HMC ARCHITECTS
3546 Concours Street
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February 23, 2010

Group 7
San Bernardino City Unified School District
Modernization Projects

Bradley Elementary School Modernization - DSA #04-107962	HMC #3137106
Marshall Elementary School Modernization - DSA #04-106227	HMC #3137114
Ramona-Alessandro Elementary School Modernization - DSA #04-106133	HMC #3137117
Ramona-Alessandro Elementary School Interim Housing Port. - DSA #04-110478	HMC #3137117
Bradley Elementary School Deferred Maintenance - DSA #04-110585	HMC #3137206

ADDENDUM NO. 3

The following changes, additions, or clarifications have been made to the original approved project Documents and shall be incorporated in the Bidder's bid amount. The Bidder shall acknowledge receipt of the Addendum in the BID FORM. All other aspects of the work from the original Documents shall remain unchanged. In case of conflict between the Drawings and Specifications and this Addendum, this Addendum shall govern. The Bidders shall be responsible for transmitting this information to all affected subcontractors and suppliers prior to the closing of bids.

ADDENDUM NO. 2

Addendum No. 2 dated 2/10/2010, issued to bidders contained Bid Set Drawings dated 5/09/08 by Design West.

SPECIFICATIONS

SPECIFICATIONS FOR BRADLEY, MARSHALL AND RAMONA-ALESSANDRO ELEMENTARY SCHOOLS
3137106, 3137114, 3137117

Item No. AD-3.1: Reference Volume 6 of 6, Asbestos Reports and Surveys

A. Limited Asbestos and Lead Survey Report for **Warm Springs School Modernization** is hereby issued FOR INFORMATION ONLY.

Item No. AD-3.2: Reference Revised Sections

A. The following Revised Specification Section is hereby issued:

Section 16720, Integrated Fire Alarm / Security System

DRAWINGS

DRAWINGS FOR BRADLEY ELEMENTARY SCHOOL MODERNIZATION
3137106

Item No. AD-3.3: Reference Revised Drawings

A. The following revised drawings are hereby issued:

A1.1	A1.2	A2.1M	A2.2M	A4.1G
A4.1M	A8.1	A9.1 through A9.4		A9.6
A9.7				
MP1.0	MP4.1M			
E1.1	E-3.3			

DRAWINGS FOR RAMONA-ALESSANDRO ELEMENTARY SCHOOL
3137117

Item No. AD-3.4: Reference Deleted Drawings

A. The following drawings dated **March 19, 2004,** are hereby deleted:

EC-2.1
EC-2.2
EC-2.3
EC-2.4

Drawings EC-2.1 through EC-2.4 dated **2/10/10**, remain a part of the Contract.

HMC ARCHITECTS

By_____ PETER LEJELLE FOR D.B.
Dan Benner, Principal-In-Charge

SECTION 16720

INTEGRATED FIRE ALARM /SECURITY SYSTEM

PART 1.0 GENERAL

1.01 SCOPE & RELATED DOCUMENTS

A. The work covered by this section of the specifications includes the furnishing of all labor, equipment, materials and performance of all operations associated with the installation of replacement and reworking of Existing Fire/Security Alarm Systems as outlined. Contractor must maintain any other existing fire alarm and security systems in operating condition for the entire duration of modernization activities at each site. Contractor shall be responsible for providing continuous fire and security watch during any period in which a portion of the fire alarm or security systems are not operating. The District shall be the sole arbitrator of any dispute concerning what is considered non-operation of any system. Prior to commencing any work on the site, Contractor must test all devices on fire and security system for faults and must indicate to the District in written report form all fault locations and defective devices, annunciators, control panels and other equipment. Scope includes reuse of all conduits, wire, door contacts, motion detectors and the removal of existing Silent Knight security system equipment and all programming, design, agency approvals, shop drawings, specifications, labor materials and equipment necessary to connect the existing security systems at each site to the new Integrated Fire Alarm/Security System. When complete, the existing security system must be capable of having bi-directional communication AND control with the existing G.E. FireWorks Central Monitoring System located at school police headquarters. All items required to complete the installation whether detailed here, in the specification, or on the drawings shall be included in this work. Contractor at their option and their own risk may reuse existing underground, exterior, and or interior fire alarm system conduits which meet referenced code provisions and are currently installed to all applicable codes and industry standards. Contractor shall be responsible for replacement of any damaged existing conduit in the fire alarm system and shall be responsible for replacement of any defective or damaged wiring in the existing Silent Knight Security systems. Record Drawings of the Silent Knight Security Systems installed at each site are available for review by bidders at the District's printing vendor. Contractor shall also rework door contacts and/or motion detectors (to make each sensor a separate addressable point) in all portable buildings on campus placed into use since the security system was installed in/or about 1998. Where security system is not installed in conduit within the portable buildings, the replacement security system need not be installed in conduit within these portable buildings, unless required by any applicable governing code. Scope of work also consists of powering down (subject to provisions above), completely disconnecting and removing existing Silent Knight Security/Intrusion Control Panels at each school site. All removed equipment shall be turned over to the District in "as found condition". The Contractor shall then rework the existing security/intrusion system wiring cabling to accommodate and make final terminations of all existing security/ intrusion system wiring/cabling to the **Existing** G.E. EST-3 or District approved equal Fire/Security Alarm Panel utilizing the "Synergy" technology of the GE/EST-3 or District approved equal panel.

B. The requirements of the conditions of the Contract, Supplementary Conditions, and General Requirements apply to the work specified in this section.

C. Related work in other sections or divisions:
   1.) Waterflow switches.
   2.) Sprinkler valve supervisory switches.
   3.) HVAC Systems Controls.
   4.) Elevator monitor/control panel.
   5.) Electrical (Division 16000 Specification Sections).

D. The entire installation, including materials and equipment shall meet or exceed the minimum standards and requirements of the following:

1.) Underwriters Laboratory Inc.
2.) 2001 Building Standards Administrative Code, Part 1, Title 24 C.C.R.
3.) 2001 California Building Code (CBC), Part 2, Title 24 (1997 UBC Volumes 1-3 and 2001California Amendments).
4.) 2004 California Electrical Code (CEC), Part 3, Title 24 C.C.R. (2002 NEC and 2004 California Amendments).
5.) 2001 California Fire Code (CFC), Part 9, Title 24 C.C.R. (2000 UFC and 2001 California Amendments).
6.) 2001 California Mechanical Code (CMC), Part 3, Title 24 C.C.R. (2002 UMC and 2001 Amendments).
7.) 2001 California Referenced Standards Code, Part 12, Title 24, C.C.R. Title 19, C.C.R. Public Safety, State Fire Marshall Regulations.
8.) 2002 NFPA 72, with California Amendments.
9.) Manufacturers Specifications.

1.02 SUBMITTALS (ADDITIONAL REQUIREMENTS)

A. The fire alarm plans for this project but not the integrated fire alarm and security system have already been approved by DSA-FLS. The Contractor shall prepare eight (8) sets of blue-line drawings, eight (8) sets of submittal booklets, for submittal to the Engineer for approval. It shall be the responsibility of the Contractor to obtain any and all agency approvals necessary to obtain final DSA and fire Department approvals of the system as installed.

B. The following shall be included on all drawings:

1.) Building floor plan of each building drawn to 1/8" scale minimum. Building floor plan shall show location of all devices, conduit and interconnecting wires. Device symbols shall be the same as on the original bid set of drawings. Show all fire rated corridors, occupancy separations and area separation walls. Show all Room Identification Numbers/Use.
2.) Site plan showing all buildings, conduit and interconnecting wires.
3.) Complete symbol legend (same symbols as bid set), showing all symbols, wire, manufacturer, model number, back-box, mounting height and CSFM Listing Number.
4.) Typical mounting height details.
5.) Voltage drop using point to point or OHMS Law calculations. Voltage drop shall not exceed 10% per circuit.
6.) Battery calculations with batteries used:
Normal - 100% for applicable equipment and devices for a period of 24 Hours.
Alarm - 100% for applicable equipment and devices for a period of 5 Minutes.
7.) Codes as used in the design of this project.
8.) DSA Application Number and District File Number.
9.) Classification per building. Ex: Manual, Automatic, etc.
10.) Typical fire penetration detail showing methods and codes used.
11.) Wiring riser diagram including but not limited to, devices, wiring, zoning, EOL'S, etc.
12.) Sequence of operations schedule.
13.) General notes pertaining to this project.

C. The following shall be included in the submittal book:

1.) Cover Sheet: Project Name, Project Location, Architect/Engineer of record, System Supplier/System Installer with C-10 License Number, UL Listing Number with Expiration Dates.
2.) Table of Contents: Page numbers of all specification sheets and CSFM Listing Numbers.
3.) Specification Sheets for each piece of equipment.
4.) CSFM Listing Sheets.

1.03 EQUIPMENT QUALIFICATION

A. The specification is based upon equipment manufactured by GE Security (formerly Edwards Systems Technology) as approved by the District. The equipment specified is a District Standard, is established, in order to have bi-directional communication and control with the **EXISTING FireWorks** Central Monitoring System at the District School Police Headquarters (GE Security EST FireWorks Central Monitorin System was provided under separate contract and is not part of this contract). The EXISTING GE Security EST-3 control panel provides bi-direction communication and control with the **EXISTING FireWorks** via District's LAN network. The District's IT Department has configured the LAN network to communicate with GE Security FireWorks. The system supplied shall be a microprocessor-based direct wired, multi-priority peer-to-peer networked system. The system shall utilize independently addressed, microprocessor-based Fire Alarm and Security Detectors, Devices and Modules as described in this specification. It shall be complete with all necessary hardware, software and memory specifically tailored for this installation.

B. All equipment shall conform to all applicable codes and ordinances, and shall be listed by Underwriters Laboratories and the California State Fire Marshall.

C. Should Contractor elect to submit a different system than specified, Contractor is to, at his/her sole expense, within 30 days of contract award provide and install a complete mock-up of the system at a school site selected by the District for review and approval by the District as a part of the substitution request process. Said mock up shall demonstrate to the sole satisfaction of the District complete compatibility, bi directional communication and control compatibility between the proposed fire/security system and the existing FireWorks Central Monitoring System

D. G.E. EST-3 or Mock-up of District approved equal system, as installed and operational, to perform per specifications herein, shall be fully integrated, whereby the fire alarm system shall not be overridden by any other system including the security systems. Fire alarm shall always have priority over security system. To the extent permitted by all applicable codes, other than fire alarm system having priority in the event of a simultaneous alarm, fault, failure and/or defect, fire alarm system shall not override security system.

E. Contractor is responsible for engineering and Division of the State Architect approval associated the proposed system; and fees borne there from. Fire alarm and security systems shall be separately wired and there shall be two separate data loops, one for each system.

F. A pre-approved equipment supplier, installation and service organization for the equipment specified is Enko Systems, (909)885-7771.

1.04 QUALIFICATION OF BIDDERS

A. To qualify as an acceptable bidder, whether the bid is submitted to the Owner, his agent, a general contractor or a sub-contractor, the system bidder or contractor shall be a qualified U.L. Listed Fire Alarm contractor and shall hold a valid C-10 License issued by the Contractors State License Board of California. The system bidder or installing contractor shall herein be referred to as the Contractor. The Contractor shall also hold a State of California Consumer Affairs License - Bureau of Collection and Investigative Services. The Contractor shall also have on staff, a minimum of Three Nicet Certified Technologists. This is to insure that licensed installers familiar with this type of installation will be used on this project.

The Contractor shall be the factory authorized installer, for the brand of equipment being installed. The Contractor shall have been in the business of supplying, installing and servicing Addressable Fire Alarm Systems for the past 10 years, in the State of California. The Contractor shall be able to refer to at least 20 projects of this nature rendering satisfactory service with contact persons, phone numbers and addresses. The Contractor shall maintain a fully equipped service organization capable of

furnishing adequate repair service to the equipment. The Contractor shall maintain an inventory of all major components in stock at all times. The Contractor's Office shall be located within 50 miles of the job-site. This will insure adequate service response, in a timely matter. The Contractor shall maintain on staff for the duration of the project a minimum of two EST-3 and FireWorks Certified Installers. Contractors named in 1.03C above, are considered to be pre approved for this project, and will be able to satisfy warranties already in place, when adding onto the FireWorks Central Monitoring System Program.

B. The responsibility of the installing Contractor is to provide all drawings, submittals, wire, devices, equipment, installation to conduit system furnished and installed under Section 16000, programming, final test out and certification. All specialty Fire Alarm Back-Boxes for the conduit system installation provided under Section 16000, shall be provided under this section. Terminal cabinets, pull boxes, etc. shall be furnished and installed under section 16000.

PART 2 SYSTEM LAYOUT

2.01 SYSTEM DESCRIPTION

A. The Fire/Security Alarm System as outlined on the drawings, shall be a Life Safety, Security System as manufactured by GE Security or District approved equal. It shall be complete with all necessary hardware, software and memory specifically tailored for this project.

B. Provide a new Network System, Remote Panels, Remote Annunciators, Printers, Devices, etc. in accordance with specifications and drawings. Counts for fire alarm devices to be in accordance with contract and other record drawings included for Reference only (for conduit locations and security device and security conduit and wire locations. Counts for existing security systems shall be as shown on Record Drawings for security systems installed about 1998. Record drawings are available for review on the Planwell website and are incorporating herein by reference as if fully set forth. In addition, contractor shall be responsible for reworking all existing security system devices added to each site since the Silent Knight system was originally installed. These added devices are located in new buildings shown on the modernization fire alarm drawings but not shown on the Silent Knight Record Drawings.

C. All equipment needed for a complete operable system, (whether specifically indicated or not) shall be included in this section. It shall be the Installing Contractors responsibility for a COMPLETE AND OPERABLE SYSTEM upon completion of this project.

2.02 AUTOMATIC ALARM OPERATIONS

A. The fire alarm system operation subsequent to the alarm initiation via pull station, smoke detector, heat detector, sprinkler flow switch, etc., shall be as follows:

1.) All audible alarm indicating devices shall sound the Temporal Signal Code in synchronization with each other, until silenced at the control panel or at the remote annunciator.
2.) All visual alarm indicating devices shall flash per NFPA requirements in synchronization with each other, until reset at the control panel or at the remote annunciator.
3.) Alarm audible devices and alarm visual devices shall operate on the same circuit.
4.) The alarm signals shall be inhibited from being silenced for a period of at least 1 minute after commencing operation. This rate is to be field programmable for actual AHJ requirements.
5.) Display type and location of alarm per point on the Main Control Panel LCD display.
6.) Display type and location of alarm per point on Remote LCD Annunciator.
7.) List on printer the time, date, type and user defined message for each event printed.
8.) Display on the FireWorks Station through the use of GUI's, A.) Whole School layout, B.) Building Layout, C.) Room Layout D.) Device Layout/Location.

9.) Subsequent alarms are to report to the Main Control Panel and FireWorks and shall indicate to the operator that a subsequent alarm is present, and also indicate the number of subsequent alarms.
10.) Shut down all associated air handlers in Alarm Zone.
11.) De-energize door holders to release fire doors in Alarm Zone.
12.) Recall elevators where required.

B. The security alarm system operation subsequent to the alarm initiation via motion detector, door contact, tamper switch, etc., shall be as follows:
1.) Individual device in alarm shall display on partition keypad, in which zone device is located.
2.) Display type and location of alarm per point on the Main Control Panel.
3.) Display type and location of alarm per point on Remote LCD Annunciator.
4.) List on printer the time, date, type and user defined message for each event printed.
5.) Display on the FireWorks Station through the use of GUI's, A.) Whole School layout, B.) Building Layout, C.) Room Layout D.) Device Layout/Location.
6.) From the FireWorks Station, control all security events at remote site. This includes, but not limited to, Arming, Disarming, Reset, etc,
7.) From the FireWorks Station, download all data to remote panels. This includes, but not limited to, Access Code Updates, Access Level Updates, Device Updates, Etc. This feature shall be a global feature to all panels, if so desired.

2.03 AUTOMATIC SUPERVISORY OPERATION

A. All data, initiating, indicating and supervisory lines shall be constantly monitored for integrity. Indicate opens, shorts, grounds, at Main Control Panel, Remote Annunciator and FireWorks Station.

2.04 OPERATION

A. During the normal state, the NORMAL LED (green) shall flash. The first line of the LCD shall display the time in (HH:MM:SS) as well as the number of active points (AP) and the number of disabled points (DP) in the system.

B. When the control panel goes into alarm condition, the NORMAL LED(green) extinguishes and the ALARM LED (red) shall light, the buzzer pulsates and the LCD indicates the time, the number of messages waiting, the type of alarm, the point ID number of device, and the time that the alarm occurred. The second line is dedicated to the user specified message.

C. To silence the panel buzzer, the operator shall press the LOCAL SILENCE button and the buzzer will silence.

D. To silence the audible devices, the operator shall press the ALARM SILENCE button. A new alarm shall cause the audibles to resound.

E. During the TROUBLE condition, the amber TROUBLE LED shall light, the NORMAL LED shall go out, and the buzzer shall pulsate. The display shall indicate the point ID number of the device, the time the event occurred and up to a 40 character custom user description.

F. During the MONITOR or SUPERVISORY condition, the appropriate LED shall light, the NORMAL LED shall go out, and the buzzer shall pulsate. The display shall indicate the point ID number of the device, the time the event occurred and up to a 40 character custom user description.

PART 3 MATERIALS

3.01 MAIN or REMOTE CONTROL PANEL EST-3 EXISTING

A. The EST-3 is existing onsite for this project. The installing Contractor shall provide and install any all required cards, modules, relays, etc.to provide a complete and full functional Fire Alarm System for this project, whether shown on DSA approved plans or not.

B. Additionally, This installing contractor shall make any / all Final terminations to the required Existing "FireWorks" station located at SBCUSD School Police Head Quarters to provide a Complete and fully functional Bi-Direction Integrated System.

C. Control Panel construction shall be modular with solid state, micro - processor based electronics. It shall display only those primary controls and displays essential to operation during an alarm condition.

D. A local audible device shall sound during Alarm, Trouble, Monitor or Supervisory conditions. This audible device shall sound differently at each condition, to distinguish one condition from another without having to view the panel.

E. Primary Keys, LED's, LCD Display
   1.) The following primary controls shall be visible through a front access panel:
      8 Line by 21 Character LCD display
      Individual System ALARM LED and Switch
      Individual SUPERVISORY LED and Switch
      Individual TROUBLE LED and Switch
      Individual MONITOR LED and Switch
      Individual RESET LED and Switch
      Individual ALARM SILENCE LED and Switch
      Individual PANEL SILENCE LED and Switch
      Individual DRILL LED and Switch
      Individual LED'S For Power, Test, CPU Fail, Gnd Fault, Disable
      NEXT/BACK Switch Per Condition

F. The Master Controller shall be capable of supporting up to 64 supervised system nodes per single line network without any change in hardware. Each controller shall contain a RS-232 Printer /Programming Port for programming locally via an IBM PC.

G. Each controller shall support up to 10 Intelligent Loop Cards (SDCs). Each card shall support (125) Intelligent Sensors and (125) Intelligent Modules. Each sensor shall respond to a panel poll for information with an analog representation of measured fire related phenomena (smoke density, particles of combustion, temperature). Such response proves end to end sensor response including the operation of the sensor electronics. Systems which only monitor the presence of a conventional detector in an addressable base shall not be acceptable.

H. The Master Controller shall have the following additional features without any changes in hardware or firmware:
   1.) Auto Programming and Electronic Addressing of Field Devices.
   2.) Logic Statements.
   3.) Time Controls.
   4.) Sequences.
   5.) Actions.
   6.) Analog Value Reporting of all analog sensors and traditional zones.
   7.) Maintenance Reporting by Intelligent Sensor.
   8.) Sensitivity Setting by Sensor (Within UL Limits).

9.) Sensitivity Setting changed by time (Day/Night Mode).
10.) Alarm Verification by point or zone. (0-60 Seconds).
11.) Print a history of Sensors Activating the Verification Cycle.
12.) On demand system condition printouts (status).
13.) Enabling and Disabling of any system device or function.
14.) Ground Fault Detection by Panel, by Signature Data Circuit, and by Device Module.
15.) Normal and Silent One Man Test.
16.) Windows Based Programming.
17.) Network Response Time Under 3 Seconds.
18.) Loop Response Time Under 750 Milliseconds.
19.) Device Mapping Feature for As-Builts.
20.) Up to 1750 History Events
21.) Remote Systems Diagnostic via Phone Line

3.02 REMOTE ANNUNCIATOR - 3- LCDANN

A. Remote Annunciator to accomodate all buildings for the Fire/Security/Access Alarm System. Annunciator zoning shall have the following displays as a minimum:
1.) Point ID number of each device.
2.) Custom annunciation of each device.
3.) Common Controls Features.

B. The remote annunciator shall contain the following:
1.) 8 Line by 21 Character LCD Display.
2.) Individual System ALARM LED and Switch.
3.) Individual SUPERVISORY LED and Switch.
4.) Individual TROUBLE LED and Switch.
5.) Individual MONITOR LED and Switch.
6.) Individual RESET LED and Switch.
7.) Individual ALARM LED and Switch.
8.) Individual TROUBLE LED and Switch.
9.) Individual DRILL LED and Switch.
10.) Individual LED'S For Power, Test, CPU Fail, Gnd Fault, Disable.

3.03 KEYPADS – KPDISP

A. Reprogram all existing keypads at each site. Provide new keypads at Contractor's option and at each defective keypad location, as indicated on the Security System Record drawings included herein by reference as well as any keypads added subsequent to the original Silent Knight installation..
1.) Keypads to be backlit 128 x 64 dot matrix LCD Display.
2.) Units to support bilingual operation.
3.) Keypad shall be electronic addressing. Jumpers or dip switch addressing shall not be considered equivalent. Each Keypad shall support up to 200 users, with unique PIN numbers.

3.04 PRINTER - PT-1S

A. Provide printer for the life safety system, as below indicated.

B. The event and status printer shall be a 9 pin, impact, dot matrix printer with a minimum print speed of 232 characters per second. Printer parameters shall be set up with a menu drive program in the printer. The printer shall be capable of serial or parallel communications protocol.

C. The communications speed for RS-232 communications protocol shall be adjustable from 300 -

9600 Baud. The serial cable shall be supervised.

C. The printer shall list the time, date, type and user defined message for each event printed.

SIGNATURE SERIES DEVICES - GENERAL

1. Each remote device shall have a microprocessor with non-volatile memory to support its function and serviceability. Each device shall store as required for its functionality the following data: device serial number, device address, device type, personality code, date of manufacture, hours in use, number of alarms and troubles, time and date of last alarm, amount of environmental compensation left/used, last maintenance date, job/project number, current detector sensitivity values, diagnostic information (trouble codes) and algorithms required to process sensor data and perform communications with the loop controller.

2. Dependent on its functionality, each device shall be capable of monitoring up to 32 diagnostic codes. This data shall be stored at the device and available for system maintenance.

3. Each device shall be capable of performing its intended function dependent of the control panel, to lower loop data traffic. Each device shall immediately alert the loop controller of a status change to achieve a loop response time of less than 750ms.

4. Each device shall be capable of electronic addressing, either automatically or application program designed, to support physical/electrical mapping and supervision by location. Setting a device's address by physical means shall not be necessary. Each device shall be individually annunciated at the Main Control Panel and Remote Annunciator.

3.05 ANALOG PULL STATIONS - SIGA-278

A. Provide pull stations as indicated on the drawings.

B. Pull station shall be double action with terminals for field wiring. Pull station shall be constructed of Red Lexan with White Letters, Key resettable with break glass rod.

C. Station shall be equipped with a STI 1100 Protective Cover w/horn, if indicated on drawings.

D. For flush mounting applications - Use 4S 2-1/8" box with 1/2" Single Gang Ring. (Furnished and Installed under Division 16, Electrical Specification Sections).

E. For surface mounting applications - Use 276B-RSB Backbox With STI-3100 Conduit Spacer. (Furnished under this section, Installed under Division 16, Electrical Specification Sections).

3.06 ANALOG SMOKE DETECTORS - SIGA-IPHS W/SIGA-SB BASE

A. Provide Intelligent Multi-Sensor Detector where indicated on the drawings.

B. Units shall incorporate three (3) sensing technologies. It shall process and analyze information from each technology (ion/photo/heat) separately using dynamic filters, then apply a sophisticated algorithmn for optimum detection accuracy. If alternate equipment is proposed, contractor shall install additional devices as required, to accomplish ALL of the above operations. ALL additional costs shall be borne by contractor.

C. Each sensing element self-compensates for changes in the detectors installed environment to maintain the sensitivity setting and prevent unwanted alarms. The detector reports when it cannot compensate any further.

D. Units shall incorporate twin status LED's . Flashing green shows normal; flashing red shows alarm state; steady red and steady green show alarm state in stand alone mode, visible from any direction.

E. Units shall incorporate a stand alone operation mode. The detector makes decisions and inputs an alarm even if the loop controller fails. The detector reverts to an intelligent "conventional" detector when polling interrogation stops.

F. Units shall mount to the SIGA-SB, SIGA-RB or SIGA-IB bases as required.

G. Base shall mount to a 4S 2-1/8" box with 3-0 1/2" ring. (Furnished and Installed under Division 16, Electrical Specification Sections).

3.07 DUCT SMOKE DETECTORS - SIGA-SD (SUPER DUCT W/INTELLIGENT SENSOR)

A. Provide Duct Smoke Detectors where indicated on the drawings.

B. Duct Housing shall be constructed of a plastic housing. Units shall incorporate the SIGA-PS sensor, base as required and sampling tubes as required for duct width.

C. Each air handling unit shall be controlled from the built in relay, for shut down of that particular unit.

D. Duct Housings, Detectors, and Sampling Tubes are to be supplied by this section.

E. Duct Housings and Sampling Tubes are to be installed as part of the conduit system in Division 16, Electrical Specification Sections. Contractor to provide and install weatherproof housings for above, if applicable to this project.

3.08 HEAT DETECTORS - SIGA-HFS or SIGA-HRS W/SIGA-SB BASE

A. Provide Heat Sensors where indicated on the drawings.

B. Detectors shall gather analog information from their fixed temperature and/or rate-of-rise heat sensing elements and convert it into digital signals. The detectors on board microprocessor measures and analyzes these signals. It compares the information to historical readings and time patterns to make an alarm decision. Digital filters remove signal patterns that are not typical of fires.

C. Units shall incorporate twin status LED's. Flashing green shows normal; flashing red shows alarm state; steady red and steady green show alarm state in stand alone mode, visible from any direction.

D. Units shall mount to the SIGA-SB, SIGA-RB or SIGA-IB bases as required.

E. Base shall mount to a 4S 2-1/8" box with 3-0 Ring. (Furnished and Installed under Division 16, Electrical Specification Sections).

3.09 ATTIC HEAT DETECTORS - 284B-PL W/SIGA-CT1

A. Provide Heat Detectors where indicated on the drawings.

B. Units shall incorporate single pole, normally open contacts and a SIGA-CT1 Monitor Module.

C. Fixed Temperature Rating shall be 194 Degrees Farenheit.

D. Units shall mount to a 4S 2-1/8" box with 3-0 Ring (Furnished and Installed under Division 16, Electrical Specification Sections).

E. Monitor modules shall mount to a 4-S 2-1/8" box with 1-Gang Ring (Furnished and Installed under Division 16, Electrical Specification Sections).

3.10 STROBES – GENESIS G1RF-VM (Wall)

A. Provide Strobes as indicated on the drawings.

B. Strobes shall be Multi Candela rated 15cd, 30cd, 75cd or 110cd. Strobes shall be cabaple of being on same circuit as audibles, be synchronized and flash per NFPA requirements. Units not capable of this feature shall install separate audible and visual circuits, conductors, synchronization modules, etc. All additional costs to be borne by contractor. Strobes shall be listed for indoor applications. Units shall be rated for 24VDC polarized operation.

C. For flush mount applications - Use 4S 2-1/8" boxes with 1 Gang Ring. (Furnished and Installed under Division 16, Electrical Specification Sections).

D. For surface mount applications - Use One Gang Wiremold Box V5748 (Furnished and installed under Division 16, Electrical Specification Sections).

3.11 STROBES – GENESIS GCF-VM (Ceiling)

A. Provide Strobes as indicated on the drawings.

B. Strobes shall be Multi Candela rated 15cd, 30cd, 75cd or 95cd. Strobes shall be cabaple of being on same circuit as audibles, be synchronized and flash per NFPA requirements. Units not capable of this feature shall install separate audible and visual circuits, conductors, synchronization modules, etc. All additional costs to be borne by contractor. Strobes shall be listed for indoor applications. Units shall be rated for 24VDC polarized operation.

C. For flush mount applications - Use 4S 2-1/8" boxes with 4-S Extensions Ring. (Furnished and Installed under Division 16, Electrical Specification Sections).

D. For surface mount applications - Use Wiremold Box V5753 (Furnished and installed under Division 16, Electrical Specification Sections).

3.12 HORNS - 757-1A-T

A. Provide Horns as indicated on the drawings.

B. Horns shall be rated at 94dBA - low and 98dBA - high. Units shall incorporate a high and low setting position. Units shall be rated for 24VDC polarized operation. Units shall have screw terminals for input/output wiring, be red in color and be suitable for indoor or outdoor applications. Units shall be capable of being installed on the same circuit as visual devices and shall sound the Temporal Code in synchronization with all units. Units not capable of this feature shall install separate audible and visual circuits, conductors, synchronization modules, etc. All additional costs to be borne by contractor.

C. For flush mount applications indoor - Use 4S 2-1/8" boxes with 2-Gang Ring (Furnished and Installed under Division 16, Electrical Specification Sections).

D. For surface mount applications indoor - Use 757A-SB Back-box (Furnished under this section, Installed under Division 16, Electrical Specification Sections).

E. For surface mount applications outdoor - Use 757A-WB Back-box (Furnished under this section, Installed under Division 16, Electrical Specification Sections).

3.13 HORN/STROBES – G1RF-HDVM (Wall)

A. Provide Horn/Strobes as indicated on the drawings.

B. HORN/(Strobes) to be rated at 92.5dBA - low and 97.6BA - high. Units shall incorporate a high and low horn setting position. (Horn)/STROBE to be Multi Candela Rated at 15cd, 30cd, 75cd or 110cd. Units shall have screw terminals for input/output wiring and be suitable for indoor applications. Units shall be capable of being installed on the same indicating circuit. Units shall sound the Temporal Code in synchronization and strobes shall flash in synchronization per NFPA requirements. Units not capable of this feature shall install separate audible and visual circuits, conductors, synchronization modules, etc. All additional costs to be borne by contractor. Units to rated for 24VDC polarized operation.

C. For flush mount applications - Use 4S 2-1/8" boxes with 1-Gang Ring (Furnished and Installed under Division 16, Electrical Specification Sections).

D. For surface mount applications - Use Wiremold Box V5748 (Furnished under this section, Installed under Division 16, Electrical Specification Sections).

3.14 HORN/STROBES – GCF-VM (Ceiling)

A. Provide Horn/Strobes as indicated on the drawings.

B. HORN/(Strobes) to be rated at 92.4dBA - low and 96.6BA - high. Units shall incorporate a high and low horn setting position. (Horn)/STROBE to be Multi Candela Rated at 15cd, 30cd, 75cd or 95cd. Units shall have screw terminals for input/output wiring and be suitable for indoor applications. Units shall be capable of being installed on the same indicating circuit. Units shall sound the Temporal Code in synchronization and strobes shall flash in synchronization per NFPA requirements. Units not capable of this feature shall install separate audible and visual circuits, conductors, synchronization modules, etc. All additional costs to be borne by contractor. Units to rated for 24VDC polarized operation.

C. For flush mount applications - Use 4S 2-1/8" boxes with 4-S Extension Ring (Furnished and Installed under Division 16, Electrical Specification Sections).

D. For surface mount applications - Use Wiremold Box V5753 (Furnished under this section, Installed under Division 16, Electrical Specification Sections).

3.15 MODULES - SIGA-CC1S/SIGA-CT1/SIGA-CT2/SIGA-CR/SIGA-MM1/SIGA-WTM

A. Provide modules where indicated on the record drawings for existing Silent Knight system, and on all portable classroom buildings and other buildings and/or rooms installed since the Silent Knight system was originally installed.

B. Units shall permanently store serial number, type of device, and job number. Each module shall be capable of having its own personality code. Use respected module for particular application. Modules shall use electronic addressing. Use of switches to set address will be prohibited.

C. Module for flush or surface mountings - Use 4S 2-1/8" Boxes One or Two Gang Ring as required, (Furnished and Installed under Division 16, Electrical Specification Sections).

3.16 SECURITY MODULE – SIGA-SEC2

A. Provide modules where indicated on the record drawings for existing Silent Knight system, and on all portable classroom buildings and other buildings and/or rooms installed since the Silent Knight

system was originally installed.

B. The Dual Input Module shall provide two (2) input circuits, each capable of a minimum of 6 personalities, each with a distinct operation.

3.17 SECURITY MOTION DETECTORS – SIGA-MDS

A. Reuse existing motion detectors where shown on the Record Drawings for the Silent Knight Security system and for any motion detectors added since the Silent Knight security system was originally installed or supply new motion detectors (if any) as indicated on the modernization drawings. Contractor shall completely disconnect and remove each existing motion detector and monitor module, provide and install a new GE/EST or District approved equal monitor module and re-install existing motion detector (unless defective or damaged) in same location.

B. The passive infrared motion detector shall utilize adaptive signal processing with gliding focus mirror optics to analyze the size, speed and shape to determine the alarm threshold.

C. The unit shall be configurable for up to seven different curtain patterns, have a range of up to 34 ft. and a 90 degree field of view.

3.18 DOOR DETECTORS – SIGA-SEC 2

A. Door detectors shall be reused unless damaged, defective, and/or not in accordance with all referenced codes. Reuse existing door detectors where shown on Record drawings for Silent Knight Security System and where door and/or motion detectors have been added to portable classroom buildings or added elsewhere on each campus since the original Silent Knight installation. Replacement or added detectors (for any and all new exterior doors) shall be as manufactured or supplied by G.E. Security. Detectors shall be removed and new GE/EST monitor module installed if required to render existing door contacts compatible with GE/EST or district approved equal system.

3.19 OTHER EQUIPMENT

A. Provide all other materials equipment and parts as required for a complete first class operating fire alarm and integrated security system.

PART 4 EXECUTION

4.01 INSTALLATION

A. Wiring shall be installed in conduit as specified under the electrical section of the specification (Division 16, Electrical Specification Sections).

B. The sum of the cross-sectional areas of individual conductors shall not exceed 40% of the interior cross sectional area of the conduit. Minimum conduit size shall be 3/4 inch trade size.

C. Wiring shall be identified at terminal and junction locations to prevent unintentional interference with the circuits during testing and servicing.

D. Junction, pull and terminal boxes/cabinets shall be labeled. Labels shall be permanently affixed to covers/doors. Labeling to be Furnished and Installed under – **SIGA-MDS**.

E. Wiring color code shall be consistent throughout the system and shall allow for easy identification of initiating, indicating and auxiliary control circuits.

F. Wiring at building terminal cabinets shall be terminated to screw barrier strips, with circuits identified.

G. Wiring in control, terminal and junction cabinets shall be neatly arranged and bundled.

H. Wiring shall test free of earth grounds or shorts between conductors.

I. The contractor shall be responsible and assure the use of adequate numbers of skilled workmen, who are thoroughly trained and experienced, and completely familiar with the specified equipment and code requirements.

J. The contractor shall be responsible for assuring that conduit size, wire type and color coding meets the specification, manufacturers and code requirements.

K. Upon completion Contractor shall provide all required programming to make final terminations to school police headquarters FireWorks central monitoring station. System must then be tested for on site security/intrusion system and off site reporting as required by the District, for a complete and fully operable and integrated fire alarm/security system.

4.02 SYSTEM VERIFICATION

A. Upon completion of the installation, the fire alarm contractor shall place into operation and test all operational features, functions and devices. Each and every security and fire alarm device shall be field tested in the presence of the District Representative. Any device which fails to adequately communicate with the FACP, FAAP and/or FireWorks or District approved equal Central Monitoring System shall be replaced at no cost to the District.

B. Upon completion of testing, and after the system has been in operation for a minimum of 5 days without failure, the fire alarm contractor shall schedule with the Authority Having Jurisdiction (DSA INSPECTOR), Architect and Engineer, a demonstration and field acceptance test.

C. Field acceptance and approval of the fire alarm system shall be evidenced in writing by the Authority Having Jurisdiction.

D. Prior to scheduling field acceptance, the fire alarm system contractor shall certify in writing, and record the method of testing, the results of all tests and certify that the system has been in operation a minimum of 5 days.

E. All testing shall be conducted in accordance with NFPA-72, contract documents, manufacturer's instructions and per the requirements of the Authority Having Jurisdiction.

4.03 GUARANTEE AND SERVICE

A. Fire alarm system contractor shall provide written guarantees for all fire alarm equipment and devices used on this project for a period of THREE (3) YEARS from the date of final acceptance.

B. During the guarantee period the contractor shall repair or replace any defective material at no additional cost to the Owner.

4.04 IN SERVICE TRAINING

A. The fire alarm contractor shall provide factory trained representatives to demonstrate the operation of the fire alarm system to the Owner's personnel. The representative shall have a thorough knowledge of the equipment and operation of the system. The contractor shall provide two (2) 4 hour in-service training sessions which shall be videotaped by the Contractor, and a VHS videotape and DVD compact disk turned over to the District for future use.

B. The fire alarm contractor shall provide to the Authority Having Jurisdiction a demonstration of

system operation. Session shall consist of one (1) 4 hour in-service training.

4.05 OPERATION MAINTENANCE MANUALS

A. The fire alarm contractor shall provide to the District, three (3) weeks after the field acceptance test, two (2) sets of operating/maintenance manuals and one (1) set of Record Drawings.

B. As-built drawings shall indicate the location of all devices, appliances, coding, zoning, wiring sequences, wiring methods, color coding, identification, labeling and connections of the components of the fire alarm system as installed. The Record Drawings shall include a mapping sequence as generated by the Fire Alarm Control Panel and connected computer. Systems not capable of this feature shall generate TRUE Device mapping sequences Record Drawings on Auto Cad 14. These Record Drawings shall show the physical layout of all addressable devices as they were actually installed on the loop.

END OF SECTION

Pacific Environmental Company

Limited Asbestos and Lead Survey Report

Warm Springs School Modernization Project
7497 Sterling Avenue
San Bernardino, California 92410

Prepared for:

San Bernardino City Unified School District
777 North F Street
San Bernardino, CA 92401

Prepared by:

Pacific Environmental Company
28202 Cabot Road, Suite 300
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July 29, 2008

Project Number: 08171

Limited Asbestos and Lead Survey Report

Warm Springs Elementary School Modernization Project
7497 Sterling Avenue
San Bernardino, California 92410

Executive Summary

Pacific Environmental Company conducted a limited asbestos and lead survey in anticipation of modernizations at Warm Springs Elementary School, which is located at 7497 Sterling Avenue in the City of San Bernardino, California. All work was conducted by State of California certified personnel and sampling was conducted in accordance with established sampling protocols. Laboratory analysis was performed by AmeriSci Los Angeles, an independent and accredited laboratory.

This executive summary is not to be utilized as a stand-alone document. The report shall be read in its entirety. The reader must review the detailed information provided in the accompanying text. Any interpretation, use, or conclusions resulting from the data contained in this report is the responsibility of the reader.

Asbestos-containing material (ACM) is defined by the Federal Environmental Protection Agency (EPA) as material containing more than one percent asbestos as determined by PLM, however, the California Department of Occupational Safety and Health (CalOSHA) classifies any material as having greater than one tenth of one percent asbestos as asbestos-containing construction material (ACCM).

Asbestos-containing materials identified during our inspection include carpet glue in Building C and penetration mastic on the M.U. Building. According to the original Power Masters, Inc. AHERA summaries that were prepared in the late 1980s, there are also asbestos-containing transite flues as well as flex joints on the mechanical equipment throughout the site.

Current EPA regulations require that the ACM and ACCM be removed prior to demolition or renovation, if they are going to be impacted. The identified materials are in good condition and do not require immediate action; however, if they are to be impacted by the renovations, then they must be removed in accordance with State of California Division of Occupational Safety and Health (Cal/OSHA) and South Coast Air Quality Management District (SCAQMD) requirements.

A licensed and certified asbestos abatement contractor must perform any asbestos abatement that takes place at the subject property. Waste generated from the asbestos abatement must be properly transported and disposed of.

Interior lead components identified at the site include the original porcelain sink fixtures (except in B-7 through B-10), ceramic sink tile throughout the classrooms in the B, C, D, and E buildings, ceramic tile in the restrooms in the B building, ceramic tile baseboards in the Admin restrooms, window frames in the B and C buildings, several doorframes in the B and C buildings, doors, doorframes, and chair railings in the admin area, as well as walls, doorframes, window frames, and ceramic wall tile in the M.U. Room. Exterior lead components include the painted window frames, doorframes, doors, eaves, fascia boards, exposed painted joists, downspouts, support columns, porcelain drinking fountains, as well as the walls of the M.U. Building. The lead-laden paint, ceramic and porcelain finishes are, for the most part, generally in good condition but will likely need to be removed to facilitate the modernizations at the site. There were some defective

paints identified which should be treated during the modernizations to prevent exposure to lead dust. Conditions of the painted components are listed in the field data reports in Appendix D.

Existing fluorescent lamps (containing mercury vapor) should be removed, and the mercury recycled. PCB-containing electrical ballasts in light fixtures should also be segregated, and either disposed in a hazardous waste landfill or incinerated, in accordance with federal and state regulations and DTSC guidelines.

Pacific Environmental recommends that all future renovation, demolition, construction or abatement activities with the potential for disturbing the identified ACM or lead laden ceramic tile, be performed by properly trained and qualified personnel. These activities should employ state-of-the-art techniques, and be conducted in accordance with all applicable local, State and Federal laws and regulations.

Every effort was made to sample all of the building materials, however some materials may have been concealed and could not be exposed without demolition. If any additional materials are encountered during the demolition or renovation activities, please call us and we will sample and analyze accordingly.

The presence of the identified hazardous materials should be brought to the attention of contractors and personnel involved in the project at the subject site. Specifications have been prepared for the removal and handling of specific hazardous materials, such as those containing asbestos and lead.

Any employees, visitors, or contractors entering this building should be notified of the presence and condition of the asbestos-containing materials, lead-based paints, and other hazardous materials (including those listed under Proposition 65), in accordance with applicable regulations.

Table of Contents

Introduction	1
Quality Control Procedures	2
Site Description	2
Asbestos Inspection and Sampling Procedures	3
Asbestos Inspection Results	5
Summary and Recommendations for Asbestos-Containing Materials	5
Lead Inspection and Sampling Procedures	6
Lead Inspection Results	7
Lead Summary and Recommendations	7
Other Hazardous Materials	8
Limitations	8
References	9

Appendix A	Site Plans
Appendix B	Bulk Sample Summary Table
Appendix C	Asbestos Sample Analysis Reports and Chain of Custody
Appendix D	XRF Sampling Results
Appendix E	DHS Form 8552
Appendix F	XRF Performance Characteristics Sheet

Limited Asbestos and Lead Survey Report

Warm Springs Elementary School Modernization Project
7497 Sterling Avenue
San Bernardino, California 92410

Introduction

Pacific Environmental Company was retained by the San Bernardino City Unified School District to conduct a limited investigation to identify the presence of asbestos-containing materials, lead-based paints and other lead laden components that will require abatement or treatment, in conjunction with the school modernizations at Warm Springs Elementary School which is located at 7497 Sterling Avenue in the City of San Bernardino, California.

All work was conducted by State of California certified personnel and sampling was conducted in accordance with established sampling protocols. Laboratory analysis was performed by AmeriSci Los Angeles, an independent and accredited laboratory.

Field Services for the inspection were conducted on June 5, 2008 and July 11, 2008. The project team included David Tillema, a Cal/OSHA Certified Site Surveillance Technician and DHS Certified Lead Paint Inspector/Assessor, Victor Sanchez, a Cal/OSHA Certified Site Surveillance Technician and DHS Certified Lead Paint Project Monitor, and Michael Lyssy, a State Certified Asbestos Consultant and Registered Environmental Assessor.

The scope of work for this project included the following key elements:

- Review, verification and incorporation of the original AHERA inspection and re-inspection data and any subsequent reports detailing the results of prior asbestos and lead testing at the School into this report.
- Inspection and assessment of asbestos-containing materials, lead-based paints, lead glazed ceramics and PCB light ballasts
- Preparation of a final report that is suitable for inclusion in the District's specifications for abatement of hazardous building materials.

Prior to our asbestos assessments, we evaluated the site conditions and developed our sampling strategy to ensure identification of all asbestos-containing materials. Representative sampling of homogeneous materials was conducted per SCAQMD guidelines, and all identifiable suspect materials were sampled. Asbestos analysis was performed by an independent, State Certified, NVLAP Accredited Laboratory. Bulk samples were analyzed by polarized light microscopy (PLM), EPA Method 600/R-93/116. This report details the specific site conditions and estimated quantities of Asbestos Containing Material (ACM) for the project. Areas affected by destructive sampling were repaired so as not to cause hazards to school personnel, survey crew, visitors and the general public.

Testing for lead-based paint was performed using an EDAX Map-4 portable X-ray fluorescence (XRF) spectrum analyzer. Testing was modeled after the protocol outlined in the Department of Housing and Urban Developments document titled Lead-Based Paint: Interim Guidelines For Hazard Identification and Abatement in Public and Indian Housing (1997 Revision).

Quality Control Procedures

Pacific Environmental Company's integrated resources, technologies, discipline, and expertise combine to ensure that the inspection and analysis for each project is conducted based on the following principles:

- All applicable regulations are addressed in order to ensure that our field inspectors and lab personnel meet their responsibilities, do so cost-effectively, and are equipped with the practical knowledge they need in order to understand and comply with regulations that affect them.
- Care is taken to make certain that the information provided and actions recommended are practical and cost effective in achieving regulatory compliance.

The 'management' approach utilized for this project assured that all work was performed using the highest standard of quality. All project results, reports and recommendations are reviewed for accuracy, content and quality prior to presentation. We recognize that, for each assignment we undertake, the information we develop and the conclusions and advice we provide, will be used to support important management decisions.

Pacific Environmental Company's Quality Assurance Program requires that all personnel:

- Provide specific objectives so that project activities can be evaluated with regard to precision, accuracy, reproducibility, completeness, and comparability.
- Provide specific guidance on the proper methodology for all activities.
- Be provided with ongoing training to enhance their technical skills.
- Be trained in QA/QC procedures and QC activities.
- Review all reports until they are acceptable in terms of technical and editorial quality, and all quality assurance activities have been successfully performed.

Site Description

Warm Springs Elementary School campus consists of six school buildings. The school was built approximately in the 1950s.

The school buildings are a combination of wood framed structures that are finished with stucco and metal/wood siding. The interior finishes include plaster walls and ceilings with applications of acoustical tile and suspended ceilings. Flooring finishes throughout the school include a combination of ceramic tile, carpet, and various applications of vinyl floorings.

Asbestos Inspection and Sampling Procedures

Asbestos-containing material (ACM) is defined by the Federal Environmental Protection Agency (EPA) as material containing more than one percent asbestos, as determined by polarized light microscopy (PLM). Title 8, Section 1529, of the California Code of Regulations, however, defines asbestos-containing construction material (ACCM) as any manufactured construction material that contains more than one-tenth of one percent asbestos by weight.

We reviewed the District's asbestos records on file in order to formulate our sampling strategy. The only documentation on file for the site was the Power Masters, Inc. AHERA summaries that were prepared originally in the late 1980s. This documentation had been marked-up to reflect the changes that have impacted ACMs over the years. The Power Master summary reports indicate that there were presumed asbestos floorings at the site; however, based on our sampling, the vinyl floor tile and linoleum are not classified as ACM. The PMI documentation also indicated the presence of asbestos-containing transite flues as well as flex joints on the mechanical equipment throughout the site. In order to properly characterize the site conditions, we collected samples of various additional materials including vinyl floorings, ceiling tile, basecove, plaster, drywall, stucco, various mastics, and suspect roofing for material analysis.

Subsequent to our review of the prior reports, a visual assessment of the suspect building materials located throughout the subject facility was completed prior to the collection of samples. During the visual assessment, the building materials suspected of containing asbestos were categorized by homogeneous areas. Materials are classified as homogenous when they appear uniform, have a consistent texture, and appear to have been installed at the same time.

The laboratory testing for the bulk samples was conducted in accordance with the recommended EPA Interim Method for Determination of Asbestos in Bulk Samples (EPA-600/R-93/116, July 1993).

The field investigation began with an initial site walk-through and identification of homogenous building materials suspected of containing asbestos. Samples were collected based on building layout, structural features, and mechanical and plumbing systems. Pacific Environmental then performed the following tasks:

- Evaluated whether materials suspected of containing asbestos were present at the site.
- Collected bulk samples, as required, to adequately characterize the suspect materials.
- Identified approximate sample locations and locations of identified ACM on field drawings or with photographs.
- Estimated the amount of ACM, where access allowed.
- Assessed the condition of the suspected and known ACMs.

At the time of inspection, suspect materials are assessed to be in good, damaged, or significantly damaged condition based on the following criteria:

> Good Condition - No or very limited visible damage or deterioration observed.
>
> Damaged Condition - Crumbling, blistering, water damage, gouges or other damage observed over less than 25% of the materials (one-tenth if evenly distributed); or accumulation of suspect powder, dust or debris observed below the material.
>
> Significantly Damaged - Crumbling, blistering, water damage, gouges or other damage observed over greater than 25% of the materials (one-tenth if evenly distributed); material delaminating or showing adhesive failure; or accumulation of suspect powder, dust or debris observed below the material.

The assessment process also includes classifying the material as Friable ACM or Non-Friable ACM. Friable ACM is the term given to any material that contains more than one percent (1%) asbestos by weight, which can be crumbled, pul-

verized, or reduced to powder by hand or mechanical pressure. The word "Friability" refers to a material's likeliness to release airborne fibers when in situ, or under mechanical pressure. There is a greater possibility that a friable material will release fibers into the air when disturbed than will a non-friable material (i.e., floor tiles, roofing materials, etc.), thereby causing a potential hazard.

After identifying those materials suspected of containing asbestos, the materials were grouped into homogeneous sampling areas. A homogeneous sampling area includes building materials that are uniform in texture and color and appear identical in every other respect. A modified AHERA protocol was used in estimating the number of samples to be collected. Actual samples collected were determined by field conditions. A total of seventy-one (71) bulk samples were collected and analyzed.

Bulk samples were collected by wetting the suspect material with amended water and cutting, scraping or coring it from its substrate using an appropriate sampling tool. Sampling tools were cleaned before and after each use to prevent cross contamination between sampling events. Small quantities of material, approximately 1/2 square inch each, were extracted from suspect materials and placed in sterile, airtight bags or vials, and sealed. Each sample was labeled with a unique identification number, utilizing a sequential numbering system. The sample was logged in on the bulk survey sheet and a description noted on the type of sample. Each sample container was then placed inside a larger sterile, airtight bag. As other samples were taken from each area, they were also placed inside this larger airtight bag. Sample locations were repaired using caulk, spray glue, encapsulant, or patching material as needed, but were not always returned to their original condition. The samples were transported under chain-of-custody to an independent NVLAP participating laboratory for analysis utilizing polarized light microscopy.

The laboratory testing was conducted in accordance with the EPA Interim Method for Determination of Asbestos in Bulk Samples (EPA-600/R-93/116, July 1993). Samples were examined for homogeneity, and non-homogeneous samples were ground to ensure homogeneity. Microscopic slides were prepared from each sample using a refractive index liquid, such as trisection and ethyl cinnamate, having a refractive index of 1.550; 1-bromo-naphthalene and 1-Iodonaphthalene, having a refractive index of 1.680; or hydrogenated terthenyl and 1-bromonaphtahlene, having a refractive index of 1.605. The slides were then examined for the presence of asbestos, utilizing polarized light microscopy (PLM) and dispersion staining techniques.

The percentage of asbestos was estimated by visual examination of fibers greater than five microns in length and with an aspect ratio of 3:1 or greater. The aspect ratio of 3:1 refers to the length of the fiber being three times as long as its width. If present, the identity of asbestos fibers was confirmed with appropriate refractive index liquids, application of dispersion staining and other techniques. The results were tabulated and detailed in the laboratory reports, which are included in the appendices of this report.

Asbestos Inspection Results

Based on our assessment services, the following materials were confirmed, or assumed as ACM and ACCM.

Material	Location	Estimated Quantity	Comments
Transite Flue Pipe	Buildings A, B, C, Cafeteria	60 LF	Vent Pipe Above Heater Closets & In Attic
Flex Joints	Buildings B, C, & Administration	1 each	Forced air units in Administration & rooms B-1 through B-6 and C-1 through C-5
Carpet Glue	Building C	4,600 SF	Rooms C-1 through C-3 & C-5 have a combination of VFT & carpet
Penetration Mastic	M.U. Building	400 SF	Exterior, Roof

The Bulk Sample Summary Table, which identifies each sample and the corresponding analytical results, is included in Appendix B., The laboratory reports and chain of custody forms are included in Appendix C.

Summary and Recommendations for Asbestos-Containing Materials

All ACM and ACCM that will be impacted by the planned modernizations must be removed pursuant to Rule 1403 of the South Coast Air Quality Management District's and CalOSHA Asbestos Regulations.

Abatement activities must be conducted in compliance with all applicable regulations, standards and generally accepted environmental and safety practices, including Federal OSHA (29 CFR 1926.58), EPA NESHAPS (40 CFR Part 61), and Toxic Substances Control Act (TSCA) Title II AHERA/ASHARA (40 CFR Part 763) Asbestos Regulations, the Occupational Safety and Health Administration, Asbestos Construction Standard, 29 CFR 1926.1101, and Title 8, California Code of Regulations Section 1529, Cal-OSHA Construction Standard.

All asbestos waste must be properly disposed of and documented. Waste Manifests must be submitted at the end of a project. Disposing of a known hazardous waste is illegal in the State of California. Every effort was made to sample all of the building materials, however some materials may have been concealed and could not be exposed without demolition. If any additional materials are encountered during the demolition activities, we will arrange to sample and analyze them accordingly.

Lead Inspection and Sampling Procedures

Lead-based paint and lead glazing on ceramics is of concern both as a source of direct exposure through ingestion of paint chips, and as a contributor to lead interior dust and exterior soil. Lead was widely used as a major ingredient in most interior and exterior oil-based paints prior to 1950. Lead compounds continued to be used as corrosion inhibitors, pigments and drying agents beginning in the early 1950's. In 1972, the Consumer Products Safety Commission limited lead content in new paint to 0.5% (5000 ppm) and, in 1978, to 0.06% (600 ppm). It has also been used extensively as a glaze on ceramic and porcelain finishes.

The U.S. Department of Housing and Urban Development (HUD) and the U.S. Environmental Protection Agency (EPA) define an inspection as a surface-by-surface investigation to determine the presence of lead-based paint (see 40 CFR part 745 and Title X of the 1992 Housing and Community Development Act).

As per the EPA & HUD guidelines, lead-based paint is defined as a dried paint film with a lead concentration of greater than or equal to 1.0 mg/cm2 or 0.5 percent by weight. Lead paint amounts were reported in mg/cm2 because this unit of measurement does not depend on the number of layers of non-lead based paint.

Portable XRF lead-based paint analyzers are the most common primary analytical method for inspections because of their demonstrated abilities to:

1. Determine if lead is present on many different types of surfaces

2. Measure the paint without destructive sampling or paint removal

3. Provide sample results immediately and at a relatively low cost per sample

Portable XRF instruments expose a building component to X-rays or gamma radiation, which causes lead to emit X-rays with a characteristic frequency or energy. The intensity of this radiation is measured by the XRF instrument. The inspector must then compare this displayed value (reading) with the inconclusive range or threshold specified in the XRF Performance Characteristic Sheet for the specific substrate beneath the painted surface. If the reading is less than the lower boundary of the inconclusive range, or less than the threshold, then the reading is considered negative. If the reading is greater than the upper boundary of the inconclusive range, or greater or equal to the threshold, then the reading is considered positive. Readings within the inconclusive range, including its boundary values, are considered inconclusive. Because the inconclusive ranges and/or thresholds shown in the Performance Characteristic Sheet are based on 1.0 mg/cm2, positive and negative readings are consistent with the HUD definition of lead-based paint for identification and disclosure purposes. The method employed for paint testing for this project was X-Ray Fluorescence (XRF) using an EDAX MAP4 lead paint analyzer (Serial Number M41509) with the capability to measure the lead content in dry paint films in the range of 0 to 50 milligrams per square centimeter.

The instrument's calibration was verified according to the manufacturer's specifications, in compliance with the Performance Characteristic Sheet (PCS) developed for this instrument. The PCS is located in Appendix F of this report. The readings from this instrument produce a 95% confidence level that the "lead" reading accurately reflects the actual level of lead in the tested surfaces, relative to the federal action level. Current industry standards suggest that, when it is determined that paint abatement and/or interim control activities will be performed on components, they should be performed according to practices that are in the HUD Guidelines and the regulations under section 402 of the Toxic Substances Control Act (TSCA), 15 USC 2682.

Lead Inspection Results

Sampling for this inspection was representative and any components that were not tested, but are similar to those components that tested positive for lead, should be considered and treated as lead laden.

Interior lead components identified at the site include the original porcelain sink fixtures (except in B-7 through B-10), ceramic sink tile throughout the classrooms in the B, C, D, and E buildings, ceramic tile in the restrooms in the B building, ceramic tile baseboards in the Admin restrooms, window frames in the B and C buildings, several doorframes in the B and C buildings, doors, doorframes, and chair railings in the admin area, as well as walls, doorframes, window frames, and ceramic wall tile in the M.U. Room. Exterior lead components include the painted window frames, doorframes, doors, eaves, fascia boards, exposed painted joists, downspouts, support columns, porcelain drinking fountains, as well as the walls of the M.U. Building.

The lead-laden paint, ceramic and porcelain finishes are, for the most part, generally in good condition but will likely need to be removed to facilitate the modernizations at the site. There were some defective paints identified which should be treated during the modernizations to prevent exposure to lead dust. Conditions of the painted components are listed in the field data reports in Appendix D.

Lead Summary and Recommendations

The federal and CAL/OSHA regulations for lead in construction do not specify a level of a lead in paint that classifies it as LBP. However, federal and state OSHA regulations specify ***airborne lead levels*** that should not be exceeded during construction without appropriate protection and training.

The action level for lead is 30 micrograms per cubic meter of air (µg/m3), and the permissible exposure limit (PEL) is 50 µg/m3. These airborne lead levels can be exceeded during construction activities such as scraping, sanding, grinding, blasting, and torching LBP surfaces, even when levels of lead in paint are far below the HUD definition of LBP of 1.0 mg/cm2 or 0.5 percent lead by weight. The XRF is designed to accurately quantify paint around the set abatement level (1.0 mg/cm2, 5,000 parts per million, or 0.5 percent by weight). However, painted surfaces tested with XRF that result in instrument readings much less than 1.0 mg/cm2 (even 0.0 mg/cm2 and negative results) may contain amounts of lead that could create an airborne hazard to workers during construction.

Based on the levels of lead in the components identified in the building survey, Pacific Environmental recommends that only properly trained and equipped individuals be assigned site preparation tasks that would involve treatment or demolition of these components. Procedures and engineering controls must be designed to follow CAL/OSHA and Department of Health Services (State of California) requirements, and workers must wear appropriate personal protective equipment during the work.

Other Hazardous Materials

During our assessment of the structures, we visually inspected the locations of fluorescent light tubes and PCB ballasts. There are fluorescent fixtures throughout the main building with ballasts that are assumed to contain PCB's and fluorescent tubes. All PCB's and spent fluorescent light tubes should be handled, packaged and disposed of in compliance with current California Environmental Protection Agency, Department of Toxic Substances Control Guidelines.

Limitations

This report is not intended to identify all hazards or unsafe conditions or to imply that others do not exist. This survey was planned and implemented on the basis of a mutually agreed upon scope of work, and Pacific Environmental's experience in performing this type of assessment.

Pacific Environmental has performed this survey in a professional manner, using the degree of skill and care exercised for similar projects, under similar conditions, by reputable and competent environmental consultants. Pacific Environmental shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time that this survey was conducted.

Pacific Environmental further states that no warranties, expressed or implied, are made regarding the quality, fitness, or results to be achieved as a consequence of this report, or impacted by information not properly disclosed to Pacific at the time of this report. It further states that no responsibility is assumed for the control or correction of conditions or practices existing at the premises of the client.

References

AHERA Summary, prepared by Power Masters, Inc.

Title 17, California Code of Regulations, Division 1, Chapter 8: Accreditation, Certification and Work Practices for Lead-Based Paint and Lead Hazards

Title 8, California Code of Regulations, Section 1532.1: Cal/OSHA Construction Safety Orders, Lead

"Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," US Department of Housing and Urban Development, June 1995

South Coast Air Quality Management District Requirements (Rule 1403)

National Emissions Standards for Hazardous Air Pollutants, 40 CFR 61, M

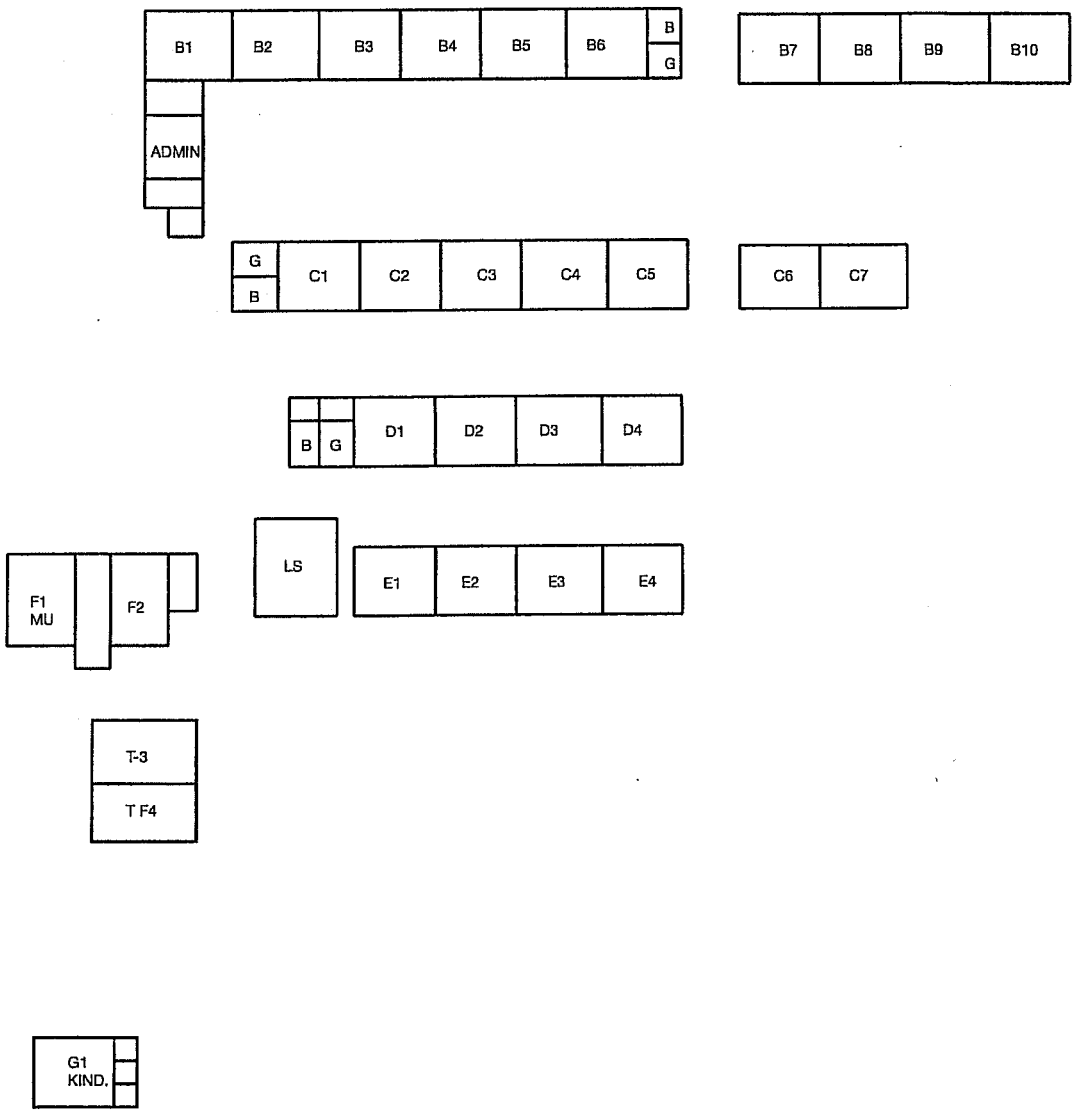
Occupational Safety and Health Administration, Asbestos in the Workplace, 29 CFR 1910.1001

Occupational Safety and Health Administration, Asbestos Construction Standard, 29 CFR 1926.1101

Title 8, California Code of Regulations Section 1529, Cal-OSHA Construction Standard

Appendix A

Site Plan



DATE PREPARED: 7/17/2008	DRAWN BY: M.L.	DRAWING TITLE: Site Plan/Sample Plan Warm Springs Elementary School 7497 Sterling Avenue San Bernardino, California
REVISION:	SOURCE: SBCUSD	
PROJECT NO: 08171	OTHER:	
PROJECT NAME: Limited Asbestos and Lead Survey		CLIENT: San Bernardino City Unified School District

FIGURE NO. 1

Appendix B

Bulk Sample Summary Table

WARM SPRINGS ELEMENTARY SCHOOL
BULK SAMPLE SUMMARY

Sample No.	Sample Description	Sample Location	Asbestos %
001	Carpet Glue	Bldg B, B-2	NAD
002	Closet Door Insulation	Bldg B, B-2	NAD
003	Basecove	Bldg B, B-2	NAD
004	12"x12" Tan VFT	Bldg B, B-2	NAD
005	2'x4' Ceiling Panel	Bldg B, B-2	NAD
006	Plaster	Bldg B, B-2	NAD
007	12"x12" Light Brown VFT	Bldg B, B-2	NAD
008	12"x12" Wall Tile	Bldg B, B-1	NAD
009	12"x12" Wall Tile	Bldg B, B-2	NAD
010	12"x12" Wall Tile	Bldg B, B-1	NAD
011	Wall Tile Mastic	Bldg B, B-1	NAD
012	Wall Tile Mastic	Bldg B, B-2	NAD
013	Wall Tile Mastic	Bldg B, B-2	NAD
014	Stucco	Bldg B, Exterior	NAD
015	2'x4' Ceiling Panel	Bldg B, Admin Hallway	NAD
016	Plaster	Bldg B, Admin Hallway	NAD
017	Plaster	Bldg B, B-6	NAD
018	Carpet Glue	Bldg B, B-7	NA - Sample Not Submitted
019	12"x12" Light Brown VFT	Bldg B, B-7	NA - Sample Not Submitted
020	Carpet Glue	Bldg B, B-7	NAD
021	12"x12" Light Brown VFT	Bldg B, B-7	NAD
022	2'x4' Ceiling Panel	Bldg B, B-7	NAD
023	Basecove, Brown	Bldg B, B-7	NAD
024	12"x12" Tan VFT	Bldg B, B-8	NAD
025	Stucco	Bldg C, Exterior Outside C-6	NAD
026	Basecove, Brown	Bldg C, C-6	NAD
027	Carpet Glue	Bldg C, C-7	4% Chrysotile
028	2'x4' Ceiling Panel	Bldg C, C-7	NAD
029	Stucco	Bldg C, Exterior By C-5	NAD
030	Basecove, Brown	Bldg C, C-5	NAD
031	Plaster	Bldg C, C-5	NAD
032	12"x12" Light Brown VFT	Bldg C, C-5	NAD
033	Carpet Glue	Bldg C, C-5	NAD
034	2'x4' Ceiling Panel	Bldg C, C-5	NAD
035	12"x12" Ceiling Tile, Pinhole	Bldg C, C-5	NAD
036	Wall Tile Mastic	Bldg C, C-5	NAD
037	Drywall	Bldg C, C-5	NAD
038	Plaster	Bldg C, C-4	NAD
039	Plaster	Bldg C, C-2	NAD
040	Drywall / Joint Compound	Bldg C, C-1 Office	NAD
041	Drywall / Joint Compound	Bldg C, C-1 Boys' RR	NAD
042	Drywall / Joint Compound	Bldg C, C-1 Girls' RR	NAD
043	Plaster	Bldg D, Boys' RR	NAD
044	Drywall	Bldg D, Boys' RR	NAD
045	Basecove, Brown	Bldg D, D-1	NAD
046	12"x12" Light Brown VFT	Bldg D, D-2	NAD
047	2'x4' Ceiling Panel	Bldg D, D-2	NAD
048	Carpet Glue	Bldg D, D-2	NAD
049	12"x12" Tan VFT	Bldg D, D-1	NAD
050	12"x12" Light Brown VFT	Bldg E, E-3	NAD
051	Basecove, Brown	Bldg E, E-3	NAD
052	2'x4' Ceiling Panel	Bldg E, E-3	NAD
053	Carpet Glue	Bldg E, E-3	NAD
054	2'x4' Ceiling Panel	Bldg MU, MU	NAD
055	12"x12" Light Brown VFT	Bldg MU, MU	NAD
056	Plaster	Bldg MU, MU	NAD

WARM SPRINGS ELEMENTARY SCHOOL
BULK SAMPLE SUMMARY

057	Plaster	Bldg MU, MU	NAD
058	Plaster	Bldg MU, MU	NAD
059	Basecove, Brown	Bldg MU, MU	NAD
060	Stucco	Bldg MU, Exterior	NAD
061	Carpet Glue	Bldg G, G-1	NAD
062	12"x12" White VFT	Bldg G, G-1	NAD
063	2'x4' Ceiling Panel	Bldg G, G-1	NAD
064	Basecove, Brown	Bldg G, G-1	NAD
065	Roof Core	Bldg MU, Exterior	NAD
066	Penetration Mastic	Bldg MU, Exterior	7% Chrysotile
067	Roof Composite	Bldg MU, Exterior	NAD
068	Roof Core	Bldg B, Exterior	NAD
069	Penetration Mastic	Bldg B, Exterior	NAD
070	Roof Core	Bldg C6-C7, Exterior	NAD
071	Penetration Mastic	Bldg C6-C7, Exterior	NAD

Appendix C

Asbestos Sample Analysis Reports and Chain of Custody

AmeriSci Los Angeles
24416 S. Main Street, Ste 308
Carson, California 90745
TEL: (310) 834-4868 • FAX: (310) 834-4772

PLM Bulk Asbestos Report

Pacific Environmental Company
Attn: Mike Lyssy
28202 Cabot Road
Suite 300
Laguna Niguel, CA 92677

Date Received 06/11/08
Date Examined 06/17/08

AmeriSci Job # 908061182
P.O. #

RE: SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
001	908061182-01	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Carpet Glue / Bldg. B / B-2			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Glue **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
002	908061182-02	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Closet Door Insulation / Bldg. B / B-2			
Analyst Description: White, Heterogeneous, Non-Fibrous, Insulation **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
003	908061182-03L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Base Cove / Bldg. B / B-2			
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Basecove **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
003	908061182-03L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Base Cove / Bldg. B / B-2			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
004	908061182-04L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Tan VFT / Bldg. B / B-2			
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
004	908061182-04L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Tan VFT / Bldg. B / B-2			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
005	908061182-05	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. B / B-2			
Analyst Description: Beige/White, Heterogeneous, Fibrous, Ceiling Tile			
Asbestos Types:			
Other Material: Cellulose 23 %, Fibrous glass 2 %, Non-fibrous 75 %			
006	908061182-06	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Plaster / Bldg. B / B-2			
Analyst Description: Light Grey, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
007	908061182-07L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. B / B-2			
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
007	908061182-07L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. B / B-2			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
008	908061182-08	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Wall Tile / Bldg. B / B-1			
Analyst Description: Orange/White, Heterogeneous, Fibrous, Wall Tile			
Asbestos Types:			
Other Material: Cellulose 60 %, Non-fibrous 40 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
009	908061182-09	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Wall Tile / Bldg. B / B-2			
Analyst Description: Orange/White, Heterogeneous, Fibrous, Wall Tile			
Asbestos Types:			
Other Material: Cellulose 60 %, Non-fibrous 40 %			
010	908061182-10	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Wall Tile / Bldg. B / B-1			
Analyst Description: Orange/White, Heterogeneous, Fibrous, Wall Tile			
Asbestos Types:			
Other Material: Cellulose 60 %, Non-fibrous 40 %			
011	908061182-11	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Wall Tile Mastic / Bldg. B / B-1			
Analyst Description: Dark Brown, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
012	908061182-12	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Wall Tile Mastic / Bldg. B / B-2			
Analyst Description: Dark Brown, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
013	908061182-13	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Wall Tile Mastic / Bldg. B / B-2			
Analyst Description: Dark Brown, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
014	908061182-14	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Stucco / Bldg. B / Exterior			
Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
015	908061182-15	***No***	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. B / Admin. Hallway			
Analyst Description: Beige/White, Heterogeneous, Fibrous, Ceiling Tile			
Asbestos Types:			
Other Material: Cellulose 17 %, Fibrous glass 5 %, Non-fibrous 78 %			
016	908061182-16	***No***	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Plaster / Bldg. B / Admin Hallway			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
017	908061182-17	***No***	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Plaster / Bldg. B / Admin / B-6			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
018	908061182-18		NA
Location: Carpet Glue / Bldg. B / B-7 (Sample Not Submitted)			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
019	908061182-19		NA
Location: 12" X 12" Lt. Brown VFT / Bldg. B / B-7 (Sample Not Submitted)			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
020	908061182-20	***No***	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Carpet Glue / Bldg. B / B-7			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Glue			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
021	908061182-21L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. B / B-7			
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
021	908061182-21L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. B / B-7			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
022	908061182-22	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. B / B-7			
Analyst Description: Beige/White, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 18 %, Fibrous glass 5 %, Non-fibrous 77 %			
023	908061182-23L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Base Cove (Brown) / Bldg. B / B-7			
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Basecove **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
023	908061182-23L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Base Cove (Brown) / Bldg. B / B-7			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
024	908061182-24L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Tan VFT / Bldg. B / B-8			
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
024	908061182-24L2	*No*	NAD
Location: 12" X 12" Tan VFT / Bldg. B / B-8			(by CVES) by Arturo A. Aldana on 06/17/08
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
025	908061182-25	*No*	NAD
Location: Stucco / Bldg. C / Exterior Outside C-6			(by CVES) by Arturo A. Aldana on 06/17/08
Analyst Description: Grey/White, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
026	908061182-26L1	*No*	NAD
Location: Base Cove Brown / Bldg. C / C-6			(by CVES) by Arturo A. Aldana on 06/17/08
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Basecove **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
026	908061182-26L2	*No*	NAD
Location: Base Cove Brown / Bldg. C / C-6			(by CVES) by Arturo A. Aldana on 06/17/08
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
026	908061182-26L3	*No*	NAD
Location: Base Cove Brown / Bldg. C / C-6			(by CVES) by Arturo A. Aldana on 06/17/08
Analyst Description: Dark Brown, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
027	908061182-27	*Yes*	4 %
Location: Carpet Glue / Bldg. C / C-7			(by CVES) by Arturo A. Aldana on 06/17/08
Analyst Description: Black/Yellow, Heterogeneous, Non-Fibrous, Mastics **Asbestos Types:** Chrysotile 4.0 % **Other Material:** Non-fibrous 96 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
028	908061182-28	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. C / C-7			
Analyst Description: Beige/White, Heterogeneous, Fibrous, Ceiling Tile			
Asbestos Types:			
Other Material: Cellulose 18 %, Fibrous glass 5 %, Non-fibrous 77 %			
029	908061182-29	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Stucco / Bldg. C / Exterior By C-5			
Analyst Description: Grey/White/Pink, Heterogeneous, Non-Fibrous, Cementitious, Stucco			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
030	908061182-30L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Brown Basecove / Bldg. C / C-5			
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Basecove			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
030	908061182-30L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Brown Basecove / Bldg. C / C-5			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
031	908061182-31	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Plaster / Bldg. C / C-5			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
032	908061182-32L1	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. C / C-5			
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
032	908061182-32L2	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. C / C-5			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
033	908061182-33	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Carpet Glue / Bldg. C / C-5			
Analyst Description: Yellow, Heterogeneous, Non-Fibrous, Glue			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
034	908061182-34	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. C /C-5			
Analyst Description: Beige/White, Heterogeneous, Fibrous, Ceiling Tile			
Asbestos Types:			
Other Material: Cellulose 20 %, Fibrous glass 3 %, Non-fibrous 77 %			
035	908061182-35	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: 12" X 12" Ceiling Tile (Pinhole) / Bldg. C /C-5			
Analyst Description: Orange/White, Heterogeneous, Fibrous, Ceiling Tile			
Asbestos Types:			
Other Material: Cellulose 60 %, Non-fibrous 40 %			
036	908061182-36	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Wall Tile Mastic / Bldg. C / C-5			
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
037	908061182-37	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Drywall / Bldg. C / C-5			
Analyst Description: Off-White/Brown, Heterogeneous, Fibrous, Drywall			
Asbestos Types:			
Other Material: Cellulose 7 %, Non-fibrous 93 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
038	908061182-38	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Plaster / Bldg. C / C-4			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
039	908061182-39	*No*	NAD (by CVES) by Arturo A. Aldana on 06/17/08
Location: Plaster / Bldg. C / C-2			
Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
040	908061182-40.1	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. C / C-1 Office			
Analyst Description: White, Homogeneous, Non-Fibrous, Drywall			
Asbestos Types:			
Other Material: Cellulose 2 %, Non-fibrous 98 %			
040	908061182-40.2	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. C / C-1 Office			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
041	908061182-41.1	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. C / C-1 Boy's R.R.			
Analyst Description: White, Homogeneous, Non-Fibrous, Drywall			
Asbestos Types:			
Other Material: Cellulose 2 %, Non-fibrous 98 %			
041	908061182-41.2	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. C / C-1 Boy's R.R.			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
042	908061182-42.1	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. C / C-1 Girls R.R			
Analyst Description: White, Homogeneous, Non-Fibrous, Drywall			
Asbestos Types:			
Other Material: Cellulose 2 %, Non-fibrous 98 %			
042	908061182-42.2	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. C / C-1 Girls R.R			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
043	908061182-43	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Plaster / Bldg. D / Boy's RR			
Analyst Description: Beige, Heterogeneous, Non-Fibrous, Cementitious, Plaster			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
044	908061182-44	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Drywall / Joint Compound / Bldg. D / Boy's RR			
Analyst Description: White/Brown, Heterogeneous, Non-Fibrous, Drywall			
Asbestos Types:			
Other Material: Cellulose 4 %, Fibrous glass Trace, Non-fibrous 96 %			
Comment: Joint compound not found.			
045	908061182-45L1	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Brown Base Cove / Bldg. D / D-1			
Analyst Description: Brown, Homogeneous, Non-Fibrous, Basecove			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
045	908061182-45L2	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Brown Base Cove / Bldg. D / D-1			
Analyst Description: Cream, Homogeneous, Non-Fibrous, Glue			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
046	908061182-46L1	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. D / D-2			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
046	908061182-46L2	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. D / D-2			
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
047	908061182-47	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. D / D-2			
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile			
Asbestos Types:			
Other Material: Cellulose 40 %, Fibrous glass 30 %, Non-fibrous 30 %			
048	908061182-48	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: Carpet Glue / Bldg. D / D-2			
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Carpet Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
049	908061182-49L1	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: 12" X 12" Tan VFT / Bldg. D / D-1			
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
049	908061182-49L2	*No*	NAD (by CVES) by Paola Ducoing on 06/17/08
Location: 12" X 12" Tan VFT / Bldg. D / D-1			
Analyst Description: Yellow/Black, Heterogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Cellulose 5 %, Non-fibrous 95 %			
050	908061182-50L1	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. E / E-3			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
050	908061182-50L2	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Bldg. E / E-3			
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
051	908061182-51L1	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Brown Basecove / Bldg. E / E-3			
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cove Base			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
051	908061182-51L2	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Brown Basecove / Bldg. E / E-3			
Analyst Description: Cream, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
052	908061182-52	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. E / E-3			
Analyst Description: Grey, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 80 %, Non-fibrous 20 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
053	908061182-53	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Carpet Glue / Bldg. E / E-3			
Analyst Description: Yellow, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Synthetic fibers 5 %, Non-fibrous 95 %			
054	908061182-54	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 2' X 4' Ceiling Panel / Mu / Mu			
Analyst Description: Grey, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 68 %, Fibrous glass 2 %, Non-fibrous 30 %			
055	908061182-55	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 12" X 12" Lt. Brown VFT / Mu / Mu			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
056	908061182-56	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Plaster / Mu / Mu			
Analyst Description: Beige, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
057	908061182-57	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Plaster / Mu / Mu			
Analyst Description: Beige, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
058	908061182-58	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Plaster / Mu / Mu			
Analyst Description: Beige, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
059	908061182-59L2	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Brown Base Cove / Mu / Mu			
Analyst Description: Cream, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
060	908061182-60	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Stucco / Mu / Exterior			
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
061	908061182-61	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Carpet Glue / Bldg. G / G-1			
Analyst Description: Cream, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 2 %, Synthetic fibers 3 %, Non-fibrous 95 %			
062	908061182-62L1	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 12" X 12" Wht. VFT / Bldg. G / G-1			
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
062	908061182-62L2	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 12" X 12" Wht. VFT / Bldg. G / G-1			
Analyst Description: Grey, Homogeneous, Non-Fibrous, Flooring			
Asbestos Types:			
Other Material: Cellulose 5 %, Non-fibrous 95 %			
063	908061182-63	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: 2' X 4' Ceiling Panel / Bldg. G / G-1			
Analyst Description: Grey, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 68 %, Fibrous glass 2 %, Non-fibrous 30 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
064	908061182-64L1	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Brown Basecove / Bldg. G / G-1			
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cove Base **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
064	908061182-64L2	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Brown Basecove / Bldg. G / G-1			
Analyst Description: Cream, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
065	908061182-65	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Roof Core / Mu / Exterior			
Analyst Description: Beige/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 5 %, Fibrous glass 15 %, Non-fibrous 80 %			
066	908061182-66	*Yes*	7 % (by CVES) by Raymundo Orozco on 06/17/08
Location: Penetration Mastic / Mu / Exterior			
Analyst Description: Black, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 7.0 % **Other Material:** Non-fibrous 93 %			
067	908061182-67	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Roof Composite / Mu / Exterior			
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 10 %, Fibrous glass 10 %, Non-fibrous 80 %			
068	908061182-68	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Roof Core / Bldg. B / Exterior			
Analyst Description: Black, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 10 %, Fibrous glass 10 %, Non-fibrous 80 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

SBCUSD; Warm-Springs E.S

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
069	908061182-69	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Penetration Mastic / Bldg. B / Exterior			
Analyst Description: Black, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 10 %, Non-fibrous 90 %			
070	908061182-70	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Roof Core / C-6 / C-7 / Exterior			
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Fibrous glass 10 %, Non-fibrous 90 %			
071	908061182-71	*No*	NAD (by CVES) by Raymundo Orozco on 06/17/08
Location: Penetration Mastic / C-6 / C-7 / Exterior			
Analyst Description: Black, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 10 %, Non-fibrous 90 %			

Reporting Notes:

Analyzed By: Arturo A. Aldana a t aldana; Date Analyzed: 6/17/2008 6-17-08

*NAD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; NVA = No Visible Asbestos; PLM (polarized light microscopy) Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0, CA ELAP lab #2322); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: Emily R. Rosario

908061182-

PACIFIC ENVIRONMENTAL

Date:	6/5/08
Client:	SBCUSD
Site:	Warm-Springs ES.
Project No:	
Inspector(s):	

ASBESTOS BULK SAMPLE FIELD LOG AND CHAIN OF CUSTODY

Sample Number	Material Sampled	Bld.	Sample Location	Condition
001	Carpet Glue	B	B-2	G
002	Closet Door Insulation			D
003	Base cove			G
004	12"x12" Tan VFT			G
005	2'x4' Ceiling Panel			D
006	Plaster			G
007	12"x12" Lt. Brown VFT			G
008	12"x12" Wall Tile		B-1	G
009			B2	
010			B-1	
011	Wall Tile Mastic		B-1	G
012			-2	
013			-2	
014	Stucco	B	Exterior	D
015	2'x4' Celing Panel		Admin Hallway	G
016	Plaster			G
017			B-6	G
018	Carpet Glue		B-7	G
019	12"x12" Lt. Brown VFT			
020	Carpet Glue			
021	12"x12" Lt. Brown VFT			
022	2'x4' Ceiling Panel			
023	Basecove (Brown)			
024	12"x12" Tan VFT		B-8	G

Analytical Method: PLM

Turn Around Time: Standard

Please fax results to (714)776-3500 and mail to

Pacific Environmental Company
1475 S. State College Blvd., Suite 212
Anaheim, California 92806

CHAIN OF CUSTODY:

Name	Signature	Date/Time
David Tillema	[signature]	6/5/08

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Pg. 1 of 3

PACIFIC ENVIRONMENTAL

Date:	6/5/08
Client:	SBCUSD
Site:	Warm Springs ES
Project No:	
Inspector(s):	D.T/V.S.

ASBESTOS BULK SAMPLE FIELD LOG AND CHAIN OF CUSTODY

Sample Number	Material Sampled	Bld.	Sample Location	Condition
025	Stucco	C	Exterior Outside C-6	G
026	Base Cove (Brown		C-6	
027	Carpet Glue		C-7	
028	2'x4' Ceiling Panel		C-7	G
029	Stucco		Exterior by C-5	D
030	Brown Basecove		C-5	G
031	Plaster		C-5	
032	12"x12" Lt. Brown VFT		C-5	
033	Carpet Glue			
034	2'x4' Ceiling Panel			
035	12"x12" Ceiling Tile (Pinhole)			
036	Wall Tile Mastic			
037	Drywall			
038	Plaster		C-4	
039			C-2	G
040	Drywall / Joint Compound		C-1 Office	
041			C-1 Boy's R.R.	
042			C-1 Girls R.R.	
043	Plaster	D	Boy's R.R.	G
044	Drywall / Joint Compound			
045	Brown Basecove		D-1	G
046	12"x12" Lt. Brown VFT		D-2	
047	2'x4' Ceiling Panel			
048	Carpet Glue			

Analytical Method: PLM

Turn Around Time: Standard

Please fax results to (714)776-3500 and mail to

Pacific Environmental Company
1475 S. State College Blvd., Suite 212
Anaheim, California 92806

CHAIN OF CUSTODY:

Name	Signature	Date/Time
David Tillema	[signature]	6/5/08

RECEIVED
JUN 11 2008
B. ARELLANO

908061182 -

PACIFIC ENVIRONMENTAL

Date:	6/5/08
Client:	SBCUSD
Site:	Warm Springs
Project No:	
Inspector(s):	D.T. / V.S.

ASBESTOS BULK SAMPLE FIELD LOG AND CHAIN OF CUSTODY

Sample Number	Material Sampled	Bld.	Sample Location	Condition
049	12"x12" Tan VFT	D	D-1	G
050	12"x12" Lt. Brown VFT	E	E-3	↓
051	Brown & Basecove	↓	↓	↓
052	2'x4' Ceiling Panel	↓	↓	↓
053	Carpet Glue	↓	↓	↓
054	2'x4 Ceiling Panel	MU	MU	↓
055	12"x12" Lt. Brown VFT	↓	↓	↓
056	Plaster	↓	↓	↓
057	↓	↓	↓	↓
058	↓	↓	↓	↓
059	Brown Basecove	↓	↓	↓
060	Stucco	↓	Exterior	↓
061	Carpet Glue	G	G-1	↓
062	12"x12" wht. VFT	G	↓	↓
063	2'x4' Ceiling Panel	↓	↓	G
064	Brown Basecove	↓	↓	↓
065	Roof Core	MU	Exterior	D
066	Penetration Mastic	↓	↓	↓
067	Roof Composite	MU	Exterior	↓
068	Roof Core	B	↓	↓
069	Penetration Mastic	↓	↓	↓
070	Roof Core	C-6/C-7	↓	↓
071	Penetration Mastic	↓	↓	↓

Analytical Method: PLM

Turn Around Time: Standard

Please fax results to (714)776-3500 and mail to

Pacific Environmental Company
1475 S. State College Blvd., Suite 212
Anaheim, California 92806

CHAIN OF CUSTODY:

Name	Signature	Date/Time
David Tillema	[signature]	6/5/08

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Pg. 3 of 3

Appendix D

XRF Sampling Results

FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
Admin	File Storage	Wall	A	Plaster	Intact	White	0.0	Negative
Admin	File Storage	Wall	B	Plaster	Intact	White	0.1	Negative
Admin	File Storage	Wall	C	Plaster	Intact	White	0.0	Negative
Admin	File Storage	Wall	D	Plaster	Intact	White	0.0	Negative
Admin	File Storage	Door Frame	C	Wood	Intact	Blue	0.0	Negative
Admin	Front Office	Wall	A	Plaster	Intact	White	0.5	Negative
Admin	Front Office	Wall	B	Plaster	Intact	White	0.5	Negative
Admin	Front Office	Wall	C	Plaster	Intact	White	0.3	Negative
Admin	Front Office	Wall	D	Plaster	Intact	White	0.3	Negative
Admin	**Front Office**	**Chair Rail**	**D**	**Wood**	**Intact**	**White**	**4.2**	**Positive**
Admin	**Front Office**	**Door**	**D**	**Wood**	**Intact**	**Blue**	**1.2**	**Positive**
Admin	**Front Office**	**Door**	**B**	**Wood**	**Intact**	**Blue**	**1.2**	**Positive**
Admin	**Front Office**	**Door Frame**	**D**	**Wood**	**Intact**	**Blue**	**3.0**	**Positive**
Admin	**Front Office**	**Door Frame**	**B**	**Wood**	**Intact**	**Blue**	**4.3**	**Positive**
Admin	Large Office	Wall	A	Plaster	Intact	White	0.4	Negative
Admin	Large Office	Wall	B	Plaster	Intact	White	0.5	Negative
Admin	Large Office	Wall	C	Plaster	Intact	White	0.5	Negative
Admin	Large Office	Wall	D	Plaster	Intact	White	0.5	Negative
Admin	Large Office	Door	B	Wood	Intact	Blue	0.0	Negative
Admin	**Large Office**	**Door Frame**	**B**	**Wood**	**Intact**	**Blue**	**1.0**	**Positive**
Admin	Large Office	Upper Cabinet	B	Wood	Intact	Blue	0.2	Negative
Admin	Men's Staff RR	Wall	A	Plaster	Intact	White	0.0	Negative
Admin	Men's Staff RR	Wall	B	Plaster	Intact	White	0.0	Negative
Admin	Men's Staff RR	Wall	C	Plaster	Intact	White	0.6	Negative
Admin	Men's Staff RR	Wall	D	Plaster	Intact	White	0.3	Negative
Admin	**Men's Staff RR**	**Baseboard Tile**	**A/B/D**	**Ceramic Tile**	**Intact**	**Red**	**21.1**	**Positive**
Admin	**Men's Staff RR**	**Door**	**C**	**Wood**	**Intact**	**Blue**	**1.2**	**Positive**
Admin	Men's Staff RR	Porcelain Fixtures	B	Porcelain	Intact	White	0.0	Negative
Admin	**Men's Staff RR**	**Door Frame**	**C**	**Wood**	**Intact**	**Blue**	**5.2**	**Positive**
Admin	Men's Staff RR	Ceramic Floor Tile	N/A	Ceramic Tile	Intact	Unlisted	0.0	Negative
B	B-1	Wall	A	Plaster	Intact	White	0.0	Negative
B	B-1	Wall	B	Plaster	Intact	White	0.3	Negative
B	B-1	Wall	C	Plaster	Intact	White	0.1	Negative
B	B-1	Wall	D	Plaster	Intact	White	0.2	Negative
B	B-1	Door	D	Wood	Intact	Brown	0.5	Negative

The HUD/EPA action level for lead-based paint is 1.0 mg/cm2.
Negative readings are below LOD for XRF

FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
B	B-1	Porcelain Sink	A	Porcelain	Intact	White	21.8	Positive
B	B-1	Door Frame	D	Wood	Intact	Brown	0.4	Negative
B	B-1	Ceramic Sink Tile	A	Ceramic Tile	Intact	Red	21.2	Positive
B	B-10	Wall	A	Metal	Intact	White	0.2	Negative
B	B-10	Wall	B	Metal	Intact	White	0.2	Negative
B	B-10	Wall	D	Metal	Intact	White	0.3	Negative
B	B-10	Door	D	Metal	Intact	Green	0.4	Negative
B	B-10	Porcelain Sink	A	Porcelain	Intact	White	0.2	Negative
B	B-10	Door Frame	D	Metal	Intact	Green	0.3	Negative
B	B-10	Lower Cabinet	A	Wood	Intact	White	0.1	Negative
B	B-2	Wall	A	Plaster	Intact	White	0.0	Negative
B	B-2	Wall	B	Plaster	Intact	White	0.3	Negative
B	B-2	Wall	C	Plaster	Intact	White	0.1	Negative
B	B-2	Wall	D	Plaster	Intact	White	0.2	Negative
B	B-2	Door	B	Wood	Intact	Green	1.2	Positive
B	B-2	Porcelain Sink	A	Porcelain	Intact	White	21.8	Positive
B	B-2	Door Frame	B	Wood	Intact	Green	2.1	Positive
B	B-2	Ceramic Sink Tile	A	Ceramic Tile	Intact	Red	21.2	Positive
B	B-3	Wall	A	Plaster	Intact	White	0.1	Negative
B	B-3	Wall	B	Plaster	Intact	White	0.2	Negative
B	B-3	Wall	C	Plaster	Intact	White	0.3	Negative
B	B-3	Wall	D	Plaster	Intact	White	0.1	Negative
B	B-3	Door	B	Wood	Intact	Green	1.4	Positive
B	B-3	Porcelain Sink	A	Porcelain	Intact	White	20.2	Positive
B	B-3	Door Frame	B	Wood	Intact	Green	1.8	Positive
B	B-3	Ceramic Sink Tile	A	Ceramic Tile	Intact	Red	22.4	Positive
B	B-4	Wall	A	Plaster	Intact	White	0.1	Negative
B	B-4	Wall	B	Plaster	Intact	White	0.0	Negative
B	B-4	Wall	C	Plaster	Intact	White	0.1	Negative
B	B-4	Wall	D	Plaster	Intact	White	0.2	Negative
B	B-4	Door	B	Wood	Intact	Green	1.4	Positive
B	B-4	Porcelain Sink	A	Porcelain	Intact	White	20.5	Positive
B	B-4	Door Frame	B	Wood	Intact	Green	1.6	Positive
B	B-4	Ceramic Sink Tile	A	Ceramic Tile	Intact	Red	20.6	Positive
B	B-5	Wall	A	Plaster	Intact	White	0.0	Negative

The HUD/EPA action level for lead-based paint is 1.0 mg/cm2.
Negative readings are below LOD for XRF

FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
B	B-5	Wall	B	Plaster	Intact	White	0.3	Negative
B	B-5	Wall	C	Plaster	Intact	White	0.1	Negative
B	B-5	Wall	D	Plaster	Intact	White	0.2	Negative
B	B-5	Door	C	Wood	Intact	Brown	0.0	Negative
B	**B-5**	**Porcelain Sink**	**A**	**Porcelain**	**Intact**	**White**	**21.8**	**Positive**
B	B-5	Door Frame	C	Wood	Intact	Brown	0.0	Negative
B	**B-5**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**Red**	**21.2**	**Positive**
B	B-6	Wall	A	Plaster	Intact	White	0.0	Negative
B	B-6	Wall	B	Plaster	Intact	White	0.3	Negative
B	B-6	Wall	C	Plaster	Intact	White	0.1	Negative
B	B-6	Wall	D	Plaster	Intact	White	0.2	Negative
B	B-6	Baseboard	A	Wood	Intact	Brown	0.1	Negative
B	**B-6**	**Door**	**B**	**Wood**	**Intact**	**Green**	**1.2**	**Positive**
B	**B-6**	**Bulletin Board Frame**	**D**	**Wood**	**Intact**	**White**	**1.8**	**Positive**
B	B-6	Chalkboard Frame	C	Wood	Intact	White	0.3	Negative
B	**B-6**	**Porcelain Sink**	**A**	**Porcelain**	**Intact**	**White**	**21.8**	**Positive**
B	**B-6**	**Door Frame**	**B**	**Wood**	**Intact**	**Green**	**2.1**	**Positive**
B	B-6	Lower Cabinet	A	Wood	Intact	Brown	0.2	Negative
B	**B-6**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**Red**	**21.2**	**Positive**
B	B-7	Wall	A	Metal	Intact	White	0.3	Negative
B	B-7	Wall	B	Metal	Intact	White	0.6	Negative
B	B-7	Wall	D	Metal	Intact	White	0.3	Negative
B	B-7	Door	D	Metal	Intact	Green	0.0	Negative
B	B-7	Porcelain Sink	A	Porcelain	Intact	White	0.0	Negative
B	B-7	Door Frame	D	Metal	Intact	Green	0.5	Negative
B	B-7	Lower Cabinet	A	Wood	Intact	Brown	0.0	Negative
B	B-8	Wall	A	Metal	Intact	White	0.2	Negative
B	B-8	Wall	B	Metal	Intact	White	0.4	Negative
B	B-8	Wall	D	Metal	Intact	White	0.0	Negative
B	B-8	Door	D	Metal	Intact	Green	0.3	Negative
B	B-8	Porcelain Sink	A	Porcelain	Intact	White	0.1	Negative
B	B-8	Door Frame	D	Metal	Intact	Green	0.2	Negative
B	B-8	Lower Cabinet	A	Wood	Intact	White	0.1	Negative
B	B-9	Wall	A	Metal	Intact	White	0.3	Negative
B	B-9	Wall	B	Metal	Intact	White	0.2	Negative

The HUD/EPA action level for lead-based paint is 1.0 mg/cm2.
Negative readings are below LOD for XRF

FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb (mg/cm2)	Results
B	B-9	Wall	D	Metal	Intact	White	0.0	Negative
B	B-9	Door	D	Metal	Intact	Green	0.1	Negative
B	B-9	Porcelain Sink	A	Porcelain	Intact	White	0.3	Negative
B	B-9	Door Frame	D	Metal	Intact	Green	0.2	Negative
B	B-9	Lower Cabinet	A	Wood	Intact	White	0.2	Negative
B	Boys' RR	Wall	A	Plaster	Intact	White	0.0	Negative
B	Boys' RR	Wall	B	Plaster	Intact	White	0.0	Negative
B	Boys' RR	Wall	C	Plaster	Intact	White	0.0	Negative
B	Boys' RR	Wall	D	Plaster	Intact	White	0.0	Negative
B	Boys' RR	Door	D	Metal	Intact	Green	0.0	Negative
B	**Boys' RR**	**Porcelain Sinks**	**B**	**Porcelain**	**Intact**	**White**	**31.1**	**Positive**
B	Boys' RR	Door Frame	D	Wood	Intact	Green	0.0	Negative
B	Boys' RR	Porcelain Toilets	B	Porcelain	Intact	White	0.0	Negative
B	**Boys' RR**	**Window Frame**	**C**	**Wood**	**Defective**	**White**	**6.0**	**Positive**
B	Boys' RR	Porcelain Urinals	D	Porcelain	Intact	White	0.0	Negative
B	**Boys' RR**	**Ceramic Tile**	**A**	**Ceramic Tile**	**Intact**	**Grey**	**3.8**	**Positive**
B	Boys' RR	Ceramic Floor Tile	N/A	Ceramic Tile	Intact	Beige	0.0	Negative
B	Girls' RR	Wall	A	Plaster	Intact	White	0.3	Negative
B	Girls' RR	Wall	B	Plaster	Intact	White	0.4	Negative
B	Girls' RR	Wall	C	Plaster	Intact	White	0.1	Negative
B	Girls' RR	Wall	D	Plaster	Intact	White	0.2	Negative
B	Girls' RR	Door	C	Metal	Intact	Green	0.3	Negative
B	**Girls' RR**	**Porcelain Sinks**	**D**	**Porcelain**	**Intact**	**White**	**26.8**	**Positive**
B	**Girls' RR**	**Door Frame**	**C**	**Wood**	**Intact**	**White**	**3.3**	**Positive**
B	Girls' RR	Door Frame	C	Wood	Intact	Green	0.4	Negative
B	**Girls' RR**	**Window Frame**	**C**	**Wood**	**Intact**	**White**	**5.6**	**Positive**
B	**Girls' RR**	**Ceramic Tile**	**D**	**Ceramic Tile**	**Intact**	**Peach/Grey**	**6.3**	**Positive**
B1-B6/Boys' RR/Office	Exterior	Wall	A	Stucco	Defective	White	0.0	Negative
B1-B6/Boys' RR/Office	Exterior	Wall	B	Stucco	Defective	White	0.0	Negative
B1-B6/Boys' RR/Office	Exterior	Wall	C	Stucco	Defective	White	0.0	Negative
B1-B6/Boys' RR/Office	Exterior	Wall	D	Stucco	Defective	White	0.0	Negative
B1-B6/Boys' RR/Office	**Exterior**	**Door**	**C**	**Wood**	**Defective**	**Green**	**4.1**	**Positive**
B1-B6/Boys' RR/Office	**Exterior**	**Door**	**D**	**Wood**	**Intact**	**Green**	**3.9**	**Positive**
B1-B6/Boys' RR/Office	**Exterior**	**Drinking Fountain**	**C**	**Porcelain**	**Intact**	**White**	**22.2**	**Positive**
B1-B6/Boys' RR/Office	**Exterior**	**Door Frame**	**C**	**Wood**	**Defective**	**Green**	**7.1**	**Positive**

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FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
B1-B6/Boys' RR/Office	Exterior	Door Frame	D	Wood	Intact	Green	8.6	Positive
B1-B6/Boys' RR/Office	Exterior	Window Frame, Boys' RR	C	Wood	Intact	Green	7.5	Positive
B1-B6/Boys' RR/Office	Exterior	Support Column	C	Metal	Intact	Green	1.7	Positive
B1-B6/Boys' RR/Office	Exterior	Eaves	D	Wood	Intact	White	5.0	Positive
B1-B6/Boys' RR/Office	Exterior	Fascia	D	Wood	Intact	Green	5.1	Positive
B1-B6/Boys' RR/Office	Exterior	Joists	D	Wood	Intact	White	5.2	Positive
B7-B10	Exterior	Wall	A	Metal	Intact	White	0.2	Negative
B7-B10	Exterior	Wall	B	Metal	Intact	White	0.1	Negative
B7-B10	Exterior	Wall	C	Metal	Intact	White	0.0	Negative
B7-B10	Exterior	Wall	D	Metal	Intact	White	0.1	Negative
B7-B10	Exterior	Door	B	Metal	Intact	Green	0.0	Negative
B7-B10	Exterior	Support Column	D	Metal	Defective	Green	1.5	Positive
B7-B10	Exterior	Door Frame	B	Metal	Intact	Green	0.0	Negative
B7-B10	Exterior	Roof Point	N/A	Unlisted	Defective	Silver	0.2	Negative
C	Boys' RR	Wall	A	Plaster	Intact	Yellow	0.1	Negative
C	Boys' RR	Wall	B	Plaster	Intact	Yellow	0.1	Negative
C	Boys' RR	Wall	C	Plaster	Intact	Yellow	0.0	Negative
C	Boys' RR	Wall	D	Plaster	Intact	Yellow	0.2	Negative
C	Boys' RR	Door	C	Metal	Intact	White	0.1	Negative
C	Boys' RR	Porcelain Sink	D	Porcelain	Intact	White	28.8	Positive
C	Boys' RR	Door Frame	C	Metal	Intact	White	0.1	Negative
C	Boys' RR	Toilet	D	Metal	Intact	White	0.0	Negative
C	Boys' RR	Ceramic Wall Tile	A/B/D	Ceramic Tile	Intact	Peach/Grey	0.0	Negative
C	Boys' RR	Ceramic Floor Tile	N/A	Ceramic Tile	Intact	Beige	0.1	Negative
C	C-1	Wall	A	Plaster	intact	White	0.1	Negative
C	C-1	Wall	B	Plaster	intact	White	0.0	Negative
C	C-1	Wall	C	Plaster	intact	White	0.1	Negative
C	C-1	Wall	D	Plaster	intact	White	0.1	Negative
C	C-1	Door	D	Wood	intact	Green	0.2	Negative
C	C-1	Porcelain Sink	A	Porcelain	Intact	White	30.8	Positive
C	C-1	Door Frame	D	Wood	Intact	Green	4.8	Positive
C	C-1	Lower Cabinet	A	Wood	intact	White	0.1	Negative
C	C-1	Ceramic Sink Tile	A	Ceramic Tile	intact	Red	24.0	Positive
C	C-2	Wall	A	Plaster	intact	White	0.1	Negative
C	C-2	Wall	B	Plaster	intact	White	0.1	Negative

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FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
C	C-2	Wall	C	Plaster	intact	White	0.2	Negative
C	C-2	Wall	D	Plaster	intact	White	0.2	Negative
C	C-2	Baseboard	A	Wood	Intact	White	0.1	Negative
C	C-2	Door	C	Wood	intact	Brown	0.0	Negative
C	**C-2**	**Porcelain Sink**	**A**	**Porcelain**	**intact**	**White**	**32.8**	**Positive**
C	C-2	Door Frame	C	Wood	intact	Brown	0.1	Negative
C	C-2	Chalkboard Frame	C	Wood	Intact	White	0.0	Negative
C	C-2	Upper Cabinet	A	Wood	Intact	Red	0.2	Negative
C	C-2	Lower Cabinet	A	Wood	intact	Red	0.1	Negative
C	**C-2**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**Red**	**22.6**	**Positive**
C	C-3	Wall	A	Plaster	intact	White	0.0	Negative
C	C-3	Wall	B	Plaster	intact	White	0.0	Negative
C	C-3	Wall	C	Plaster	intact	White	0.0	Negative
C	C-3	Wall	D	Plaster	intact	White	0.0	Negative
C	C-3	Door	C	Wood	intact	Brown	0.0	Negative
C	**C-3**	**Porcelain Sink**	**A**	**Porcelain**	**intact**	**White**	**34.4**	**Positive**
C	C-3	Door Frame	C	Wood	intact	Brown	0.0	Negative
C	C-3	Chalkboard Frame	C	Wood	Intact	White	0.0	Negative
C	C-3	Lower Cabinet	A	Wood	intact	Red	0.0	Negative
C	**C-3**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**intact**	**Red**	**23.1**	**Positive**
C	C-4	Wall	A	Plaster	intact	White	0.1	Negative
C	C-4	Wall	B	Plaster	intact	White	0.0	Negative
C	C-4	Wall	C	Plaster	intact	White	0.0	Negative
C	C-4	Wall	D	Plaster	intact	White	0.1	Negative
C	C-4	Door	D	Wood	intact	Green	0.2	Negative
C	**C-4**	**Porcelain Sink**	**A**	**Porcelain**	**intact**	**White**	**32.8**	**Positive**
C	**C-4**	**Door Frame**	**D**	**Wood**	**intact**	**Green**	**6.2**	**Positive**
C	C-4	Lower Cabinet	A	Wood	intact	White	0.1	Negative
C	**C-4**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**intact**	**Red**	**22.0**	**Positive**
C	C-5	Wall	A	Plaster	intact	White	0.0	Negative
C	C-5	Wall	B	Plaster	intact	White	0.0	Negative
C	C-5	Wall	C	Plaster	intact	White	0.0	Negative
C	C-5	Wall	D	Plaster	intact	White	0.0	Negative
C	C-5	Door	D	Wood	intact	Green	0.3	Negative
C	**C-5**	**Porcelain Sink**	**A**	**Porcelain**	**intact**	**White**	**34.4**	**Positive**

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FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
C	**C-5**	**Door Frame**	**D**	**Wood**	**Intact**	**Green**	**6.8**	**Positive**
C	C-5	Lower Cabinet	A	Wood	intact	White	0.0	Negative
C	**C-5**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**Red**	**23.1**	**Positive**
C	C-6	Wall	A	Plaster	Intact	White	0.0	Negative
C	C-6	Wall	B	Plaster	Intact	White	0.0	Negative
C	C-6	Wall	C	Plaster	Intact	White	0.0	Negative
C	C-6	Wall	D	Plaster	Intact	White	0.0	Negative
C	C-6	Door	D	Metal	Intact	Green	0.4	Negative
C	C-6	Door Frame	D	Metal	Intact	Green	0.6	Negative
C	**C-6**	**Window Frame**	**B**	**Wood**	**Intact**	**White**	**2.6**	**Positive**
C	C-6	Lower Cabinet	A	Wood	Intact	White	0.0	Negative
C	C-7	Wall	A	Plaster	Intact	White	0.0	Negative
C	C-7	Wall	B	Plaster	Intact	White	0.1	Negative
C	C-7	Wall	C	Plaster	Intact	White	0.0	Negative
C	C-7	Wall	D	Plaster	Intact	White	0.1	Negative
C	C-7	Door	D	Metal	Intact	Green	0.2	Negative
C	C-7	Door Frame	D	Metal	Intact	Green	0.4	Negative
C	**C-7**	**Window Frame**	**B**	**Wood**	**Intact**	**White**	**2.8**	**Positive**
C	C-7	Lower Cabinet	A	Wood	Intact	White	0.1	Negative
C	**C-7**	**Porcelain Sink**	**A**	**Porcelain**	**Intact**	**White**	**38.8**	**Positive**
C	Girls' RR	Wall	A	Plaster	Intact	Yellow	0.0	Negative
C	Girls' RR	Wall	B	Plaster	Intact	Yellow	0.1	Negative
C	Girls' RR	Wall	C	Plaster	Intact	Yellow	0.0	Negative
C	Girls' RR	Wall	D	Plaster	Intact	Yellow	0.1	Negative
C	Girls' RR	Door	C	Metal	Intact	White	0.0	Negative
C	**Girls' RR**	**Porcelain Sink**	**D**	**Porcelain**	**Intact**	**White**	**30.4**	**Positive**
C	Girls' RR	Door Frame	C	Metal	Intact	White	0.0	Negative
C	Girls' RR	Toilet	D	Metal	Intact	White	0.0	Negative
C	Girls' RR	Ceramic Wall Tile	A/B/D	Ceramic Tile	Intact	Grey/Green	0.0	Negative
C	Girls' RR	Ceramic Floor Tile	N/A	Ceramic Tile	Intact	Beige	0.0	Negative
C1-C5	Exterior	Wall	A	Stucco	Intact	White	0.1	Negative
C1-C5	Exterior	Wall	B	Stucco	Intact	White	0.2	Negative
C1-C5	Exterior	Wall	C	Stucco	Intact	White	0.1	Negative
C1-C5	Exterior	Wall	D	Stucco	Intact	White	0.0	Negative
C1-C5	Exterior	Door	B	Metal	Intact	Green	0.0	Negative

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FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
C1-C5	Exterior	Door	A	Wood	Intact	Green	1.2	Positive
C1-C5	Exterior	Door Frame	B	Wood	Intact	Green	6.8	Positive
C1-C5	Exterior	Door Frame	A	Wood	Intact	Green	9.2	Positive
C1-C5	Exterior	Window Frame	A	Wood	Intact	Green	8.8	Positive
C1-C5	Exterior	Eaves	B	Wood	Intact	White	5.2	Positive
C1-C5	Exterior	Fascia	B	Wood	Intact	Green	5.0	Positive
C1-C5	Exterior	Joists	B	Wood	Intact	White	5.4	Positive
C1-C5	Exterior	Downspout	B	Metal	Intact	White	7.0	Positive
C6-C7	Exterior	Wall	A	Stucco	Intact	White	0.2	Negative
C6-C7	Exterior	Wall	B	Stucco	Intact	White	0.0	Negative
C6-C7	Exterior	Wall	C	Stucco	Intact	White	0.0	Negative
C6-C7	Exterior	Wall	D	Stucco	Intact	White	0.0	Negative
C6-C7	Exterior	Door	D	Metal	Intact	Green	1.3	Positive
C6-C7	Exterior	Support Column	A	Metal	Intact	Green	1.2	Positive
C6-C7	Exterior	Door Frame	D	Metal	Intact	Green	1.7	Positive
C6-C7	Exterior	Support Beam	N/A	Metal	Intact	White	1.2	Positive
C6-C7	Exterior	Eaves	B	Wood	Intact	White	1.2	Positive
C6-C7	Exterior	Fascia	B	Wood	Intact	Green	1.2	Positive
C6-C7	Exterior	Joists	B	Metal	Intact	White	1.2	Positive
C6-C7	Exterior	Porch Ceiling	N/A	Metal	Intact	White	0.2	Negative
D	D-1	Wall	A	Metal	Intact	White	0.0	Negative
D	D-1	Wall	B	Metal	Intact	White	0.1	Negative
D	D-1	Wall	C	Metal	Intact	White	0.0	Negative
D	D-1	Wall	D	Metal	Intact	White	0.0	Negative
D	D-1	Door	D	Metal	Intact	Green	0.0	Negative
D	D-1	Door Frame	D	Metal	Intact	Green	0.0	Negative
D	D-1	Lower Cabinet	A	Wood	Intact	White	0.0	Negative
D	D-2	Wall	A	Metal	Intact	White	0.0	Negative
D	D-2	Wall	B	Metal	Intact	White	0.1	Negative
D	D-2	Wall	C	Metal	Intact	White	0.0	Negative
D	D-2	Wall	D	Metal	Intact	White	0.0	Negative
D	D-2	Door	D	Metal	Intact	Green	0.0	Negative
D	D-2	Door Frame	D	Metal	Intact	Green	0.0	Negative
D	D-2	Chalkboard Frame	A	Wood	Intact	White	0.0	Negative
D	D-2	Lower Cabinet	A	Wood	Intact	White	0.0	Negative

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FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
D	D-3	Wall	A	Metal	Intact	White	0.1	Negative
D	D-3	Wall	B	Metal	Intact	White	0.1	Negative
D	D-3	Wall	C	Metal	Intact	White	0.2	Negative
D	D-3	Wall	D	Metal	Intact	White	0.0	Negative
D	D-3	Door	D	Metal	Intact	Green	0.2	Negative
D	D-3	Door Frame	D	Metal	Intact	Green	0.0	Negative
D	D-3	Lower Cabinet	A	Wood	Intact	White	0.1	Negative
D	D-4	Wall	A	Metal	Intact	White	0.0	Negative
D	D-4	Wall	B	Metal	Intact	White	0.1	Negative
D	D-4	Wall	C	Metal	Intact	White	0.0	Negative
D	D-4	Wall	D	Metal	Intact	White	0.0	Negative
D	D-4	Door	D	Metal	Intact	Green	0.0	Negative
D	D-4	Door Frame	D	Metal	Intact	Green	0.0	Negative
D	D-4	Lower Cabinet	A	Wood	Intact	White	0.0	Negative
D	**D-4**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**White**	**37.5**	**Positive**
D	Exterior	Wall	A	Metal	Intact	White	0.1	Negative
D	Exterior	Wall	B	Metal	Intact	White	0.1	Negative
D	Exterior	Wall	C	Metal	Intact	White	0.2	Negative
D	Exterior	Wall	D	Metal	Intact	White	0.1	Negative
D	Exterior	Door	B	Metal	Intact	Green	0.2	Negative
D	**Exterior**	**Support Column**	**D**	**Metal**	**Defective**	**Green**	**1.4**	**Positive**
D	Exterior	Door Frame	B	Metal	Intact	Green	0.1	Negative
D	Exterior	Roof Point	N/A	Unlisted	Defective	Silver	0.0	Negative
E	E-1	Wall	A	Metal	Intact	White	0.1	Negative
E	E-1	Wall	B	Metal	Intact	White	0.0	Negative
E	E-1	Wall	C	Metal	Intact	White	0.1	Negative
E	E-1	Wall	D	Metal	Intact	White	0.1	Negative
E	E-1	Door	D	Metal	Intact	Green	0.2	Negative
E	E-1	Chalkboard Frame	A	Wood	Intact	White	0.3	Negative
E	E-1	Door Frame	D	Metal	Intact	Green	0.2	Negative
E	E-1	Lower Cabinet	A	Wood	Intact	White	0.0	Negative
E	E-2	Wall	A	Metal	Intact	White	0.1	Negative
E	E-2	Wall	B	Metal	Intact	White	0.1	Negative
E	E-2	Wall	C	Metal	Intact	White	0.2	Negative
E	E-2	Wall	D	Metal	Intact	White	0.0	Negative

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FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb(mg/cm2)	Results
E	E-2	Door	D	Metal	Intact	Green	0.3	Negative
E	E-2	Door Frame	D	Metal	Intact	Green	0.2	Negative
E	E-2	Lower Cabinet	A	Wood	Intact	White	0.1	Negative
E	**E-2**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**White**	**34.8**	**Positive**
E	E-3	Wall	A	Metal	Intact	White	0.0	Negative
E	E-3	Wall	B	Metal	Intact	White	0.0	Negative
E	E-3	Wall	C	Metal	Intact	White	0.0	Negative
E	E-3	Wall	D	Metal	Intact	White	0.1	Negative
E	E-3	Door	D	Metal	Intact	Green	0.0	Negative
E	E-3	Chalkboard Frame	A	Wood	Intact	White	0.0	Negative
E	E-3	Door Frame	D	Metal	Intact	Green	0.2	Negative
E	E-3	Lower Cabinet	A	Wood	Intact	White	0.0	Negative
E	E-4	Wall	A	Metal	Intact	White	0.2	Negative
E	E-4	Wall	B	Metal	Intact	White	0.1	Negative
E	E-4	Wall	C	Metal	Intact	White	0.1	Negative
E	E-4	Wall	D	Metal	Intact	White	0.0	Negative
E	E-4	Door	D	Metal	Intact	Green	0.3	Negative
E	E-4	Door Frame	D	Metal	Intact	Green	0.0	Negative
E	E-4	Lower Cabinet	A	Wood	Intact	White	0.2	Negative
E	**E-4**	**Ceramic Sink Tile**	**A**	**Ceramic Tile**	**Intact**	**White**	**33.2**	**Positive**
E	Exterior	Wall	A	Metal	Intact	White	0.0	Negative
E	Exterior	Wall	B	Metal	Intact	White	0.2	Negative
E	Exterior	Wall	C	Metal	Intact	White	0.1	Negative
E	Exterior	Wall	D	Metal	Intact	White	0.0	Negative
E	Exterior	Door	B	Metal	Intact	Green	0.2	Negative
E	**Exterior**	**Support Column**	**D**	**Metal**	**Defective**	**Green**	**1.8**	**Positive**
E	Exterior	Door Frame	B	Metal	Intact	Green	0.1	Negative
E	Exterior	Roof Point	N/A	Unlisted	Defective	Silver	0.1	Negative
G	Boys' RR	Wall	A	Metal	Intact	White	0.0	Negative
G	Boys' RR	Wall	B	Metal	Intact	White	0.1	Negative
G	Boys' RR	Wall	C	Metal	Intact	White	0.0	Negative
G	Boys' RR	Wall	D	Metal	Intact	White	0.1	Negative
G	Boys' RR	Door	A	Wood	Intact	Brown	0.1	Negative
G	**Boys' RR**	**Porcelain Sink**	**C**	**Porcelain**	**Intact**	**White**	**20.2**	**Positive**
G	Boys' RR	Door Frame	A	Metal	Intact	Brown	0.4	Negative

The HUD/EPA action level for lead-based paint is 1.0 mg/cm2.
Negative readings are below LOD for XRF

FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb (mg/cm2)	Results
G	Boys' RR	Lower Cabinet	C	Wood	Intact	Brown	0.1	Negative
G	Boys' RR	Porcelain Toilet	C	Porcelain	Intact	White	0.2	Negative
G	**Boys' RR**	**Porcelain Sink**	**C**	**Porcelain**	**Intact**	**White**	**36.4**	**Positive**
G	G-1	Wall	A	Metal	Intact	White	0.0	Negative
G	G-1	Wall	B	Metal	Intact	White	0.2	Negative
G	G-1	Wall	C	Metal	Intact	White	0.2	Negative
G	G-1	Wall	D	Metal	Intact	White	0.1	Negative
G	G-1	Door	B	Metal	Intact	Green	0.4	Negative
G	G-1	Door Frame	B	Metal	Intact	Green	0.5	Negative
G	Girls' RR	Wall	A	Metal	Intact	White	0.0	Negative
G	Girls' RR	Wall	B	Metal	Intact	White	0.0	Negative
G	Girls' RR	Wall	C	Metal	Intact	White	0.1	Negative
G	Girls' RR	Wall	D	Metal	Intact	White	0.0	Negative
G	Girls' RR	Door	A	Wood	Intact	Brown	0.0	Negative
G	**Girls' RR**	**Porcelain Sink**	**C**	**Porcelain**	**Intact**	**White**	**20.8**	**Positive**
G	Girls' RR	Door Frame	A	Metal	Intact	Brown	0.5	Negative
G	Girls' RR	Partition	N/A	Wood	Intact	Brown	0.0	Negative
G	Girls' RR	Lower Cabinet	C	Wood	Intact	Brown	0.0	Negative
G	Girls' RR	Porcelain Toilet	C	Porcelain	Intact	White	0.0	Negative
G	**Girls' RR**	**Porcelain Sink**	**C**	**Porcelain**	**Intact**	**White**	**38.2**	**Positive**
G	Teachers' Rm	Wall	A	Metal	Intact	White	0.1	Negative
G	Teachers' Rm	Wall	B	Metal	Intact	White	0.1	Negative
G	Teachers' Rm	Wall	C	Metal	Intact	White	0.0	Negative
G	Teachers' Rm	Wall	D	Metal	Intact	White	0.0	Negative
G	Teachers' Rm	Door	A	Wood	Intact	Brown	0.4	Negative
G	Teachers' Rm	Door Frame	A	Metal	Intact	Brown	0.0	Negative
G1	Exterior	Wall	A	Metal	Intact	White	0.0	Negative
G1	Exterior	Wall	B	Metal	Intact	White	0.0	Negative
G1	Exterior	Wall	C	Metal	Intact	White	0.0	Negative
G1	Exterior	Wall	D	Metal	Intact	White	0.0	Negative
G1	Exterior	Door	B	Metal	Intact	Green	0.0	Negative
G1	Exterior	Door Frame	B	Metal	Intact	Green	0.0	Negative
G1	Exterior	Eaves	B	Metal	Intact	White	0.0	Negative
G1	Exterior	Fascia	B	Metal	Intact	White	0.1	Negative
G1	Exterior	Joists	B	Metal	Intact	White	0.1	Negative

The HUD/EPA action level for lead-based paint is 1.0 mg/cm2.
Negative readings are below LOD for XRF

FIELD DATA REPORT

PROJECT NAME: SBCUSD Warm Springs

PROJECT NO.: 08171

Building	Area	Component	Location	Substrate	Condition	Color	Pb (mg/cm2)	Results
M.U.	M.U.	Wall	A	Plaster	Intact	White	2.8	Positive
M.U.	M.U.	Wall	B	Plaster	Intact	White	3.1	Positive
M.U.	M.U.	Wall	C	Plaster	Intact	White	2.9	Positive
M.U.	M.U.	Wall	D	Plaster	Intact	White	3.4	Positive
M.U.	M.U.	Door	D	Metal	Intact	Green	0.0	Negative
M.U.	M.U.	Door Frame	D	Wood	Intact	Green	2.3	Positive
M.U.	M.U.	Window Frame	B	Wood	Intact	White	0.0	Negative
M.U.	M.U.	Window Frame	D	Wood	Intact	White	2.0	Positive
M.U.	M.U.	Ceramic Wall Tile	A/D	Ceramic Tile	Intact	White	5.8	Positive
M.U.	M.U. RR	Door	C	Wood	Intact	Red	0.0	Negative
M.U.	M.U. RR	Door	A	Metal	Intact	Green	0.1	Negative
M.U.	M.U. RR	Door Frame	C	Wood	Intact	Red	0.0	Negative
M.U.	M.U. RR	Door Frame	A	Wood	Intact	Green	0.0	Negative
M.U.	M.U. RR	Ceramic Wall Tile	A/B/C/D	Ceramic Tile	Intact	White	0.0	Negative
M.U.	MU 1 1/2	Upper Cabinet	C	Wood	Intact	Red	0.0	Negative
M.U.	MU 1 1/2	Lower Cabinet	C	Wood	Intact	Red	0.0	Negative
MU	Exterior	Wall	A	Concrete	Intact	White	1.2	Positive
MU	Exterior	Wall	B	Concrete	Intact	White	1.2	Positive
MU	Exterior	Wall	C	Concrete	Intact	White	1.2	Positive
MU	Exterior	Wall	D	Concrete	Intact	White	1.2	Positive
MU	Exterior	Door	D	Wood	Intact	Green	0.0	Negative
MU	Exterior	Door Frame	D	Wood	Intact	Green	6.5	Positive
MU	Exterior	Window Frame	D	Wood	Intact	Green	5.7	Positive
MU	Exterior	Eaves	D	Wood	Intact	White	2.2	Positive
MU	Exterior	Fascia	D	Metal	Intact	Green	1.2	Positive
MU	Exterior	Joists	D	Wood	Intact	White	2.0	Positive
MU	Exterior	Support Column	D	Wood	Intact	Green	1.2	Positive

The HUD/EPA action level for lead-based paint is 1.0 mg/cm2.
Negative readings are below LOD for XRF

Appendix E

DHS Form 8552

LEAD HAZARD EVALUATION REPORT

Section 1—Date of Lead Hazard Evaluation 07/11/08

Section 2—Type of Lead Hazard Evaluation (Check one box only)

☑ Lead inspection ☐ Risk assessment ☐ Clearance inspection ☐ Other (specify) _____

Section 3—Structure Where Lead Hazard Evaluation Was Conducted

Address (number, street, apartment (if applicable))	City	County	ZIP code
Warm Springs ES 7497 Sterling Avenue	San Bernardino	San Bernardino	92410

Construction date (year) of structure	Type of structure (check one box only)
01/01/60	☐ Single family dwelling ☐ Multi-unit building ☐ Child-occupied facility ☑ Other (specify) School

Section 4—Owner of Structure (If business/agency, list contact person)

Name	Telephone number
San Bernardino City Unified School District	(909) 381-1238

Address (number, street, apartment (if applicable))	City	State	ZIP code
1362 Pacific Street	San Bernardino	California	92401

Section 5—Results of Lead Hazard Evaluation (Check one box only)

☐ **No lead-based paint detected.**
A lead inspection was conducted following the procedures outlined in Title 17, California Code of Regulations, Division 1, Chapter 8. No lead-based paint was detected during this lead inspection. This structure is found to be lead-based paint free.

☐ **No lead hazards detected.**
Lead hazard evaluation was conducted following the procedures outlined in Title 17, California Code of Regulations, Division 1, Chapter 8. No lead hazards were detected.

☑ **Lead-based paint and/or lead hazards detected.**
Lead hazard evaluation was conducted following the procedures outlined in Title 17, California Code of Regulations, Division 1, Chapter 8. Lead-based paint and/or lead hazards were detected.

Section 6—Individual Conducting Lead Hazard Evaluation

Name	Telephone number
David Tillema/Pacific Environmental	(800) 303-6484

Address (number, street, apartment (if applicable))	City	State	ZIP code
28202 Cabot Road, Suite 300	Laguna Niguel	California	92677

Brand name and serial number of any portable x-ray fluorescence (XRF) instrument used (if applicable)

EDAX Map 4 Serial Number M41590

DHS certification number	Signature	Date
17740	➤	07/28/08

Section 7—Attachments

A. A foundation diagram or sketch of the structure indicating the specific locations of each lead hazard or presence of lead-based paint;

B. Each testing method, device, and sampling procedure used;

C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector *Second copy and attachments retained by owner*

Third copy only (no attachments) mailed to:
Department of Health Services
Childhood Lead Poisoning Prevention Branch
Reports
1515 Clay Street, No. 1801
Oakland, CA 94612
FAX (510) 622-5002

Appendix F

XRF Performance Characteristics Sheet

Performance Characteristic Sheet

EFFECTIVE DATE: June 26, 1996 **EDITION NO.: 3**

MANUFACTURER AND MODEL:

Make: *Scitec Corporation*
Model: *MAP-4*
Source: ^{57}Co
Note: This sheet supersedes all previous sheets for the XRF instrument of the make, model, and source shown above.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS

Test mode, Screen mode, or Unlimited mode.

XRF CALIBRATION CHECK LIMITS

0.6 to 1.2 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

When using Unlimited mode, substrate correction recommended for:

None

When using Unlimited mode, substrate correction not recommended for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

When using Screen or Test mode, for XRF results below 4.0 mg/cm^2, substrate correction recommended for:

Drywall, Metal, and Wood

When using Screen or Test mode, substrate correction not recommended for:

Brick, Concrete, and Plaster

INCONCLUSIVE RANGE OR THRESHOLD

UNLIMITED MODE READING DESCRIPTION	SUBSTRATE	INCONCLUSIVE RANGE (mg/cm^2)
Results not corrected for substrate bias for unlimited mode readings	Brick	0.91 to 1.19
	Concrete	0.91 to 1.19
	Drywall	0.91 to 1.19
	Metal	0.91 to 1.19
	Plaster	0.91 to 1.19
	Wood	0.91 to 1.19

SCREEN MODE READING DESCRIPTION	SUBSTRATE	INCONCLUSIVE RANGE (mg/cm²)
Results corrected for substrate bias for screen mode readings on drywall, metal, and wood substrates only	Brick	0.91 to 1.09
	Concrete	0.91 to 1.09
	Drywall	0.91 to 1.39
	Metal	0.91 to 1.19
	Plaster	0.91 to 1.09
	Wood	0.91 to 1.29

TEST MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm²)	INCONCLUSIVE RANGE (mg/cm²)
Readings corrected for substrate bias for test mode readings on drywall, metal, and wood substrates only	Brick	0.9	None
	Concrete	0.9	None
	Drywall	None	0.91 to 1.39
	Metal	None	0.91 to 1.09
	Plaster	0.9	None
	Wood	None	0.91 to 1.29

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from an EPA/HUD evaluation using archived building components. Testing was conducted on approximately 150 test locations. All of the test locations were tested in February 1996 using two different instruments. One instrument had a new source installed in July 1994 and its strength at the time of testing was calculated as 9.4 mCi. The other instrument had a new source installed in September 1994 and its strength at the time of testing was calculated as 10.6 mCi.

OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds

SUBSTRATE CORRECTION VALUE COMPUTATION

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

- Using the same XRF instrument, take three readings on a <u>bare</u> substrate area covered with the

NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.

- Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.

  For each substrate type (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):

$$\left.\begin{matrix}\text{Correction}\\ \text{Value}\end{matrix}\right\} = \frac{1^{st} + 2^{nd} + 3^{rd} + 4^{th} + 5^{th} + 6^{th}\ \text{Reading}}{6} - 1.02\,mg/cm^2$$

- Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use either 15-second readings or 60-second readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten retest XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES

For screen, test, and confirm modes, the MAP 4 instrument tests until a K-shell result is obtained relative to a level of precision. A result is "positive", "negative" or "retest" as displayed by indicator lights. For the unlimited mode, the MAP 4 instrument tests until a K-shell result is indicated relative to an action level (1.0 mg/cm ^{2} for archive testing) and the current precision, or until the the reading is terminated by releasing the trigger. A few unlimited mode readings were terminated because they exceeded the two-minute limit used for archive testing. The following tables provide testing time information for three testing modes. Insufficient information is available to provide this information for confirm mode. All times have been scaled to match an initial 12 miC source. Note that source strength and factors such as substrate may affect testing times.

UNLIMITED MODE TESTING TIMES (Seconds)

SUBSTRATE*	ALL DATA			MEDIAN FOR LABORATORY-MEASURED LEAD LEVELS (mg/cm^2)		
	25th Percentile	Median	75th Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	3	4	6	4	13	3
Metal	3	4	8	4	9	3
Brick Concrete Plaster	4	5	8	6	6	3

*The general calibration was used for wood, drywall, brick, concrete, plaster. Steel calibration was used for metal. (There are no aluminum samples in the archive facility).

SCREEN MODE TESTING TIMES (Seconds)

SUBSTRATE*	ALL DATA			MEDIAN FOR LABORATORY-MEASURED LEAD LEVELS (mg/cm^2)		
	25th Percentile	Median	75th Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	4	6	7	5	6	7
Metal	4	5	6	5	5	5
Brick Concrete Plaster	11	11	13	11	11	11

*The general calibration was used for wood, drywall, brick, concrete, plaster. Steel calibration was used for metal. (There are no aluminum samples in the archive facility).

TEST MODE TESTING TIMES (Seconds)						
SUBSTRATE	ALL DATA			MEDIAN FOR LABORATORY-MEASURED LEAD LEVELS (mg/cm²)		
	25th Percentile	Median	75th Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	17	22	27	21	20	28
Metal	13	20	23	20	20	20
Brick Concrete Plaster	41	42	52	41	46	43

*The general calibration was used for wood, drywall, brick, concrete, plaster. Steel calibration was used for metal. (There are no aluminum samples in the archive facility).

BIAS AND PRECISION

Do not use these bias and precision data to correct for substrate bias. These bias and precision data were computed without substrate correction from samples with laboratory-measured lead levels less than 4.0 mg/cm² lead. There were 15 testing locations taken in the screen mode with a laboratory-measured lead levels equal to or greater than 4.0 mg/cm² lead. None of these had XRF readings less than 1.0 mg/cm². There were 15 testing locations taken in the test mode with a laboratory-measured lead levels equal to or greater than 4.0 mg/cm² lead. None of these had XRF readings less than 1.0 mg/cm². There were not any testing locations taken in the confirm mode with a laboratory-measured lead levels equal to or greater than 4.0 mg/cm² lead. There were 15 testing locations taken in the unlimited mode with a laboratory-measured lead levels equal to or greater than 4.0 mg/cm² lead. None of these had XRF readings less than 1.0 mg/cm². All testing was done in February 1996 with two different instruments. The following data are for illustrative purposes only. Actual bias must be determined on the site. Inconclusive ranges provided above already account for bias and precision.

SCREEN MODE READING MEASURED AT	SUBSTRATE	BIAS (mg/cm²)	PRECISION* (mg/cm²)
0.0 mg/cm²	Brick	-0.1	0.3
	Concrete	-0.1	0.3
	Drywall	0.1	0.2
	Metal	0.1	0.3
	Plaster	-0.1	0.3
	Wood	0.0	0.2
0.5 mg/cm²	Brick	0.0	0.3
	Concrete	0.0	0.3
	Drywall	0.3	0.4
	Metal	0.2	0.3
	Plaster	0.0	0.3
	Wood	0.2	0.4
1.0 mg/cm²	Brick	0.1	0.4
	Concrete	0.1	0.4
	Drywall	0.5	0.6
	Metal	0.3	0.3
	Plaster	0.1	0.4
	Wood	0.4	0.6

2.0 mg/cm²	Brick	0.4	0.5
	Concrete	0.4	0.5
	Drywall	0.9	0.8
	Metal	0.5	0.3
	Plaster	0.4	0.5
	Wood	0.7	0.8
*Precision at 1 standard deviation			

TEST MODE READING MEASURED AT	SUBSTRATE	BIAS (mg/cm²)	PRECISION* (mg/cm²)
0.0 mg/cm²	Brick	-0.1	0.2
	Concrete	-0.1	0.2
	Drywall	0.1	0.1
	Metal	0.1	0.2
	Plaster	-0.1	0.2
	Wood	0.0	0.1
0.5 mg/cm²	Brick	-0.1	0.3
	Concrete	-0.1	0.3
	Drywall	0.3	0.4
	Metal	0.2	0.2
	Plaster	-0.1	0.3
	Wood	0.2	0.4
1.0 mg/cm²	Brick	-0.1	0.3
	Concrete	-0.1	0.3
	Drywall	0.5	0.6
	Metal	0.3	0.2
	Plaster	-0.1	0.3
	Wood	0.4	0.6
2.0 mg/cm²	Brick	0.0	0.4
	Concrete	0.0	0.4
	Drywall	1.0	0.8
	Metal	0.5	0.2
	Plaster	0.0	0.4
	Wood	0.8	0.8
*Precision at 1 standard deviation			

CLASSIFICATION OF RESULTS

XRF results are classified as positive if they are greater than the upper boundary of the inconclusive range, and negative if they are less than the lower boundary of the inconclusive range, or inconclusive if in between. The inconclusive range includes both its upper and lower bounds. Earlier editions of this *XRF Performance Characteristics Sheet* did not include both bounds of the inconclusive range as "inconclusive." While this edition of the Performance Characteristics Sheet uses a different system, the specific XRF readings that are considered positive, negative, or inconclusive for a given XRF model and substrate remain unchanged, so previous inspection results are not affected.

DOCUMENTATION

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristics Sheet is a joint product of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Housing and Urban Development (HUD). The issuance of this sheet does not constitute rulemaking. The information provided here is intended solely as guidance to be used in conjunction with Chapter 7, Lead-Based Paint Inspection, of the *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*. EPA and HUD reserve the right to revise this guidance. Please address questions and comments on this sheet to: Director, Office of Lead Hazard Control (L), U.S. Department of Housing and Urban Development, 451 Seventh St, S.W., Washington, DC 20410.