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PRELIMINARY ENVIRONMENTAL ASSESSMENT
CLAWSON SCHOOL SITE
3420 PERALTA AND 3315 MAGNOLIA STREETS
OAKLAND, CALIFORNIA
SCI 272.023

Prepared for:

Ms. Julie Carver
Real Estate Services
City of Oakland
1333 Broadway, Suite 820
Oakland, California 94612

by:

William K. Wikander
Geotechnical Engineer 892 (expires 12/31/92)

REGISTERED PROFESSIONAL ENGINEER
WILLIAM K. WIKANDER
No. GE 000892
GEOTECHNICAL
STATE OF CALIFORNIA

R. William Rudolph
Geotechnical Engineer 741 (expires 12/31/92)

REGISTERED PROFESSIONAL ENGINEER
ROSS WILLIAM RUDOLPH
No. GE 000741
GEOTECHNICAL
STATE OF CALIFORNIA

Subsurface Consultants, Inc.
171 - 12th Street, Suite 201
Oakland, California 94607
(415) 268-0461

September 27, 1991

EXECUTIVE SUMMARY

Subsurface Consultants, Inc. (SCI) was contracted by the City of Oakland to conduct a Phase 1 and Phase 2 environmental assessment of the Clawson School site. The property is currently owned by the Oakland Unified School District. The City conducted the assessment to examine the environmental conditions existing at the site prior to acquiring the property. The assessment included (1) research of historical uses of the site and nearby properties, (2) retaining a subconsultant (EnviroGroup) to conduct an asbestos and PCB survey of the buildings, (3) drilling 29 test borings, (4) installing 3 groundwater monitoring wells, and (5) analyzing selected soil and groundwater samples for contaminants.

The results of the study indicate that the site has been a school facility since the mid 1800's. The adjoining properties have had residential uses. There are numerous confirmed and/or potential environmental cases within about 2,000 feet of the site. However, there are no off-site contamination problems which are known to be impacting the site.

The on-site environmental concerns identified by this study include (1) a leaking underground fuel oil tank located near the school boiler room, (2) elevated levels of lead in the shallow landscape soils west of the school site, and (3) asbestos containing building materials within the structure. Each of these items will require remediation and/or mitigation during site development.

The studies conducted to date suggest that subsurface contamination is limited to soil and groundwater near the tank site and the shallow landscape soils west of the building.

1.0 INTRODUCTION

This report records the results of an environmental assessment conducted by Subsurface Consultants, Inc. (SCI) for the Clawson School site in Oakland, California. The site is located at 3420 Peralta and 3315 Magnolia Streets, as shown on the Site Plan, Plate 1.

The Clawson School site occupies most of the city block surrounded by Union, Peralta, 34th, Magnolia and 32nd Streets. There are four buildings on the property. The remainder of the site contains playgrounds and landscaped areas. An underground fuel storage tank currently exists on-site.

We understand that the Oakland Unified School District currently owns the property and the City of Oakland is considering acquisition of it.

As outlined in the Agreement dated April 8, 1991, SCI's scope of services was to include the following tasks:

Task 1 - Phase 1 Preliminary Environmental Assessment

Research the historical use of the site and neighboring properties and draw conclusions regarding the likelihood of on-site and off-site sources of contamination impacting the site.

Task 2 - Phase 1 Hazardous Materials Survey

Retain a subconsultant (EnviroGroup) to conduct a survey to identify asbestos containing products and materials, and equipment containing polychlorinated biphenyls' within the existing buildings.

Task 3 - Phase 1 Subsurface Exploration and Analytical Testing at an existing underground tank site.

Drill and sample 4 to 6 test borings near the underground tank to check for contamination.

Based on the results of Tasks 1 and 3, SCI identified several environmental concerns associated with the site. The results of the Hazardous Materials Survey performed by EnviroGroup is presented in Appendix A.

SCI's scope of services was subsequently expanded to include additional investigation. The additional work was authorized in Agreement Amendment Nos. 1 and 2. Specifically, the additional services included a detailed Phase 2 Site Assessment which included the following tasks:

Task 1. Analytically testing selected samples obtained during the previous assessment for petroleum hydrocarbons and fire-related contaminants.

Task 2. Screening a sample of the tank contents for common constituents/additives to fuel oil,

Task 3. Installing and sampling 3 groundwater monitoring wells,

Task 4. Drilling 5 test borings inside and 3 test borings outside the school building to determine the extent of contamination near the existing tank,

Task 5. Drilling and sampling 10 test borings on the west side of the school building to check for the presence of lead in the near-surface soils,

Task 6. Analytically testing selected soil and groundwater samples from the monitoring wells and test borings, and

Task 7. Preparing this report.

2.0 SITE CONDITIONS

2.1 Geology

The site is located on a broad alluvial plain bordered by the Berkeley Hills on the east and San Francisco Bay on the west. According to a geologic map by Radbruch (1957)[1], the site is underlain by the Temescal formation, an alluvial fan deposit comprised of inter-fingered lenses of clayey gravel, sandy silty clay, sand-clay-silt mixtures.

2.2 Surface Conditions

The relatively level, nearly rectangular site measures about 250 by 500 feet in plan and comprises about 2.9 acres. It is bordered by Peralta and Union Streets, 32nd Street, Magnolia Street, and residences on the west, south, east and north sides, respectively. The site is currently occupied by four structures, as shown on Plate 1. The Clawson School building is a 3-story, reinforced concrete and wood frame structure. The Senior Center is a 1-story, wood-frame structure, and the two out-buildings are 1-story, wood-frame structures. None of the structures appear to have basements. Most of the site north, east and south of the Clawson School building is a playground and is paved with asphaltic concrete. The area west of the building is landscaped with lawns, bushes and trees. An underground fuel oil storage tank is located

[1] "Areal and Engineering Geology of the Oakland West Quadrangle, California", USGS Map I-239

east of the Clawson School building. Its location is shown on Plate 1.

Based upon measurements made through the fill pipe, the underground tank appears to be about 5 feet in diameter. The top and bottom of the tank are at depths of about 5 and 10 feet, respectively. The length and volume of the tank are unknown. The tank currently contains water with a thin layer of floating oily product on it. Research to date indicates that the tank was used to store fuel oil for boilers located inside the Clawson School building.

3.0 SITE USAGE HISTORY

3.1 General

Our understanding of the past use of the site and neighboring parcels is based upon information obtained from the following sources:

1. Sanborn Fire Insurance maps,
2. Historical telephone directories,
3. Building plans and permits,
4. Oakland Teachers Professional Library records,
5. Interviews with Department of Building and Grounds, and Oakland Unified School District personnel,
6. Fire Marshall records,
7. Main Library Oakland History Room records,
8. Regulatory agency files, and

9. Aerial photographs[2].

3.2 Clawson School Site

The Clawson School parcel was originally part of the Watts Farm Tract, an area bounded by 30th, Chestnut and 36th Streets, and the waterfront. In 1878, the Watts Tract School opened at the site. In about 1882, the four room building was renamed as the Clawson School. The school site was roughly half the size as it is today and occupied the area adjacent to Magnolia Street. The remainder of the site (adjacent to Union and Peralta Streets) was mostly occupied by single family residences. In 1892, the building was moved to another position on the same parcel, as shown on Plate 1. At least two additions were constructed prior to 1911. In 1914, the Clawson School building was completely destroyed by fire. In the same year, the existing 18-room school building was constructed. The residences along Union and Peralta Streets were removed and the school site was enlarged to accommodate the new building. By 1941, the Clawson School site was expanded to its current size of about 2.9 acres. In 1961, a multi-purpose building was constructed at the site. We believe that it is the building currently occupied by the Progressive Senior Center. Also in 1961, the auditorium within the Clawson School building was removed due to earthquake hazards. The two existing out-buildings were

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[2] Pacific Aerial Surveys photographs AV11-05-14 (1947), AV28-12-34/35 1949), AV253-08-24 (1957), AV337-07-24/25 (1959), AV995-04-18/19 (1971), AV1100-05-15/16 (1973) and AV2300-06-19/20 (1983).

constructed some time between 1959 and 1971. Five small classroom buildings, not connected to the main structure, were removed to allow construction of the new buildings. The Clawson School building and out-buildings remained in use until sometime during the 1970's.

3.3 Surrounding Neighborhood

Properties that formerly occupied the site or that have shared its boundaries have been primarily residential. The exceptions were a Masonic Hall at 3204 Union Street and a store at 3302 Peralta Street that were removed in 1914. The surrounding neighborhood contains a mix between residential, commercial and light industrial uses. According to Sanborn maps, and current observations, non-residential uses that have occurred within a city block comprising the site include the following:

Use	Approx. Address	Approx. Dates
Lumber Yard	1185-32nd Street	circa 1951
Theater Equipment Studio	1196-32nd Street	circa 1951 to present
Machine Shop	1201-32nd Street	circa 1951 to present
Auto Repair Shop	1153-34th Street	circa 1951
Cleaners (benzene storage)	1200-34th Street	circa 1951
Iron Works	3250 Hollis	Present
Fire Station	3320 Magnolia	circa 1951
Battery Service Shop	3227 Peralta	circa 1935
Service Station	3352 Peralta	1947-1964
Machine Shop	3201 Union	circa 1951
Warehouses/Auto Storage Yards	Various	Present

4.0 ENVIRONMENTAL CONCERNS

Our research during the Phase 1 assessment revealed several on-site and off-premises environmental concerns. These concerns are addressed in the following sections.

4.1 On-Site

Current and past uses of the site raise a number of environmental concerns. The concerns are summarized below.

1. Fire department records do not indicate the size, capacity or historic contents of the existing underground fuel storage tank. However, it appears that the tank stored fuel oil used by a boiler to heat the existing school building. Soil and groundwater adjacent to and/or beneath the tank may contain fuel oil if the tank or pipes leaked, or if the tank was routinely over filled.

2. Near surface soils beneath the previous school building destroyed by fire may contain fire-related contaminants such as polynuclear aromatic hydrocarbons (PNAs) and lead.

3. The site is in an urban environment which was originally developed in the late 1800s. Near surface soils in older urban areas often contain elevated lead concentrations.

4. Existing buildings at the site appear to have been constructed with some asbestos containing materials (EnviroGroup Report - Appendix A).

Investigation programs were developed to check for the existence and extent of soil and groundwater contamination associated with the previous tank, and to check for the presence of lead and PNAs in the shallow soils. The programs are described in more detail in Section 5.0.

4.2 Off-Premises

It is possible that contaminated groundwater from off-site sources (particularly those upgradient from the site) could impact the site. Based on a review of environmental cases compiled by the San Francisco Regional Water Quality Control Board (RWQCB), the California Department of Health Services (DHS) and the Federal Environmental Protection Agency (EPA), there are no documented environmental cases on adjoining properties. However, seven (7) environmental cases exist within about 2000 feet of the site. The addresses of these cases are listed below, and their locations are shown on the Environmental Case Plan, Plate 2. References used to identify the sites are listed in Appendix B.

Site Name	Address	Contaminant
City of Paris Cleaners	3516 Adeline	Solvents
Belous Property	3423 Harlan	Fuel
Ransome Company	4030 Hollis	Fuel
Custom Alloy Scrap	2730 Peralta	Fuel
Thrifty Oil	3400 San Pablo	Fuel
Shell Service Station	3420 San Pablo	Fuel
Catellus Property	Yerba Buena Avenue	Fuel, Solvents, PCB's, Metals

Areas upgradient of the site have been used for residential, commercial and light-industrial purposes. Businesses in the area include service stations, dry cleaners, machine shops, auto repair facilities, and other manufacturing facilities which likely use or have used materials currently considered hazardous. It is unknown if releases have occurred at these sites.

5.0 FIELD EXPLORATION

5.1 General

Based on the environmental concerns identified during this study, an investigation program was developed to preliminarily assess soil and groundwater quality. In general, subsurface conditions were investigated by drilling 29 test borings and completing 3 selected borings as groundwater monitoring wells. The boring and well locations are shown on Plate 1.

5.2 Test Borings

5.2.1 Tank Area

Eleven (11) test borings, (Borings 1 thru 11) were initially drilled during the Phase 1 study to depths ranging from 1 to 18 feet. To supplement data provided by these borings, eleven (11) additional borings, (Borings 12 thru 19 and MW1 thru MW3) were drilled to depths ranging form 13 to 21 feet.

Test Borings 1 thru 11 and 17 thru 18 were drilled using 4.5 and 6-inch-diameter, trailer mounted, solid flight auger equipment. Borings 12 thru 16 were drilled within the existing school building utilizing a portable "Minute Man" rig equipped with 3-inch-diameter solid flight augers. Test borings MW1 thru MW3 were drilled using trailer mounted 8-inch-diameter hollow stem augers.

At the completion of drilling, Test Borings 1 thru 18 were backfilled with cement grout. Groundwater monitoring wells were installed in Test Borings MW1 thru MW3 as detailed in the following section. Soil cuttings generated during drilling were encapsulated

in two 1 cubic yard soil bags; appropriate disposal methods are currently being investigated. Documentation of this disposal will be submitted at a later date.

5.2.2 Near Surface Soils

Ten (10) test borings, designated 20 through 29, were drilled in the landscaped area west of the existing school building to assess lead concentrations in the near surface soils. The borings were advanced utilizing hand auger equipment to depths ranging up to 5 feet. Upon completion of drilling, the borings were backfilled with soil cuttings.

5.2.3 Environmental Sampling

Our geologist/engineer observed drilling operations and prepared logs of the soils encountered. The Logs of Test Borings are presented on Plates 3 through 23. The soils are classified in accordance with the Unified Soil Classification System described on Plate 24. Drilling and sampling equipment was steam cleaned prior to each use. Undisturbed soil samples were obtained from the test borings at intervals of 3 to 5 feet and at significant lithologic changes. The samples were retained in brass sample liners. Teflon sheets were placed over the liner ends prior to capping, taping and labeling. The samples were refrigerated until delivery to the analytical laboratory. The samples were accompanied by Chain-of-Custody forms, copies of which are presented in Appendix C.

In the field, portions of each sample were placed in plastic "Ziplock" bags and allowed to warm for about 15 minutes in sunlight. The air within each bag was then checked with an organic vapor meter (OVM - Model 580A) calibrated to a hexane standard. The OVM readings are presented on the Logs of Test Borings, Plates 3 through 23.

5.3 Groundwater Monitoring Wells

Groundwater monitoring wells were installed in Test Borings MW1 through MW3. Prior to well installation, a permit was obtained from the Alameda County Flood Control and Water Conservation District, Zone 7. A copy of the permit is presented in Appendix D.

Schematic diagrams of the wells, as installed, are shown on the Logs of Test Borings, Plates 21 through 23. In summary, the monitoring wells consist of 2-inch-diameter, PVC plastic pipe having flush threaded joints. The lower 10 feet consists of machine slotted (screened) well pipe encased in a sand filter. The screened section is positioned such that 5 feet extends above and 5 feet extends below the groundwater level measured in Borings 6 and 11 during the Phase 1 assessment. The well heads are provided with locks, and are set below grade in utility boxes.

After the grout seals were allowed to set up, the wells were developed. Initially, the depth to water was measured. The wells were then developed by bailing them dry using new steam cleaned Teflon bailers. Approximately 5 to 10 gallons of water were removed from the wells. The water was placed in steel drums and left on-site for later disposal. Review of the analytical tests of

groundwater samples from the wells indicated that it was non-hazardous. Accordingly, the water in the drums was allowed to evaporate. Two days after development, the wells were purged of 1 to 2 gallons and then sampled using Teflon samplers dedicated to each well. Water samples were placed in containers pre-cleaned by the supplier and refrigerated until delivery to the analytical laboratory. The samples were accompanied by Chain-of-Custody forms, copies of which are presented in Appendix C. Copies of the well development and purge logs are presented in Appendix D.

5.4 Groundwater Level Measurements

A level survey was performed to determine the top of casing (TOC) elevation of each of the monitoring wells. The elevation reference is the bottom of the stairs at the west side of the school building (as shown on Plate 1), and is assumed to be at Elevation 100.00 feet. The depth to groundwater below the top of each casing was intermittently measured using a well sounder. The direction and gradient of groundwater flow was determined, based upon this data. The groundwater elevation contours for the August 1991 reading are shown on the Plate 1. The results of all groundwater readings to date are summarized in Table 1.

6.0 SUBSURFACE CONDITIONS

6.1 Soil Conditions

Based upon the results of our field exploration, we conclude that the subsurface conditions consist of naturally deposited clays overlying clayey sands, and fill adjacent to the tank. The fill consists of soft to medium stiff sandy clays, and dense clayey gravels. It extends to a depth of about 10 feet. Beneath the fill and at the groundsurface elsewhere are native, medium stiff to stiff silty and sandy clays. Medium dense clayey sands were encountered beneath the clays in some of the borings.

Small pockets of a black oily substance, and relatively high OVM readings and/or oil odors were noted in the soil samples from Test Borings 1, 2, 4, 5, 6, and 8 during our Phase 1 assessment, and later at Test Borings 18, 19, and MW3. Most of the contamination appeared to be at depths ranging from about 10 to 15 feet. The contaminated soil was near the existing underground tank. No contaminated soil was evident in test borings drilled within the Clawson School building, including the boiler room.

6.2 Groundwater

Groundwater was encountered at depths of about 14 to 16 feet during drilling. Several weeks later, the depths to groundwater measured in the monitoring wells ranged from about 10 to 12 feet. During development, the wells were very slow to yield water after they were bailed dry. Based upon groundwater elevation measurements to date, the direction of groundwater flow is to the

west; monitoring well MW3 is directly downgradient from the tank. Free product was noted in a "grab" groundwater sample from Boring 6. No free product, nor a sheen was noted on groundwater samples from the monitoring wells.

7.0 ANALYTICAL TESTING

Selected soil and groundwater samples were analyzed by CKY, Incorporated, and Curtis & Tompkins, LTD, both State of California Department of Health Services (DHS) certified analytical laboratories for the tests performed. The analytical test reports are presented in Appendix C. The analytical test results are summarized in Tables 2 through 5.

The testing program implemented during the Phase 1 assessment included screening selected soil samples for total petroleum hydrocarbons, as diesel, and total recoverable petroleum hydrocarbons using the following methods:

1. Total petroleum hydrocarbons, as diesel (TPH), sample preparation and analysis using EPA methods 3550 (sonication) and 8015 (modified, gas chromatograph coupled to a flame ionization detector), and

2. Total recoverable petroleum hydrocarbons, sample preparation and analysis using EPA methods 3550 and EPA 418.1 (infrared spectrophotometer).

During the supplemental study, previously screened samples were further analyzed for benzene, toluene, xylene and ethylbenzene (BTXE) using the following method:

1. Benzene, toluene, xylenes and ethylbenzene (BTXE), sample preparation and analysis using EPA methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector).

Selected samples from Test Borings 1 through 11 which had not been previously analyzed during the Phase 1 assessment, were also analyzed for TPH and BTXE during the supplemental study.

Fuel oils can contain additives and other chemicals such as gasoline, solvents and volatile organic compounds. Accordingly, we attempted to screen a sample of the tank contents for commonly found constituents. However, insufficient product existed for the analyses. Therefore, a soil sample (Boring 5 at 13 feet) with the highest concentration of petroleum hydrocarbons detected during the Phase 1 assessment was analyzed for the following:

1. Halogenated volatile organics, sample preparation and analysis using EPA methods 5030 and 8010 (gas chromatograph and electrolytic conductivity detector), and

2. Semivolatile organics and PCB's, sample preparation and analysis using EPA methods 3550 and 8270 (gas chromatograph with mass spectroscope).

A near-surface soil sample obtained during the Phase 1 assessment from within the footprint of the former fire-destroyed school building (Boring 7 at 1.5 feet) was analyzed for fire related contaminants as follow:

1. Polynuclear aromatic hydrocarbons, sample preparation and analysis using EPA methods 3550 and 8100 (gas chromatograph with flame ionization detector), and

2. Total and soluble lead, analysis using EPA method 7420; extraction by Waste Extraction Test: CCR Title 26, Section 22-66700.

Near-surface soil samples from the landscaped area west of the Clawson School building were analyzed for total and soluble lead.

Analytical testing of some samples obtained during the Phase 1 assessment was performed beyond the sample holding times recommended by the EPA. The samples, and their recommended and actual holding times are listed in Appendix C. The samples were stored in sealed containers and refrigerated. We judge that it is unlikely that analyzing the samples beyond their holding times had a significant affect on the contaminant concentrations.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 General

Based upon the results of this investigation, three areas of potential environmental concern were identified at the site. These areas include: (1) the existing underground fuel storage tank and the associated contaminated soils and groundwater, (2) fire related contaminants and lead in the near-surface soils, and (3) groundwater contamination. Our findings regarding these areas are discussed in the following sections.

8.2 Existing Fuel Tank

8.2.1 Soil Contamination

The existing underground fuel tank at the site currently contains water and a small amount of fuel oil. Soil samples obtained from the tank vicinity contain diesel concentrations ranging up to 1100 mg/kg (Boring 19 at 13 feet) and total

recoverable hydrocarbon concentrations ranging up to 990 mg/kg (Boring 5 at 13 feet). One soil sample (Boring 5 at 13 feet) contained minor concentrations of toluene, xylene and several semi-volatile organic compounds. These constituents appear to be typical components of fuel oil.

The estimated extent of soil contamination, based upon the results of field exploration to date, is shown on Plate 1. Although most of the contaminated soils appear to be outside the limits of the existing Clawson School building, some soil contamination may extend beneath it.

8.2.2 Groundwater Contamination

The results of analyses of the groundwater samples to date suggest that contaminated groundwater exists within a few feet of the tank, but does not extend to areas containing the monitoring wells. Free product was observed and dissolved product was detected in a "grab" groundwater sample from near the tank (Boring 6). No free product (nor sheen) has been encountered in any of the wells, including Well MW-3, the well nearest to and down gradient from the tank. No detectable concentrations of diesel were encountered in groundwater samples from the monitoring wells (reporting limit: 0.2 mg/l). Small concentrations of toluene (1 to 3 ug/l) were detected in the wells. The source of toluene may be the existing on-site tank.

No halogenated volatile organics (with the exception of methylene chloride) were detected in the groundwater samples, above reporting limits. Methylene chloride was detected in the groundwater samples and in a blank water sample prepared by the analytical laboratory. Methylene chloride is often used as a solvent by analytical laboratories. Because methylene chloride was detected in the blank sample (at a higher concentration than in the groundwater samples), we judge that its presence in the well samples is due to laboratory contamination, and, therefore, not indicative of contamination that exists at the site.

8.3 Fire Related Contaminants and Lead

The near-surface soils beneath buildings that were previously destroyed by fire often contain fire related contaminants. These include polynuclear aromatic hydrocarbons (PNA's) and lead. In addition, near-surface soils in older urban areas, particularly near buildings and roadways, often contain elevated lead concentrations. PNA's often exist in roofing and flooring materials, and also result from the incomplete combustion of organic matter. Lead is often associated with roofing, pipes, paint and metal gutters, and may also result from airborne sources, such as leaded gasoline exhaust and industrial emissions.

8.3.1 Previous Fire Destroyed Building

We analyzed a near surface soil sample (Boring 7 at 1.5 feet) from the former fire destroyed structure location. PNA and soluble lead concentrations were less than the laboratory reporting limits (PNA: 0.1 to 0.2 mg/kg, soluble lead: 0.1 mg/l). The total lead

concentration was 15 mg/kg. We judge these results are not indicative of a significant PNA or lead problem in the near surface soils and as such, no further investigation is necessary.

8.3.2 Lead in Near Surface Soils

The near-surface soils from the landscaped area west of the building contained total and soluble lead concentrations ranging up to 347 mg/kg (Boring 23 at 0.5 feet) and 12.5 mg/l (Boring 21 at 1.5 feet), respectively. Near-surface soil samples from east of the existing Clawson School Building had non-detectable soluble lead concentrations (reporting limit 0.10 mg/l) and total lead concentrations ranging up to 22 mg/kg (Boring 6 at 2.0 feet).

The significance of the lead concentrations can be put in perspective by comparing the detected concentrations to the Total Threshold Limit Concentration (TTLC) and to the Soluble Threshold Limit Concentration (STLC) values of lead, as defined in Title 26, Division 22 of the California Code of Regulations. The TTLC concentration for lead is 1000 mg/kg; the STLC value for lead is 5.0 mg/l. If the total concentration of lead in a soil exceeds the TTLC or STLC values, the soil meets the criteria for classification as a hazardous waste when transported.

Small amounts of lead are commonly encountered in surface soils in the Bay Area. Total lead concentrations similar to those detected in surface soils east of the existing Clawson School Building, in samples from Boring 6 at 2.0 feet (22 mg/kg) and Boring 7 at 1.5 feet (15 mg/kg) are routinely encountered, and are frequently considered to represent "background" levels.

The total lead concentrations in samples from the landscaped area west of the school building are well below the lead TTLC value. Limited data exists regarding soluble lead concentrations at the site. Accordingly, the extent of lead contamination can only be roughly estimated. As a conservative estimate, if it is assumed that soil samples with total lead concentrations greater than 200 mg/kg also have soluble lead concentrations greater than 5 mg/l, as the existing data suggests, then the upper about 2 feet of soil in the vicinity of Borings 11, 21 and 23 likely has soluble lead concentrations above 5 mg/l.

8.4 Submittal to Regulatory Agencies

We recommend that this report be provided to the following regulatory agencies:

Ms. Susan Hugo
Alameda County Health Care Services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Mr. Lester Feldman
Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Oakland, California 94612

9.0 LIMITATIONS

This study was intended to provide a preliminary means of evaluating the risk of soil and groundwater contamination, based upon the previous known uses of the site, limited subsurface investigation and analytical testing. If areas of contamination exist on other portions of the property, away from the areas investigated, it is probable that they would not have been detected by the analyses. In addition, if chemicals that were not tested for exist at the site, they would not have been detected during this study.

Table 1.
Groundwater Level Measurements

Well	Top of Casing Elevation (feet)[1]	Date	Groundwater Depth (ft)	Groundwater Elevation (ft.)
MW-1	97.71	06/11/91	10.06	87.65
		06/17/91	10.21	87.50
		06/25/91	10.20	87.51
		07/22/91	11.46	86.25
		08/27/91	10.74	86.97
MW-2	97.93	06/11/91	11.12	86.81
		06/17/91	11.25	86.68
		06/25/91	11.20	86.73
		07/22/91	12.45	85.48
		08/27/91	11.76	86.17
MW-3	99.89	06/11/91	13.27	86.62
		06/17/91	11.37	88.52
		06/25/91	11.18	88.71
		07/22/91	12.39	87.50
		08/27/91	11.64	88.25

[1] Elevation Reference: Bottom of stairs at west side of Clawson School Building (see Plate 1) is assumed to be at elevation 100.00 feet.