HMS, Inc.
HAZARD MANAGEMENT SERVICES, INC.

ALCO
HAZMAT

93 NOV 23 AM 11:40

November 12, 1993

Via Fax Transmission

Please do not remove this report from my office
Ravi
11/23/93

Ms. Nancy Germond, Director
Risk Management Department
Oakland Unified School District
1025 2nd Avenue
Oakland, CA 94606

Dear Ms. Germond:

Attached you will find sample results and a rough sketch of sample locations from the lead-in-soil survey conducted by Hazard Management Services, Inc. (HMS, Inc.) at Cox Elementary School on November 9, 1993. You requested this survey to determine soil contamination levels in order to plan a lead abatement exercise.

Procedures

Soil samples were collected and analyzed according to the procedures listed on page 7 of the "Collection and Analysis of Lead and Other Metals, A Summary of Methods and Procedures" (attached). Sample locations were chosen to complement the original survey in March of 1993 and to determine the depth of soil contamination. See attached sketch for sample locations.

Observations

A PG&E project outside the school fence line at 98th Avenue and Sunnyside has resulted in the removal and replacement of soil in this area. An East Bay Municipal Utility District project (or, it may have been done by City of Oakland street crews) has resulted in the removal and replacement of soil from the corner of 98th and Sunnyside eastward along 98th for 60 – 80 feet. A new curb has been installed here. These projects have resulted in the accumulation of dirt and debris along the fence line parallel with 98th Avenue.

Results - General

The sample results are indicative of several items. First, with only one significant exception, lead concentrations in the soil were less at subsoil levels than at surface levels. The lone exception was at a tree well on Bancroft Avenue.

Second, while PG&E and City of Oakland activities at the 98th Avenue and Sunnyside intersection have significantly reduced lead contamination outside the northwest portion of the play yard, very high levels of lead remain on the surface along the rest of the dirt area outside the fence on the northern perimeter.

P.O. Box 576848
Modesto, CA 95357-6848
(209) 551-2000

P.O. Box 7548
Citrus Heights, CA 95621-7548
(916) 723-4350

P.O. Box 25474
Fresno, CA 93729
(209) 434-8163

Third, tree wells along both Sunnyside and Bancroft remain contaminated.

Fourth, the sample results for exposed soil on the north side of the main entry to the school (on Sunnyside) were not as high as in the last study. This variation was probably due to a slight difference in the sample location rather than an overall change in the lead content of the soil in this area.

Results - Detailed

Surface samples varied from 71 parts per million (ppm) to 6433 ppm. The lowest level was found south of the main Sunnyside entrance to the school. The two highest levels (6433 and 5803 ppm) were found in the soil outside the fence adjacent to 98th Avenue. Tree well surface samples ranged from 499 ppm to 1930 ppm.

Samples taken at a six inch depth ranged from 32 ppm to 253 ppm. Samples taken at a 12 inch depth ranged from 6 ppm to 22 ppm except for one 12 inch sample taken in a tree well on Bancroft Avenue. This sample contained 1056 pm and may have been the result of cross-contamination with surface soil, but it may have been just an unusual finding.

Recommendations

California's Department of Health Services recommends abatement of soil which contains 500 ppm of lead or more. The California Environmental Protection Agency classifies all soils which contain 1000 ppm of lead or more as "hazardous wastes". To eliminate concern for exposure to lead at this site I recommend the following courses of action.

1. Remove soil to a depth of four to six inches along the old sidewalk area on the north side of the school play yard area.

2. Remove soil from all tree wells to a depth of twelve inches or as deep as concrete and tree roots permit.

3. Clean all dirt and debris from the north fence perimeter.

4. Fill all holes and cracks in the play yard areas.

5. Re-surface the play yard area.

6. Remove two inches of soil in areas not covered with grass in the Sunnyside Street planting areas.

Abatement Costs

To remove all the soils recommended in this report the costs for an abatement contractor would be from $11,000 – $13,500. This would provide for removal and disposal. For HMS, Inc. to design and monitor the project our not-to-exceed figure would be $4,750. This would include the bid process, air sampling costs and a project report.

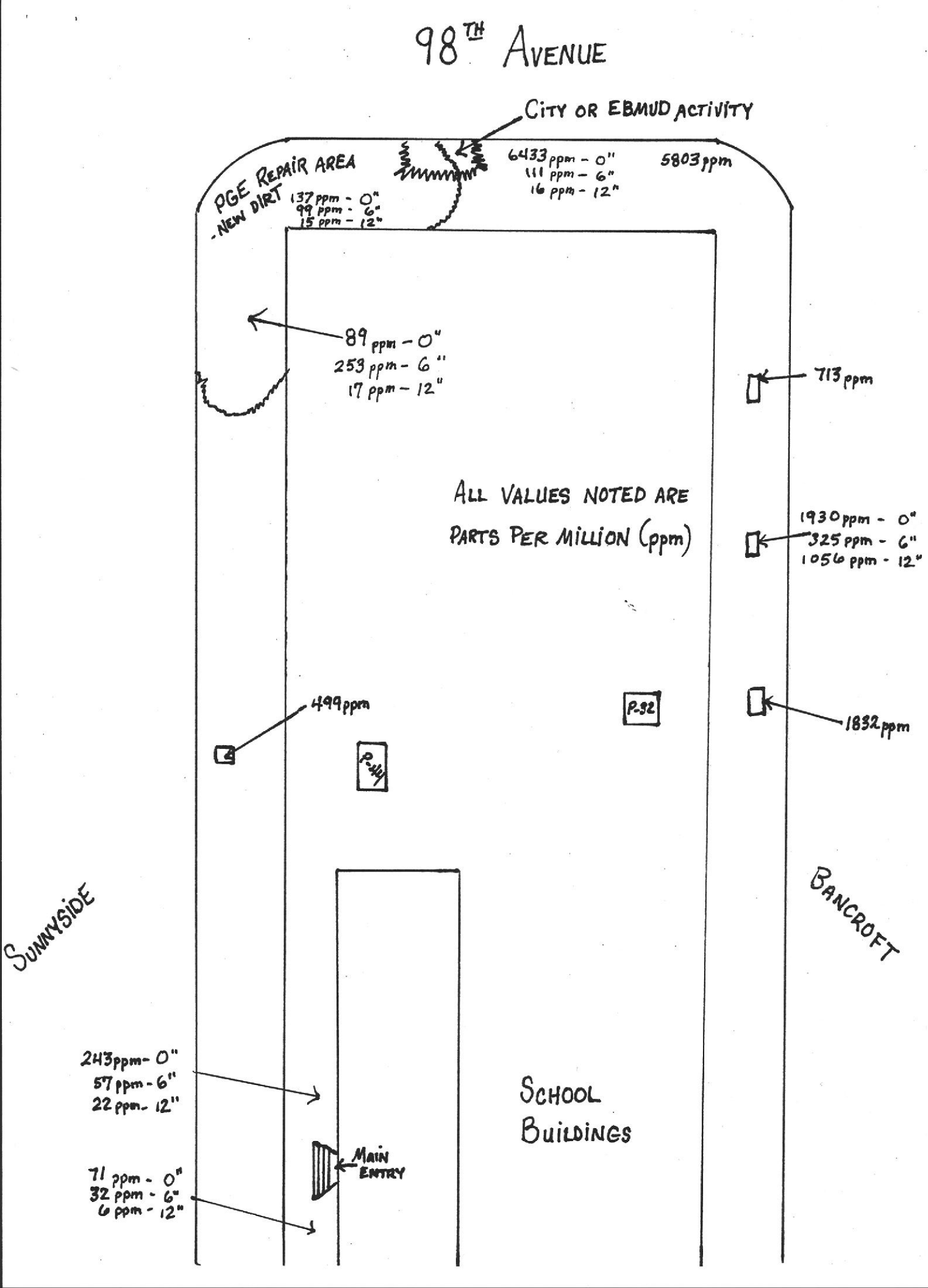
If you have any questions please call.

Sincerely,

James E Sharp
Vice-President, Technical Operations

JES/bcy

Attachments: As Stated Above


98TH AVENUE
CITY OR EBMUD ACTIVITY
PGE REPAIR AREA
- NEW DIRT
137 ppm - 0"
99 ppm - 6"
15 ppm - 12"
6433 ppm - 0"
111 ppm - 6"
16 ppm - 12"
5803 ppm
89 ppm - 0"
253 ppm - 6"
17 ppm - 12"
713 ppm
ALL VALUES NOTED ARE
PARTS PER MILLION (ppm)
1930 ppm - 0"
325 ppm - 6"
1056 ppm - 12"
499 ppm
P-92
P-91
1832 ppm
SUNNYSIDE
BANCROFT
243 ppm - 0"
57 ppm - 6"
22 ppm - 12"
SCHOOL
BUILDINGS
MAIN
ENTRY
71 ppm - 0"
32 ppm - 6"
6 ppm - 12"

FORENSIC ANALYTICAL SPECIALTIES

FAX TRANSMISSION SUMMARY

Atomic Absorption Analysis
of Soils/Bulks by FLAME Analysis

Company: Hazard Management Services, I

Date: 11-12-1993

Attn: Jim Sharp

Time: 11:10

Job ID / Site: Oakland Unified/Cox Elem

Report #: 204710

Client #	Elem	Result		Client #	Elem	Result	
OAK-COX-01	Pb	243.0	ppm	OAK-COX-15	Pb	111.3	ppm
OAK-COX-02	Pb	57.9	ppm	OAK-COX-16	Pb	16.2	ppm
OAK-COX-03	Pb	22.0	ppm	OAK-COX-17	Pb	5803.6	ppm
OAK-COX-04	Pb	71.3	ppm	OAK-COX-18	Pb	713.4	ppm
OAK-COX-05	Pb	32.1	ppm	OAK-COX-19	Pb	1930.9	ppm
OAK-COX-06	Pb	6.73	ppm	OAK-COX-20	Pb	325.0	ppm
OAK-COX-07	Pb	498.8	ppm	OAK-COX-21	Pb	1055.6	ppm
OAK-COX-08	Pb	88.3	ppm	OAK-COX-22	Pb	1832.9	ppm
OAK-COX-09	Pb	253.0	ppm				
OAK-COX-10	Pb	17.1	ppm				
OAK-COX-11	Pb	137.3	ppm				
OAK-COX-12	Pb	99.4	ppm				
OAK-COX-13	Pb	14.6	ppm				
OAK-COX-14	Pb	6432.9	ppm				

Comments:

These results are PRELIMINARY. Hard copy will follow in the mail.

FAX TRANSMITTED TO: (209) 551-2005

Forensic Analytical FAX: (510) 887-4218
Forensic Analytical Voice: (510) 887-8828

Supervisor Approval DC

Forensic Analytical

BULK Request Form

Client Name and Address:
1146
HWS, IAC

Phone: 209-557-2005

Date: 11-9-93

☐ PLM ☐ 2hr ☐ 24hr ☐ Ext ☐ P.C. 435

☐ TEM Bulk Qualitative
☐ TEM Bulk Quantitative
☐ TEM Water

Results Needed: Friday - 11-12 by 5:00pm

Contact: Jim Sharp, Sr.

P.O. # | Job ID: Oakland Unified

Site: Cox Elementary

ATOMIC ABSORPTION
☒ Flame ☐ Furnace
Metals LEAD

Sample Number	Date Collected	Sample Location/Description
HWS-OAK-COX 01	11/9/93	North of main Entry surface.
02	11	North of Main Entry 6" deep
03	11	North of Main Entry 12" deep
04	11	South of Main Entry surface
05	11	South of main Entry 6" deep
06	11	South of main Entry 12" deep
07	11	Empty treewell by P44 surface
08	11	Two Power Pole hole N/W Corner of Playground surface

Relinquished By: J Sharp
Date/Time: 11-9-93, at 12:25

Received By:
Date/Time 11/9/93 12:25

Relinquished By:
Date/Time:

Received By:
Date/Time

SF: 3777 Depot Road, Hayward, CA 94545.

LA: 19443 Laurel Park Road, Rancho Dominguez, CA 90220

Forensic Analytical

BULK Request Form

Client Name and Address: 1146 HNTB, Inc.	Phone: 209-557-2000 Date: 11-9-93
	☐ PLM ☐ 2hr ☐ 24hr ☐ Ext ☐ P.C. 435
	☐ TEM Bulk Qualitative ☐ TEM Bulk Quantitative ☐ TEM Water — Results Needed: Friday, 11-12-93 by 8:00AM
Contact: Jim Sharp, Sr.	ATOMIC ABSORPTION
P.O. # — Job ID: Oakland Qualified	☒ Flame ☐ Furnace
Site: Cox Elementary	Metals LEAD

Sample Number	Date Collected	Sample Location/Description
HNTB-OAK-COX 09	11/9/93	Two Power Pole hole N/W Corner of Playground 6" deep
10	"	Two Power Pole hole N/W Corner of Playground 12" deep
11	"	98th Ave & Sunnyside N. Corner of Playground Surface
12	"	98th Ave & Sunnyside N. Corner of Playground 6" deep
13	"	98th Ave & Sunnyside N. Corner of Playground 12" deep
14	"	98th Ave at Power Pole N. of Playground Surface
15	"	98th Ave at Power Pole N. of Playground 6" deep
16	"	98th Ave at Power Pole N. of Playground 12" deep

Relinquished By: JS Date/Time: 11-9-93, 12:25 P	Received By: Date/Time 11/9/93 1:25
Relinquished By: Date/Time:	Received By: Date/Time

SF: 3777 Depot Road, Hayward, CA 94545. LA: 19443 Laurel Park Road, Rancho Dominguez, CA 9022

Forensic Analytical

BULK Request Form

Client Name and Address:

1146
HMS, Inc.

Phone: 209-537-2000

Date: 11-9-93

☐ PLM ☐ 2hr ☐ 24hr ☐ Ext ☐ P.C. 435

☐ TEM Bulk Qualitative
☐ TEM Bulk Quantitative
☐ TEM Water

Results Needed: _____

Contact: Jim Sharp, Sr.

P.O. # | Job ID: Oakland Unified

Site: Cox Elementary

ATOMIC ABSORPTION

☒ Flame ☐ Furnace

Metals LEAD

Sample Number	Date Collected	Sample Location/Description
HMS-OAK-COX 17	11/9/93	98th & Bancroft N/E corner of Playground surface
18	"	1st Treewell on Bancroft surface
19	"	3rd Treewell on Bancroft E. side of Playground surface
20	"	3rd Treewell on Bancroft E. side of Playground 6' deep
21	"	3rd Treewell on Bancroft E. side of playground 12' deep
22	"	Bancroft treewell at PSE surface

Relinquished By: J Sharp

Date/Time: 11-9-93, 12:25 PM

Received By: Alvale

Date/Time 11/9/93 17:25

Relinquished By:

Date/Time:

Received By:

Date/Time

SF: 3777 Depot Road, Hayward, CA 94545.

LA: 19443 Laurel Park Road, Rancho Dominguez, CA 9022

Collection and Analysis of Soil Samples

Sampling Containers:	Pre-cleaned sampling containers for sludges Zip-lock bags for dry soils
Suggested Supplier:	I-Chem (1/800/262-5006) #211-0250 HPDE wide mouth jars
Sample Volume:	Fill jar at least half full or collect 1/2 cup
Sampling Strategies:	Open sampling containers only immediately prior to use. Select areas where soil may be contaminated from peeling or aging paint. Select areas where soil may be contaminated from rain run-off. As a control, select an area away from the house that is not subject to other lead contamination sources
Shipment:	Stable
Analytical Reference:	OSHA ID-121
Analysis:	The soil is dried and sized to 400 mesh. Approximately 0.5 g is extracted. The extracts are analyzed by flame atomic absorption.