BENCHMARK

Asbestos/Lead Investigation

NASA-Ames (PAI Corporation) Building 19

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BUILDING INSPECTIONS

ENVIRONMENTAL ENGINEERING

SPECIALIZED TRAINING

CONTRACT MANAGEMENT

BENCHMARK

ASBESTOS SURVEY REPORT

NASA Research/Support Facility
(ID: Building 19)

NASA-AMES (PAI CORPORATION)
Moffett Field
Mt. View, CA 95035

Prepared for:
NASA - AMES (PAI CORPORATION)
Nasa-ames Research Center
Mt. View, CA 94035-1000

Prepared by:
Benchmark Environmental Engineering
February 7, 2002
Project Number: **E01-612-A-SU**

Prepared By:

Terri MacFarlane
a California Certified Asbestos Consultant
90-2747

Reviewed By:

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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 NASA Research/Support Facility (Building ID: Building 19), to determine the locations of accessible and to the extent feasible, inaccessible friable and non-friable asbestos containing building materials (ACBM).

This inspection was limited to the interior spaces only. 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 previously identified.

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

Boiler Insulation
Interior Boiler Insulation
Pipe Elbows
Pipe Insulation
Pipe Insulation, Straight Run, Aircell
Wrap - Miscellaneous

Asbestos was detected in the following non-friable materials:

Floor Tile
Mastic

The following materials were assumed to contain asbestos:

Fire Door

Section 1 Introduction

Benchmark Environmental Engineering (Benchmark) performed an Asbestos Hazard Emergency Response Act (AHERA) style asbestos survey of the NASA Research/Support Facility located at Moffett Field, Mountain 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 was limited to the interior spaces only. 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 previously 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 Tuesday, November 13, 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 Corporation), 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

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: 2 **Year Built:** 1933 **Total Square Footage:** 138,357

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
Other:
Tile

Heating and mechancial systems include: Plenum Return

Building Description/Comments:

Building 19 is a tan concrete building on a concrete foundation with an attic and basement. The structure has a pitched tile roof in the central portion and a composite flat room on the remainder of the building.

Comments:

There was a previous asbestos survey conducted by Tetra Tech, Inc. on January 11, 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
NASA Research/Support Facility (Site ID: 3-15 Yrs.)
Moffett Field
Mt. View, CA 95035

Client Information
NASA - Ames (PAI Corporation)
NASA-Ames Research Center
Mt. View, CA 94035-1000

Survey Performed By	*Inspector*	*Inspection Date*	*Job Number*
Benchmark Environmental Engineering	Terri MacFarlane	Tuesday, November 13, 2001	E01-612-A-SU

Suspect Material	*Category*	*HM Number*	*Material Location(s)*	*Asbestos Present?*
Plaster	Surfacing	PL-2	THROUGHOUT THE BULDING	No
Wallboard		WLBD-3	THROUGHOUT THE BULDING	No
2'x4' white pinhole Ceiling Tile	Ceilings	CT-4	1ST AND 2ND FLOOR HALLWAYS	No
Coving Mastic	Miscellaneous	MASTIC-5	THROUGHOUT THE BULDING	No
1'x4' Floor Tile on Stairs	Flooring	FT-6	STAIRWELL	No
12" Tan Floor Tile	Flooring	FT-7	1ST AND 2ND FLOOR HALLWAYS	No
9" Brown Floor Tile	Flooring	FT-8	1ST AND 2ND FLOOR CENTER AND SOUTHEAST.	Yes
1" Pipe Insulation run	TSI	PI-9	1ST AND 2ND FLOOR CENTER AND SE	Yes
1" Pipe Elbows TSI	TSI	PE-10	THROUGHOUT THE BULDING	Yes
3/4" Pipe Insulation	TSI	PI-11	1ST AND 2ND FLOOR (WEST AND EAST)	Yes
12" White Ceiling Tile	Ceilings	CT-12	1ST AND 2ND FLOOR	No
2'x4' White Patterned Ceiling Tile	Ceilings	CT-13		No
12" White Ceiling Tile With Holes	Ceilings	CT-15	1ST FLOOR (SOUTH)	No
3/4" Pipe Elbows TSI	TSI	PE-16	1ST FLOOR - WEST AND 2ND FLOOR EAST.	Yes

Suspect Material	*Category*	*HM Number*	*Material Location(s)*	*Asbestos Present?*
3" Pipe Insulation TSI	TSI	PI-17	BASEMENT AND 1ST FLOOR	Yes
Fire Door	Miscellaneous	FD-18	SECOND FLOOR - CENTER	Yes (assumed)
1' x 3' Black Stair Floor Tile	Flooring	FT-19	STAIRWAY	No
5" Pipe Insulation	TSI	PI-20	BASEMENT	Yes
5" Pipe Elbows	TSI	PE-21	BASEMENT	Yes
6" Pipe Insulation	TSI	PI-22	BASEMENT	Yes
3" Pipe Elbows	TSI	PE-23	BASEMENT	Yes
2" Pipe Insulation	TSI	PI-24	BASEMENT	Yes
2" Pipe Elbows	TSI	PE-25	BASEMENT	Yes
12" Pipe Insulation	TSI	PI-26	BASEMENT	Yes
Silver Interior Boiler Insulation	TSI	IB-27	MECHANICAL ROOM	Yes
Yellow Boiler Insulation	TSI	BI-28	MECHANICAL ROOM	Yes
1" Pipe Insulation	TSI	PI-29	CRAWL SPACE	Yes
1" Pipe Elbows Aircell	TSI	PE-30	CRAWL SPACE	Yes
2" Pipe Insulation, Straight Run, Aircell		2A1A-31		Yes
Thermal Hanger Shields Wrap - Miscellaneous	TSI	WR -32		Yes
Floor Tile Mastic	Miscellaneous	MASTIC-34		Yes
Tan Exterior WALL Surfacing		WALL-35		No
12" x 12" Red Floor Tile	Flooring	FT-36		No

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)
Moffett Field
Mt. View, CA 95035

Client Information
NASA - Ames (PAI Corporation)
NASA-Ames Research Center
Mt. View, CA 94035-1000

Survey Performed By	*Inspector*	*Inspection Date*	*Job Number*
Benchmark Environmental Engineering	Terri MacFarlane	Tuesday, November 13, 2001	E01-612-A-SU

Material Description	*Material Number*	*Asbestos Present?*
Plaster	**PL-2**	**No**

Material Category	*Friable Classification*	*EPA Category*	*Total Quantity*	*Unit of Measure*
Surfacing	Friable	Friable	950,000	Square Feet

General Condition	*Damage Category*	*Overall Material Assessment*	*Recommended Response*
		No Assessment,Non-asbestos	

General Material Comments

Material Location(s)
THROUGHOUT THE BULDING

Sample ID(s)	*Sample Location(s)*	*Floor*	*Analyzed*	*Overall Result*	*Layer(s) Reported by Lab*	*Results by Layer*
pl-2-019-H02-A			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-B			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-C			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-D			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-E			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-F			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-G			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-H			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-I			Yes	0	1) Plaster 2) 3)	Non Detected
pl-2-019-H02-J			Yes	0	1) Plaster 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
Wallboard

Material Number
WLBD-3

Asbestos Present?
No

Material Category

Friable Classification
Non-Friable

EPA Category
Category II

Total Quantity
19,860

Unit of Measure
Square Feet

General Condition

Damage Category

Overall Material Assessment
No Assessment,Non-asbestos

Recommended Response

General Material Comments

Material Location(s)
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
WLBD-3-019-H03-A			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-B			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-C			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-D			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-E			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-F			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-G			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-H			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-I			Yes	0	1) Wallboard 2) 3)	Non Detected
WLBD-3-019-H03-J			Yes	0	1) Wallboard 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
2'x4' white pinhole Ceiling Tile

Material Number
CT-4

Asbestos Present?
No

Material Category
Ceilings

Friable Classification
Friable

EPA Category
Friable

Total Quantity
15,000

Unit of Measure
Square Feet

General Condition

Damage Category

Overall Material Assessment
No Assessment,Non-asbestos

Recommended Response

General Material Comments

Material Location(s)
1ST AND 2ND FLOOR HALLWAYS

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ct-4-019-H04-A			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-B			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-C			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-D			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-E			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-F			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-G			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-H			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-019-H04-I			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-4-010-H04-J			Yes	0	1) Ceiling Tile 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description: **Coving Mastic** | *Material Number*: **MASTIC-5** | *Asbestos Present?*: **No**

Material Category: Miscellaneous | *Friable Classification*: Non-Friable | *EPA Category*: Category II | *Total Quantity*: 15,000 | *Unit of Measure*: Square Feet

General Condition | *Damage Category* | *Overall Material Assessment*: No Assessment,Non-asbestos | *Recommended Response*

General Material Comments

Material Location(s): THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
MASTIC-5-01-6354-19-1	C1007 at Room 1018/1018A		Yes	0	1) Base Cove mastic 2) 3)	Non Detected
MASTIC-5-01-6355-19-2	S102 at Room 1018A		Yes	0	1) Base Cove mastic 2) 3)	Non Detected
MASTIC-5-01-6356-19-3	S204		Yes	0	1) Base Cove mastic 2) 3)	Non Detected

Material Description: **1'x4' Floor Tile on Stairs** | *Material Number*: **FT-6** | *Asbestos Present?*: **No**

Material Category: Flooring | *Friable Classification*: Non-Friable | *EPA Category*: Category I | *Total Quantity*: 990 | *Unit of Measure*: Square Feet

General Condition | *Damage Category* | *Overall Material Assessment*: No Assessment,Non-asbestos | *Recommended Response*

General Material Comments

Material Location(s): STAIRWELL

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-6-01-6357-19-4	S103		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-6-01-6358-19-5	S104		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-6-01-6359-19-6	S104		Yes	0	1) Floor Tile 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description: **12" Tan Floor Tile** | *Material Number*: **FT-7** | *Asbestos Present?*: **No**

Material Category: Flooring | *Friable Classification*: Non-Friable | *EPA Category*: Category I | *Total Quantity*: 253,000 | *Unit of Measure*: Square Feet

General Condition: | *Damage Category*: | *Overall Material Assessment*: No Assessment,Non-asbestos | *Recommended Response*:

General Material Comments:

Material Location(s): 1ST AND 2ND FLOOR HALLWAYS

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-7-01-6360-19-7	Room 1080		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-7-01-6361-19-8	S102		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-7-01-6362-19-9	C1012 at Room 1018		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-7-01-6363-19-10	C1016 at Room 2015		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-7-01-6364-19-11	S204		Yes	0	1) Floor Tile 2) 3)	Non Detected

Material Description: **9" Brown Floor Tile** | *Material Number*: **FT-8** | *Asbestos Present?*: **Yes**

Material Category: Flooring | *Friable Classification*: Non-Friable | *EPA Category*: Category I | *Total Quantity*: 2,300 | *Unit of Measure*: Square Feet

General Condition: | *Damage Category*: | *Overall Material Assessment*: Not Assessed under AHERA | *Recommended Response*: Abate Prior to Renovation

General Material Comments:

Material Location(s): 1ST AND 2ND FLOOR CENTER AND SOUTHEAST.

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-8-01-6391-19-40	S106		Yes	5%	1) Floor Tile 2) 3)	5 % Chrysotile
ft-8-02-6991-19-41	S106		Yes	4%	1) Floor Tile 2) 3)	4 % Chrysotile
ft-8-01-6392-19-42	S106		Yes	5%	1) Floor Tile 2) 3)	5 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
1" Pipe Insulation run

Material Number
PI-9

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
2,300

Unit of Measure
Linear Feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
1ST AND 2ND FLOOR CENTER AND SE

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-9-019-H09-A			Yes	30%	1) Pipe Insulation 2) Pipe Insulation 3)	10-20 % Chrysotile 20-30 % Amosite
pi-9-019-H09-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-9-019-H09-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-9-019-H09-D			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-9-019-H09-E			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-9-01-6373-19-20	Crawlspace Southeast		Yes	10%	1) Pipe Insulation 2) Pipe Insulation 3)	7 % Amosite 10 % Chrysotile
pi-9-01-6374-19-21	Crawlspace Southwest		Yes	15%	1) Pipe Insulation 2) Pipe Insulation 3)	15 % Amosite 5 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
1" Pipe Elbows TSI

Material Number: **PE-10** | *Asbestos Present?*: **Yes**

Material Category: TSI | *Friable Classification*: Friable | *EPA Category*: Friable | *Total Quantity*: 400 | *Unit of Measure*: Linear Feet

General Condition | *Damage Category* | *Overall Material Assessment* | *Recommended Response*: Abate Prior to Renovation

General Material Comments

Material Location(s)
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-10-019-H10-A			Yes	30%	1) TSI Elbow 2) TSI Elbow 3)	10-20 % Chrysotile 20-30 % Amosite
pe-10-019-H10-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-10-019-H10-C			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-10-01-6375-19-22	Crawlspace Southeast		Yes	10%	1) TSI Elbow 2) TSI Elbow 3)	10 % Amosite 5 % Chrysotile
pe-10-01-6376-19-23	Crawlspace Southeast		Yes	10%	1) TSI Elbow 2) TSI Elbow 3)	10 % Amosite 5 % Chrysotile

Material Description
3/4" Pipe Insulation

Material Number: **PI-11** | *Asbestos Present?*: **Yes**

Material Category: TSI | *Friable Classification*: Friable | *EPA Category*: Friable | *Total Quantity*: 22 | *Unit of Measure*: Linear Feet

General Condition | *Damage Category* | *Overall Material Assessment* | *Recommended Response*: Abate Prior to Renovation

General Material Comments

Material Location(s)
1ST AND 2ND FLOOR (WEST AND EAST)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-11-019-H11-A			Yes	30%	1) Pipe Insulation 2) Pipe Insulation 3)	20-30 % Chrysotile 10-20 % Amosite
pi-11-019-H11-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-11-019-H11-C			No	Not Avail.	1) Pipe Insulation 2) 3)	

Section 4 Material Information Tables

Site Information
IASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
12" White Ceiling Tile

Material Number
CT-12

Asbestos Present?
No

Material Category
Ceilings

Friable Classification
Friable

EPA Category
Friable

Total Quantity
1,800

Unit of Measure
Square Feet

General Condition

Damage Category

Overall Material Assessment
No Assessment,Non-asbestos

Recommended Response

General Material Comments

Material Location(s)
1ST AND 2ND FLOOR

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ct-12-019-H12-A			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-12-019-H12-B			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-12-019-H12-C			Yes	0	1) Ceiling Tile 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
2'x4' White Patterned Ceiling Tile

Material Number
CT-13

Asbestos Present?
No

Material Category
Ceilings

Friable Classification
Friable

EPA Category
Friable

Total Quantity
15,500

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
ct-13-019-H13-A			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-B			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-C			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-D			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-E			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-F			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-G			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-H			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-I			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-13-019-H13-J			Yes	0	1) Ceiling Tile 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
12" White Ceiling Tile With Holes

Material Number: **CT-15**
Asbestos Present?: **No**

Material Category: Ceilings
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 5,900
Unit of Measure: Square Feet

General Condition:
Damage Category:
Overall Material Assessment: No Assessment,Non-asbestos
Recommended Response:

General Material Comments:

Material Location(s)
1ST FLOOR (SOUTH)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ct-15-019-H15-A			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-15-019-H15-B			Yes	0	1) Ceiling Tile 2) 3)	Non Detected
ct-15-019-H15-C			Yes	0	1) Ceiling Tile 2) 3)	Non Detected

Material Description
3/4" Pipe Elbows TSI

Material Number: **PE-16**
Asbestos Present?: **Yes**

Material Category: TSI
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 2
Unit of Measure: Each

General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments:

Material Location(s)
1ST FLOOR - WEST AND 2ND FLOOR EAST.

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-16-019-H16-A			Yes	30%	1) TSI Elbow 2) TSI Elbow 3)	20-30 % Chrysotile 5-10 % Amosite

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description: **3" Pipe Insulation TSI** | *Material Number*: **PI-17** | *Asbestos Present?*: **Yes**

Material Category: TSI | *Friable Classification*: Friable | *EPA Category*: Friable | *Total Quantity*: 1,500 | *Unit of Measure*: Linear Feet

General Condition | *Damage Category* | *Overall Material Assessment* | *Recommended Response*: Abate Prior to Renovation

General Material Comments

Material Location(s): BASEMENT AND 1ST FLOOR

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-17-019-H17-A			Yes	5%	1) Pipe Insulation 2) 3)	1-5 % Chrysotile
pi-17-019-H17-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-17-019-H17-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-17-01-6377-19-24	Crawlspace Northwest		Yes	15%	1) Pipe Insulation 2) Pipe Insulation 3)	5 % Amosite 15 % Chrysotile
pi-17-01-6378-19-25	Crawlspace Southwest		Yes	8%	1) Pipe Insulation 2) Pipe Insulation 3)	8 % Amosite 7 % Chrysotile

Material Description: **Fire Door** | *Material Number*: **FD-18** | *Asbestos Present?*: **Yes (assumed)**

Material Category: Miscellaneous | *Friable Classification*: Non-Friable | *EPA Category*: Category II | *Total Quantity*: 1 | *Unit of Measure*: Each

General Condition | *Damage Category* | *Overall Material Assessment*: Not Assessed under AHERA | *Recommended Response*: Abate Prior to Renovation

General Material Comments

Material Location(s): SECOND FLOOR - CENTER

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description: **1' x 3' Black Stair Floor Tile** | *Material Number*: **FT-19** | *Asbestos Present?*: **No**

Material Category: Flooring | *Friable Classification*: Non-Friable | *EPA Category*: Category I | *Total Quantity*: 110 | *Unit of Measure*: Square Feet

General Condition: | *Damage Category*: | *Overall Material Assessment*: No Assessment,Non-asbestos | *Recommended Response*:

General Material Comments:

Material Location(s): STAIRWAY

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-19-01-6389-19-38	S106		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-19-01-6390-19-39	S106		Yes	0	1) Floor Tile 2) 3)	Non Detected

Material Description: **5" Pipe Insulation** | *Material Number*: **PI-20** | *Asbestos Present?*: **Yes**

Material Category: TSI | *Friable Classification*: Friable | *EPA Category*: Friable | *Total Quantity*: 800 | *Unit of Measure*: Linear Feet

General Condition: | *Damage Category*: | *Overall Material Assessment*: | *Recommended Response*: Abate Prior to Renovation

General Material Comments:

Material Location(s): BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-20-019-H20-A			Yes	40%	1) Pipe Insulation 2) 3)	30-40 % Chrysotile
pi-20-019-H20-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-20-019-H20-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-20-01-6379-19-26	Room 016		Yes	17%	1) Pipe Insulation 2) Pipe Insulation 3)	3 % Amosite 17 % Chrysotile
pi-20-01-6380-19-27	Room 016		Yes	18%	1) Pipe Insulation 2) Pipe Insulation 3)	2 % Amosite 18 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
5" Pipe Elbows

Material Number
PE-21

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
20

Unit of Measure
Linear feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-21-019-H21-A			Yes	40%	1) TSI Elbow 2) 3)	30-40 % Chrysotile
pe-21-019-H21-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-21-019-H21-C			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-21-01-6381-19-28	Room 016		Yes	20%	1) TSI Elbow 2) 3)	20 % Chrysotile
pe-21-01-6382-19-29	Room 016		Yes	15%	1) TSI Elbow 2) 3)	15 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
6" Pipe Insulation

Material Number
PI-22

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
325

Unit of Measure
Linear Feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-22-019-H22-A			Yes	40%	1) Pipe Insulation 2) 3)	30-40 % Chrysotile
pi-22-019-H22-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-22-019-H22-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-22-01-6395-19-45	C001		Yes	20%	1) Pipe Insulation 2) 3)	20 % Chrysotile
pi-22-E02-6887-19-46	C001		Yes	40%	1) Pipe Insulation 2) Pipe Insulation 3)	40 % Amosite 5 % Chrysotile

Section 4 Material Information Tables

Site Information
IASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
3" Pipe Elbows

Material Number
PE-23

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
30

Unit of Measure
Linear feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-23-019-H23-A			Yes	30%	1) TSI Elbow 2) 3)	20-30 % Chrysotile
pe-23-019-H23-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-23-019-H23-C			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-23-01-6383-19-30	Crawlspace Southwest		Yes	9%	1) TSI Elbow 2) TSI Elbow 3)	7 % Amosite 9 % Chrysotile
pe-23-01-6384-19-31	Crawlspace Northwest		Yes	15%	1) TSI Elbow 2) TSI Elbow 3)	5 % Amosite 15 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
2" Pipe Insulation

Material Number
PI-24

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
1,300

Unit of Measure
Linear Feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-24-019-H24-A			Yes	30%	1) Pipe Insulation 2) Pipe Insulation 3)	10-20 % Chrysotile 20-30 % Amosite
pi-24-019-H24-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-24-019-H24-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-24-01-6385-19-32	Crawlspace South		Yes	10%	1) Pipe Insulation 2) Pipe Insulation 3)	7 % Amosite 10 % Chrysotile
pi-24-01-6386-19-33	Crawlspace East		Yes	2%	1) Pipe Insulation 2) Pipe Insulation 3)	2 % Amosite 2 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
2" Pipe Elbows

Material Number
PE-25

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
25

Unit of Measure
Linear Feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-25-019-H25-A			Yes	40%	1) TSI Elbow 2) 3)	30-40 % Chrysotile
pe-25-019-H25-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-25-019-H25-C			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-25-01-6387-19-34	Crawlspace South		Yes	12%	1) TSI Elbow 2) TSI Elbow 3)	12 % Amosite 5 % Chrysotile
pe-25-01-6388-19-35	Crawlspace East		Yes	15%	1) TSI Elbow 2) TSI Elbow 3)	15 % Amosite 5 % Chrysotile

Material Description
12" Pipe Insulation

Material Number
PI-26

Asbestos Present?
Yes

Material Category
TSI

Friable Classification
Friable

EPA Category
Friable

Total Quantity
60

Unit of Measure
Linear Feet

General Condition

Damage Category

Overall Material Assessment

Recommended Response
Abate Prior to Renovation

General Material Comments

Material Location(s)
BASEMENT

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-26-019-H26-A			Yes	40%	1) Pipe Insulation 2) 3)	30-40 % Chrysotile
pi-26-019-H26-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-26-019-H26-C			No	Not Avail.	1) Pipe Insulation 2) 3)	

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
Silver Interior Boiler Insulation

Material Number: **IB-27**
Asbestos Present?: **Yes**

Material Category: TSI
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 450
Unit of Measure: Square Feet

General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments:

Material Location(s)
MECHANICAL ROOM

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ib-27-019-H27-A			Yes	20%	1) Tank Insulation 2) Tank Insulation 3)	10-20 % Amosite 10-20 % Chrysotile
ib-27-019-H27-B			No	Not Avail.	1) Tank Insulation 2) 3)	
ib-27-019-H27-C			No	Not Avail.	1) Tank Insulation 2) 3)	
ib-27-01-6393-19-43	Room N010		Yes	30%	1) Insulation 2) Insulation 3)	5 % Amosite 30 % Chrysotile
ib-27-01-6394-19-44	Room N010		Yes	20%	1) Insulation 2) 3)	20 % Chrysotile

Material Description
Yellow Boiler Insulation

Material Number: **BI-28**
Asbestos Present?: **Yes**

Material Category: TSI
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 100
Unit of Measure: Square Feet

General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments:

Material Location(s)
MECHANICAL ROOM

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
bi-28-019-H28-A			Yes	20%	1) Tank Insulation 2) Tank Insulation 3)	10-20 % Amosite 10-20 % Chrysotile
bi-28-019-H28-B			No	Not Avail.	1) Tank Insulation 2) 3)	
bi-28-019-H28-C			No	Not Avail.	1) Tank Insulation 2) 3)	

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
1" Pipe Insulation

Material Number: **PI-29**
Asbestos Present?: **Yes**
Material Category: TSI
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 230
Unit of Measure: Linear Feet
General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments

Material Location(s)
CRAWL SPACE

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-29-019-H29-A			Yes	10%	1) Pipe Insulation 2) 3)	5-10 % Chrysotile
pi-29-019-H29-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-29-019-H29-C			No	Not Avail.	1) Pipe Insulation 2) 3)	

Material Description
1" Pipe Elbows Aircell

Material Number: **PE-30**
Asbestos Present?: **Yes**
Material Category: TSI
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 8
Unit of Measure: Each
General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments

Material Location(s)
CRAWL SPACE

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-30-019-H30-A			Yes	20%	1) TSI Elbow 2) TSI Elbow 3)	10-20 % Chrysotile 10-20 % Amosite
pe-30-019-H30-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-30-019-H30-C			No	Not Avail.	1) TSI Elbow 2) 3)	

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
2" Pipe Insulation, Straight Run, Aircell

Material Number: **2A1A-31**
Asbestos Present?: **Yes**

Material Category:
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 75
Unit of Measure: Linear Feet

General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments:

Material Location(s):

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
2A1a-31-019-H31-A			Yes	20%	1) Pipe Insulation 2) 3)	10-20 % Chrysotile
2A1a-31-019-H31-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
2A1a-31-019-H31-C			No	Not Avail.	1) Pipe Insulation 2) 3)	

Material Description
Thermal Hanger Shields Wrap - Miscellaneous

Material Number: **WR -32**
Asbestos Present?: **Yes**

Material Category: TSI
Friable Classification: Friable
EPA Category: Friable
Total Quantity: 35
Unit of Measure: Linear Feet

General Condition:
Damage Category:
Overall Material Assessment:
Recommended Response: Abate Prior to Renovation

General Material Comments:

Material Location(s):

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
WR -32-019-H32-A			Yes	0	1) Unspec Non-Fibrous Material 2) 3)	Non Detected
WR -32-019-H32-B			Yes	30%	1) Unspec Non-Fibrous Material 2) 3)	20-30 % Chrysotile
WR -32-019-H32-C			No	Not Avail.	1) Unspec Non-Fibrous Material 2) 3)	

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
Floor Tile Mastic

Material Number
MASTIC-34

Asbestos Present?
Yes

Material Category
Miscellaneous

Friable Classification
Non-Friable

EPA Category
Category II

Total Quantity
28,600

Unit of Measure
Square Feet

General Condition

Damage Category

Overall Material Assessment
Not Assessed under AHERA

Recommended Response
Abate Prior to Renovation

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-34-01-6365-19-12	S103		Yes	0	1) Mastic 2) 3)	Non Detected
MASTIC-34-01-6366-19-13	Room 1080		Yes	0	1) Mastic 2) 3)	Non Detected
MASTIC-34-01-6367-19-14	Room 2018		Yes	0	1) Mastic 2) 3)	Non Detected
MASTIC-34-01-6368-19-15	S106		Yes	0	1) Mastic 2) 3)	Non Detected
MASTIC-34-01-6369-19-16	S106		Yes	10%	1) Mastic 2) 3)	10 % Chrysotile

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description
Tan Exterior WALL Surfacing

Material Number
WALL-35

Asbestos Present?
No

Material Category

Friable Classification
Non-Friable

EPA Category
Category II

Total Quantity
500,000

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
WALL-35-019-H35-A			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-B			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-C			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-D			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-E			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-F			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-G			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-H			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-I			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected
WALL-35-019-H35-J			Yes	0	1) Exterior Surfacing 2) 3)	Non Detected

Section 4 Material Information Tables

Site Information
NASA Research/Support Facility (Site ID: 3-15 Yrs.)

Inspection Date
Tuesday, November 13, 20

Material Description	*Material Number*	*Asbestos Present?*
12" x 12" Red Floor Tile	**FT-36**	**No**

Material Category	*Friable Classification*	*EPA Category*	*Total Quantity*	*Unit of Measure*
Flooring	Non-Friable	Category I	500	Square Feet

General Condition	*Damage Category*	*Overall Material Assessment*	*Recommended Response*
		No Assessment,Non-asbestos	

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-36-01-6370-19-17	Room 2018		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-36-01-6371-19-18	Room 2018		Yes	0	1) Floor Tile 2) 3)	Non Detected
ft-36-01-6372-19-19	Room 2018		Yes	0	1) Floor Tile 2) 3)	Non Detected

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 NASA Research/Support Facility

HM	EPA Category	Suspect Material	Material Location	QTY. Units Removal Costs (low to high)
8	Category I	9" Brown Floor Tile	1ST AND 2ND FLOOR CENTER AND SOUTHEAST.	2,300 Square Feet $3450 to $4600
9	Friable	1" Pipe Insulation run	1ST AND 2ND FLOOR CENTER AND SE	2,300 Linear Feet $34500 to $46000
10	Friable	1" Pipe Elbows TSI	THROUGHOUT THE BULDING	400 Linear Feet $8000
11	Friable	3/4" Pipe Insulation	1ST AND 2ND FLOOR (WEST AND EAST)	22 Linear Feet $550
16	Friable	3/4" Pipe Elbows TSI	1ST FLOOR - WEST AND 2ND FLOOR EAST.	2 Each $500
17	Friable	3" Pipe Insulation TSI	BASEMENT AND 1ST FLOOR	1,500 Linear Feet $22500 to $30000

HM	Building EPA Category	Suspect Material	Material Location	QTY. Units Removal Costs (low to high)
18	Category II	Fire Door	SECOND FLOOR - CENTER	1 Each $500
20	Friable	5" Pipe Insulation	BASEMENT	800 Linear Feet $12000 to $16000
21	Friable	5" Pipe Elbows	BASEMENT	20 Linear feet $500
22	Friable	6" Pipe Insulation	BASEMENT	325 Linear Feet $4875 to $6500
23	Friable	3" Pipe Elbows	BASEMENT	30 Linear feet $600
24	Friable	2" Pipe Insulation	BASEMENT	1,300 Linear Feet $19500 to $26000
25	Friable	2" Pipe Elbows	BASEMENT	25 Linear Feet $500
26	Friable	12" Pipe Insulation	BASEMENT	60 Linear Feet $900 to $1200
27	Friable	Silver Interior Boiler Insulation	MECHANICAL ROOM	450 Square Feet $500
28	Friable	Yellow Boiler Insulation	MECHANICAL ROOM	100 Square Feet $2000

HM	Building EPA Category	Suspect Material	Material Location	QTY. Units Removal Costs (low to high)
29	Friable	1" Pipe Insulation	CRAWL SPACE	230 Linear Feet $3450 to $4600
30	Friable	1" Pipe Elbows Aircell	CRAWL SPACE	8 Each $500
31	Friable	2" Pipe Insulation, Straight Run, Aircell		75 Linear Feet $1350
32	Friable	Thermal Hanger Shields Wrap - Miscellaneous		35 Linear Feet $500
34	Category II	Floor Tile Mastic		28,600 Square Feet $28600 to $57200

Total Removal Costs: $145,725 to $208,450

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 on-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

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: 2541-01-319
CLIENT: Benchmark
ADDRESS: 3732 Charter Park Drive Suite A
San Jose, CA 95136

PO NO.:
PROJECT NAME:
PROJECT NO.: E01-612
JOB LOCATION: NASA BLdg 19

DATE COLLECTED: 11/13/2001
DATE RECEIVED: 12/ 3/2001
DATE ANALYZED: 12/ 3/2001
DATE REPORTED: 2/ 1/2002

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-6354-19-1	2110491	Rm 1018/1018A		
	Layer 1:	Mastic	**No**	Homogenous, White, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Brown, Brittle
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-6355-19-2	2110492	S102 @ 1018A		
	Layer 1:	Mastic	**No**	Homogenous, White, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Brown, Brittle
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
01-6356-19-3	2110493	S204		
	Layer 1:	Mastic	**No**	Homogenous, White, Soft
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Brown, Brittle
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

***MENDED REPORT ***

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Client Sample	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-6357-19-4	2110494	S103		
	Layer 1:	Stair Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6358-19-5	2110495	S104		
	Layer 1:	Stair Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6359-19-6	2110496	S104		
	Layer 1:	Stair Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6360-19-7	2110497	Rm 1080		
	Layer 1:	Floor Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6361-19-8	2110498	S102		
	Layer 1:	Floor Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6362-19-9	2110499	C1012 @ Rm 1078		
	Layer 1:	Floor Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6363-19-10	2110500	C1016 @ Rm 2015		
	Layer 1:	Floor Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6364-19-11	2110501	S204		
	Layer 1:	Floor Tile	**No**	Homogenous, Tan, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6365-19-12	2110502	W/ 4 @ S103		
	Layer 1:	Mastic	**No**	Tan, Soft
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6366-19-13	2110503	W/ 7 @ Rm 1080		
	Layer 1:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	

AMENDED REPORT *

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Client Sample	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-6367-19-14	2110504	W/ 17 @ Rm 2018		
	Layer 1:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6368-19-15	2110505	W/ 38 @ S106		
	Layer 1:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6369-19-16	2110506	W/ 40 S106		
	Layer 1:	Mastic	**Yes**	Black, Bituminous
	10% Asbestos		CHRYSOTILE 10%	
	90% Non-Asbestos		NON FIBROUS MATERIAL 90%	
01-6370-19-17	2110507	Rm 2018		
	Layer 1:	Floor Tile	**No**	Homogenous, Red, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6371-19-18	2110508	Rm 2018		
	Layer 1:	Floor Tile	**No**	Homogenous, Red, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6372-19-19	2110509	Rm 2018		
	Layer 1:	Floor Tile	**No**	Homogenous, Red, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6373-19-20	2110510	Crawl Space S/E		
	Layer 1:	TSI	**Yes**	Homogenous, White, Granular, Fibrous
	17% Asbestos		AMOSITE 7%, CHRYSOTILE 10%	
	83% Non-Asbestos		NON FIBROUS MATERIAL 83%	
	No Cover Found			
01-6374-19-21	2110511	Crawl Space S/W		
	Layer 1:	TSI	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos		AMOSITE 15%, CHRYSOTILE 5%	
	80% Non-Asbestos		NON FIBROUS MATERIAL 80%	
	Layer 2:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%	
01-6375-19-22	2110512	Crawl Space S/E		
	Layer 1:	Elbow Insulation	**Yes**	White, Granular, Fibrous
	15% Asbestos		AMOSITE 10%, CHRYSOTILE 5%	
	85% Non-Asbestos		NON FIBROUS MATERIAL 85%	

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:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-6376-19-23	2110513	Crawl Space S/W		
	Layer 1:	Elbow Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	17% Asbestos			AMOSITE 7%, CHRYSOTILE 10%
	83% Non-Asbestos			NON FIBROUS MATERIAL 83%
	Layer 2:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 95%, NON FIBROUS MATERIAL 5%
01-6377-19-24	2110514	Crawl Space N/W		
	Layer 1:	Pipe Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos			AMOSITE 5%, CHRYSOTILE 15%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%
	No Cover Found			
01-6378-19-25	2110515	Crawl Space S/W		
	Layer 1:	Pipe Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	15% Asbestos			AMOSITE 8%, CHRYSOTILE 7%
	85% Non-Asbestos			NON FIBROUS MATERIAL 85%
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-6379-19-26	2110516	Room 016		
	Layer 1:	Pipe Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos			AMOSITE 3%, CHRYSOTILE 17%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%
	Layer 2:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 80%, NON FIBROUS MATERIAL 20%
01-6380-19-27	2110517	Room 016		
	Layer 1:	Pipe Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos			AMOSITE 2%, CHRYSOTILE 18%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%
	No Cover Found			
01-6381-19-28	2110518	Room 016		
	Layer 1:	Elbow Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos			CHRYSOTILE 20%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%

***MENDED REPORT ***

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Client Sample	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 80%, NON FIBROUS MATERIAL 20%
01-6382-19-29	2110519	Room 016		
	Layer 1:	Elbow Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	15% Asbestos			CHRYSOTILE 15%
	85% Non-Asbestos			NON FIBROUS MATERIAL 85%
	No Cover Found			
01-6383-19-30	2110520	Crawl Space S/W		
	Layer 1:	Elbow Insulation	**Yes**	White, Granular, Fibrous
	16% Asbestos			AMOSITE 7%, CHRYSOTILE 9%
	84% Non-Asbestos			NON FIBROUS MATERIAL 84%
	No Cover Found			
01-6384-19-31	2110521	Crawl Space N/W		
	Layer 1:	Elbow Insulation	**Yes**	White, Granular, Fibrous
	20% Asbestos			AMOSITE 5%, CHRYSOTILE 15%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%
	No Cover Found			
01-6385-19-32	2110522	Crawl Space S		
	Layer 1:	Pipe Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	17% Asbestos			AMOSITE 7%, CHRYSOTILE 10%
	83% Non-Asbestos			NON FIBROUS MATERIAL 83%
	Layer 2:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-6386-19-33	2110523	Crawl Space E		
	Layer 1:	Pipe Insulation	**Yes**	Brown, Brittle
	4% Asbestos			AMOSITE 2%, CHRYSOTILE 2%
	96% Non-Asbestos			NON FIBROUS MATERIAL 96%
	No Cover Found			
01-6387-19-34	2110524	Crawl Space S		
	Layer 1:	Elbow Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	17% Asbestos			AMOSITE 12%, CHRYSOTILE 5%
	83% Non-Asbestos			NON FIBROUS MATERIAL 83%
	No Cover Found			

AMENDED REPORT *

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Client Sample	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-6388-19-35	2110525	Crawl Space E		
	Layer 1:	Elbow Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos		AMOSITE 15%, CHRYSOTILE 5%	
	80% Non-Asbestos		NON FIBROUS MATERIAL 80%	
	No Cover Found			
01-6389-19-38	2110526	S106		
	Layer 1:	Stair Tile	**No**	Homogenous, Black, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6390-19-39	2110527	S106		
	Layer 1:	Stair Tile	**No**	Homogenous, Black, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
01-6391-19-40	2110528	S106		
	Layer 1:	Floor Tile	**Yes**	Homogenous, Brown, Organically Bound
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
02-6991-19-41	2110529	S106		
	Layer 1:	Floor Tile	**Yes**	Homogenous, Brown, Organically Bound
	4% Asbestos		CHRYSOTILE 4%	
	96% Non-Asbestos		NON FIBROUS MATERIAL 96%	
01-6392-19-42	2110530	S106		
	Layer 1:	Floor Tile	**Yes**	Homogenous, Brown, Organically Bound
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 91%	
01-6393-19-43	2110531	N010		
	Layer 1:	Boiler Insulation	**Yes**	White, Fibrous
	35% Asbestos		AMOSITE 5%, CHRYSOTILE 30%	
	65% Non-Asbestos		NON FIBROUS MATERIAL 65%	
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 80%, NON FIBROUS MATERIAL 20%	
01-6393-19-44	2110532	N010		
	Layer 1:	Boiler Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	20% Asbestos		CHRYSOTILE 20%	
	80% Non-Asbestos		NON FIBROUS MATERIAL 80%	

AMENDED REPORT *

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Client Sample	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 75%, NON FIBROUS MATERIAL 25%	
01-6395-19-45	2110533	C001		
	Layer 1:	Pipe Insulation	**Yes**	White, Granular, Fibrous
	20% Asbestos		CHRYSOTILE 20%	
	80% Non-Asbestos		NON FIBROUS MATERIAL 80%	
	No Cover Found			
E02-6887-19-46	2113807	C001		
	Layer 1:	Pipe Insulation	**Yes**	Homogenous, White, Granular, Fibrous
	45% Asbestos		AMOSITE 40%, CHRYSOTILE 5%	
	55% Non-Asbestos		NON FIBROUS MATERIAL 55%	
	Layer 2:	Cover	**No**	Tan, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%	

ANALYST: MARK DELEONARDIS
Total no. of pages in report = 7

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)

pg 3

Project Number: ______ Date: ______ Technician: ______

Project Location: Bldg 19

Client Name: ______ Company: ______

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
	3" PIPE ELBOW	01-6384 19-31	Crawl space N/W	
24	2" PIPE RUN	01-6385 19-32	Crawl space S	
	↓	01-6386 19-33	Crawl space E	
25	2" PIPE ELBOW	01-6387 19-34	Crawl space S	
	↓	01-6388 19-35	Crawl space E	
26	12" PIPE RUN	01- 19-36		NOT SUBMITTED
	↓	01- 19-37		
19	1'x3' BLACK STAIR TILE	01-6389 19-38	S106	
	↓	~~01~~ 6390 19-39	S106	<TILE ONLY>
08	9x9 BROWN FLOOR TILE	01-6391 19-40	S106	
	↓	02-6991-19-41 ~~01-6391 19-41~~	S106	<TILE ONLY>
		01-6392 19-42	S106	<TILE ONLY>
27	SILVER BOWL	01-6393-19-43	N010	
	↓	01-6394 19-44	N010	
22	6" PIPE RUN	01-6395 19-45	C001	

Relinquished By:	Received By:	Date/Time Received
J. [signature]	[signature]	12-3-01 945A

~~01-6396 19-46 C001~~
C02-6887.19.46 2E2899221612998

BENCHMARK

Sample Location Worksheet
Chain Of Custody

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

pg 1

Project Number: E01-612 Date: 11/13/01 Technician: T-Macfarlane

Project Location: NASA BLDG. 19

Client Name: K. MCGLOTHLIN Company: PAI

Project Type	Type Of Analysis	Turnaround Time
(Asbestos) [circled]	(PLM/Bulk (EPA 600)) [circled]	Same Day 3 Hr 6 Hr
Lead-based Paint	EPA SW846-7420, FLAA	(24 Hour) [circled]
Lead Risk Assessment	Dust Wipes, Paint Chips	(48 Hour) [circled]
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
05	COVING MASTIC	✓01-6354 19-1	C1007 AT ROOM 1018/1018A	
↓	↓	✓01-6355 19-2	S102 AT 1018A	
		✓01-6356 19-3	S204	
06	STAIR TILE (TAN)	✓01-6357 19-4	S103	
↓	↓	✓01-6358 19-5	S104	<TILE ONLY>
		✓01-6359 19-6	S104	<TILE ONLY>
07	12 x 12 TAN FLOOR TILE	✓01-6360 19-7	ROOM 1080	
↓	↓	✓01-6361 19-8	S102	<TILE ONLY>
		✓01-6362 19-9	C1012 AT ROOM 1078	<TILE ONLY>
		✓01-6363 19-10	C1016 AT ROOM 2015	<TILE ONLY>
		✓01-6364 19-11	S204	<TILE ONLY>
34	FLOOR TILE MASTIC	✓01-6365 19-12	w/ Sample #4	
↓	↓	✓01-6366 19-13	w/ Sample # 7	
		✓01-6367 19-14	w/ sample 17	
		✓01-6368 19-15	w/ Sample #38	

Relinquished By:	Received By:	Date/Time Received
T. MacFarlane	[signature]	12-03-01 9:45 AM

54

26289922 10126798

BENCHMARK

Sample Location Worksheet
Chain Of Custody

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

pg 2

Project Number: ______ Date: ______ Technician: ______

Project Location: Bldg 19

Client Name: ______ Company: ______

Project Type	Type Of Analysis	Turnaround Time
Asbestos	PLM/Bulk (EPA 600)	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
34	FLOOR TILE MASTIC	01-6369-19-16	w/ Sample 40	
36	12 x 12 RED FLOOR TILE	01-6370-19-17	Room 2018	
	↓	01-6371-19-18	Room 2018 <TILE ONLY>	
	↓	01-6372-19-19	Room 2018 <TILE ONLY>	
09	1" TSI RUN	01-6373-19-20	Crawl space S/E	
	↓	01-6374-19-21	Crawl space S/W	
10	1" TSI ELBOW	01-6375-19-22	Crawl space S/E	
	↓	01-6376-19-23	Crawl space S/W	
17	3" PIPE RUN	01-6377-19-24	Crawl space N/W	
	↓	01-6378-19-25	Crawl space S/W	
20	5" PIPE RUN	01-6379-19-26	Room 016	
	↓	01-6380-19-27	Room 016	
21	5" PIPE ELBOW	01-6381-19-28	Room 016	
	↓	01-6382-19-29	Room 016	
23	3" PIPE ELBOW	01-6383-19-30	Crawl space S/W	

Relinquished By:	Received By:	Date/Time Received
T. Macfarlane	[signature]	12-03 945A

2629922101367790

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 activites, 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

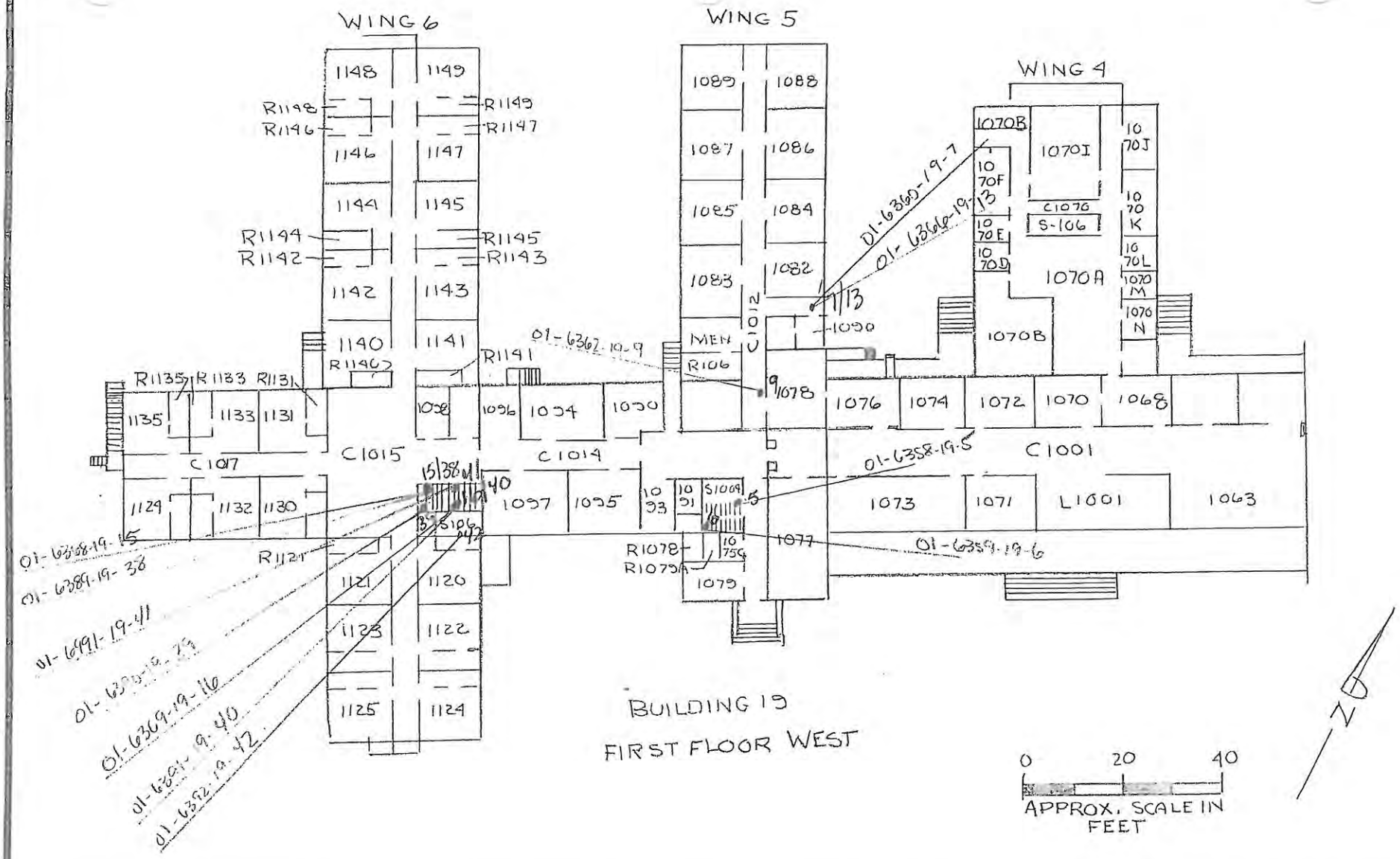
Certification No. **90–2747**

Expires on **5/3/2002**

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

Appendix F

Drawings Indicating Sampling Locations



BUILDING 19

FIRST FLOOR WEST

BENCHMARK

Property Inspections - Environmental Engineering

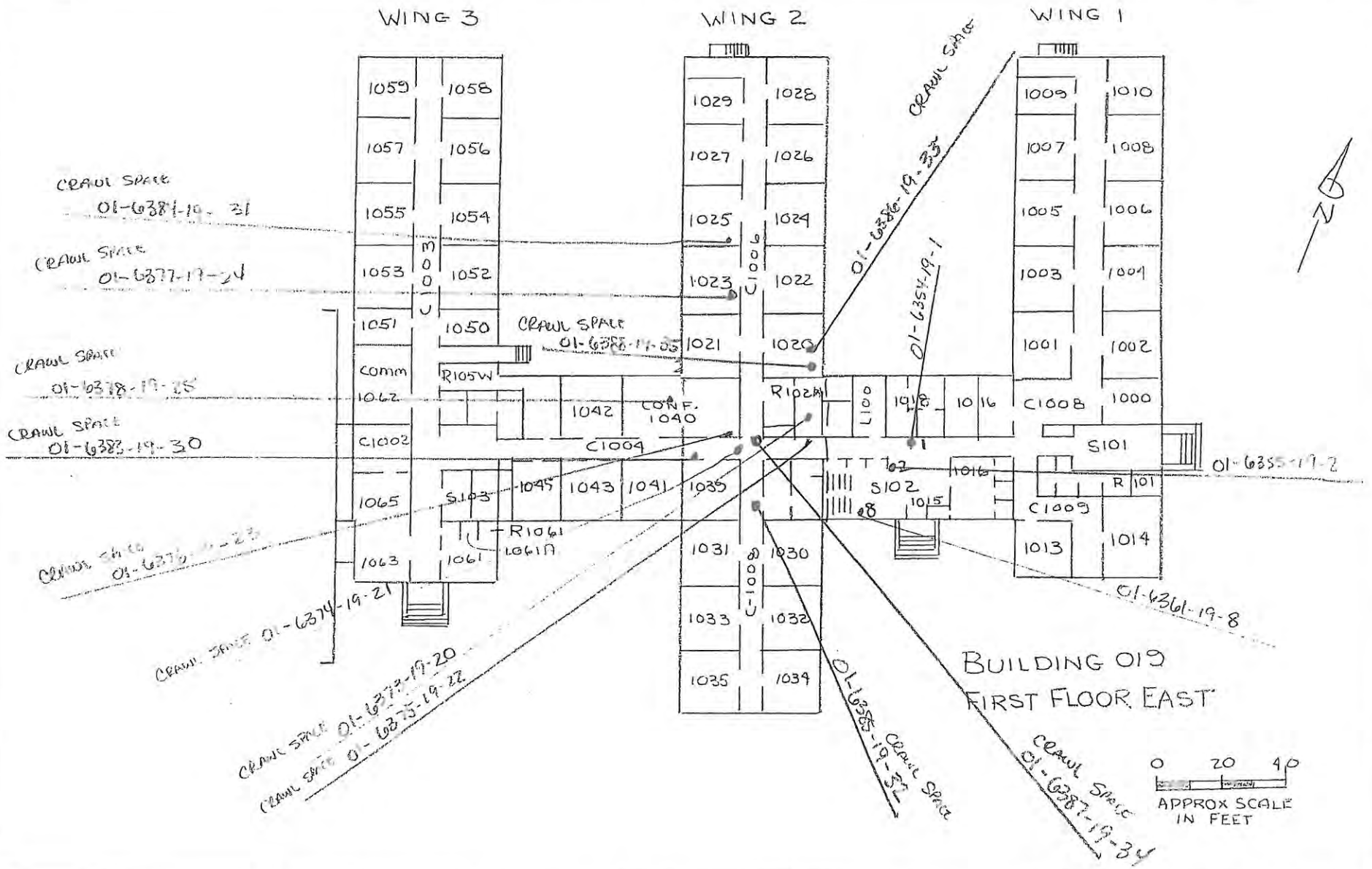
Specilized Training - Contract Management

3732 - A Charter Park Drive

San Jose, CA 951366

Phone: (408) 448-7594 - Fax: (408) 448-3849

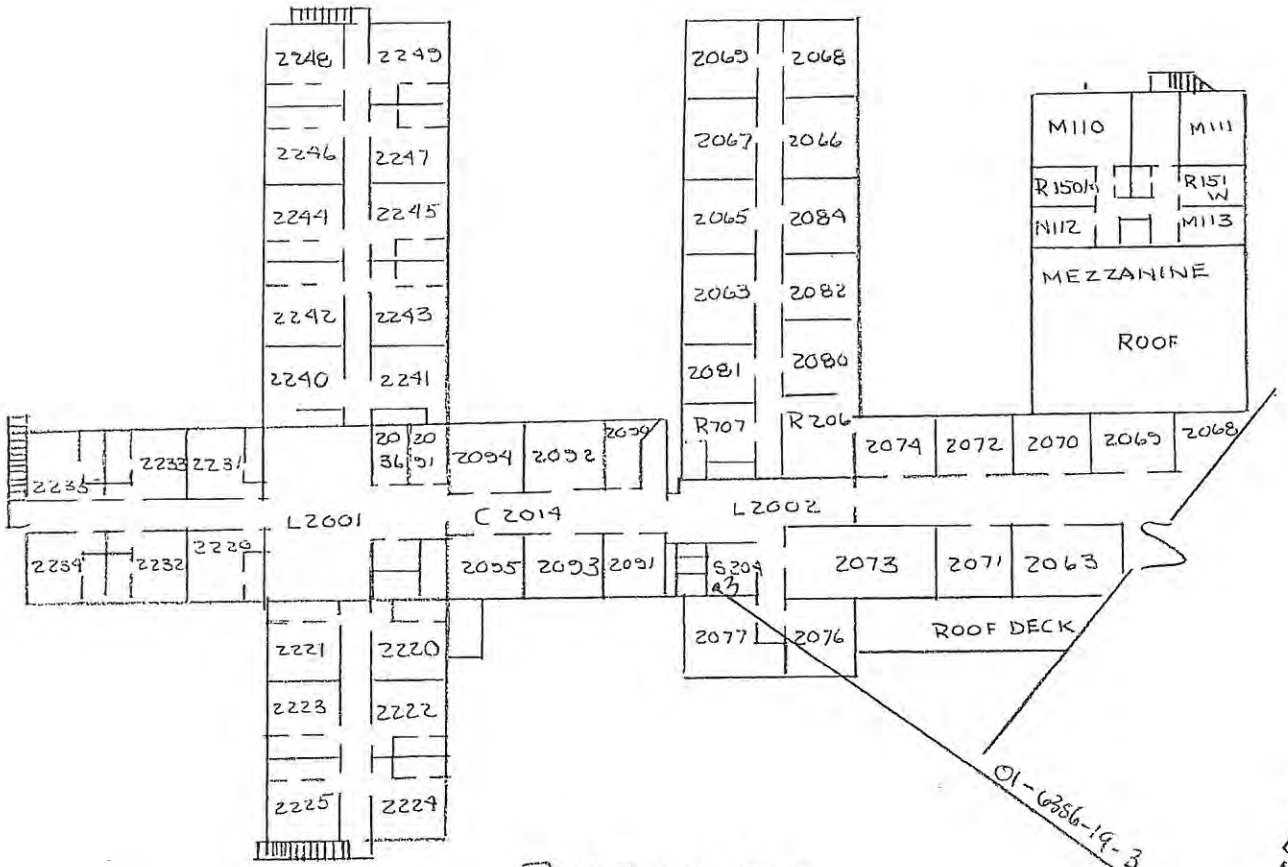
PROJECT NAME:	DRAFT PERSON:	DATE:	DWG. No.
BUILDING 19 NASA-AMES 3-15 Years Out	RJM	12/14	01
	PROJECT No. EO1-612-AL-SU		



BENCHMARK

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

PROJECT NAME:	DRAFT PERSON:	DATE:	DWG. No.
BUILDING 19 NASA-AMES 3-15 Years Out	RJM	12/16	02
	PROJECT No.		
	EO1-612-AL-SU		

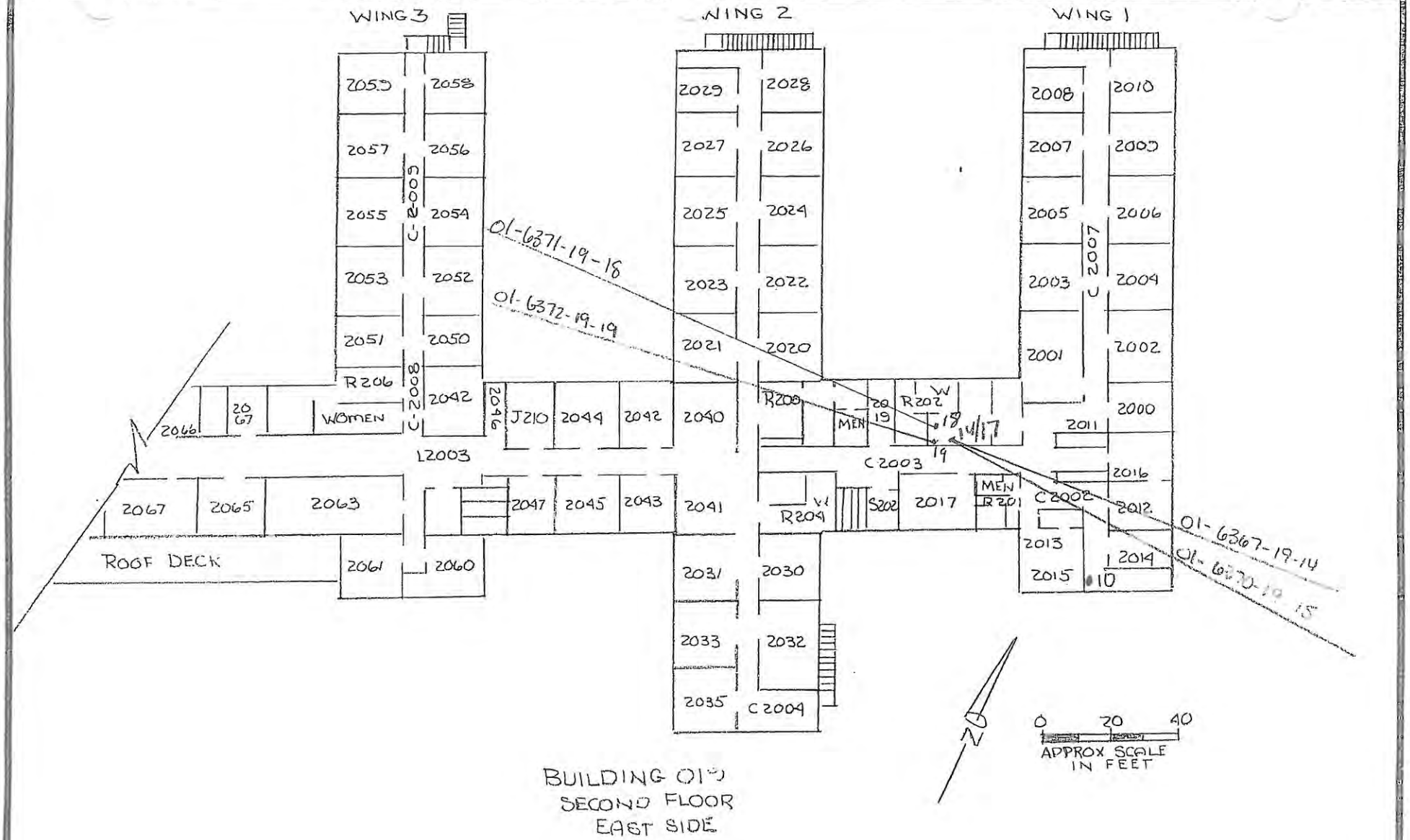


BUILDING 019
SECOND FLOOR WEST

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

PROJECT NAME:	DRAFT PERSON:	DATE:	DWG. No.
BUILDING 19 NASA-AMES 3-15 Years Out	RJM	12/17	03

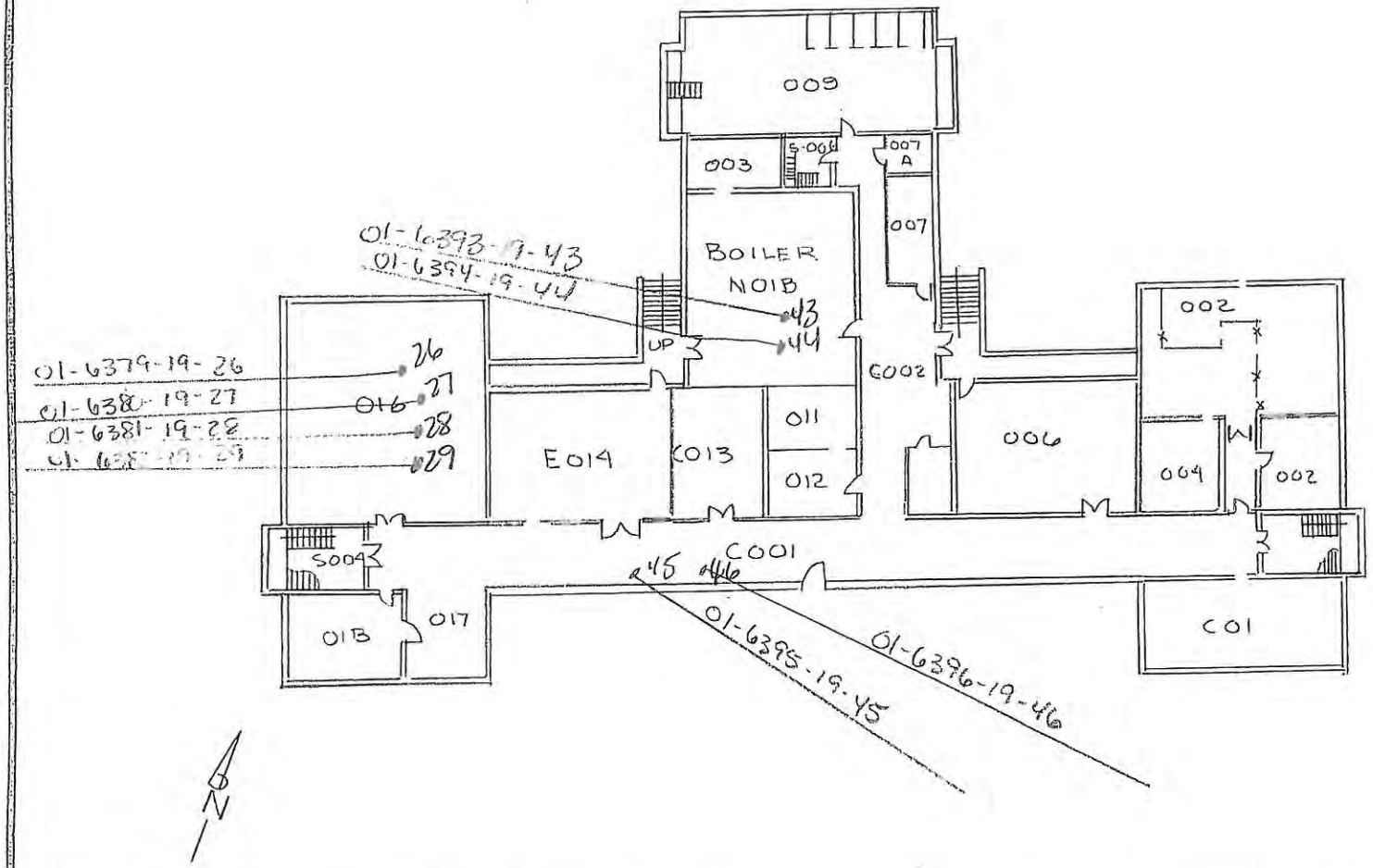
PROJECT No.
EO1-612-AL-SU



BUILDING 019
SECOND FLOOR
EAST SIDE

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

PROJECT NAME:	DRAFT PERSON:	DATE:	DWG. No.
BUILDING 19 NASA-AMES 3-15 Years Out	RJM	12/17	04
	PROJECT No. EO1-612-AL-SU		



BASEMENT

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

PROJECT NAME:	DRAFT PERSON:	DATE:	DWG. No.
BUILDING 19 NASA-AMES 3-15 Years Out	RJM	12/17	05

PROJECT No.
EO1-612-AL-SU

3732 Charter Park Drive
Suite A
San Jose, CA 95136
: 408.448.7594
Toll Free: 800.988.7424
Fax: 408.448.3849

BENCHMARK

LEAD BASED PAINT SURVEY REPORT

NASA RESEARCH/SUPPORT (ID: Building 19)

NASA-AMES

Moffett Field, CA 94035

PREPARED FOR

NASA AMES PAI CORPORATION
NASA Ames Research Center
Moffett Field, CA 94035-1000

PREPARED BY

Benchmark Environmental Engineering
November 13, 2001
Project Number: E01-612-L-SU

Prepared By:

Richard E. MacFarlane
DHS Inspector/Assessor
DHS# I-2241

Reviewed By:

Bryan K. Buller
COO, UPIN, Inc
14946

Table of Contents

EXECUTIVE SUMMARY

Benchmark Environmental Engineering was retained by PAI Corporation, to conduct a lead-based paint survey at NASA Research/Support, Building 19 located at Moffett Field, California.

In order to determine if lead based paint was present, two (2) paint chip samples were collected and 477 assays were taken using an X-RAY FLUORESCENCE (XRF) instrument. The results indicated that the following building components were above the EPA and DHS level of 1.0 mg/ cm^2 or 5000 PPM.

Lead-based Paint was identified on the following building components:

Exterior: Window, Window Sill, Fire Supply, Door Casing, Stair Handrail, Brick Walls.

Interior: Basement Hallways – Walls, Column, Doors, Door Casings, Cage, Ceiling. Basement Linen Storage – Walls, Door Casing, Column, Window Jamb. Basement Break Room (017) – Walls, Door Casing, Door, Cage, Ceiling. Basement Stairway – Walls, Handrail, Stairpost/Newell, Garage Door.

1st Floor. Lobby (1001) – Window Sill, Window, Column. Hallway (1001) – Column, Door Casing, Skylight, Fire Exit, Door, Drain Pipe, Men's Room Door, Fire Exit, Ceiling, Deep Sink Door, Skylight, Janitor Closet Door, Building Trim. Stairway (1001) – Common Wall Handrail, Stairpost/Newell, Garage Door, Ceiling. Hallway (1004) – Janitor Closet Door, Bench Seat, Walls, Ceiling, Drain Pipe, Skylight, Doors, Storeroom Doors, Fire Exit. Office (1043) – Walls, Column, Window, Window Sill, Window, Door, Door Casing. Private Bathroom (1043) – Walls, Window Sills, Window. Office (1064) – Wall, Window, Beam. Office (1071) – Wall, Window Sill, Window, Fire Cabinet. Office (1073) – Wall, Window, Column. Office (10994) – Cage, Wall, Window Sill, Window. Office (1097) – Wall, Window Sill, Common Wall, Column.

2nd Floor. Hallway (2002) – Walls, Door, Door Casing, Column, Fire Cabinet, Drain Pipe, Skylight. Hallway (2004) – Column. Lobby (2010) – Walls. Hallway (2010) – Door, Door Casing, Walls, Drain Pipe. Hallway (2014) – Drain Pipe. Office (2095) – Wall, Window Jamb, Window Sill. Lobby (2202) – Walls, Bench Seat, Storeroom Door, Door Casing.

INTRODUCTION

Benchmark Environmental Engineering was retained by Mr. Kris McGlothlin, to conduct a lead-based paint survey at NASA Ames-PAI Corporation, Moffett Field, California.

Authorization to perform this survey was received via signed agreement to BENCHMARK from Mr. Kris McGlothlin, on or about August 1, 2001, as referenced by BENCHMARK'S proposal E01-612.

BACKGROUND

This facility is a two-story tan concrete building. It has an attic, basement, and a plenum over both the first and second floors. Built in 1933, it is a concrete frame structure on a concrete foundation. The central portion has a pitched tile roof, but the rest of the roof is composite and flat.

WARRANTY

Benchmark Environmental Engineering warrants that the findings contained herein have been prepared with the level of care and skill exercised by experienced and knowledgeable environmental consultants who are appropriately licensed or otherwise trained to perform lead-related construction risk assessments and inspections pursuant to the scope of work required on this Project.

The survey included inspection of accessible materials. BENCHMARK did not inspect or sample inaccessible areas such as behind walls or within ductwork, and did not dismantle any part of the structure to survey inaccessible areas. For the purpose of this warranty, inaccessible is defined as areas of the building that could not be tested (sampled) without destruction of the structure or a portion of the structure. Inaccessible materials that are not visible to Benchmark's inspectors are assumed to be lead containing.

Authorization to perform this survey was received by BENCHMARK from Mr. Kris McGlothlin, of The PAI Corporation, on August 1, 2001, as referenced by Benchmark's Proposal E01-612.

The survey was conducted on November 13, 2001. A comprehensive site survey was performed based on the building plan. All building components identified in the specifications that may contain lead-based paint/coating were targeted for testing. (Exterior and interior walls, exterior and interior windows, doors and numerous associated components).

Sampling protocol for identification of lead-based paint was in accordance with The U.S. Department of Housing and Urban Development (HUD) Guidelines for

the Evaluation and Control of Lead-Based Paint Hazards in Housing, Chapter 7. All suspect lead-coated surfaces were identified by building, wall, and building component, as such each component had a unique identification number.

The report establishes lead concentrations in painted surfaces as a general guidance tool for the purpose of conducting renovation activities for Building 19.

A total of 477 XRF assays and two (2) paint chip samples were collected within this building.

SCOPE OF SERVICES

Benchmark recognized the scope of work for the NASA Ames-PAI Corporation, to be composed of a Lead Based Paint Inspection for the NASA Research/Support Facility (ID: Building 19). The survey consisted of testing for lead-base paint in general accordance with the U.S Department of Housing and Urban Development (HUD) guidelines for the evaluation and control of Lead-Based Paint Hazards in Housing, Chapter 7.

Certain building components that are adjacent to each other and not likely to have different painting histories have been grouped together into a single testing combination, as follows: Window Casings/Stops/Jambs/Aprons *-Or-* Door Jambs/Stops/Transoms/Casings and other door frame parts.

The following building components were inspected when applicable:

- Exterior Areas:

Walls	Windows
Windowsills	Stair Handrails
Doors	Door Molding
Downspouts	Window Screen
Building Trim	Skylight
Balusters	Stair Handrail
Stair Risers	Support Pillar

- Interior Areas:

Walls	Windows
Windowsills	Stair Treads
Balusters	Doors
Door Molding	Stair Stringer
Ceilings	Ceiling Molding
Skylight	Floors
Ceiling Molding	Grates
Baseboards	Support Beams
Electrical Box	Book Shelf
Chair Rail	Wainscot

Paint chip samples were collected from two (2) building components to provide conclusions that would be in compliance with DOSH 8 CCR 1532.1.

METHODOLOGY

GENERAL REFERENCES

Inspection, sampling, and assessment procedures were performed in general accordance with the guidelines published by The Department of Housing and Urban Development's (HUD) 1995 Guidelines, Chapter 7. The survey consisted of three major activities: visual inspection, sampling, and analysis. Although these activities are listed separately, they are integrated tasks.

VISUAL INSPECTION

An inspector that is a Department of Health Services Certified Lead Inspector/ Risk Assessor performed the inspection. An initial building walkthrough was conducted to determine the presence of suspect materials that were accessible or exposed.

SAMPLING PROCEDURES

Following the walkthrough, the inspector selected samples areas of exposed or accessible materials identified as suspect LBP. EPA and HUD guidelines were used to determine the sampling protocol. Sampling locations were chosen to be representative of the homogeneous material.

X-RAY FLUORESCENCE (XRF) ANALYSIS

XRF instruments measure lead in paint by directing high energy X-rays and gamma rays into the paint, causing the lead atoms in the paint to emit X-rays which are detected by the instrument and converted to a measurement of the amount of lead in the paint. The EPA approved technology allows for measurement of X-rays without scraping or samples preparation to characterize substrate or matrix effects. The Spectrum Analyzer, Metals Analysis Probe (MAP 4) is combined with a microprocessor system that enables field-testing with a high degree of quality control and speed. Sample locations, descriptions, conditions, and measurement results are automatically recorded by the instrument and easily downloaded to a PC or laptop.

QUALITY CONTROL PROGRAM

Benchmark Environmental Engineering utilizes only DHS approved inspectors, which are certified to use radioactive instruments. The MAP 4 Spectrum Analyzer has on-board calibration routines, which continuously operate, and self-correct to minimize sampling error. This is known as substrate correcting software.

PAINT CHIP SAMPLE COLLECTION

A total of two (2) paint chip samples were collected in accordance with the HUD Evaluation and Control of Lead-Based Paint Hazards in Housing, Paint Chip Sampling. A two-inch by two-inch area was measured and delineated. The paint chip sample was collected with the use of a sharp stainless steel paint scraper. Paint was scraped directly off the substrate. The goal is remove all layers of paint equally, but none of the substrate. Paint chip samples collected in this fashion are reported in PPM or % by weight .

LEAD

Laboratory analysis was performed by Schneider Laboratories, Inc. Their AIHA Accredited Laboratory Identification Number is AIHA/ELLAP #100527, and CA ELAP #2078. Samples are analyzed by Flame Atomic Absorption in accordance with EPA's "Standard Operating Procedures for Lead in Paint by Hotplate or Microwave based Acid digestions and Atomic Absorption or Inductively Coupled Plasma Emission Spectrometry" (1991), EPA/600/8-91/213, NTIS Document No. PB92-114172. Samples are prepared by hotplate digestion with nitric acid and hydrogen peroxide, and analyzed by Flame AA.

LABORATORY QUALITY CONTROL PROGRAM

Schneider Laboratories, Inc. maintains an in-house quality control program. This program involves blind reanalysis of ten percent of all samples, precision and accuracy controls, and use of standard bulk reference materials.

FINDINGS AND OBSERVATIONS

LEAD

A total of 477 assays were taken. The results indicated that 169 assays contained lead above the EPA and DHS level of 1.0 mg/ cm^2 or greater. The components, which contain lead-based paint, are:

Exterior: Window, Window Sill, Fire Supply, Door Casing, Stair Handrail, Brick Walls.

Interior: Basement Hallways – Walls, Column, Doors, Door Casings, Cage, Ceiling. Basement Linen Storage – Walls, Door Casing, Column, Window Jamb. Basement Break Room (017) – Walls, Door Casing, Door, Cage, Ceiling. Basement Stairway – Walls, Handrail, Stairpost/Newell, Garage Door.

1st Floor. Lobby (1001) – Window Sill, Window, Column. Hallway (1001) – Column, Door Casing, Skylight, Fire Exit, Door, Drain Pipe, Men's Room Door, Fire Exit, Ceiling, Deep Sink Door, Skylight, Janitor Closet Door, Building Trim. Stairway (1001) – Common Wall Handrail, Stairpost/Newell, Garage Door, Ceiling. Hallway (1004) – Janitor Closet Door, Bench Seat, Walls, Ceiling, Drain Pipe, Skylight, Doors, Storeroom Doors, Fire Exit. Office (1043) – Walls, Column, Window, Window Sill, Window, Door, Door Casing. Private Bathroom (1043) – Walls, Window Sills, Window. Office (1064) – Wall, Window, Beam. Office (1071) – Wall, Window Sill, Window, Fire Cabinet. Office (1073) – Wall, Window, Column. Office (10994) – Cage, Wall, Window Sill, Window. Office (1097) – Wall, Window Sill, Common Wall, Column.

2nd Floor. Hallway (2002) – Walls, Door, Door Casing, Column, Fire Cabinet, Drain Pipe, Skylight. Hallway (2004) – Column. Lobby (2010) – Walls. Hallway (2010) – Door, Door Casing, Walls, Drain Pipe. Hallway (2014) – Drain Pipe. Office (2095) – Wall, Window Jamb, Window Sill. Lobby (2202) – Walls, Bench Seat, Storeroom Door, Door Casing.

Cal/OSHA's Lead in Construction Standard, Title 8, CCR section 1532.1, is primarily concerned with worker protection when disturbing any detectable level of lead in paint or surface coatings.

Assays with results **less than** 1.0 mg/cm^2 and paint chip samples with results less than 5000 ppm may create hazardous conditions if subjected to poor and/or prohibited work practices. Refer to Work Activities on the following page.

OSHA LEAD REGULATION SUMMARY

The Federal Occupational Safety and Health Administration (OSHA) has enacted an interim lead standard, which was adopted by Cal/OSHA as 8 CCR 1532.1. The purpose of both standards is to protect construction workers from exposure to lead. OSHA is primarily concerned with activities that disturb lead-containing material. Lead was used in most paints until the mid 1950's and was banned in amounts in excess of 0.06% by weight in 1978 for most non-industrial paints by the Consumer Product Safety Commission (CPSC).

The new standard requires contractors and employers who perform activities that would disturb lead, must monitor their employees to determine whether they are being exposed in excess of the Action Level (AL) of 30 micrograms per cubic meter of air (ug/m^3) over an eight-hour time weighted average (TWA) or the Permissible Exposure Limit (PEL) of 50 ug/m^3 TWA. Monitoring is performed by personal exposure air sampling.

Even when concentrations are below the AL, an employer must provide employees with High Efficiency Particulate Air (HEPA) filtered vacuums, wetting agents and hand-washing facilities. If the exposure exceeds the AL or the PEL, other procedures such as containing the area, decontamination facilities and medical monitoring are required.

OSHA has identified several activities that pose varying levels of potential lead exposure to laborers disturbing lead-containing paint. Estimated exposure levels of lead are founded on the activity itself, rather than the concentrations of lead present in paint. Therefore, as an example, paints that contain 0.5% versus 15% of lead by weight or 0.8 mg/cm^2 versus 3.5 mg/cm^2 of lead in paint could present the same levels of potential exposure to workers depending on the activities that cause the disturbance and the administrative and engineering controls that are followed.

The following is a summary of work activities that disturb paint, the expected exposures and the respiratory protection requirements as outlined in the OSHA standards:

Class I Activities:

Class I activities include:	Manual demolition, manual scraping, manual sanding, heat gun application, general cleanup, power tool cleaning with dust collection systems and spray painting activities.
Potential Exposure:	50 ug/m^3 to 500 ug/m^3 Minimum Respiratory Protection: Half mask air purifying respirator equipped with HEPA filters having a protection factor of 10.

Class II Activities:

Class II activities include:	Using lead-containing mortars, lead burning, lead riveting, rivet busting, power tool cleaning without dust collection systems, cleanup of dry expendable abrasives and abrasive blasting.
Potential Exposure:	500 ug/m^3 to 2,500 ug/m^3 Minimum Respiratory Protection: Full face powered air-purifying respirators equipped with HEPA filters having a protection Factor of 100.

Class III Activities:

Class II activities include:	Abrasive blasting, welding, cutting and torch burning on steel structures.
Potential Exposure:	Greater than 2,500 ug/m^3. Minimum Respiratory Protection: Full face supplied - air respirator operated in pressure demand mode or - the positive pressure mode.

DOSH 8 CCR 1532.1 requires that an initial exposure assessment be performed if workers will be performing any of the trigger tasks found in 1532.1. It should be noted that the California Department of Health Services (DHS) has issued emergency work procedures for lead paint materials that in the absence of any other procedures are recommendations.

The following recommendations are general site specific work practice specifications.

- You must use "containment" when you sand, scrape, or disturb any detectable level of lead in paint or surface coatings.
- Containment is required for abatement and/or any activity that or disturb any detectable level of lead in paint or surface coatings.
- You must be DHS-certified (workers, supervisors, monitors, and inspectors) if you are conducting abatement.
- You must follow an abatement plan.
- A DHS -certified supervisor, monitor, and/or project designer must design an abatement project.
- A clearance inspection by dust wipe sampling is required for abatement.

RESULTS OF THE PAINT CHIP SAMPLES COLLECTED

Paint Chip Samples
NASA Ames-PAI Corporation
November 13, 2001

Sample Number	Component	Location	PPM	% By Weight
01-6346-19-1	Wall Interior	Basement at Entrance to Jail/Brig	2370	0.237
01-6347-19-2	Wall #4	Exterior Wall	70	0.007

LEAD WASTE DISPOSAL

The visual determination indicated that all building components that tested positive were in intact to poor condition (minor cracking to flaking and peeling). As such, these components need to be considered a lead hazard if flaking paint is not stabilized. All small debris (paint chips, rags, filters, and components smaller that 2"x2") that may be generated during the paint stabilization process (paint preparation) should be considered Class I, lead hazardous waste. The debris generated from paint stabilization of LBP building components should be segregated from all other dust and debris. Building components, which tested positive, should be stabilized by a DHS-accredited Contractor.

Power washing may be conducted on the building. Run off water must be collected and analyzed by an accredited laboratory to meet the criteria established by the Clean Water Act, Resource Conservation and Recovery Act (RCRA 1972). Lead levels must not exceed 5mg/L.

CODES AND REGULATIONS - LEAD-BASED PAINT

Federal and state regulations, which govern lead-based, paint work or hauling and disposal of lead-based paint waste materials include but are not limited to the following:

FEDERAL
Housing and Urban Development (HUD) 1995 Guidelines For The Evaluation and Control of Lead-Based Paint in Housing

OSHA
Lead In Construction
29 CFR 1926.62

NESHAP

Emissions Standards
40 CFR 50.12

Lead-Based Paint Poisoning Prevention Act (LBPPPA), 1970.

Title 10 - Residential LBP Hazard Reduction Act, 1992, (amendment for LBPPPA, 1970)

Resource Conservation Recovery Act (RCRA)

STATE
Cal/OSHA
Lead In Construction
Title 8 CCR 1532.1

Department of Health Services (DHS)
Emergency Work Practice Regulations
Title 17 CCR, Division 1, Chp.

APPENDIX A

XRF - DATA RESULTS TABLE

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	Base.	C001	XRF Positive	7315	Hallway	1	Wall	1.94	
19	Base.	C001	Negative	7316	Hallway	3	Wall	0.626	
19	Base.	C001	Negative	7317	Hallway	1	Column	0.504	
19	Base.	C001	XRF Positive	7318	Hallway	1	Column	2.034	
19	Base.	C001	XRF Positive	7319	Hallway	1	Door Casing	6.824	
19	Base.	C001	XRF Positive	7320	Hallway	1	Door	3.873	
19	Base.	C001	Negative	7322	Hallway	3	Vent	-0.328	
19	Base.	C001	Negative	7323	Hallway	3	Vent	-0.034	
19	Base.	C001	Negative	7324	Hallway	3	Vent	0.187	
19	Base.	C001	Negative	7325	Hallway	3	Door Casing	0.512	
19	Base.	C001	Negative	7326	Hallway	3	Door Casing	0.582	
19	Base.	C001	Negative	7327	Hallway	3	Door	-1.218	
19	Base.	C001	Negative	7328	Hallway	3	Wall	0.227	
19	Base.	C001	XRF Positive	7329	Hallway	3	Wall	5.303	
19	Base.	C001	XRF Positive	7330	Hallway	3	Cage	4.135	
19	Base.	C001	XRF Positive	7331	Hallway	1	Door	8.455	
19	Base.	C001	XRF Positive	7332	Hallway	1	Door Casing	10.647	
19	Base.	C001	Negative	7333	Hallway	1	Wall	-2.195	
19	Base.	C001	Negative	7334	Hallway	1	Wall	-0.001	
19	Base.	C002	Negative	7337	Hallway	2	Wall	-0.189	
19	Base.	C002	Negative	7338	Hallway	1	Column	-0.57	
19	Base.	C002	Negative	7339	Hallway	1	Beam	0.221	
19	Base.	C002	Negative	7340	Hallway	2	Wall	0.06	
19	Base.	C002	XRF Positive	7341	Hallway	2	Door	8.575	
19	Base.	C002	XRF Positive	7342	Hallway	2	Door Casing	10.483	
19	Base.	C002	XRF Positive	7343	Hallway	3	Door	5.535	
19	Base.	C002	XRF Positive	7344	Hallway	3	Door Casing	15.013	
19	Base.	C002	XRF Positive	7345	Hallway	2	Ceiling	5.93	
19	Base.	C002	Inconclusive	7346	Hallway	4	Wall	1.047	
19	Base.	C002	Negative	7347	Hallway	4	Wall	0.397	
19	Base.	C002	Negative	7348	Hallway	4	Fire Supply	-0.663	
19	Base.	C002	Negative	7349	Hallway	4	Door Casing	0.056	
19	Base.	003	XRF Positive	7353	Linen Storage	2	Wall	11.913	
19	Base.	003	Negative	7354	Linen Storage	2	Door Casing	0.292	
19	Base.	003	Negative	7355	Linen Storage	2	Door Casing	0.012	
19	Base.	003	XRF Positive	7356	Linen Storage	2	Door Casing	4.533	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	Base.	003	XRF Positive	7357	Linen Storage	1	Column	14.541	
19	Base.	004	XRF Positive	7361	Laundry Room	2	Wall	18.525	
19	Base.	004	XRF Positive	7362	Laundry Room	3	Wall	3.534	
19	Base.	004	XRF Positive	7363	Laundry Room	4	Wall	14.954	
19	Base.	004	XRF Positive	7364	Laundry Room	4	Column	11.096	
19	Base.	004	XRF Positive	7365	Laundry Room	1	Door Casing	3.162	
19	Base.	004	Negative	7366	Laundry Room	1	Door	0.078	
19	Base.	004	XRF Positive	7367	Laundry Room	3	Window Jamb	6.542	
19	Base.	004	XRF Positive	7368	Laundry Room	3	Window Sill	1.434	
19	Base.	004	Negative	7369	Laundry Room	1	Baseboard	0.009	
19	Base.	011	Negative	7372	Break Room	1	Wall	0.102	
19	Base.	011	Negative	7373	Break Room	2	Wall	0.77	
19	Base.	011	Negative	7374	Break Room	3	Wall	0.508	
19	Base.	011	Negative	7375	Break Room	1	Door Casing	0.584	
19	Base.	017	XRF Positive	7378	Break Room	1	Wall	19.74	
19	Base.	017	XRF Positive	7379	Break Room	2	Wall	17.507	
19	Base.	017	XRF Positive	7380	Break Room	3	Wall	30.373	
19	Base.	017	XRF Positive	7381	Break Room	4	Wall	16.691	
19	Base.	017	XRF Positive	7382	Break Room	3	Door Casing	18.391	
19	Base.	017	XRF Positive	7383	Break Room	3	Door	12.215	
19	Base.	017	Negative	7384	Break Room	4	Sink/Cabinet	0.159	
19	Base.	017	Negative	7385	Break Room	4	Sink/Cabinet	-0.406	
19	Base.	017	XRF Positive	7386	Break Room	1	Cage	16.059	
19	Base.	017	XRF Positive	7387	Break Room	1	Ceiling	14.367	
19	Base.	S006	XRF Positive	7390	Stairway	1	Wall	28.787	
19	Base.	S006	XRF Positive	7391	Stairway	2	Wall	34.024	
19	Base.	S006	XRF Positive	7392	Stairway	3	Wall	33.907	
19	Base.	S006	Negative	7393	Stairway	4	Wall	-1.489	70
19	Base.	S006	Negative	7394	Stairway	4	Wall	-0.999	2370
19	Base.	S006	XRF Positive	7395	Stairway	4	Wall	30.676	
19	Base.	S006	XRF Positive	7396	Stairway	3	Handrail Support	2.008	
19	Base.	S006	XRF Positive	7397	Stairway	3	Stairpost/Newell	13.709	
19	Base.	S006	Negative	7398	Stairway	3	Stair Handrail	-0.257	
19	Base.	S006	XRF Positive	7399	Stairway	3	Garage Door	7.662	
19	0002		Negative	7404	Exterior	1	Wall	-0.84	
19	0002		XRF Positive	7405	Exterior	1	Window	8.747	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002		XRF Positive	7406	Exterior	1	Window Sill	3.503	
19	0002		Negative	7407	Exterior	1	Beam	0.25	
19	0002		Negative	7408	Exterior	1	Door	-0.318	
19	0002		Negative	7409	Exterior	1	Door Casing	0.757	
19	0002		Negative	7410	Exterior	1	Column	0.387	
19	0002		Negative	7411	Exterior	1	Stair Handrail	0.281	
19	0002		XRF Positive	7412	Exterior	1	Fire Supply	1.452	
19	0002		XRF Positive	7413	Exterior	1	Door Casing	3.1	
19	0002		Negative	7414	Exterior	1	Ledger	-1.51	
19	0002		Negative	7415	Exterior	1	Stair Handrail	0.605	
19	0002		Negative	7416	Exterior	1	Stair Riser	0.353	
19	0002		Negative	7417	Exterior	1	Stair Riser	-0.318	
19	0002		Negative	7418	Exterior	2	Wall	-1.992	
19	0002		Negative	7419	Exterior	2	Wall	-0.292	
19	0002		XRF Positive	7420	Exterior	2	Stair Handrail	4.8	
19	0002		Negative	7421	Exterior	2	Brick Wall	0.223	
19	0002		Negative	7422	Exterior	2	Stair Riser	0.444	
19	0002		Negative	7423	Exterior	2	Window	0.396	
19	0002		Inconclusive	7424	Exterior	2	Window	1.093	
19	0002		Negative	7425	Exterior	3	Wall	0.405	
19	0002		XRF Positive	7426	Exterior	3	Brick Wall	3.476	
19	0002		XRF Positive	7427	Exterior	3	Stair Handrail	3.655	
19	0002		XRF Positive	7428	Exterior	3	Window	6.107	
19	0002		Negative	7430	Exterior	4	Wall	-0.266	
19	0002		XRF Positive	7431	Exterior	4	Fire Supply	1.28	
19	0002		XRF Positive	7432	Exterior	4	Door Casing	3.44	
19	0002		Negative	7433	Exterior	4	Stair Handrail	0.064	
19	0002		Negative	7434	Exterior	4	Ledger	0.258	
19	0002		Negative	7435	Exterior	4	Ledger	0.584	
19	0002		Negative	7436	Exterior	4	Ledger	-0.024	
19	0002		Negative	7437	Exterior	4	Window	0.206	
19	0002		Negative	7438	Exterior	4	Window	0.338	
19	0002		Negative	7439	Exterior	4	Window	0.382	
19	0002		Negative	7440	Exterior	4	Window	0.556	
19	0002		Negative	7441	Exterior	4	Window	0.44	
19	0002		XRF Positive	7442	Exterior	4	Window	4.072	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002		XRF Positive	7443	Exterior	1	Window	5.625	
19	0002	R103	Negative	7446	Men's Bathroom	3	Tile Wall	-2.675	
19	0002	R103	Negative	7447	Men's Bathroom	3	Window Sill	0.362	
19	0002	R103	Negative	7448	Men's Bathroom	3	Window	-0.063	
19	0002	R103	Negative	7449	Men's Bathroom	1	Wall	-0.179	
19	0002	R103	Negative	7450	Men's Bathroom	2	Wall	-0.011	
19	0002	R103	Negative	7451	Men's Bathroom	2	Wall	-0.158	
19	0002	R103	Negative	7452	Men's Bathroom	3	Sink/Cabinet	0.028	
19	0002	R103	Negative	7453	Men's Bathroom	2	Door	-0.028	
19	0002	R103	Negative	7454	Men's Bathroom	2	Door Casing	0.169	
19	0002	1135	Negative	7458	Hotel Room	1	Wall	0.321	
19	0002	1135	Negative	7459	Hotel Room	2	Wall	-0.047	
19	0002	1135	Negative	7460	Hotel Room	3	Wall	-0.048	
19	0002	1135	Negative	7461	Hotel Room	4	Window Sill	0.091	
19	0002	1135	Negative	7462	Hotel Room	3	Window	0.373	
19	0002	R1135	Negative	7463	Private Bathrm.	3	Window Sill	-0.377	
19	0002	R1135	Negative	7464	Private Bathrm.	3	Window Sill	0.538	
19	0002	1000	Negative	7467	Office	1	Common Wall	0.529	
19	0002	1000	Negative	7468	Office	2	Common Wall	0.298	
19	0002	1000	Negative	7469	Office	3	Common Wall	0.252	
19	0002	1000	Negative	7470	Office	4	Wall	0.342	
19	0002	1000	Negative	7471	Office	4	Window Sill	0.237	
19	0002	1000	Negative	7472	Office	4	Window	0.182	
19	0002	1000	Negative	7473	Office	4	Window	-0.226	
19	0002	1000	Negative	7474	Office	4	Support	0.473	
19	0002	1000	Negative	7475	Office	2	Door	-0.222	
19	0002	1000	Negative	7476	Office	2	Door Casing	-0.017	
19	0002	1001	Negative	7479	Lobby	1	Wall	0.698	
19	0002	1001	Negative	7480	Lobby	2	Wall	0.071	
19	0002	1001	Negative	7481	Lobby	2	Chair Rail	-0.522	
19	0002	1001	XRF Positive	7482	Lobby	1	Window Sill	2.299	
19	0002	1001	XRF Positive	7483	Lobby	1	Window	4.354	
19	0002	1001	Negative	7484	Lobby	1	Support	-0.514	
19	0002	1001	Negative	7485	Lobby	1	Floor	0.287	
19	0002	1001	Negative	7486	Lobby	1	Fire Supply	0.066	
19	0002	1001	Negative	7487	Lobby	1	Door Casing	0.348	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002	1001	XRF Positive	7488	Lobby	1	Column	2.599	
19	0002	1001	Negative	7489	Lobby	1	Bench Seat	0.207	
19	0002	1001	Inconclusive	7490	Lobby	1	Ceiling	0.962	
19	0002	1001	Negative	7491	Lobby	1	Ceiling	-1.492	
19	0002	1001	Negative	7492	Lobby	1	Ceiling	0.429	
19	0002	1001	Negative	7493	Lobby	1	Ceiling	0.874	
19	0002	1001	Negative	7494	Lobby	3	Door	-0.069	
19	0002	1001	Negative	7495	Lobby	3	Door Casing	0.347	
19	0002	1001	XRF Positive	7496	Lobby	3	Column	1.895	
19	0002	1001	Negative	7497	Lobby	3	Wall	-0.239	
19	0002	1001	Negative	7498	Lobby	3	Chair Rail	0.07	
19	0002	1001	Negative	7499	Lobby	3	Door	0.201	
19	0002	1001	Negative	7500	Lobby	3	Door Casing	0.254	
19	0002	1001	Negative	7501	Lobby	1	Door	0.093	
19	0002	1001	Negative	7502	Lobby	1	Door Casing	-0.644	
19	0002	1001	Negative	7503	Lobby	1	Chair Rail	-0.927	
19	0002	1001	Negative	7504	Lobby	1	Wall	0.053	
19	0002	C1001	Negative	7505	Hallway	3	Door	0.36	
19	0002	C1001	Negative	7506	Hallway	3	Door Casing	0.144	
19	0002	C1001	Negative	7507	Hallway	3	Door	-0.068	
19	0002	C1001	Negative	7508	Hallway	3	Door Casing	-0.651	
19	0002	C1001	Negative	7509	Hallway	1	Door	-0.479	
19	0002	C1001	Negative	7510	Hallway	1	Door Casing	0.044	
19	0002	C1001	XRF Positive	7511	Hallway	3	Column	1.368	
19	0002	C1001	Negative	7512	Hallway	3	Door	-0.252	
19	0002	C1001	Negative	7513	Hallway	3	Door Casing	-0.333	
19	0002	C1001	Negative	7514	Hallway	1	Fire Supply	-0.206	
19	0002	C1001	Negative	7515	Hallway	1	Door Casing	-0.038	
19	0002	C1001	XRF Positive	7516	Hallway	2	Door Casing	1.34	
19	0002	C1001	XRF Positive	7517	Hallway	2	Skylight	7.519	
19	0002	C1001	Negative	7518	Hallway	1	Fire Exit	-0.101	
19	0002	C1001	XRF Positive	7519	Hallway	1	Fire Exit	3.476	
19	0002	C1001	XRF Positive	7520	Hallway	3	Door	2.138	
19	0002	C1001	Negative	7521	Hallway	1	Door Casing	0.438	
19	0002	C1001	Negative	7522	Hallway	1	Door Casing	0.092	
19	0002	C1001	Negative	7523	Hallway	2	Door	0.058	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002	C1001	Negative	7524	Hallway	2	Door Casing	-0.793	
19	0002	C1001	Negative	7525	Hallway	2	Fire Supply	0.008	
19	0002	C1001	Negative	7526	Hallway	2	Door Casing	-0.539	
19	0002	S101	XRF Positive	7527	Stairway	1	Wall	34.136	
19	0002	S101	Negative	7528	Stairway	4	Wall	-0.383	
19	0002	S101	XRF Positive	7529	Stairway	3	Wall	26.719	
19	0002	S101	XRF Positive	7530	Stairway	3	Handrail Support	1.866	
19	0002	S101	Negative	7531	Stairway	3	Stair Handrail	0.472	
19	0002	S101	XRF Positive	7532	Stairway	3	Stairpost/Newell	3.147	
19	0002	S101	XRF Positive	7533	Stairway	3	Garage Door	4.974	
19	0002	S101	Negative	7534	Stairway	3	Brick Wall	-0.121	
19	0002	S101	XRF Positive	7535	Stairway	1	Window Sill	7.467	
19	0002	S101	Negative	7536	Stairway	1	Window	0.426	
19	0002	S101	XRF Positive	7537	Stairway	1	Window	4.197	
19	0002	S101	XRF Positive	7538	Stairway	1	Ceiling	19.692	
19	0002	1001	XRF Positive	7539	Hallway	4	Wall	3.102	
19	0002	1001	Negative	7540	Hallway	2	Common Wall	0.24	
19	0002	1001	Negative	7541	Hallway	2	Wall	-0.149	
19	0002	1001	Negative	7542	Hallway	2	Door	-0.101	
19	0002	1001	Negative	7543	Hallway	2	Door Casing	0.261	
19	0002	1001	XRF Positive	7544	Hallway	3	Door Casing	2.959	
19	0002	1001	XRF Positive	7545	Hallway	3	Drain Pipe	2.243	
19	0002	1001	XRF Positive	7546	Hallway	3	Skylight	9.231	
19	0002	1001	XRF Positive	7547	Hallway	2	Door	2.981	
19	0002	1001	XRF Positive	7548	Hallway	2	Door Casing	9.295	
19	0002	1001	Negative	7549	Hallway	3	Fire Supply	0.002	
19	0002	1001	Negative	7550	Hallway	3	Door Casing	0.005	
19	0002	1001	Negative	7551	Hallway	4	Common Wall	0.036	
19	0002	1001	Negative	7552	Hallway	4	Conduit	0.276	
19	0002	1001	XRF Positive	7553	Hallway	2	Mens Room Door	2.262	
19	0002	1001	XRF Positive	7554	Hallway	2	Door Casing	6.112	
19	0002	1001	Negative	7555	Hallway	3	Door	0.43	
19	0002	1001	Negative	7556	Hallway	3	Door Casing	0.158	
19	0002	1001	XRF Positive	7557	Hallway	3	Column	1.587	
19	0002	1001	Negative	7558	Hallway	3	Door	-0.662	
19	0002	1001	Negative	7559	Hallway	3	Door Casing	-0.544	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002	1001	XRF Positive	7560	Hallway	3	Wall	10.065	
19	0002	1001	Negative	7561	Hallway	1	Fire Supply	-0.283	
19	0002	1001	Negative	7562	Hallway	1	Door Casing	0.242	
19	0002	1001	XRF Positive	7563	Hallway	4	Drain Pipe	2.79	
19	0002	1001	XRF Positive	7564	Hallway	4	Skylight	8.928	
19	0002	1001	Negative	7565	Hallway	1	Fire Exit	0.633	
19	0002	1001	Negative	7566	Hallway	1	Fire Exit	-1.21	
19	0002	1001	Negative	7567	Hallway	1	Fire Exit	0.488	
19	0002	1001	XRF Positive	7568	Hallway	1	Fire Exit	20.274	
19	0002	1001	XRF Positive	7569	Hallway	1	Ceiling	9.989	
19	0002	1001	XRF Positive	7570	Hallway	2	Column	2.68	
19	0002	1001	Negative	7571	Hallway	4	Door	-0.355	
19	0002	1001	XRF Positive	7572	Stairway	1	Wall	26.801	
19	0002	1001	Negative	7573	Stairway	2	Wall	0.593	
19	0002	1001	XRF Positive	7574	Stairway	3	Common Wall	24.565	
19	0002	1001	XRF Positive	7575	Stairway	4	Common Wall	19.433	
19	0002	1001	XRF Positive	7576	Stairway	3	Handrail Support	1.296	
19	0002	1001	Negative	7577	Stairway	3	Stair Handrail	0.494	
19	0002	1001	XRF Positive	7578	Stairway	3	Stairpost/Newell	5.906	
19	0002	1001	XRF Positive	7579	Stairway	3	Garage Door	6.723	
19	0002	1001	XRF Positive	7580	Stairway	1	Ceiling	14.242	
19	0002	1001	XRF Positive	7581	Hallway	4	Deep Sink Door	6.396	
19	0002	1001	XRF Positive	7582	Hallway	4	Skylight	6.087	
19	0002	1001	Negative	7583	Restroom	4	Wms restrm door	-0.108	
19	0002	1001	Negative	7584	Hallway	4	Fire Exit	-0.273	
19	0002	1001	Negative	7585	Hallway	4	Door Casing	-0.271	
19	0002	1001	Negative	7586	Hallway	2	Door	-0.253	
19	0002	1001	Negative	7587	Hallway	2	Door Casing	-0.139	
19	0002	1001	Negative	7588	Hallway	4	Door	0.195	
19	0002	1001	Negative	7589	Hallway	4	Door Casing	0.215	
19	0002	1001	XRF Positive	7590	Hallway	2	Column	3.966	
19	0002	1001	Negative	7591	Hallway	2	Door	0.331	
19	0002	1001	Negative	7592	Hallway	4	Electrical Panel	0.228	
19	0002	1001	XRF Positive	7593	Hallway	1	Door	3.477	
19	0002	1001	XRF Positive	7594	Hallway	1	Janitor Closet Dr.	4.196	
19	0002	1001	XRF Positive	7595	Hallway	1	Door Casing	6.255	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002	1001	Negative	7596	Hallway	1	Door	-0.273	
19	0002	1001	Negative	7597	Hallway	1	Door Casing	0.424	
19	0002	1001	XRF Positive	7598	Hallway	*	Building Trim	3.037	
19	0002	1003	Negative	7601	Office	1	Common Wall	-0.488	
19	0002	1003	Negative	7602	Office	2	Wall	0.739	
19	0002	1003	Negative	7603	Office	3	Common Wall	0.301	
19	0002	1003	Negative	7604	Office	4	Common Wall	-0.101	
19	0002	1003	Negative	7605	Office	2	Window Sill	0.721	
19	0002	1003	Negative	7606	Office	2	Window	0.247	
19	0002	1003	Negative	7607	Office	4	Door Casing	0.402	
19	0002	C1004	Negative	7610	Hallway	1	Janitor Closet Dr.	0.179	
19	0002	C1004	XRF Positive	7611	Hallway	1	Janitor Closet Dr.	3.944	
19	0002	C1004	XRF Positive	7612	Hallway	1	Bench Seat	5.879	
19	0002	C1004	XRF Positive	7613	Hallway	1	Wall	4.724	
19	0002	C1004	XRF Positive	7614	Hallway	3	Wall	5.573	
19	0002	C1004	XRF Positive	7615	Hallway	1	Ceiling	10.929	
19	0002	C1004	XRF Positive	7616	Hallway	4	Drain Pipe	1.473	
19	0002	C1004	XRF Positive	7617	Hallway	4	Skylight	4.852	
19	0002	C1004	Negative	7618	Hallway	1	Door	-0.073	
19	0002	C1004	Negative	7619	Hallway	1	Door Casing	-0.211	
19	0002	C1004	Negative	7620	Hallway	3	Door	0.062	
19	0002	C1004	Negative	7621	Hallway	3	Door Casing	-0.395	
19	0002	C1004	Negative	7622	Hallway	1	Wall	0.27	
19	0002	C1004	Negative	7623	Hallway	4	Drain Pipe	-0.504	
19	0002	C1004	Negative	7624	Hallway	3	Wall	0.138	
19	0002	C1004	Negative	7625	Hallway	3	Chair Rail	0.329	
19	0002	C1004	Negative	7626	Hallway	3	Fire Cabinet	0.156	
19	0002	C1004	XRF Positive	7627	Hallway	1	Door	2.296	
19	0002	C1004	XRF Positive	7628	Hallway	1	Door	1.379	
19	0002	C1004	XRF Positive	7629	Hallway	1	Storerm door 1-2-	1.444	
19	0002	C1004	XRF Positive	7630	Hallway	1	Storerm door 1-2-	1.703	
19	0002	C1004	Negative	7631	Hallway	1	Door Casing	0.079	
19	0002	C1004	Negative	7632	Hallway	1	Door Casing	-0.403	
19	0002	C1004	Negative	7633	Hallway	1	Door Casing	0.155	
19	0002	C1004	XRF Positive	7634	Hallway	1	Fire Exit	2.195	
19	0002	C1004	Negative	7635	Hallway	1	Door Casing	0.523	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002	1025	Negative	7638	Office	1	Common Wall	-0.24	
19	0002	1025	Negative	7639	Office	2	Chair Rail	0.138	
19	0002	1025	Negative	7640	Office	3	Common Wall	-0.691	
19	0002	1025	Negative	7641	Office	4	Common Wall	-0.01	
19	0002	1025	Negative	7642	Office	2	Window Sill	-0.139	
19	0002	1025	Negative	7643	Office	2	Window	0.363	
19	0002	1025	Negative	7644	Office	4	Baseboard	-0.139	
19	0002	1025	Negative	7645	Office	4	Door Casing	0.219	
19	0002	1025	Negative	7646	Office	4	Door Casing	0.418	
19	0002	1043	XRF Positive	7649	Office	1	Wall	14.028	
19	0002	1043	Negative	7650	Office	2	Common Wall	-0.143	
19	0002	1043	XRF Positive	7651	Office	2	Column	6.024	
19	0002	1043	Negative	7652	Office	4	Common Wall	0.477	
19	0002	1043	XRF Positive	7653	Office	1	Window	4.235	
19	0002	1043	XRF Positive	7655	Office	1	Wall	7.135	
19	0002	1043	XRF Positive	7656	Office	2	Common Wall	9.905	
19	0002	1043	XRF Positive	7657	Office	4	Wall	6.157	
19	0002	1043	XRF Positive	7658	Office	4	Window Sill	7.95	
19	0002	1043	XRF Positive	7659	Office	4	Window	6.227	
19	0002	1043	XRF Positive	7660	Office	3	Door	6.186	
19	0002	1043	XRF Positive	7661	Office	3	Door Casing	7.162	
19	0002	1043	XRF Positive	7662	Private Bathrm.	2	Wall	6.039	
19	0002	1043	XRF Positive	7663	Private Bathrm.	3	Wall	8.8	
19	0002	1043	XRF Positive	7664	Private Bathrm.	4	Wall	5.899	
19	0002	1043	XRF Positive	7665	Private Bathrm.	4	Window Sill	3.354	
19	0002	1043	XRF Positive	7666	Private Bathrm.	4	Window	7.995	
19	0002	1064	XRF Positive	7669	Office	3	Wall	1.349	
19	0002	1064	Negative	7670	Office	3	Window Sill	-1.01	
19	0002	1064	XRF Positive	7671	Office	3	Window	3.616	
19	0002	1064	Negative	7672	Office	2	Siding	-0.148	
19	0002	1064	Negative	7673	Office	4	Wall	0.212	
19	0002	1064	Negative	7674	Office	1	Siding	-0.878	
19	0002	1064	Negative	7675	Office	1	Door Casing	-0.035	
19	0002	1064	XRF Positive	7676	Office	1	Beam	10.41	
19	0002	1064	Negative	7677	Office	1	Ceiling	0.112	
19	0002	1071	XRF Positive	7680	Office	4	Wall	15.656	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0002	1071	Negative	7681	Office	2	Wall	0.181	
19	0002	1071	XRF Positive	7682	Office	4	Window Sill	1.76	
19	0002	1071	XRF Positive	7683	Office	4	Window	10.899	
19	0002	1071	Negative	7684	Office	2	Baseboard	0.796	
19	0002	1071	Negative	7686	Hallway	1	Floor	-0.543	
19	0002	1071	XRF Positive	7687	Hallway	2	Fire Cabinet	8.998	
19	0002	1072	Negative	7690	Office	1	Siding	-0.734	
19	0002	1072	Negative	7691	Office	1	Door	0.238	
19	0002	1072	Negative	7692	Office	1	Door Casing	-0.097	
19	0002	1072	Negative	7693	Office	3	Siding	0.026	
19	0002	1072	Negative	7694	Office	6	Stair Riser	-0.098	
19	0002	1073	Inconclusive	7697	Office	1	Wall	1.085	
19	0002	1073	XRF Positive	7698	Office	1	Wall	3.024	
19	0002	1073	Negative	7699	Office	1	Window Sill	0.158	
19	0002	1073	XRF Positive	7700	Office	1	Window	13.222	
19	0002	1073	Negative	7701	Office	4	Siding	0.274	
19	0002	1073	Negative	7702	Office	3	Siding	-0.584	
19	0002	1073	XRF Positive	7703	Office	3	Column	1.499	
19	0002	1073	Negative	7704	Office	3	Door Casing	0.031	
19	0002	1073	Negative	7705	Office	3	Door	0.21	
19	0002	1094	XRF Positive	7708	Office	2	Cage	2.853	
19	0002	1094	XRF Positive	7709	Office	3	Wall	15.726	
19	0002	1094	XRF Positive	7710	Office	3	Window Sill	3.698	
19	0002	1094	XRF Positive	7711	Office	3	Window	4.39	
19	0002	1094	Negative	7712	Office	2	Common Wall	-0.715	
19	0002	1097	XRF Positive	7715	Office	1	Wall	10.247	
19	0002	1097	XRF Positive	7716	Office	1	Window Sill	1.846	
19	0002	1097	XRF Positive	7717	Office	1	Window	7.868	
19	0002	1097	XRF Positive	7718	Office	2	Common Wall	2.445	
19	0002	1097	Negative	7719	Office	3	Common Wall	-0.49	
19	0002	1097	XRF Positive	7720	Office	2	Column	1.359	
19	0002	1097	Negative	7721	Office	3	Door	-0.307	
19	0003	0205	Negative	7724	WmnsBathroom	1	Tile Wall	0.665	
19	0003	0205	Negative	7725	WmnsBathroom	1	Tile Wall	-1.197	
19	0003	0205	Inconclusive	7726	WmnsBathroom	1	Baseboard	0.982	
19	0003	0205	Negative	7727	WmnsBathroom	1	Bench Seat	-1.554	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0003	0205	Negative	7728	WmnsBathroom	1	Stall Door	0.267	
19	0003	0205	Negative	7729	WmnsBathroom	1	Floor	0.166	
19	0003	0205	Negative	7730	WmnsBathroom	3	Window Jamb	0.103	
19	0003	0205	Negative	7731	WmnsBathroom	3	Window Sill	0.128	
19	0003	0234	Negative	7734	Hotel Room	1	Wall	0.207	
19	0003	0234	Negative	7735	Hotel Room	2	Wall	-0.721	
19	0003	0234	Negative	7736	Hotel Room	3	Wall	0.5	
19	0003	0234	Negative	7737	Hotel Room	4	Wall	0.229	
19	0003	0234	Negative	7738	Hotel Room	1	Window Jamb	0.608	
19	0003	0234	Negative	7739	Hotel Room	1	Door	0.116	
19	0003	0234	Negative	7740	Private Bathrm.	1	Wall	0.26	
19	0003	0234	Negative	7741	Private Bathrm.	2	Wall	-0.4	
19	0003	0234	Negative	7742	Private Bathrm.	2	Door Casing	-0.411	
19	0003	2000	Negative	7745	Office	1	Wall	0.181	
19	0003	2000	Negative	7746	Office	1	Door	-0.011	
19	0003	2000	Negative	7747	Office	1	Door Casing	0.321	
19	0003	2000	Negative	7748	Office	2	Wall	0.122	
19	0003	2000	Negative	7749	Office	3	Wall	-0.333	
19	0003	2000	Negative	7750	Office	3	Window Jamb	0.328	
19	0003	2000	Negative	7751	Office	3	Window Sill	-0.145	
19	0003	2000	Negative	7752	Office	4	Wall	0.177	
19	0003	C2002	XRF Positive	7755	Hallway	1	Wall	30.928	
19	0003	C2002	XRF Positive	7756	Hallway	3	Wall	26.832	
19	0003	C2002	XRF Positive	7757	Hallway	3	Door	9.989	
19	0003	C2002	XRF Positive	7758	Hallway	3	Door Casing	6.14	
19	0003	C2002	XRF Positive	7759	Hallway	3	Column	11.383	
19	0003	C2002	XRF Positive	7760	Hallway	3	Fire Cabinet	6.266	
19	0003	C2002	XRF Positive	7761	Hallway	4	Drain Pipe	6.524	
19	0003	C2002	XRF Positive	7762	Hallway	4	Skylight	9.161	
19	0003	C2003	Negative	7765	Hallway	1	Wall	-0.611	
19	0003	C2003	Negative	7766	Hallway	1	Chair Rail	0.358	
19	0003	C2003	Negative	7767	Hallway	3	Door Casing	0.281	
19	0003	C2003	Negative	7768	Hallway	1	Wall	0.352	
19	0003	C2003	Negative	7769	Hallway	1	Window Jamb	0.109	
19	0003	C2003	Negative	7770	Hallway	1	Window Sill	0.447	
19	0003	C2003	Negative	7771	Hallway	2	Stairpost/Newell	0.283	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0003	C2003	Negative	7772	Hallway	1	Stair Handrail	0.253	
19	0003	C2003	Negative	7773	Hallway	3	Ladder	0.592	
19	0003	C2003	Negative	7774	Hallway	3	Ceiling	0.09	
19	0003	C2003	Negative	7775	Hallway	1	Wall	0.215	
19	0003	C2003	Negative	7776	Hallway	2	Wall	0.194	
19	0003	C2003	Negative	7777	Hallway	3	Window Jamb	0.01	
19	0003	2004	Negative	7780	Office	1	Wall	-0.017	
19	0003	2004	Negative	7781	Office	1	Window Jamb	0.258	
19	0003	2004	Negative	7782	Office	1	Window Sill	-0.064	
19	0003	2004	Negative	7783	Office	2	Wall	0.424	
19	0003	2004	Negative	7784	Office	2	Door Casing	0.002	
19	0003	2004	Negative	7785	Office	2	Door	-0.971	
19	0003	C2004	Negative	7786	Hallway	2	Column	0.411	
19	0003	C2004	Negative	7787	Hallway	2	Column	0.17	
19	0003	C2004	Negative	7788	Hallway	2	Column	0.12	
19	0003	C2004	Negative	7789	Hallway	2	Column	0.772	
19	0003	C2004	Negative	7790	Hallway	2	Column	0.533	
19	0003	C2004	XRF Positive	7791	Hallway	2	Column	7.297	
19	0003	2006	Negative	7794	Common Area	1	Wall	0.144	
19	0003	2006	Negative	7795	Hallway	3	Door	0.047	
19	0003	2006	Negative	7796	Hallway	3	Door Casing	-0.551	
19	0003	2007	Negative	7799	Office	1	Wall	0.044	
19	0003	2007	Negative	7800	Office	2	Wall	0.063	
19	0003	2007	Negative	7801	Office	2	Window Jamb	0.506	
19	0003	2007	Negative	7802	Office	2	Window Sill	0.361	
19	0003	2007	Negative	7803	Office	3	Wall	-0.08	
19	0003	2007	Negative	7804	Office	4	Wall	-0.446	
19	0003	2007	Negative	7805	Office	4	Door Casing	0.028	
19	0003	2007	Negative	7806	Office	4	Door	-1.44	
19	0003	2010	XRF Positive	7809	Lobby	1	Wall	9.494	
19	0003	2010	XRF Positive	7810	Hallway	1	Wall	6.424	
19	0003	2010	XRF Positive	7811	Hallway	1	Door	6.643	
19	0003	2010	XRF Positive	7812	Hallway	1	Door Casing	2.744	
19	0003	2010	XRF Positive	7813	Hallway	3	Wall	8.361	
19	0003	2010	Negative	7814	Hallway	1	Baseboard	-1.173	
19	0003	2010	Negative	7815	Hallway	1	Baseboard	0.613	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0003	2010	XRF Positive	7817	Hallway	1	Wall	22.532	
19	0003	2010	XRF Positive	7818	Hallway	3	Wall	29.994	
19	0003	2010	Negative	7819	Hallway	3	Door	0.01	
19	0003	2010	Negative	7820	Hallway	3	Door Casing	-0.025	
19	0003	2010	Negative	7821	Hallway	1	Wall	0.525	
19	0003	2010	XRF Positive	7822	Hallway	1	Wall	12.391	
19	0003	2010	XRF Positive	7823	Hallway	4	Drain Pipe	7.542	
19	0003	2010	Negative	7824	Hallway	4	Fire Supply	-0.177	
19	0003	2014	Negative	7827	Hallway	1	Wall	-0.043	
19	0003	2014	Negative	7828	Hallway	3	Wall	0.334	
19	0003	2014	Negative	7829	Hallway	2	Fire Supply	0.18	
19	0003	2014	Negative	7830	Hallway	2	Door Casing	0.077	
19	0003	2014	Negative	7831	Hallway	1	Door Casing	0.278	
19	0003	2014	XRF Positive	7832	Hallway	3	Drain Pipe	10.129	
19	0003	2017	Negative	7835	Hallway	1	Wall	-0.114	
19	0003	2017	Negative	7836	Hallway	2	Window Jamb	0.306	
19	0003	2029	Negative	7839	Office	1	Wall	-0.538	
19	0003	2029	Inconclusive	7840	Office	2	Wall	0.944	
19	0003	2029	Negative	7841	Office	2	Wall	0.517	
19	0003	2029	Negative	7842	Office	2	Window Jamb	0.452	
19	0003	2029	Negative	7843	Office	2	Window Sill	-0.928	
19	0003	2029	Negative	7844	Office	3	Wall	-0.153	
19	0003	2029	Negative	7845	Office	4	Wall	-0.003	
19	0003	2029	Negative	7846	Office	4	Door Casing	-0.461	
19	0003	2029	Negative	7847	Office	4	Door	0.297	
19	0003	2080	Uknown	7850	Copy Room	1	Wall	0	
19	0003	2080	Negative	7852	Copy Room	1	Wall	0.341	
19	0003	2080	Negative	7853	Copy Room	2	Wall	0.324	
19	0003	2080	Negative	7854	Copy Room	4	Window Jamb	0.099	
19	0003	2080	Negative	7855	Copy Room	2	Door Casing	-0.437	
19	0003	2095	XRF Positive	7858	Office	1	Wall	32.407	
19	0003	2095	XRF Positive	7859	Office	1	Window Jamb	7.277	
19	0003	2095	Negative	7860	Office	1	Window Sill	-0.067	
19	0003	2095	XRF Positive	7861	Office	1	Window Sill	6.378	
19	0003	2095	Negative	7862	Office	2	Wall	0.401	
19	0003	2095	Negative	7863	Office	2	Column	0.075	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
19	0003	2095	Negative	7864	Office	3	Wall	-1.158	
19	0003	2202	XRF Positive	7867	Lobby	1	Wall	13.686	
19	0003	2202	XRF Positive	7868	Lobby	3	Wall	16.221	
19	0003	2202	Negative	7869	Lobby	1	Fire Supply	-0.171	
19	0003	2202	Negative	7870	Lobby	1	Door Casing	-0.01	
19	0003	2202	Negative	7871	Lobby	1	Door Casing	-0.309	
19	0003	2202	XRF Positive	7872	Lobby	3	Bench Seat	8.144	
19	0003	2202	XRF Positive	7873	Lobby	3	Storeroom Door	5.433	
19	0003	2202	XRF Positive	7874	Lobby	3	Door Casing	2.643	

APPENDIX B

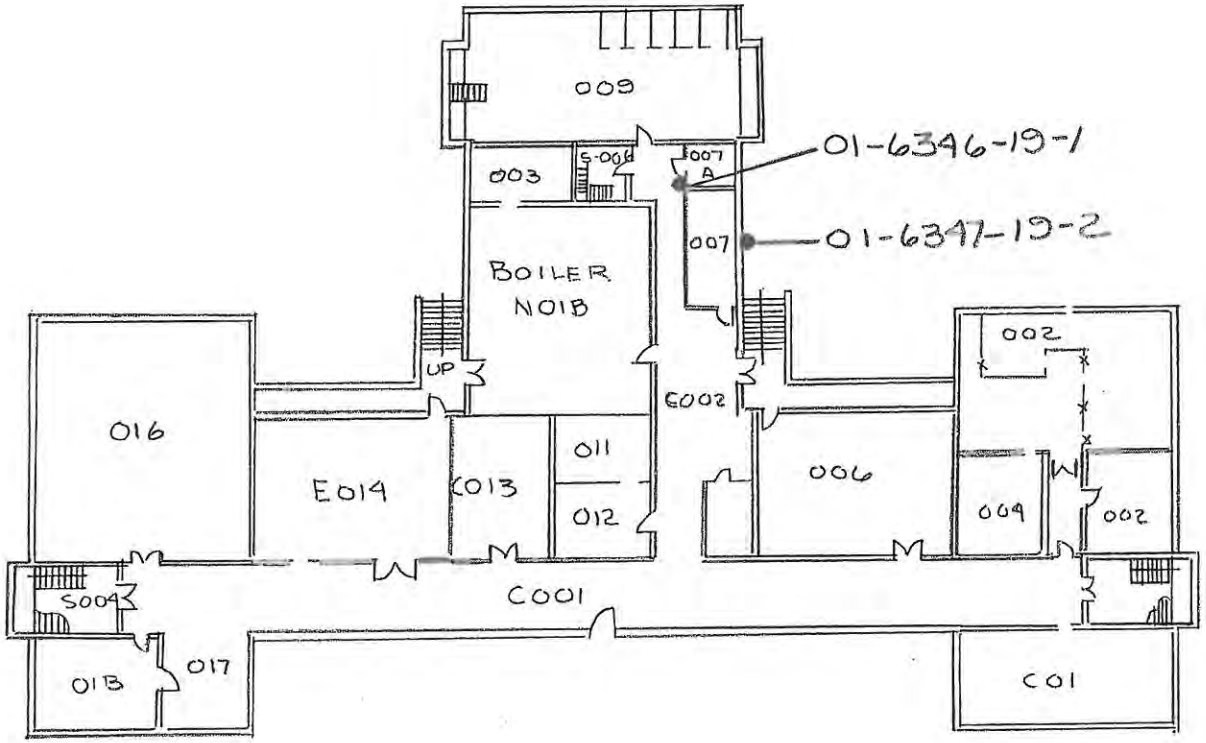
CERTIFICATION(S)

Richard L. MacFarlane

Inspector/Assessor
I-2241 (Exp.12/03/01)

APPENDIX C

SITE MAP



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BASEMENT

BENCHMARK

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

PROJECT NAME:
BUILDING 19
NASA-AMES
3-15 Years Out

DRAFT PERSON:	DATE:	DWG. No.
RJM	12/17	05

PROJECT No.
EO1-612-AL-SU

APPENDIX D

LABORATORY RESULTS

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

Lead Analysis by EPA 3050B/7420 Method

ACCOUNT #: 2541-01-291
CLIENT: Benchmark
ADDRESS: 3732 Charter Park Drive
San Jose, CA 95136
PO NO.:
PROJECT NAME: PAI
PROJECT NO:
JOB LOCATION: NASA Bldg 19

DATE COLLECTED: 11/13/2001
DATE RECEIVED: 11/14/2001
DATE ANALYZED: 11/14/2001
DATE REPORTED: 11/15/2001

SAMPLE TYPE: PAINT

SLI Sample No.	Client Sample No.	Sample Description	Sample Wt (mg)	Dilution Factor	Total Lead (µg)*	Lead Conc (% by wt)	Lead Conc (PPM)
2096467	01-6346-19-1	Bsmt@EntToJail/Brig	492	2	1,164.1	0.237	2370
2096468	01-6347-19-2	Wall #4	490	1	32.0	0.007	70
	QC - 19950	10.0 ppm Calibration Std			992.5	99.2%	
	QC - 19950	200 µg spike			201.3	100.6%	
	QC - 19950	5.0 ppm Calibration Std			510.1	102.0%	
	QC - 19950	Blank			< 20.0		
	QC - 19950	NIST 2710 Standard			569.4	102.9%	

ANALYST: AMY J. COLOSIMO
Total no. of pages in report = 1

REVIEWED BY Matthew D. Asbury **Matthew D. Asbury, Dept. Head**

*Minimum Reporting Limit: 20 µg Total Lead. For work involving HUD, child-occupied building and other residential units, the Federal Lead Standard is 0.5% lead by weight [5000 ppm]. The requirements of the OSHA Lead in Construction Standard, 29 CFR 1926.62, are invoked if any lead is present in the sample; there is no minimum concentration. *For true values, assume two (2) significant figures. All testing is performed in strict accordance with Schneider Laboratories, Inc. protocol.*

2541-01-291

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: _____ Date: 11-13-01 Technician: R. MAC FARLAND

Project Location: NASA Bldg # 19

Client Name: Kris m Company: PAI

Project Type	Type Of Analysis	Turnaround Time
Asbestos	PLM/Bulk (EPA 600)	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
P/C	SAMPLES 2"x2"			PPM
	WALL INTERIOR	01-6346-19-1	BASEMENT AT ENTRANCE TO JAIL/BRIG	
	WALL EXTERIOR	01-6347-19-2	WALL #4	
			Sensitivity must be < 25	

Relinquished By:	Received By:	Date/Time Received
PPM	Gone 1Z2E28992210136784	11-14-01 10:00 UPS

3732 Charter Park Drive
Suite A
San Jose, CA 95136
408.448.7594
TOLL FREE: 800.988.7424
FAX: 408.448.3849

BUILDING INSPECTIONS

ENVIRONMENTAL ENGINEERING

SPECIALIZED TRAINING

CONTRACT MANAGEMENT

BENCHMARK

Visual Mold Evaluation

Building 19

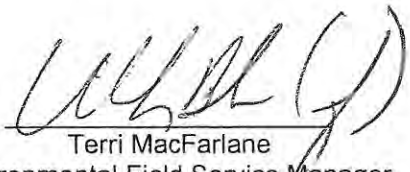
Benchmark PROJECT NO. E01-612-AL-SU

PREPARED FOR

Kris McGlothlin
NASA-Ames PAI Corporation
NASA-Ames Research Center
MS 19-21
Moffett Field, CA 94035-1000

PREPARED BY

Benchmark Environmental Engineering
3732-A Charter Park Drive
San Jose, CA 95136
1-800-988-7424



Terri MacFarlane
Environmental Field Service Manager

Discoloration

Floor	Building	Space ID	Observation
2	Building 19	Hallway	Discoloration
2	Building 19	Main Corridor	Discoloration
2	Building 19	Main Corridor	Discoloration
2	Building 19	Copy Room	Discoloration
2	Building 19	Main Corridor	Discoloration
2	Building 19	Main Lobby - Hotel	Discoloration
1	Building 19	Bathroom - Outside of hotel area	Peeling Paint
1	Building 19	Reception Area	Discoloration
1	Building 19	Administration Offices	Discoloration
2	Building 19	Messanine	Discoloration
1	Building 19	Hallway	Discoloration

Other Observation

Floor	Building	Space ID	Observation
2	Building 19	Room 2091	Large Bag

BUILDING 019: BACHELORS ENLISTED QUARTERS AND OFFICES

This two-story, tan concrete building was built in 1933 and is 138,357-square feet. There is an attic, basement, and a plenum over both the first and second floors. The concrete-frame structure rests on a concrete foundation; the central portion has a pitched tile roof, but the rest of the roof is composite and flat. The National Aeronautics and Space Administration (NASA) was scheduled to occupy the building as of June 1993.

The asbestos survey and sampling determined the following information:

- thirty-five homogeneous areas (HA) were identified during the initial survey;
- eighteen HAs were confirmed by sampling to contain asbestos;
- ten HAs were assumed to contain asbestos; and,
- asbestos was not detected in seven homogeneous areas.

One hundred ten samples were collected from the twenty-five HAs sampled. Seventy-five samples were analyzed by Polarized Light Microscopy (PLM); thirty-five were not analyzed because the presence of asbestos was confirmed in another sample of the same homogeneous area.

Sample Results

The following homogeneous areas sampled in Building 019 were confirmed to contain asbestos:

- 2,700 LF of 1" pipe run TSI (HA 09) with damage;
- 400 LF of 1" pipe elbow TSI (HA 10) with damage;

- 22 LF of 3/4" pipe TSI (HA 11) with significant damage;
- 2 LF of 3/4" pipe elbow TSI (HA 16) with no damage;
- 1,500 LF of 3" pipe run TSI (HA 17) with significant damage;
- 800 LF of 5" pipe run TSI (HA 20) with damage;
- 20 LF of 5" pipe elbow TSI (HA 21) with damage;
- 325 LF of 6" pipe run TSI (HA 22) with damage;
- 30 LF of 3" pipe elbow TSI (HA 23) with damage;
- 1,300 LF of 2" pipe run TSI (HA 24) with damage;
- 25 LF of 2" pipe elbow TSI (HA 25) with damage;
- 60 LF of 12" pipe run TSI (HA 26) with damage;
- 450 SF of silver boiler TSI (HA 27) with damage;
- 100 SF of yellow boiler TSI (HA 28) with damage;
- 230 LF of 1" pipe run TSI (HA 29) with damage;
- 8 LF of 1" pipe elbow with aircell (HA 30) with damage;
- 75 SF of 2" pipe run aircell (HA 31) with damage; and,
- 35 LF of thermal hangar shields (HA 32) with potential for damage.

Asbestos was not detected in the following homogeneous areas identified in Building 019:

- 95,000 SF of plaster (HA 02) with damage;
- 19,860 SF of wallboard (HA 03) with potential for damage;
- 15,000 SF of 2'x4' white pinhole ceiling tile (HA 04) with damage;
- 1,800 SF of 12" white ceiling tile (HA 12) with damage;
- 15,500 SF of 2'x4' white patterned ceiling tile (HA 13) with potential for damage;
- 5,900 SF of 12" white ceiling tile with holes (HA 15) with no damage; and,
- 500,000 SF of tan exterior surfacing (HA 35) with no damage.

Assumed ACM

The following homogeneous areas in Building 019 were assumed to contain asbestos:

- 32,000 SF of roofing (HA 01) with no damage;
- 15,000 SF of coving mastic (HA 05) with damage;
- 990 SF of 1'x4' floor tile on stairs (HA 06) with damage;
- 25,300 SF of 12" tan floor tile (HA 07) with no damage;
- 2,300 SF of 9" brown floor tile (HA 08) with no damage;

- 6 SF of 12" green floor tile (HA 14) with significant damage;
- 60 SF of fire doors (HA 18) with no damage;
- 110 SF of 1'x3' black stair tile (HA 19) with no damage;
- 7,700 SF of ceiling tile mastic (HA 33) with potential for damage; and,
- 28,600 SF of floor tile mastic (HA 34) with potential for damage.

Previous ACM Reports

No previous asbestos reports were made available to Tetra Tech for Building 019.

Observations

A small pile of lagging debris has accumulated in NASA's storage room in the east end of the basement.

Microvacuum samples of settled dust were taken from two areas. Each microvacuum sample was one square foot of surface area; the sample numbers, locations, and fiber count are as follows:

- MOFV-015; on an upholstered chair seat in the basement boiler room; 12,752 fibers/SF; and,
- MOFV-016, in the main basement corridor, near the intersection of the corridor leading to the boiler room; 8,340 fibers/SF.

Refer to Appendix G for a discussion of microvacuum results.

Recommendations for Operations and Maintenance

Operations and maintenance recommendations for confirmed or assumed homogeneous areas of ACM are shown below:

- HA 01 (roofing) is an assumed, non-friable ACM with no damage. HA 01 is located on the exterior of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 05 (coving mastic) is an assumed, non-friable ACM with damage. HA 05 is located throughout the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 06 (1'x4' floor tile on stairs) is an assumed, non-friable ACM with damage. HA 06 is located on the stairway of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 07 (12" tan floor tile) is an assumed, non-friable ACM with no damage. HA 07 is located in the first and second floor hallways of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 08 (9" brown floor tile) is an assumed, non-friable ACM with no damage. HA 08 is located in the south central part of the 1st floor, second floor north central and southeast end of the building. This material should be maintained following guidelines in the O&M Plan,

Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 09 (1" pipe run TSI) is a confirmed, friable ACM with damage. HA 09 is located throughout the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 10 (1" pipe elbow TSI) is a confirmed, friable ACM with damage. HA 10 is located throughout the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 11 (3/4" pipe TSI) is a confirmed, friable ACM with significant damage. HA 11 is located in the western end of the first floor and the second floor, east end of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 14 (12" green floor tile) is an assumed, non-friable ACM with significant damage. HA 14 is located in the western part of the first floor of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 16 (3/4" pipe elbow TSI) is a confirmed, friable ACM with no damage. HA 16 is located in the western end of the first floor and the second floor, east end of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 17 (3" pipe run TSI) is a confirmed, friable ACM with significant damage. HA 17 is located in the basement and first floor of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 18 (fire doors) is an assumed, non-friable ACM with no damage. HA 18 is located in the central part of the second floor of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 19 (1'x3' black stair tile) is an assumed, non-friable ACM with no damage. HA 19 is located on the stairway of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 20 (5" pipe run TSI) is a confirmed, friable ACM with damage. HA 20 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 21 (5" pipe elbow TSI) is a confirmed, friable ACM with damage. HA 21 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 22 (6" pipe run TSI) is a confirmed, friable ACM with damage. HA 22 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 23 (3" pipe elbow TSI) is a confirmed, friable ACM with damage. HA 23 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 24 (2" pipe run TSI) is a confirmed, friable ACM with damage. HA 24 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 25 (2" pipe elbow TSI) is a confirmed, friable ACM with damage. HA 25 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 26 (12" pipe run TSI) is a confirmed, friable ACM with damage. HA 26 is located in the basement of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 27 (silver boiler TSI) is a confirmed, friable ACM with damage. HA 27 is located in the mechanical room of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 28 (yellow boiler TSI) is a confirmed, friable ACM with damage. HA 28 is located in the mechanical room of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 29 (1" pipe run TSI) is a confirmed, friable ACM with damage. HA 29 is located inside the crawlspace of the building. This material should be

removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 30 (1" pipe elbow with aircell) is a confirmed, friable ACM with damage. HA 30 is located inside the crawlspace of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 31 (2" pipe run aircell) is a confirmed, friable ACM with damage. HA 31 is located inside the crawlspace of the building. This material should be removed following guidelines in the O&M Plan, Section 6 and Appendices C and E.

- HA 32 (thermal hangar shields) is a confirmed, friable ACM with potential for damage. HA 32 is located inside the crawlspace of the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 33 (ceiling tile mastic) is an assumed, non-friable ACM with potential for damage. HA 33 is located throughout the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

- HA 34 (floor tile mastic) is an assumed, non-friable ACM with potential for damage. HA 34 is located throughout the building. This material should be maintained following guidelines in the O&M Plan, Section 6 and Appendix A, during regular maintenance and any small-scale repair activities.

NAS Moffett Field
Asbestos Survey Summary

Building	Material No.	Description	Location	Quantity	Units	% Damage	Friability	Condition	Recom-mended Action	Repair/ Replace Cost for Friable ACM	Hazard	Comments
019	01	Roofing	Exterior	32000	SF	0	Non	No damage	O&M		4	
019	02	Plaster	Throughout	95000	SF	1	Non	Damage	None		0	
019	03	Wallboard	Throughout	19860	SF	0	Non	Pot. for damage	None		0	
019	04	2'x4' white pinhole ceiling tile	1st and 2nd fl hallways	15000	SF	3	Low	Damage	None		0	
019	05	Coving mastic	Throughout	15000	SF	8	Non	Damage	O&M		21	Repair
019	06	1'x4' floor tile on stairs	Stairway	990	SF	3	Non	Damage	O&M		18	Repair
019	07	12" tan floor tile	1st and 2nd fl hallways	25300	SF	0	Non	No damage	O&M		7	
019	08	9" brown floor tile	1st fl S center, 2nd fl N center and SE	2300	SF	0	Non	No damage	O&M		6	
019	09	1" pipe run TSI	Throughout	2700	LF	9	Mod	Damage	Remove	$32,400.00	51	
019	10	1" pipe elbow TSI	Throughout	400	LF	3	Low	Damage	Remove	$5,200.00	35	
019	11	3/4" pipe TSI	1st fl W and 2nd fl E	22	LF	25	Mod	Sig. damage	Remove	$264.00	61	
019	12	12" white ceiling tile	1st and 2nd floor	1800	SF	1	Low	Damage	None		0	
019	13	2'x4' white patterned ceiling tile	1st and 2nd fl W	15500	SF	0	Low	Pot. for damage	None		0	
019	14	12" green floor tile	1st fl W	6	SF	8	Non	Significant damage	O&M		24	Repair
019	15	12" white ceiling tile w/ holes	1st floor S	5900	SF	0	Low	No damage	None		0	
019	16	3/4" pipe elbow TSI	1st fl W and 2nd fl E	2	LF	0	Low	No damage	O&M		12	
019	17	3" pipe run TSI	Bsmnt, 1st fl	1500	LF	20	Mod	Sig. damage	Remove	$19,500.00	61	
019	18	Fire doors	2nd fl center	60	SF	0	Non	No damage	O&M		6	
019	19	1'x3' black stair tile	Stairway	110	SF	0	Non	No damage	O&M		6	
019	20	5" pipe run TSI	Bsmnt	800	LF	9	Mod	Damage	Remove	$12,000.00	46	
019	21	5" pipe elbow TSI	Bsmnt	20	LF	2	Mod	Damage	Remove	$380.00	46	
019	22	6" pipe run TSI	Bsmnt	325	LF	3	Mod	Damage	Remove	$5,525.00	46	
019	23	3" pipe elbow TSI	Bsmnt	30	LF	2	Mod	Damage	Remove	$450.00	23	
019	24	2" pipe run TSI	Bsmnt	1300	LF	14	Mod	Damage	Remove	$16,250.00	51	
019	25	2" pipe elbow TSI	Bsmnt	25	LF	1	Mod	Damage	Remove	$350.00	46	
019	26	12" pipe run TSI	Bsmnt	60	LF	5	Mod	Damage	Remove	$1,200.00	46	
019	27	Silver boiler TSI	Mechanical room	450	SF	10	Mod	Damaged	Remove	$8,100.00	46	
019	28	Yellow boiler TSI	Mechanical room	100	SF	20	Mod	Damage	Remove	$1,800.00	46	
019	29	1" pipe run TSI	Crawl space	230	LF	9	Mod	Damage	Remove	$2,760.00	42	
019	30	1" pipe elbow w/ aircell	Crawl space	8	LF	2	Mod	Damage	Remove	$96.00	46	

POLARIZED LIGHT MICROSCOPY
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180 Howard Street, Suite 250
San Francisco, CA 94105

Samples Submitted: 110
Samples Analyzed: 75
Job Site / No. NAS Moffett Field Asbestos Survey
TC9292-09

Date Submitted: Jun-17-93
Date Reported: Jun-17-93

SAMPLE ID	ASBESTOS % TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H03A Lab ID # 103-298-011	None Detected	Fibers: 1-5% Cellulose Matrix: 95-99% Gypsum,Anhydrite,Calcite,Qtz	Bldg # 019 Sheetrock, White
019-H03B Lab ID # 103-298-012	None Detected	Fibers: 1-5% Cellulose Matrix: 95-99% Gypsum,Calcite,Anhydrite	Bldg # 019 Sheetrock, Off-White
019-H03C Lab ID # 103-298-013	None Detected	Fibers: 1-5% Cellulose Matrix: 95-99% Gypsum, Calcite, Anhydrite	Bldg # 019 Sheetrock, Off-White
019-H03D Lab ID # 103-298-014	None Detected	Fibers: 1-5% Cellulose Matrix: 95-99% Gypsum,Anhydrite,Calcite	Bldg # 019 Sheetrock, Off-White
019-H03E Lab ID # 103-298-015	None Detected	Fibers: None Detected Matrix: 99-100% Quartz,Gypsum,Paint,Calcite	Bldg # 019 Coarse Plaster/Paint, White
019-H03F Lab ID # 103-298-016	None Detected	Fibers: 5-10% Cellulose Matrix: 90-95% Gypsum,Calcite,Anhydrite,Qtz	Bldg # 019 Sheetrock, White
019-H03G Lab ID # 103-298-017	None Detected	Fibers: <1% Fiberglass, Cellulose Matrix: 99-100% Gypsum, Calcite, Quartz	Bldg # 019 Sheetrock, Off-White
019-H03-H Lab ID # 103-298-018	None Detected	Fibers: 1-5% Cellulose Matrix: 95-99% Gypsum, Calcite, Quartz	Bldg # 019 Sheetrock, White
019-H03-I Lab ID # 103-298-019	None Detected	Fibers: 10-20% Cellulose Matrix: 80-90% Gypsum, Calcite, Quartz	Bldg # 019 Sheetrock, White
019-H03-J Lab ID # 103-298-020	None Detected	Fibers: 1-5% Cellulose Matrix: 95-99% Gypsum,Calcite,Gypsum,Quartz	Bldg # 019 Sheetrock, White

Lab Manager [signature]

Analyst [signature] Pokrovski

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SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H04-A Lab ID # 103-298-021	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Binder,Paint,Calcite,Fib	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-B Lab ID # 103-298-022	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Binder,Calcite,Paint,Fib	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-C Lab ID # 103-298-023	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Fibgl Frag,Calcite,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-D Lab ID # 103-298-024	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40%Foam,Fibgls Frag,Calcite,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-E Lab ID # 103-298-025	None Detected		Fibers: 60-80% Cellulose, Fiberglass Matrix: 20-40% Foam,Fibgls Frag,Quartz,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-F Lab ID # 103-298-026	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Fibgls Frag,Quartz,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-G Lab ID # 103-298-027	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Fibglass,Paint,Calcite	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-H Lab ID # 103-298-028	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Fibglass,Paint,Calcite	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-I Lab ID # 103-298-029	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40%Foam,Fibgls Frag,Calcite,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey
019-H04-J Lab ID # 103-298-030	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40%Foam,Fibgls Frag,Calcite,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey

Lab Manager R. McKinney

Analyst V. Porosky

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SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H09-A Lab ID # 103-298-031	10-20% 10-20%	Chrysotile Amosite	Fibers: 5-10% Cellulose Matrix: 50-75% Calcite, Binder, Quartz	Bldg # 019 Insulation, White
019-H09-B Lab ID # 103-298-032	Not Analyzed		Fibers: Matrix:	Bldg # 019
019-H09-C Lab ID # 103-298-033	Not Analyzed		Fibers: Matrix:	Bldg # 019
019-H09-D Lab ID # 103-298-034	Not Analyzed		Fibers: Matrix:	Bldg # 019
019-H09-E Lab ID # 103-298-035	Not Analyzed		Fibers: Matrix:	Bldg # 019
019-H10-A Lab ID # 103-298-036	10-20% 20-30%	Chrysotile Amosite	Fibers: None Detected Matrix: 50-70% Calcite, Binder	Bldg # 019 Insulation, White
019-H10-B Lab ID # 103-298-037	Not Analyzed		Fibers: Matrix:	Bldg # 019
019-H10-C Lab ID # 103-298-038	Not Analyzed		Fibers: Matrix:	Bldg # 019
019-H11-A Lab ID # 103-298-039	20-30% 10-20%	Chrysotile Amosite	Fibers: None Detected Matrix: 50-70% Calcite, Binder	Bldg # 019 Insulation, White
019-H11-B Lab ID # 103-298-040	Not Analyzed		Fibers: Matrix:	Bldg # 019

Lab Manager R. McKay

Analyst L. Porowski

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019-H11-C Lab ID # 103-298-041	**Not Analyzed**	Fibers: / Matrix:	Bldg # 019
019-H12-A Lab ID # 103-298-042	**None Detected**	Fibers: 70-80% Fiberglass / Matrix: 20-30% Binder, Paint, Quartz	Bldg # 019 / Ceiling Tile, Grey
019-H12-B Lab ID # 103-298-043	**None Detected**	Fibers: 70-80% Fiberglass / Matrix: 20-30% Binder, Paint, Quartz	Bldg # 019 / Ceiling Tile/Paint, Grey/White
019-H12-C Lab ID # 103-298-044	**None Detected**	Fibers: 70-80% Fiberglass / Matrix: 20-30% Binder, Paint, Quartz	Bldg # 019 / Ceiling Tile/Paint, Grey/White
019-H13-A Lab ID # 103-298-045	**None Detected**	Fibers: 60-80% Fiberglass, Cellulose / Matrix: 20-40%Binder,Calcite,Fibgl Frag,Foam	Bldg # 019 / Ceiling Tile/Paint, Lt.Grey/White
019-H13-B Lab ID # 103-298-046	**None Detected**	Fibers: 60-80% Cellulose, Fiberglass / Matrix: 20-40% Foam,Fibgl Frag,Paint,Calcite	Bldg # 019 / Ceiling Tile/Paint, Lt.Grey/White
019-H13-C Lab ID # 103-298-047	**None Detected**	Fibers: 60-80% Fiberglass, Cellulose / Matrix: 20-40% Foam,Fibgl Frag,Paint,Calcite	Bldg # 019 / Ceiling Tile/Paint, Lt.Grey
019-H13-D Lab ID # 103-298-048	**None Detected**	Fibers: 60-80% Fiberglass, Cellulose / Matrix: 20-40% Foam,Fibgl Frag,Paint,Calcite	Bldg # 019 / Ceiling Tile/Paint, Lt.Grey/White
019-H13-E Lab ID # 103-298-049	**None Detected**	Fibers: 60-80% Fiberglass, Cellulose / Matrix: 20-40% Foam,Fibgl Frag,Paint,Calcite	Bldg # 019 / Ceiling Tile/Paint, Lt.Grey/White
019-H13-F Lab ID # 103-298-050	**None Detected**	Fibers: 60-80% Fiberglass, Cellulose / Matrix: 20-40% Foam,Fibgl Frag,Paint,Calcite	Bldg # 019 / Ceiling Tile/Paint, Lt.Grey/White

Lab Manager R. McKay **Analyst** M. Ponasik

ASBESTOS TEM LABORATORIES, INC. 1409 FIFTH STREET, BERKELEY, CA 94710 (510) 528-0108

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

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SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H13-G Lab ID # 103-298-051	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Fibgl Frag,Paint,Calcite	Bldg # 019 Ceiling Tile/Paint, Lt.Grey/White
019-H13-H Lab ID # 103-298-052	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Glue,Fibgl Frag,Paint,	Bldg # 019 Ceiling Tile/Paint, Grey/White
019-H13-I Lab ID # 103-298-053	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Binder,Fig Frag,Paint	Bldg # 019 Ceiling Tile/Paint, Grey
019-H13-J Lab ID # 103-298-054	None Detected		Fibers: 60-80% Fiberglass, Cellulose Matrix: 20-40% Foam,Binder,Fib Frag,Paint	Bldg # 019 Ceiling Tile/Paint, Lt.Grey/White
019-H15-A Lab ID # 103-298-055	None Detected		Fibers: 90-95% Cellulose Matrix: 5-10% Glue, Paint, Quartz	Bldg # 019 Ceiling Tile/Paint, Yellow/White
019-H15-B Lab ID # 103-298-056	None Detected		Fibers: 90-95% Cellulose Matrix: 5-10% Glue, Paint	Bldg # 019 Ceiling Tile/Paint, Yellow/White
019-H15-C Lab ID # 103-298-057	None Detected		Fibers: 90-95% Cellulose Matrix: 5-10% Glue, Paint	Bldg # 019 Ceiling Tile/Paint, Yellow/White
019-H16-A Lab ID # 103-298-058	20-30% 5-10%	Chrysotile Amosite	Fibers: None Detected Matrix: 60-75% Calcite,Binder,Quartz	Bldg # 019 Insulation, Off-White
019-H17-A Lab ID # 103-298-059	1-5%	Chrysotile	Fibers: 70-80% Cellulose Matrix: 15-29% Glue, Binder	Bldg # 019 Top Layer Insulation, Yellow/Grey/White
019-H17-B Lab ID # 103-298-060	Not Analyzed		Fibers: Matrix:	Bldg # 019

Lab Manager R. [signature] Analyst V. Porovski [signature]

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SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H17-C Lab ID # 103-298-061		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H20-A Lab ID # 103-298-062	30-40%	Chrysotile	Fibers: None Detected Matrix: 60-70% Calcite, Binder	Bldg # 019 Insulation, White
019-H20-B Lab ID # 103-298-063		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H20-C Lab ID # 103-298-064		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H21-A Lab ID # 103-298-065	30-40%	Chrysotile	Fibers: None Detected Matrix: 60-70% Calcite, Binder	Bldg # 019 Insulation, Off-White
019-H21-B Lab ID # 103-298-066		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H21-C Lab ID # 103-298-067		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H22-A Lab ID # 103-298-068	30-40%	Chrysotile	Fibers: None Detected Matrix: 60-70% Calcite,Binder,Quartz	Bldg # 019 Insulation, Off-White
019-H22-B Lab ID # 103-298-069		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H22-C Lab ID # 103-298-070		Not Analyzed	Fibers: Matrix:	Bldg # 019

Lab Manager R. [signature] Analyst V. Pokrovskii

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SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H23-A Lab ID # 103-298-071	20-30%	Chrysotile	Fibers: None Detected Matrix: 70-80% Calcite,Binder,Quartz	Bldg # 019 Insulation, Off-White
019-H23-B Lab ID # 103-298-072		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H23-C Lab ID # 103-298-073		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H24-A Lab ID # 103-298-074	10-20% 20-30%	Chrysotile Amosite	Fibers: None Detected Matrix: 50-70% Calcite, Binder	Bldg # 019 Insualtion, Off-White
019-H24-B Lab ID # 103-298-075		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H24-C Lab ID # 103-298-076		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H25-A Lab ID # 103-298-077	30-40%	Chrysotile	Fibers: 1-5% Cellulose Matrix: 55-69% Calcite, Binder	Bldg # 019 Insulation, Off-White
019-H25-B Lab ID # 103-298-078		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H25-C Lab ID # 103-298-079		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H26-A Lab ID # 103-298-080	30-40%	Chrysotile	Fibers: None Detected Matrix: 60-70% Calcite, Binder, Quartz	Bldg # 019 Insulation, Off-White

Lab Manager R. McKay

Analyst M. Pokrovski

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019-H26-B Lab ID # 103-298-081		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H26-C Lab ID # 103-298-082		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H27-A Lab ID # 103-298-083	10-20% 10-20%	Amosite Chrysotile	Fibers: None Detected Matrix: 60-80% Calcite, Binder, Opaques	Bldg # 019 Insulation, Off-White
019-H27-B Lab ID # 103-298-084		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H27-C Lab ID # 103-298-085		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H28-A Lab ID # 103-298-086	10-20% 10-20%	Amosite Chrysotile	Fibers: None Detected Matrix: 60-80% Calcite, Binder	Bldg # 019 Insulation, Off-White
019-H28-B Lab ID # 103-298-087		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H28-C Lab ID # 103-298-088		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H29-A Lab ID # 103-298-089	5-10%	Chrysotile	Fibers: 70-80% Cellulose Matrix: 10-25% Calcite, Binder	Bldg # 019 Fibrous Material, Grey
019-H29-B Lab ID # 103-298-090		Not Analyzed	Fibers: Matrix:	Bldg # 019

Lab Manager [signature]

Analyst W. Pokrovskii [signature]

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019-H29-C Lab ID # 103-298-091		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H30-A Lab ID # 103-298-092	10-20% 10-20%	Chrysotile Amosite	Fibers: None Detected Matrix: 60-80% Calcite, Binder, Quartz	Bldg # 019 Insulation, Off-White
019-H30-B Lab ID # 103-298-093		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H30-C Lab ID # 103-298-094		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H31-A Lab ID # 103-298-095	10-20%	Chrysotile	Fibers: 60-70% Cellulose Matrix: 10-30% Binder, Glue	Bldg # 019 Fibrous Layer, Grey/Dk.Grey-Brown
019-H31-B Lab ID # 103-298-096		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H31-C Lab ID # 103-298-097		Not Analyzed	Fibers: Matrix:	Bldg # 019
019-H32-A Lab ID # 103-298-098		None Detected	Fibers: 20-40% Fiberglass, Synthetics Matrix: 60-80% Calcite, Binder, Quartz	Bldg # 019 Insulation, White
019-H32-B Lab ID # 103-298-099	20-30%	Chrysotile	Fibers: None Detected Matrix: 70-80% Calcite, Binder	Bldg # 019 Insulation, Off-White
019-H32-C Lab ID # 103-298-100		Not Analyzed	Fibers: Matrix:	Bldg # 019

Lab Manager [signature]   Analyst W. Pokrovskii [signature]

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

Contact: Mr. Bill Bicknell
Samples Submitted: 110
Date Submitted: Jun-17-93

Address: Tetra Tech, Inc.
180 Howard Street, Suite 250
San Francisco, CA 94105
Samples Analyzed: 75
Date Reported: Jun-17-93
Job Site / No. NAS Moffett Field Asbestos Survey
TC9292-09

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	NON-ASBESTOS	LOCATION / DESCRIPTION
019-H35-A Lab ID # 103-298-101	None Detected		Fibers: None Detected Matrix: 99-100% Paint, Quartz, Mica	Bldg # 019 Paint, Off-White
019-H35-B Lab ID # 103-298-102	None Detected		Fibers: None Detected Matrix: 99-100% Paint, Quartz, Mica	Bldg # 019 Paint, Off-White
019-H35-C Lab ID # 103-298-103	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Calcite,Quartz,Mica	Bldg # 019 Paint, Off-White
019-H35-D Lab ID # 103-298-104	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Quartz,Mica,Calcite	Bldg # 019 Paint, Off-White
019-H35-E Lab ID # 103-298-105	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Quartz,Mica,Calcite	Bldg # 019 Paint, Off-White
019-H35-F Lab ID # 103-298-106	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Quartz,Mica,Calcite	Bldg # 019 Paint, Off-White
019-H35-G Lab ID # 103-298-107	None Detected		Fibers: None Detected Matrix: 99-100% Paint, Quartz, Mica	Bldg # 019 Paint, Off-White
019-H35-H Lab ID # 103-298-108	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Quartz,Mica,Calcite	Bldg # 019 Paint, Off-White
019-H35-I Lab ID # 103-298-109	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Calcite,Quartz,Mica	Bldg # 019 Paint, Off-White
019-H35-J Lab ID # 103-298-110	None Detected		Fibers: None Detected Matrix: 99-100% Paint,Calcite,Quartz,Mica	Bldg # 019 Paint, Off-White

Lab Manager _____ Analyst _____

CHAIN - OF - CUSTODY

NAS Moffett Field Asbestos Survey TC 9292-09

TETRA TECH, INC.
180 Howard Street, Suite 250
San Francisco, CA 94105
Telephone (415) 974-1221

Asbestos TEM Laboratories, Inc.
1409 Fifth Street
Berkeley, CA 94710
(520) 528-0108

Sample Date: 8 June 93, 9 June 9

Sampler Signature: [signature]

NOTE: Analyze each homogenous material ("H" number) until positive; start with "A" sample

NORMAL TURNAROUND

SAMPLE#	TIME	SAMPLE TYPE	ANALYSIS TYPE	LOCATION	COMMENTS
019-H02-A	1153	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H02-B	1150	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-C	1145	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-D	1122	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-E	1135	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-F	1130	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-G	1118	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-H	1110	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-I	1105	bulk/grab	PLM for asbestos	Bldg # 019	
019-H02-J	1100	bulk/grab	PLM for asbestos	Bldg # 019	
019-H03-A	1208	bulk/grab	PLM for asbestos	Bldg # 019	
019-H03-B	1112	bulk/grab	PLM for asbestos	Bldg # 019	
019-H03-C	1420	bulk/grab	PLM for asbestos	Bldg # 019	
019-H03-D	1430	bulk/grab	PLM for asbestos	Bldg # 019	
019-H03-E	9:11	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H03-F	1435	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H03-G	1430	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H03-H	8:40	bulk/grab	PLM for asbestos	Bldg # 019	6-9
019-H03-I	8:44	bulk/grab	PLM for asbestos	Bldg # 019	6-9
019-H03-J	8:51	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H04-A	9:14	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H04-B	9:11	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H04-C	9:10	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H04-D	9:04	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H04-E	8:50	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H04-F	8:40	bulk/grab	PLM for asbestos	Bldg # 019	6-9
019-H04-G	1425	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H04-H	1205	bulk/grab	PLM for asbestos	Bldg # 019	
019-H04-I	1142	bulk/grab	PLM for asbestos	Bldg # 019	
019-H04-J	1055 AM	bulk/grab	PLM for asbestos	Bldg # 019	
019-H09-A	9:16	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H09-B	0838	bulk/grab	PLM for asbestos	Bldg # 019	9 June

SIGNATURES:

DATE/TIME:

Relinquished by: [signature] — 17 JUN 10^30 AM
Received by: [signature]
Relinquished by:
Received by:

CHAIN - OF - CUSTODY

NAS Moffett Field Asbestos Survey TC 9292-09

TETRA TECH, INC.
180 Howard Street, Suite 250
San Francisco, CA 94105
Telephone (415) 974-1221

Asbestos TEM Laboratories, Inc.
1409 Fifth Street
Berkeley, CA 94710
(520) 528-0108

Sample Date: 8 and 9 June

Sampler Signature: [signature]

NOTE: Analyze each homogenous material ("H" number) until positive; start with "A" sample

NORMAL TURNAROUND

SAMPLE#	TIME	SAMPLE TYPE	ANALYSIS TYPE	LOCATION	COMMENTS
019-H09-C	10:33	bulk/grab	PLM for asbestos	Bldg # 019	7 June
019-H09-D	1432	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H09-E	8:47	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H10-A	5:18	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H10-B	0840	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H10-C	10:31	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H11-A	1500	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H11-B	1501	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H11-C	1502	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H12-A	1454	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H12-B	0828	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H12-C	1415	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H13-A	1425	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-B	1437	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-C	1445	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-D	1435	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-E	1440	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-F	1214	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-G	1220	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-H	1221	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-I	1223	bulk/grab	PLM for asbestos	Bldg # 019	↓
019-H13-J	1217	bulk/grab	PLM for asbestos	Bldg # 019	
019-H15-A	08:57	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H15-B	12:50	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H15-C	1446	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H16-A	1503	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H17-A	9:03	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H17-B	10:37	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H17-C	9:32	bulk/grab	PLM for asbestos	Bldg # 019	7 June
019-H20-A	9:33	bulk/grab	PLM for asbestos	Bldg # 019	7 June
019-H20-B	9:46	bulk/grab	PLM for asbestos	Bldg # 019	8 June
019-H20-C	10:49	bulk/grab	PLM for asbestos	Bldg # 019	"

SIGNATURES:

Relinquished by: [signature]
Received by: [signature]
Relinquished by: _____
Received by: _____

DATE/TIME:

17 Jun 10[30] Hrs
_____
_____
_____

CHAIN - OF - CUSTODY

NAS Moffett Field Asbestos Survey TC 9292-09

TETRA TECH, INC.
180 Howard Street, Suite 250
San Francisco, CA 94105
Telephone (415) 974-1221

Asbestos TEM Laboratories, Inc.
1409 Fifth Street
Berkeley, CA 94710
(520) 528-0108

Sample Date: 8 and 9 June 93

Sampler Signature:

NOTE: Analyze each homogenous material ("H" number) until positive; start with "A" sample

NORMAL TURNAROUND

SAMPLE#	TIME	SAMPLE TYPE	ANALYSIS TYPE	LOCATION	COMMENTS
019-H21-A	9:37	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H21-B	10:54	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H21-C	10:51	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H22-A	10:41	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H22-B	10:52	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H22-C	12:15	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H23-A	9:47	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H23-B	~~9:55~~	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H23-C	10:11	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H24-A	9:36	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H24-B	10:22	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H24-C	10:56	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H25-A	10:20	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H25-B	10:24	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H25-C	10:22	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H26-A	10:08	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H26-B	10:10	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H26-C	10:12	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H27-A	10:01	bulk/grab	PLM for asbestos	Bldg # 019	9 June
019-H27-B	10:04	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H27-C	10:06	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H28-A	9:58	bulk/grab	PLM for asbestos	Bldg # 019	end of border 9 Ju
019-H28-B	9:59	bulk/grab	PLM for asbestos	Bldg # 019	middle of border "
019-H28-C	10:01	bulk/grab	PLM for asbestos	Bldg # 019	end of border "
019-H29-A	1:36	bulk/grab	PLM for asbestos	Bldg # 019	9 Jun
019-H29-B	1:22	bulk/grab	PLM for asbestos	Bldg # 019	9 Jun
019-H29-C	1:11	bulk/grab	PLM for asbestos	Bldg # 019	9 Jun
019-H30-A	1:16	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H30-B	12:43	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H30-C	12:55	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H31-A	1:12	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H31-B	1:45	bulk/grab	PLM for asbestos	Bldg # 019	"

SIGNATURES:

Relinquished by:
Received by: Pedersen
Relinquished by:
Received by:

DATE/TIME:

17 JUN 1030

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NAS Moffett Field Asbestos Survey TC 9292-09

TETRA TECH, INC.
180 Howard Street, Suite 250
San Francisco, CA 94105
Telephone (415) 974-1221

Asbestos TEM Laboratories, Inc.
1409 Fifth Street
Berkeley, CA 94710
(520) 528-0108

Sample Date: 8 and 9 June 97

Sampler Signature:

NOTE: Analyze each homogenous material ("H" number) until positive; start with "A" sample

NORMAL TURNAROUND

SAMPLE#	TIME	SAMPLE TYPE	ANALYSIS TYPE	LOCATION	COMMENTS
019-H31-C	1:47	bulk/grab	PLM for asbestos	Bldg # 019	7 Jun
019-H32-A	12:16	bulk/grab	PLM for asbestos	Bldg # 019	9 Jun
019-H32-B	12:20	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H32-C	12:35	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-A	14:31	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-B	14:00	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-C	14:05	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-D	13:50	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-E	14:15	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-F	13:45	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-G	13:5536	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-H	13:25	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-I	13:05	bulk/grab	PLM for asbestos	Bldg # 019	"
019-H35-J	13:45	bulk/grab	PLM for asbestos	Bldg # 019	"

SIGNATURES:

Relinquished by:
Received by:
Relinquished by:
Received by:

DATE/TIME:

17 Jun 10:30 AM

Westmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Smyrna, GA 404-333-6066 | Melbourne, FL 407-725-5223 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401

EMSL

Tuesday, August 17th, 1993

Tetra Tech, Inc.
180 Howard St.
Suite 250
San Francisco, CA 94105

POLARIZED LIGHT MICROSCOPY (PLM)

Project: NAS Moffett Field Asbestos Survey TC 9292-09/Bldg. #019

SAMPLE #	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS % TYPE	NONASBESTOS % FIBROUS	% NONFIBROUS
D019-H26-A	Bldg. 019 Basement	Tan Fibrous Homogeneous	Teased	20% Chrysotile		80% Other
D019-H35-A	Exterior	Tan Nonfibrous Homogeneous	Crushed	None Detected		100% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of layers" also refers to number of separable subsamples.

Nonette Patron
Analyst

Laboratory Supervisor

Approved Signatory

Disclaimers: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed. Floor tiles and wipes should be tested with either SEM or TEM. The above test report relates only to the items tested. This report may only be reproduced in full with written approval by EMSL. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. All "NVLAP" reports with NVLAP logo must contain at least one signature to be valid. Laboratory is not responsible for the accuracy of results when requested to physically seperate and analyze layered samples.

CHAIN - OF - CUSTODY

NAS Moffett Field Asbestos Survey TC 9292-09

TETRA TECH, INC.
180 Howard Street, Suite 250
San Francisco, CA 94105
Telephone (415) 974-1221

EMSL
1720 South Amphlett Blvd,. Suite 130
San Mateo, CA 94402
(415) 570-5401

SAMPLE DATE 8 June 93
SAMPLER SIGNATURE [signature]

BUILDING NUMBER 019

NORMAL TURNAROUND

SAMPLE#	TIME	SAMPLE TYPE	ANALYSIS TYPE	LOCATION	COMMENTS
~~D019-H2-A~~ H02	~~1155~~	~~bulk/grab~~	~~PLM for asbestos~~	~~#019~~	wB
D019-H02-A	1155	bulk/grab	PLM for asbestos	019 2nd Flr	
D019-H03-A	1210	bulk/grab	PLM for asbestos	019 "	
D019-H03-A	1428	bulk/grab	PLM for asbestos	019 First Flr	
D019-H16-A	1505	bulk/grab	PLM for asbestos	019 "	
D019-H15-A	8:57	bulk/grab	PLM for asbestos	019 First Floor	
D019-H20A	9:35	bulk/grab	PLM for asbestos	019 Basement	
D019-H25-A	10:07	bulk/grab	PLM for asbestos	019 Basement	
D019-H35-A	1430	bulk/grab	PLM for asbestos	exterior	
		bulk/grab	PLM for asbestos		

SIGNATURES | DATE | TIME

	SIGNATURES	DATE	TIME
Relinquished by:	JC Bango	7/15	
Received by:	Kavanaugh	7/16/93	430
Relinquished by:	Cristela Guido	7/19/93	9 am
Received by:		7/28/93	11:00 AM
Relinquished by:			
Received by:			

Page 1 / 1

10% QA/QC SAMPLES

Asbestos Survey ing Results
NAS MOFFETT FIELD
Building Number 019

Homog Area	Sample Number	Asbestos Type One	Result	Asbestos Type Two	Result	Duplicate One	Result	Duplicate Two	Result	Duplicate Three	Result
17	019-H17-B	Not Analyzed									
17	019-H17-C	Not Analyzed									
18	Assumed	Chrysotile	60								
19	Assumed	Chrysotile	15								
20	019-H20-A	Chrysotile	30-40			Chrysotile	50				
20	019-H20-B	Not Analyzed									
20	019-H20-C	Not Analyzed									
21	019-H21-A	Chrysotile	30-40								
21	019-H21-B	Not Analyzed									
21	019-H21-C	Not Analyzed									
22	019-H22-A	Chrysotile	30-40								
22	019-H22-B	Not Analyzed									
22	019-H22-C	Not Analyzed									
23	019-H23-A	Chrysotile	20-30								
23	019-H23-B	Not Analyzed									
23	019-H23-C	Not Analyzed									
24	019-H24-A	Chrysotile	10-20	Amosite	20-30				20-30		
24	019-H24-B	Not Analyzed									
24	019-H24-C	Not Analyzed									
25	019-H25-A	Chrysotile	30-40								
25	019-H25-B	Not Analyzed									
25	019-H25-C	Not Analyzed									
26	019-H26-A	Chrysotile	30-40			Chrysotile	20				
26	019-H26-B	Not Analyzed									
26	019-H26-C	Not Analyzed									
27	019-H27-A	Amosite	10-20	Chrysotile	10-20				10-20		
27	019-H27-B	Not Analyzed									
27	019-H27-C	Not Analyzed									
28	019-H28-A	Amosite	10-20	Chrysotile	10-20				10-20		
28	019-H28-B	Not Analyzed									
28	019-H28-C	Not Analyzed									
29	019-H29-A	Chrysotile	5-10								
29	019-H29-B	Not Analyzed									

Asbestos Survey Summary Sheet
NAS Moffett Field

Building Number 019 Square Footage: 138357
Building Use: BEQ
Construction Date:1933

Material Number	Description	Location	Quantity	Units	Percent Damage	Friability	Condition	Recommended Action	Repair/Replace Cost For Friable ACM	Hazard Rating
17	3" pipe run TSI	Bsmnt, 1st fl	1500	LF	20	Mod	Sig. damage	Remove		61
17	3" pipe run TSI	Bsmnt, 1st fl	1500	LF	20	Mod	Sig. damage	Remove		61
18	Fire doors	2nd fl center	60	SF	0	Non	No damage	O&M		6
19	1'x3' black stair tile	Stairway	110	SF	0	Non	No damage	O&M		6
20	5" pipe run TSI	Bsmnt	800	LF	9	Mod	Damage	Remove	$12,000.	46
20	5" pipe run TSI	Bsmnt	800	LF	9	Mod	Damage	Remove		46
20	5" pipe run TSI	Bsmnt	800	LF	9	Mod	Damage	Remove		46
21	5" pipe elbow TSI	Bsmnt	20	LF	2	Mod	Damage	Remove	$380.00	46
21	5" pipe elbow TSI	Bsmnt	20	LF	2	Mod	Damage	Remove		46
21	5" pipe elbow TSI	Bsmnt	20	LF	2	Mod	Damage	Remove		46
22	6" pipe run TSI	Bsmnt	325	LF	3	Mod	Damage	Remove	$5,525.0	46
22	6" pipe run TSI	Bsmnt	325	LF	3	Mod	Damage	Remove		46
22	6" pipe run TSI	Bsmnt	325	LF	3	Mod	Damage	Remove		46
23	3" pipe elbow TSI	Bsmnt	30	LF	2	Mod	Damage	Remove	$450.00	23
23	3" pipe elbow TSI	Bsmnt	30	LF	2	Mod	Damage	Remove		23
23	3" pipe elbow TSI	Bsmnt	30	LF	2	Mod	Damage	Remove		23
24	2" pipe run TSI	Bsmnt	1300	LF	14	Mod	Damage	Remove	$16,250.	51
24	2" pipe run TSI	Bsmnt	1300	LF	14	Mod	Damage	Remove		51
24	2" pipe run TSI	Bsmnt	1300	LF	14	Mod	Damage	Remove		51
25	2" pipe elbow TSI	Bsmnt	25	LF	1	Mod	Damage	Remove	$350.00	46
25	2" pipe elbow TSI	Bsmnt	25	LF	1	Mod	Damage	Remove		46
25	2" pipe elbow TSI	Bsmnt	25	LF	1	Mod	Damage	Remove		46
26	12" pipe run TSI	Bsmnt	60	LF	5	Mod	Damage	Remove	$1,200.0	46
26	12" pipe run TSI	Bsmnt	60	LF	5	Mod	Damage	Remove		46
26	12" pipe run TSI	Bsmnt	60	LF	5	Mod	Damage	Remove		46
27	Silver boiler TSI	Mechanical room	450	SF	10	Mod	Damaged	Remove	$8,100.0	46
27	Silver boiler TSI	Mechanical room	450	SF	10	Mod	Damage	Remove		46
27	Silver boiler TSI	Mechanical room	450	SF	10	Mod	Damage	Remove		46
28	Yellow boiler TSI	Mechanical room	100	SF	20	Mod	Damage	Remove	$1,800.0	46
28	Yellow boiler TSI	Mechanical room	100	SF	20	Mod	Damage	Remove		46
28	Yellow boiler TSI	Mechanical room	100	SF	20	Mod	Damage	Remove		46
29	1" pipe run TSI	Crawl space	230	LF	9	Mod	Damage	Remove	$2,760.0	42
29	1" pipe run TSI	Crawl space	230	LF	9	Mod	Damage	Remove		42

Asbestos Survey ting Results
NAS MOFFETT FIELD
Building Number 019

Homog Area	Sample Number	Asbestos Type One	Result	Asbestos Type Two	Result	Duplicate One	Result	Duplicate Two	Result	Duplicate Three	Result
29	019-H29-C	Not Analyzed									
30	019-H30-A	Chrysotile	10-20	Amosite	10-20				10-20		
30	019-H30-B	Not Analyzed									
30	019-H30-C	Not Analyzed									
31	019-H31-A	Chrysotile	10-20								
31	019-H31-B	Not Analyzed									
31	019-H31-C	Not Analyzed									
32	019-H32-A	None Detected									
32	019-H32-B	Chrysotile	20-30								
32	019-H32-C	Not Analyzed									
33	Assumed	Chrysotile	15								
34	Assumed	Chrysotile	15								
35	019-H35-A	None Detected				None Detec					
35	019-H35-B	None Detected									
35	019-H35-C	None Detected									
35	019-H35-D	None Detected									
35	019-H35-E	None Detected									
35	019-H35-F	None Detected									
35	019-H35-G	None Detected									
35	019-H35-H	None Detected									
35	019-H35-I	None Detected									
35	019-H35-J	None Detected									

Asbestos Survey Summary Sheet
NAS Moffett Field

Building Number 019 Square Footage: 138357
Building Use: BEQ
Construction Date:1933

Material Number	Description	Location	Quantity	Units	Percent Damage	Friability	Condition	Recommended Action	Repair/Replace Cost For Friable ACM	Hazard Rating
29	1" pipe run TSI	Crawl space	230	LF	9	Mod	Damage	Remove		42
30	1" pipe elbow w/ aircell	Crawl space	8	LF	2	Mod	Damage	Remove	$96.00	46
30	1" pipe elbow w/ aircell	Crawl space	8	LF	2	Mod	Damage	Remove		46
30	1" pipe elbow w/ aircell	Crawl space	8	LF	2	Mod	Damage	Remove		46
31	2" pipe run aircell	Crawl space	75	SF	9	Mod	Damage	Remove	$900.00	46
31	2" pipe run aircell	Crawl space	75	SF	9	Mod	Damage	Remove		46
31	2" pipe run aircell	Crawl space	75	SF	9	Mod	Damage	Remove		46
32	Thermal hangar shields	Crawl space	35	LF	0	Mod	Pot. for damage	O&M		26
32	Thermal hangar shields	Crawl space	35	LF	0	Mod	Pot. for damage	O&M		26
32	Thermal hangar shields	Crawl space	35	LF	0	Mod	Pot. for damage	O&M		26
33	Ceiling tile mastic	Throughout	7700	SF	0	Non	Pot. for damage	O&M		14
34	Floor tile mastic	Throughout	28600	SF	0	Non	Pot. for damage	O&M		14
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0
35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0

NAS Moffett Field
Summary of Analytical Results

Building	Material No.	Description	Sample #	Sample Results				Duplicate Results					
				Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 3	%Asb3
019	26	12" pipe run TSI	019-H26-A	Chrysotile	30-40			Chrysotile	20				
019	26	12" pipe run TSI	019-H26-B	Not Analyzed									
019	26	12" pipe run TSI	019-H26-C	Not Analyzed									
019	27	Silver boiler TSI	019-H27-A	Amosite	10-20	Chrysotile	10-20						
019	27	Silver boiler TSI	019-H27-B	Not Analyzed									
019	27	Silver boiler TSI	019-H27-C	Not Analyzed									
019	28	Yellow boiler TSI	019-H28-A	Amosite	10-20	Chrysotile	10-20						
019	28	Yellow boiler TSI	019-H28-B	Not Analyzed									
019	28	Yellow boiler TSI	019-H28-C	Not Analyzed									
019	29	1" pipe run TSI	019-H29-A	Chrysotile	5-10								
019	29	1" pipe run TSI	019-H29-B	Not Analyzed									
019	29	1" pipe run TSI	019-H29-C	Not Analyzed									
019	30	1" pipe elbow w/ aircell	019-H30-A	Chrysotile	10-20	Amosite	10-20						
019	30	1" pipe elbow w/ aircell	019-H30-B	Not Analyzed									
019	30	1" pipe elbow w/ aircell	019-H30-C	Not Analyzed									
019	31	2" pipe run aircell	019-H31-A	Chrysotile	10-20								
019	31	2" pipe run aircell	019-H31-B	Not Analyzed									
019	31	2" pipe run aircell	019-H31-C	Not Analyzed									
019	32	Thermal hangar shields	019-H32-A	None Detected									
019	32	Thermal hangar shields	019-H32-B	Chrysotile	20-30								
019	32	Thermal hangar shields	019-H32-C	Not Analyzed									
019	33	Ceiling tile mastic	Assumed	Chrysotile	15								
019	34	Floor tile mastic	Assumed	Chrysotile	15								
019	35	Tan exterior surfacing	019-H35-A	None Detected				None Detected					
019	35	Tan exterior surfacing	019-H35-B	None Detected									
019	35	Tan exterior surfacing	019-H35-C	None Detected									
019	35	Tan exterior surfacing	019-H35-D	None Detected									
019	35	Tan exterior surfacing	019-H35-E	None Detected									
019	35	Tan exterior surfacing	019-H35-F	None Detected									

NAS Moffett Field
Summary of Analytical Results

Building	Material No.	Description	Sample #	Sample Results				Duplicate Results					
				Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 3	%Asb3
019	35	Tan exterior surfacing	019-H35-G	None Detected									
019	35	Tan exterior surfacing	019-H35-H	None Detected									
019	35	Tan exterior surfacing	019-H35-I	None Detected									
019	35	Tan exterior surfacing	019-H35-J	None Detected									

NAS Moffett Field
Summary of Analytical Results

Building	Material No.	Description	Sample #	Sample Results				Duplicate Results					
				Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 3	%Asb3
019	01	Roofing	Assumed	Chrysotile	20								
019	02	Plaster	019-H02-A	None Detected				None Detected					
019	02	Plaster	019-H02-B	None Detected									
019	02	Plaster	019-H02-C	None Detected									
019	02	Plaster	019-H02-D	None Detected									
019	02	Plaster	019-H02-E	None Detected									
019	02	Plaster	019-H02-F	None Detected									
019	02	Plaster	019-H02-G	None Detected									
019	02	Plaster	019-H02-H	None Detected									
019	02	Plaster	019-H02-I	None Detected									
019	02	Plaster	019-H02-J	None Detected									
019	03	Wallboard	019-H03-A	None Detected				None Detected					
019	03	Wallboard	019-H03-B	None Detected									
019	03	Wallboard	019-H03-C	None Detected									
019	03	Wallboard	019-H03-D	None Detected									
019	03	Wallboard	019-H03-E	None Detected									
019	03	Wallboard	019-H03-F	None Detected									
019	03	Wallboard	019-H03-G	None Detected									
019	03	Wallboard	019-H03-H	None Detected									
019	03	Wallboard	019-H03-I	None Detected									
019	03	Wallboard	019-H03-J	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-A	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-B	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-C	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-D	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-E	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-F	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-G	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-H	None Detected									

NAS Moffett Field
Asbestos Survey Summary

Building	Material No.	Description	Location	Quantity	Units	% Damage	Friability	Condition	Recom-mended Action	Repair/ Replace Cost for Friable ACM	Hazard	Comments
019	31	2" pipe run aircell	Crawl space	75	SF	9	Mod	Damage	Remove	$900.00	46	
019	32	Thermal hangar shields	Crawl space	35	LF	0	Mod	Pot. for damage	O&M		26	
019	33	Ceiling tile mastic	Throughout	7700	SF	0	Non	Pot. for damage	O&M		14	
019	34	Floor tile mastic	Throughout	28600	SF	0	Non	Pot. for damage	O&M		14	
019	35	Tan exterior surfacing	Exterior	500000	SF	0	Non	No damage	None		0	
Total Cost										$107,175.00		

NAS Moffett Field
Summary of Analytical Results

Building	Material No.	Description	Sample #	Sample Results				Duplicate Results					
				Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 3	%Asb3
019	13	2'x4' white patterned ceiling tile	019-H13-J	None Detected									
019	14	12" green floor tile	Assumed	Chrysotile	15								
019	15	12" white ceiling tile w/ holes	019-H15-A	None Detected				None Detected					
019	15	12" white ceiling tile w/ holes	019-H15-B	None Detected									
019	15	12" white ceiling tile w/ holes	019-H15-C	None Detected									
019	16	3/4" pipe elbow TSI	019-H16-A	Chrysotile	20-30	Amosite	5-10	Amosite	60	Chrysotile	15		
019	17	3" pipe run TSI	019-H17-A	Chrysotile	1-5								
019	17	3" pipe run TSI	019-H17-B	Not Analyzed									
019	17	3" pipe run TSI	019-H17-C	Not Analyzed									
019	18	Fire doors	Assumed	Chrysotile	60								
019	19	1'x3' black stair tile	Assumed	Chrysotile	15								
019	20	5" pipe run TSI	019-H20-A	Chrysotile	30-40			Chrysotile	50				
019	20	5" pipe run TSI	019-H20-B	Not Analyzed									
019	20	5" pipe run TSI	019-H20-C	Not Analyzed									
019	21	5" pipe elbow TSI	019-H21-A	Chrysotile	30-40								
019	21	5" pipe elbow TSI	019-H21-B	Not Analyzed									
019	21	5" pipe elbow TSI	019-H21-C	Not Analyzed									
019	22	6" pipe run TSI	019-H22-A	Chrysotile	30-40								
019	22	6" pipe run TSI	019-H22-B	Not Analyzed									
019	22	6" pipe run TSI	019-H22-C	Not Analyzed									
019	23	3" pipe elbow TSI	019-H23-A	Chrysotile	20-30								
019	23	3" pipe elbow TSI	019-H23-B	Not Analyzed									
019	23	3" pipe elbow TSI	019-H23-C	Not Analyzed									
019	24	2" pipe run TSI	019-H24-A	Chrysotile	10-20	Amosite	20-30						
019	24	2" pipe run TSI	019-H24-B	Not Analyzed									
019	24	2" pipe run TSI	019-H24-C	Not Analyzed									
019	25	2" pipe elbow TSI	019-H25-A	Chrysotile	30-40								
019	25	2" pipe elbow TSI	019-H25-B	Not Analyzed									
019	25	2" pipe elbow TSI	019-H25-C	Not Analyzed									

NAS Moffett Field
Summary of Analytical Results

Building	Material No.	Description	Sample #	Sample Results				Duplicate Results					
				Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 1	%Asb1	Asbestos Type 2	%Asb2	Asbestos Type 3	%Asb3
019	04	2'x4' white pinhole ceiling tile	019-H04-I	None Detected									
019	04	2'x4' white pinhole ceiling tile	019-H04-J	None Detected									
019	05	Coving mastic	Assumed	Chrysotile	15								
019	06	1'x4' floor tile on stairs	Assumed	Chrysotile	15								
019	07	12" tan floor tile	Assumed	Chrysotile	15								
019	08	9" brown floor tile	Assumed	Chrysotile	15								
019	09	1" pipe run TSI	019-H09-A	Chrysotile	10-20	Amosite	10-20						
019	09	1" pipe run TSI	019-H09-B	Not Analyzed									
019	09	1" pipe run TSI	019-H09-C	Not Analyzed									
019	09	1" pipe run TSI	019-H09-D	Not Analyzed									
019	09	1" pipe run TSI	019-H09-E	Not Analyzed									
019	10	1" pipe elbow TSI	019-H10-A	Chrysotile	10-20	Amosite	20-30						
019	10	1" pipe elbow TSI	019-H10-B	Not Analyzed									
019	10	1" pipe elbow TSI	019-H10-C	Not Analyzed									
019	11	3/4" pipe TSI	019-H11-A	Chrysotile	20-30	Amosite	10-20						
019	11	3/4" pipe TSI	019-H11-B	Not Analyzed									
019	11	3/4" pipe TSI	019-H11-C	Not Analyzed									
019	12	12" white ceiling tile	019-H12-A	None Detected									
019	12	12" white ceiling tile	019-H12-B	None Detected									
019	12	12" white ceiling tile	019-H12-C	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-A	None Detected				None Detected					
019	13	2'x4' white patterned ceiling tile	019-H13-B	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-C	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-D	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-E	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-F	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-G	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-H	None Detected									
019	13	2'x4' white patterned ceiling tile	019-H13-I	None Detected									

Asbestos Survey Sampling Results
NAS MOFFETT FIELD
Building Number 019

Homog Area	Sample Number	Asbestos Type One	Result	Asbestos Type Two	Result	Duplicate One	Result	Duplicate Two	Result	Duplicate Three	Result
01	Assumed	Chrysotile	20								
02	019-H02-A	None Detected				None Detec					
02	019-H02-B	None Detected									
02	019-H02-C	None Detected									
02	019-H02-D	None Detected									
02	019-H02-E	None Detected									
02	019-H02-F	None Detected									
02	019-H02-G	None Detected									
02	019-H02-H	None Detected									
02	019-H02-I	None Detected									
02	019-H02-J	None Detected									
03	019-H03-A	None Detected				None Detec					
03	019-H03-B	None Detected									
03	019-H03-C	None Detected									
03	019-H03-D	None Detected									
03	019-H03-E	None Detected									
03	019-H03-F	None Detected									
03	019-H03-G	None Detected									
03	019-H03-H	None Detected									
03	019-H03-I	None Detected									
03	019-H03-J	None Detected									
04	019-H04-A	None Detected									
04	019-H04-B	None Detected									
04	019-H04-C	None Detected									
04	019-H04-D	None Detected									
04	019-H04-E	None Detected									
04	019-H04-F	None Detected									
04	019-H04-G	None Detected									
04	019-H04-H	None Detected									
04	019-H04-I	None Detected									
04	019-H04-J	None Detected									
05	ıed	Chrysotile	15								

Asbestos Survey Sampling Results
NAS MOFFETT FIELD
Building Number 019

Homog Area	Sample Number	Asbestos Type One	Result	Asbestos Type Two	Result	Duplicate One	Result	Duplicate Two	Result	Duplicate Three	Result
06	Assumed	Chrysotile	15								
07	Assumed	Chrysotile	15								
08	Assumed	Chrysotile	15								
09	019-H09-A	Chrysotile	10-20	Amosite	10-20				10-20		
09	019-H09-B	Not Analyzed									
09	019-H09-C	Not Analyzed									
09	019-H09-D	Not Analyzed									
09	019-H09-E	Not Analyzed									
10	019-H10-A	Chrysotile	10-20	Amosite	20-30				20-30		
10	019-H10-B	Not Analyzed									
10	019-H10-C	Not Analyzed									
11	019-H11-A	Chrysotile	20-30	Amosite	10-20				10-20		
11	019-H11-B	Not Analyzed									
11	019-H11-C	Not Analyzed									
12	019-H12-A	None Detected									
12	019-H12-B	None Detected									
12	019-H12-C	None Detected									
13	019-H13-A	None Detected				None Detec					
13	019-H13-B	None Detected									
13	019-H13-C	None Detected									
13	019-H13-D	None Detected									
13	019-H13-E	None Detected									
13	019-H13-F	None Detected									
13	019-H13-G	None Detected									
13	019-H13-H	None Detected									
13	019-H13-I	None Detected									
13	019-H13-J	None Detected									
14	Assumed	Chrysotile	15								
15	019-H15-A	None Detected				None Detec					
15	019-H15-B	None Detected									
15	019-H15-C	None Detected									
16	019-H16-A	Chrysotile	20-30	Amosite	5-10	Amosite	60	Chrysotile	5-10		
17	019-H17-A	Chrysotile	1-5								