US Army Corps
of Engineers
Savannah District

Fort Stewart
Georgia

Solicitation Number
W912HN-04-R-0034
Barracks Complex
FY-04/05, Line Item 51124/60408
Volume III of III – Hazardous Building Materials Surveys
July 2004

PHASE TWO OF TWO PHASE DESIGN/BUILD

THIS SOLICITATION IS UNRESTRICTED PURSUANT TO THE "BUSINESS OPPORTUNITY DEVELOPMENT REFORM ACT OF 1988" (PUBLIC LAW 100-656)

U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6502, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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Building No. 6502, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6502 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6502 at Ft. Stewart, Georgia conducted on 13 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. Apartment units 12 & 13 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6502 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6502. TCLP analysis by EMSL Analytical indicates that lead is not present above EMSL's reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Five mercury-containing thermostats were visually located in Building 6502, one in the living room of each inspected apartment unit except Unit 14, which has had its thermostat removed. Mercury-containing thermostats are assumed to exist in Units 12 & 13 raising the total found and assumed to seven.

e. *Smoke Detectors:* Twenty-eight smoke detectors were visually located in building 6502, one on the first floor and four on the second floor of each unit inspected with the exception of Unit 14, which had only two on the second floor. Five

detectors are assumed to exist in Units 12 & 13 raising the total of found and assumed detectors to thirty-eight.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units except Unit 15. They are assumed to exist in Units 12 & 13 raising the total of found and assumed extinguishers to seven.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6502; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Six refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 12 & 13 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6502 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6502 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

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Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6502
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	3	2 bulb, 2 foot long fluorescent fixtures
Interior	3	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6502
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6502
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	7
Smoke detectors	First and second floor hallways and bedrooms	38
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	7
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6502
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 14, Storage Room	13%
Interior wall covering	White painted plaster	Unit 14, Living Room wall	23%
Roofing Components	Roof shingle	Unit 13, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 14, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 16	40%
Ceiling Material	White ceiling plaster	Unit 15, Kitchen	7%
Painted Wood-Interior	White base molding	Unit 14, Entry Hall at base of stairs	1%
Painted Wood-Exterior	Brown door frame	Unit 15, rear entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6503, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6503, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6503 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6503 at Ft. Stewart, Georgia conducted on 6 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment units 42, 46 & 48 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6503 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Five mercury-containing thermostats were visually located in Building 6503, one in the living room of each inspected apartment unit. Mercury-containing thermostats are assumed to exist in Units 42, 46 & 48 raising the total found and assumed to eight.

d. *Smoke Detectors:* Twenty-five smoke detectors were visually located in building 6503, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in each of Units 42, 46 & 48 raising the total found and assumed to forty.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. They are assumed to exist in Units 42, 46 & 48 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6503; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator

coils are located within the mechanical closet off the entry hall of each apartment unit. Five refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 42, 46 & 48 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6503 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6503 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

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TABLE 1
Ft. STEWART BUILDING 6503
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	8	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6503
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6503
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
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d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6504, one in the living room of each apartment unit.

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f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing

carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6504; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each unit. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

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BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 17, Storage Room	13%
Interior wall covering	White painted plaster	Unit 24, Living Room wall	23%
Roofing Components	Roof shingle	Unit 17, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 24, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 24	40%
Ceiling Material	White ceiling plaster	Unit 24, First floor hall closet	7%
Painted Wood-Interior	White base molding	Unit 24, Entry Hall at base of stairs	1%
Painted Wood-Exterior	Brown door frame	Unit 24, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6505, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6505, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6505 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed associated with Units 30 & 32 has been removed. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6505 at Ft. Stewart, Georgia conducted on 5-12 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. Apartment units 32 & 36 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6505 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6505. TCLP analysis by EMSL Analytical indicates that lead is not present above EMSL's reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Six mercury-containing thermostats were visually located in Building 6505, one in the living room of each inspected apartment unit. Mercury-containing thermostats are assumed to exist in Units 32 & 36 raising the total found and assumed to eight.

e. *Smoke Detectors:* Twenty-seven smoke detectors were visually located in building 6505, one on the first floor and four on the second floor of each unit inspected with the exception of Unit 38, which had only one on the second floor. Five detectors are assumed to exist in each of Units 12 & 13 raising the total of found and assumed detectors to thirty-seven.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. They are assumed to exist in Units 32 & 36 raising the total of found and assumed extinguishers to eight.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6505; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Six refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 32 & 36 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6505 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6505 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6505
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	3	2 bulb, 2 foot long fluorescent fixtures
Interior	1	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6505
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6505
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	37
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6505
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 26, Storage Room	13%
Interior wall covering	White painted plaster	Unit 38, Kitchen wall	23%
Roofing Components	Roof shingle	Unit 26, main roof field	7%
Interior Floor Coverings	Vinyl flooring	Unit 38, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 40	40%
Ceiling Material	White ceiling plaster	Unit 38, Living Room	7%
Painted Wood-Interior	White shelf trim	Unit 38, second floor Linen Closet shelving	1%
Painted Wood-Exterior	Brown door frame	Unit 38, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6506, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6506, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6506 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed associated with Units 11 & 12 has been removed. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6506 at Ft. Stewart, Georgia conducted on 14 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6506 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6506, one in the living room of each apartment unit.

d. *Smoke Detectors:* Thirty-nine smoke detectors were visually located in building 6506, one on the first floor and four on the second floor of each unit with the exception of unit 16 which had only three on the second floor.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units except Unit 9.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6506; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the units. All of

these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6506 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6506 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

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Interior	8	2 screw in fluorescent bulb fixtures

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LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6506
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	39
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	7
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6507, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6507 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

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Investigation

This report documents the hazardous building materials survey of Building No. 6507 at Ft. Stewart, Georgia conducted on 13 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. Apartment unit 2 was inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6507 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6507. TCLP analysis by EMSL Analytical indicates that lead is not present above EMSL's reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Seven mercury-containing thermostats were visually located in Building 6507, one in the living room of each inspected apartment unit. A mercury-containing thermostat is assumed to exist in Unit 2 raising the total found and assumed to eight.

e. *Smoke Detectors:* Thirty-five smoke detectors were visually located in building 6507, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in Unit 2 raising the total of found and assumed detectors to forty.

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i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6507 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6507 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

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TABLE 4
Ft. STEWART BUILDING 6507
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 2, Storage Room	13%
Interior wall covering	White painted plaster	Unit 16, Mechanical Closet wall	23%
Roofing Components	Roof shingle	Unit 16, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 16, First floor Entry Hall	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 16	40%
Ceiling Material	White ceiling plaster	Unit 16, Bedroom Closet	7%
Painted Wood-Interior	White base molding	Unit 16, Kitchen	1%
Painted Wood-Exterior	Brown door frame	Unit 14, rear entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6508, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Final Report

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Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6508 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6508 at Ft. Stewart, Georgia conducted on 20 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment unit 1 was inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6508 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* seven mercury-containing thermostats were visually located in Building 6508, one in the living room of each inspected apartment unit. One mercury-containing thermostat is assumed to exist in Unit 1 raising the total found and assumed to eight.

d. *Smoke Detectors:* Thirty-five smoke detectors were visually located in building 6508, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in Unit 1 raising the total found and assumed to forty.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

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g. *Portable Fire Extinguishers:* Fire extinguishers were not found within the apartment units.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6508; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6508 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6508 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6508
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	12	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6508
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6508
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	0
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6508
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 8, Storage Room	13%
Interior wall covering	White painted plaster	Unit 2, Kitchen wall	23%
Roofing Components	Roof shingle	Unit 33, front awning roof field	7%
Interior Floor Coverings	Floor tile	Unit 8, First floor Entry Hall	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 8	40%
Ceiling Material	White ceiling plaster	Unit 4, Kitchen Pantry/water heater closet	7%
Painted Wood-Interior	White shelf support	Unit 6, Bedroom Closet shelf support	1%
Painted Wood-Exterior	Brown door frame	Unit 8, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6510, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6510, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6510 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6510 at Ft. Stewart, Georgia conducted on 18 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6510 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6510. TCLP analysis by EMSL Analytical indicates that lead is present at 0.6 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6510, one in the living room of each apartment. The thermostat in Unit 5 is destroyed and its mercury bulb is broken. Mercury contamination of the floor below should be expected.

e. *Smoke Detectors:* Thirty-seven smoke detectors were visually located in building 6510, one on the first floor and four on the second floor of each apartment unit with the exception of Unit 5 that has only one detector on the second floor.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units except Unit 5.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6510; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6510 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6510 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

j. *Miscellaneous Materials:* Several miscellaneous hazardous non-building materials were located in or around the building. Unit 5 is a condemned unit with fire damage and a large amount of garbage stored within. Within this pile of garbage an automobile tire, automobile battery, and approximately three gallons of used motor oil, some of which has spilled onto the floor, were noted. Approximately 5 gallons of used motor oil was located in a container within the storage shed associated with Unit 5. An automobile tire was abandoned in the storages shed associated with Unit 1. An automobile battery, lying on its side, was located abandoned beside the chain-link fence behind Unit 1.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6510
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	2	2 bulb, 2 foot long fluorescent fixtures
Interior	7	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6510
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6510
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	37
Carbon monoxide detectors	In living room of units and second floor hallways	14
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	7
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6510
MISCELLANEOUS HAZARDOUS NON-BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Automobile tires	Unit 5 Living Room and Unit 1 Storage Shed	2
Used Motor oil	Unit 5 Living Room and Unit 5 Storage Shed	8 gallons
Automobile batteries	Unit 5 Living Room and by fence behind Unit 1	14

TABLE 5
Ft. STEWART BUILDING 6510
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 5, Storage Room	13%
Interior wall covering	White painted plaster	Unit 5, Entry Hall wall	23%
Roofing Components	Roof shingle	Unit 5, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 5, First floor Restroom	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 5	40%
Ceiling Material	White ceiling plaster	Unit 5, Stairwell	7%
Painted Wood-Interior	Window sill	Unit 5, Living Room	1%
Painted Wood-Exterior	Brown door frame	Unit 5, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
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FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6511, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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Building No. 6511, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6511 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6511 at Ft. Stewart, Georgia conducted on 20 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6511 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6511, one in the living room of each apartment unit.

d. *Smoke Detectors:* Forty smoke detectors were visually located in building 6511, one on the first floor and four on the second floor of each unit.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units. In addition, one fire extinguisher was located in the storage shed of Unit 10.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6511; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6511 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6511 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6511
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	8	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6511
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6511
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	9
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6512, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6512, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6512 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6512 at Ft. Stewart, Georgia conducted on 19 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment units 20, 21, 23 & 24 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6512 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Four mercury-containing thermostats were visually located in Building 6512, one in the living room of each inspected apartment unit. Mercury-containing thermostats are assumed to exist in Units 20, 21, 23 & 24 raising the total found and assumed to eight.

d. *Smoke Detectors:* Twenty smoke detectors were visually located in building 6512, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in each of Units 20, 21, 23 & 24 raising the total found and assumed to forty.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. They are assumed to exist in Units 20, 21, 23 & 24 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6512; one for each apartment unit. The AC condensing

units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Four refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 20, 21, 23 & 24 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6512 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6512 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6512
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	8	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6512
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6512
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6513, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6513, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6513 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6513 at Ft. Stewart, Georgia conducted on 19 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6513 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6513, one in the living room of each apartment unit.

d. *Smoke Detectors:* Forty smoke detectors were visually located in building 6513, one on the first floor and four on the second floor of each apartment unit.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all apartment units.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6513; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6513 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6513 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

i. *Miscellaneous Hazardous Non-Building materials:* Unit 27 is used as a maintenance shop office. A flammable materials storage cabinet was located at the rear exterior of the unit. The storage shed attached to the unit contains paint and cleaning supplies.

j.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6513
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	3	2 bulb, 4 foot long fluorescent fixtures
Interior	1	1 bulb, 2 foot long fluorescent fixture
Interior	1	2 bulb, 2 foot square fixture
Interior	1	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6513
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6513
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6514, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6514, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6514 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6514 at Ft. Stewart, Georgia conducted on 17 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6514 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6514. TCLP analysis by EMSL Analytical indicates that lead is present at 0.7 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Seven mercury-containing thermostats were visually located in Building 6514, one in the living room of each apartment except Unit 27.

e. *Smoke Detectors:* Thirty-six smoke detectors were visually located in building 6514, one on the first floor and four on the second floor of each apartment unit with the exception of Unit 31 that has no detectors on the second floor.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing

carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units except Unit 31.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6514; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6514 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6514 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6514
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	1	2 bulb, 2 foot long fluorescent fixtures
Interior	0	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6514
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6514
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	7
Smoke detectors	First and second floor hallways and bedrooms	36
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	7
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6514
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 31, Storage Room	13%
Interior wall covering	White painted plaster	Unit 31, Living Room wall	23%
Roofing Components	Roof shingle	Unit 31, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 31, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 31	40%
Ceiling Material	White ceiling plaster	Unit 31, Living Room	7%
Painted Wood-Interior	White base molding	Unit 31, Living Room	1%
Painted Wood-Exterior	Brown door frame	Unit 31, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6517, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6517, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6517 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6517 at Ft. Stewart, Georgia conducted on 17 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6517 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6517. TCLP analysis by EMSL Analytical indicates that lead is not present above EMSL's reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Seven mercury-containing thermostats were visually located in Building 6517, one in the living room of each apartment except Unit 3.

e. *Smoke Detectors:* Thirty-nine smoke detectors were visually located in building 6517, one on the first floor and four on the second floor of each apartment unit with the exception of Unit 3 that has no detector on the first floor.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing

carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units except Units 3 and 11.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6517; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6517 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6517 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6517
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	1	2 bulb, 2 foot long fluorescent fixtures
Interior	1	1 bulb, 2 foot long fluorescent fixtures

TABLE 2
Ft. STEWART BUILDING 6517
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6517
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	7
Smoke detectors	First and second floor hallways and bedrooms	36
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	7
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6517
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 3, Storage Room	13%
Interior wall covering	White painted plaster	Unit 3, second floor Hall wall	23%
Roofing Components	Roof shingle	Unit 3, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 3, first floor Restroom	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 3	40%
Ceiling Material	White ceiling plaster	Unit 3, Entry Hall	7%
Painted Wood-Interior	White base molding	Unit 3, second floor Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 31, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6518, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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Building No. 6518, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6518 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6518 at Ft. Stewart, Georgia conducted on 13 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. Apartment units 24 and 28 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6518 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6518. TCLP analysis by EMSL Analytical indicates that lead is not present above EMSL's reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Four mercury-containing thermostats were visually located in Building 6518, one in the living room of each apartment except Unit 20 & 32. Mercury-containing thermostats are assumed to exist in units 24 & 28 bringing the total found and assumed to six.

e. *Smoke Detectors:* Twenty-two smoke detectors were visually located in building 6518, one on the first floor and four on the second floor of each apartment unit inspected with the exceptions that Unit 20 that has only 2 detectors on the second floor and Units 30 & 32 have only one detector each on the second floor. Five

detectors are assumed to exist in each Units 24 & 28 bringing the total found and assumed to thirty-two.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* Fire extinguishers were not found in any inspected unit of this building and are assumed not to exist in Units 24 & 28.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6518; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Six refrigerators were visually located. One in each of the inspected apartment units. Refrigerators are assumed to exist in Units 24 & 28 bringing the total found and assumed to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6518 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6518 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

j. *Miscellaneous Hazardous Non-Building Materials:* One container with approximately three gallons of used motor oil was located directly behind Unit 26.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6518
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	6	2 bulb, 2 foot long fluorescent fixtures
Interior	7	1 bulb, 2 foot long fluorescent fixtures

TABLE 2
Ft. STEWART BUILDING 6518
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6518
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	6
Smoke detectors	First and second floor hallways and bedrooms	32
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	None located in this building	0
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6518
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 32, Storage Room	13%
Interior wall covering	White painted plaster	Unit 30, Kitchen wall	23%
Roofing Components	Roof shingle	Unit 30, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 32, Entry Hall	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 18	40%
Ceiling Material	White ceiling plaster	Unit 30, Living Room	7%
Painted Wood-Interior	White base molding	Unit 30, Entry Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 20, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6519, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6519, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6519 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6519 at Ft. Stewart, Georgia conducted on 19 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6519 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6519. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6519, one in the living room of each apartment unit.

e. *Smoke Detectors:* Forty smoke detectors were visually located in building 6519, one on the first floor and four on the second floor of each apartment unit.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing

carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6519; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6519 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6519 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6519
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	8	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6519
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6519
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6519
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 1, Storage Room	13%
Interior wall covering	Tan painted plaster	Unit 1, Mechanical Closet wall	23%
Roofing Components	Roof shingle	Unit 3, main roof field	7%
Interior Floor Coverings	Sheet vinyl flooring	Unit 8, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 3	40%
Ceiling Material	White ceiling plaster	Unit 1, Kitchen	7%
Painted Wood-Interior	White base molding	Unit 6, Entry Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 3, rear entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6520, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6520, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6520 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6520 at Ft. Stewart, Georgia conducted on 18 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6520 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6520, one in the living room of each apartment unit.

d. *Smoke Detectors:* Forty smoke detectors were visually located in building 6520, one on the first floor and four on the second floor of each apartment unit.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all apartment units except Unit 15.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6520; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6520 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6520 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6520
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	8	2 screw in bulb fluorescent fixtures

TABLE 2
Ft. STEWART BUILDING 6520
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6520
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6521, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6521, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6521 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6521 at Ft. Stewart, Georgia conducted on 13-21 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment units 17, 18, 19 & 20 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6521 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Four mercury-containing thermostats were visually located in Building 6521, one in the living room of each inspected apartment unit. Mercury-containing thermostats are assumed to exist in Units 17, 18, 19 & 20 raising the total found and assumed to eight.

d. *Smoke Detectors:* Twenty smoke detectors were visually located in building 6521, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in each of Units 17, 18, 19 & 20 raising the total found and assumed to forty.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. They are assumed to exist in Units 17, 18, 19 & 20 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6521; one for each apartment unit. The AC condensing

units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Four refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 17, 18, 19 & 20 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6521 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6521 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6521
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	0	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6521
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6521
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6522, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6522, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6522 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6522 at Ft. Stewart, Georgia conducted on 18 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment units 39 & 41 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6522 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Six mercury-containing thermostats were visually located in Building 6522, one in the living room of each inspected apartment unit. Mercury-containing thermostats are assumed to exist in Units 39 & 41 raising the total found and assumed to eight.

d. *Smoke Detectors:* Twenty-five smoke detectors were visually located in building 6522, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in each of Units 39 & 41 raising the total found and assumed to forty.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. They are assumed to exist in Units 39 & 41 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6522; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator

coils are located within the mechanical closet off the entry hall of each apartment unit. Six refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 39 & 41 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6522 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6522 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

i. *Miscellaneous Hazardous Non-Building Materials:* One container holding approximately three gallons of used motor oil was located in Unit 37.

j.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6522
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	6	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6522
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6522
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6523, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6523, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6523 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6523 at Ft. Stewart, Georgia conducted on 5 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6523 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6523. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Five mercury-containing thermostats were visually located in Building 6523, one in the living room of each apartment unit except Units 34, 46 & 48.

e. *Smoke Detectors:* Twenty-five smoke detectors were visually located in building 6523.

f. *Portable Fire Extinguishers:* No fire extinguishers were located within this building.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6523; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. All refrigerators have been removed from this building. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6523 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6523 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6523
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	16	2 bulb, 2 foot long fluorescent fixtures
Interior	0	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6523
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6523
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	5
Smoke detectors	First and second floor hallways and bedrooms	25
Carbon monoxide detectors	In living room of units and second floor hallways	0
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	0
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 0 refrigerators

TABLE 4
Ft. STEWART BUILDING 6523
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing		13%
Interior wall covering	Tan painted plaster		23%
Roofing Components	Roof shingle		7%
Interior Floor Coverings	Sheet vinyl flooring		8%
Block, Brick, Concrete	Unpainted red brick		40%
Ceiling Material	White ceiling plaster		7%
Painted Wood-Interior	White base molding		1%
Painted Wood-Exterior	Brown door frame		1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6524, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6524, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6524 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6524 at Ft. Stewart, Georgia conducted on 18 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6524 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6524. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6524, one in the living room of each apartment.

e. *Smoke Detectors:* Thirty-seven smoke detectors were visually located in building 6524, one on the first floor and four on the second floor of each apartment unit with the exception of Unit 23 that has only one detector on the second floor.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing

carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all units except Unit 31.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6524; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6524 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6524 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6524
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	2	2 bulb, 2 foot long fluorescent fixtures
Interior	7	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6524
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6524
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	37
Carbon monoxide detectors	In living room of units and second floor hallways	14
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	7
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6524
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 31, Storage Room	13%
Interior wall covering	White painted plaster	Unit 31, Second floor Hallway	23%
Roofing Components	Roof shingle	Unit 19, main roof field	7%
Interior Floor Coverings	Floor tile	Unit 27, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 31	40%
Ceiling Material	White ceiling plaster	Unit 31, Second floor Linen Closet	7%
Painted Wood-Interior	White base molding	Unit 31, Entry Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 31, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6529, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

The contents of this report are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute an official endorsement or approval of the use of such commercial products.

The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6529, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6529 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6529 at Ft. Stewart, Georgia conducted on 10 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. Apartment unit 34 was inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6529 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6529. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Three mercury-containing thermostats were visually located in Building 6529, one in the living room of apartment units 38 & 40 and one lying on the floor of the first floor Entry Hall Closet in Unit 32. All others in inspected units had been removed. One thermostat is assumed in Unit 34 bringing the total located and assumed to four.

e. *Smoke Detectors:* Twenty-nine smoke detectors were visually located in building 6529. Five are assumed to exist in Unit 34 bringing the total located and assumed to thirty-four.

f. *Carbon Monoxide Detectors:* Two carbon monoxide detectors were located, one each in Units 38 & 40.

g. *Portable Fire Extinguishers:* Two 10-pound portable fire extinguisher bottles were visually located, one each in Units 38 & 40.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6529; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6529 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6529 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6529
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	7	2 bulb, 2 foot long fluorescent fixtures
Interior	2	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6529
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6529
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	4
Smoke detectors	First and second floor hallways and bedrooms	34
Carbon monoxide detectors	In living room of units and second floor hallways	2
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	2
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 0 refrigerators

TABLE 4
Ft. STEWART BUILDING 6529
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 34, Storage Room	13%
Interior wall covering	White painted plaster	Unit 32, Kitchen	23%
Roofing Components	Roof shingle	Unit 34, main roof field	7%
Interior Floor Coverings	Sheet vinyl flooring	Unit 36, First floor Restroom	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 26	40%
Ceiling Material	White ceiling plaster	Unit 32, Entry Hall	7%
Painted Wood-Interior	White base molding	Unit 32, Entry Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 26, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6530, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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Building No. 6530, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6530 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6530 at Ft. Stewart, Georgia conducted on 20 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment unit 3 was inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6530 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Seven mercury-containing thermostats were visually located in Building 6530, one in the living room of each inspected apartment unit. One mercury-containing thermostat is assumed to exist in Unit 3 raising the total found and assumed to eight.

d. *Smoke Detectors:* Thirty-one smoke detectors were visually located in building 6530, one on the first floor and four on the second floor of each unit inspected except none were noted to exist on the second floor of Unit 4. Five detectors are assumed to exist in Unit 3 raising the total found and assumed to thirty-six.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. One is assumed to exist in Unit 3 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6530; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator

coils are located within the mechanical closet off the entry hall of each apartment unit. Seven refrigerators were visually located. One in each of the inspected units. One refrigerator is assumed to exist in Unit 3 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6530 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6530 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

i. *Miscellaneous Hazardous Non-Building Materials:* One container holding approximately three gallons of used motor oil was located behind Unit 1 and an automobile tire was located behind Unit 7.

j.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6530
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	4	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6530
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6530
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	36
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6531, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6531, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6531 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6531 at Ft. Stewart, Georgia conducted on 13-21 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment units 15 & 16 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6531 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Six mercury-containing thermostats were visually located in Building 6531, one in the living room of each inspected apartment unit. One mercury-containing thermostat is assumed to exist in each of Units 15 & 16 raising the total found and assumed to eight.

d. *Smoke Detectors:* Twenty-seven smoke detectors were visually located in building 6531, one on the first floor and four on the second floor of each unit inspected except only one was noted on the second floor of Unit 13. Five detectors are assumed to exist in each of Units 15 & 16 raising the total found and assumed to thirty-seven.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. One is assumed to exist in each of Units 15 & 16 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6531; one for each apartment unit. The AC condensing

units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Six refrigerators were visually located. One in each of the inspected units. One refrigerator is assumed to exist in each of Units 15 & 16 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6531 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6531 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6531
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	7	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6531
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6531
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	37
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6532, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6532, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6532 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6532 at Ft. Stewart, Georgia conducted on 20 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6532 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6532, one in the living room of each apartment unit.

d. *Smoke Detectors:* Forty smoke detectors were visually located in building 6532, one on the first floor and four on the second floor of each apartment unit.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all apartment units.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6532; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were visually located. One in each of the apartment units. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6532 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6532 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6532
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	12	Loose 2 foot long fluorescent bulbs located in the Kitchen Pantry of Unit 24
Interior	8	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6532
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6532
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	37
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6533, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6533, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6533 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6533 at Ft. Stewart, Georgia conducted on 6 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6533 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6533. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6533, one in the living room of each apartment unit.

e. *Smoke Detectors:* Forty smoke detectors were visually located in building 6533.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10-pound portable fire extinguisher bottles were visually located, one each in apartment unit.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6533; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were located, one in each apartment unit. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were located associated with Building 6533 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6533 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

j. *Miscellaneous Hazardous Non-Building Materials:* A container of approximately two gallons of used motor oil was located by the air conditioning condenser unit at Unit 33.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6533
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	2	2 bulb, 2 foot long fluorescent fixtures
Interior	0	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6533
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6533
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6533
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 27, Storage Room	13%
Interior wall covering	White painted plaster	Unit 29, Kitchen	23%
Roofing Components	Roof shingle	Unit 25, main roof field	7%
Interior Floor Coverings	Sheet vinyl flooring	Unit 29, Kitchen	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 25	40%
Ceiling Material	White ceiling plaster	Unit 35, Entry Hall	7%
Painted Wood-Interior	White base molding	Unit 29, Entry Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 31, front entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6538, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6538, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6538 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6538 at Ft. Stewart, Georgia conducted on 5-12 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6538 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6538. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6538, one in the living room of each apartment unit.

e. *Smoke Detectors:* Forty smoke detectors were visually located in building 6538.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10-pound portable fire extinguisher bottles were visually located, one each in apartment unit.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6538; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were located, one in each apartment unit. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* An above ground diesel storage tank providing fuel for an emergency generator associated with a sewage lift station was located within a fenced compound near Building 6538 at the intersection of Colquitt Street and Davis Avenue. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6538 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

j. *Miscellaneous Hazardous Non-Building Materials:* An automobile battery was located by the air conditioning condenser unit at Unit 33.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6538
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	8	2 bulb, 2 foot long fluorescent fixtures
Interior	0	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6538
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6538
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6538
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 41, Storage Room	13%
Interior wall covering	White painted plaster	Unit 41, Kitchen	23%
Roofing Components	Roof shingle	Unit 41, main roof field	7%
Interior Floor Coverings	White floor tile	Unit 33, Entry Hall	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 37	40%
Ceiling Material	White ceiling plaster	Unit 33, Living Room	7%
Painted Wood-Interior	White base molding	Unit 33, Kitchen	1%
Painted Wood-Exterior	Brown door frame	Unit 37, rear entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
FS-6523	*0001*	12/12/03	<0.4 mg/L
FS-6533	*0002*	12/12/03	<0.4 mg/L
FS-6539	*0003*	12/12/03	<0.4 mg/L
FS-6509	*0004*	12/12/03	<0.4 mg/L
FS-6529	*0005*	12/12/03	<0.4 mg/L
FS-6505	*0006*	12/12/03	<0.4 mg/L
FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6539, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

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Building No. 6539, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

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Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6539 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6539 at Ft. Stewart, Georgia conducted on 6 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District, which includes the USAEHA guidance for demolition debris characterization by TCLP sampling. All apartment units were accessed at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6539 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *T*CLP *Lead Results:* Sampling of building components was performed as required and components were processed and mixed in the proper percentages and given a sample identification of FS 6539. TCLP analysis by EMSL Analytical indicates that lead is not present above their reporting limit of 0.4 mg/L, and therefore is below the regulatory limit of 5 mg/L for landfill disposal. Field sampling data including component type, color, TCLP mix percentage and approximate sampling location is presented in Table 4. A scanned copy of EMSL's analytical report is included as Appendix A.

d. *Thermostats:* Eight mercury-containing thermostats were visually located in Building 6539, one in the living room of each apartment unit.

e. *Smoke Detectors:* Forty smoke detectors were visually located in building 6539.

f. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in some inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

g. *Portable Fire Extinguishers:* 10-pound portable fire extinguisher bottles were visually located, one each in apartment unit.

h. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6539; one for each apartment unit. The AC condensing units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Eight refrigerators were located, one in each apartment unit. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

i. *Above and Underground Storage Tanks:* None of either were visually located associated with Building 6539. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6539 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Appendix

Tables

TABLE 1
Ft. STEWART BUILDING 6539
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	8	2 bulb, 2 foot long fluorescent fixtures
Interior	0	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6539
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6539
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators

TABLE 4
Ft. STEWART BUILDING 6539
TCLP COMPOSITE SAMPLE COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	PERCENTAGE OF SAMPLE
Unpainted Wood	Wall framing	Unit 9, Storage Room	13%
Interior wall covering	White painted plaster	Unit 10, Entry Hall	23%
Roofing Components	Roof shingle	Unit 9, main roof field	7%
Interior Floor Coverings	White floor tile	Unit 10, Entry Hall	8%
Block, Brick, Concrete	Unpainted red brick	Exterior of Unit 9	40%
Ceiling Material	White ceiling plaster	Unit 10, Entry Hall	7%
Painted Wood-Interior	White base molding	Unit 10, Entry Hall	1%
Painted Wood-Exterior	Brown door frame	Unit 9, rear entry door	1%

Appendix A

Analytical Report – EMSL Analytical

EMSL Analytical
3 Cooper St., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-9551 Email: gmiller1@emsl.com

Attn: Tim Jones
U.S. Army Corps of Engineers
200 North Cobb Pkwy
Bldg 400,Suite 404
Marietta, GA 30062
Fax: (678) 354-0330 Phone: (678) 354-0310
Project: **Ft. Stewart 04 Barracks**

Customer ID: USAE30
Customer PO: CCApp087789$98
Received: 12/05/03 11:38 AM

EMSL Order: 200313998
EMSL Proj:

Toxicity Characteristic Leaching Procedure (SW846, 1311/7420)

Client Sample Description	*Lab ID*	*Analyzed*	*Lead Concentration*
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FS-6507	*0007*	12/12/03	<0.4 mg/L
FS-6538	*0008*	12/12/03	<0.4 mg/L
FS-6502	*0009*	12/12/03	<0.4 mg/L
FS-6504	*0010*	12/12/03	<0.4 mg/L
FS-6518	*0011*	12/12/03	<0.4 mg/L
FS-6514	*0012*	12/12/03	0.7 mg/L
FS-6517	*0013*	12/12/03	<0.4 mg/L
FS-6510	*0014*	12/12/03	0.6 mg/L
FS-6524	*0015*	12/12/03	<0.4 mg/L
FS-6519	*0016*	12/12/03	<0.4 mg/L
FS-QC	*0017*	12/12/03	<0.4 mg/L

Gerold J. Miller, Ph.D.
Laboratory Director
or other approved signatory

The test results contained within this report meet the requirements of NELAC unless otherwise noted.
ACCREDITATIONS: NJ-NELAP: 04653, AIHA Environmental Lead Laboratory Approval Program: 100194

Date Printed: 12/29/03 3:36:37 PM

PB w/o QC

2003713998

EMSL ANALYTICAL CHAIN OF CUSTODY LEAD

Revised 7/1/99

EMSL Rep: Sheryl Steinmetz DATE: 12-3-03

Your Company Name: U.S. Army Corps of Engineers EMSL-Bill to: CC App# 087789

Street: 200 North Cobb Parkway Street: SAME

Box #: Building 400, Suite 404 Box #:

City/State: Marietta, GA Zip: 30062 City/State: Zip:

Phone Results to:

Name:

Telephone #:

Project Name/Number: Ft. Stewart 04 Barracks

Fax Results to:

Name: Tim Jones

Fax #: 678-354-0330

Purchase Order #:

MATRIX	METHOD	INSTRUMENT	Mdls	TAT
Lead Chips*	SW846-7420 or AOAC 5.009 (974.02)	Flame Atomic Absorption	0.01% ++	
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil +	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	5 ug/filter	
	or NIOSH 7300	ICP	3.0 ug/filter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead ** 17 each	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	5 DAY
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/filter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil +			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	
Total Dust	NIOSH 0500-0600	Gravimetric Reduction	0.0001g	

TAT (Turnaround) - 3 hours, 6 hours, Please call ahead to schedule.
12 hours (must arrive by 11:00 a.m),
24 hours (1day), 48 hours (2 days), 72 hours, 96 hours (3 days), 120 hours(4 days), 144 + hours (6-10 days)
*, **, ***, ****, +, ++ Please Refer to Price Quote

RECEIVED EMSL WESTMONT, N.J. 2003 DEC -5 AM 11:38

Report PPM for Lead Chip and Soil Samples Analyzed by Flame AA

Report PPB for Lead Drinking Water Samples Analyzed by Graphite Furnace

PLEASE DO NOT!!! FAX OUR CHAIN OF CUSTODY WITH OUR RESULTS!!!

Relinquished By; (Person)	Date:
Received at EMSL By:	Date: 12/5/03

Note: Please duplicate this form and use additional sheets if necessary.

2003 13958

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/13/03	15:00	cool		X	FS-6518	2	X					47278	building composite	13958 -11
11/17/03	10:35	cool		X	FS-6514	2	X					47279	building composite	-12
11/17/03	11:50	cool		X	FS-6517	2	X					47280	building composite	-13
11/18/03	9:30	cool		X	FS-6510	2	X					47281	building composite	-14
11/18/03	11:15	cool		X	FS-6524	2	X					47282	building composite	-15
11/19/03	9:45	cool		X	FS-6519	2	X					47283	building composite	-16
		cool		X	FS-QC	2	X					47284	building composite	17

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time
Tim Sowa	12-4-03 1400	[illegible]	12/5/03 1138
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time

Remarks:

1 Large container for TCLP

2 Small container for pH determination for extraction fluid

3 Please provide QC summary

20031398

US Army Corps of Engineers

Savannah District

Chain of Custody Record

Project Name: **Ft. Stewart FY 04 Barracks**

Job # **7960**

TAT **5 DAYS**

Date	Time	Pres.	Gr	Cm	Site Code/Sample Number	No. of Containers	TCLP Lead					SAD No.	Matrix	
11/05/03	13:00	cool		X	FS-6523	2	X					47268	building composite	-1
11/06/03	11:00	cool		X	FS-6533	2	X					47269	building composite	-2
11/06/03	13:45	cool		X	FS-6539	2	X					47270	building composite	-3
11/07/03	12:50	cool		X	FS-6509	2	X					47271	building composite	-4
11/10/03	14:45	cool		X	FS-6529	2	X					47272	building composite	-5
11/12/03	9:35	cool		X	FS-6505	2	X					47273	building composite	-6
11/12/03	12:15	cool		X	FS-6507	2	X					47274	building composite	-7
11/12/03	14:00	cool		X	FS-6538	2	X					47275	building composite	-8
11/13/03	9:50	cool		X	FS-6502	2	X					47276	building composite	-9
11/13/03	11:15	cool		X	FS-6504	2	X					47277	building composite	-10

13958

Relinquisher by: (sig)	Date/Time	Received by: (sig)	Date/Time	Remarks:
Tim Sou	12-4-03 1400	[illegible]	12/5/03 1138A	1 Large container for TCLP
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	2 Small container for pH determination for extraction fluid
Relinquished by: (sig)	Date/Time	Received by: (sig)	Date/Time	3 Please provide QC summary

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 6540, Ft. Stewart, Georgia

Prepared by Timothy A. Jones

Typical Building Photo

Approved for public release, distribution is unlimited

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The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Building No. 6540, Ft. Stewart, Georgia

by Timothy A. Jones

Final Report

Approved for public release; distribution is unlimited

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 6540 is a two-story wood frame structure with brick exterior of 1950s vintage. It is divided into eight identical three-bedroom apartment units. The first floor of each apartment unit consists of a kitchen with pantry/water heater closet, living room, half bathroom (added later), entry hall, storage closet and mechanical closet. The second floor of each unit consists of three bedrooms with closets, a full bathroom, a hallway and a linen closet. Original interior walls and ceilings are constructed of wood framing covered with gypsum board that is in turn covered by approximately ¾ inch of hard plaster. Walls separating individual apartment units are constructed of masonry covered with plaster. A half bathroom has been added on the first floor of each apartment unit at some later time the new walls of which are wood frame covered by gypsum board. The first floor is poured concrete slab on grade topped with a combination of wood parquet, sheet vinyl flooring and floor tile. Floors on the second floor are finished hardwood planking over wood sub-flooring in the hallway and bedrooms and ceramic tile in the bathroom. There is no attic space above the second floor; ceilings are attached to the roof joists. Attached wooden storage sheds on the rear of the building are each shared by two apartment units. The storage shed's roofs are constructed of rolled roofing over plywood. All remaining roof structures are asphalt shingles over felt over wood decking. Second story exterior soffits are covered with vinyl siding material over older plywood. Windows have aluminum frames.

Mechanical systems consist of a natural gas fired forced air furnace coupled with a conventional split system refrigerated air conditioner. An electric water heater is located in the pantry of the kitchen. Waste heat recovery water heating systems once operating off of the air conditioner condensing units exist but have been abandoned. Stainless-steel kitchen exhaust hoods remain in the kitchens, though the stove/ranges have been removed. Dishwashers have also been removed.

Description of study

Investigation

This report documents the hazardous building materials survey of Building No. 6540 at Ft. Stewart, Georgia conducted on 18 November 2003 by USACE Savannah District employees Tim Jones and Mike Wielputz. This survey was conducted in general accordance with the Statement of Services developed by Ray Willingham, retired, USACE Savannah District. Apartment units 1, 5, 6, 7 & 8 were inaccessible at the time of inspection.

Conclusions

The following information gathered during the survey of Building 6540 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials:* Inspection of the building revealed lead in the plumbing drainage and vent piping system used as pipe joints. Details are outlined in Table 2.

c. *Thermostats:* Three mercury-containing thermostats were visually located in Building 6540, one in the living room of each inspected apartment unit. Mercury-containing thermostats are assumed to exist in Units 1, 5, 6, 7 & 8 raising the total found and assumed to eight.

d. *Smoke Detectors:* Fifteen smoke detectors were visually located in building 6540, one on the first floor and four on the second floor of each unit inspected. Five detectors are assumed to exist in each of Units 1, 5, 6, 7 & 8 raising the total found and assumed to forty.

e. *Carbon Monoxide Detectors:* Carbon monoxide detectors were present in one of the inspected units. At the time of inspection, maintenance personnel were placing carbon monoxide detectors in all units so that each would have two. One detector on each floor, bringing the total to sixteen for the building.

f. *Portable Fire Extinguishers:* 10 pound portable fire extinguisher bottles were visually located in all inspected units. They are assumed to exist in Units 1, 5, 6, 7 & 8 raising the total found and assumed to eight.

g. *Compressed Refrigerant Gas:* Eight split system central air-conditioning units were located in Building 6540; one for each apartment unit. The AC condensing

units are located near the front door of each apartment unit and the evaporator coils are located within the mechanical closet off the entry hall of each apartment unit. Three refrigerators were visually located. One in each of the inspected units. Refrigerators are assumed to exist in Units 1, 5, 6, 7 & 8 raising the total of found and assumed refrigerators to eight. All of these units are assumed to contain refrigerant gas that should be recovered prior to demolition.

h. *Above and Underground Storage Tanks:* None of either were located associated with Building 6540 by visual inspection. Documentation in the form of an environmental baseline study produced by Zapata Engineering, P.A. dated March 2003 indicates that USTs for heating oil once existed in the vicinity of buildings in the Hallwood Homes housing area in which Building 6540 is located. That report states that all USTs were removed in 1991. No other documentation of the reported USTs was found.

List of Tables

Tables

TABLE 1
Ft. STEWART BUILDING 6540
FLUORESCENT LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	0	2 bulb, 2 foot long fluorescent fixtures
Interior	6	2 screw in fluorescent bulb fixtures

TABLE 2
Ft. STEWART BUILDING 6540
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Under slab, in plumbing chase walls and first floor ceilings	350-450

TABLE 3
Ft. STEWART BUILDING 6540
MISCELLANEOUS HAZARDOUS BUILDING MATERIALS

MISCELLANEOUS MATERIAL	LOCATION	ESTIMATED NUMBER
Mercury-thermostats	In living room of units	8
Smoke detectors	First and second floor hallways and bedrooms	40
Carbon monoxide detectors	In living room of units and second floor hallways	16
Portable fire extinguishers	Usually located in first floor entry hall, sometimes found in kitchen	8
Compressed refrigerant gas	Split system air conditioners and refrigerators	8 ac systems and 8 refrigerators