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ASBESTOS SURVEY REPORT

Bachelors Enlisted Quarters (ID: Building512C)

NASA-AMES
Moffett Field
Mt. View, CA

BUILDING INSPECTIONS

ENVIRONMENTAL ENGINEERING

SPECIALIZED TRAINING

CONTRACT MANAGEMENT

Prepared for:
NASA - AMES (PAI CORPORATION)
Nasa-ames Research Center
Moffett Field, CA 94035-1000

Prepared by:
Benchmark Environmental Engineering
November 14, 2001
Project Number: **E01-448-A-SU**

Prepared By:

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a California Certified Asbestos Consultant
90-2747

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a California Certified Asbestos Consultant
90-2747

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Executive Summary

Benchmark Environmental Engineering (Benchmark) was retained by NASA - Ames (PAI Corporation) to perform an Asbestos Hazard Emergency Response Act (AHERA) style asbestos survey of the Bachelors Enlisted Quarters (Building ID: Building512C), to determine the locations of accessible and to the extent feasible, inaccessible friable and non-friable asbestos containing building materials (ACBM).

This inspection included both the interior and exterior spaces. Pre-existing survey data was used to help provide a picture of existing condition of this building. Benchmark collected additional samples of the construction material to help supplement existing data, to contradict existing data or to provide additional data of materials not perviously identified.

Asbestos was detected in the following friable (or jacketed friable) materials:

- Tank Insulation

Asbestos was detected in the following non-friable materials:

- Roofing Material

Section 1 Introduction

Benchmark Environmental Engineering (Benchmark) performed an Asbestos Hazard Emergency Response Act (AHERA) style asbestos survey of the Bachelors Enlisted Quarters located at Moffett Field, Mt. View, CA, to identify ACBM. This report identifies the locations and asbestos content of friable and non-friable ACBM, provides assessment of the friable ACBM in relation to the material's hazard potential to building occupants and provides removal cost estimates.

This inspection included both the interior and exterior spaces. Pre-existing survey data was used to help provide a picture of existing condition of this building. Benchmark collected additional samples of the construction material to help supplement existing data, to contradict existing data or to provide additional data of materials not perviously identified.

All identified suspect asbestos-containing materials are summarized in Section 3. Materials testing positive for asbestos including material assessments, recommended response actions, and quantities are described in Section 4. Removal cost estimates for asbestos-containing materials are included in Section 5.

Removal cost estimates (Section 5) are for budgeting purposes only and should not be used as a quote for removal of the materials. It is not our recommendation to remove these materials unless they are beyond repair, or planned demolition or renovation activities will disturb the materials. Estimates are based on recent pricing we have received from contractors performing similar work and may vary from actual prices obtained due to the actual scope of work, quantity of material removed, control measures specified and contractor work loads.

On Thursday, July 19, 2001 Terri MacFarlane (90-2747) , a California Certified Asbestos Consultant and Roy J. Mabus (92-0191) , a California Certified Asbestos Consultant, from Benchmark, performed an asbestos survey of the building(s) in accordance with the Asbestos Hazard and Emergency Response Act of 1987 (AHERA).

DISCLAIMER

This report is prepared for the express use and benefit of NASA - Ames (PAI Corportation), its agents and employees. The information in this report or portions thereof may be required to be included in notifications to employees, contractors or other visitors to the building(s). This report is not intended to be used as a specification or work plan for any of the work suggested or recommended in this report.

This report is based upon conditions observed at the property and information made available to the surveyor. This report does not intend to identify all hazards or unsafe

conditions, nor to indicate that other hazards or unsafe conditions do not exist at the premises.

Section 2 Description of Building Construction and Systems

Number of Floors: 3

Year Built: 1970

Structural components consist of: Concrete Foundation

Exterior Wall construction components consist of: Concrete

Interior Wall construction components consist of: Drywall

Interior ceiling components consist of: Ceiling Tile

Roofing construction components consist of: Rolled Composite

Building Description/Comments:

This is a three-story concrete frame building over a concrete foundation. The grey exterior is concrete block. It has a flat composite roof. This building is unoccupied because of earthquake damage.

Comments:

There was a previous asbestos survey done by Tetra Tech, inc. in July of 1993.

Section 3 Summary of Findings for Suspect Materials

The following table is a list of all materials at this building which were tested for the presence of asbestos or were assumed to contain asbestos along with overall sample results. Complete information on asbestos containing materials is included in Section 4 of this report.

Each unique material within the building is assigned a unique HM number by the surveyor at the time the survey is performed.

Section 3 and Section 4 are organized by building, surfacing, thermal systems insulation, flooring, walls, ceilings, roofing and miscellaneous materials.

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)
Moffett Field
Mt. View, CA

Client Information

NASA - Ames (PAI Corporation)
NASA-Ames Research Center
Moffett Field, CA 94035-1000

Survey Performed By

Benchmark Environmental Engineering

Inspector

Terri MacFarlane

Inspection Date

Thursday, July 19, 2001

Job Number

E01-448-A-SU

<i>Suspect Material</i>	<i>Category</i>	<i>HM Number</i>	<i>Material Location(s)</i>	<i>Asbestos Present?</i>
12" White Ceiling Tile	Ceilings	CT-1		No
Ceiling Tile Mastic	Miscellaneous	MASTIC-2		No
Coving Mastic	Miscellaneous	MASTIC-3		No
Wallboard		WLBD-4		No
12 x 12 White Floor Tile	Flooring	FT-5		No
Floor Tile Mastic	Miscellaneous	MASTIC-6		No
Tank Insulation	TSI	TI-11		Yes
4" pipe run TSI Pipe Insulation	TSI	PI-12		No
6" TSI Pipe Elbows	TSI	PE-13		No
Roofing Material	Roofing	RM-14	ROOF	Yes
1" TSI Pipe Elbows	TSI	PE-15		No
Bottom Layer, Below 12 x 12 Floor	Flooring	FT-16		No

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)
Moffett Field
Mt. View, CA

Client Information

NASA - Ames (PAI Corporation)
NASA-Ames Research Center
Moffett Field, CA 94035-1000

Survey Performed By

Benchmark Environmental Engineering

Inspector

Terri MacFarlane

Inspection Date

Thursday, July 19, 2001

Job Number

E01-448-A-SU

Material Description

12" White Ceiling Tile

Material Number

CT-1

Asbestos Present?

No

Material Category

Ceilings

Friable Classification

Friable

EPA Category

Friable

Total Quantity

Unit of Measure

Square Feet

General Condition

Damage Category

Overall Material Assessment

No Assessment, Non-asbestos

Recommended Response

General Material Comments

Material Location(s)

Sample ID(s)

ct-1-512-H01-A

Sample Location(s)

Floor

Analyzed

Yes

Overall Result

0%

Layer(s) Reported by Lab

1) Ceiling Tile
2)
3)

Results by Layer

Non Detected

Material Description

Ceiling Tile Mastic

Material Number

MASTIC-2

Asbestos Present?

No

Material Category

Miscellaneous

Friable Classification

Non-Friable

EPA Category

Category II

Total Quantity

Unit of Measure

Square Feet

General Condition

Damage Category

Overall Material Assessment

No Assessment, Non-asbestos

Recommended Response

General Material Comments

Material Location(s)

Sample ID(s)

MASTIC-2-01-4613-512C-1

Sample Location(s)

Main Lobby, West

Floor

Analyzed

Yes

Overall Result

0%

Layer(s) Reported by Lab

1) Mastic
2)
3)

Results by Layer

Non Detected

MASTIC-2-01-4614-512C-2

Main Lobby, East

Yes

0%

1) Mastic
2)
3)

Non Detected

MASTIC-2-01-4615-512C-3

Main Lobby

Yes

0%

1) Mastic
2)
3)

Non Detected

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description Coving Mastic			Material Number MASTIC-3	Asbestos Present? No
Material Category Miscellaneous	Friable Classification Non-Friable	EPA Category Category II	Total Quantity	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	

General Material Comments

Material Location(s)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
MASTIC-3-01-4616-512C-4	Office, Behind Counter		Yes	0%	1) Mastic 2) 3)	Non Detected
MASTIC-3-01-4617-512C-5	Main Lobby, East		Yes	0%	1) Mastic 2) 3)	Non Detected
MASTIC-3-01-4618-512C-6	Office, Across From Bathroom		Yes	0%	1) Mastic 2) 3)	Non Detected

Material Description Wallboard			Material Number WLBD-4	Asbestos Present? No
Material Category	Friable Classification Non-Friable	EPA Category Category II	Total Quantity	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	

General Material Comments

Material Location(s)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
WLBD-4-512-H04-A			Yes	0%	1) Drywall 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description 12 x 12 White Floor Tile			Material Number FT-5	Asbestos Present? No
Material Category Flooring	Friable Classification Non-Friable	EPA Category Category I	Total Quantity 50	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	
General Material Comments				
Material Location(s)				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-5-01-4619-512C-7	Office Behind Counter, Top Layer		Yes	0%	1) Floor Tile 2) 3)	Non Detected
ft-5-01-4620-512C-8	Office Behind Counter, Top Layer		Yes	0%	1) Floor Tile 2) 3)	Non Detected
ft-5-01-4621-512C-9	Office Behind Counter, Top Layer (Tile Only)		Yes	0%	1) Floor Tile 2) 3)	Non Detected

Material Description Floor Tile Mastic			Material Number MASTIC-6	Asbestos Present? No
Material Category Miscellaneous	Friable Classification Non-Friable	EPA Category Category II	Total Quantity	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	
General Material Comments				
Material Location(s)				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
MASTIC-6-01-4622-512C-10	Office Behind Counter Top Layer		Yes	0%	1) Mastic 2) 3)	Non Detected
MASTIC-6-01-4623-512C-11	Office Behind Counter, Top Layer		Yes	0%	1) Mastic 2) 3)	Non Detected
MASTIC-6-01-4624-512C-12	Bottom Layer Below 12 x 12 Floor Tile		Yes	0%	1) Mastic 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description Tank Insulation			Material Number TI-11	Asbestos Present? Yes
Material Category TSI	Friable Classification Friable	EPA Category Friable	Total Quantity 300	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment	Recommended Response Abate Prior to Demolition	
General Material Comments				
Material Location(s)				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ti-11-512-H11-A			Yes	20%	1) Tank Insulation 2) Tank Insulation 3)	10-20 % Amosite 10-20 % Chrysotile
ti-11-512-H11-B			No	Not Avail.	1) Tank Insulation 2) 3)	
ti-11-512-H11-C			No	Not Avail.	1) Tank Insulation 2) 3)	

Material Description 4" pipe run TSI Pipe Insulation			Material Number PI-12	Asbestos Present? No
Material Category TSI	Friable Classification Friable	EPA Category Friable	Total Quantity	Unit of Measure Linear Feet
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	
General Material Comments				
Material Location(s)				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-12-512-H12-A			Yes	0%	1) Pipe Insulation 2) 3)	Non Detected
pi-12-01-4663-512A-1	Boiler Room, Pipe Run Along South Wall		Yes	0%	1) Pipe Insulation 2) 3)	Non Detected
pi-12-01-4664-512A-2	Boiler Room, Pipe Riser Pipe South Wall		Yes	0%	1) Pipe Insulation 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description 6" TSI Pipe Elbows			Material Number PE-13	Asbestos Present? No
Material Category TSI	Friable Classification Friable	EPA Category Friable	Total Quantity	Unit of Measure Each
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	

General Material Comments

Material Location(s)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-13-512-H13-A			Yes	0%	1) TSI Elbow 2) 3)	Non Detected
pe-13-01-4665-512C-3	Along South Wall		Yes	0%	1) TSI Elbow 2) 3)	Non Detected
pe-13-01-4666-512C-4	Above Boiler Tank		Yes	0%	1) TSI Elbow 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description Roofing Material			Material Number RM-14	Asbestos Present? Yes
Material Category Roofing	Friable Classification Non-Friable	EPA Category Category I	Total Quantity 3,000	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment Not Assessed under AHERA	Recommended Response Abate Prior to Demolition	

General Material Comments

Material Location(s)

ROOF

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
rm-14-01-4625-512C-13	Roof Core		Yes	0%	1) Roofing core 2) 3)	Non Detected
rm-14-01-4626-512C-14	Roof Core		Yes	0%	1) Roofing core 2) 3)	Non Detected
rm-14-01-4627-512C-15	Roofing Flashing		Yes	35%	1) Flashing mastic 2) 3)	35 % Chrysotile
rm-14-01-4628-512C-16	Roofing Flashing		Yes	35%	1) Flashing mastic 2) 3)	35 % Chrysotile
rm-14-01-4629-512C-17	Roofing Penetration		Yes	20%	1) Roof penetration 2) 3)	20 % Chrysotile
rm-14-01-4630-512C-18	Roofing Penetration		Yes	15%	1) Roof penetration 2) 3)	15 % Chrysotile
rm-14-01-4631-512C-19	Roof Patch		Yes	3%	1) Roofing material 2) 3)	3 % Chrysotile

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description 1" TSI Pipe Elbows			Material Number PE-15	Asbestos Present? No
Material Category TSI	Friable Classification Friable	EPA Category Friable	Total Quantity	Unit of Measure Each
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	

General Material Comments

Material Location(s)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-15-512-H15-A			Yes	BLD	1) TSI Elbow 2) 3)	
pe-15-01-4667-512C-5	South Wall		Yes	0%	1) TSI Elbow 2) 3)	Non Detected
pe-15-01-4668-512C-6			Yes	0%	1) TSI Elbow 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information

Bachelors Enlisted Quarters (Site ID: Parcel 5)

Inspection Date

Thursday, July 19, 2001

Material Description Bottom Layer, Below 12 x 12 Floor Tile			Material Number FT-16	Asbestos Present? No
Material Category Flooring	Friable Classification Non-Friable	EPA Category Category I	Total Quantity	Unit of Measure Square Feet
General Condition	Damage Category	Overall Material Assessment No Assessment, Non-asbestos	Recommended Response	

General Material Comments

Material Location(s)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-16-01-4632-512C-20	Bottom Layer Below 12 x 12 Floor Tile		Yes	0%	1) Layer2 2) 3)	Non Detected
ft-16-01-4633-512C-21	Bottom Layer Floor Tile Only		Yes	0%	1) Layer2 2) 3)	Non Detected
ft-16-01-4634-512C-22	Bottom Layer Floor Tile Only		Yes	BLD	1) Layer2 2) 3)	
ft-16-01-4635-512C-23	Bottom Layer Floor Tile Only		Yes	0%	1) Layer2 2) 3)	Non Detected
ft-16-01-4636-512C-24	Bottom Layer Floor Tile Only		Yes	BLD	1) Layer2 2) 3)	
ft-16-01-4637-512C-25	Bottom Layer Floor Tile Only		Yes	BLD	1) Layer2 2) 3)	
ft-16-01-4638-512C-26	Bottom Layer Floor Tile Only		Yes	BLD	1) Composite 2) 3)	
ft-16-01-4639-512C-27	Bottom Layer Floor Tile Only		Yes	BLD	1) Layer2 2) 3)	
ft-16-01-4640-512C-28	Bottom Layer Floor Tile Only		Yes	BLD	1) Layer2 2) 3)	

Section 5 Removal Cost Estimate Summary

These estimates are for budgeting purposes only and should not be used as a quote for removal of the materials. It is not our recommendation to remove these materials unless they are beyond repair, or planned demolition or renovation activities will disturb the materials. Estimates are based on recent pricing we have received from contractors performing similar work and may vary from actual prices obtained due to the actual scope of work, quantity of material removed, control measures specified and contractor work loads, etc.

Building Bachelors Enlisted Quarters				QTY. Units Removal Costs (low to high)
HM	EPA Category	Suspect Material	Material Location	
11	Friable	Tank Insulation		300 Square Feet \$6000
14	Category I	Roofing Material	ROOF	3,000 Square Feet \$3000 to \$6000
Total Removal Costs:			\$9,000	to \$12,000

Building	Floor	Sample #	Sample Location	Room	Sample Description	%/Type
512C	1	01-4613-512C-1	Main Lobby, West		Ceiling Tile Mastic	Non-Detected
512C	1	01-4614-512C-2	Main Lobby, East		Ceiling Tile Mastic	Non-Detected
512C	1	01-4615-512C-3	Main Lobby		Ceiling Tile Mastic	Non-Detected
512C	1	01-4616-512C-4	Office, Behind Counter		Coving Mastic	Non-Detected
512C	1	01-4617-512C-5	Main Lobby, East		Coving Mastic	Non-Detected
512C	1	01-4618-512C-6	Office, Across From Bathroom		Coving Mastic	Non-Detected
512C	1	01-4619-512C-7	Office Behind Counter, Top Layer		12 x 12 White Floor Tile	Non-Detected
512C	1	01-4620-512C-8	Office Behind Counter, Top Layer		12 x 12 White Floor Tile	Non-Detected
512C	1	01-4621-512C-9	Office Behind Counter, Top Layer (Tile Only)		12 x 12 White Floor Tile	Non-Detected
512C	1	01-4622-512C-10	Office Behind Counter, Top Layer		Floor Tile Mastic	Non-Detected
512C	1	01-4623-512C-11	Office Behind Counter, Top Layer		Floor Tile Mastic	Non-Detected
512C	1	01-4624-512C-12	Bottom Layer Below 12 x 12 Floor Tile		Floor Tile Mastic	Non-Detected
512C	1	01-4625-512C-13	Roof Core		Floor Tile Mastic	Non-Detected
512C	1	01-4626-512C-14	Roof Core		Roofing Material	Non-Detected
512C	1	01-4627-512C-15	Roofing Flashing		Roofing Material	Non-Detected
512C	1	01-4628-512C-16	Roofing Flashing		Roofing Material	35% Chrysootile
512C	1	01-4629-512C-17	Roofing Penetration		Roofing Material	35% Chrysootile
512C	1	01-4630-512C-18	Roofing Penetration		Roofing Material	20% Chrysootile
512C	1	01-4631-512C-19	Roof Patch		Roofing Material	15% Chrysootile
512C	1	01-4632-512C-20	Bottom Layer Below 12 x 12 Floor Tile		Roofing Material	3% Chrysootile
512C	1	01-4633-512C-21	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4634-512C-22	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4635-512C-23	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4636-512C-24	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4637-512C-25	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4638-512C-26	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4639-512C-27	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4640-512C-28	Bottom Layer Floor Tile Only		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4663-512A-1	Boiler Room, Pipe Run Along South Wall		Bottom Layer, Below 12 x 12 Floor	Non-Detected
512C	1	01-4664-512A-2	Boiler Room, Pipe Riser Pipe South Wall		4" pipe run TSI Pipe Insulation	Non-Detected
512C	1	01-4665-512C-3	Along South Wall		4" pipe run TSI Pipe Insulation	Non-Detected
512C	1	01-4666-512C-4	Above Boiler Tank		6" TSI Pipe Elbows	Non-Detected
512C	1	01-4667-512C-5	South Wall		6" TSI Pipe Elbows	Non-Detected
512C	1	01-4668-512C-6			1" TSI Pipe Elbows	Non-Detected
512C	1	512-H01-A			1" TSI Pipe Elbows	Non-Detected
512C	1	512-H04-A			12" White Ceiling Tile	Non-Detected
					Wallboard	Non-Detected

Building	Floor	Sample #	Sample Location	Room	Sample Description	%/Type
512C	1	512-H11-A			Tank Insulation	20% Amosite
512C	1	512-H11-B			Tank Insulation	Non-Detected
512C	1	512-H11-C			Tank Insulation	Non-Detected
512C	1	512-H12-A			4" pipe run TSI Pipe Insulation	Non-Detected
512C	1	512-H13-A			6" TSI Pipe Elbows	Non-Detected
512C	1	512-H15-A			1" TSI Pipe Elbows	Non-Detected

Appendix A
Definitions of Terms and Assessment Criteria

Definitions of Terms and Assessment Criteria

This survey report organizes information on each suspect ACBM identified in tables located in Section 4. This section describes how to interpret the data found on materials listed in Section 4.

Material description contains the description of the suspect homogeneous asbestos containing building material.

Material Serial Number is used to reference the material for reinspections, etc..

Asbestos type and content describes the type of asbestos and its percentage in the material.

Asbestos Results for positive materials are shown as a percentage. Samples having less than 1% asbestos are reported as containing "Trace" amounts of asbestos and samples with no detected asbestos are reported as "BLD" or below limit of detection.

Sample number(s) identifies a particular material sample obtained from a specific sample location. Sample numbers are used primarily for laboratory identification.

Sample Location identifies where the samples of this material were obtained.

Material Category categorizes each material as surfacing, TSI or miscellaneous.

Surfacing Materials - Asbestos containing materials that are sprayed-on, trowled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Thermal Systems Insulation (TSI) - Asbestos containing materials applied to pipes, fittings, boilers, breaching, tanks, ducts or other interior structural components to prevent heat loss or gain or water condensation.

Miscellaneous Materials - Asbestos containing materials applied to or a part of building components that are not classified as surfacing materials or thermal systems insulation.

Quantity & Units reports approximate total quantity per unit of measure for each material.

Building(s) & Floor(s) specifies where a material is located.

Material Location describes where the material is found throughout the building.

Material Condition identifies the material as Friable, Non-friable or Jacketed (for thermal systems insulation only) if asbestos is present.

Friable - An asbestos containing material that can be crumbled, pulverized or reduced to powder, when dry, by hand pressure, such as spray applied fireproofing on structural steel members, spray applied acoustical ceiling materials or damaged thermal systems insulation. Friable materials are of greatest concern due to their potential fiber release.

Non-Friable - An asbestos containing material where the asbestos is bound tightly in a matrix or sealed by a protective layer. Non-friable materials can become friable by being rendered to a crumbled, pulverized or powdered state, when dry, by crushing, sanding, sawing, shot-blasting, severe weathering or by other mechanically induced means. Common examples of non-friable materials are adhesives, floor tiles, transite and roofing materials.

Jacketed - An asbestos containing material applied to thermal systems insulation and "jacketed" with a protective outer layer such as canvas or metal to keep the material in good condition. Undamaged jacketed ACBM is considered non-friable. If the jacketing is damaged, the material is considered friable.

Damage Category describes the type of damage, if any, to the material. The following damage categories are used: None, Physical, Air, and Water.

Material Assessment identifies the condition of the material in relation to physical and water damage, delamination of the material from its substrate, the extent of the damage and the potential for damage from building conditions, such as, accessibility by building occupants, influence of vibration, etc. The six standard assessment categories ranked by hazard potential, with the first being the lowest hazard are as follows: 1) Potential for Damage, 2) Potential for Significant Damage, 3) Damaged, 4) Damaged with Potential for Damage, 5) Damaged with Potential for Significant Damage, and 6) Significantly Damaged. Only friable materials are assessed under AHERA regulations. Non-friable materials, unless damaged, are not assessed and can be assumed to be in good condition.

Damaged - The damage or deterioration of the material results in inadequate cohesion or adhesion with crumbling, blistering, water stains, marring or otherwise abraded over less than one-tenth (1/10) of the surface if the damage is evenly distributed or one-fourth (1/4) if the damage is localized.

Significant Damage - The damage or deterioration of the material results in inadequate adhesion or cohesion and the damage is extensive and severe with one or more of the following characteristics: 1) Crumbling or blistering over at least one-tenth (1/10) of the surface if evenly distributed, one-fourth (1/4) if the damage is localized; 2) Areas of the material hanging from the surface, delaminated, or showing adhesive failure; 3) Water stains, gouges or marred.

Recommended Response suggests the appropriate options for controlling or maintaining ACBM in a safe manner. There are four options used:

Operations & Maintenance (O&M) - A program designed to "manage" asbestos in-place. As long as asbestos containing materials remain in a building, an O&M program should be instituted to alert maintenance personnel, custodial workers and outside vendors of the existence and location of these materials and to set a policy for the maintenance of these materials. The material is usually only required to be removed if it is significantly damaged, prior to demolition of the building or if it will be disturbed by renovation activities.

Repair - The restoration of damaged or deteriorated asbestos containing building materials to an intact condition. Once the intact condition is established, the material should be included in an O&M program. The material is usually only required to be removed if it is significantly damaged, prior to demolition of the building or if it will be disturbed by renovation activities.

Abate Due to Condition - This material is significantly damaged and is unsafe in its current condition. The access to the area should be restricted to personnel equipped with appropriate personal protection. This material should be properly removed by a licensed contractor using workers trained in the safe removal of asbestos.

Abate Prior to Renovation - This material should be properly removed prior to planned renovation activities by a licensed contractor using workers trained in the safe removal of asbestos. This recommendation is usually made only on survey reports prepared prior to planned renovation activities.

Comments & Damage Description contains any additional information and or specific details of material damage are noted here.

EPA Category provides the appropriate material category as outlined in the NESHAPS regulation. The four options are friable, Category 1, Category 2, and needs determination.

Friable - Materials containing greater than 1% asbestos are always considered Regulated Asbestos Containing Materials (RACM) that require removal prior to building renovation or demolition activities that impact the material.

Category 1 - Materials that are bituminous non-friable and contain more than 1% asbestos that become RACM and require removal only when will be subject to grinding, cutting, sanding or abrading.

Appendix B
Bulk Sampling Protocol and Analytical Methods

Bulk Sampling Protocol and Analytical Methods

Bulk samples of suspect asbestos containing building materials were obtained using standard industrial hygiene techniques including wetting the material to minimize fiber release. Our personnel wore half-face air purifying respirators equipped with high efficiency particulate (HEPA) filters while obtaining samples

Our sampling strategy for suspect friable surfacing materials was based on the guidelines outlined in the EPA publication *Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials*, and the procedures outlined in 40 CFR 763, Subpart E (AHERA). For non-friable suspect materials, AHERA requires the building inspector to determine the appropriate number of samples to obtain and analyze. Usually one to three samples of non-friable materials are collected.

For each homogeneous material identified by visual inspection as suspect material, random samples are obtained. A single bulk sample is randomly selected from each homogeneous material for first-round testing. If the sample is positive, the remaining samples are not analyzed; if the sample is negative, the other samples are submitted for study. Every sample must be reported negative if the material is to be considered non-asbestos containing.

The bulk samples were delivered to an independent laboratory that participates in the bulk sample proficiency analysis program conducted by the United States Environmental Protection Agency and is accredited by the National Voluntary Laboratory Program (NVLAP). The samples were analyzed using Polarized Light Microscopy (PLM) with dispersion staining to estimate the percent of asbestos composition by volume. Samples with no observable asbestiform minerals are designated as None-Detected. Samples in which asbestiform minerals are observed, but exist in concentrations of less than one percent (<1%), are designated as present in Trace amounts; all other samples are designated as asbestos containing with the appropriate percent of asbestos noted.

Appendix C
Laboratory Bulk Sampling Reports

SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928

Excellence in Service and Technology

AIHA/ELLAP 100527, NVLAP 1150, NYELAP 11413, CAELAP 2078, NC 593, SC 93003

LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method 600/R-93/116

ACCOUNT: 2541-01-27
CLIENT: Benchmark
ADDRESS: 3732 Charter Park Drive
San Jose, CA 95136

DATE COLLECTED:
DATE RECEIVED: 7/20/2001
DATE ANALYZED: 7/23/2001
DATE REPORTED: 7/23/2001

PO NO.:
PROJECT NAME:
PROJECT NO.: E01-448
JOB LOCATION: Bldg. 512C

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-4613-512C-1	1993946 Layer 1: 100% Non-Asbestos	Main lobby W Mastic	No	Brown, Brittle CELLULOSE FIBER < 1%, MINERAL/GLASS WOOL 2%, NON FIBROUS MATERIAL 95%, TALC < 1%, WOLLASTONITE 3%
01-4614-512C-2	1993947 Layer 1: 100% Non-Asbestos	Main lobby E Mastic	No	Brown, Brittle CELLULOSE FIBER < 1%, MINERAL/GLASS WOOL 2%, NON FIBROUS MATERIAL 95%, TALC 1%, WOLLASTONITE 2%
01-4615-512C-3	1993948 Layer 1: 100% Non-Asbestos	Main lobby adj bath Mastic	No	Brown, Brittle CELLULOSE FIBER < 1%, MINERAL/GLASS WOOL 2%, NON FIBROUS MATERIAL 95%, TALC < 1%, WOLLASTONITE 3%
01-4616-512C-4	1993949 Layer 1: 100% Non-Asbestos	Office behind ctrl Mastic	No	Light Brown, Brittle NON FIBROUS MATERIAL 100%
01-4617-512C-5	1993950 Layer 1: 100% Non-Asbestos	Main lobby Mastic	No	Dark Brown, Brittle NON FIBROUS MATERIAL 100%

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	No	Cream, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 3:	Granular Material	No	White, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-4618-512C-6	1993951	Office across bathrm		
	Layer 1:	Mastic	No	Cream, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-4619-512C-7	1993952	Office behind cntr		
	Layer 1:	Floor Tile	No	Beige, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-4620-512C-8	1993953	Office behind cntr		
	Layer 1:	Floor Tile	No	Beige, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-4621-512C-9	1993954	Office behind cntr		
	Layer 1:	Floor Tile	No	Beige, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastics	No	Brown/Tan, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
		<i>Unable to separate individual layers.</i>		
01-4622-512C-10	1993955	With sample #7 top		
	Layer 1:	Mastic	No	Black, Soft
	100% Non-Asbestos			CELLULOSE FIBER < 1%, NON FIBROUS MATERIAL 100%
01-4623-512C-11	1993956	With sample #8 top		
	Layer 1:	Mastic	No	Dark Brown, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-4624-512C-12	1993957	With sample #20		
	Layer 1:	Mastic	No	Brown, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-4625-512C-13	1993958	Core		
	Layer 1:	Roofing	No	Black, Bituminous
	100% Non-Asbestos			CELLULOSE FIBER 20%, NON FIBROUS MATERIAL 80%

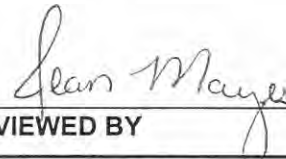
Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-4626-512C-14	1993959 Layer 1: 100% Non-Asbestos	Core Roofing	No	Black, Bituminous CELLULOSE FIBER 25%, NON FIBROUS MATERIAL 75%
01-4627-512C-15	1993960 Layer 1: 35% Asbestos 65% Non-Asbestos	Flashing Flashing	Yes	Black/Gray, Bituminous, Fibrous CHRYSTILE 35% CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 55%
01-4628-512C-16	1993961 Layer 1: 35% Asbestos 65% Non-Asbestos	Flashing Flashing	Yes	Black/Gray, Bituminous, Fibrous CHRYSTILE 35% MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 60%
01-4629-512C-17	1993962 Layer 1: 20% Asbestos 80% Non-Asbestos	Penetration Penetration	Yes	Black/Gray, Bituminous CHRYSTILE 20% MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 75%
01-4630-512C-18	1993963 Layer 1: 15% Asbestos 85% Non-Asbestos	Penetration Penetration	Yes	Black/Gray, Bituminous CHRYSTILE 15% NON FIBROUS MATERIAL 85%
01-4631-512C-19	1993964 Layer 1: 3% Asbestos 97% Non-Asbestos	Patch Penetration	Yes	Black/Gray, Bituminous CHRYSTILE 3% CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 95%
01-4632-512C-20	1993965 Layer 1: 100% Non-Asbestos	Bottom layer FT Floor Tile	No	Yellow, Hard NON FIBROUS MATERIAL 100%
01-4633-512C-21	1993966 Layer 1: 100% Non-Asbestos	Bottom layer FT Floor Tile	No	Yellow, Hard NON FIBROUS MATERIAL 100%
01-4634-512C-22	1993967 Layer 1: 100% Non-Asbestos	Bottom layer FT Floor Tile	No	Yellow, Hard NON FIBROUS MATERIAL 100%

ANALYST: KATHERINE M. CHARLES

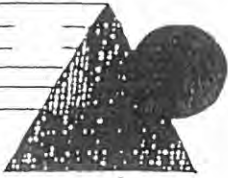
Total no. of pages in report = 3

REVIEWED BY



Jean L. Mayes, Analyst

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.



BENCHMARK

2541-01-27
Sample Location Worksheet
Chain Of Custody

3680 Charter Park Dr Suite E San Jose, CA 95136
(408) 448-7594 (408) 448-3849 (fax)

Project Number: ED1-448 Date: 7/13/01

Technician: T. J. [Signature]

Project Location: Bldg. 512C

Client Name: V. McFLOTTIN Company: PAI

Project Type Asbestos Lead-based Paint Lead Risk Assessment Lead (water) Mold/Fungus/Bacteria Indoor Air Quality Other: _____	Type Of Analysis PLM/Bulk (EPA 600) EPA SW846-7420, FLAA Dust Wipes, Paint Chips Air, Soil SM313B, GFAA, Water TEM/Bulk (Chatfield) Other: _____	Turnaround Time Same Day 3 Hr 6 Hr 24 Hour 48 Hour 72 Hour 5 Day Other: _____ TTP = Test Till Positive →
---	--	--

Homogenous Material Group	Material / Component	Sample Number	Location Of Samples	Analysis Specification
02	CEILING TILE MASTIC	01-4603-512C-1	MAIN LOBBY WEST	ANALYZES ARE SUBMITTED
	↓	01-4604-512C-2	MAIN LOBBY EAST	
	↓	01-4605-512C-3	OFFICE 2 ADJ. BATHROOM	
03	CEILING MASTIC	01-4606-512C-4	OFFICE, BEHIND COUNTER	
	↓	01-4607-512C-5	MAIN LOBBY	
	↓	01-4608-512C-6	OFFICE, ACCESS FROM BATHROOM	
05	12 x 12 WHITE FLOOR TILE	01-4609-512C-7	OFFICE, BEHIND COUNTER TOP LAYER	
	↓	01-4620-512C-8	OFFICE, BEHIND COUNTER TOP LAYER (TILE ONLY)	
	↓	01-4621-512C-9	OFFICE, BEHIND COUNTER, TOP LAYER	
06	FLOOR TILE MASTIC	01-4622-512C-10	WITH SAMPLE #7 TOP LAYER	
	↓	01-4623-512C-11	WITH SAMPLE #8 TOP LAYER	
	↓	01-4624-512C-12	WITH SAMPLE #20 BOTTOM LAYER	
14	RECFINISH	01-4625-512C-13	CORE	
		01-4626-512C-14	CORE	
		01-4627-512C-15	FLASHING	
Relinquished By: <u>T. J. [Signature]</u>		Received By: <u>[Signature]</u>		Date/Time Received: <u>7-20-01</u> (015-A)

827942145497

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AIHA/ELLAP 100527, NVLAP 1150, NYELAP 11413, CAELAP 2078, NC 593, SC 93003

LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method 600/R-93/116

ACCOUNT: 2541-01-76
CLIENT: Benchmark
ADDRESS: 3732 Charter Park Drive
San Jose, CA 95136

DATE COLLECTED: 8/14/2001
DATE RECEIVED: 8/21/2001
DATE ANALYZED: 8/22/2001
DATE REPORTED: 8/29/2001

PO NO.:
PROJECT NAME:
PROJECT NO.: E01-448
JOB LOCATION: 512C Boiler Rm

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-4663-512C-1	2022864 Layer 1: 100% Non-Asbestos	Boiler rm S wall Insulation	No	Yellow, Fibrous MINERAL/GLASS WOOL 95%, NON FIBROUS MATERIAL 5%
01-4664-512C-2	2022865 Layer 1: 100% Non-Asbestos	Boiler rm S wall Insulation	No	Yellow, Fibrous CELLULOSE FIBER 2%, MINERAL/GLASS WOOL 95%, NON FIBROUS MATERIAL 3%
01-4665-512C-3	2022866 Layer 1: 100% Non-Asbestos	Along S wall Insulation	No	Tan, Fibrous CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
	Layer 2: 100% Non-Asbestos	Fibrous Material	No	White, Fibrous CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4666-512C-4	2022867 Layer 1: 100% Non-Asbestos	Abv boiler tank Insulation	No	Yellow, Fibrous CELLULOSE FIBER 3%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 7%


* AMENDED REPORT *

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Fibrous Material	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 80%, MINERAL/GLASS WOOL 15%, NON FIBROUS MATERIAL 5%
01-4667-512C-5	2022868	South wall		
	Layer 1:	Insulation	No	Yellow, Fibrous
	100% Non-Asbestos			MINERAL/GLASS WOOL 95%, NON FIBROUS MATERIAL 5%
	Layer 2:	Fibrous Material	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 80%, MINERAL/GLASS WOOL 15%, NON FIBROUS MATERIAL 5%
01-4668-512C-6	2022869	South wall		
	Layer 1:	Insulation	No	Yellow, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
	Layer 2:	Fibrous Material	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 80%, MINERAL/GLASS WOOL 15%, NON FIBROUS MATERIAL 5%

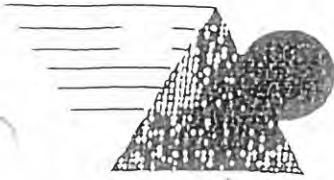
ANALYST: JONNELLE G. HARGROVE

Total no. of pages in report = 2



REVIEWED BY
*** AMENDED REPORT ***

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.



BENCHMARK

Sample Location Worksheet
Chain Of Custody

3680 Charter Park Dr Suite E San Jose, CA 95136
(408) 448-7594 (408) 448-3849 (fax)

Project Number: EOI-448 Date: 8/14/01 Technician: T. McFarland

Project Location: BLDG 512 C (BOILER ROOM) (AMENDED)

Client Name: K McGLATHLIN Company: PAI

Project Type	Type Of Analysis	Turnaround Time
<u>Asbestos</u>	<u>PLM/Bulk (EPA 600)</u>	Same Day 3 Hr 6 Hr
Lead-based Paint	EPA SW846-7420, FLAA	24 Hour
Lead Risk Assessment	Dust Wipes, Paint Chips	48 Hour
Lead (water)	Air, Soil	72 Hour
Mold/Fungus/Bacteria	SM313B, GFAA, Water	5 Day
Indoor Air Quality	TEM/Bulk (Chatfield)	Other: _____
Other: _____	Other: _____	TTP = Test Till Positive

Homogenous Material Group	Material / Component	Sample Number	Location Of Samples	Analysis Specification
12	4" PIPE RUIN	01-4663-512C-1	BOILER ROOM PIPE RUN ALONG SOUTH WALL	
		01-4664-512C-2	BOILER ROOM PIPE RISER ALONG SOUTH WALL	
13	6" ELBOW	01-4665-512C-3	BOILER RM PIPING @ SOUTH WALL	
		01-4666-512C-4	ABOVE BOILER TANK	
15	1" ELBOW	01-4667-512C-5	@ SOUTH WALL	
		01-4668-512C-6	@ SOUTH WALL	
<i>This is being amended to reflect all sample numbers to be 512C - not 512A.</i>				

Relinquished By: <u>T. McFarland</u>	Received By: _____	Date/Time Received: <u>8/</u>
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Appendix D
Summary of Regulatory Requirements

Appendix D Summary of Regulatory Requirements

This appendix provides a summary of building owner and manager requirements under various asbestos regulations promulgated by the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) to protect building occupants and employees from exposure to asbestos.

Survey Requirements

Prior to any renovation activity, OSHA and EPA regulations require that a complete asbestos survey be performed to determine if asbestos is present in any suspect asbestos containing material that will be present in the construction or work area. This survey report addresses accessible materials. It is recommended that prior to renovation activities, inaccessible areas that could contain asbestos materials be inspected.

Notification and Posting Requirements

Regulatory agencies feel that the building owner or manager should be responsible for knowing and communicating the locations of asbestos in their buildings to building employees, outside contractors and tenants to prevent exposure to asbestos.

Under the California Health and Safety Code, building owners and managers are required to provide annual notifications regarding known asbestos containing materials in their buildings to building employees, tenants, vendors and outside contractors. Therefore, specific information contained in this survey report is required to be included in the notification.

OSHA requires building employees, outside contractors, vendors and construction contractors bidding on or performing work in buildings be provided with notification regarding asbestos containing materials in their work areas. OSHA also requires that asbestos warning signs be posted in mechanical rooms.

Removal Requirements

Under EPA regulations, asbestos containing materials must be properly removed by licensed asbestos abatement contractors prior to renovation or demolition activities that would disturb friable materials or cause non-friable materials to become friable and a regulated material.

Repair of Damaged Materials and Cleanup of Debris

OSHA requires that asbestos containing debris be immediately cleaned up. It is recommended that damaged materials that may release fibers be repaired as soon as possible to prevent fiber release and potential exposures.

Training Requirements

OSHA requires employers whose employees are likely to or required to disturb asbestos to receive an asbestos training course. Refresher training is required to be provided annually.

Appendix E
AHERA Building Inspector Certifications

State of California
Division of Occupational Safety and Health

Certified Asbestos Consultant

Terri A. MacFarlane



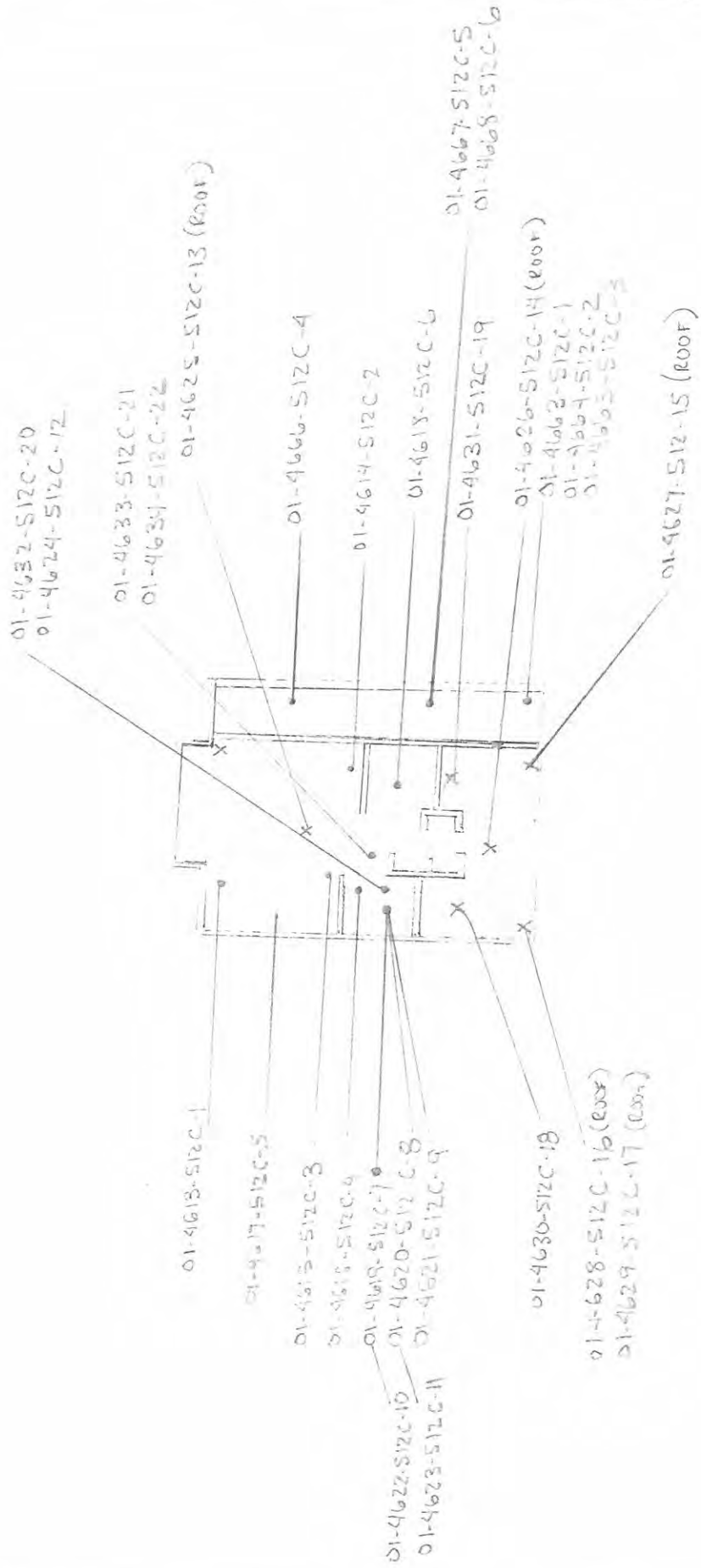
Name

Certification No. 90-2747

Expires on 5/3/2002

This certificate was issued by the Division of Occupational Safety and Health, authorized by Sections 7180 et seq. of the Business and Professions Code.

Appendix F
Drawings Indicating Sampling Locations



Property Inspections - Environmental Engineering
 Specialized Training - Contract Management
 3732 - A Charter Park Drive
 San Jose, CA 951366
 Phone: (408) 448-7594 - Fax: (408) 448-3849

PROJECT NAME:
 NASK ATTES
 PARCELS
 Bldg S12C

DRAFT PERSON:	DATE:	DWG. No.
WLB	11/14	1
PROJECT No.		EO1-44B-ALSU