MF-2342). Bay Mud MAY underlies the terrace deposits at shallow depth. About two blocks northeast of the Site, the terrace deposits either inter-finger with, or are overlain by, alluvial fan deposits of Pleistocene age.	None	NA
	Site	***Geology:*** The Site is situated at an elevation of 18 ft above Mean Sea Level (MSL). Logs of three soil borings are available for the Site. Sandy clay was present in all three borings from the bottom of the fill beneath the sidewalk/road base to about 8.5 to 10.5 ft bgs. A medium-grained sand bed was present at around 11ft bgs in all three borings. This bed varied in thickness from about 3 ft in MW-1 and MW-2, to 5 ft in MW-3, and constitutes a groundwater pathway during times when the water table is high. Fine grained alluvium (clay, silt, and clayey to silty sand) underlies the medium-grained sand bed in all of the borings to total depth at 16 ft bgs. Clayey-silt/silty clay Bay Mud deposits probably underlie the Site at a shallow depth, and would serve as a very effective aquitard. Logs of the well borings are attached (Appendix A). ***Groundwater:*** Groundwater flow at the Site has generally been southeast, directly toward MW-3, in four of the five monitoring events conducted to date. The fifth gradient was southwesterly, in the general direction of MW-2. Depth to groundwater has ranged from 8.54 ft in MW-3 in March 2001, to 12.50 ft in MW-3 in September 2001. A table of groundwater elevations is attached.	None	Well boring logs and a groundwater table are attached
Surface Water Bodies		The closest surface water body is the Brooklyn Basin portion of the Oakland Inner Harbor of San Francisco Bay, located 2000 ft due south of the Site. Surface topography indicates that a culverted creek underlies 14th Avenue about 1800 ft southwest of the Site.	None	NA
Nearby Wells		The State Water Resources Control Board's Geotracker GAMA website was searched for nearby public water supple wells. No such wells were identified within two miles of the subject Site. The nearest water supply well is located in Redwood Regional Park.	Possible domestic wells in the Site vicinity.	Search California Department of Water Resources data base.
Release History	Gasoline UST	On December 29, 1993, a 1000-gallon UST for gasoline was removed from beneath the sidewalk about 50 ft northwest of the corner of 9th Avenue and 11th Street and about 150 ft north of the waste-oil UST. During and after the UST removal, approximately thirty cubic yards (cu yds) of excavated contaminated soil was hauled to a vacant lot located at 8th Avenue and East 11th Street for aeration under permit from the Bay Area Air Quality Management District (BAAQMD). On December 30, 1993, the excavation was backfilled with 30 tons of pea gravel. Five discrete soil samples were collected from the excavation. Four samples were non-detect (ND) for petroleum hydrocarbons. Gasoline-range Total Petroleum Hydrocarbons (TPHg) were detected at 1.0 mg/kg in sample TS 5.5'. Benzene was detected in sample TS at 0.086 milligrams per kilogram (mg/kg) at 5.5 feet (ft) below grade (bg). This value is close to the 0.044 mg/kg San Francisco Bay Regional Water Quality Control Board Environmental Screening Level (ESL) for shallow soil at sites where groundwater is a potential source of drinking water. Given that sample TS was collected in December 1993, over 20 years ago, it is likely that natural attenuation will have degraded the benzene to below ESL concentration. Toluene, ethylbenzene and xylenes were detected in sample TS 5.5' at concentrations well below their respective ESLs. A table of analytical results for the gasoline UST excavation is attached; Touchstone Developments, Figure 1, Site Plan/Sampling Locations is attached in Appendix B.	None	Table is attached
	Waste-oil UST	On July 20, 1994, a 280-gallon UST for waste oil was removed from beneath the sidewalk on the east side of the Site facility. Approximately ten cu yds (~15 tons) of contaminated soil was hauled to the vacant lot at 8th Avenue and East 11th. On February 15, 1995, 19 tons of contaminated soil was hauled to, and disposed at, the Remedial Environmental Marketing Co. (Remco) in Richmond, California. The Remco weight tickets indicate that the soil was hauled in two loads, one of 24,850 lbs, the other of 13,480 lbs. Two discrete soil samples were collected from the excavation. Benzene was not detected in the 3 ft bg sample from the excavation, and TPHg was detected at only 34 mg/kg. In the 8.5 ft bg sample, benzene was detected at 0.91 mg/kg and TPHg was detected at 590 mg/kg. In the 20 years since this sample was taken, natural attenuation likely has largely degraded this material. Contaminated soil appears to have been confined to the immediate vicinity of the former UST excavation. The soil samples from the MW-1 boring, located next to the former UST location on the downgradient side, were ND for all analytes. A table of analytical results for the waste-oil UST excavation is attached; Touchstone Developments, Figure 1, Site Plan/Sampling Locations is attached in Appendix B.	None	Table is attached
Plume		The most recent sampling event showed the FHC plume to be restricted to MW-1, located on the downgradient side of the former waste-oil UST location. TPHg at 63 µg/l, TPH diesel (TPHd) at 87 µg/l, and isopropylbenzene at 0.57 µg/l were detected in the sample. No target analytes have been reported from MW-2 and MW-3. A table of analytical results for the monitoring wells is attached.	None	Table is attached
Summary Tables		Summary tables for soil samples from the gasoline and waste-oil UST excavations and water samples from the monitoring wells are attached.	None	Tables are attached

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Facility Structures		The Site building is a ~140 ft square, one-story brick building that occupies the eastern quadrant of the city block bounded by 8th & 9th Avenues and by 10th & 11th Streets.	None	NA
Site Operations		Salle's Paint & Auto Body has occupied the Site since 1959. Site operations consist of automobile repair and painting. Solvents, paint and paint thinners are stored in the facility.		
Other Containment Releases		A search of the Geotracker website showed the JB Auto (T06019761004) to be the closest LUFT site to the Site; this site is located one block north of the Salle's Site; no site investigations or cleanup actions have been performed to date.	None	NA
		The Southern Pacific Railyard (T0600101299) site is located about two blocks southwest of Salle's; no site investigations or cleanup actions have been performed to date.		
		The Merritt Env Corp (T0600102304) site is located four blocks west of Salle's; nine soil borings were advanced at this site in 1996; no boring logs have been uploaded to Geotracker. TPHg with concentrations as high as 63,000 µg/l was detected in grab-groundwater samples from the borings. Monitoring well MW1 was installed in 1997. This well was 20 ft deep; the attached log shows mostly brown to green clay to 16.5 ft bgs, with 3.5 ft of brown medium-grained silty-sand in the bottom of the boring. TPHg at 500 µg/l and benzene at 3.7 µg/l were detected in this well in 1997. The Log of MW1 is attached (Appendix A).		
		The Gibson Paint Co/Screen (T0600100644) site is located about 3 ½ blocks east of Salle's. The case was closed in March 1998 after the UST was removed.		
Land Uses		Due to the limited extent of the fuel hydrocarbon plume (one well), and low concentrations (less than 100 µg/l), there is no threat of plume migration to sensitive receptors. Because benzene is not present in site groundwater or shallow soil (3 ft bg), and the USTs were located outside the site building, there is no threat of vapor intrusion.	None	NA
		The Brooklyn Basin portion of the Oakland Inner Harbor of San Francisco Bay is located 2000 ft due south of the Site. No natural vegetation is apparent on air photos of the Brooklyn Basin shoreline, the great majority of which is devoted to marinas.		
		The Site is located in a neighborhood of mixed family residences, apartment buildings and commercial properties.		
		Franklin Elementary School is located four blocks northeast of the Site at East 15th Street and 9th Avenue.		
		The closest health care facility is the Bay Area Healthcare Center located at 1833 10th Avenue, seven blocks northeast of the Site.		
		Two day care facilities are located in the site vicinity: the East Bay Academy located at 1011 7th Avenue, and Lil Franklin Daycare located at 1430 9th Avenue.		

CSM Table 2. Data Gaps and Proposed Investigations, Salle's Paint & Auto Body, 1049 9th Avenue, Oakland, California

Item	Data Gap	Proposed Investigation	Rationale	Analysis
1 LTCP General Criteria d (Free Product)	In their letter of April 7, 2014, ACHCS expressed the concern that free product may be present in the former gasoline UST excavation because contaminated soil removed during the tank removal may have been returned to the excavation.	None	EC&A's June 17, 2014, report titled *Soil Disposal Documentation, Salle's Paint & Auto Body* showed that the contaminated soil removed from the gasoline UST excavation was aerated on a nearby lot under permit from the Bay Area Air Quality Management District (BAAQMD) and subsequently reused by the client. The excavation was backfilled with 30 tons of pea gravel on December 30, 1993. Residual fuel hydrocarbon (FHC) concentrations in one sidewall soil sample in the gasoline UST excavation are well below those indicative of the presence of Free Product (Table 1).	None
	In their letter of April 7, 2014, ACHCS expressed the concern that free product may be present in the former waste-oil UST excavation because contaminated soil removed during the tank removal may have been returned to the excavation.	None	EC&A's June 17, 2014, *Soil Disposal Documentation, Salle's Paint & Auto Body* showed that the contaminated soil removed from the waste-oil UST excavation was temporarily stored at the same location where soil from the gasoline UST excavation was aerated. On February 15, 1995, 19 tons of contaminated soil was hauled to, and disposed at, the Remedial Environmental Marketing Co. (Remco) in Richmond, California. The Remco weight tickets indicate that the soil was hauled in two loads, one of 24,850 lbs, the other of 13,480 lbs. Residual FHC concentrations in soil samples from the waste-oil UST excavation are well below those indicative of the presence of Free Product (Table 2). Total Petroleum Hydrocarbons (TPH) as gasoline (TPHg) and TPH as diesel (TPHd) concentrations in groundwater samples from MW-1 next to the waste-oil UST location are less than 100 µg/l (Table 4).	None
2 LTCP General Criteria e (Conceptual Site Model)	A full Conceptual Site Model has not been prepared.	None. CSM Table 1 is sufficient for this site.	Preparing a full Conceptual Site Model for this uncomplicated and minimally impacted site would be over-kill and a waste of resources. CSM Table 1, Initial Site Conceptual Model is sufficient for this site.	None
3 LTCP General Criteria f (Secondary Source Has Been Removed to the Extent Practicable)	None for the former gasoline UST location	None	The former gasoline UST excavation occupied almost the entire sidewalk between the street and the auto shop building; the storm drain beneath the street would prevent excavation in that direction. The 13.5 foot below grade (ft bg) bottom sample and three of four sidewall samples were non-detect (ND) for all analytes (Table 1).	None
	None for the former waste-oil UST location	None	The former waste-oil UST excavation occupied almost the entire sidewalk between the street and the auto shop building; the storm drain beneath the street would prevent excavation in that direction.	None
4 LTCP General Criteria g (Soil and Groundwater Have Been Tested for MTBE)	Soil and groundwater samples from the former gasoline UST location have not been tested for MTBE.	If so directed by ACHCS, a soil boring will be advanced to groundwater next to the former gasoline UST location.	Analytical data from the soil boring would confirm (or refute) EC&A's interpretation that there is no significant contamination by gasoline and BTEX at this date. EC&A does not consider this option to be necessary for site closure because nearly all FHC contaminated soil was removed during over-excavation activities following removal of the UST for gasoline, and natural attenuation has had over 20 years to reduce any residual concentrations. .	If so directed by ACHCS, grab groundwater and soil samples should be analyzed for TPHg and benzene, toluene, ethylbenzene and xylenes (BTEX) by Methods SW8015Bm/ 8015B/8021B; TPHd with silica gel clean-up by Method SW8015B; and MTBE and other gasoline oxygenates by Method SW8260B.
	Soil at the former waste-oil UST location has not been tested for MTBE.	None	Because MTBE has not been detected in groundwater next to the waste-oil UST location, its presence in soil is highly unlikely (Table 4).	None
5 LTCP Media Specific Criteria for Groundwater	In their letter of April 7, 2014, ACHCS contended that insufficient data collection and analysis had been done to support the requisite characteristics of plume stability or plume classification.			
5 a Extent of Gasoline Groundwater Plume	In their letter of April 7, 2014, ACHCS expressed the concern that TPHg may be present in groundwater near the former gasoline UST excavation because contaminated soil removed during the UST removal may have been returned to the excavation.	None because contaminated soil was aerated on a nearby lot under permit from the BAAQMD and subsequently reused or removed by the owner.	EC&A's June 17, 2014, *Soil Disposal Documentation, Salle's Paint & Auto Body* showed that contaminated soil removed from the gasoline UST excavation was aerated on a nearby lot under permit from the BAAQMD and subsequently reused by the client. The gasoline UST excavation was backfilled with 30 tons of pea gravel on December 30, 1993.	None

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5 a Extent of Gasoline Groundwater Plume	None for the former waste-oil UST location.	None	Impacts by gasoline to groundwater in the vicinity of the former waste-oil UST location are limited to MW-1, where TPHg was detected at 63 µg/l in December 2011.	None
5 b Nearest Water Supply Well	In their letter of April 7, 2014, ACHCS expressed the concern that there may nearby domestic water wells that could have been impacted by releases from the site.	A records search could be performed in the DWR and Alameda County Public Works Agency data bases for nearby water wells that may have been impacted by releases from the site.	No information is available on domestic wells in the site vicinity. However, because drinking water is provided to the City of Oakland by the East Bay Municipal Utility District, it is unlikely that any nearby domestic wells are used for drinking water. In any event, the FHC plume is of such limited extent that no nearby wells would be impacted. If no domestic well is present within 250 ft of the former UST locations, LTCP groundwater media criterion (1) will be satisfied.	None
5 c List of Appropriate Analytes	In their letter of April 7, 2014, ACHCS expressed the concern that TPHd may be present in soil and groundwater near the former gasoline UST excavation.	If so directed by the ACHCS, a soil boring will be advanced to groundwater next to the former gasoline UST location.	In their letter of April 7, 2014, ACHCS contended that the higher concentration of total-xylenes (0.11 mg/kg) compared to benzene (0.086 mg/kg) in sample TS 5.5' was indicative that diesel fuel may have been stored in UST for gasoline. A very likely alternative explanation is that the gasoline sample was degraded and had experienced a relative loss of the more volatile benzene component compared to the less volatile total-xylenes component.	If so directed by ACHCS, soil and groundwater samples from a soil boring will be analyzed for TPHd with silica gel clean-up by Method SW8015B.
	None for the former waste-oil UST location.	None for the former waste-oil UST location.	Soil samples from the waste-oil excavation were analyzed for TPHg, TPHd, Oil & Grease, BTEX, Semivolatile Organics (SVOCs), Halogenated Volatile Organics (HVOCs), Cadmium, Chromium, Nickel, Lead and Zinc. In the 3 ft bg sample, only TPHd at 210 mg/kg exceed the San Francisco Bay Regional Water Quality Control Board Environmental Screening Level (ESL) for soils where groundwater IS a potential drinking water source (100 mg/kg). Groundwater samples from the monitoring wells have been analyzed for TPHg, TPHd, Oil & Grease, BTEX, MTBE, SVOCs and HVOCs. In December 2011, only three detections were reported (TPHg at 63 µg/l, TPHd at 87 µg/l, and isopropylbenzene at 0.57 µg/l.	None
6 LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air	None for the former gasolene UST location.	None for the former gasoline UST location.	Because the former gasoline UST excavation is located outside the Site building beneath a paved sidewalk, and the Site building has a concrete slab floor, vapor intrusion is highly unlikely given the low FHC concentrations in shallow soil. The Site will satisfy the LTCP low-threat indoor-air vapor-intrusion criteria when groundwater criterion (1) c is satisfied by a domestic well search of the site vicinity:	None
	None for the former waste-oil UST location.	None for the former waste-oil UST location.	Because the former waste-oil UST excavation is located outside the Site building beneath a paved sidewalk, and the Site building has a concrete slab floor, vapor intrusion is highly unlikely. The Site will satisfy the LTCP low-threat indoor-air vapor-intrusion criteria when groundwater criterion (1) c is satisfied by a domestic well search of the site vicinity:	None
7 LTCP Media Specific Criteria for Direct Contact and Outdoor Air Criteria	None for the former gasolene UST location.	None for the former gasoline UST location.	The direct-contact and outdoor air exposure is satisfied because the benzene and ethylbenzene concentrations reported in soil (0.086 mg/kg and 0.016 mg/kg, respectively) are well below their respective 5 ft depth (1.9 mg/kg and 21 mg/kg) and 10 ft depth (2.8 mg/kg and 32 mg/kg) residential limits for the gasoline UST location (Table 1) (Table 1 in the LTCP, Appendix C attached).	None
	None for the former waste-oil UST location.	None for the former waste-oil UST location.	The direct-contact and outdoor air exposure is satisfied because the concentrations reported in soil of benzene (0.91 mg/kg at 8.5 ft bg), ethylbenzene (0.093 mg/kg at 3 ft bg and 26 mg/kg at 8.5 ft bg), napthalene (9.0 mg/kg at 8.5 ft) and poly-aromatic hydrocarbon (ND) are below their respective 5 ft depth (1.9 mg/kg and 21 mg/kg) and 10 ft depth (2.8 mg/kg and 32 mg/kg) residential limits for the waste-oil UST location (Table 2) (Table 1 in the LTCP, Appendix C attached).	None
8 Data Gap Work Plan and Focused Conceptual Site Model	Domestic well search and (possibly) collect soil and grab-groundwater samples from the former gasolene UST location.	A records search in the DWR and Alameda County Public Works Agency water well data bases. If so directed by ACHCS, a soil boring will be advanced to groundwater next to the former gasoline UST location.	The LTCP low-threat groundwater and indoor-air vapor-intrusion criteria will be satisfied when groundwater criterion (1) c is addressed by a domestic well search of the site vicinity: Analytical data from a soil boring at the former UST for gasoline location would confirm (or refute) EC&A's interpretation that there is no significant contamination by TPHg and TPHd at this date. EC&A does not consider this boring to be necessary for site closure because nearly all contaminated soil was removed during over-excavation activities following removal of the UST, and natural attenuation has had over 20 years to reduce any residual concentrations.	If so directed by ACHCS, a grab-groundwater sample and three soil samples should be analyzed for TPHg and benzene, toluene, ethylbenzene and xylenes (BTEX) by Methods SW8015Bm/ 8015B/8021B; TPHd with silica gel clean-up by Method SW8015B; and MTBE and other gasoline oxygenates by Method SW8260B.

Appendix A

Monitoring Well Boring Logs

BORING LOCATION	1049 9th Avenue, Oakland, CA			ELEVATION/DATUM TOC 18.76 ft	BORING NO. MW-1
DRILLING AGENCY	Gregg Drilling	DRILLER	Rich	DATE STARTED / DATE FINISHED	08 Sep 00 → 08 Sep 00
DRILLING EQUIPMENT	Rhino D-15			COMPLETION DEPTH 20.0 ft	SAMPLER Push
DRILLING METHOD	Hollow Stem Auger	DRILL BIT	8 inches	NO. OF SAMPLES / DIST. 4	UNDIST. —
SIZE AND TYPE OF CASING	2.0 inch PVC	FROM 20.0 ft TO	0.2 ft	WATER LEVEL / FIRST 11.0 ft	COLLECTED /MEASURED None
TYPE OF PERFORATION:	0.01 inch Slotted	FROM 20.0 ft TO	3.5 ft	CORE BARREL 2.0 inches	LENGTH 18 inches
SIZE AND TYPE OF PACK	RMC #2/12 Sand	FROM 20.0 ft TO	4.0 ft	LOGGED BY: R. Ely	CHECKED BY:
TYPE OF SEAL NO. 1	Bentonite	FROM 4.0 ft TO	3.0 ft	COMMENTS:	
NO. 2	Portland Cement	FROM 3.0 ft TO	0.2 ft		

DEPTH (feet)	SAMPLES	RUN	MATERIAL DESCRIPTION	USCS
			Concrete Sidewalk.	
			Sandy Clay – 2 to 3 inch transitional, dark gray-brown.	
			SANDY CLAY (CL) – native soil, strong brown (7.3YR 5/6).	CL
5	1		Color change to dark brown (7.5YR 4.4), dry to moist, stiff.	
			Color change to grayish-green (10GY 5/2), dry, hard.	
10	2		SAND (SP), grayish-green (5G 4-5/2), wet, dense, well-sorted medium-grained sand, subrounded to rounded quartz with trace mafics; faint product odor.	SP
15	3		SANDY SILT (ML), grayish-brown to grayish-green (10YR 5/2 to 10G 4/2) mottled brownish-yellow (10YR 6/6), damp, stiff, fine-grained sand with trace mica.	ML
	4		SAND (SP) – 6 inch thick bed at 18.7-19.2 ft, olive-gray, damp, loose, well-sorted medium-grained sand (same as at 11 ft).	
20			TD: 20.0 ft bgs	

WELL CONSTRUCTION: Lock Box; Grout; 2" PVC; Bentonite; Sand; 0.010 Well Screen

Harris & Lee Environmental Sciences

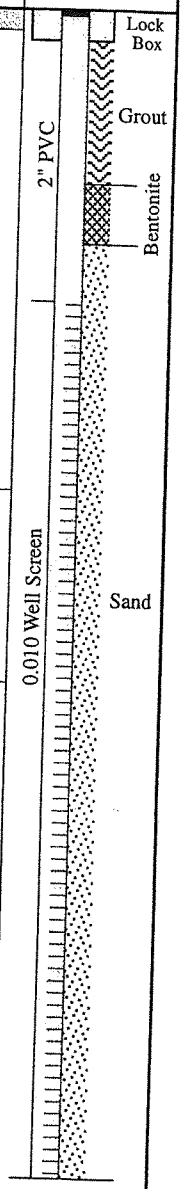
REVIEWED BY:	DATE:	FIELD LOG OF BORING NO.	SHEET NO.
Richard Ely	September 2000	MW-1	1 OF 1

TRACE 235

BORING LOCATION	1049 9th Avenue, Oakland, CA			ELEVATION/DATUM TOC 17.77 ft	BORING NO. MW-2
DRILLING AGENCY	Gregg Drilling	DRILLER	Rich	DATE STARTED / DATE FINISHED	08 Sep 00 → 08 Sep 00
DRILLING EQUIPMENT	Rhino D-15			COMPLETION DEPTH 20.0 ft	SAMPLER Push
DRILLING METHOD	Hollow Stem Auger	DRILL BIT	8 inches	NO. OF SAMPLES DIST. 4	UNDIST. —
SIZE AND TYPE OF CASING	2.0 inch PVC	FROM 20.0 ft TO	0.2 ft	WATER LEVEL FIRST None	COLLECTED /MEASURED None
TYPE OF PERFORATION:	0.01 inch Slotted	FROM 20.0 ft TO	5.0 ft	CORE BARREL 2.0 inches	LENGTH 18 inches
SIZE AND TYPE OF PACK	RMC #2/12 Sand	FROM 20.0 ft TO	4.0 ft	LOGGED BY: R. Ely	CHECKED BY:
TYPE OF SEAL NO. 1	Bentonite	FROM 4.0 ft TO	3.0 ft	COMMENTS:	
NO. 2	Portland Cement	FROM 3.0 ft TO	0.2 ft		

DEPTH (feet)	SAMPLES	RUN	MATERIAL DESCRIPTION	USCS
			Concrete Sidewalk.	
			SANDY CLAY (CL), brown (7.5YR 5/6) to dark brown (2.5YR 3/2), dry, stiff, medium- to coarse-grained sand of subangular to subrounded quartz with trace lithics.	CL
5	1			
10	2		CLAYEY GRAVELLY SAND (SC), grayish-brown (2.3Y-5/2), moist, dense, poorly-sorted medium- to very coarse-grained sand, subangular to rounded mostly quartz with trace mafics and black chert (?), subrounded pebbles to 1 cm long of red and black chert.	SC
			CLAYEY SILT (ML), light brownish-green (10YR 6/2) mottled yellowish-brown (10YR 5/4), moist, stiff, trace mica.	ML
15	3			
	4		SILTY SAND (SP), light brownish-gray (2.5Y 6/3) to olive yellow (2.5Y 6/6), moist, dense, well-sorted fine-grained sand.	SP
20			TD: 20.0 ft bgs	

WELL CONSTRUCTION



Harris & Lee Environmental Sciences

REVIEWED BY:	DATE:	FIELD LOG OF BORING NO.	SHEET NO.
Richard Ely	September 2000	MW-2	1 OF 1

TRACE 235

BORING LOCATION	1049 9th Avenue, Oakland, CA			ELEVATION/DATUM	TOC 18.02 ft
DRILLING AGENCY	Gregg Drilling	DRILLER	Rich	BORING NO.	MW-3
DRILLING EQUIPMENT	Rhino D-15			DATE STARTED / DATE FINISHED	08 Sep 00 → 08 Sep 00
DRILLING METHOD	Hollow Stem Auger	DRILL BIT	8 inches	COMPLETION DEPTH	20.0 ft
				NO. OF SAMPLES / DIST.	4
SIZE AND TYPE OF CASING	2.0 inch PVC	FROM 20.0 ft TO 0.2 ft		WATER LEVEL / FIRST	None
TYPE OF PERFORATION:	0.01 inch Slotted	FROM 20.0 ft TO 5.0 ft		CORE BARREL	2.0 inches
SIZE AND TYPE OF PACK	RMC #2/12 Sand	FROM 20.0 ft TO 4.0 ft		LOGGED BY:	R. Ely
TYPE OF SEAL NO. 1	Bentonite	FROM 4.0 ft TO 3.0 ft		COMMENTS:	
TYPE OF SEAL NO. 2	Portland Cement	FROM 3.0 ft TO 0.2 ft			

DEPTH (feet)	SAMPLES	RUN	MATERIAL DESCRIPTION	USCS
			Asphalt.	
			Road Gravel.	
			SANDY CLAY (CL), light olive gray (5Y 6/2), dry to damp, stiff, well-sorted fine-grained sand.	CL
5		1		
10		2	Same as above.	
			SAND (SP), brown to dark brown (10YR 3-5/3), moist, loose, well-sorted fine- to medium-grained sand, subangular to subrounded mostly quartz with trace mafics; trace quartz and chert pebbles to 4 mm long.	SP
15		3	CLAYEY SAND and SANDY CLAY (SC/CL), light brownish-gray (10YR 6/2) mottled yellowish-brown (10YR 5/4-6), well-sorted fine-grained sand.	SC/CL
		4	Same as above, except moderate-sorted fine- to medium-grained sand with trace coarse sand.	
20			TD: 20.0 ft bgs	

WELL CONSTRUCTION: Lock Box; Grout; 2" PVC; Bentonite; 0.010 Well Screen; Sand

Harris & Lee Environmental Sciences

REVIEWED BY:	DATE:	FIELD LOG OF BORING NO.	SHEET NO.
Richard Ely	September 2000	MW-3	1 OF 1

TRACE 235

P & D ENVIRONMENTAL

BORING NO.: MW1 PROJECT NO.: 0101 PROJECT NAME: MERRITT ENVIRONMENTAL CORPORATION

BORING LOCATION: INSIDE YARD ADJACENT TO OFFICE ELEVATION AND DATUM: N/A

DRILLING AGENCY: EXPLORATION GASERVICES, INC. DRILLER: JOHN & MIKE

DATE & TIME STARTED: 7/21/97

DATE & TIME FINISHED: 7/21/97

DRILLING EQUIPMENT: 8" OD HOLLOW STEM AUGER

COMPLETION DEPTH: 20 FEET BEDROCK DEPTH: UNKNOWN

LOGGED BY: AOG

CHECKED BY: PHK

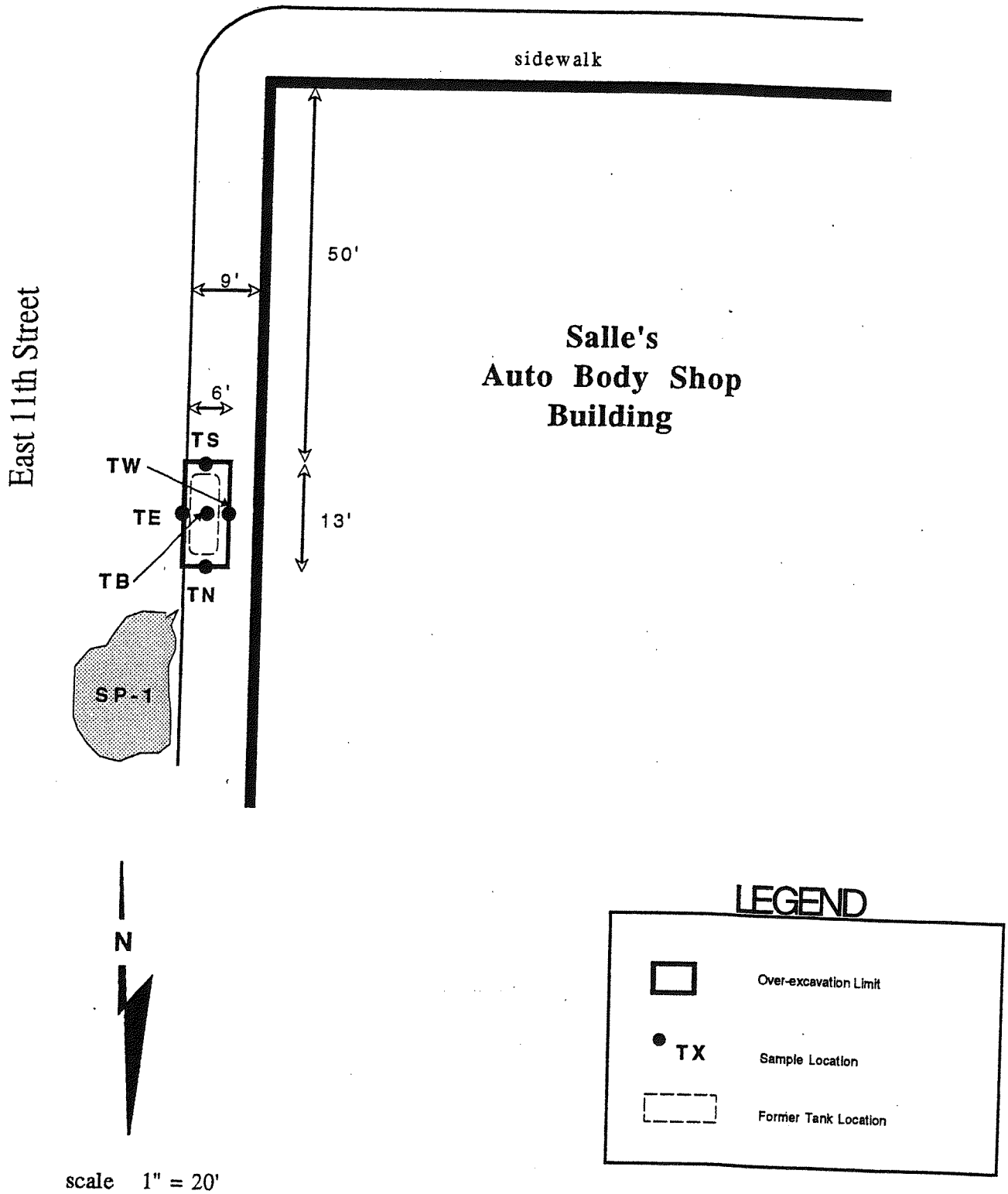
FIRST WATER DEPTH: 16.5 FEET NO. OF SAMPLES: 2

DEPTH (FT)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	BLOW COUNT PER 6"	PID/ppm	REMARKS
0	Gravel					
1	Dark brown SILTY CLAY (CL); with some brick fragements, dry. No Petroleum Hydrocarbon (PHC) odor.	CL				
2						
3	Light brown SILTY CLAY (CL); with medium sand, minor gravel 1/4" in diameter, hard, very dry. No PHC odor.	CL				
4						
5				34		
6				50 4	0	
7						
8	Green SAND (SP); medium sand, very moist. Strong PHC odor.	SP				
9	Green CLAY (CL); minor medium sand, dark brown mottling, medium stiff, moist. Strong PHC odor.	CL				
10				4		
11				10 10	20	
12	Green CLAY (CL); minor sand, moist. Moderate PHC odor.	CL				
13						
14						
15	Green CLAY (CL); brown mottling, medium stiff, very moist. No PHC odor.	CL		6		
16				10 12	0	
17	Brown SILTY SAND (SM); medium sand, dark brown mottling, very stiff, moist. No PHC odor.	SM	▽			Groundwater first encountered at 16.5 feet on 7/21/97.
18				14		
19				20 23	0	
20						Borehole terminated at 20 feet below grade. Groundwater monitoring well constructed on 7/21/97.
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

7/28/97 1001MW1.DWG

Appendix B

Touchstone Developments
Site Plans & Sample Locations



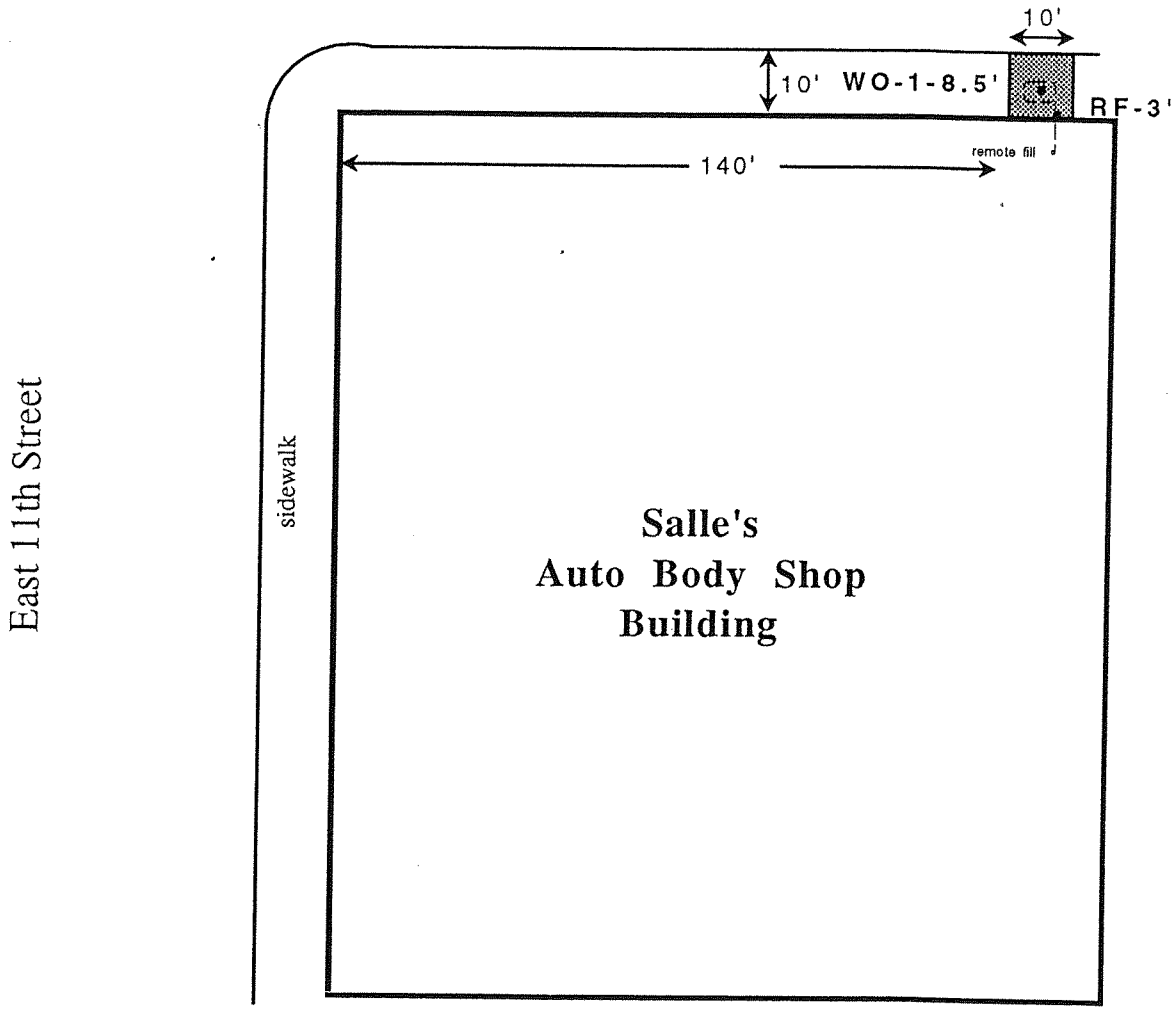
Touchstone Developments
Environmental Management

Site Plan / Sampling Locations
1049 9th Avenue
Oakland, California

Figure 1

2-1-94 | mjt

Project Number 93-25



N

not to scale

LEGEND

- Excavation Limit
- TX — Sample Location
- Former Tank Location
- Remote Fill Piping

Touchstone Developments Environmental Management	**Site Plan / Sampling Locations** 1049 9th Avenue Oakland, California	**Figure 1** 7-22-94 mjt Project Number 94-13

Appendix C

LTCP Table 1
Petroleum Constituents in Soil

3. Direct Contact and Outdoor Air Exposure

This policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatized to outdoor air poses a low threat to human health. Release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any of the following:

a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs). The concentration limits for 0 to 5 feet bgs protect from ingestion of soil, dermal contact with soil, and inhalation of volatile soil emissions and inhalation of particulate emissions. The 5 to 10 feet bgs concentration limits protect from inhalation of volatile soil emissions. Both the 0 to 5 feet bgs concentration limits and the 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial/Industrial) shall be satisfied. In addition, if exposure to construction workers or utility trench workers are reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied; or

b. Maximum concentrations of petroleum constituents in soil are less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health; or

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

Table 1

Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health

Chemical	Residential		Commercial/ Industrial		Utility Worker
	0 to 5 feet bgs mg/kg	Volatilization to outdoor air (5 to 10 feet bgs) mg/kg	0 to 5 feet bgs mg/kg	Volatilization to outdoor air (5 to 10 feet bgs) mg/kg	0 to 10 feet bgs mg/kg
Benzene	1.9	2.8	8.2	12	14
Ethylbenzene	21	32	89	134	314
Naphthalene	9.7	9.7	45	45	219
PAH[1]	0.063	NA	0.68	NA	4.5

Notes:

1. Based on the seven carcinogenic poly-aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. Sampling and analysis for PAH is only necessary where soil as affected by either waste oil or Bunker C fuel.
2. The area of impacted soil where a particular exposure occurs is 25 by 25 meters (approximately 82 by 82 feet) or less.
3. NA = not applicable
4. mg/kg = milligrams per kilogram