Science & Engineering Consultants
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April 4, 2025

Mr. Ryan Thomas
Assistant to City Administrator
City of Seneca
221 E. North 1st Street
Seneca, South Carolina 27699

REFERENCE: **Demolition Asbestos Survey Report**
Old Seneca Middle School
810 W. South 4th Street
Seneca, Oconee County, South Carolina 27699
Project No. 00.6563.00

Dear Mr. Thomas:

SynTerra Corporation (SynTerra) submits this Demolition Asbestos Survey Report for the asbestos survey conducted at the above referenced site.

SITE DESCRIPTION

The subject property known as the Old Seneca Middle School is further identified by Oconee County parcel identification number (PID) 530-37-01-001. Oconee County GIS property information for the subject property is provided in **Attachment E.** A site location map is provided on **Figure 1**. Ownership was recently transferred from Oconee County Schools to the City of Seneca. The site is approximately 22 acres in size and includes 4 buildings which reportedly total approximately 147,000 square feet. Limited information is available for the site and structures on the Oconee County GIS. The southern approximately 60-70% will be demolished as shown on the provided demolition plan, **Figure 2**. Some northern portions of the building will remain such as the new science lab, gymnasium, chorus room, locker rooms and other areas as shown on **Figure 2**.

The client provided SynTerra with an Asbestos Hazard Emergency Response Act (AHERA) Management Plan, dated October 1, 1988 by Marshall Clarke Architects, Inc. for the subject property. This report is challenging to utilize because it has been photo-copied several times, sample images are black and white, many materials were presumed ACM, and the majority of exterior materials were not included. SynTerra has highlighted various sample results and references which were used in conjunction with additional sampling to evaluate the buildings for the presence of asbestos containing materials (ACM) as provided in **Attachment C**. The AHERA report was last updated December 19, 2023 via a Six Month Periodic Surveillance Report at the end of the document. The report does include the exterior stucco ceilings over the covered walks and entry roofs as required in AHERA but other exterior samples were not included and were sampled by SynTerra. For some interior materials, SynTerra utilized the prior sampling data followed by additional sample collection to meet the required sample numbers per material type or per functional space, current transmission electron microscopy (TEM) analysis requirements, etc.

BUILDING INFORMATION

The main portion of the school building and the then-detached Tim Howard Gymnasium appear to have been constructed after 1965 but before 1977 according to historical aerial photography provided in **Attachment D**. Aerial photography was researched to amend the minimal information provided about building additions and dates of construction of the various functional areas. SynTerra then divided the building areas to be demolished into functional spaces based on their apparent dates of construction, uses, additions, dates of apparent interior remodels and reconfigurations such as the boiler building (Boiler B) and the portable storage building (Building A). The following table provides our understanding of each functional space, see **Figures 3** and **4**.

Old Seneca Middle School				
Functional Space	**Building or Area Name**	**Use**	**Apparent Date of Construction**	**Notes**
A	Portable	Storage	1994-2005	Modular wood-frame building, significantly damaged friable material (ceiling texture).
B	Boiler	Boiler room and storage	1965-1977	Masonry structure, TSI previously abated, PACM gaskets.
C	Main School	School	1965-1977	Masonry structure, evidence of TSI not observed, ACM identified.
D	West Addition	School	1994-2005	Metal roof, masonry structure, rooms 207-210, includes interior hallway along eastern side of classrooms, ACM was not identified, sampled independently from Area C. Note: east wall of hallway with lockers along Rooms 311, 312, 313 has PACM wallboard/joint compound considered the west edge of Area C.
E	South Addition	School	1977-1981	2 Story addition, homogeneous exterior materials to Area C, different interior materials, sampled independent from Area C.
F	Addition (Art Room) & Remodel (Media)	Art Room 408, Media Room	1984-1991	Art Room 408 is an addition built at former courtyard, Media Room presumed remodel based on interior building materials, ACM not identified, sampled independent from Area C.

TSI: Thermal System Insulation
ACM: Asbestos Containing Material
PACM: Presumed Asbestos Containing Material, in this case based on prior AHERA sampling, or homogeneous materials sampled by SynTerra

ASBESTOS ASSESSMENT

On February 18 and 19, 2025, SynTerra employee Andy Kosse (SC Asbestos Building Inspector #BI-01423) and Mr. Robert Smith with 911 Environmental (#BI-00405) collected 138 samples of suspect asbestos-containing materials (ACM) in general accordance with United States Environmental Protection Agency (USEPA) sampling requirements for ACM in schools (40 CFR 763, Subpart E and Appendices), as applicable. We submitted the samples to EMSL Analytical in Pineville, North Carolina to be tested for asbestos by polarized light microscopy using AHERA Method 40CFR 763 Subpart E. EMSL Analytical is accredited under the National Voluntary Accreditation Program Lab Code 200841-0. An ACM is defined by the USEPA and State of South Carolina as a material containing greater than one percent (>1%) asbestos. Copies of the staff accreditation certificates are provided in **Attachment F.**

Some samples contained multiple layers and the laboratory was requested to use a positive stop method which resulted in a total of 220 PLM sample layers analyzed. A total of 40 samples of organically bound nonfriable (NOB) materials were analyzed by transmission electron microscopy (TEM) via EPA/600/R-93/116 Section 2.5.5.1. Sample and site photographs are provided in **Attachment B**.

Additional flooring and wallboard/joint compound samples from Area C were collected, but were held and not analyzed since the results were not relevant due to the presence of positive ACM black mastics, white and gray speckled VCT, and joint compounds throughout Area C.

The laboratory reports are included as **Attachment A.** A copy of the photo log is included as **Attachment B.** The following table presents a summary of ACM identified during the survey. All samples and their locations are described in the attached **Table 1**.

SUMMARY OF IDENTIFIED ACM

Functional Space-Building	Material	Sample No.	Description / Location	Quantity [a]	Result	F/NF - Condition [b]
A	Ceiling Texture	A-7 – A-9	White Popcorn ceiling texture / Portable ceiling, disturbed	900 SF	2% Chrysotile	F-SD
A	Joint Compound	A-7 – A-9	White joint compound / Portable ceiling, disturbed, assoc. with ACM ceiling texture	See above	ND-PACM	F-SD
A	Wallboard	A-7 – A-9	Gray wallboard / Portable ceiling, disturbed, assoc. with ACM ceiling texture	See above	ND-PACM	F-SD

Functional Space-Building	Material	Sample No.	Description / Location	Quantity [a]	Result	F/NF - Condition [b]
B	Gaskets	PACM	Gaskets / Boiler room, remaining boiler pipes and equipment	15 gaskets	PACM	NF-G
C	Vinyl Floor Tile	C-1, C-23, C-29	Gray-white speckled vinyl floor tile, 12”x12” / Room 212 (C-1), main office (C-23), room 406 (C-29), AHERA samples OC-SHS-09, SHS-10	30,000 SF	PACM	NF-G
C	Floor Mastic	C-1, C-23, C-29	Black floor mastic / C area floor, AHERA samples OC-SHS-09, SHS - 10	30,000 SF	3% Chrysotile (C-23)	NF-G
C	Wallboard	C-13 – C-15	Light gray wallboard / Walls room 302	See D-13 below	ND-PACM	F-G
C	Joint Compound	C-13 – C-15	White joint compound / Walls room 302	12,500 SF	ND-PACM	F-G
D	Vinyl Floor Tile	D-10 – D-12	VCT, 12”x12”, white speckled / Room 312	(see area C VCT, C-1, C-23, C-29)	4% Chrysotile	NF-G
D	Floor Mastic and Leveler	D-10 – D-12	Black floor mastic, leveler sporadic / Under VCT room 312	(see area C floor mastic, C-1, C-23, C-29)	5% Chrysotile	NF-G
D	Drywall	D-13 – D-15	Light gray wallboard / Room 311 (Area C-original school) assoc. with ACM joint compound	See Below	ND-PACM	F-G
D	Joint Compound	D-13 – D-15	White joint compound / Room 311 (Area C-original school)	2,600 SF (Area C)	3% Chrysotile	F-G

Functional Space-Building	Material	Sample No.	Description / Location	Quantity [a]	Result	F/NF - Condition [b]
D	Tape	D-13 – D-15	Tan tape at joints / Room 311 (Area C-original school), assoc. with ACM joint compound	See above	ND	NF-G
E	Vinyl Sheet Flooring	E-38 – E-40	Vinyl sheet, tan pebble pattern / Science lab only, room 603 (E-38 – E-40)	800 SF	15% Chrysotile	NF-G
F	Vinyl Floor Tile	F-1 – F-3	Gray-white speckled vinyl floor tile, 12”x12” / Room 408 art room, ACM because inseparable from mastic, and media room in some closets	2,500 SF	ND	NF-G
F	Floor Mastic	F-1 – F-3	Black floor mastic / Room 408 art room addition (F-1 – F-3), and media room in southeast AV closet	2,500 SF	3% Chrysotile	NF-G
O	Window Glazing	O-19 – O-21	Window glazing, gray, hard / One window on west side of building at room 410	50 LF - 1 window	3% Chrysotile	NF-G
All	Fire Doors	Not Sampled	Fire doors throughout, most are wood finished, some metal / Throughout interior	275	PACM	F-G

Notes:
Misc.=Miscellaneous, ND= None Detected, F=Friable, NF=Non-Friable, SF =Square Feet, LF = Linear Feet,
PACM = Presumed Asbestos Containing Material
[a] Quantities are approximate and not for bidding purposes or use by abatement contractors.
[b] Material Condition Codes:
G= Good = No damage or very limited damage
D= Damaged = <10% damage equally distributed, <25% of damage localized
SD = Significantly Damaged = ≥10 damage equally distributed, ≥25% of damage localized

This asbestos survey is based on the analysis of building material samples collected from locations accessible at the time of the survey. Due to the limited destructive nature of our testing, suspect materials may be hidden behind walls, obscured chases, fixed ceilings, below floor slabs, etc. In the event of demolition or renovation, additional sampling of previously inaccessible materials may be required or assumed to be ACM. The ACM materials identified are considered Regulated Asbestos Containing Materials (RACM) and a NESHAP permit will be required due to the quantities identified. The portable storage building, identified as functional space A, will be specified in the pending asbestos abatement designs to be removed entirely as asbestos waste due to significant damage to the building which has scattered the ceiling texture, a friable ACM surfacing material, throughout the structure.

RECOMMENDATIONS

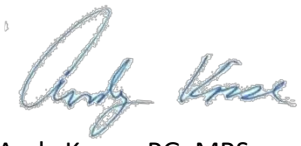
Asbestos Materials

SynTerra recommends the identified RACM be removed and disposed of by a qualified asbestos-abatement contractor prior to demolition activities, which may disturb the identified RACM. Due to the quantities of RACM, a NESHAP permit will be required. The permit is typically submitted by the abatement contractor. Asbestos abatement designs are being prepared by SynTerra which will be used for permitting and abatement.

We appreciate this opportunity to provide environmental services to the City of Seneca. If you have any questions or require additional information, please do not hesitate to contact Mr. Andy Kosse at 980-298-1185, or by email at akosse@synterracorp.com.

Sincerely,

SynTerra



Andy Kosse, PG, MRS
Senior Geologist-Market Leader
SC Buidling Inspector #BI-01423

Senior Peer Review:

Andrea Kehn, P.E.
Vice President, Engineering

ATTACHMENTS:

Figures
Tables

Attachment A	Asbestos Analysis Laboratory Reports
Attachment B	Photo Log
Attachment C	AHERA Management Plan
Attachment D	Historical Aerial Photography
Attachment E	GIS Property Information
Attachment F	SC DES Asbestos Accreditations

FIGURES

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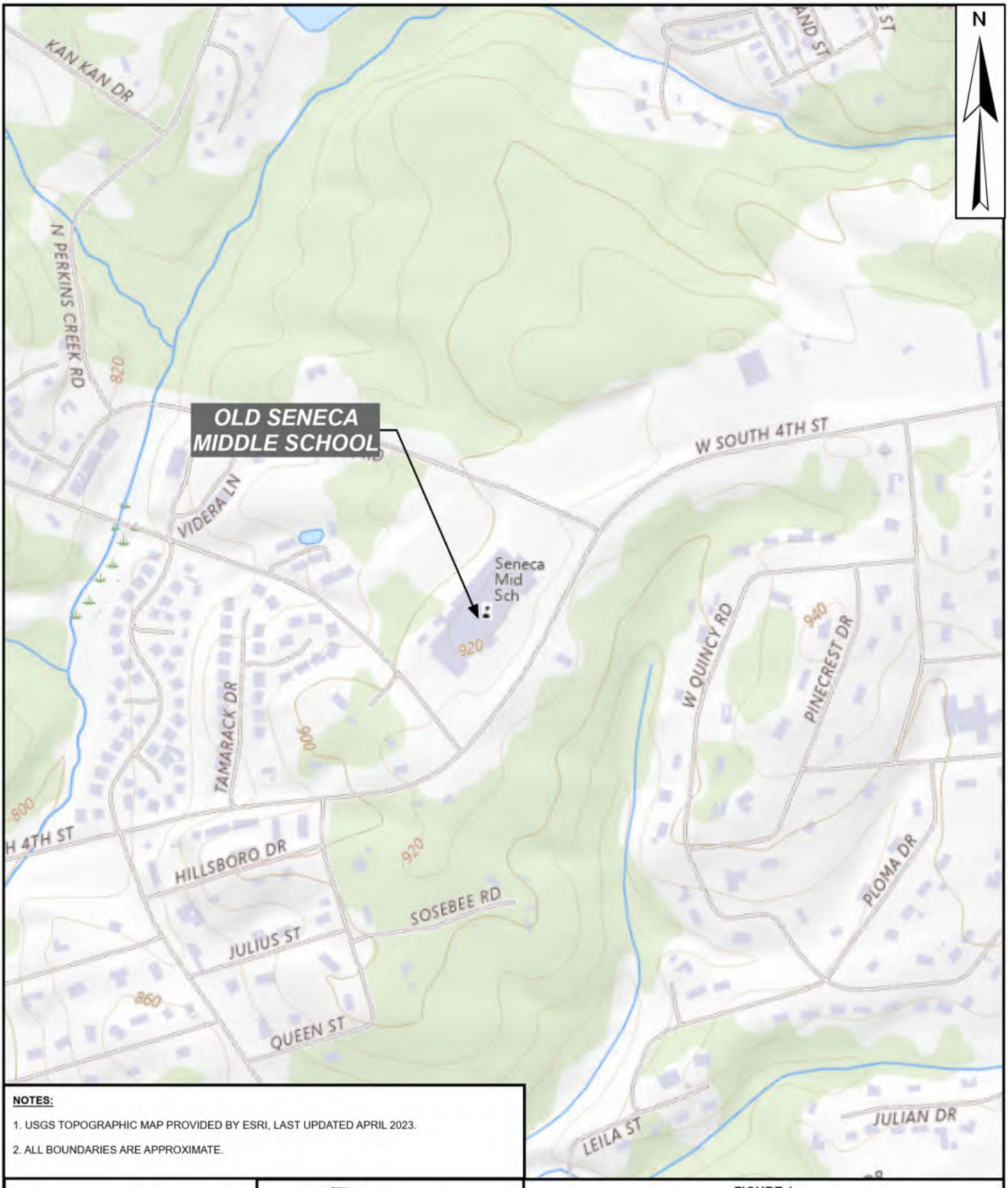

NOTES:

1. USGS TOPOGRAPHIC MAP PROVIDED BY ESRI, LAST UPDATED APRIL 2023.
2. ALL BOUNDARIES ARE APPROXIMATE.

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FIGURE 1
SITE LOCATION MAP
ASBESTOS DEMOLITION SURVEY
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

DRAWN BY: W. PRATER	DATE: 03/19/2025
REVISED BY: W. PRATER	DATE: 03/20/2025
CHECKED BY: A. KOSSE	DATE: 03/20/2025
APPROVED BY: A. KOSSE	DATE: 03/20/2025
PROJECT MANAGER: ANDREW KOSSE	

GRAPHIC SCALE
300 0 300 600
(IN FEET)

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NOTES:

1. ALL BOUNDARIES ARE APPROXIMATE.

2. AERIAL IMAGERY PROVIDED BY ESRI, COLLECTED ON NOVEMBER 4, 2023.

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FIGURE 2
DEMOLITION PLAN
ASBESTOS DEMOLITION SURVEY
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

DRAWN BY: W. PRATER	DATE: 03/19/2025
REVISED BY: W. PRATER	DATE: 03/20/2025
CHECKED BY: A. KOSSE	DATE: 03/20/2025
APPROVED BY: A. KOSSE	DATE: 03/20/2025
PROJECT MANAGER: ANDREW KOSSE	

GRAPHIC SCALE
50 0 50 100
(IN FEET)

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NOTES:

1. PACM - PRESUMED ASBESTOS CONTAINING MATERIAL
2. AERIAL IMAGERY PROVIDED BY ESRI, COLLECTED ON NOVEMBER 4, 2023.

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FIGURE 3
ACM SAMPLE LOCATIONS - FUNCTIONAL SPACES A AND B
ASBESTOS DEMOLITION SURVEY
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

DRAWN BY: W. PRATER	DATE: 03/19/2025
REVISED BY: W. PRATER	DATE: 03/20/2025
CHECKED BY: A. KOSSE	DATE: 03/20/2025
APPROVED BY: A. KOSSE	DATE: 03/20/2025
PROJECT MANAGER: ANDREW KOSSE	

GRAPHIC SCALE
15 0 15 30
(IN FEET)

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AREA E
(South Addition, 2nd Floor)

E-38
E-39
E-40
Vinyl Sheet

SECOND FLOOR

O-19
O-20
O-21
Window Glazing

C-1
VCT/Mastic

D-13
D-14
D-15
Joint compound/Wallboard

AREA D
(West Addition)

D-10
D-11
D-12
VCT/Mastic

F-1
F-2
F-3
VCT/Mastic

AREA F

AREA E
(South Addition, 1st Floor)

C-29
VCT/Mastic

AREA F

C-23
VCT/Mastic

FIRST FLOOR

AREA C

C-13
C-14
C-15
Joint Compound/Wallboard

N

DRAWING NOT TO SCALE

DRAWN BY: W. PRATER	DATE: 03/19/2025
REVISED BY: W. PRATER	DATE: 03/20/2025
CHECKED BY: A. KOSSE	DATE: 03/20/2025
APPROVED BY: A. KOSSE	DATE: 03/20/2025
PROJECT MANAGER: ANDREW KOSSE	

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FIGURE 4
ACM SAMPLE LOCATIONS - FUNCTIONAL SPACES
C THROUGH F
ASBESTOS DEMOLITION SURVEY
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

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TABLE

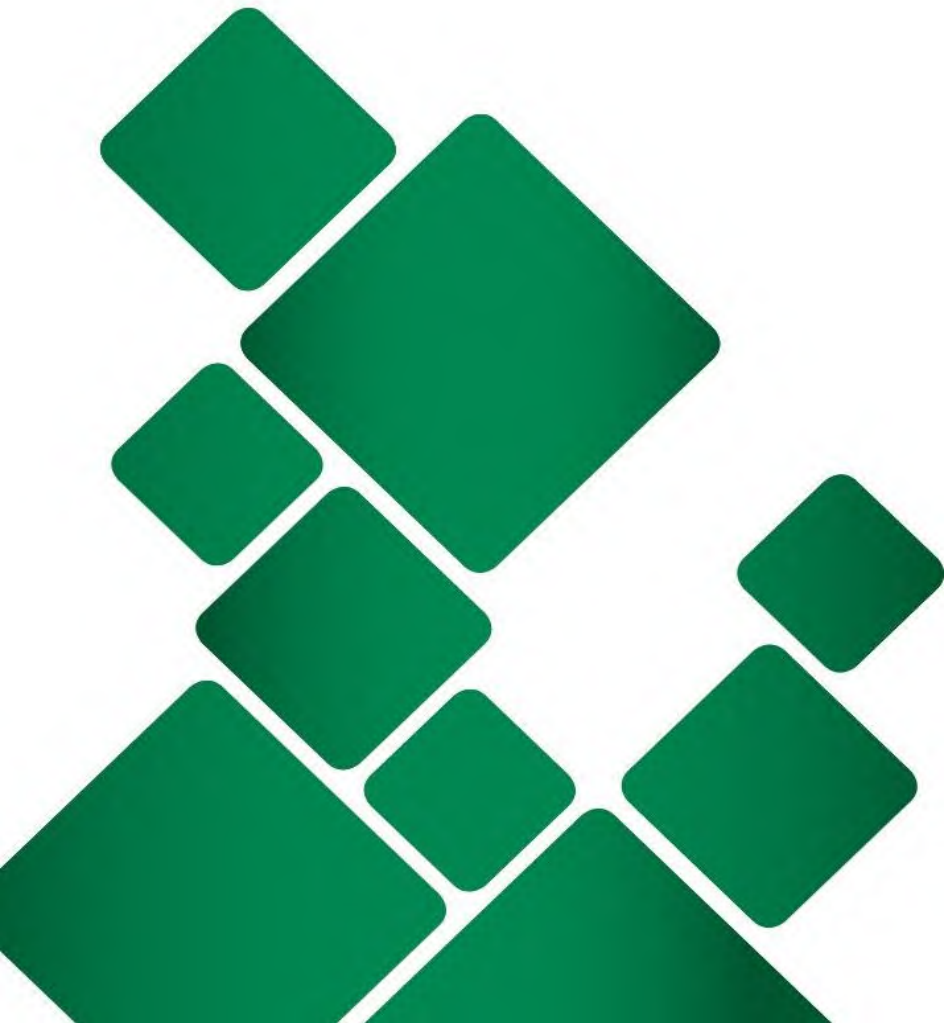

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TABLE 1
ASBESTOS SAMPLE RESULTS
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

Functional Space - Building	Material	Sample No.	Description/Location	Quantity	Result (PLM & TEM where required)	Friable/Non-Friable - Condition
A-Portable						
A	Shingles	A-1 – A-3	Gray roof shingles / Portable roof	900 SF	ND	NF-G
A	Felt	A-4 – A-6	Black Roof Felt / Portable roof	900 SF	ND	NF-G
A	**Ceiling Texture***	**A-7 – A-9**	**White Popcorn ceiling texture / Portable ceiling, disturbed**	**900 SF**	**2% Chrysotile**	**F-SD**
A	**Joint Compound**	**A-7 – A-9**	**White joint compound / Portable ceiling, disturbed**	**See above**	**ND-PACM**	**F-SD**
A	**Wallboard**	**A-7 – A-9**	**Gray wallboard / Portable ceiling, disturbed**	**See above**	**ND-PACM**	**F-SD**
B – Boiler						
B	Roofing	B-1 – B-5	Gray, asphalt composite roll roofing / Boiler building roof	1,365 SF	ND	NF-G
B	Roof Flashing	B-6 – B-8	White Flashing sealant / Boiler roof, along perimeter flashings	300 SF	ND	NF-G
B	Roof Flashing	B-6 – B-8	Black Flashing sealant / Boiler roof, along perimeter flashings	300 SF	ND	NF-G
B	Plaster-skim coat	B-9, B-10	White plaster skim coat / Boiler building ceiling, note: 3 samples in AHERA report (OC-SHS-04-05-06)	1,365 SF	ND	NF-D
B	Plaster-rough coat	B-9, B-10	Gray rough coat / Boiler building ceiling, note: 3 samples in AHERA report (OC-SHS-04-05-06)	1,365 SF	ND	F-D
B	Door Caulk	B11 – B-13	Black door caulk, exterior / Boiler buildings, around metal door frames	51 LF	ND	NF-G
B	**Gaskets**	**PACM**	**Gaskets / Boiler room, remaining boiler pipes and equipment**	**15 gaskets**	**PACM**	**NF-G**
C-Main School						
C	**Vinyl Floor Tile**	**C-1, C-23, C-29**	**Gray-white speckled vinyl floor tile, 12”x12” / Room 212 (C-1), main office (C-23), room 406 (C-29), AHERA samples OC-SHS-09 & OC-SHS-10**	**30,000 SF**	**PACM**	**NF-G**
C	**Floor Mastic**	**C-1, C-23, C-29**	**Black floor mastic / C area floor, AHERA samples OC-SHS-09 & OC-SHS -10**	**30,000 SF**	**3% Chrysotile (C-23)**	**NF-G**
C	Ceiling Tile	C-4 – C-6	White ceiling tiles, 2’x4’, with small fissures typ. / Hall outside room 211, 2 obtained in AHERA report (OC-SHS-08,-016)	50,000 SF	ND	F-Good
C	Block Walls	C-7 – C-9	CMU Block walls, painted / Wall outside room 212, additional layers identified at C-8	60,000 SF	ND	NF-Good
C	Transition Strips	C-10 – C-12	Black floor transition strips / Floor at room 310,	200 SF	ND	NF-Good
C	Mastic	C-10 – C-12	Tan mastic / Beneath floor strips at room 310	200 SF	ND	NF-Good
C	**Wallboard**	**C-13 – C-15**	**Light gray wallboard / Walls room 302**	**See below**	**ND-PACM**	**F-Good**
C	**Joint Compound**	**C-13 – C-15**	**White joint compound / Walls room 302**	**12,500 SF**	**ND - PACM**	**F-Good**
C	Plaster-skim coat	C-16, C-20	White plaster skim coat / Ceiling over SRO Office (C-16, C-17), electric closet (C-18), kitchen (C-19, C-20)	10,000 SF	ND	NF-G
C	Plaster-rough coat	C-16 – C-20	Gray rough coat / Ceiling over SRO Office (C-16, C-17), electric closet (C-18), kitchen (C-19, C-20)	See above	ND	F-D
C	Flashing Caulk	C-200 – C-202	Tan flashing caulk / Along parapet wall flashing of area-C roof, east wall at 600’s rooms (C-200), west wall over rooms 409-410 (C-201), west wall at kitchen (C-202)	200 LF	ND	NF-G
C	Roofing	C-203 – C-209	Gray, asphalt composite roll roofing / Area C roof, kitchen (C-203), front center over main entry (C-204), north over rooms 306-307 (C-205), northeast corner (C-206), northwest corner (C-207), west central over rooms 211-212 (C-208), southwest over room 410 (C-209)	61,000 SF	ND	NF-G
C	Flashing	C-210-212	White flashing boots at pipe terminations, flexible / Area C roof, front central area by main entry (C-210), center of roof (C-211), kitchen (C-212)	50 SF	ND	NF-G

TABLE 1
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OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

Functional Space - Building	Material	Sample No.	Description/Location	Quantity	Result (PLM & TEM where required)	Friable/Non-Friable - Condition
D-West Addition						
D	Vinyl Floor Tile	D-1 – D-3	VCT, red speckled, 12”x12” / Room 313, only this room	720 SF	ND	NF-G
D	Floor Mastic	D-1 – D-3	Mastic or glue, clear, sticky / Room 313 under red VCT, only this room	720 SF	ND	NF-G
D	CMU Block	D-4 – D-6	Block wall, CMU masonry, gray, hard / West wall at room 313	10,000 SF	ND	NF-G
D	CMU Mortar	D-4 – D-6	Mortar at CMU wall, gray, hard / West wall at room 313	2,000 SF	ND	NF-G
D	Vinyl Floor Tile	D-7 – D-9	VCT, 12”x12”, medium gray speckled / Room 210	4,350 SF	ND	NF-G
D	Floor Mastic and Leveler	D-7 – D-9	Tan floor mastic, leveler sporadic / Under VCT room 210	4,350 SF	ND	NF-G
D	**Vinyl Floor Tile**	**D-10 – D-12**	**VCT, 12”x12”, white speckled / Room 312**	**(see area C VCT, C-1, C-23, C-29)**	**4% Chrysotile**	**NF-G**
D	**Floor Mastic and Leveler**	**D-10 – D-12**	**Black floor mastic, leveler sporadic / Under VCT room 312**	**(see area C floor mastic, C-1, C-23, C-29)**	**5% Chrysotile**	**NF-G**
D	**Drywall**	**D-13 – D-15**	**Light gray wallboard / Room 311 (Area C-original school)**	**See Below**	**ND**	**F-G**
D	**Joint Compound**	**D-13 – D-15**	**White joint compound / Room 311 (Area C-original school)**	**2,600 SF (Area C)**	**3% Chrysotile**	**F-G**
D	**Tape**	**D-13 – D-15**	**Tan tape at joints / Room 311 (Area C-original school)**	**See above**	**ND**	**NF-G**
D	Ceiling Tile	D-16 – D-18	White pinhole ceiling tile, 2’x2’, pulpy gray core / Hall ceiling outside room 311	7,125 SF	ND	F-G
D	Fireproofing	D-19 – D-21	Gray fireproofing, spray-applied, fluffy / West wall of rooms 311-313 at hall and inside rooms, above drop ceilings	1,500 SF	ND	F-D
E-South Addition						
E	Stair Treads	E-1 – E-3	Vinyl stair treads, gray / Exit 13 stairwell at west end	300 SF	ND	NF-G
E	Floor Mastic and Leveler	E-1 – E-3	Black mastic and gray leveler / Exit 13 stairwell under stair treads	300 SF	ND	NF-G
E	Brick	E-4 – E-6	Red brick, clay, hard/ Perimeter walls, south (E-4), west (E-5), north (E-6)	15,000	ND	NF-G
E	Mortar	E-4 – E-6	Mortar, gray, hard/ Perimeter walls, south (E-4), west (E-5), north (E-6)	3,000 SF	ND	NF-G
E	Vinyl Floor Tile	E-7 – E-9	VCT, white speckled, 12”x12” / Flooring near stairwell, east (E-7, E-8), west (E-9)	1,300 SF	ND	NF-G
E	Floor Mastic	E-7 – E-9	Tan floor mastic / Under VCT near stairwell, west #14 (E-7, E-8), east #14 (E-9)	1,300 SF	ND	NF-G
E	CMU Block	E-10 – E-12	Block wall, CMU masonry, gray, hard / West wall at room 313	10,000 SF	ND	NF-G
E	CMU Mortar	E-10 – E-12	Mortar at CMU wall, gray, hard / west stairwell #13 (E-10, E-11), east stairwell #14 (E-12)	2,000 SF	ND	NF-G
E	Covebase Trim	E-13 – E-15	Blue vinyl cove base trim / First floor 500’s wing	700 SF	ND	NF-G
E	Covebase Mastic	E-13 – E-15	Tan-brown cove base mastic / First floor 500’s wing	700 SF	ND	NF-G
E	Vinyl Floor Tile	E-16 – E-18	VCT, white-tan speckled, 12”x12” / Room 506	7,200 SF	ND	NF-G
E	Floor Mastic	E-16 – E-18	Tan floor mastic / Under VCT room 506	7,200 SF	ND	NF-G
E	Floor Leveler	E-16 – E-18	Gray floor leveler / Under VCT at room 506, discontinuous	7,200 SF	ND	NF-G
E	Joint Compound	E-19 – E-25	White joint compound / Walls at room 506 (E-19), room 503 (E-20), room 601 (E-21), room 603 (E-22, E-23), room 604 (E-24), room 606 (E-25)	See below	ND	F-G

TABLE 1
ASBESTOS SAMPLE RESULTS
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

Functional Space - Building	Material	Sample No.	Description/Location	Quantity	Result (PLM & TEM where required)	Friable/Non-Friable - Condition
E	Wallboard	E-19 – E-25	Light gray wallboard / Walls at room 506 (E-19), room 503 (E-20), room 601 (E-21), room 603 (E-22, E-23), room 604 (E-24), room 606 (E-25)	2,600 SF	ND	F-G
E	Tape	E-19 – E-25	Tan tape at joints / Walls at room 506 (E-19), room 503 (E-20), room 601 (E-21), room 603 (E-22, E-23), room 604 (E-24), room 606 (E-25)	See above	ND	NF-G
E	Covebase Trim	E-26 – E-28	Red vinyl cove base trim / Room 506	700 SF	ND	NF-G
E	Covebase Mastic	E-26 – E-28	Tan cove base mastic / Room 506 beneath cove base trim	700 SF	ND	NF-G
E	Covebase Mastic	E-26 – E-28	Brown cove base mastic / Room 506 beneath cove base trim	700 SF	ND	NF-G
E	Window Caulk	E-29 – E-31	Window caulk, interior, dark green-black / Room 503 (E-29, E-30), room 506 (E-31)	312 LF	ND	NF-G
E	Ceiling Tile	E-32 – E-34	White pinhole ceiling tile, 2'x2', pulpy gray core / Ceilings throughout both floors of E-wing	17,000 SF	ND	F-G
E	Vinyl Floor Tile	E-35 – E-37	VCT, 12"x12", gray speckled / Room 601 (E-35, E-36), hallway (E-37)	3,850 SF	ND	NF-G
E	Floor Mastic and Leveler	E-35 – E-37	Tan-yellow floor mastic, white leveler sporadic / Under VCT at room 601 (E-35, E-36), hallway (E-37)	3,850 SF	ND	NF-G
E	**Vinyl Sheet Flooring**	**E-38 – E-40**	**Vinyl sheet, tan pebble pattern / Science labs only, room 603 (E-38 – E-40)**	**800 SF**	**15% Chrysotile**	**NF-G**
E	Floor Mastics and Leveler	E-38 – E-40	Mixed tan-yellow floor mastics, white leveler sporadic / Science labs only, room 603 (E-38 – E-40), adjoining room 605 (not sampled)	800 SF	ND	NF-G
E	Vinyl Floor Tile	E-41 – E-43	VCT, 12"x12", white speckled mixed / Room 608 (E-41 – E-43)	3,850 SF	ND	NF-G
E	Floor Mastic	E-41 – E-43	Tan floor mastic / Under VCT at Room 608 (E-41 – E-43)	3,850 SF	ND	NF-G
E	CMU Block	E-44 – E-46	Block wall, CMU masonry, gray, hard / Walls of 600's hallway of E-wing	30,000 SF	ND	NF-G
E	Roofing	E-200 – E-202, E-212, E-213	Gray, asphalt composite roll roofing / Roof, northwest corner (E-200), center (E-201), southeast corner (E-202), northeast corner (C-206), southwest corner (E-212), central (E-213)	12,600 SF	ND	NF-G
E	Roofing-Gypsum Board	E-200 – E-202, E-212, E-213	White-gray gypsum board / Roof under roll roofing, northwest corner (E-200), center (E-201), southeast corner (E-202), northeast corner (C-206), southwest corner (E-212), central (E-213)	12,600 SF	ND	NF-G
E	Roof Flashing	E-203 – E-205	Black flashing sealant / Along perimeter aluminum coping and at coping joints	2,600 LF	ND	NF-G
E	Roof Flashing	E-206 – E-208	Gray flashing sealant, flexible / Along perimeter aluminum coping and at coping joints, overlain or mixed with above black flashing sealant	2,600 LF	ND	NF-G
E	Flashing Boots	E-209 – E-211	White flashing boots at pipe terminations, flexible / Roof penetrations	18 SF	ND	NF-G
F-Art Room & Media Room						
F	**Vinyl Floor Tile**	**F-1 – F-3**	**Gray-white speckled vinyl floor tile, 12"x12" / Room 408 art room, ACM because inseparable from mastic, and media room in some closets**	**2,500 SF**	**ND**	**NF-G**
F	**Floor Mastic**	**F-1 – F-3**	**Black floor mastic / Room 408 art room addition (F-1 – F-3), and media room in some closets**	**2,500 SF**	**3% Chrysotile**	**NF-G**
F	Brick Column	F-4 – F-6	Brick, masonry support columns / Art room 408	250 SF	ND	NF-G
F	CMU Block	F-7 – F-9	Block wall, CMU masonry, gray, hard / Walls of art room 408	1,550 SF	ND	NF-G
F	Ceiling Tile	F-10 – F-12	White pinhole ceiling tile, 2'x2', pulpy gray core / Ceiling art room 408	2,000 SF	ND	F-G
F	Wallboard	F-13 – F-15	Light gray wallboard / Limited walls at art room 408 and media center	800 SF	ND	F-G

TABLE 1
ASBESTOS SAMPLE RESULTS
OLD SENECA MIDDLE SCHOOL
810 WEST SOUTH 4TH STREET
SENECA, OCONEE COUNTY, SOUTH CAROLINA

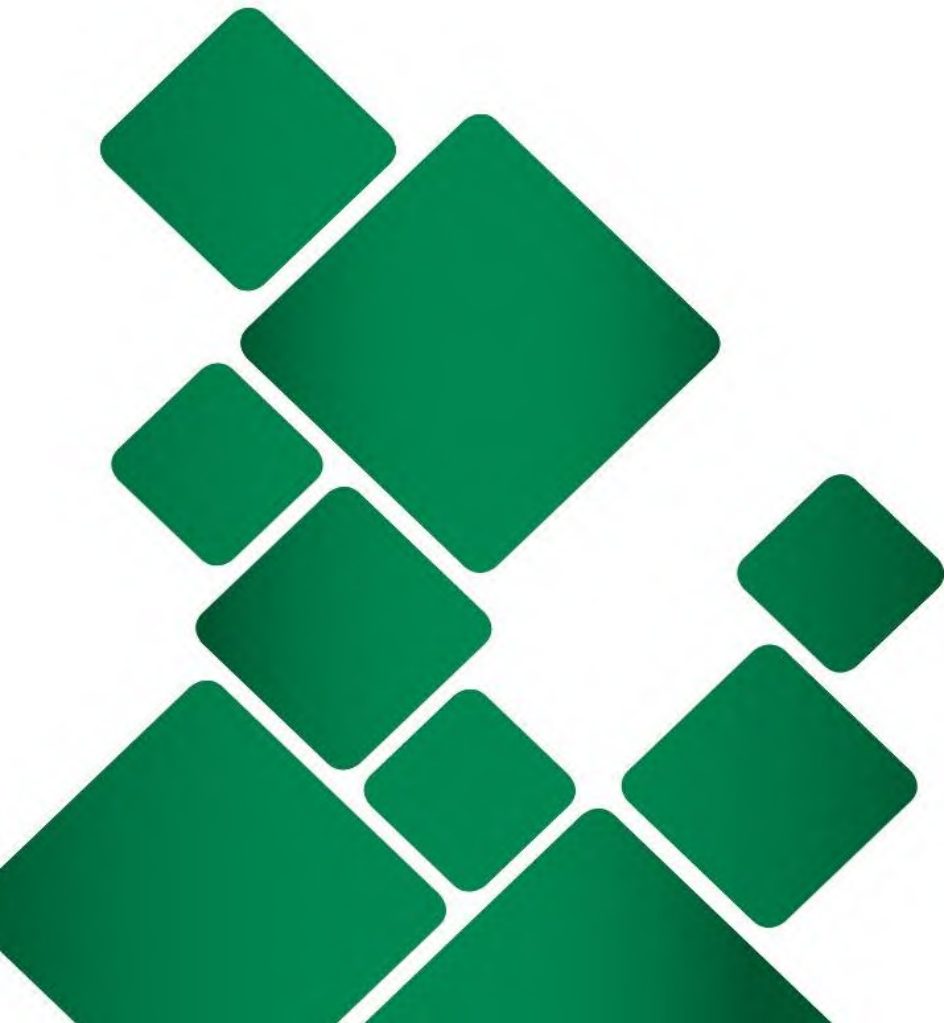
Functional Space - Building	Material	Sample No.	Description/Location	Quantity	Result (PLM & TEM where required)	Friable/Non-Friable - Condition
F	Joint Compound	F-13 – F-15	White joint compound / Limited walls at art room 408 and media center	See above	1,552 SF	F-G
O – Outside (exterior)						
O	Stucco-skim coat	O-1 – O-7, O-12	White stucco skim coat, painted tan, hard / Walls main entry at guidance office (O-1), at room 302 (O-2), over window at room 211 (O-3), cafeteria (O-4), front wall at covered main entry (O-5), 2nd floor at room 603 (O-6, O-7) E-area 2nd floor north wall (O-12),	8,414 SF	ND	NF-G
O	Stucco-rough coat	O-1 – O-7, O-12	Gray rough coat / Ceiling over SRO Office (C-16, C-17), electric closet (C-18), kitchen (C-19, C-20)	8,414 SF	ND	NF-G
O	Window Caulk	O-8 – O-11	Dark green window caulk, flexible / East wall at guidance office (O-8), east wall at room 302 (O-9), west side at room 208 (O-10), south side at room 506 (O-11)	1,670 LF	ND	NF-G
O	Building Caulk	O-13 – O-15	Tan building caulk, at edges where stucco meets concrete, spongy and soft / E-area 2nd floor north wall (O-13), front east wall outside guidance office (O-14), south side at room 302 (O-15)	725 LF	ND	NF-G
O	Building Caulk	O-16 – O-18	Expansion joint caulk at brick, brown, sticky / West wall, vertical joints at rooms 206/207 (O-16) and cafeteria (O-17, O-18)	30 LF	ND	NF-G
O	**Window Glazing**	**O-19 – O-21**	**Window glazing, gray, hard / One window on west side of building at room 410**	**50 LF - 1 window**	**3% Chrysotile**	**NF-G**
Misc. Items						
All	**Fire Doors**	**Not Sampled**	**Fire doors throughout, most are wood finished, some metal / Throughout interior**	**275**	**PACM**	**F-G**

Notes: All materials were observed to be in good condition unless noted otherwise (exception being window glazing in Bld. 25)
Bold type is asbestos containing material (ACM)
*Positive stop based on first positive result
G = Good
D = Damaged
SD = Significantly Damaged

*Trace asbestos, <1% when analyzed as composites, unregulated by NESHAP, OSHA worker safety guidelines apply.

ATTACHMENT A

ASBESTOS ANALYSIS LABORATORY REPORTS



synTerra

Science & Engineering Consultants

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501877
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	02/28/2025 - 03/01/2025
	Charlotte, NC 28269	**Collected Date:**	
Project:	Old Seneca Middle School/ Functional Space Boiler Room "B"/ Functional Space Portable "A"/ 00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
A-1 *412501877-0001*	Portable - Roofing Shingle	Gray/Black Fibrous Homogeneous	20% Glass	5% Quartz 20% Ca Carbonate 55% Non-fibrous (Other)	None Detected
A-2 *412501877-0002*	Portable - Roofing Shingle	White/Black Fibrous Homogeneous	10% Glass	3% Quartz 20% Ca Carbonate 67% Non-fibrous (Other)	None Detected
A-4 *412501877-0003*	Portable - Felt	Black Non-Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
A-5 *412501877-0004*	Portable - Felt	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
A-7-Texture *412501877-0005*	Portable - Wallboard-Joint Compound-Texture	White Non-Fibrous Homogeneous		60% Ca Carbonate 5% Mica 33% Non-fibrous (Other)	**2% Chrysotile**
A-7-Joint Compound *412501877-0005A*	Portable - Wallboard-Joint Compound-Texture	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
A-7-Wallboard *412501877-0005B*	Portable - Wallboard-Joint Compound-Texture	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
A-8-Texture *412501877-0006*	Portable - Wallboard-Joint Compound-Texture				**Positive Stop (Not Analyzed)**
A-8-Joint Compound *412501877-0006A*	Portable - Wallboard-Joint Compound-Texture	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
A-8-Wallboard *412501877-0006B*	Portable - Wallboard-Joint Compound-Texture	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
A-9-Texture *412501877-0007*	Portable - Wallboard-Joint Compound-Texture				**Positive Stop (Not Analyzed)**
A-9-Joint Compound *412501877-0007A*	Portable - Wallboard-Joint Compound-Texture	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
A-9-Wallboard *412501877-0007B*	Portable - Wallboard-Joint Compound-Texture	Brown/Gray Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
B-1 *412501877-0008*	Boiler Room - Roofing	Black Non-Fibrous Homogeneous	4% Cellulose 10% Glass	10% Quartz 20% Ca Carbonate 56% Non-fibrous (Other)	None Detected
B-2 *412501877-0009*	Boiler Room - Roofing	Gray/Black Fibrous Homogeneous	4% Cellulose 8% Glass	10% Quartz 20% Ca Carbonate 58% Non-fibrous (Other)	None Detected
B-3 *412501877-0010*	Boiler Room - Roofing	Black Fibrous Homogeneous	4% Cellulose 8% Glass	10% Quartz 20% Ca Carbonate 58% Non-fibrous (Other)	None Detected

Initial report from: 03/01/2025 12:29:03

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501877
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
B-4 *412501877-0011*	Boiler Room - Roofing	Tan/White/Black Fibrous Homogeneous	20% Cellulose <1% Glass	3% Quartz 15% Ca Carbonate 62% Non-fibrous (Other)	None Detected
B-6-White Layer *412501877-0012*	Boiler Room - Roof Flashing	White Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
B-6-Roofing *412501877-0012A*	Boiler Room - Roof Flashing	Black Non-Fibrous Homogeneous		4% Quartz 15% Ca Carbonate 81% Non-fibrous (Other)	None Detected
B-7-White Layer *412501877-0013*	Boiler Room - Roof Flashing	Gray/White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
B-7-Roofing *412501877-0013A*	Boiler Room - Roof Flashing	Black Non-Fibrous Homogeneous	<1% Cellulose	<1% Quartz 10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
B-9-White Coat *412501877-0014*	Boiler Room - Plaster	White Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
B-9-Tan Coat *412501877-0014A*	Boiler Room - Plaster	Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
B-10-White Coat *412501877-0015*	Boiler Room - Plaster	White Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
B-10-Tan Coat *412501877-0015A*	Boiler Room - Plaster	Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
B-11 *412501877-0016*	Boiler Room - Door Caulk-Black	Black Non-Fibrous Homogeneous		2% Quartz 98% Non-fibrous (Other)	None Detected
B-12 *412501877-0017*	Boiler Room - Door Caulk-Black	White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Ashley Hill (10)
David Zalewski (15)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/01/2025 12:29:03

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501877
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/06/2025
Collected Date:

Project: Old Seneca Middle School/ Functional Space Boiler Room "B"/ Functional Space Portable "A"/ 00.6563.00

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
A-3 *412501877-0018*	Portable - Roofing Shingle	Gray/Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
A-6 *412501877-0019*	Portable - Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
B-5 *412501877-0020*	Boiler Room - Roofing	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
B-8-White Layer *412501877-0021*	Boiler Room - Plaster	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
B-8-Roofing *412501877-0022*	Boiler Room - Plaster	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
B-13 *412501877-0023*	Boiler Room - Door Caulk-Black	Gray/White/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (6)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/06/2025 16:35:22

OrderID: 412501877

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only: 412501877

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
EMAIL CinnAsblab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID	
Company Name	SynTerra
Contact Name	Andy Kosse
Street Address	5015 West W.T.Harris Boulevard, Suite C
City, State, Zip	Charlotte, North Carolina 28269
Country	USA
Phone	864-527-4670
Email(s) for Report	akosse@synterracorp.com

Billing Information

Billing ID	
Company Name	SAME as customer
Billing Contact	
Street Address	
City, State, Zip	
Country	
Phone	
Email(s) for Invoice	

Project Information

Project Name/No.	Old Seneca middle school / 00.6563.00
Purchase Order	00.6563.00
EMSL LIMS Project ID (If applicable. EMSL will provide)	
US State where samples collected	SC
State of Connecticut (CT) must select project location	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name	Andy Kosse
Sampled By Signature	Andy Kosse
No. of Samples in Shipment	9

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ **Positive Stop - Clearly Identified Homogeneous Areas (HA)** | **Filter Pore Size (Air Samples)** ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
A1 - A-3	Portable / Roofing Shingle	1	2-18-25
A-4 - A-6	/ Felt	2	↓
A-7 - A-9	/ Wallboard - Joint Compound - Texture	3	↓
	↓		

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.):

per SC - TEM NOBs where required

Functional SPACE
Portable "A"

Method of Shipment		Sample Condition Upon Receipt	
Relinquished by: Andy Kosse	Date/Time: 02-24-25 / 11:30a.m.	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: CG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R16 10/26/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

OrderID: 412501877

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only: 412501877

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
EMAIL CinnAslab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:	
Company Name:	SynTerra
Contact Name:	Andy Kosse
Street Address:	5015 West W.T.Harris Boulevard, Suite C
City, State, Zip:	Charlotte, North Carolina 28269
Country:	USA
Phone:	864-527-4670
Email(s) for Report:	akosse@synterracorp.com

Billing Information

Billing ID:	
Company Name:	SAME as customer
Billing Contact:	
Street Address:	
City, State, Zip:	
Country:	
Phone:	
Email(s) for Invoice:	

Project Information

Project Name/No.:	old Seneca middle School / 00.6563.00
Purchase Order:	00.6563.00
EMSL LIMS Project ID: (If applicable, EMSL will provide)	
US State where samples collected:	SC
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	Andy Kosse
Sampled By Signature:	Andy Kosse
No. of Samples in Shipment:	13

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
* B-1 – B-5	Boiler Room / Roofing	4	2-18-25
B-6 – B-8	/ Roof Flashing	5	↓
B-9 & B-10	/ Plaster	6	
B-11 – B-13	↓ / Door Caulk - Black	7	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

* Positive stop all layers based on any positive result - do not analyze Foam or wood.

per SC – Tem NOBs where required.

Functional Space Boiler Room "B"

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Andy Kosse	Date/Time: 02-24-25 / 11:30	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: CG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R16 10/29/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501844
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 PM
	Unit C	**Analysis Date:**	02/27/2025 - 02/28/2025
	Charlotte, NC 28269	**Collected Date:**	02/19/2025
Project:	Old Seneca Middle School/ Area "C" Interior/ 00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-1 *412501844-0001*	Area C - VCT & Mastic	Black Non-Fibrous Homogeneous	5% Cellulose	15% Ca Carbonate 80% Non-fibrous (Other)	None Detected
C-23 *412501844-0002*	Area C - VCT & Mastic	Black Non-Fibrous Homogeneous		3% Quartz 5% Ca Carbonate 89% Non-fibrous (Other)	**3% Chrysotile**
C-4 *412501844-0003*	Area C - Ceiling Tiles	Gray/White Fibrous Homogeneous	60% Cellulose 15% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
C-5 *412501844-0004*	Area C - Ceiling Tiles	Gray/White Fibrous Homogeneous	60% Cellulose 15% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
C-6 *412501844-0005*	Area C - Ceiling Tiles	White/Beige Fibrous Homogeneous	60% Cellulose 15% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
C-7 *412501844-0006*	Area C - Block Walls	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-8-Light Gray Coat *412501844-0007*	Area C - Block Walls	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-8-Dark Gray Coat *412501844-0007A*	Area C - Block Walls	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
C-9 *412501844-0008*	Area C - Block Walls	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-10-Transition Strip *412501844-0009*	Area C - Transition Strips @ Terrazo	Tan/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-10-Mastic *412501844-0009A*	Area C - Transition Strips @ Terrazo	Tan Non-Fibrous Homogeneous	2% Cellulose	5% Ca Carbonate 93% Non-fibrous (Other)	None Detected
C-11-Transition Strip *412501844-0010*	Area C - Transition Strips @ Terrazo	White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-11-Mastic *412501844-0010A*	Area C - Transition Strips @ Terrazo	Brown/Gray/Tan Non-Fibrous Heterogeneous		2% Quartz 8% Ca Carbonate 90% Non-fibrous (Other)	None Detected
C-13-Joint Compound *412501844-0011*	Area C - Drywall & Joint Compound	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
C-13-Drywall *412501844-0011A*	Area C - Drywall & Joint Compound	Brown/Gray/Tan Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
C-14-Joint Compound *412501844-0012*	Area C - Drywall & Joint Compound	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected

Initial report from: 03/01/2025 08:17:06

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501844
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-14-Drywall *412501844-0012A*	Area C - Drywall & Joint Compound	Brown/Gray/Tan Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
C-15-Drywall *412501844-0013* *No joint compound present.*	Area C - Drywall & Joint Compound	Gray Non-Fibrous Homogeneous	10% Cellulose <1% Glass	90% Non-fibrous (Other)	None Detected
C-16-White Coat *412501844-0014*	Area C - Ceiling Plaster	White Non-Fibrous Homogeneous		5% Quartz 3% Ca Carbonate 92% Non-fibrous (Other)	None Detected
C-16-Gray Coat *412501844-0014A*	Area C - Ceiling Plaster	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-17-White Coat *412501844-0015*	Area C - Ceiling Plaster	White Non-Fibrous Homogeneous		5% Quartz 3% Ca Carbonate 92% Non-fibrous (Other)	None Detected
C-17-Gray Coat *412501844-0015A*	Area C - Ceiling Plaster	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-18-White Coat *412501844-0016*	Area C - Ceiling Plaster	White Non-Fibrous Homogeneous		5% Quartz 3% Ca Carbonate 92% Non-fibrous (Other)	None Detected
C-18-Gray Coat *412501844-0016A*	Area C - Ceiling Plaster	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-19-White Coat *412501844-0017*	Area C - Ceiling Plaster	White Non-Fibrous Homogeneous		<1% Quartz 5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
C-19-Gray Coat *412501844-0017A*	Area C - Ceiling Plaster	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
C-20-White Coat *412501844-0018*	Area C - Ceiling Plaster	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
C-20-Gray Coat *412501844-0018A*	Area C - Ceiling Plaster	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected

Analyst(s)

David Zalewski (18)
Matthew Schaefer (10)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/01/2025 08:17:06

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501844
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269
Project: Old Seneca Middle School/ Area "C" Interior/ 00.6563.00

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 PM
Analysis Date: 03/07/2025
Collected Date: 02/19/2025

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
C-12-Transition Strip *412501844-0019*	Area C - Transition Strips @ Terrazo	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
C-12-Mastic *412501844-0020*	Area C - Transition Strips @ Terrazo	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (2)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2025 15:16:38

OrderID: 412501844

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

~~412501843~~ 11 4/12501844

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
EMAIL CinnAslab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:	
Company Name:	SynTerra
Contact Name:	Andy Kosse
Street Address:	5015 West W.T.Harris Boulevard, Suite C
City, State, Zip:	Charlotte, North Carolina 28269
Country:	USA
Phone:	864-527-4670
Email(s) for Report:	akosse@synterracorp.com

Billing Information

Billing ID:	
Company Name:	SAME as customer
Billing Contact:	
Street Address:	
City, State, Zip:	
Country:	
Phone:	
Email(s) for Invoice:	

Project Information

Project Name/No: Old Seneca middle School / 00.6563.00
Purchase Order: 00.6563.00
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: SC
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Andy Kosse
Sampled By Signature: Andy Kosse
No. of Samples in Shipment: 20

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
C-1, C-23 & C-24	Area C / VCT + Mastic	20	2-19-25
C-4 - C-6	/ Ceiling Tiles	21	
C-7 - C-9	/ Black Walls	22	
C-10 - C-12	/ Transition Strips @ Terrazzo	23	
C-13 - C-15	/ Drywall & Joint Compound	24	
C-16 - C-20	/ Ceiling Plaster	25	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

* Analyze Black Mastic only (NOT VCT)
SC-RULES. Area "C" Interior

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Andy Kosse	Date/Time: 2-24-25 / 1130 a.m.	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: QG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R16 10/26/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501841
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	02/28/2025
	Charlotte, NC 28269	**Collected Date:**	
Project:	Old Seneca Middle School /Main Roof "Area C" Roofing/00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-200 *412501841-0001*	Area "C" Roof - Flashing Caulk - Tan	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
C-201 *412501841-0002*	Area "C" Roof - Flashing Caulk - Tan	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
C-203 *412501841-0003*	Area "C" Roof - Roofing	Gray/Black Fibrous Homogeneous	3% Cellulose 20% Glass	5% Quartz 20% Ca Carbonate 52% Non-fibrous (Other)	None Detected
C-204 *412501841-0004*	Area "C" Roof - Roofing	Gray/Black Fibrous Homogeneous	2% Cellulose 10% Glass	5% Quartz 20% Ca Carbonate 63% Non-fibrous (Other)	None Detected
C-205 *412501841-0005*	Area "C" Roof - Roofing	Gray/Black Non-Fibrous Homogeneous	2% Cellulose 15% Glass	4% Quartz 20% Ca Carbonate 59% Non-fibrous (Other)	None Detected
C-206 *412501841-0006*	Area "C" Roof - Roofing	Gray/Black Fibrous Homogeneous	3% Cellulose 15% Glass	5% Quartz 20% Ca Carbonate 57% Non-fibrous (Other)	None Detected
C-207 *412501841-0007*	Area "C" Roof - Roofing	Gray/Black Fibrous Homogeneous	15% Glass	5% Quartz 30% Ca Carbonate 50% Non-fibrous (Other)	None Detected
C-208 *412501841-0008*	Area "C" Roof - Roofing	Gray/Black Fibrous Homogeneous	30% Glass	5% Quartz 30% Ca Carbonate 35% Non-fibrous (Other)	None Detected
C-210 *412501841-0009*	Area "C" Roof - Roofing	White/Black Non-Fibrous Homogeneous		15% Quartz 20% Ca Carbonate 65% Non-fibrous (Other)	None Detected
C-211 *412501841-0010*	Area "C" Roof - Roofing	White/Black Non-Fibrous Heterogeneous	5% Synthetic	5% Quartz 10% Ca Carbonate 80% Non-fibrous (Other)	None Detected

Analyst(s)

David Zalewski (6)

Kelsie Dwyer (4)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 02/28/2025 20:29:27

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501841
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269
Project: Old Seneca Middle School /Main Roof "Area C" Roofing/00.6563.00

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/07/2025
Collected Date:

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
C-202 *412501841-0011*	Area "C" Roof - Flashing Caulk - Tan	Gray/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
C-209 *412501841-0012*	Area "C" Roof - Roofing	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
C-212 *412501841-0013*	Area "C" Roof - Roofing	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (3)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2025 15:56:53

OrderID: 412501841

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only: 412501841

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	SynTerra	Company Name:	SAME as customer
Contact Name:	Andy Kosse	Billing Contact:	
Street Address:	5015 West W.T.Harris Boulevard, Suite C	Street Address:	
City, State, Zip:	Charlotte, North Carolina 28269	Country: USA	City, State, Zip: Country:
Phone:	864-527-4670		Phone:
Email(s) for Report:	akosse@synterracorp.com		Email(s) for Invoice:

Project Information

Project Name/No: Old Seneca Middle School / 00.6563.06
Purchase Order: 00.6563.00
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: SC
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Andy Kosse
Sampled By Signature: Andy Kosse
No. of Samples in Shipment: 13 CG 2/24/25

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only, samples must be submitted by 11:30 am. per Andy

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0 25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0 25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
C-200 – C-202	Area "C" Roof / Flashing caulk-Tan	8	2-18-25
* C-203 – C-209	/ Roofing	9	↓
C-210 – C-212	/ Flashing - white Brushed	10	↓

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

SC Rules
* Positive stop all layers based on any positive result – do not analyze foam or wood
Main Roof Area "C" - Roofing

Method of Shipment:		Sample Condition Upon Receipt	
Relinquished by: Andy Kosse	Date/Time: 02-24-25 / 10:30	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: CG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R16 10/26/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501842
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	02/28/2025
	Charlotte, NC 28269	**Collected Date:**	
Project:	Old Seneca Middle School /Area "D" Interior/00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
D-1-Vinyl Composition Tile *412501842-0001*	Area D - VCT & Glue - 313	Red/Pink Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
D-1-Glue *412501842-0001A*	Area D - VCT & Glue - 313	Clear Non-Fibrous Homogeneous	3% Cellulose	5% Quartz 10% Ca Carbonate 82% Non-fibrous (Other)	None Detected
D-2-Vinyl Composition Tile *412501842-0002*	Area D - VCT & Glue - 313	Red/Pink Non-Fibrous Homogeneous		60% Ca Carbonate 40% Non-fibrous (Other)	None Detected
D-2-Glue *412501842-0002A*	Area D - VCT & Glue - 313	Yellow/Clear Non-Fibrous Homogeneous	2% Cellulose	20% Ca Carbonate 78% Non-fibrous (Other)	None Detected
D-4 *412501842-0003*	Area D - Brick Wall - 313	White/Red Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
D-5-Brick *412501842-0004*	Area D - Brick Wall - 313	Red Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
D-5-Grout *412501842-0004A*	Area D - Brick Wall - 313	Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
D-6-Brick *412501842-0005*	Area D - Brick Wall - 313	Red/Black Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
D-6-Grout *412501842-0005A*	Area D - Brick Wall - 313	Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
D-7-Vinyl Composition Tile *412501842-0006*	Area D - VCT & Mastic - 210	Gray/Blue Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
D-7-Mastic *412501842-0006A*	Area D - VCT & Mastic - 210	Tan Non-Fibrous Homogeneous	3% Cellulose	5% Quartz 10% Ca Carbonate 82% Non-fibrous (Other)	None Detected
D-8-Vinyl Composition Tile *412501842-0007*	Area D - VCT & Mastic - 210	Gray/Blue Non-Fibrous Homogeneous		60% Ca Carbonate 40% Non-fibrous (Other)	None Detected
D-8-Mastic/Leveler *412501842-0007A*	Area D - VCT & Mastic - 210	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
D-10-Vinyl Composition Tile *412501842-0008*	Area D - VCT & Black Mastic - 312	Tan Non-Fibrous Homogeneous		40% Ca Carbonate 56% Non-fibrous (Other)	**4% Chrysotile**
D-10-Mastic *412501842-0008A*	Area D - VCT & Black Mastic - 312	Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	**5% Chrysotile**

Initial report from: 03/01/2025 08:12:45

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501842
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
D-11-Vinyl Composition Tile *412501842-0009*	Area D - VCT & Black Mastic - 312				**Positive Stop (Not Analyzed)**
D-11-Mastic *412501842-0009A*	Area D - VCT & Black Mastic - 312				**Positive Stop (Not Analyzed)**
D-13-Wallboard *412501842-0010* *No joint compound present.*	Area D - Wallboard & Joint Compound - 311 & Hall	Brown/Tan Fibrous Homogeneous	10% Cellulose 5% Glass	3% Mica 82% Non-fibrous (Other)	None Detected
D-14-Joint Compound *412501842-0011*	Area D - Wallboard & Joint Compound - 311 & Hall	White Non-Fibrous Homogeneous		70% Ca Carbonate 27% Non-fibrous (Other)	**3% Chrysotile**
D-14-Wallboard *412501842-0011A*	Area D - Wallboard & Joint Compound - 311 & Hall	Brown/Gray Fibrous Homogeneous	10% Cellulose 4% Glass	3% Mica 83% Non-fibrous (Other)	None Detected
D-15-Tape *412501842-0012*	Area D - Wallboard & Joint Compound - 311 & Hall	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
D-15-Joint Compound *412501842-0012A*	Area D - Wallboard & Joint Compound - 311 & Hall				**Positive Stop (Not Analyzed)**
D-15-Wallboard *412501842-0012B*	Area D - Wallboard & Joint Compound - 311 & Hall	Brown/Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
D-16 *412501842-0013*	Area D - Ceiling Tile - 312 & Hall	Gray/White Fibrous Homogeneous	60% Cellulose 15% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
D-17 *412501842-0014*	Area D - Ceiling Tile - 312 & Hall	Gray/White Fibrous Homogeneous	60% Cellulose 15% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
D-18 *412501842-0015*	Area D - Ceiling Tile - 312 & Hall	Gray/White Fibrous Homogeneous	40% Cellulose 30% Min. Wool	20% Perlite 10% Non-fibrous (Other)	None Detected
D-19 *412501842-0016*	Area D	Gray/White Fibrous Homogeneous	60% Min. Wool	40% Non-fibrous (Other)	None Detected
D-20 *412501842-0017*	Area D	Gray Fibrous Homogeneous	60% Min. Wool	40% Non-fibrous (Other)	None Detected
D-21 *412501842-0018*	Area D	Gray/White Fibrous Homogeneous	90% Min. Wool	10% Non-fibrous (Other)	None Detected

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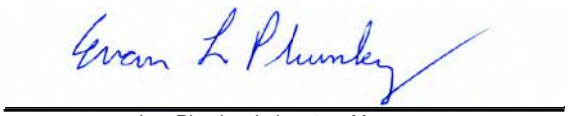
Analyst(s)

David Zalewski (16)
Kelsie Dwyer (10)



Lee Plumley, Laboratory Manager
or Other Approved Signatory

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EMSL Order: 412501842
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269
Project: Old Seneca Middle School /Area "D" Interior/00.6563.00

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/07/2025
Collected Date:

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
D-3-Vinyl Composition Tile *412501842-0019*	Area D - VCT & Glue - 313	Red Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
D-3-Glue *412501842-0020*	Area D - VCT & Glue - 313	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
D-9-Vinyl Composition Tile *412501842-0021*	Area D - VCT & Mastic - 210	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
D-9-Mastic/Leveler *412501842-0022*	Area D - VCT & Mastic - 210	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (4)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2025 16:12:59

OrderID: 412501842

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only: 412501842

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAslab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:	
Company Name:	SynTerra
Contact Name:	Andy Kosse
Street Address:	5015 West W.T.Harris Boulevard, Suite C
City, State, Zip:	Charlotte, North Carolina 28269
Country:	USA
Phone:	864-527-4670
Email(s) for Report:	akosse@synterracorp.com

Billing Information

Billing ID:	
Company Name:	SAME as customer
Billing Contact:	
Street Address:	
City, State, Zip:	
Country:	
Phone:	
Email(s) for Invoice:	

Project Information

Project Name/No:	old Seneca Middle school / 00.6563.00
Purchase Order:	00.6563.00
EMSL LIMS Project ID: (If applicable, EMSL will provide)	
US State where samples collected:	SC
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	Robert Smith
Sampled By Signature:	RS,
No. of Samples in Shipment:	18

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only, samples must be submitted by 11.30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0 1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198 6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198 4 (Non-Fnable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
D-1 - D-3	Area D / VCT + Glue - 312	26	2-19-25
D-4 - D-6	/ Brick Wall - 312	27	
D-7 - D-9	/ VCT + mastic - 20	28	
D-10 - D-12	/ VCT + Black Mastic - 312	29	
D-13 - D-15	/ Wallboard + Joint Compound - 311 + Hall	30	
D-16 - D-18	/ Ceiling Tile - 312 + Hall	31	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

SC Rules

Area "D" Interior

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Andy Kosse	Date/Time: 02-24-25 / 11:30 a.m.	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by: RG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R18 10/26/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, inc 's Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501846
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	02/28/2025 - 03/01/2025
	Charlotte, NC 28269	**Collected Date:**	
Project:	Old Seneca Middle School/Area "E" Interior/00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E1-Stair Tread *412501846-0001*	Area E - Stair Tread - 13	Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
E1-Mastic *412501846-0001A*	Area E - Stair Tread - 13	Black/Rust Non-Fibrous Homogeneous	<1% Cellulose	2% Ca Carbonate 98% Non-fibrous (Other)	None Detected
E2-Stair Tread *412501846-0002*	Area E - Stair Tread - 13	Gray Non-Fibrous Homogeneous		4% Ca Carbonate 96% Non-fibrous (Other)	None Detected
E2-Mastic/Leveler *412501846-0002A*	Area E - Stair Tread - 13	Gray/Black Non-Fibrous Heterogeneous		10% Quartz 2% Ca Carbonate 88% Non-fibrous (Other)	None Detected
E4-Brick *412501846-0003*	Area E - Brick - 13 & 14	Red Non-Fibrous Homogeneous		5% Quartz 10% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E4-Mortar *412501846-0003A*	Area E - Brick - 13 & 14	Gray Non-Fibrous Homogeneous	<1% Cellulose	30% Quartz 10% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E5-Brick *412501846-0004*	Area E - Brick - 13 & 14	Brown/Red Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
E5-Mortar *412501846-0004A*	Area E - Brick - 13 & 14	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
E6-Mortar *412501846-0005* *No brick present.*	Area E - Brick - 13 & 14	Gray/Tan Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
E7-Vinyl Composition Tile *412501846-0006*	Area E - VCT & Mastic - Near Stairs	White/Beige Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E7-Mastic *412501846-0006A* *Result includes a small amount of inseparable attached flooring.*	Area E - VCT & Mastic - Near Stairs	Tan Non-Fibrous Heterogeneous		5% Quartz 2% Ca Carbonate 93% Non-fibrous (Other)	None Detected
E8-Vinyl Composition Tile *412501846-0007*	Area E - VCT & Mastic - Near Stairs	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
E8-Mastic *412501846-0007A* *Result includes a small amount of inseparable attached paint.*	Area E - VCT & Mastic - Near Stairs	Gray/Tan Non-Fibrous Heterogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
E10-Light Gray Block *412501846-0008*	Area E - Block Wall - 13 & 14	Gray Non-Fibrous Homogeneous		50% Quartz 10% Ca Carbonate 40% Non-fibrous (Other)	None Detected

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EMSL Order:	412501846
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Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E10-Dark Gray Block *412501846-0008A*	Area E - Block Wall - 13 & 14	Gray Non-Fibrous Homogeneous		30% Quartz 10% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E11 *412501846-0009*	Area E - Block Wall - 13 & 14	Gray Non-Fibrous Homogeneous		30% Quartz 10% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E12 *412501846-0010*	Area E - Block Wall - 13 & 14	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
E13-Cove Base *412501846-0011*	Area E - Blue Covebase - 500 Hall	Blue Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
E13-Tan Mastic *412501846-0011A*	Area E - Blue Covebase - 500 Hall	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
E13-Brown Mastic *412501846-0011B*	Area E - Blue Covebase - 500 Hall	Brown Non-Fibrous Homogeneous		4% Quartz 96% Non-fibrous (Other)	None Detected
E14-Cove Base *412501846-0012*	Area E - Blue Covebase - 500 Hall	Blue Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E14-Tan Mastic *412501846-0012A*	Area E - Blue Covebase - 500 Hall	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
E14-Brown Mastic *412501846-0012B*	Area E - Blue Covebase - 500 Hall	Brown Non-Fibrous Homogeneous		<1% Quartz 10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
E16-Flooring *412501846-0013*	Area E - Flooring - 506	White/Orange Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E16-Mastic *412501846-0013A*	Area E - Flooring - 506	Tan Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
E16-Tan Layer *412501846-0013B*	Area E - Flooring - 506	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E16-Leveler *412501846-0013C*	Area E - Flooring - 506	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
E17-Flooring *412501846-0014*	Area E - Flooring - 506	Tan/White/Rust Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
E17-Mastic *412501846-0014A*	Area E - Flooring - 506	Tan Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
E17-Tan Layer *412501846-0014B*	Area E - Flooring - 506	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E17-Leveler *412501846-0014C*	Area E - Flooring - 506	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
E18-Leveler *412501846-0014D*	Area E - Flooring - 506	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
E19-Tape *412501846-0015*	Area E - Wallboard & Joint Compound - 500s & 600s	Tan Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E19-Joint Compound *412501846-0015A*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E19-Wallboard *412501846-0015B*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
E20-Tape *412501846-0016*	Area E - Wallboard & Joint Compound - 500s & 600s	Tan Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
E20-Joint Compound *412501846-0016A*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E20-Wallboard *412501846-0016B*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
E21-Tape *412501846-0017*	Area E - Wallboard & Joint Compound - 500s & 600s	Tan Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
E21-Joint Compound *412501846-0017A*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E21-Wallboard *412501846-0017B*	Area E - Wallboard & Joint Compound - 500s & 600s	Gray Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
E22-Tape *412501846-0018*	Area E - Wallboard & Joint Compound - 500s & 600s	Tan Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
E22-Joint Compound *412501846-0018A*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E22-Wallboard *412501846-0018B*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
E23-Tape *412501846-0019*	Area E - Wallboard & Joint Compound - 500s & 600s	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
E23-Joint Compound *412501846-0019A*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E23-Wallboard *412501846-0019B*	Area E - Wallboard & Joint Compound - 500s & 600s	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
E24-Joint Compound *412501846-0020*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E24-Wallboard *412501846-0020A*	Area E - Wallboard & Joint Compound - 500s & 600s	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
E25-Tape *412501846-0021*	Area E - Wallboard & Joint Compound - 500s & 600s	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
E25-Joint Compound *412501846-0021A*	Area E - Wallboard & Joint Compound - 500s & 600s	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
E25-Wallboard *412501846-0021B*	Area E - Wallboard & Joint Compound - 500s & 600s	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E26-Cove Base *412501846-0022*	Area E - Red Covebase - 506	Red/Purple Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
E26-Tan Mastic *412501846-0022A*	Area E - Red Covebase - 506	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
E26-Brown Mastic *412501846-0022B*	Area E - Red Covebase - 506	Brown Non-Fibrous Homogeneous		3% Quartz 97% Non-fibrous (Other)	None Detected
E27-Cove Base *412501846-0023*	Area E - Red Covebase - 506	Red Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
E27-Tan Mastic *412501846-0023A*	Area E - Red Covebase - 506	Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
E27-Brown Mastic *412501846-0023B*	Area E - Red Covebase - 506	Brown Non-Fibrous Homogeneous		<1% Quartz 15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E29 *412501846-0024*	Area E - Interior Window Caulk	Green Non-Fibrous Homogeneous	2% Cellulose	15% Ca Carbonate 83% Non-fibrous (Other)	None Detected
E30 *412501846-0025*	Area E - Interior Window Caulk	Black Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
E32 *412501846-0026*	Area E - Ceiling Tile	White/Beige Fibrous Homogeneous	40% Cellulose 35% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
E33 *412501846-0027*	Area E - Ceiling Tile	White/Beige Fibrous Homogeneous	40% Cellulose 35% Min. Wool	20% Perlite 5% Non-fibrous (Other)	None Detected
E34 *412501846-0028*	Area E - Ceiling Tile	Brown/Gray/White Fibrous Homogeneous	30% Cellulose 40% Min. Wool	20% Perlite 10% Non-fibrous (Other)	None Detected
E35-Vinyl Composition Tile *412501846-0029*	Area E - VCT & Mastic - 601 & Hall	Gray Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E35-Mastic *412501846-0029A*	Area E - VCT & Mastic - 601 & Hall	Gray/Tan Non-Fibrous Heterogeneous		10% Quartz 5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E36-Vinyl Composition Tile *412501846-0030*	Area E - VCT & Mastic - 601 & Hall	Gray/White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
E36-Mastic *412501846-0030A*	Area E - VCT & Mastic - 601 & Hall	Tan/Yellow Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
E38-Flooring *412501846-0031*	Area E - Roll Flooring - 603	Tan Fibrous Heterogeneous		15% Ca Carbonate 70% Non-fibrous (Other)	**15% Chrysotile**
E38-Mastic/Leveler *412501846-0031A*	Area E - Roll Flooring - 603	White/Yellow Non-Fibrous Heterogeneous		5% Quartz 10% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E39-Flooring *412501846-0032*	Area E - Roll Flooring - 603				**Positive Stop (Not Analyzed)**

Initial report from: 03/01/2025 14:50:53

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501846
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E39-Mastic/Leveler *412501846-0032A*	Area E - Roll Flooring - 603	Gray/Tan/Yellow Non-Fibrous Heterogeneous		10% Quartz 5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E41-Flooring *412501846-0033*	Area E - Flooring - 608	White/Orange Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E41-Mastic *412501846-0033A*	Area E - Flooring - 608	Tan Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
E42-Flooring *412501846-0034*	Area E - Flooring - 608	Tan/White/Rust Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
E42-Mastic *412501846-0034A*	Area E - Flooring - 608	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	10% Quartz 90% Non-fibrous (Other)	None Detected
E44 *412501846-0035*	Area E - Block Wall - 600 Hall	Gray Non-Fibrous Homogeneous		50% Quartz 10% Ca Carbonate 40% Non-fibrous (Other)	None Detected
E45 *412501846-0036*	Area E - Block Wall - 600 Hall	Gray Non-Fibrous Homogeneous		30% Quartz 10% Ca Carbonate 60% Non-fibrous (Other)	None Detected
E46 *412501846-0037*	Area E - Block Wall - 600 Hall	Gray Non-Fibrous Homogeneous		25% Quartz 10% Ca Carbonate 65% Non-fibrous (Other)	None Detected

Analyst(s)

Ashley Hill (30)
Maggie Pasour (6)
Matthew Schaefer (41)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/01/2025 14:50:53

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501846
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269
Project: Old Seneca Middle School/Area "E" Interior/00.6563.00

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/07/2025
Collected Date:

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
E3-Stair Tread *412501846-0038*	Area E - Stair Tread - 13	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E3-Mastic/Leveler *412501846-0039*	Area E - Stair Tread - 13	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E9-Vinyl Composition Tile *412501846-0040*	Area E - VCT & Mastic - Near Stairs	Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E9-Mastic *412501846-0041*	Area E - VCT & Mastic - Near Stairs	Gray/Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
E13-Cove Base *412501846-0042*	Area E - Blue Covebase - 500 Hall	Black/Blue Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E13-Tan Mastic *412501846-0043*	Area E - Blue Covebase - 500 Hall	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E13-Brown Mastic *412501846-0044*	Area E - Blue Covebase - 500 Hall	Brown Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E18-Flooring *412501846-0045*	Area E - Flooring - 506	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E18-Mastic *412501846-0046*	Area E - Flooring - 506	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E18-Tan Layer *412501846-0047*	Area E - Flooring - 506	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E28-Cove Base *412501846-0048*	Area E - Red Covebase - 506	Purple Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E28-Tan Mastic *412501846-0049*	Area E - Red Covebase - 506	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2025 16:05:20

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501846
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269
Project: Old Seneca Middle School/Area "E" Interior/00.6563.00

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/07/2025
Collected Date:

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
E28-Brown Mastic *412501846-0050*	Area E - Red Covebase - 506	Brown Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E31 *412501846-0051*	Area E - Interior Window Caulk	Green Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E37-Vinyl Composition Tile *412501846-0052*	Area E - VCT & Mastic - 601 & Hall	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E37-Mastic *412501846-0053*	Area E - VCT & Mastic - 601 & Hall				
Insufficient Material					
E40-Mastic/Leveler *412501846-0054*	Area E - Roll Flooring - 603				
Insufficient Material					
E43-Flooring *412501846-0055*	Area E - Flooring - 608	Gray/White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E43-Mastic *412501846-0056*	Area E - Flooring - 608	Brown Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)
Sarah Breneman (17)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2025 16:05:20

OrderID: 412501846

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 412501846

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
EMAIL CinnAsbLab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:	
Company Name:	SynTerra
Contact Name	Andy Kosse
Street Address:	5015 West W.T.Harris Boulevard, Suite C
City, State, Zip:	Charlotte, North Carolina 28269
Country:	USA
Phone:	864-527-4670
Email(s) for Report:	akosse@synterracorp.com

Billing Information

Billing ID:	
Company Name:	SAME as customer
Billing Contact:	
Street Address:	
City, State, Zip:	
Country:	
Phone:	
Email(s) for Invoice	

Project Information

Project Name/No:	Old Seneca Middle School / 00.6563.00
Purchase Order:	00.6563.00
EMSL LIMS Project ID: (If applicable, EMSL will provide)	
US State where samples collected:	SC
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	Robert Smith
Sampled By Signature:	
No. of Samples in Shipment	46

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only, samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0 25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0 25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198 4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
E-1 - E-3	Area E / Stair tread - 13	32	2-18-25
E-4 - E-6	/ Brick - 13 + 14	33	
E-7 - E-9	/ VCT + mastic - Near stair	34	
E-10 - E-12	/ Block Wall - 13 + 14	35	
E13 - E-15	/ Blue Covebase - 500 Hall	36	
E16 - E-18	/ Flooring - 506	37	
E-19 - E-25	/ Wallboard + Joint Compound - 500's + 600's	38	
E-26 - E-28	/ Red Covebase - 506	39	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods Limits of Detection, etc.)

SC - Rules

Area "E" - Interior

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Andy Kosse	Date/Time: 2-24-25 / 11:30 a.m.	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: OG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-45-Asbestos R15 10/29/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

OrderID: 412501846

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

01846

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE (800) 220-3675
EMAIL CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Old Seneca Middle School / 00.65630.00 — positive stop each HA

Area "E" Interior

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
E29 - E-31	Area E / Interior Window Caulk	40	2-18-25
E-32 - E-34	/ Ceiling Tile	41	
E-35 - E-37	/ VCT + Mastic - 600 Hall	42	
E-38 - E-40	/ Roll Flooring - 603	43	
E-41 - E-43	/ Flooring - 608	44	
E-44 - E-46	/ Black Wall - 600 Hall	45	

SC Rules + positive stop

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by	Date/Time: 02-24-25/11:30 am	Received by:	Date/Time
Relinquished by	Date/Time:	Received by	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501878
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	03/03/2025
	Charlotte, NC 28269	**Collected Date:**	
Project:	Old Seneca Middle School/ South Roof Area "E" Roofing/ 00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E-200-Roofing *412501878-0001*	Area "E" Roof - Roofing	Black Fibrous Homogeneous	15% Glass	20% Quartz 25% Ca Carbonate 40% Non-fibrous (Other)	None Detected
E-200-Gypsum Wallboard *412501878-0001A*	Area "E" Roof - Roofing	White Fibrous Homogeneous	60% Glass	40% Non-fibrous (Other)	None Detected
E-201-Roofing *412501878-0002*	Area "E" Roof - Roofing	Black Fibrous Homogeneous	15% Glass	15% Quartz 25% Ca Carbonate 45% Non-fibrous (Other)	None Detected
E-201-Gypsum Wallboard *412501878-0002A*	Area "E" Roof - Roofing	White Fibrous Homogeneous	60% Glass	40% Non-fibrous (Other)	None Detected
E-202-Roofing *412501878-0003*	Area "E" Roof - Roofing	Black Fibrous Homogeneous	15% Glass	15% Quartz 25% Ca Carbonate 45% Non-fibrous (Other)	None Detected
E-202-Gypsum Wallboard *412501878-0003A*	Area "E" Roof - Roofing	White Fibrous Homogeneous	60% Glass	40% Non-fibrous (Other)	None Detected
E-212-Roofing *412501878-0004*	Area "E" Roof - Roofing	White/Black Fibrous Homogeneous	10% Glass	15% Quartz 25% Ca Carbonate 50% Non-fibrous (Other)	None Detected
E-212-Gypsum Wallboard *412501878-0004A*	Area "E" Roof - Roofing	White Fibrous Homogeneous	60% Glass	40% Non-fibrous (Other)	None Detected
E-213-Gypsum Wallboard *412501878-0004B*	Area "E" Roof - Roofing	White Fibrous Homogeneous	60% Glass	40% Non-fibrous (Other)	None Detected
E-203 *412501878-0005*	Area "E" Roof - Flashing-Black	White/Black Non-Fibrous Homogeneous		<1% Quartz 100% Non-fibrous (Other)	None Detected
E-204 *412501878-0006*	Area "E" Roof - Flashing-Black	Black Non-Fibrous Homogeneous	5% Glass	30% Ca Carbonate 65% Non-fibrous (Other)	None Detected
E-206 *412501878-0007*	Area "E" Roof - Flashing-Gray	Gray/Silver Non-Fibrous Heterogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
Result includes a small amount of inseparable attached silver paint.					
E-207 *412501878-0008*	Area "E" Roof - Flashing-Gray	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
E-209 *412501878-0009*	Area "E" Roof - Flashing-White Tape	White Fibrous Homogeneous	60% Synthetic	10% Quartz 30% Non-fibrous (Other)	None Detected

Initial report from: 03/03/2025 11:02:42

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501878
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
E-210	Area "E" Roof - Flashing-White Tape	White Non-Fibrous Homogeneous	40% Synthetic	10% Quartz 50% Non-fibrous (Other)	None Detected
412501878-0010					

Analyst(s)

David Zalewski (6)

Kelsie Dwyer (9)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/03/2025 11:02:42

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501878
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/06/2025
Collected Date:

Project: Old Seneca Middle School/ South Roof Area "E" Roofing/ 00.6563.00

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
E-213-Roofing *412501878-0011*	Area "E" Roof - Roofing	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E-205 *412501878-0012*	Area "E" Roof - Flashing-Black	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E-208 *412501878-0013*	Area "E" Roof - Flashing-Gray	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
E-211 *412501878-0014*	Area "E" Roof - Flashing-White Tape	White Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (4)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/06/2025 16:40:49

OrderID: 412501878

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only: 412501878

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
EMAIL CinnAsblab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	SynTerra	Company Name:	SAME as customer
Contact Name:	Andy Kosse	Billing Contact:	
Street Address:	5015 West W.T.Harris Boulevard, Suite C	Street Address:	
City, State, Zip:	Charlotte, North Carolina 28269	Country: USA	City, State, Zip: / Country:
Phone:	864-527-4670		Phone:
Email(s) for Report:	akosse@synterracorp.com		Email(s) for Invoice:

Project Information

Project Name/No: Old Seneca Middle School / 00.6563.00
Purchase Order: 00.6563.00
EMSL LIMS Project ID (If applicable, EMSL will provide):
US State where samples collected: SC
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Andy Kosse
Sampled By Signature: Andy Kosse
No. of Samples in Shipment: 14

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA)

Filter Pore Size (Air Samples): ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
* E-200 – E-202, E-212 & E-213	Area "E" Roof / Roofing	11	2-18-25
E-203 – E-205	/ Flashing - Black	12	
E-206 – E-208	/ Flashing - gray	13	
E-209 – E-211	/ Flashing - white tape	14	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

SC Rule)
* Positive stop all layers based on any positive result and do not analyze foam or wood - South Roof Area "E" - Roofing

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Andy Kosse	Date/Time: 2-24-25 / 11:30 a.m.	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: CG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R16 10/26/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501843
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	02/27/2025 - 02/28/2025
	Charlotte, NC 28269	**Collected Date:**	
Project:	Old Seneca Middle School /Area "F" Interior/00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
F-1-Vinyl Composition Tile *412501843-0001*	Area F - VCT & Black Mastic - ~~108~~ 408	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
F-1-Mastic *412501843-0001A*	Area F - VCT & Black Mastic - ~~108~~ 408	Black Non-Fibrous Homogeneous		97% Non-fibrous (Other)	**3% Chrysotile**
F-2-Vinyl Composition Tile *412501843-0002*	Area F - VCT & Black Mastic - 108 408	White Non-Fibrous Homogeneous	<1% Cellulose	40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
F-2-Mastic *412501843-0002A*	Area F - VCT & Black Mastic - ~~108~~ 408				**Positive Stop (Not Analyzed)**
F-4-Brick *412501843-0003*	Area F - Brick Column - 408	Red/Black Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
F-4-Grout *412501843-0003A*	Area F - Brick Column - 408	Tan Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
F-5 *412501843-0004*	Area F - Brick Column - 408	Red/Black Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
F-6-Brick *412501843-0005*	Area F - Brick Column - 408	Red Non-Fibrous Homogeneous		10% Quartz 5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
F-6-Grout *412501843-0005A*	Area F - Brick Column - 408	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	40% Quartz 60% Non-fibrous (Other)	None Detected
F-7 *412501843-0006*	Area F - Block Wall - 408	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
F-8 *412501843-0007*	Area F - Block Wall - 408	Gray/White Non-Fibrous Heterogeneous		40% Quartz 5% Ca Carbonate 55% Non-fibrous (Other)	None Detected
F-9 *412501843-0008*	Area F - Block Wall - 408	Gray/White Non-Fibrous Homogeneous	<1% Cellulose	30% Quartz 10% Ca Carbonate 60% Non-fibrous (Other)	None Detected
F-10 *412501843-0009*	Area F - Ceiling Tile - 408	Tan/White Fibrous Homogeneous	30% Cellulose 30% Min. Wool	30% Perlite 10% Non-fibrous (Other)	None Detected
F-11 *412501843-0010*	Area F - Ceiling Tile - 408	Tan/White Fibrous Homogeneous	30% Cellulose 30% Min. Wool	30% Perlite 10% Non-fibrous (Other)	None Detected
F-12 *412501843-0011*	Area F - Ceiling Tile - 408	Tan/White Fibrous Homogeneous	50% Cellulose 15% Min. Wool	30% Perlite 5% Non-fibrous (Other)	None Detected

Initial report from: 03/01/2025 08:14:53

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501843
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
F-13-Tape *412501843-0012*	Area F - Drywall & Joint Compound - 408 & Library	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
F-13-Joint Compound *412501843-0012A*	Area F - Drywall & Joint Compound - 408 & Library	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
F-13-Drywall *412501843-0012B*	Area F - Drywall & Joint Compound - 408 & Library	Brown/Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
F-14-Tape *412501843-0013*	Area F - Drywall & Joint Compound - 408 & Library	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
F-14-Joint Compound *412501843-0013A*	Area F - Drywall & Joint Compound - 408 & Library	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
F-14-Drywall *412501843-0013B*	Area F - Drywall & Joint Compound - 408 & Library	Brown/Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
F-15-Tape *412501843-0014*	Area F - Drywall & Joint Compound - 408 & Library	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
F-15-Joint Compound *412501843-0014A*	Area F - Drywall & Joint Compound - 408 & Library	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
F-15-Drywall *412501843-0014B*	Area F - Drywall & Joint Compound - 408 & Library	Gray Non-Fibrous Homogeneous	5% Cellulose <1% Glass	95% Non-fibrous (Other)	None Detected

Analyst(s)

Kelsie Dwyer (15)

Maggie Pasour (8)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/01/2025 08:14:53

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501843
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse Synterra Corp 5015 W T Harris Blvd Unit C Charlotte, NC 28269	**Phone:**	(864) 527-4670
		Fax:	
		Received Date:	02/24/2025 11:40 AM
		Analysis Date:	03/07/2025
		Collected Date:	
Project:	Old Seneca Middle School /Area "F" Interior/00.6563.00		

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
F-3-Vinyl Composition Tile *412501843-0015*	Area F - VCT & Black Mastic - ~~108~~ 408	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (1)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2025 15:14:23

OrderID: 412501843

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 412501843

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE (800) 220-3675
EMAIL CinnAslab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information		Billing Information	
Customer ID.		Billing ID	
Company Name:	SynTerra	Company Name:	SAME as customer
Contact Name:	Andy Kosse	Billing Contact	
Street Address:	5015 West W.T.Harris Boulevard, Suite C	Street Address:	
City, State, Zip:	Charlotte, North Carolina 28269	City, State, Zip:	
Country:	USA	Country:	
Phone:	864-527-4670	Phone:	
Email(s) for Report:	akosse@synterracorp.com	Email(s) for Invoice	

Project Information

Project Name/No.: Old Seneca Middle School / 00.6563.00
Purchase Order: 00.6563.00
EMSL LIMS Project ID (If applicable, EMSL will provide):
US State where samples collected: SC
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Robert Smith
Sampled By Signature: RS
No. of Samples in Shipment: 15

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only, samples must be submitted by 11.30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
F-1 – F-3	Area F / VCT + Black Mastic - 408	46	2-18-25
F-4 – F-6	/ Brick Column - 408	47	
F-7 – F-9	/ Block Wall - 408	48	
F-10 – F-12	/ Ceiling Tile - 408	49	
F-13 – F-15	/ Drywall + Joint Compound - 408 Library	50	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods Limits of Detection, etc.)

SC Rules

Area "F" - Interior

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Andy Kosse	Date/Time: 2-24-25 / 11:30	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: CG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R15 10/25/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501845
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Attention:	Andy Kosse	**Phone:**	(864) 527-4670
	Synterra Corp	**Fax:**	
	5015 W T Harris Blvd	**Received Date:**	02/24/2025 11:40 AM
	Unit C	**Analysis Date:**	02/28/2025 - 03/01/2025
	Charlotte, NC 28269	**Collected Date:**	02/18/2025
Project:	Old Seneca Middle School/ Outside Area "O"/ 00.6563.00		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
O-1-White Coat *412501845-0001*	Exterior FF - Stucco	White Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
O-1-Gray Coat *412501845-0001A*	Exterior FF - Stucco	Gray Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
O-2-White Coat *412501845-0002*	Exterior FF - Stucco	White Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
O-2-Gray Coat *412501845-0002A*	Exterior FF - Stucco	Gray Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
O-3-Tan Coat *412501845-0003*	Exterior FF - Stucco	Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
O-3-Gray Coat *412501845-0003A*	Exterior FF - Stucco	Gray Non-Fibrous Homogeneous		70% Quartz 30% Non-fibrous (Other)	None Detected
O-4-White Coat *412501845-0004*	Exterior FF - Stucco	White Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
O-4-Gray Coat *412501845-0004A*	Exterior FF - Stucco	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
O-5-White Coat *412501845-0005*	Exterior FF - Stucco	White Non-Fibrous Homogeneous		3% Quartz 97% Non-fibrous (Other)	None Detected
O-5-Gray Coat *412501845-0005A*	Exterior FF - Stucco	Gray Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
O-6-White Coat *412501845-0006*	Exterior 2nd Flr - Stucco	White Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
O-6-Gray Coat *412501845-0006A*	Exterior 2nd Flr - Stucco	Gray Non-Fibrous Homogeneous	5% Glass	30% Quartz 65% Non-fibrous (Other)	None Detected
O-7-Top White Coat *412501845-0007*	Exterior 2nd Flr - Stucco	White Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
O-7-Gray Coat *412501845-0007A*	Exterior 2nd Flr - Stucco	Gray Non-Fibrous Homogeneous	5% Glass	30% Quartz 65% Non-fibrous (Other)	None Detected
O-7-Bottom White Coat *412501845-0007B*	Exterior 2nd Flr - Stucco	White Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
O-12-Top White Coat *412501845-0008*	Exterior 2nd Flr - Stucco	White Non-Fibrous Homogeneous		10% Quartz 5% Ca Carbonate 85% Non-fibrous (Other)	None Detected

Initial report from: 03/01/2025 15:51:56

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order:	412501845
Customer ID:	SYNT23
Customer PO:	00.6563.00
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
O-12-Gray Coat *412501845-0008A*	Exterior 2nd Flr - Stucco	Gray Non-Fibrous Homogeneous	5% Glass	60% Quartz 35% Non-fibrous (Other)	None Detected
O-12-Bottom White Coat *412501845-0008B*	Exterior 2nd Flr - Stucco	White Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
O-8 *412501845-0009*	Exterior - Green Window Caulk	Green Non-Fibrous Homogeneous		5% Quartz 25% Ca Carbonate 70% Non-fibrous (Other)	None Detected
O-9 *412501845-0010*	Exterior - Green Window Caulk	Green Non-Fibrous Homogeneous		5% Quartz 25% Ca Carbonate 70% Non-fibrous (Other)	None Detected
O-10 *412501845-0011*	Exterior - Green Window Caulk	Brown/Black Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
O-13 *412501845-0012*	Exterior - Tan Building Caulk	Tan Non-Fibrous Homogeneous		2% Quartz 10% Ca Carbonate 88% Non-fibrous (Other)	None Detected
O-14 *412501845-0013*	Exterior - Tan Building Caulk	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
O-16 *412501845-0014*	Exterior - Expansion Joint Caulk	Brown/Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
O-17 *412501845-0015*	Exterior - Expansion Joint Caulk	Brown Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
O-19 *412501845-0016*	Exterior - Window Glazing @ 410	Gray/White/Beige Non-Fibrous Homogeneous		25% Ca Carbonate 72% Non-fibrous (Other)	**3% Chrysotile**
O-20 *412501845-0017*	Exterior - Window Glazing @ 410				**Positive Stop (Not Analyzed)**

Analyst(s)
Ashley Hill (10)
Kelsie Dwyer (16)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/01/2025 15:51:56

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412501845
Customer ID: SYNT23
Customer PO: 00.6563.00
Project ID:

Attention: Andy Kosse
Synterra Corp
5015 W T Harris Blvd
Unit C
Charlotte, NC 28269
Project: Old Seneca Middle School/ Outside Area "O"/ 00.6563.00

Phone: (864) 527-4670
Fax:
Received Date: 02/24/2025 11:40 AM
Analysis Date: 03/06/2025
Collected Date: 02/18/2025

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
0-11 *412501845-0018*	Exterior - Green Window Caulk	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
0-15 *412501845-0019*	Exterior - Tan Building Caulk	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
0-18 *412501845-0020*	Exterior - Expansion Joint Caulk	Brown Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (3)

Lee Plumley, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/06/2025 16:37:57

OrderID: 412501845

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only: 412501845

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
EMAIL CinnAslab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID	
Company Name	SynTerra
Contact Name	Andy Kosse
Street Address	5015 West W.T.Harris Boulevard, Suite C
City, State, Zip	Charlotte, North Carolina 28269
Country	USA
Phone	864-527-4670
Email(s) for Report	akosse@synterracorp.com

Billing Information

Billing ID	
Company Name	SAME as customer
Billing Contact	
Street Address	
City, State, Zip	
Country	
Phone	
Email(s) for Invoice	

Project Information

Project Name/No.	Old Seneca Middle School / 00.6563.00
Purchase Order	00.6563.00
EMSL LIMS Project ID (if applicable, EMSL will provide)	
US State where samples collected	SC
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name	Andy Kosse
Sampled By Signature	Andy Kosse
No. of Samples in Shipment	21

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☒ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☒ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
* 0-1 – 0-5	Exterior FF / Stucco	15	2-18-25
* 0-6, 0-7 & 0-12	Exterior 2nd FLR / Stucco	15 ~~16~~	
0-8 – 0-11	Exterior / Green Window Caulk	16	
0-13 – 0-15	Exterior / Tan Building Caulk	17	
0-16 – 0-18	Exterior / Expansion Joint Caulk	18	
0-19 – 0-21	Exterior / Window Glazing @ 410	19	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

SC RULES

* positive stop (Both Layers) based on any positive layer outside Area "O" & Exterior.

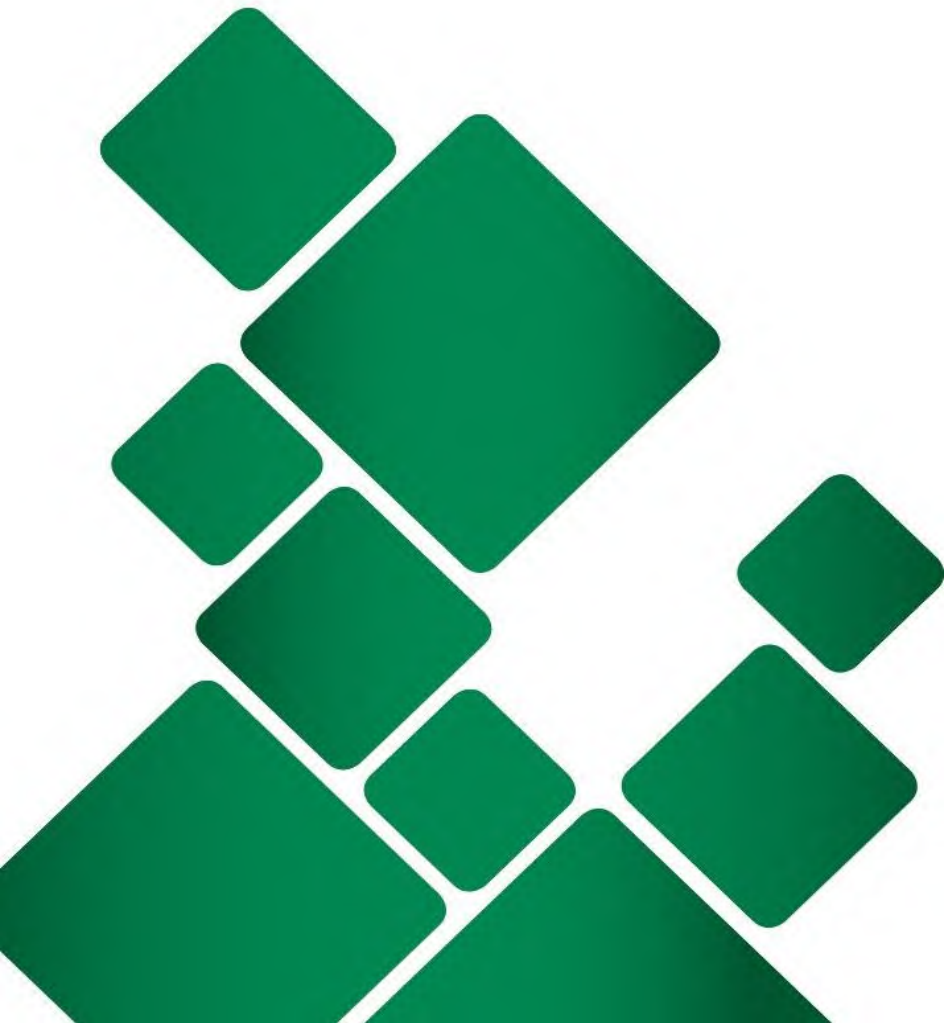
Method of Shipment		Sample Condition Upon Receipt	
Relinquished by: Andy Kosse	Date/Time: 2-24-25 / 11:30	Received by:	Date/Time
Relinquished by	Date/Time	Received by: QG	Date/Time: 2/24/25 1140 WI

Controlled Document - COC-05 Asbestos R16 10/26/2021

☒ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

ATTACHMENT B

PHOTO LOG



synTerra

Science & Engineering Consultants

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
1	03-17-25

Direction of Photo:

NA

Description:

View looking southeast at portable building A.

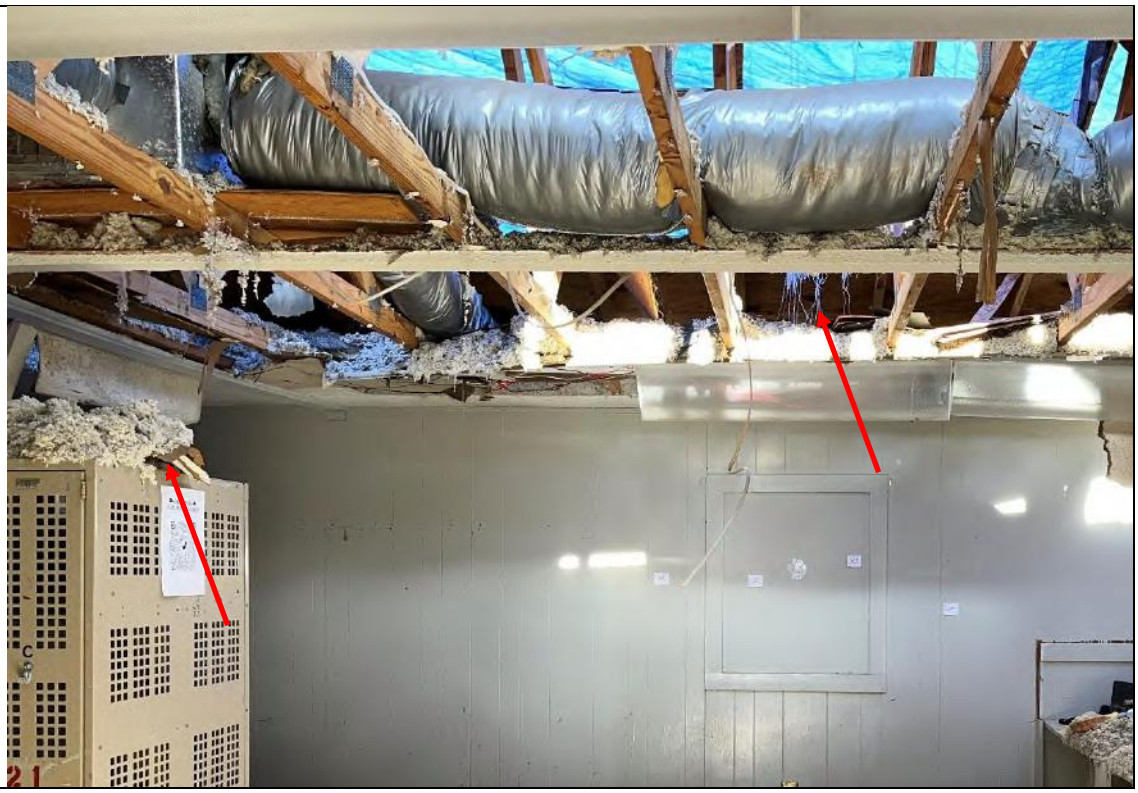
Photo No.	Date:
2	03-17-25

Direction of Photo:

NA

Description:

Portable building A interior; note mix of disturbed ceilings and roof, debris and ACM popcorn ceiling texture.



PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
3	03-17-25

Direction of Photo:

NA

Description:

View sample A-8, ACM ceiling texture at portable building A

Photo No.	Date:
4	3-17-25

Direction of Photo:

NA

Description:

View south at north elevation of boiler building B

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
5	3-17-25

Direction of Photo:

NA

Description:

Though other ACM such as TSI were apparently abated, remaining boiler-related equipment with PACM gaskets remain within boiler building B

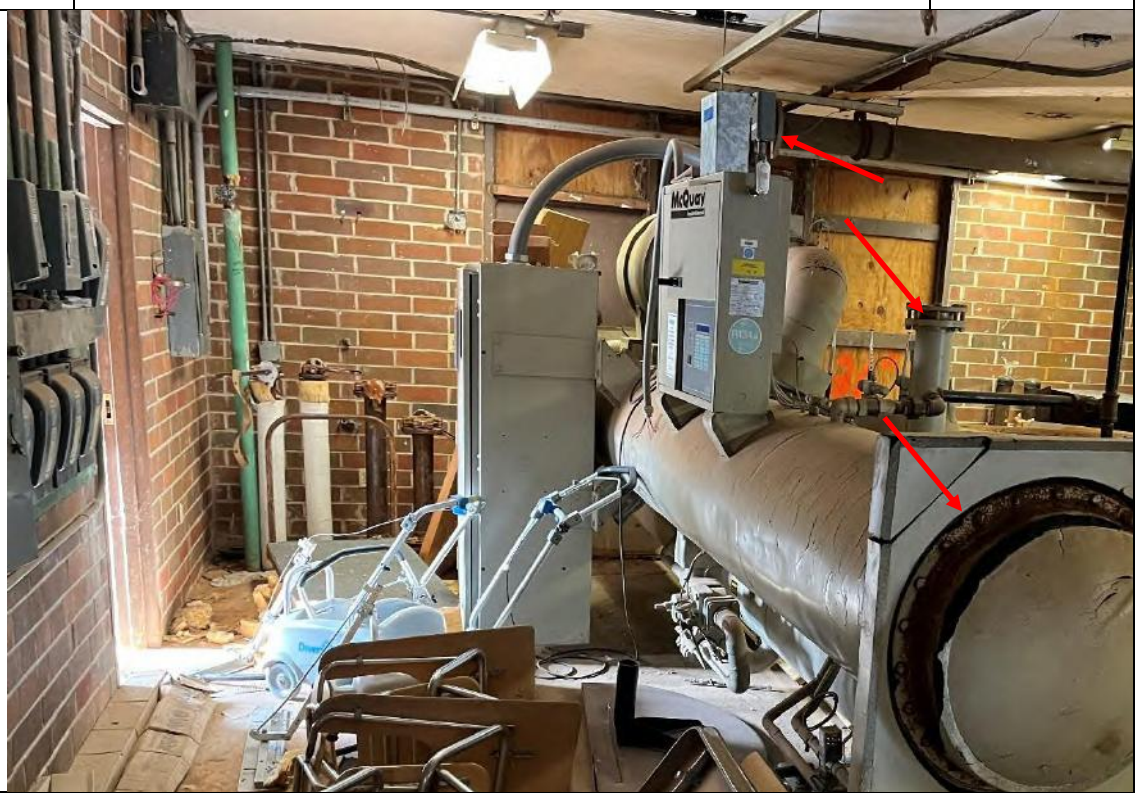


Photo No.	Date:
6	03-17-25

Direction of Photo:

NA

Description:

Typical~~.~~ PACM gaskets on some remaining boiler-related equipment in boiler building B

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
7	3-17-25

Direction of Photo:

NA

Description:

Typical view of building B roof, all samples non-detect; ~~samples –~~ samples - B-5 of roll roofing and B-6 – B-8 of flashing sealants at arrows.

Photo No.	Date:
8	3-17-25

Direction of Photo:

West

Description:

View of front, east elevation of school, covered roof plaster-like material non-detect per prior AHERA report.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
9	3-17-25

Direction of Photo:

NA

Description:

View of front, eastern elevation of school, arrow denotes 2-story Area-E addition

Photo No.	Date:
10	3-17-25

Direction of Photo:

NA

Description:

View of south elevation of Area E, 2-story addition at south end of school building; sampled window caulk, building caulk, and stucco at arrows

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
11	3-17-25

Direction of Photo:

NA

Description:

View of typical courtyard

Photo No.	Date:
12	3-17-25

Direction of Photo:

Southeast

Description:

View of west elevation of school, 1-window with ACM window glazing at room 410

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
13	3-17-25

Direction of Photo:

North

Description:

View ACM window glazing, sample O-19, 1-window only at back, western elevation of room 410

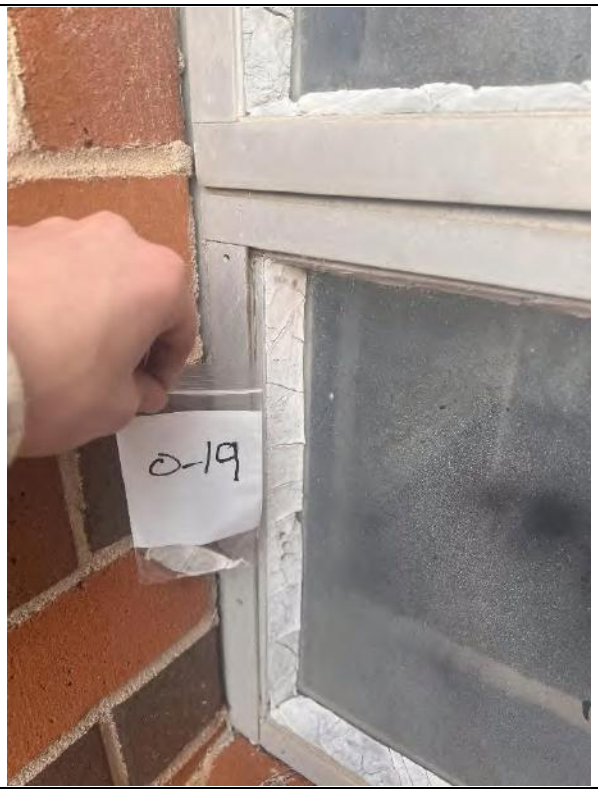


Photo No.	Date:
14	3-17-25

Direction of Photo:

NA

Description:

Sample C-1 location at room 212, ACM VCT and mastic

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
15	3-17-25

Direction of Photo:

NA

Description:

Typical ACM VCT and mastics at main offices, similar materials both underlain by ACM black mastics, sample C-23 and similar materials at C-29 in room 406, Area-C

Photo No.	Date:
16	3-17-25

Direction of Photo:

West

Description:

View of sample D-15 with ACM joint compound in lab room 311, part of original school Area-C

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
17	3-17-25

Direction of Photo:

NA

Description:

Typical wallboard and joint compound along eastern hallway wall and limits C-area at transition to hallway/classroom addition Area-D, presume same ACM joint compound as Area-C

Photo No.	Date:
18	3-17-25

Direction of Photo:

NA

Description:

View of ACM roll flooring in science lab room 203, 2nd floor of Area-E addition, sample E-38

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
19	3-17-25

Direction of Photo:

NA

Description:

Detail view of E-38 ACM roll vinyl flooring in lab room 603 at 2nd floor of Area-E

Photo No.	Date:
20	3-17-25

Direction of Photo:

NA

Description:

Representative view of art room 408 in Area-F; note ACM VCT flooring, sample F-1. Wallboard and joint compound tested non-detect for asbestos and ceiling panels are fiberglass.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
21	3-17-25

Direction of Photo:

NA

Description:

Detail view of sample F-1 where ACM black mastic is present in art room 408 of Area-F

Photo No.	Date:
22	3-17-25

Direction of Photo:

South

Description:

View of typical PACM fire-rated door at room 302, similar throughout school building spaces including all functional areas

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Old Seneca Middle School	810 W. South 4th St., Seneca, SC	00.6563.00

Photo No.	Date:
23	3-17-25

Direction of Photo:

NA

Description:

Typical view above drop ceilings

Photo No.	Date:
24	3-17-25

Direction of Photo:

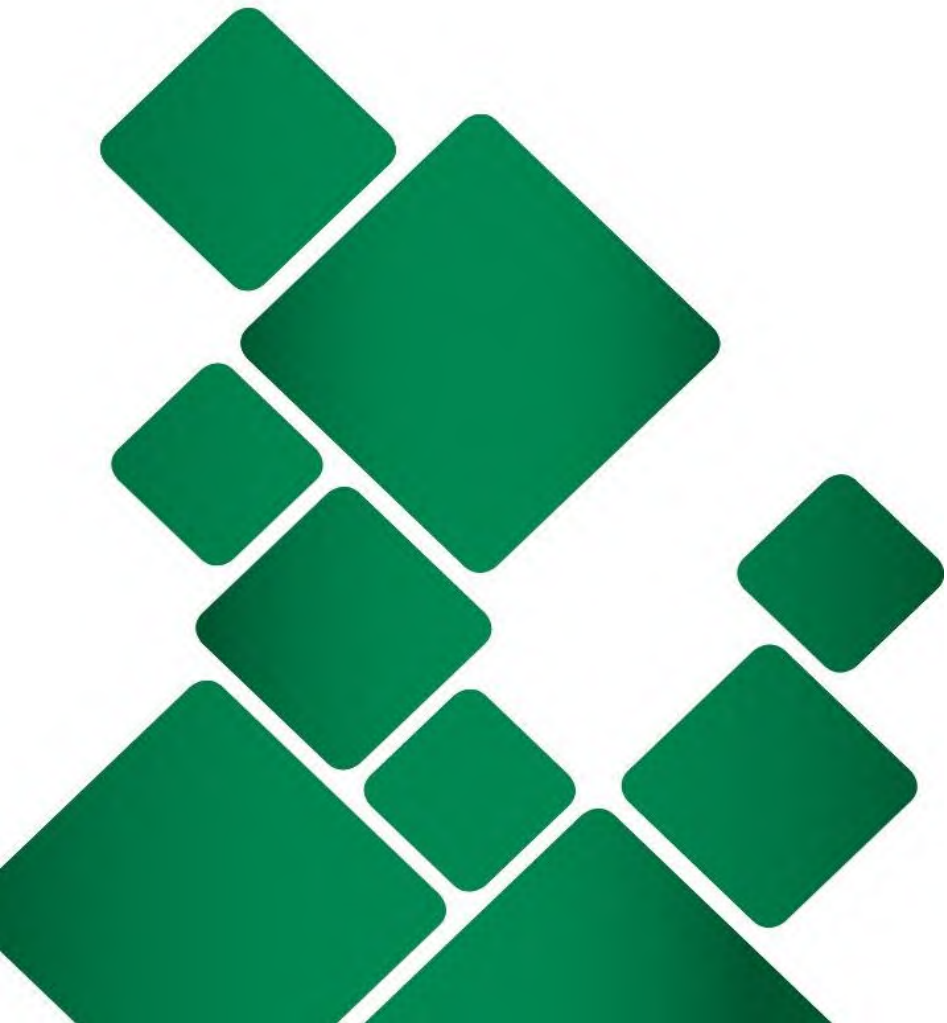
South

Description:

Typical view above drop ceilings at main offices at front of building, note ACM joint compound

ATTACHMENT C

AHERA MANAGEMENT PLAN



synTerra

Science & Engineering Consultants

MARSHALL CLARKE
ARCHITECTS, INC.
PLANNING • ARCHITECTURE • DEVELOPMENT

AHERA MANAGEMENT PLAN

SENECA ~~SENIOR HIGH~~ Middle SCHOOL

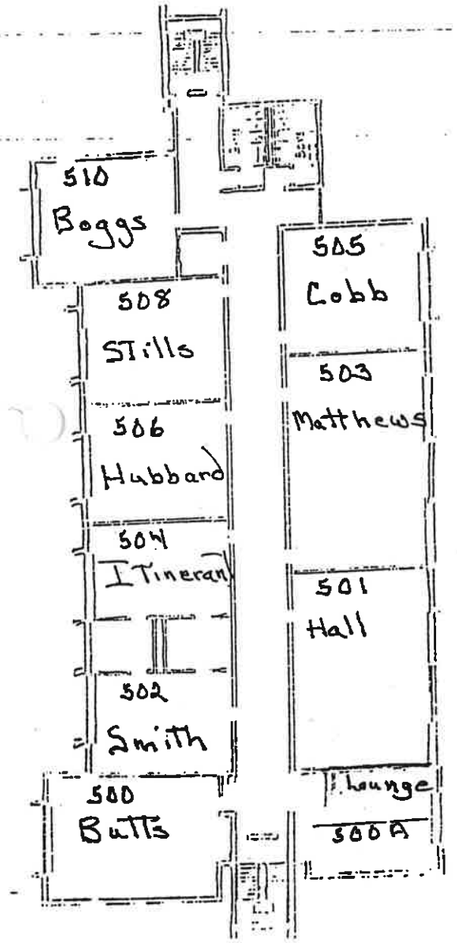
OCONEE COUNTY SCHOOL DISTRICT

SENECA, SOUTH CAROLINA

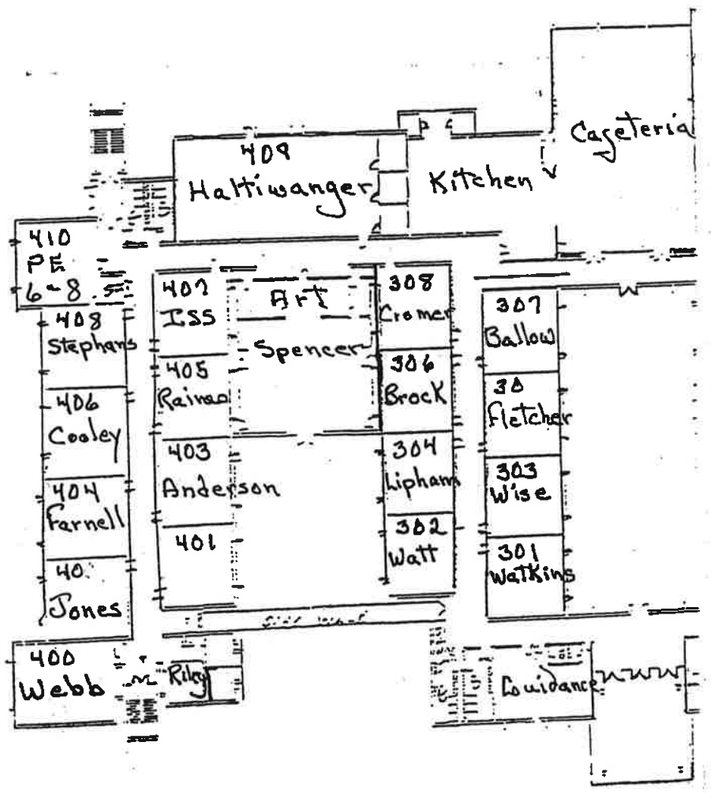
OCTOBER 1, 1988

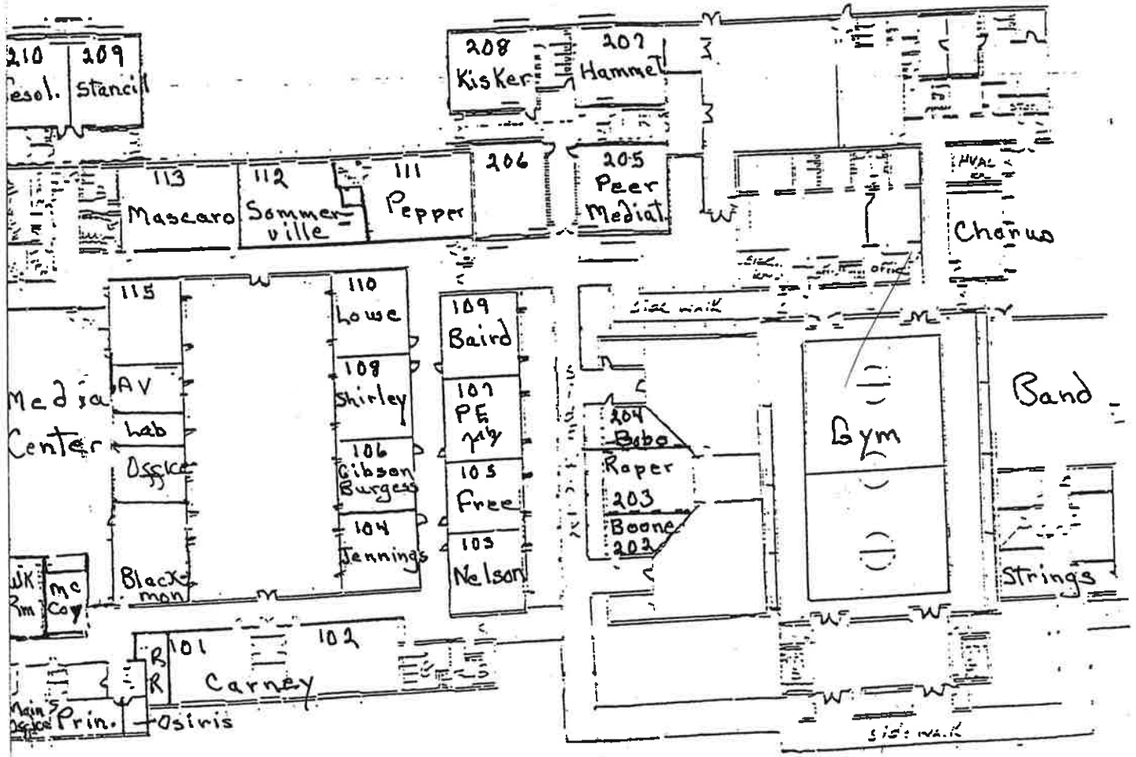
17

Suite 220 Century at Keith • 5 Century Drive • Greenville, S.C. 29607 • Telephone: (803) 232-8204



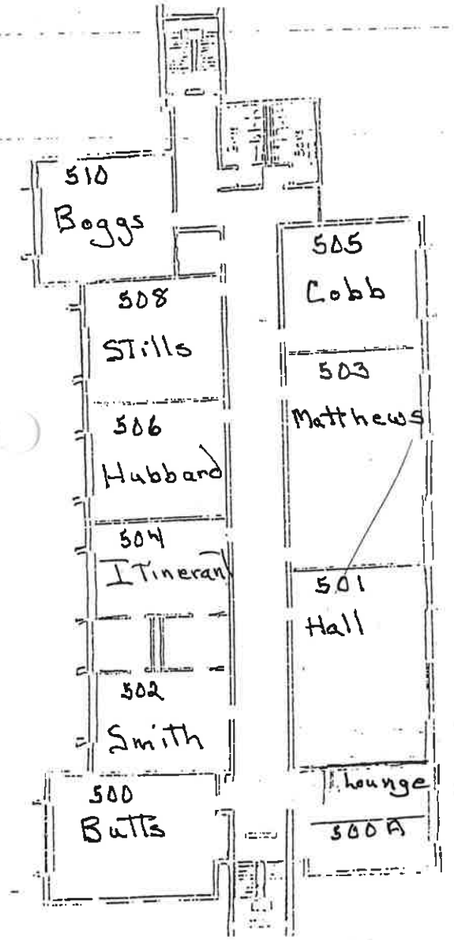
2nd Floor



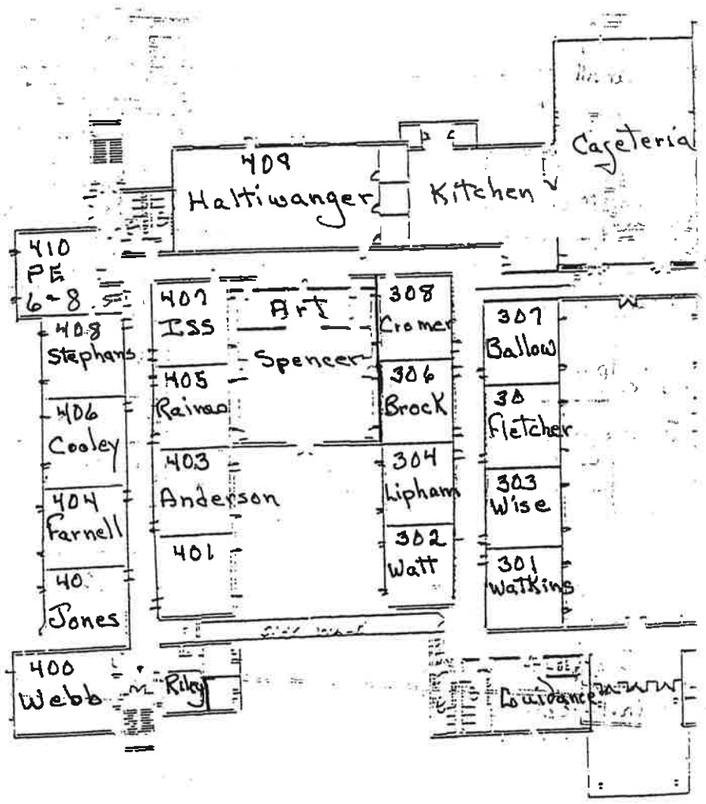


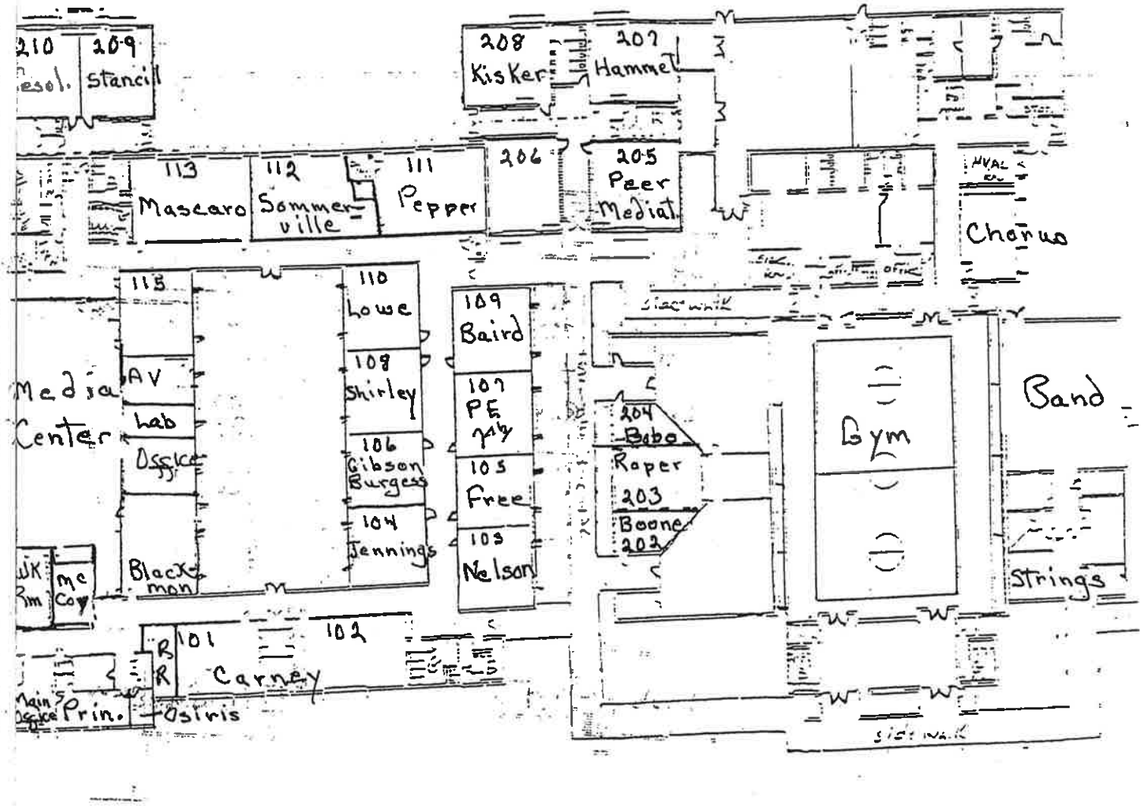
SENECA MIDDLE SCHOOL

1st Floor



2nd Floor





SENECA MIDDLE SCHOOL

1st Floor

NAME OF SCHOOL: Seneca Senior High School
LEA: Oconee County School District
ADDRESS: P. O. Box 220
Walhalla, SC 29691
COUNTY: Oconee
PHONE: 803 658 5868
DATE: Sbmt'd. 10-10-88 Rec'd.

STATE OF SOUTH CAROLINA
AHERA MANAGEMENT PLAN

SUBMIT TO THE OFFICE OF SCHOOL PLANNING & BUILDING, S. C. STATE DEPARTMENT OF EDUCATION

MANAGEMENT PLAN SUBMISSION: X Original _ Resubmittal _ New Building

LIST OF DOCUMENTS ATTACHED:

1 ☒ List of School Buildings
2 ☒ Drawings/Diagrams/& or Photos of Buildings
3 ☒ Determination of Sample Loc.
4 ☒ Description of Ea. Sample Area and Assesment of Materials
5 ☒ Bulk Sample Analysis
6 ☒ Response Actions Recommeded & Prev. Meas. & Resp. Actions Sch.
7 ☒ Operations and Maint. Plan
8 ☒ Periodic Surveillance Plan
9 ☒ Reinspection Plan
10 ☒ Resources Needed
11 ☒ Steps to Inform Others
12 ☒ Copy of Inspectors Licens
13 ☒ Copy MGMT. Planners Licen

INSPECTOR: Marshall Clarke Architects, Inc.
Jason L. Smith 1426
NAME & SCDEHEC. LIC #
SIGNATURE & DATE OCT 10 1988
803 232-8204
PHONE #

MGMT. PLANNER: Marshall Clarke Architects, Inc.
Marshall F. Clarke 1421
NAME & SCDEHEC. LIC #
SIGNATURE & DATE OCT 10 1988
803 232-8204
PHONE #

No person or firm shall offer to perform, perform or be hired to perform as professionals in providing the servic of inspection, preparation of management plans, designing of response actions, or supervising of response acti except as properly accredited under the provisions of Public Law 99-519, EPA Regulations 40 CFR Part 763, a South Carolina DHEC Regulation 61-86.1. In addition these persons or firms performing as professionals sha be registered in South Carolina under the registration laws of the State. Such professionals shall be indepenae practitioners and shall have no financial or other interest in contractors, subcontractors, manufacturers, jobbers under their jurisdiction where direct conflict of interest could occur, except as permitted as follows.

An employee of a public school, a private school association, a private school or an A/E may provide the servic of inspection, and or preparation of management plans, provided the employee is properly accredited under t "AHERA" Laws and Regulations. Where an employee of the LEA provides these services, the Lea must request a Waiv of Professional Services.

The signatures here on attest to the above statement and certify that it is the intent of the signatories t carry out all other provisions of the "AHERA" Law and Regulations.

LEA DESIGNEE: William Richardson
NAME
SIGNATURE & DATE OCT 10 1988
803 882-5588
PHONE #

LEA OFFICER: James M. Brown
NAME
SIGNATURE & DATE OCT 10 1988
803 638-5868
PHONE #

BOARD CHAIRMAN: James M. Brown
NAME
SIGNATURE & DATE OCT 10 1988
803 638-5868
PHONE #

__ Accepted
__ Returned for Reasons Stated Below

STATE OF SOUTH CAROLINA
REGISTERED ARCHITECTS
ARCHITECTS INC.
GREENVILLE
B-T7015

REGISTRATION SEAL

REVIEWER: _____
NAME
SIGNATURE & DATE
PHONE #

SCHOOL DISTRICT OF OCONEE COUNTY

Operations and Maintenance

P.O. Box 1708, Seneca, S.C. 29679

Bill Richardson

Tel. 882-5588

January 4, 1989

Mr. Stuart Clarkson
Office of School Planning and Building
Koger Executive Center
100 Executive Center Drive
Santee Building, Suite A-22
Columbia, South Carolina 29210

Dear Mr. Clarkson:

As the AHERA Designated Person for Oconee County School District, the General Local Education Agency's responsibilities as stipulated in AHERA Law, paragraph 763.84 have been met or will be met.

Sincerely,

Bill Richardson

Bill Richardson
Oconee County School District
AHERA Designated Person

BR:oo

1a

MARSHALL CLARKE
ARCHITECTS, INC.
PLANNING • ARCHITECTURE • DEVELOPMENT

NOTICE TO LOCAL EDUCATION AGENCY (LEA)

Marshall Clarke Architects, Inc., is pleased to present the enclosed Management Plan and Inspection Report for the asbestos situation in the subject school. To the best of our knowledge, the report represents an accurate accounting of the asbestos building materials at the school. This plan is presented with the following comments.

1. No reporting of roofing materials or other exterior building materials (other than covered walkways) is included in the Plan.

2. No reporting of furniture, fabrics or other non-building items is included in the Plan.

3. The AHERA Rule does not encourage "destructive" inspections or testing. Therefore, your school may have asbestos containing building materials primarily in the form of pipe insulation or fireproofing located at inaccessible chases, plenums and sealed-off spaces.

4. Should future building demolition or renovations be scheduled for your school, it is recommended that the exterior and concealed areas mentioned above be inspected and tested for asbestos prior to any demolition or renovation work at the school.

   Present State of South Carolina regulations and Federal EPA regulations require the removal of asbestos containing materials using "proper removal procedures" as outlines in their respective regulations prior to any building demolition or renovation that would disturb the asbestos at a building.

5. The AHERA Rule has certain specific requirements of the LEA that will be ongoing as long as asbestos containing building materials exist at the school. The LEA should reference the "Rule" for these specific requirements.

Suite 220 Century at Keith • 5 Century Drive • Greenville, S.C. 29607 • Telephone: (803) 232-8204

INTRODUCTION

On October 22, 1986, President Reagan signed into law the Asbestos Hazard Emergency Act (AHERA, Public Law 99-519). The law required the Environmental Protection Agency (EPA) to develop regulations which provide a comprehensive framework for addressing asbestos problems in public and private elementary and secondary schools. On October 30, 1987, EPA published the Asbestos-Containing Materials in Schools Rule (40 CFR, PART 763, Subpart E). This new rule requires all public and private elementary and secondary schools to inspect for friable and non-friable asbestos, develop asbestos management plans that address asbestos hazards in school buildings, and implement response actions in a timely fashion.

To carry out the above activities, involving inspections, management plans, and response actions, schools must use accredited persons. Marshall Clarke Architects, Inc., has performed appropriate inspections and presents this management plan of the subject school to assist the Local Education Agency (LEA) meet the requirements of the new Asbestos-Containing Materials in Schools Rule.

This booklet contains separate sections which makeup the AHERA management plan. Each section is preceded by a narrative which gives a brief description of the material within that section and its intended use. Should you have any questions relating to this management plan, contact the LEA designee, whose name and phone number is shown on the cover sheet of this AHERA management plan.

DEFINITIONS:

1. Asbestos - A generic name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure, are incombustible in air, and are separable into fibers. Asbestos include the asbestiform varieties of chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite-gruneiste), anthopbyllite, actinolite and frencolite.

2. Asbestos Containing Material (ACM) - Any material or product which contains more than one percent asbestos.

3. Asbestos Containing Building Material (ACBM) - Any building material which contains more than one percent asbestos.

INDEX

Sequence # 4

SECTION 1

LIST OF SCHOOL BUILDINGS

NARRATIVE

Document Number 1 is prepared in accordance with 40 CFR, part 763.93(e) (1) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice. A copy of this regulation is included at the end of this booklet for your reference.

This document lists whether friable or non-friable ACBM, suspect ACBM or no ACBM was discovered during the survey of this school.

DEFINITIONS

1. Friable ACBM - Asbestos Containing Building Material that can be crumbled or reduced to powder by hard pressure.

2. Non-Friable ACBM - Asbestos Containing Building Material, such as floor tile, which becomes friable only when disturbed, damaged or broken.

3. Suspect ACBM - Building Material which when touched or observed appears to contain asbestos.

4

STATE OF SOUTH CAROLIHR

LEA: Oconee County School District
SCHOOL: Seneca Senior High
ADDRESS: P. O. Box 917
Seneca, SC 29679

1 - LIST OF SCHOOL BUILDINGS

Building Name and Address if different	Check Here for Presence of:				No. ACBM	Date Inspected	Comments
	ACBM		Suspect ACBM				
	Friable	Non Friable	Friable	Non Friable			
Main Bldg. Classrooms		X				E roll flooring 603	Rolled flooring
Main Building Cafeteria		X				C and F-VCT	floor tile
Gym Building (Gymnasium)	not included in demo area		X				Elbows @ unit heater;
Boiler Room Building	X				abated		TSI
Portables Buildings					X	wrong	

SECTION 2

DRAWINGS, DIAGRAMS, SKETCHES, AND/OR PHOTO OF DRAWING

NARRATIVE

Document Number 2 is prepared in accordance with 40 CFR, Part 763.93 (e) (2) (ii) of U.S EPA Asbestos-Containing Materials in Schools; Final Rule and Notice Dated October 30, 1987. This regulation is included at the end of this booklet for your reference.

This document shows a small-scale floor plan of this school and where the actual bulk samples for analysis were taken. The plan also shows each homogeneous area of the school building(s). Photographs were made where each bulk sample was taken to show the material(s) and its condition when analyzed. The photographs are identified by the bulk sample identification number and are shown on the pages following the small scale plan(s).

DEFINITIONS:

1. Bulk Samples - Samples of bulk material; in the case of asbestos, suspect material.

2. Bulk Sample Analysis - Laboratory analysis of the materials gathered to determine the presence of asbestos.

3. Homogeneous Area - An area which appears similar throughout in terms of color, texture and date of material application.

LEA: Oconee County School District
SCHOOL: Seneca High School
BUILDING: Entire
146,789 sf

abated, TSI not found, most of boiler removed

B area plaster, non-detect

B area, ACM boiler gaskets

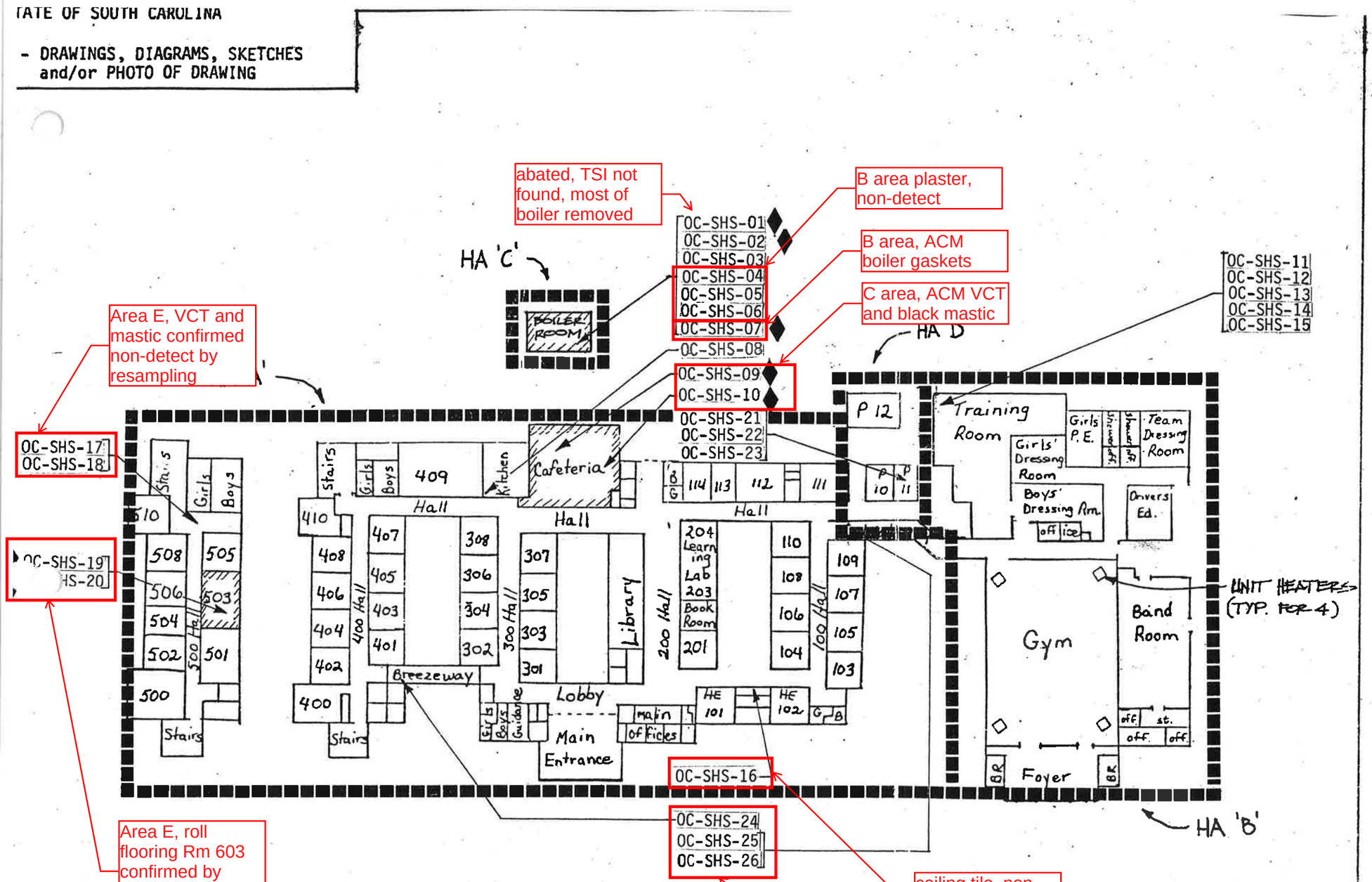
C area, ACM VCT and black mastic

Area E, VCT and mastic confirmed non-detect by resampling

Area E, roll flooring Rm 603 confirmed by sampling, none in Rm 503

ceiling tile, non-detect

plaster at covered exterior walks, non-detect



NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

■■■ – DENOTES HOMOGENEOUS AREA

◆ – DENOTES ACBM

– DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

BULK SAMPLE LEGEND:

XXX XXX XX
- SAMPLE NO.
- SCHOOL
- SCHOOL DISTRICT

HOMOGENEOUS AREA LEGEND FOR ACBM

SAMPLE #	HAID#	AMT.	DESCRIPTION
OC-SHC-01	C1	40	elbows @ piping
OC-SHC-02	C2	400sf	Expan tank
OC-SHC-07	C3	2sf	Seal @ blr #1
OC-SHS-9&10	A2	3000sf	Floor tile
OC-SHS-19&20	A5	500sf	Rolled flooring

Sequence # ___

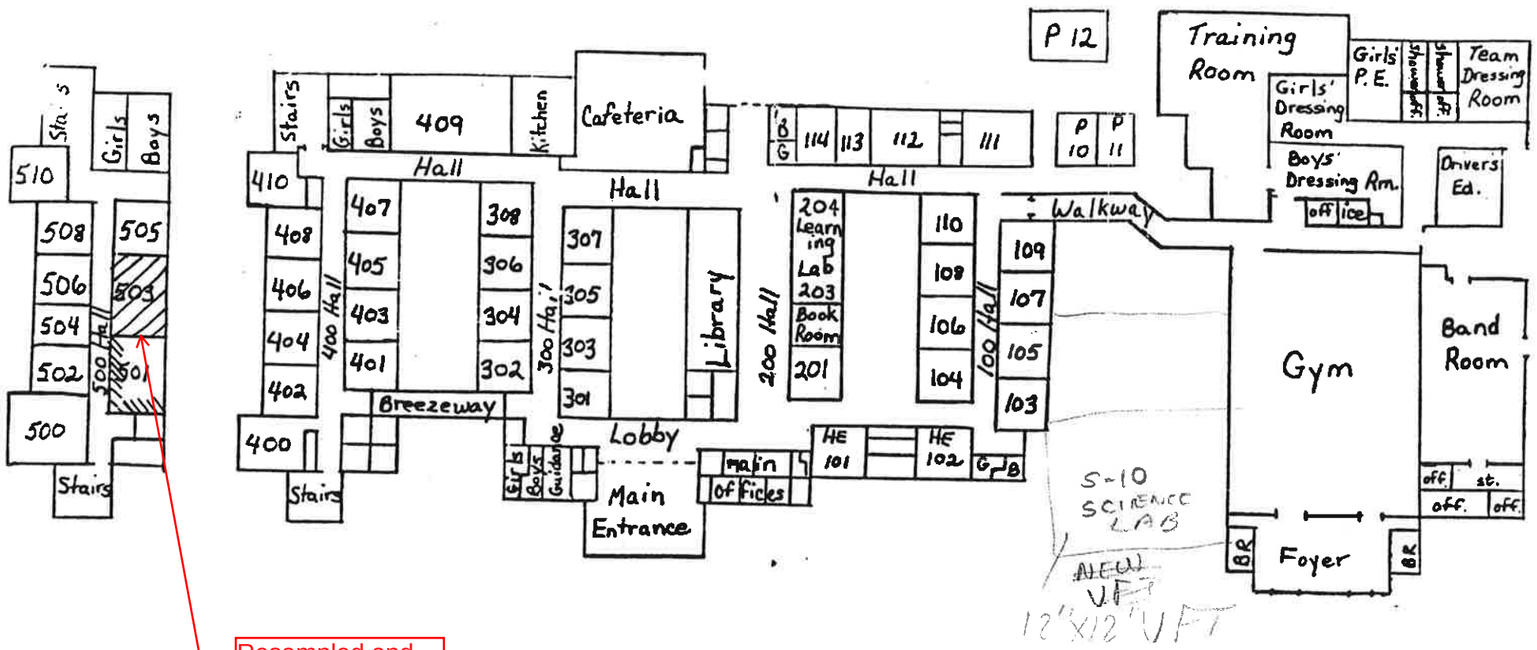
DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



Resampled and not found, ACM roll flooring in 603, science lab on 2nd floor

-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

AREA A5 500 S.F. ROLLED FLOORING

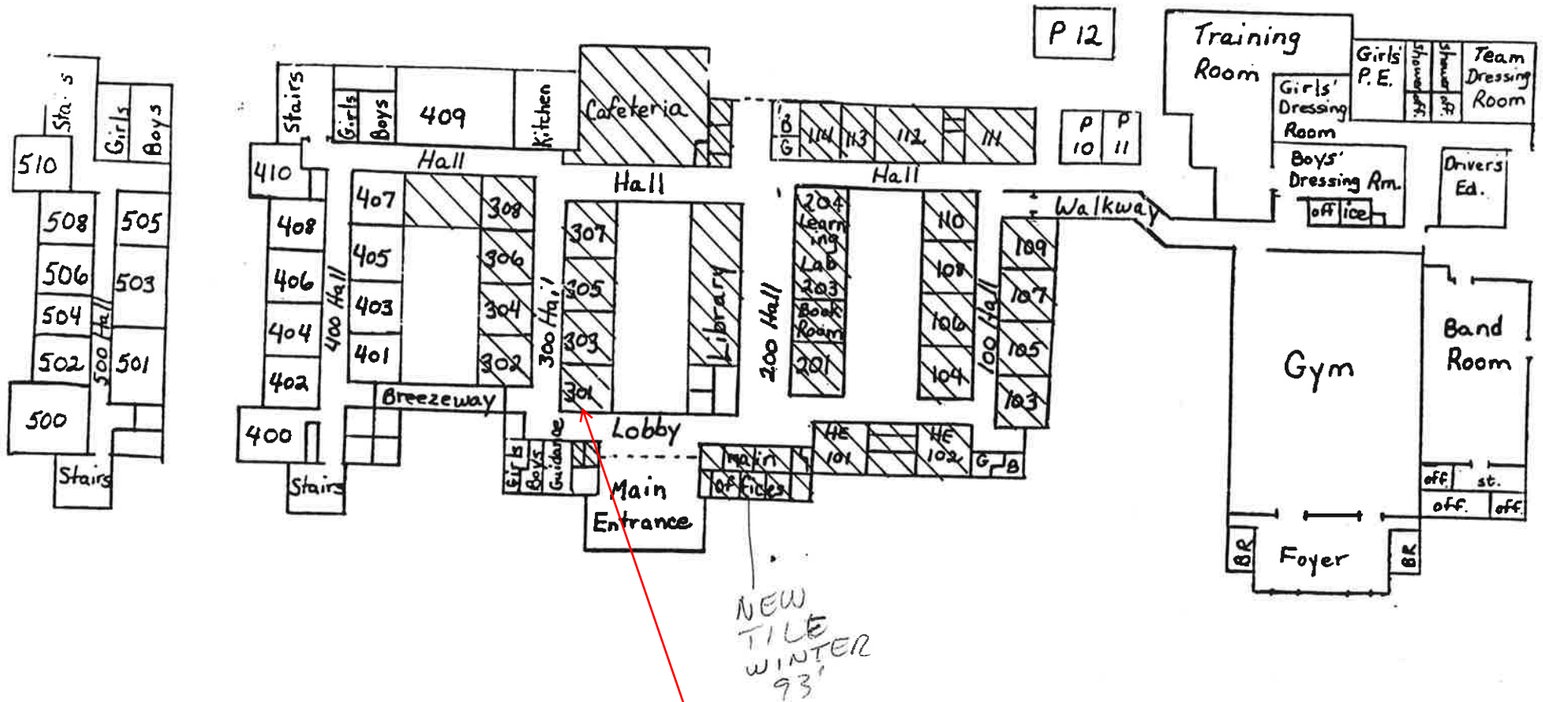
- DRAWINGS, DIAGRAMS, SKETCHES and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

Due to additional sampling and wide extent of ACM black mastic, Area C ACM VCT and mastic is to be all of Areas C and F per SynTerra

AREA A2 3000 S.F. FLOOR TILE

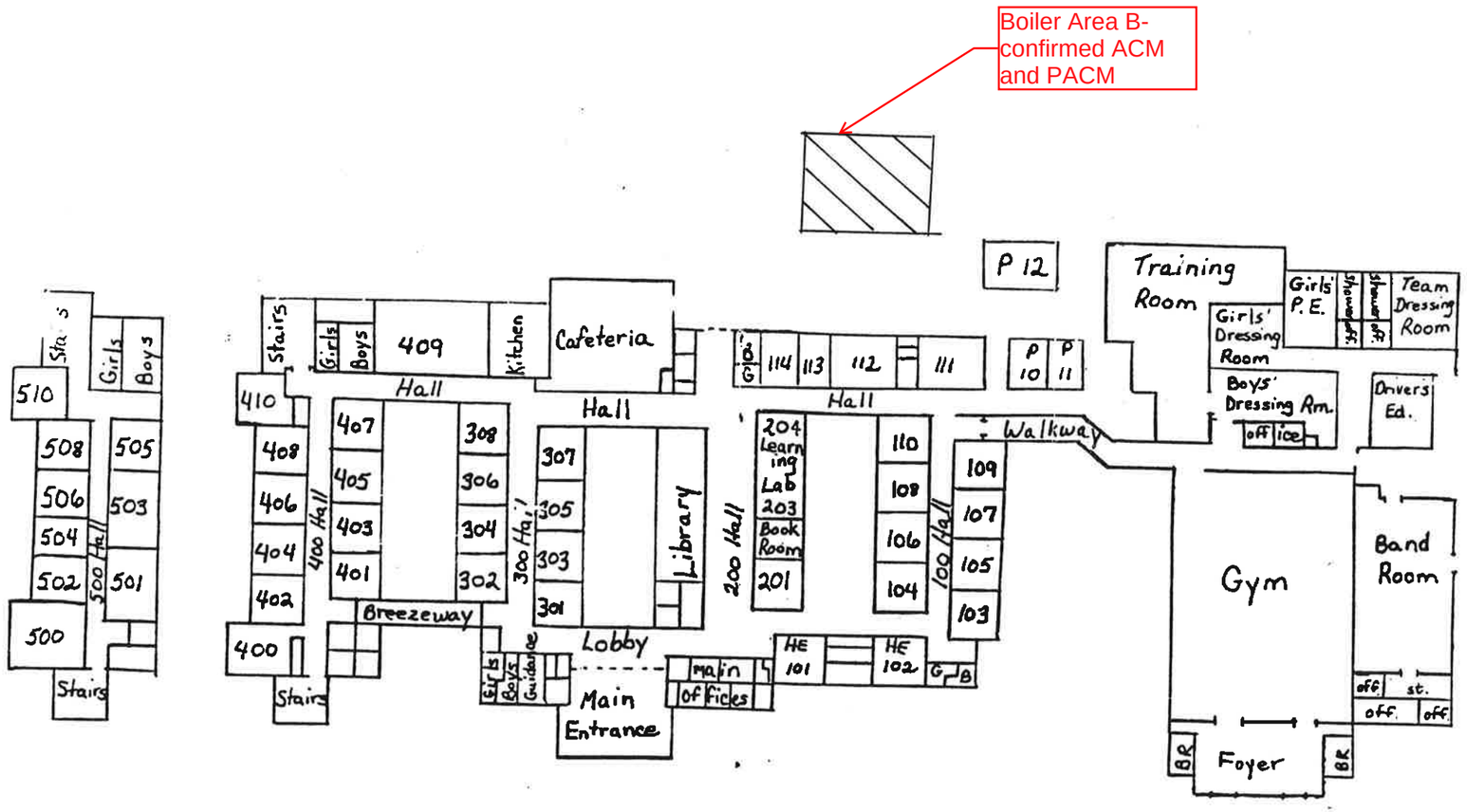
DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

AREA C3 2 S.F. SEAL AT BLR. #1

Sequence #

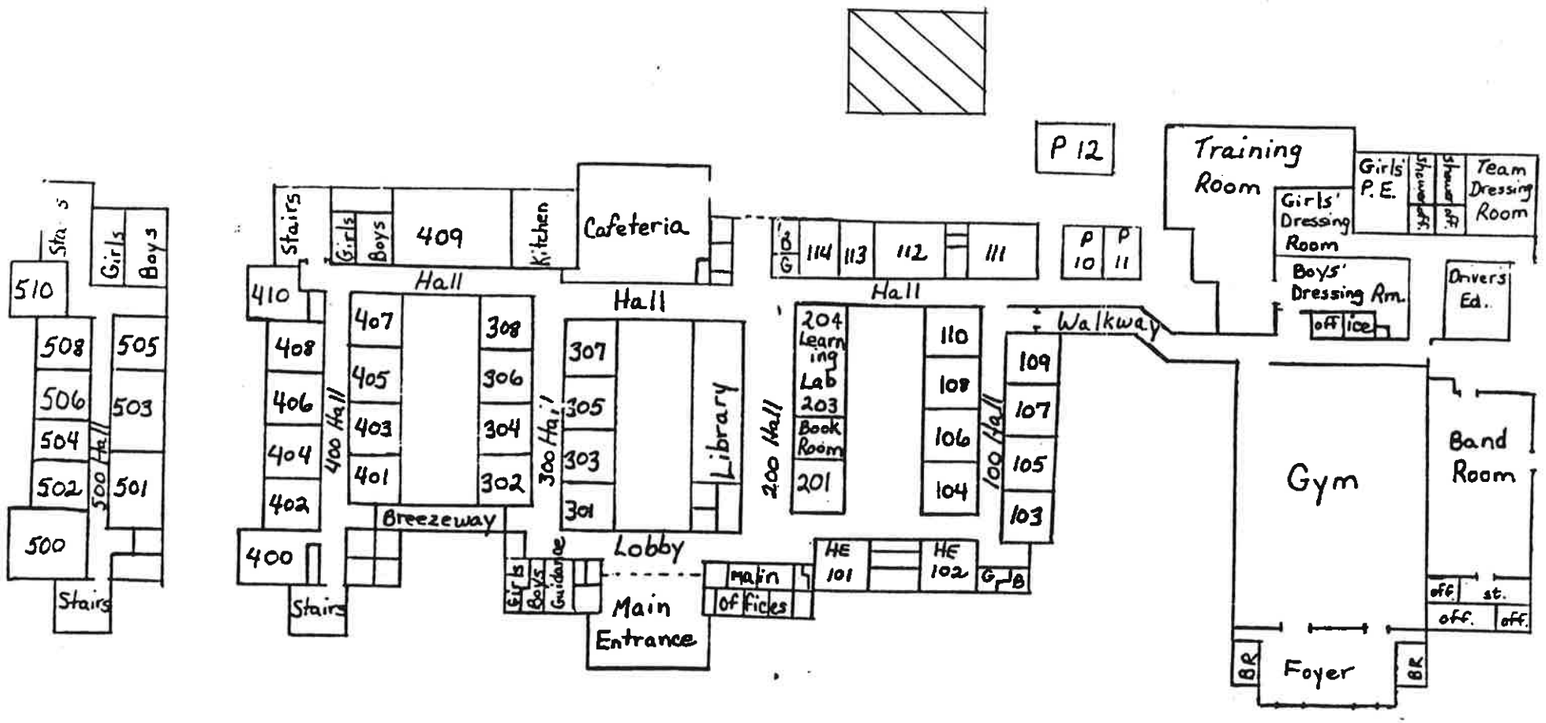
DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



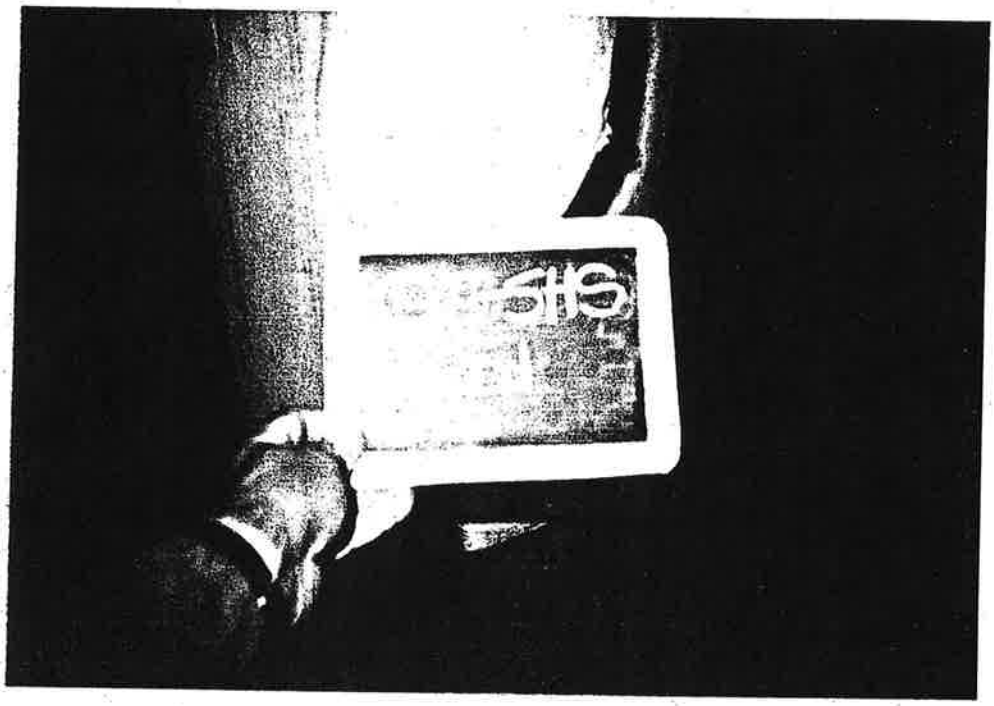
AREA C1 30 ELBOWS AT PIPING

-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

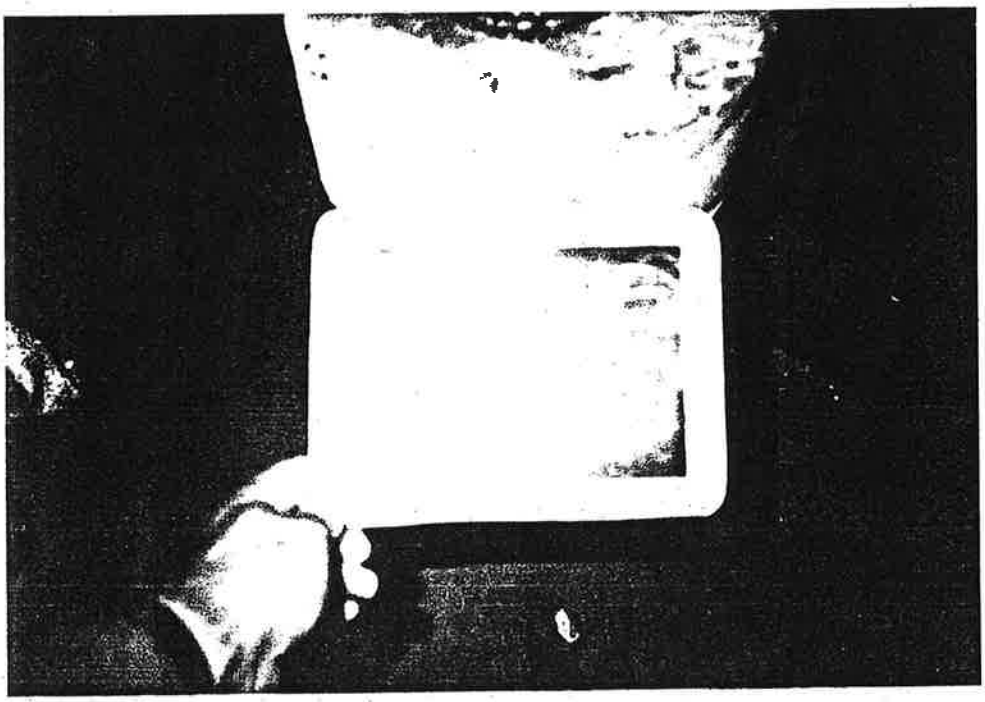
2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

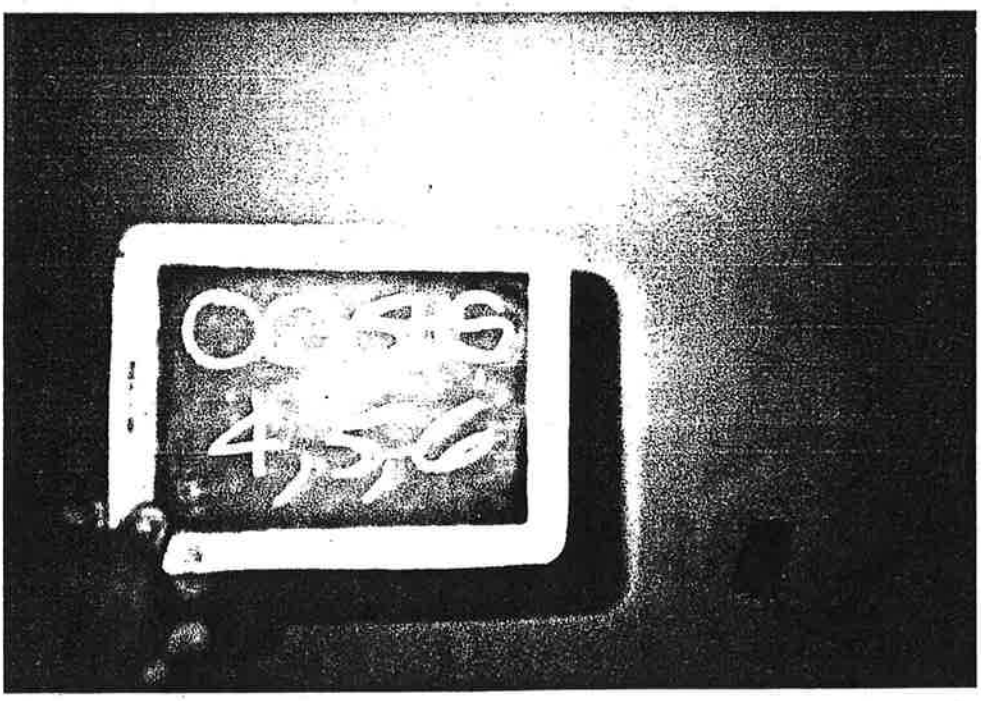


STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING





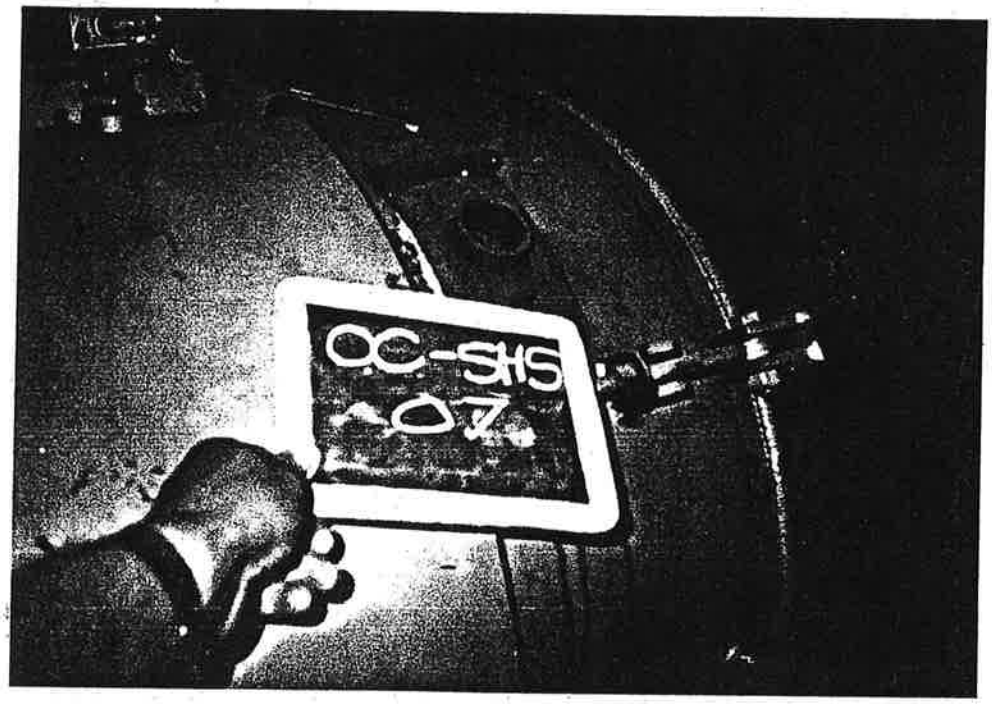
Document #2 Page __ of __

Sequence # 10

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

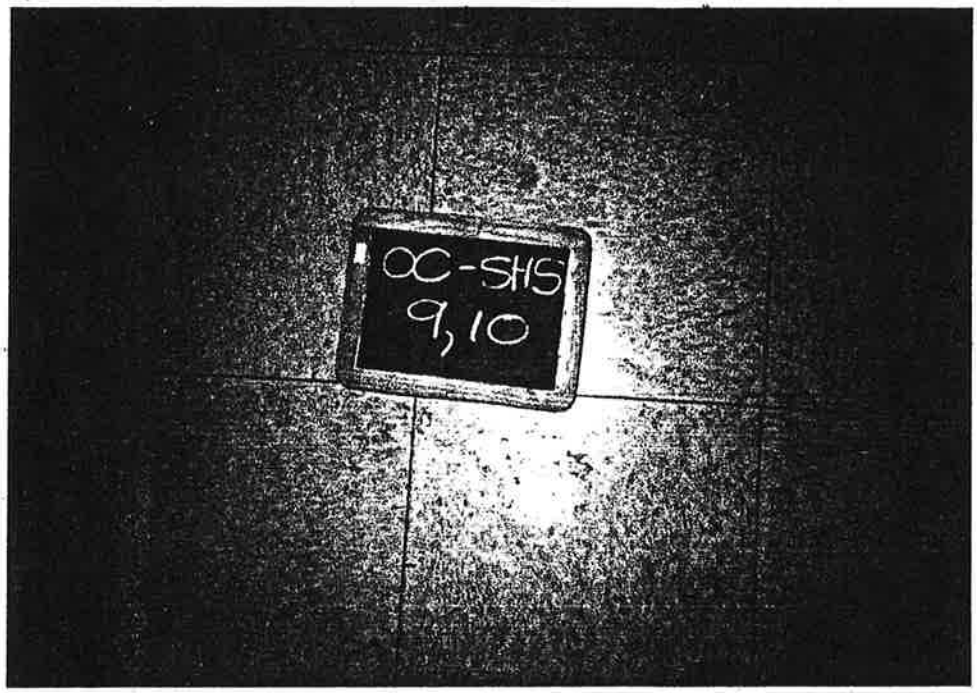
2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING



STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

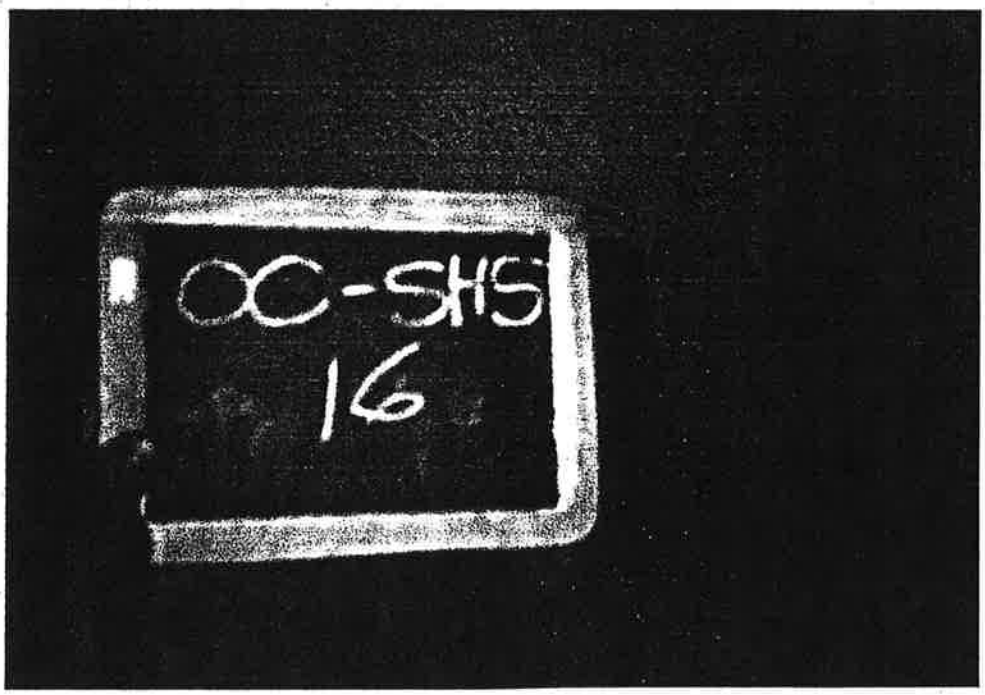
2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING



STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

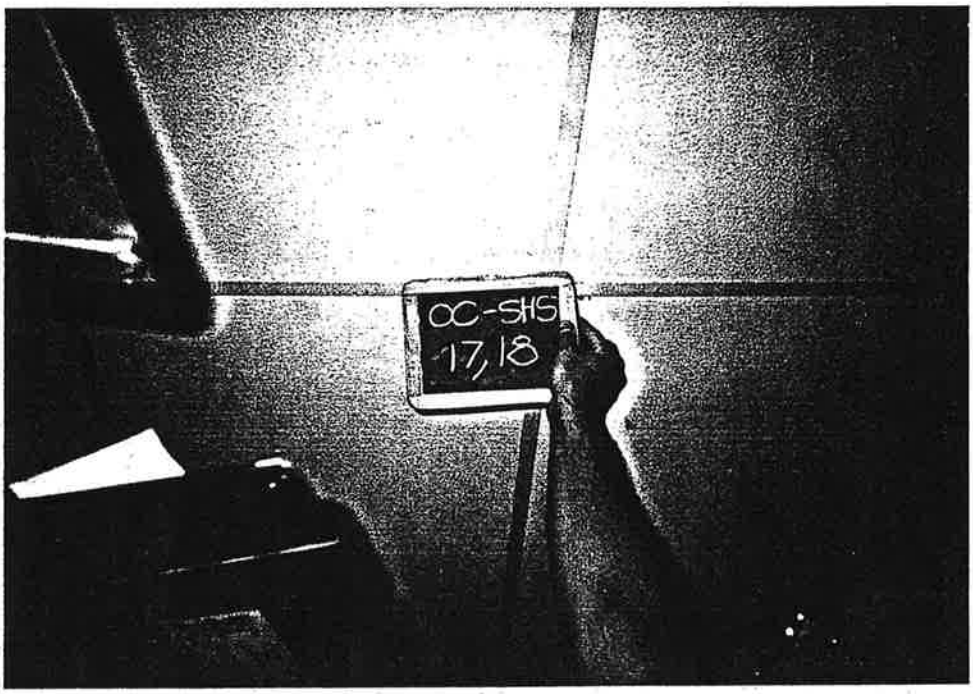


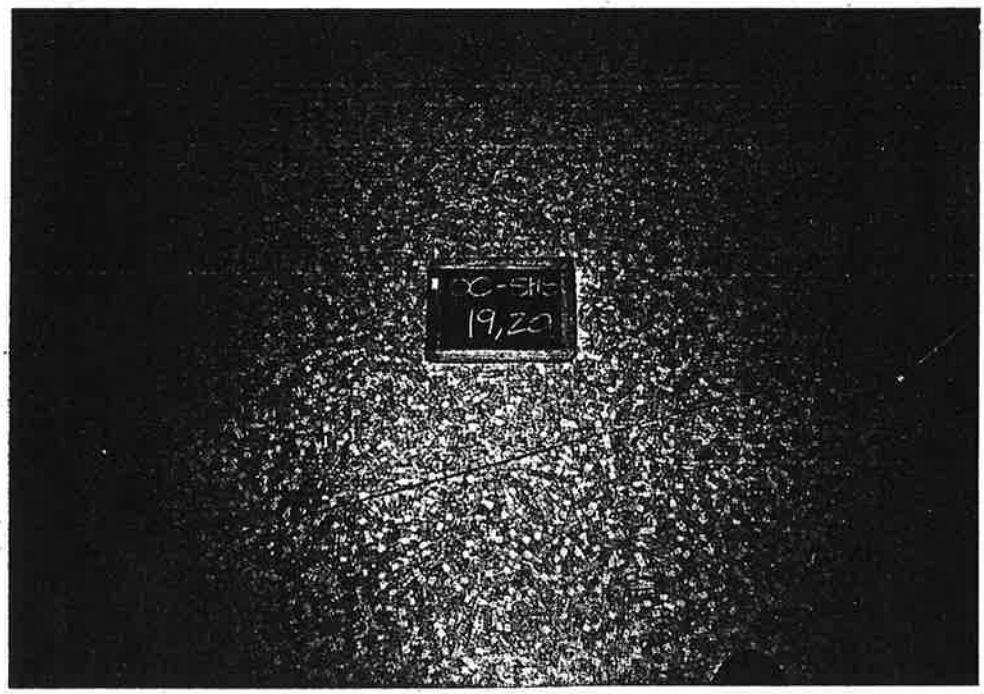
Sequence #13

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

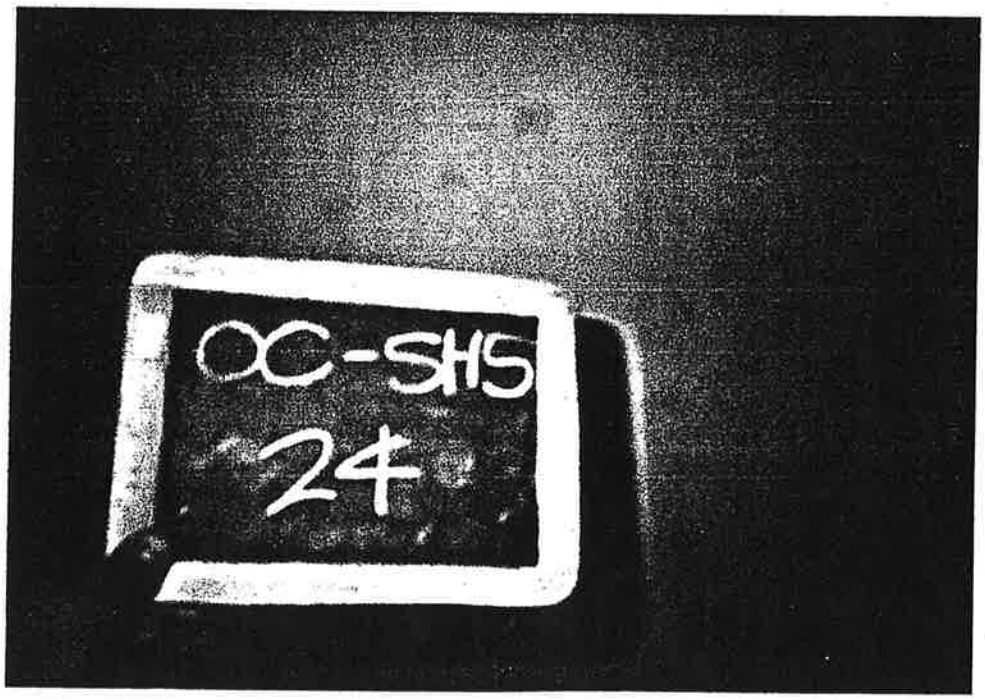




STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING



Sequence # 15

STATE OF SOUTH CAROLINA

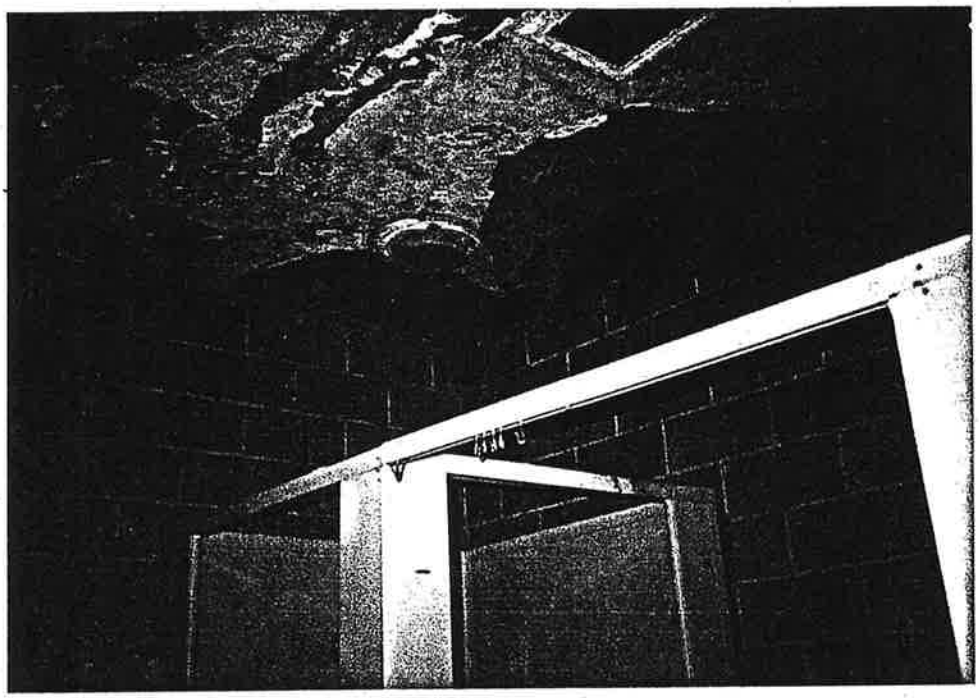
LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

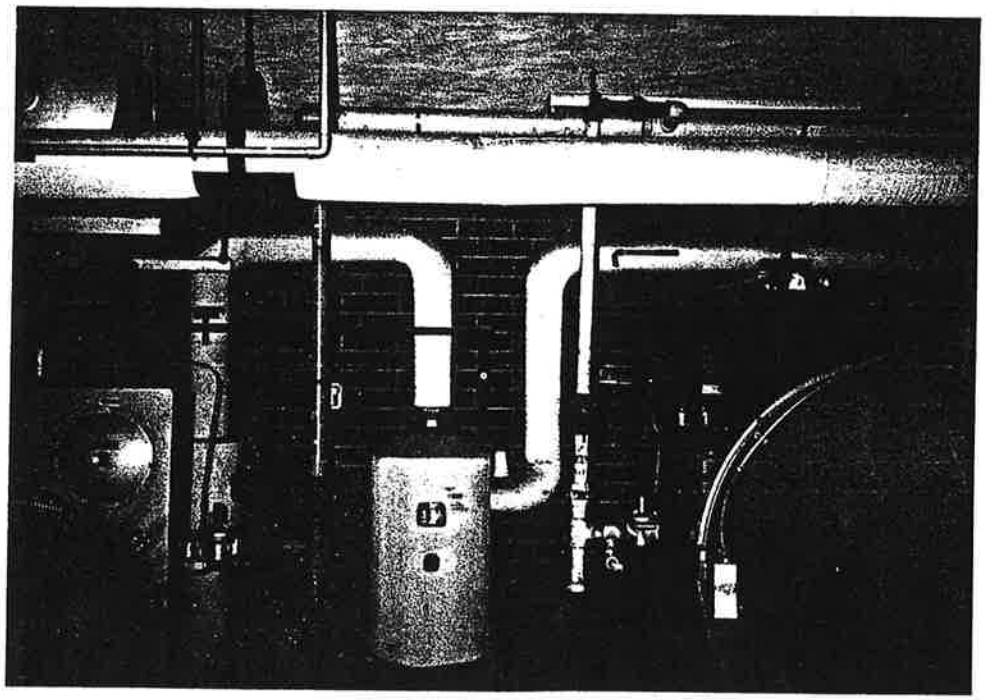
2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

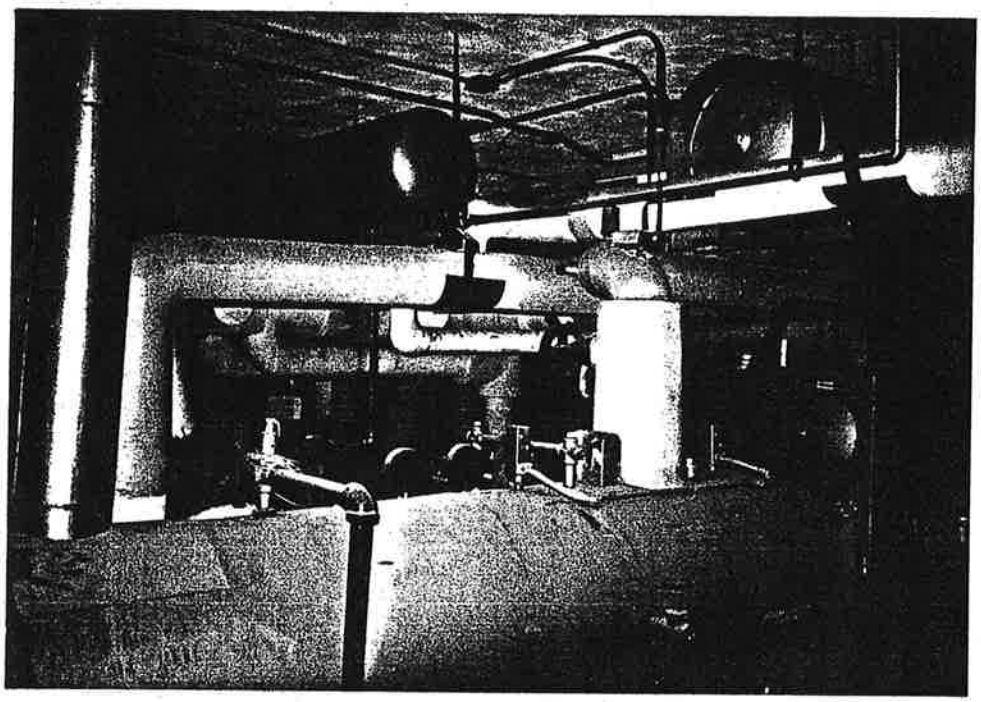


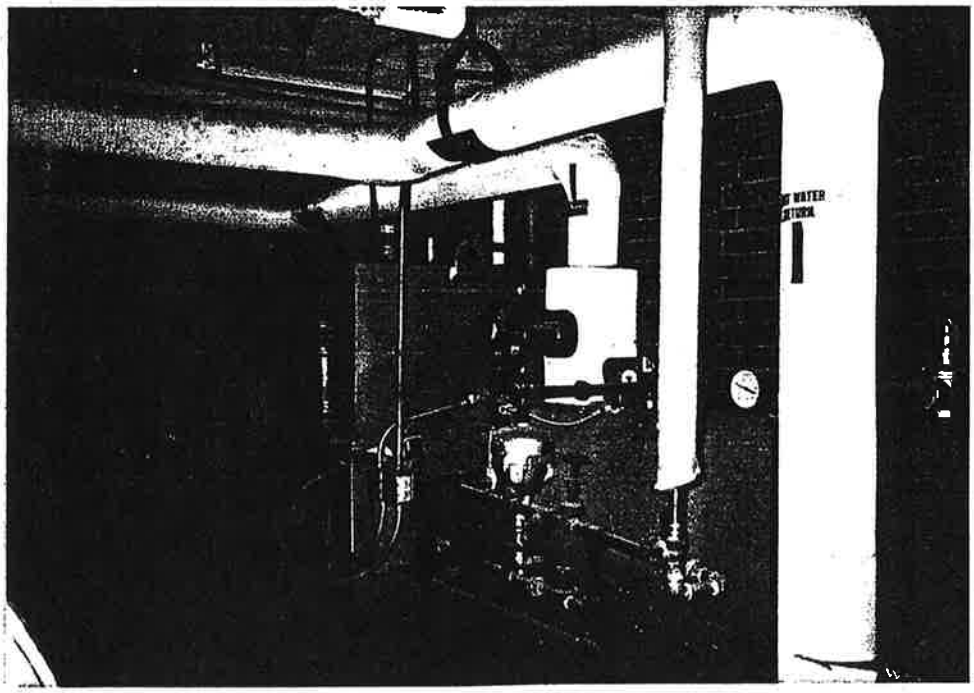


STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School (SHS)
BUILDING:

2 - DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING





Sequence #15

SECTION 3

DETERMINATION OF SAMPLING LOCATIONS

NARRATIVE

Document Number 3 is prepared in accordance with 40 CFR, Part 763.93 (C) (3) (iii) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation is included at the end of this booklet for your reference.

This document describes the manner used in determining bulk sample location(s), and is actually a brief description of the school's building materials and systems in relation to AHERA. Refer to Section 2 of this booklet for actual sample locations.

Directly following the discussion of sampling locations in this section, all data relating to previous asbestos surveys or abatement projects prior to implementation of the current regulation is included for your review.

DEFINITIONS

1. Building Materials - Actual materials used in the construction of a building, including finish materials such as floor tile or acoustical ceiling tiles.

2. Building Systems - (a) Heating, ventilating and air-conditioning (HVAC) system - the system of pipes, ducts and equipment (air conditioning, chillers, heaters, boilers, pumps or fans) used to heat, cool, move and filter air in a building. These systems are also known as mechanical system. (b) Electrical Systems - The system of wires, lights, power generation equipment, and related facilities to produce, convey and utilize electrical power in a building.

3. Asbestos Survey - A comprehensive walk-through of the school building to determine the actual location of asbestos.

4. Abatement Project - A project to remove asbestos materials by following the proper removal techniques as stipulated by governing agencies.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING: Main & Portables

3 - DETERMINATION OF SAMPLING LOCATIONS

DISCUSS EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

Samples were collected as outlined in EPA regulations 40 CFR 763.86 as follows:

A "Homogeneous Area" is defined as "an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture." Each homogeneous area is assigned a unique code. Samples were taken in a statistically random manner.

Sampling locations for surfacing materials were selected by dividing the homogeneous area into nine sub-areas. The sub-areas to be sampled were determined by the use of a random number table in accordance with EPA publication "Simplified Sampling Scheme for Friable Surfacing Materials" (EPA 560/5-85-0303 a).

For homogeneous areas of Thermal System Insulation, three (3) samples were collected where the suspect material was not assumed to contain asbestos. One (1) sample was collected from patched areas. Other materials such as cement fittings on tees, elbows and valves were sampled in a representative manner.

Samples of miscellaneous suspect materials were collected in a representative manner to determine if the material contains asbestos. In cases where the material was highly suspect such as cementitious boards (transite) a sample may not have been collected and the material assumed to contain asbestos.

The actual number of samples is governed by the requirements of section 763.86, Sampling, of the regulations.

One must realize that there are limitations to each survey. Therefore, Marshall Clarke Architects, Inc., cannot guarantee that all ACBM was located or identified during the building survey.

Sequence # 19A

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING: Main&Portables

3 - DETERMINATION OF SAMPLING LOCATIONS

DISCUSS EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

Seneca Senior High School consists of approximately 146,789 s.f. The campus consists of two (2) main buildings and a boiler room out-building.

The main building, Homogeneous Area A, consists of administrative offices, the cafeteria, a media center and classrooms on two levels. Classrooms floors in these areas are finished with carpet, terrazzo or vinyl floor tile. Corridors are terrazzo or carpet.

Ceilings are 2 x 4 lay-in acoustical ceiling tile , hard finish plaster, or textured paint.

Homogeneous Area B consists of the gymnasium, locker rooms and band room. Finish materials are the same as Homogeneous Area A.

The boiler room building is Homogeneous Area C.

Homogeneous Area D consists of two portables. Flooring is carpet. Ceilings are textured paint. Portables were also found to contain no asbestos.

Domestic water piping is insulated with fiberglass; the school is heated with hot water and cooled with chilled water. The piping insulation is fiberglass with elbows and tees consistin gof a hard cementition substance.

Homogeneous areas represent specific materials throughout the buildings and are described throughout in Document 4 hereinafter.

Reference Section 2 hereinbefore to determine exact location of homogeneous areas where ACBM occurs.

Jason L. Smith — Inspector's Typed Name
Signature
October 1, 1988 — Date

South Carolina License #: 1426 Expires: 2/10/89

State & Agency (Where Trained): Atlanta, Georgia, The Environmental Institute

Telephone #: 803 232-8204

Sequence #20

SECTION 4

DESCRIPTION OF EACH SAMPLING AREA

AND ASSESSMENT OF MATERIALS

NARRATIVE

Document Number 4 is prepared in accordance with 40 CFR, Part 763.93 (e) (3) (ii) of the U. S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation is included at the end of this booklet for your reference.

This document describes the following:

1. The date the sample was taken.

2. Each sample's "Sample Identification Number". The accredited building inspector assigned these numbers during his/her inspection. Each sample number and its location is identified on the small scale plan found in Section 2 of this booklet.

3. Photographs were taken where each sample was gathered. Photographs are shown in Section 2 of this booklet.

4. The sample's homogeneous area includes its particular identification number, i.e.,"A" for building A, etc., and the approximate amount of the sampled material in square or linear footage.

5. The type of asbestos found within each sample and its (%) content of the ACBM. A description of each sample in detail is described in the laboratory bulk sample analysis found in Section 5 of this booklet.

6. An assessment of the samples which tested positive for ACBM. These samples were classified by the accredited building inspector into one of the following categories as required in accordance with 40 CFR, Part 763.88 (b) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987.

Category 1 - Damaged or significantly damaged thermal system insulation (TSI) ACBM.

Category 2 - Damaged friable surfacing ACBM.

Category 3 - Significantly damaged friable surfacing ACBM.

Category 4 - Damaged or significantly damaged friable miscellaneous ACBM.

Category 5 - ACBM with potential for damage

Category 6 - ACBM with potential for significant damage.

Category 7 - Any remaining friable ACBM or friable assumed ACBM

Category 8 - Non friable ACBM

DEFINITIONS

1. Assessment - Assessing suspect material to determine the current condition of the material and the potential for future disturbance.

2. Chrysotile - White asbestos; the only asbestiform mineral of the serpentine group. It is the most common form of asbestos used in buildings.

3. Amosite - Brown asbestos; an asbestiform mineral of the amphibole group. It is the second most common used form of asbestos in the U.S.

4. Crocidolite - Blue asbestos; strongest of asbestos minerals, an asbestiform mineral of the amphibole group. It is of minor commercial value in the U.S.

5. Surfacing Material - Material in a school building that is sprayed on, troweled on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

6. Thermal System Insulation (TSI) - Means material applied to pipes, fittings, boilers, breeching, tanks, ducts or other interior structural components to prevent heat loss or gain, or water condensation or for other purposes.

7. Miscellaneous Material - Interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District

SCHOOL: Seneca High School

BUILDING: Mechanical Room

AREA OF BUILDING: 146,789 sf

4-DESCRIPTION OF EACH SAMPLE AREA AND ASSESSMENT OF MATERIALS

DESCRIPTION OF EACH SAMPLE AREA								ASSESSMENT OF MATERIALS			
Date	Sample ID#	Location	Photo		Homogeneous Area			Asbestos		Assessment	Comments
			Yes	No	HA ID#	Sq.Ft.	Ln.Ft.	Type	%		
9-7-88	OC-SHC-01	Mech. Rm/Boiler	X		C1		40 elbows	amosite Chrysotile	3 2	5	Hard elbow @ piping
9-7-88	OC-SHS-02	Mech.Rm/Boiler	X		C2	400		amosite Chrysotile	18 25	5	Expansion tank(s)
9-7-88	OC-SHS-03	Mech. Rm/Boiler	X		C1				0		Packing mud @ tee
9-7-88	OC-SHS-04	Mech. Rm/Boiler	X		C 3				0		Plaster ceiling
9-7-88	OC-SHS-05	Mech. Rm/Boiler	X		C 3				0		Plaster ceiling
9-7-88	OC-SHS-06	Mech. Rm/Boiler	X		C 3				0		Plaster ceiling
9-7-88	OC-SHS-07	Mech.Rm/Boiler	X		C3 C4	2		Crocidolite	75		Fibrous seal @ Boiler # 1 @ viewing glass
9-7-88	OC-SHS-08	Kitchen Ofc./Storage	X		A1				0		Acoustical ceiling tile - 2' x 4' white W/small fissure

Inspector's Typed Name: J. L. Smith

Signature:

Telephone #: 232-8204

Date: Oct.1,.1988

SCDEHEC License #: 1426

State & Agency Where Trained: Georgia, Environmental Institute

STATE OF SOUTH CAROLINA

LEA: Oconee County School District

SCHOOL: Seneca High School (SHS)

BUILDING: Entire

AREA OF BUILDING: 146,789 sf

4-DESCRIPTION OF EACH SAMPLE AREA AND ASSESSMENT OF MATERIALS

DESCRIPTION OF EACH SAMPLE AREA									ASSESSMENT OF MATERIALS			
Date	Sample ID#	Location	Photo		Homogeneous Area			Asbestos		Assessment	Comments
			Yes	No	HA ID#	Sq.Ft.	Ln.Ft.	Type	%		
9-7-88	OC-SHC-09	Cafeteria	X		A2	3000		Chrysotile	21 24	8	Lt. cream floor tile
9-7-88	OC-SHS-10	Cafeteria	X		A2			Chrysotile	27 24 =	8	Lt. cream floor tile
9-7-88	OC-SHS-11	Boys Shower Room	X		B1				0		Plaster ceiling in shower - delaminated
9-7-88	OC-SHS-12	Boys Shower Room	X		B1				0		Plaster ceiling in shower - delaminated
9-7-88	OC-SHS-13	Boys Shower Room	X		B1				0		Plaster ceiling in shower- delaminated
9-7-88	OC-SHS-14	Toilet Area -Boys Dressing Room	X		B1				0		Plaster ceiling in dressing toilet area
9-7-88	OC-SHS-15	Toilet Area - Boys Dressing Room	X		B1				0		Plaster ceiling in dressing toilet area
9-7-88	OC-SHS-16	Elec. Rm. Off Corr.	X		A1				0		Acoustical clg. tile 2' X 4' white w/small fissures

Inspector's Typed Name: J. L. Smith

Signature:

Telephone #: 232-8204

Date: Oct.1,.1988

SCDEHEC License #: 1426

State & Agency Where Trained: Georgia, Environmental Institute

Sequence #

STATE OF SOUTH CAROLINA

LEA: Oconee County School District

SCHOOL: Seneca High School

BUILDING: Entire

AREA OF BUILDING: 146,789 sf

4-DESCRIPTION OF EACH SAMPLE AREA AND ASSESSMENT OF MATERIALS

DESCRIPTION OF EACH SAMPLE AREA									ASSESSMENT OF MATERIALS			
Date	Sample ID#	Location	Photo		Homogeneous Area			Asbestos		Assessment	Comments
			Yes	No	HA ID#	Sq.Ft.	Ln.Ft.	Type	%		
9-7-88	OC-SHS-17	Corridor	X		A4				0		2 X 4 Acoustical ceiling tile - white;small stipple pattern.
9-7-88	OC-SHS-18	Classroom	X		A4				0		2 X 4 acoust. ceiling tile white; small stipple pattern
9-7-88	OC-SHS-19	Chemistry Room	X		A5	500		Chrysotile	12	8	Rolled flooring -tan, grey sm. block pattern
9-7-88	OC-SHS-20	Chemistry Room	X		A5			Chrysotile	12	8	Rolled flooring - tan grey sm block pattern
9-7-88	OC-SHS-21	Portable	X		D1				0		White;textured paint clg.
9-7-88	OC-SHS-22	Portable	X		D1				0		White;textured paint clg.
9-7-88	OC-SHS-23	Portable	X		D1				0		White;textured paint clg.
9-7-88	OC-SHS024	Canopies over door-ways	X		A6				0		Hard stipple plaster,painted
9-7-88	OC-SHS-25	Canopies over door-ways	X		A6				0		Hard stipple plaster,painted
9-7-88	OC-SHS-26	Canopies over door-ways	X		A6				0		Hard stipple plaster,painte d

Inspector's Typed Name: J. L. Smith

Signature:

Telephone #: 232-8204

Date: Oct.1,.1988

SCDEHEC License #: 1426

State & Agency Where Trained: Georgia, Environmental Institute

SECTION 5

BULK SAMPLE ANALYSIS

NARRATIVE

Document Number 5 is prepared in accordance with 40 CFR, Part 763.93 (e) (3) (iv) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation in included at the end of this booklet for your reference.

This document describes the physical characteristics of the sample material and what the material is made of. Each sample was analyzed by polarized light microscopy (PLM).

DEFINITION

1. Polarized light microscopy (PLM) - A method of analyzing bulk samples for asbestos in which the sample is illuminated with polarized light (light which vibrates in only one plane) and viewed under a light microscope.

Sequence #26

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-23	28839102		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE
OC-SHS-24	28839103		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ
OC-SHS-25	28839104		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ
OC-SHS-26	28839104A		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ -

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

Sequence # MCAOSHS3.259

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-11	28839090		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-12	28839091		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-13	28839092		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-14	28839093		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-15	28839094		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-16	28839095		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER
OC-SHS-17	28839096		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, PERLITE
OC-SHS-18	28839097		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, PERLITE
OC-SHS-19	28839098	CHRYSOTILE	12	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, VINYL
OC-SHS-20	28839099	CHRYSOTILE	12	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, VINYL
OC-SHS-21	28839100		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE
OC-SHS-22	28839101		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-01	28839080	AMOSITE CHRYSOTILE	3 2	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, CLAY
OC-SHS-02	28839081	AMOSITE CHRYSOTILE	18 25	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, CLAY
OC-SHS-03	28839082		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER, CLAY
OC-SHS-04	28839083		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-05	28839084		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-06	28839085		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-07	28839086	CROCIDOLITE	75	HETEROGENEOUS, FIBROUS, UNTREATED, SYNTHETIC FIBER, CELLULOSE
OC-SHS-08	28839087		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER
OC-SHS-09	28839088	CHRYSOTILE	4	HETEROGENEOUS, MIXED, UNTREATED, QUARTZ, FLOOR TILE, MASTIC (TILE 2%, MASTIC 2%)
OC-SHS-10	28839089	CHRYSOTILE	4	HETEROGENEOUS, MIXED, UNTREATED, QUARTZ, FLOOR TILE, MASTIC (TILE 2%, MASTIC 2%)

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

Sequence # MCAOSHS1.259

SCHNEIDER LABORATORIES

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AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT: 1765-00-19
CLIENT: Environmental Testing & Management
ADDRESS: P.O. Box 896
Mauldin, SC 29662
PO NO.: 8571
PROJECT NAME: Oconee Co Sch Dist
PROJECT NO.:
JOB LOCATION: Seneca Middle

DATE COLLECTED: 2/21/2000
DATE RECEIVED: 2/24/2000
DATE ANALYZED: 2/28/2000
DATE REPORTED: 4/13/2000

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
C1-01	1621181	Boiler rm elbow		
	Layer 1:	Elbow	**Yes**	Beige, Powdery
	2% Asbestos		AMOSITE 2%	
	98% Non-Asbestos		CELLULOSE FIBER 8%, MINERAL/GLASS WOOL 45%, NON FIBROUS MATERIAL 45%	
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
C1-02	1621182	Boiler rm elbow		
	Layer 1:	Elbow		
	Not analyzed due to positive stop instructions.			
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
C1-03	1621183	Boiler rm elbow		
	Layer 1:	Elbow		
	Not analyzed due to positive stop instructions.			
	Layer 2:	Cover	**No**	White/Green, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	

**** AMENDED REPORT ****

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ACCOUNT - WORKORDER: 1765-00-19

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
C5-04	1621184	Boiler rm valve body		
	Layer 1:	Powdery Material	No	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	No	White/Green, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-05	1621185	Boiler rm valve body		
	Layer 1:	Powdery Material	No	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	No	Green/Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-06	1621186	Boiler rm valve body		
	Layer 1:	Powdery Material	No	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C2-07	1621187	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover	Yes	Gray/Cream, Powdery, Fibrous
	55% Asbestos			AMOSITE 25%, CHRYSOTILE 30%
	45% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 20%, NON FIBROUS MATERIAL 20%
	Unable to separate individual layers.			
C2-08	1621188	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover		
	Not analyzed due to positive stop instructions.			
C2-09	1621189	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover		
	Not analyzed due to positive stop instructions.			
B2-10	1621190	Gym boiler rm elbow		
	Layer 1:	Elbow	No	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%

AMENDED REPORT

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
B2-11	1621191	Gym boiler rm elbow		
	Layer 1:	Elbow	No	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
B2-12	1621192	Gym boiler rm elbow		
	Layer 1:	Elbow/Cover	No	Gray/Cream, Powdery, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 10%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 40%
	Unable to separate individual layers.			
B3-13	1621193	Gym boil rm pipe wrp		
	Layer 1:	Fibrous Material	No	Brown/Black, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
	Layer 2:	Fibrous Material	No	Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
	Layer 3:	Fibrous Material	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
B3-14	1621194	Gym boil rm pipe wrp		
	Layer 1:	Fibrous Material	No	Brown, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 95%, NON FIBROUS MATERIAL 5%
	Layer 2:	Fibrous Material	No	Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
	Layer 3:	Fibrous Material	No	White/Silver, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 70%, METAL FOIL 5%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 15%
B3-15	1621195	Gym boil rm pipe wrp		
	Layer 1:	Wrap	No	Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 70%, METAL FOIL 5%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 15%
A7-16	1621196	Hallway baseboard		
	Layer 1:	Baseboard	No	Brown, Rubbery
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

**** AMENDED REPORT ****

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

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	No	Brown, Brittle
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
A7-17	1621197	Hallway baseboard		
	Layer 1:	Baseboard	No	Brown, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%
	Layer 2:	Mastic	No	Brown, Brittle
	100% Non-Asbestos			CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 96%
A7-18	1621198	Hallway baseboard		
	Layer 1:	Baseboard	No	Brown, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%
	Layer 2:	Mastic	No	Brown, Brittle
	100% Non-Asbestos			CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 96%
D2-19	1621199	Portable #25 FT		
	Layer 1:	Floor Tile	No	Blue, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic/Brittle Mtrl	No	Black/Yellow, Bituminous, Brittle
	100% Non-Asbestos			CELLULOSE FIBER 8%, NON FIBROUS MATERIAL 92%
	Unable to separate individual layers.			
D2-20	1621200	Portable #25 FT		
	Layer 1:	Floor Tile	No	Blue, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	No	Black, Bituminous
	100% Non-Asbestos			CELLULOSE FIBER 5%, NON FIBROUS MATERIAL 95%
D3-21	1621201	Portable #25 FT		
	Layer 1:	Floor Tile	No	Beige, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	No	Yellow, Soft
	100% Non-Asbestos			CELLULOSE FIBER 5%, NON FIBROUS MATERIAL 95%
D3-22	1621202	Portable #25 FT		
	Layer 1:	Floor Tile	No	Beige, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	No	Yellow, Soft
	100% Non-Asbestos			CELLULOSE FIBER 5%, NON FIBROUS MATERIAL 95%

**** AMENDED REPORT ****

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

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
D4-23	1621203	Portable #25 SCM		
	Layer 1:	Ceiling Material	No	White, Granular
	100% Non-Asbestos			CELLULOSE FIBER 5%, MICA 5%, NON FIBROUS MATERIAL 90%
D4-24	1621204	Portable #25 SCM		
	Layer 1:	Ceiling Material	No	White, Granular
	100% Non-Asbestos			CELLULOSE FIBER 5%, MICA 5%, NON FIBROUS MATERIAL 90%
D4-25	1621205	Portable #25 SCM		
	Layer 1:	Ceiling Material	No	White, Granular
	100% Non-Asbestos			CELLULOSE FIBER 5%, MICA 5%, NON FIBROUS MATERIAL 90%

ANALYST: CHRISTIE L. SHACKLEFORD
Total no. of pages in report = 5

REVIEWED BY

AMENDED REPORT

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

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AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT: 1765-00-17
CLIENT: Environmental Testing & Management
ADDRESS: P.O. Box 896
Mauldin, SC 29662

PO NO.:
PROJECT NAME: Oconee Co. Schools
PROJECT NO.:
JOB LOCATION: Seneca Middle Sch

DATE COLLECTED: 1/24/2000
DATE RECEIVED: 1/27/2000
DATE ANALYZED: 1/27/2000
DATE REPORTED: 4/13/2000

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
B6-01	1605762	Band rm CT		
	Layer 1:	Ceiling Tile	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
)6-02	1605763	Band rm CT		
	Layer 1:	Ceiling Tile	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
B7-03	1605764	Band rm FT/mastic		
	Layer 1:	Floor Tile	No	Gray, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	Yes	Black, Bituminous
	10% Asbestos			CHRYSOTILE 10%
	90% Non-Asbestos			NON FIBROUS MATERIAL 90%
B7-04	1605765	Band rm FT/mastic		
	Layer 1:	Floor Tile	No	Gray, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

**** AMENDED REPORT ****

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic		
	Not analyzed due to positive stop instructions.			
B4-05	1605766	Band rm PW		
	Layer 1:	Wrap Material	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 60%, METAL FOIL 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 30%
B4-06	1605767	Band rm PW		
	Layer 1:	Wrap Material	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 60%, METAL FOIL 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 30%
B4-07	1605768	Boys locker rm C mtr		
	Layer 1:	Plaster Basecoat	**No**	Gray, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Wet Sample			
	Layer 2:	Skimcoat	**No**	White, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
B1-08	1605769	Boys locker rm C mtr		
	Layer 1:	Plaster	**No**	Gray, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	No Skimcoat Found			
B1-09	1605770	Boys locker rm C mtr		
	Layer 1:	Plaster	**No**	White, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	No Basecoat Found			
B5-10	1605771	Mini gym FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos			CHRYSOTILE 8%
	92% Non-Asbestos			NON FIBROUS MATERIAL 92%
B5-11	1605772	Mini gym FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

**** AMENDED REPORT ****

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ACCOUNT - WORKORDER: 1765-00-17

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic		
	Not analyzed due to positive stop instructions.			
A13-12	1605773	Room 111 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			FOAMED GLASS 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
A13-13	1605774	Room 111 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			FOAMED GLASS 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
A8-14	1605775	Room 410 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Yellow, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 96%, SYNTHETIC FIBER 2%
A8-15	1605776	Room 410 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Yellow, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 96%, SYNTHETIC FIBER 2%
A9-16	1605777	Room 410 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
A9-17	1605778	Room 410 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
A10-18	1605779	Room 309 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

AMENDED REPORT

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	No	Clear, Soft
	100% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%	
A10-19	1605780	Room 309 FT/mastic		
	Layer 1:	Floor Tile	No	White, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Layer 2:	Mastic	Yes	Black, Bituminous
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Sample Not Homogenous With #18 Mastic			
C7-20	1605781	Boiler rm PW		
	Layer 1:	Pipe Wrap	No	Gray/Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 65%, NON FIBROUS MATERIAL 35%	
C7-21	1605782	Boiler rm PW		
	Layer 1:	Pipe Wrap	No	Green/Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 65%, NON FIBROUS MATERIAL 35%	

ANALYST: SAMI A. HOSN
Total no. of pages in report = 4

REVIEWED BY

*** *AMENDED REPORT* ***

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

SECTION 6

RESPONSE ACTIONS RECOMMENDED AND PREVENTIVE MEASURES

AND RESPONSE ACTIONS SCHEDULED

NARRATIVE

Document Number 6 is prepared in accordance with 40 CFR, Part 763.93 (e) (6) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation in included at the end of this booklet.

This document describes the recommended response action(s) or control option(s) for ACBM as determined by the certified management planner. Response action alternatives, as defined by the AHERA rule, fall into five main categories:

1. Operations and maintenance program - A program of training, cleaning, work practices and periodic surveillance to maintain friable and non-friable ACBM in good condition, ensure clean-up of any asbestos fibers previously released and prevent further release by minimizing and controlling friable and non-friable ACBM disturbance.

2. Repair - returning damaged ACBM to an undamaged condition or to an intact state through limited replacement and patching.

3. Encapsulation - treating ACBM with a liquid that, after proper application, surrounds or embeds asbestos fibers in an adhesive bond to prevent fiber release. The material may be a penetrant, which adds cohesion by penetrating the asbestos material, or a bridging encapsulant, which covers the surface of the material with a protective coating. Both are applied to the surface of the material using airless spray equipment at low pressure in order to reduce fiber release during applications.

4. Enclosure - an air-tight (or as air-tight as is possible) barrier installed between the friable or non-friable asbestos and the building environment. They typically are constructed by either mechanical attachment or spray application and prevent the release of asbestos fibers into the air. An enclosure should be considered the same as a removal project, since there is a possibility of fiber release while constructing the enclosure.

5. Removal - stripping ACBM from it's substrate. The ACBM material is separated from the underlying surface (substitute), collected and placed in proper containers for burial in an approved disposal site.

Response Actions #1 (O&M) and #2 (Repair) may be performed by LEA custodial or maintenance personnel provided they have receive the 16 hour AHERA Rule required training and provided that the activity is considered a small scale/short duration activity or a "minor fiber release episode" as further discussed in Document #7 hereafter. Otherwise, response actions must be designed and conducted by accredited persons per the AHERA Rule.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca High School
ADDRESS:

6 - RESPONSE ACTIONS RECOMMENDED AND PREVENTIVE MEASURES AND RESPONSE ACTIONS SCHEDULED

EACH LOCATION	RECOMMENDED RESPONSE ACTIONS	DESCRIPTION OF AND REASONS FOR PREV. MEASURES & RESPONSE ACTIONS	SCHEDULE	
			BEGIN	COMPLETE
HA-A Cafeteria & Classroom #503	Implement O & M plan for non-friable ACBM	Vinyl floor tile is considered as non-friable until removal, disturbance or severe wear.	9Jul89	Upon removal
HA-B Gymnasium	Implement O & M plan for friable ACBM	Hard elbows @ unit heaters are in good condition and will become friable only if disturbed.	9Jul89	Upon removal
HA-C Boiler Room	Implement O & M plan for friable ACBM	TSI is in good condition and will become friable only if disturbed.	9Jul89	Upon removal

MANGEMENT PLANNER		LEA ASBESTOS COORDINATOR	
Typed Name	SCDHEC LIC. #	Typed Name	SCDHEC LIC. #
Marshall F. Clarke	1421	William Richardson	1445
Exp. Date:	Date & Where Trained	Exp. Date:	Date & Where Trained
3/25/89	Atlanta, GA, Georgia Tech	3/31/89	State of SC
SIGNATURE	Phone	SIGNATURE	PHONE
M J Clarke	803 232-8204	William Richardson	882-3582

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE PLAN
AHERA 40CFR, Part 763.93

LEA Coordinator Bill Richardson

The Periodic Surveillance Inspection was completed 4-12-89

Bill Richardson, LEA Designate, and Mrs. Opal Orr conducted the surveillance of all Oconee County Schools.

Details of the inspection were referenced from the Management Plan - Section 6/Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been written to provide Response Action.

The attachment from Section # 6 for: Seneca High School #17

depicts results of Inspection and the Response Actions.

COMMENTS: Gym - Boiler Room - not noted in Management Plan -TSI elbow assumed asbestos, in good condition.

SIGNED: Bill Richardson

DATE: 4/12/89

School District of Oconee County

Interoffice Memo

PERIODIC SURVEILLANCE/AHERA 40 CFR, Part 763.93

The Periodic Surveillance Inspection was completed October 30, 1989.

Opal Orr, Oconee School District Operations Department, conducted the surveillance of all Oconee County Schools.

Details of the inspection were referenced from the Management Plan - Section 6/Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been written to provide Response Action where applicable.

The attachment from Section # 6 for Seneca Middle School #17 depicts results of Inspection and the Response Actions.

COMMENTS: All areas in good condition.

Opal Orr

Opal Orr

10-31-89

Date

School District of Oconee County

Interoffice Memo

PERIODIC SURVEILLANCE/AHERA 40 CFR, PART 763.93

The Periodic Surveillance Inspection of all Oconee County schools has been completed by Opal Orr, Oconee School District's Operations Department.

Details of the inspection were referenced from the Management Plan - Section 6/Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been written to provide Response Action where applicable.

The attachment from Section # 6 for Seneca Middle #17 depicts results of Inspection and the Response Actions.

COMMENTS: Warning signs need to be posted. (Supply of signs sent to school for installation by custodian).

Surveillance documents in place.

Boiler Rooms clean and in good condition.

Opal Orr

Opal Orr

April 20, 1990

Date

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six Month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed October 31, 1990 by Opal Orr, Operations Department.

Details of the inspection were referenced from the Management Plan - Section 6/Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachement for Section # 6 for: Seneca Middle # 17 depicts results of Inspection and the Response Action(s).

COMMENTS: Tile in lunchroom is damaged in one location.
WORK ORDER ISSUED TO REPAIR (custodian to show worker location).

Boiler Room Clean and posted.

SIGNED: Opal Orr

DATE: 11-14-90

on - Feb-26-1991 Damaged & Chipped tile was Repaired in the Lunchroom at Seneca Middle,

All materials was looked with annealed water and protective gear was worn,

HEELY-BROWN COMPANY

ROOFING SUPPLIES SINCE 1939

PRIORITY 1

1. Emergency
2. Within 1 week
3. Within 1 month
4. When practical

A.S.A.P.

Date Nov. 14, 1990

hardson (per periodic surv.)

Principal or Administrator

ged in one location (more

ng lunchtime) See Mr. Poole for

VO - OPAL OFF.

From Hughie

Bobby Checked this work order. and Reported it BACK As Having Been Done all Ready, If there is a problem Please Let me Know

Gordon VO

rector of Maintenance

	PRICE	TOTAL

TOTAL	
LABOR	
MATERIALS	
TAX	
TOTAL COSTS	

(Turn Bills in to Maintenance Office)

Feb-26-1991
DATE WORK COMPLETED

COMPLETED BY

APPROVED BY PRINCIPAL

INSTRUCTIONS:
Fill out upper section of form. Send white and yellow copy to Maintenance Department. Retain pink copy for your records.

REQUEST FOR MAINTENANCE SERVICES A.S.A.P.

PRIORITY 1
1. Emergency
2. Within 1 week
3. Within 1 month
4. When practical

SECTION A (To be completed by Principal or Administrator)

Date Nov. 14, 1990

Seneca Middle
School or Building

Bill Richardson (per periodic surv.)
Principal or Administrator

Brief Description of Work to be Performed: Tile in lunchroom is damaged in one location (more chipping of this tile occurs as chairs are moved during lunchtime) See Mr. Poole for specific location.

SECTION B (Maintenance Department USE ONLY)

Date Received 11-27-90

Niels Gordon /lo
Director of Maintenance

QUANTITY	LIST ITEMS USED FROM STOCK OR TRUCK	PRICE	TOTAL

P.O. #'s	PURCHASED AT	DATE		
			TOTAL	
			LABOR	
			MATERIALS	
			TAX	
			TOTAL COSTS	

(Turn Bills in to Maintenance Office)

Feb-26-1991
DATE WORK COMPLETED

COMPLETED BY

APPROVED BY PRINCIPAL

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six Month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April 1991.

Details of the inspection were referenced from the Management Plan - Section 6/Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section # 6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments: Damaged & chipped tile has been repaired in lunchroom. All areas in good condition.

Signed: _____

Date: 4-29-91

INSTRUCTIONS:
Fill out upper section of form. Send white and yellow copy to Maintenance Department. Retain pink copy for your records.

sdoc

REQUEST FOR MAINTENANCE SERVICES

PRIORITY 1
1. Emergency
2. Within 1 week
3. Within 1 month
4. When practical

SECTION A (To be completed by Principal or Administrator)

Date Sept. 4, 1991

Seneca Middle School
School or Building

Per 3 yr. Insp. M.C.A.
Principal or Administrator

Brief Description of Work to be Performed: Remove damaged floor tile - Room 302.

All Ready Done
paper work already in system

SECTION B (Maintenance Department USE ONLY)

Date Received 9-12-91

Niels Gordon/O
Director of Maintenance

QUANTITY	LIST ITEMS USED FROM STOCK OR TRUCK	PRICE	TOTAL

P.O. #'s	PURCHASED AT	DATE

(Turn Bills in to Maintenance Office)

TOTAL	
LABOR	
MATERIALS	
TAX	
TOTAL COSTS	

DATE WORK COMPLETED

COMPLETED BY

APPROVED BY PRINCIPAL

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six Month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in October 1991.

Details of the inspection were referenced from the Management Plan - Section 6/Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section # 6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments: Damaged floor tile in room 302 has been replaced per M.C.A. 3 yr re-inspection recommendation.
Areas in good condition.

Signed: Jack Orr

Date: October 30, 1991

INSTRUCTIONS:
Fill out upper section of form. Send white and yellow copy to Maintenance Department. Retain pink copy for your records.

REQUEST FOR MAINTENANCE SERVICES

PRIORITY 1
1. Emergency
2. Within 1 week
3. Within 1 month
4. When practical

SECTION A (To be completed by Principal or Administrator)

Date Sept. 4, 1991

Seneca Middle School
School or Building

Per 3 yr. Insp. M.C.A.
Principal or Administrator

Brief Description of Work to be Performed: Remove damaged floor tile - Room 302.

All Ready Done
paper work already in system

SECTION B (Maintenance Department USE ONLY)

Date Received 9-12-91

Niels Gordon/O
Director of Maintenance

QUANTITY	LIST ITEMS USED FROM STOCK OR TRUCK	PRICE	TOTAL

P.O. #'s	PURCHASED AT	DATE		
			TOTAL	
			LABOR	
			MATERIALS	
			TAX	
			TOTAL COSTS	

(Turn Bills in to Maintenance Office)

DATE WORK COMPLETED | COMPLETED BY | APPROVED BY PRINCIPAL

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, PART 763.93

The Six Month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April 1992.

Details of the inspection were referenced from the Management Plan - Section 6/ Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section # 6 of each schools Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section # 6 for: SENECA MIDDLE depicts results of Inspection and the Response Action(s).

Comments: Boiler Room - Good
Floor Tile - Good
Management Plan and Documents in place.
Signes posted.

Signed: Wyatt Orr

Date: 5-15-92

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, PART 763.93

The Six-Month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in October 1992.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments: Good condition.

Signed: Robert P Gordon

Date: October 30, 1992

School District of Oconee County
Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April, 1993.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments: Good Condition

Signed: Neil P Gordon

Date: April 15, 1993

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April, 1993.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments: Some fiberglass insulation torn loose. Band room boiler - couple of torn fiberglass insulation spots. Work orders written.

Signed: Mabel Dark

Date: October 25, 1993

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six-Month Periodic Surveillance Inspection of all Oconee County schools and Departments was completed in April, 1994.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle depicts results of Inspection and the Response Action(s).

Comments:

OK

Signed: Neill Bowles

Date: 4/22/94

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The Six-Month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in October, 1994.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: SENECA MIDDLE

depicts results of Inspection and the Response Action(s).

Comments: OK

Signed: Nield Gordon
Nield Gordon
Director of Maintenance

Date: November 10, 1994

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April, 1995.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments:

O.K.

Signed: Ruth Gordon

Date: 4/20/95

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April, 1995.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments: OK

Signed: R Alexander

Date: 10-19-95

School District of Oconee County

Interoffice Memo

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April, 1996.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle School depicts results of Inspection and the Response Action(s).

Comments:

OK

Signed: R Alexander

Date: 4-20-96

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in October, 1996.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle depicts results of Inspection and the Response Action(s).

Comments: OK

Signed: R Alexander

Date: 11-6-96

MEMORANDUM/PERIODIC SURVEILLANCE
AHERA 40CFR, Part 763.93

The six-month Periodic Surveillance Inspection of all Oconee County Schools and Departments was completed in April, 1997.

Details of the inspection were referenced from the Management Plan - Section 6 Response Actions Recommended and Preventative Measures and Response Action Scheduled.

Notation of items requiring attention are included with Section #6 of each school's Management Plan and Maintenance Department Work Orders have been issued to provide Response Action.

The attachment for Section #6 for: Seneca Middle depicts results of Inspection and the Response Action(s).

Comments: OK

Signed: R Alexander

Date: 4-22-97

School District of Oconee County

Interoffice Memo

Memo No. 5 - 1997-98

TO: Principals

FROM: Richard Alexander
Director of Maintenance

SUB.: Asbestos Inspections

DATE: October 17, 1997

The Maintenance Department was informed by AAA Environmental that a six month asbestos inspection is not necessary in the tenth of month of 1997. This is due to the fact that they are doing a three year inspection.

SECTION 7

OPERATIONS AND MAINTENANCE PLAN

NARRATIVE

Document No. 7 is prepared in accordance with 40 CFR, Part 763.93 (e) (9) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation in included at the end of this booklet for your reference.

This document describes actions to be taken by the LEA to implement an Operations, Maintenance and Repair (O & M) Program when friable ACBM is present. Any material identified as non-friable ACBM must be treated as friable ACBM for the purposes of this program when the material is about to become friable as a result of activities performed in the school building. (An example of this might be the wet-sanding of floor tile or its removal, both of which may cause the release of fibers into the air.)

A. Initial Cleaning:

All areas of a school building where friable ACBM, damaged or significantly damaged thermal system insulation ((TSI) ACBM, are present shall be "initially" cleaned at least once before the initiation of any response action, other than O & M and Repair. Initial Cleaning shall be as follows:

1. HEPA-vacuum or steam-clean all carpets.

2. HEPA-vacuum or wet clean all other floors and all other horizontal surfaces.

3. Dispose of all debris, filters, mopheads, and cloths in sealed leaktight containers as contaminated waste.

B. Operations and Maintenance Activities:

The LEA shall ensure that the procedures described below to protect building occupants shall be followed for any O&M activities disturbing friable ACBM:

1. Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.

2. Post signs to prevent entry by unauthorized persons.

3. Shut-off or temporarily modify the air-handling system and restrict other sources of air movement.

4. Use work practices or other controls, such as wet methods, protective clothing, HEPA-vacuum, mini-enclosures, glove bags, as necessary to inhibit the spread of any released fibers if work is considered a "small scale/short duration activity".

5. Clean all fixtures or other components in the immediate work area.

6. Place the asbestos debris and other cleaning materials in a sealed, leak-tight container and dispose of as contaminated waste.

C. Maintenance Activities Other Than Small Scale, Short-Duration.

The response action for any maintenance activities disturbing friable ACBM, other than small scale, short-duration maintenance activities, shall be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions. Also, a general definition of "small scale/short duration activity" is found in attached AHERA Regulation, Appendix B, page 41894.

D. Emergency Fiber Release Episodes:

1. Minor Fiber Release Episode:

The LEA shall ensure that the procedures described below are followed in the event of a minor fiber release episode.

(i) Thoroughly saturate the debris using wet methods.

(ii) Clean the area, as described in paragraph "B" of this section.

(iii) Place the asbestos debris in a sealed leak-tight container and dispose of as contaminated waste.

(iv) Repair the area of damaged ACM with materials such as asbestos-free spackling, plaster, cement or insulation, or seal with latex paint or an encapsulant.

2. Major Fiber Release Episode:

The LEA shall ensure that the procedures described below are followed in the event of a major fiber release episode.

(i) Restrict entry into the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.

(ii) Shut off or temporarily modify the air handling system to prevent the distribution of fibers to other areas in the building.

(iii) The response action for any major fiber release episode must be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.

E. Worker Protection:

1. The protection provided by EPA at 40 CFR 763.121 for worker protection during asbestos abatement project is extended to employees of local education agencies who perform operations, maintenance, and repair (O & M) activities involving ACM and who are not covered by the OSHA asbestos construction standard at 29 CFR 1926.58 or an asbestos worker approved by OSHA under section 19 of the Occupational Safety and Health Act. Local education agencies may consult Appendix B of the AHERA Rule if their employees are performing operations, maintenance, and repair activities that are of "small-scale, short-duration" or "minor fiber release episodes".

2. The following written worker protection programs must be implemented by the LEA with appropriate record keeping for implementation at each school.

   a) Emergency response procedures for fiber release episodes.

   b) Permit procedures for maintenance work in areas that could disturb asbestos.

   c) Worker respiratory protection program including medical exams, surveillance and record keeping.

   d) Procedures for maintaining an adequate inventory of supplies for repair and O&M maintenance.

   e) Waste handling procedures for removed ACM.

   f) Initial personnel air monitoring of small scale/short duration projects until a "standard" is established by record verifying that such activities keep the air borne fiber count well below the OSHA action level of O-1 fibers/cubic centimeter.

F. Specific Procedures for Maintenance or Repair activities for "small scale/short duration " projects and/or "minor fiber release episodes" shall be in accordance with Appendix B of the AHERA Rule and shall include as a minimum the following procedures:

1. Approval should be obtained from the LEA designee before beginning work. The LEA designee should make an initial visit to the work site.

2. The work should be scheduled after normal working hours (nights or weekends), if possible, or access to the work area should be controlled. Doors should be locked from the inside and signs posted to prevent unauthorized persons from entering the work area (e.g., "MAINTENANCE WORK IN PROGRESS, DO NOT ENTER", or,if asbestos levels are , or are anticipated to be, high enough to trigger the OSHA Rule (the Permissible Exposure Limit or higher), "DANGER - ASBESTOS: CANCER AND LUNG DISEASE HAZARD: AUTHORIZED PERSONNEL ONLY: RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA"). Note that emergency exits must remain in operation.

3. The air-handling system should be shut off or temporarily modified to prevent the distribution of any released fibers to areas outside the work site.

4. A 6 mil polyethylene plastic drop cloth should be placed underneath the location of the maintenance work, extending at least 10 feet beyond all sides of the work site. Alternatively, a rectangular enclosure constructed of 6-mil plastic on a frame can be positioned underneath the maintenance area to inhibit the spread of fibers from fallen ACM. (Mobile enclosures of this type are available commercially.)

5. Workers should wear at least a half-face negative pressure air-purifying respirator with HEPA filters and protective clothing, including a body suit and hood.

6. The ACM in the vicinity of the maintenance work should be misted lightly with amended water. Use a mister that produces a very fine spray. Be sure that the electrical system is shut off before spraying around any electrical conduits or fixtures.

7. After maintenance work is completed, the fixture, register, or other component, and all tools, ladders and other equipment should be HEPA-vacuumed or wiped with a damp cloth.

8. If any debris is apparent on the drop cloth, floor or elsewhere, it should be HEPA-vacuumed.

9. The plastic drop cloth (or enclosure) should be wiped with a damp cloth, carefully folded, and discarded as asbestos waste.

10. All clothes, vacuum bags/filters, and other disposal materials should be discarded in sealed and labeled plastic bag as asbestos waste.

11. Workers should HEPA-vacuum respirators and protective clothing at the work site. The clothing should then be discarded as asbestos waste.

G. Warning Labels.

1. The LEA shall attach a warning label immediately adjacent to any friable and nonfriable ACBM and suspected ACBM assumed to ACM located in routine maintenance areas (such as boiler rooms) at each school building,. This shall include:

   a) Friable ACBM that was responded to by a means other than removal.

   b) ACBM for which no response action was carried out.

2. All labels shall be prominently displayed in readily visible locations and shall remain posted until the ACBM that is labeled is removed.

3. The warning label shall read, in print which is readily visible because of large size or bright color,as follows: CAUTION: ASBESTOS, HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

H. Training of LEA Personnel

1. The LEA shall ensure, prior to the implementation of the O&M provisions of the management plan, that all members of its maintenance and custodial staff (custodians, electricians, heating/air conditioning engineers, plumbers, etc.) who may work in a building that contains ACBM receive awareness training of at least 2 hours, whether or not they are required to work with ACBM. New custodial and maintenance employees shall be trained within 60 days after commencement of employment. Also it is recommended, but not required, that all Principals receive the 2 hour training. Training shall include, but not be limited to:

   a) Information regarding asbestos and its various uses and forms.

   b) Information on the health effects associated with asbestos exposure.

   c) Locations of ACBM identified throughout each school building in which they work.

   d) Recognition of damage, deterioration, and delamination of ACBM.

   e) Name and telephone number of the person designated to carry out general local education agency responsibilities and the availability and location of the management plan.

2. The LEA shall ensure that all members of its maintenance and custodial staff who conduct any activities that will result in the disturbance of ACBM shall receive training described in paragraph (a) (1) of this section and 14 hours of additional training. Additional training shall include, but not be limited to:

   a) Descriptions of the proper methods of handling ACBM.

   b) Information on the use of respiratory protection as contained in the EPA/NIOSH Guide to Respiratory Protection for the Asbestos Abatement Industry, September 1986 (EPA 560/OPTS-86-001), and other personal protection measures.

   c) The provisions of the AHERA Rule 40 CFR 763, Subpart E with Appendices A,B,D, EPA regulations contained in 40 CFR Part 763, Subpart G, and in 40 CFR Part 61, Subpart M, and OSHA regulations contained in 29 CFR 1926.58.

   d) Hands-on training in the use of respiratory protection, other personal protection measures, and good work practices.

3. LEA maintenance and custodial staff who have attended EPA-approved asbestos training or received equivalent training for O&M and periodic surveillance activities involving asbestos shall be considered trained for the purposes of this section.

I. Record Keeping

See Section 14 - "RECORD KEEPING" for general and detailed requirements for information which must be recorded and maintained.

DEFINITIONS

1. Minor fiber release episode - Fibers released from the falling or dislodging of 3 square or linear feet of friable ACBM.

2. Major fiber release episode - Fibers released from the falling or dislodging of more than 3 square or linear feet of friable ACBM.

3. HEPA-vacuum - A special high-efficiency particulate air filtered vacuum cleaner.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING:

7 - OPERATIONS AND MAINTENANCE PLAN

DISCUSSION OF OPERATIONS, MAINTENANCE, AND REPAIR PLAN:

Reference the general discussions indicated in the "Narrative" of this section.

A. Friable ACBM: At Boiler Room and Gymnasium unit heaters.

1. Initial Cleaning: None required.

2. O&M Activities - Required. (Reference paragraphs B, C, D, E, F, G and H of the Narrative.) This material is in good condition and should remain so unless a specific maintenance activity disturbs it.

B. Non-Friable ACBM: Floor tile at Cafeteria and Classroom 503.

O&M not required unless an activity is about to cause the material to become friable.

NOTE: If the vinyl asbestos floor tile becomes severely worn at aisles, etc., then a repair or replacement of the damaged tile should take place immediately using the work procedures described in the Narrative for Friable Materials.

Marshall F. Clarke — Preparer's Typed Name
M. F. Clarke — Signature
October 1, 1988 — Date

Sequence # 38

STATE OF SOUTH CAROLINA
DEPARTMENT OF EDUCATION
COLUMBIA 29201

Charlie G. Williams
State Superintendent of Education

MEMORANDUM

TO: All District Superintendents

FROM: G. Stuart Clarkson, Director
Office of School Planning & Building

2/13/90

SUBJECTS: 1. Maintenance of Asbestos Containing Floor Coverings - EPA

2. Removal of Asbestos Containing Floor Tiles - DHEC

DATE: February 13, 1990

For your information attached are copies of two memos concerning Asbestos Containing Floor Coverings.

EPA - dated January 25, 1990 - Maintenance
DHEC - received February 13, 1990 - Removal

These memos set forth the positions of EPA and DHEC concerning the Maintenance and/or Removal of Asbestos Containing Floor Coverings principally Floor Tiles.

GSC/lsg

cc: Mr. Carl J. Garris
Mr. Dick Sharpe

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF SCHOOL
PLANNING & BUILDING

JAN 25 1990

FEB 13 1990

RECEIVED
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Recommended Interim Guidance for Maintenance of Asbestos-Containing Floor Coverings

FROM: Robert C. McNally, Chief
Assistance Programs Development Branch
Environmental Assistance Division (TS-799)

TO: Interested Parties

Attached are recommended interim guidelines for stripping wax or finish coat from asbestos-containing floors in your buildings. They were developed by the U.S. Environmental Protection Agency (EPA) in consultation with asbestos control professionals and several flooring material and floor care product manufacturers to reduce any possible exposure to asbestos fibers.

In November 1989, the local NBC affiliate in Washington, D.C. produced and aired a 3-part series on the potential danger of stripping asbestos-containing floor tiles. The NBC network news carried a brief portion of the series on November 29. The series concluded that stripping excess wax or finish coat from asbestos-containing floor tiles in schools may increase the asbestos exposure of school maintenance personnel and school children.

The series has precipitated numerous telephone calls to EPA Headquarters and to the ten EPA Regional offices. Perhaps many of you have also received calls from parents, staff, custodial workers, and others.

Since its airing, EPA's Environmental Assistance Division has tried to explain more clearly what the series did and did not demonstrate. First, there is no clear evidence that the "routine" stripping activities described in the series produced significantly elevated levels of asbestos fibers. In fact, the air levels generated during routine stripping were below those which require special procedures under federal regulation. Thus,

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FEB 07 1990
OFFICE OF AIR
QUALITY CONTROL

the levels are unlikely to cause asbestos-related health problems. Second, higher levels were produced only after a stripping machine was used on a relatively dry, unwaxed floor. Such a practice is not a normal maintenance procedure.

Since improperly performed floor tile maintenance procedures could result in an increase in asbestos exposure, EPA strongly recommends that the attached basic guidelines be followed in order to safeguard the health of building occupants.

JAN 25 1990

RECOMMENDED INTERIM GUIDELINES FOR STRIPPING ASBESTOS-CONTAINING FLOORS

The Environmental Protection Agency (EPA) recommends that school officials, building owners, and custodial/maintenance staff consider the following basic guidelines when stripping wax or finish coat from asbestos-containing floor coverings:

1. AVOID STRIPPING FLOORS. Stripping of floors should be done as infrequently as possible -- perhaps once or twice or less per year depending on circumstances. The frequency should be carefully considered as floor maintenance schedules or contracts are written or renewed.

2. PROPERLY TRAIN STAFF. Custodial or maintenance staff who strip floors should be trained to operate properly and safely the machines, pads, and floor care chemicals used at the facility.

3. FOLLOW APPROPRIATE WORK PRACTICES. Custodial or maintenance staff who strip floors should follow appropriate work practices, such as those recommended here, under informed supervision. Directions from floor tile and floor wax product manufacturers on proper maintenance procedures should be consulted.

4. STRIP FLOORS WHILE WET. The floor should be kept adequately wet during the stripping operation. Do NOT perform dry stripping. Prior to machine operation, an emulsion of chemical stripper in water is commonly applied to the floor with a mop to soften the wax or finish coat. After stripping and before application of the new wax, the floor should be thoroughly cleaned, while wet.

5. RUN MACHINE AT SLOW SPEED. If the machine used to remove the wax or finish coat has variable speeds, it should be run at slow speed (about 175-190 rpm) during the stripping operation.

6. SELECT THE LEAST ABRASIVE PAD POSSIBLE. EPA recommends that the machine be equipped with the least abrasive pad possible to strip wax or finish coat from asbestos-containing floors.

7. DO NOT OVERSTRIP FLOORS. Stop stripping when the old surface coat is removed. Overstripping can damage the floor and may cause the release of asbestos fibers. Do NOT operate a floor machine with an abrasive pad on unwaxed or unfinished floors.

REMEMBER: Improperly removing asbestos-containing floor covering could result in the release of high levels of asbestos. EPA recommends that you leave asbestos-containing floor covering in place, provided the material is in good condition. However, proper maintenance procedures, such as those outlined above, should always be followed.

Attachment #—

South Carolina Department of Health and Environmental Control

2600 Bull Street
Columbia, S.C. 29201

Commissioner
Michael D. Jarrett

OFFICE OF SCHOOL PLANNING & BUILDING
FEB 1 1990
RECEIVED

Removal of Asbestos-Containing Floor Tiles

1. Asbestos in vinyl tile and sheet flooring is typically tightly bound and is not released under normal use. In general, this material is considered to be non-friable. However, even non-friable materials can become friable under certain conditions. Sawing, drilling, sanding or cutting vinyl-asbestos tile and sheet flooring can result in the emission of asbestos dust. Asbestos fibers can also be released if the tile or flooring is seriously damaged or if the backing is dry-scraped or sanded. It is DHEC's position that use of destructive methods to remove vinyl-asbestos floor tiles renders them friable. For example, if tiles are chipped loose from the floor in pieces, they are friable.

2. If non-friable asbestos-containing materials are rendered friable during an abatement project, they immediately become subject to the same requirements as friable materials, including those pertaining to training, licensing, notifications, and work practices. If it can reasonably be anticipated that non-friable materials will be rendered friable during the abatement, the removal must be considered a friable project from the beginning.

3. There are methods available for removing asbestos flooring without rendering it friable. For example, if water will not otherwise damage the building, flooding an area will often soak tiles loose. Freezing tiles with pulverized dry ice has been used successfully (in well ventilated areas only), since tiles contract and break loose from the subfloor as they cool. Heating tiles with a heat gun may soften the mastic enough so that the tiles can be pulled up easily. The two latter methods are sometimes used together by applying first dry ice, then heat, to loosen the tiles.

4. Asbestos-containing mastic can be removed using citrus-based cleaners, and the residues are not subject to Hazardous Waste Management Regulations as they would be if a petroleum-derived solvent were used. Grinding, sanding, or chipping mastic off the floor renders the mastic friable.

5. All waste materials, including those from non-friable removal projects, must be disposed of properly. Never attempt to burn any asbestos-containing material. Contact DHEC's Bureau of Air Quality Control at 734-4517 for further information regarding disposal of non-friable asbestos wastes.

6. Occupational Safety and Health Administration (OSHA) regulations may apply whether the material is friable or non-friable. Contact the Department of Labor at 734-9644 for further information.

7. A safe and recommended alternative to removal is to install new flooring material directly over old tiles or sheet flooring. Carpeting is in itself not considered to be an adequate enclosure for a badly damaged floor, since it is not airtight, impermeable, and permanent.

SECTION 8

PERIODIC SURVEILLANCE PLAN

NARRATIVE

Document Number 8 is prepared in accordance with 40 CFR, Part 763.93 (e) (9) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation is included at the end of this booklet for your reference.

This document describes the requirement for periodic surveillance, at least once every six months, in each school building that contains ACBM. The LEA's designate for this surveillance does not have to be an accredited inspector. However, the LEA designate shall be familiar with the school building in order to be able to accurately perceive any changes in the condition of all friable or non-friable ACBM that is identified in Section 2 of this management plan.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING:

8 - PERIODIC SURVEILLANCE PLAN

DISCUSSION OF PERIODIC SURVEILLANCE PLAN:

Since ACBM is present, a periodic surveillance plan will be required. This plan consists of the LEA designate performing the following tasks:

1. Visually inspect all areas that are identified as ACBM. Refer to plan in Section 2 of this booklet for location of ACBM.

2. Record the date of the surveillance, area(s) inspected, inspector's name and any changes in the condition of the materials. Be specific when recording the condition of the ACBM, such as water damage or delamination, etc.

3. A copy of the periodic surveillance plan shall be developed and incorporated into the management plan for submittal to the LEA Designate to administer the AHERA program.

Marshall F. Clarke
Preparer's Typed Name

Signature

October 1, 1988
Date

803 232-8204
Telephone No.

Sequence # 40

SIX MONTH PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Date Inspected: May 18, 1999

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	Damaged	Gym, Lobby, Classes
Main	A2A	Mastic Associated w/HA-A2	N/A	Inaccessible	See HA-A2.
Main	A5	Linoleum Beige/Grey Speckled	Good		
Main	C1	TSI Pipe insulation	Damaged	Damaged	Boiler rm joint, hangers
Main	C3	Gasket Material	good	good	Boiler #1 viewing glass
Main	C4	Wrap on F/G lines	N/A	ASSUMED	Not previously sampled
Main	A7	3" Wide vinyl strips	good	ASSUMED	@ Terrazzo floors
Main	A8	Sheetrock Joint Cmpd Sys	good	ASSUMED	Throughout
Main	A9	Plaster Systems	N/A	ASSUMED	Lobby Center

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: Colleen Christian - Environmental Testing & Management, Inc.
Phone: 864-963-3688

SECTION 9

REINSPECTION PLAN

NARRATIVE

Document Number 9 is prepared in accordance with 40 CFR, Part 763.93 (e) (9) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation in included at the end of this booklet for your reference.

This document describes the requirement for reinspection at least once every three years in each school building that contains ACBM. The accredited inspector performing the reinspection shall reassess all friable or non-friable ACBM that is identified in Section 2 of this management plan.

If no asbestos was found in a specific school building during the initial inspection, reinspection is not required.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING:

9 - REINSPECTION PLAN

DISCUSSION OF REINSPECTION PLAN:

At least once every three years, a reinspection of all friable or non-friable known or assumed ACBM is required. Each inspection shall be made by an accredited inspector who shall:

1. Visually reinspect and reassess under 763.88 (page 41849 of the regulation) the condition of all friable known or assumed ACBM.

2. Visually inspect material that was previously considered non-friable ACBM and touch the material to determine whether it has become friable since the last inspection or reinspection.

3. Identify any homogeneous areas with material that has become friable since the last inspection or reinspection.

4. For each homogeneous area of newly friable material that is already assumed to be ACBM, bulk samples may be collected and submitted for analysis in accordance with 763.86 and 763.87 (page 41849 of the regulation).

5. Assess, under 763.88, (page 41849 of the regulation) the condition of the newly friable material in areas where samples are collected and newly friable materials in areas that are assumed to be ACBM.

6. Reassess, under 763.88, (page 41849 of the regulation) the condition of friable known or assumed ACBM previously identified.

7. Record the following and submit to the person designated under 763.84 (page 41848 of the regulation) a copy of such record for inclusion in the management plan within 30 days of the reinspection.

Marshall F. Clarke — M. F. Clarke
Preparer's Typed Name — Signature

October 1, 1988 — 803 232-8204
Date — Telephone No.

Sequence #42

AHERA REINSPECTION REPORT

F-5/6/91

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
ADDRESS: P. O. Box 220
Walhalla, SC 29691
COUNTY: Oconee
TELEPHONE: 638-4029
DATE: June 21, 1991
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)

SUBMIT TO LEA DESIGNEE

LIST OF DOCUMENTS ATTACHED:

- X 1. List of School Buildings
- X 2. Reassessment of Areas of ACBM or Suspect ACBM
- ___ 3. Added Homogeneous Areas of ACBM or Suspect ACBM
- ___ 4. Diagram of Each New or Altered Area of ACBM or Suspect ACBM
- ___ 5. Description of Each New Homogeneous Area and Determination of Sampling Location
- ___ 6. Description of Each Sample Area & Assessment of Materials
- ___ 7. Bulk Sample Analysis
- X 8. Response Actions Recommended, Response Actions Selected and Dates
- X 9. Copy of Inspectors License
- X 10. Copy of Management Planners License

No person or firm shall offer to perform, perform or be hired to perform as professionals in providing the services of inspection, preparation of management plans, designing of response actions, or supervising of response action except as properly accredited under the provisions of Public Law 99-519, EPA Regulations 40 CFR Part 763 and SCDHEC Regulation 61-86.1. In addition these persons or firms performing as professionals shall be registered in South Carolina under the registration laws of the State. Such professionals shall be independent practitioners and shall have no financial or other interest in contractors, subcontractors, manufacturers, or jobbers under their jurisdiction where direct conflict of interest could occur, except as ...ted as follows.

An employee of a public school, a private school association, a private school or an A/E may provide the services of inspection, and or preparation of management plans, provided the employee is properly accredited under the "AHERA" Laws and Regulations. Where an employee of the LEA provides these services, the LEA must request a Waiver of Professional Services.

The signatures here on attest to the above statement and certify that it is the intent of the signatories to carry out all other provisions of the "AHERA" Law and Regulations.

LEA DESIGNEE: Neild Gordon (Name) Neild Gordon (Signature & Date) 8/21/91 882-5588 (Telephone No.)

HOURS TRAINING 16 WHERE TRAINED & DATE Charleston, S.C. 1989

LEA OFFICER: James M. Brown (Name) James M. Brown 8/21/91 638-4029 (Telephone No.)

BOARD CHAIRMAN James M. Brown (Name) James M. Brown 8/21/91 638-4029 (Telephone No.)

INSPECTOR Keith M. Clarke (Name & Signature)

S. C. DHEC LICENSE NO. 20384 Telephone No. 232-8204

MANAGEMENT PLANNER Marshall F. Clarke (Name & Signature)

S. C. DHEC LICENSE NO. 1421 Telephone No. 232-8204

REGISTRATION SEAL

COVER SHEET PHOTOCOPY AS NEEDED SEQUENCE #

AHERA REINSPECTION REPORT

F-5/6/91

STATE OF SOUTH CAROLINA

( ) OF BUILDINGS REINSPECTED

LEA: Oconee County School District

SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)

ADDRESS: Holland Ave.
Seneca, SC 29678

DATE REINSPECTED: June 17, 1991

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NONFRIABLE	FRIABLE	NONFRIABLE	
HA'A' - Main Building		X			
HA'B' - Gym Building			X		
HA'C' - Boiler Room	X				
HA'D' - Portables					X

COMMENTS: * Room 302 has water damage to floor tile and needs to be removed.

* Area C-2 abated with tank removed.

PHOTOCOPY AS NEEDED

SEQUENCE # _____

AHERA REINSPECTION REPORT
Document #1 instructions

PURPOSE: To record information from the original AHERA Management Plan indicating whether the buildings of this school contained any known or suspect friable or nonfriable ACBM or no ACBM at all according to 263.85(b)(1)

PREPARATION: The name of the LEA and school address should be in the top right-hand corner of this form. Include street address, city, zip code and county.

In each indicated location on the form, list the name of each school building and location if other than school address. Include street address, city, zip code and county. For each building, also indicate whether or not asbestos exists in the facility. Under ACBM (asbestos containing building material) indicate presence of friable material, or non-friable material. Under suspect ACBM, indicate presence of friable or non-friable material. If no ACBM or suspected ACBM has been found in the building by the inspector, place a check in the column under No ACBM.

Use the same form to list additional buildings.

DISTRIBUTION: Attach to AHERA Management Plan Cover Sheet and submit to LEA Designee.

'ATE OF SOUTH CAROLINA

LEA: Oconee County School Distr
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)

REASSESSMENT OF AREAS OF ACBM OR SUSPECT ACBM

DATE OF REINSPECTION: June 17, 1991

HA# OR FS	MATERIAL TYPE	AM'T	SAMPLES OLD	SAMPLES NEW	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES? YES	CHANGES? NO
1	Pipe insul. elbows	30 lf	1		Non-friable; Good	A, V	X	
2	Tank insul.		1		Removed		X	
3	Seal @ Boiler #1	2sf	1		Friable; Good	A, V		X
2	Beige speck. 12 X 12 F.T.	20000 sf	2		Non-friable; Damaged: <10% L	A	X	
5	Beige/gray speck.sheet vinyl	1000sf	2		Non-friable; Good	A	X	

ISPECTOR: Keith M. Clarke

LEA DESIGNEE: Neild Gordon

ATE OF INSPECTION: June 17, 1991

DATE OF REINSPECTION REVIEW: 8/21/91

CDHEC LICENSE NO.: 20384 EXP. DATE: 4/24/92

IGNATURE: Keith M. Clarke

SIGNATURE: Neild Gordon

OCUMENT #2 Page 1 of 1

PHOTOCOPY AS NEEDED

SEQUENCE #

AHERA REINSPECTION REPORT
Document #2 instructions

RPOSE: To record information about the current condition, the potential for disturbance, amount of ACBM for each homogeneous area that was found to contain known or assumed ACBM in the original Management Plan and whether this represents any change from the original management plan according to 763.85 (b)(2)(3)(i)(ii)(iii)(iv)(v)(vi).

INSTRUCTIONS:

HA\FA
Give the homogeneous area and, if necessary, the functional space number or letter designated in the management plan. If the inspector decides to divide a homogeneous area into different functional spaces during the reinspection, insert the information here and indicate "yes" in the "CHANGED?" category.

MATERIAL TYPE
Describe the material included in the homogeneous area including color, size, and texture or location.
Examples: green 9" x 9" floor tile, white ceiling surfacing.

AMOUNT
Verify the amount of material included in the homogeneous area in square feet (sf), linear feet (lf), or cubic feet (cf). If the inspector changed the material amount listed in the original inspection, insert the information here and indicate "yes" in the "CHANGED?" category.

SAMPLES - OLD/NEW
State the number of samples that were taken from this homogeneous area during the previous inspection report in the "OLD" column; if new samples were taken during the reinspection, include the information in the "NEW" column. If no samples have been taken, a "0" will indicate that the area was assumed to contain asbestos. Indicate "yes" in the "CHANGED?" category if the area is sampled during reinspection.

CURRENT CONDITION: TYPE AND AMOUNT OF DISTURBANCE
Indicate whether the material is friable or nonfriable and the condition of the material: good, damaged, or significantly damaged.

1. Include a brief description of the type of damage: D=deterioration; W=water; P=physical; and O=other.
2. Indicate the amount of damage in the area and whether or not the damage is localized or evenly distributed: >10%E, <10%E, >25%L, <25%L, or no indication if the material is in good condition.
3. Indicate "yes" in the "CHANGED?" category if the current condition of the area during reinspection is different from the assessment in the management plan.

POTENTIAL FOR DISTURBANCE: TYPE AND AMOUNT OF DISTURBANCE
Indicate the type of disturbance potential: A=accessibility, V=vibration, or E=air erosion. Indicate the amount of disturbance potential for each type of disturbance that is high or medium; no mention of a disturbance type will indicate a low potential for disturbance.

ANY CHANGES?
Check yes if any of the information presented on this page differs from the original management plan.

TRIBUTION: Attach to the AHERA Reinspection Cover Sheet and submit to LEA Designee.

AHERA REINSPEC N REPORT

1/91

TATE OF SOUTH CAROLINA

ACTIONS RECOMMENDED AND
ESPONSE ACTION SELECTED & DATES

LEA: Oconee County School District
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)

DATES: June 17, 1991

HA # OR FS	RECOMMENDED RESPONSE ACTION	SELECTED RESPONSE ACTION	ORIGINAL DATE	SCHEDULED DATE	COMMENTS
A2	Room 302 should have water damaged floor tile removed.	Same	N/A	August 91	Water damage to tile has loosened tile to a degree where removal is necessary.

MANAGEMENT PLANNER: Marshall F. Clarke

LEA DESIGNEE: Neild Gordon

DATE OF REPORT: June 17, 1991

DATE OF REINSPECTION REVIEW: 8/21/91

SCDHEC LICENSE #: 1421 EXP. DATE: 2/11/92

SIGNATURE: Marshall F. Clarke

SIGNATURE: Neild P. Gordon

DOCUMENT # 8 PAGE 1 OF 1

PHOTOCOPY AS NEEDED

SEQUENCE #

AHERA REINSPECTION REPORT
Document #8 Instructions

PURPOSE:

To record response actions recommended, response action selected, and preventive measures and response actions scheduled as required by 40 CFR Part 763.93 (e)(6) of the EPA Asbestos-Containing Materials in Schools;, Final Rule and Notice.

PREPARATION:

The top right hand corner of the form, fill in the name of the LEA, the school name, and the building name.

Under the column entitled "HA or FS" the Management Planner shall indicate the number of each homogeneous area and/or functional space where friable asbestos containing building material (ACBM) was found in the building.

The Management Planner shall describe recommended response actions for each homogeneous area under RECOMMENDED RESPONSE ACTIONS.

The LEA Designee shall indicate response action selected. The Management Planner should sign and date the document in the appropriate signature block. The Management Planner will also supply the SCDHEC License Number and the state and name of the training agency at which the accreditation was received.

For each location where friable ACBM is found in the building, the LEA shall give a detailed description of preventive measure.

LEA Designee shall sign in lower right hand corner and note date of reinspection review.

For each action taken, the LEA shall indicate the month, day, and year the action is to begin and also the month, day and year the action is scheduled to be complete. Planners should also indicate original date of original Management Plan if applicable.

DISTRIBUTION:

Attach to AHERA Reinspection Cover Sheet and submit to LEA Designee.

"AHERA8A"

MAY 28 1991

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

ASBESTOS ABATEMENT LICENSE

NO. 20384

This certifies that

Keith M. Clarke

MARSHALL CLARKE ARCHITECTS

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 for the category of

CONSULTANT(AHERA)/BUILDING INSPECTOR

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company unless otherwise specified and shall expire one year from 04/24/91 .

05/24/91
Date

William P. Brantley, Director
Air Compliance & Management Division
Bureau of Air Quality Control
South Carolina Department of
Health & Environmental Control

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

ASBESTOS ABATEMENT LICENSE

NO. 1421

This certifies that

Marshall Clarke

MARSHALL CLARKE ARCHITECTS

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 for the category of

CONSULTANT(AHERA)/MANAGEMENT PLANNER

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company unless otherwise specified and shall expire one year from 02/11/91.

The holder of this license is qualified in accordance with requirements of the Asbestos Hazard Emergency Response Act of 1986 (AHERA) to perform as an asbestos Building Inspector.

03/25/91
Date

William P. Brantley, Director
Air Compliance & Management Division
Bureau of Air Quality Control
South Carolina Department of
Health & Environmental Control

1994
AHERA Reinspection Report
for the
Oconee County School District's
Seneca Middle School

Performed by
AAA Environmental
PO Box 8178
300 Henry Place
Spartanburg, South Carolina 29305
(803)-582-1222

AHERA Reinspection Summary
for the
Oconee County School District
Seneca Middle School

A reinspection of known or assumed asbestos containing material was performed per the requirements of the Asbestos Hazard Emergency Response Act at Seneca Middle School on June 24, 1994. The following highlights the findings of the survey and provides proper management planner recommendations for applicable areas:

Homogeneous Areas with a Changed Condition:

No Applicable homogeneous areas.

Inspector Comments:

The gym boiler room has had the asbestos containing materials abated.

During the inspectors reinspection walkthrough, the inspector observed some suspect materials that were inadvertently omitted from the previous inspections. The inspector found 3" wide vinyl strips at expansion joints and drywall, tape and spackle throughout the facility. These materials should be to be asbestos containing building materials until further sampling of these materials proves otherwise.

No documentation concerning the flooring material's mastic was identified in the report. It is advised to assume these materials as asbestos containing, unless testing proves otherwise.

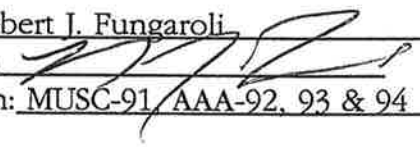
Management Planner Recommendations:

Due to there being no changes in the condition of the known or assumed asbestos containing materials identified in the previous AHERA report, the recommended response action for these materials is to continue the operations and maintenance program outlined in the original management plan.

The vinyl stripping and drywall, tape and spackle material was found to be nonfriable and should be included within the operations and maintenance program. Due to the material being nonfriable, no further actions are necessary for these materials at this time.

Name of Inspector: Stan Berry
Signature of Inspector: Stanley Berry
Schools and Dates of Accreditation: MUSC-91, AAA-92, 93 & 94

Name of Management Planner: Robert J. Fungaroli

Signature of Management Planner: 

Schools and Dates of Accreditation: MUSC-91, AAA-92, 93 & 94

Name of LEA Designee: _____

Signature of LEA Designee: _____

Date of Implementation within Management Plan: _____

AHERA Reinspection of Known or Assumed Asbestos Containing Materials
Oconee County School District

School: SENECA MIDDLE SCHOOL | Date: 6/23/94 | Page: 1 of 2

Homog. Area #	Material Type	Previous Reinspection Assessment	Current Condition	Locations/Comments
A2	BEIGE SPECKLE 12"X12" VFT	✓Non- __Fri G (D) SD PFD: L M H Other:	✓Non- __Friable G (<10D) >10D >25D >25D PFD: (L) M H AHERA Cat(1-8): 8 Chgd Cond: (Y) N SR	CAFETERIA 100 WING, 200 WING, 300 WING OFFICE AREA RM 201/202 BLUE CARPET OVER VFT RMS 203, 204 NEW VFT 12"X12" OFFWHITE SUMMER '93 (DOCUMENT)
A5	BEIGE/GRAY SPECKLE SHEET VINYL	✓Non- __Fri (G) D SD PFD: L M H Other:	✓Non- __Friable (G) <10D >10D <25D >25D PFD: (L) M H AHERA Cat(1-8): 8 Chgd Cond: Y (N)	RM 503
C1	PIPE INSUL. ELBOWS	✓Non- __Fri (G) D SD PFD: L M H Other:	__Non- ✓Friable (G) <10D >10D <25D >25D PFD: (L) M H AHERA Cat(1-8): 5 Chgd Cond: (Y) N	MECH RM./BOILER RM.
C2	EXPANSION TANK(S)	__Non- __Fri G D SD PFD: L M H Other: REMOVED	__Non- __Friable G <10D >10D <25D >25D PFD: L M H AHERA Cat(1-8): ___ Chgd Cond: (Y) N	MECH RM./BOILER RM. TANKS HAVE BEEN REMOVED
C3	SEAL AT BOILER #1	__Non- ✓Fri (G) D SD PFD: L M H Other:	__Non- ✓Friable (G) <10D >10D <25D >25D PFD: L (M) H AHERA Cat(1-8): 5 Chgd Cond: Y (N)	MECH RM/BOILER RM.

For Each Homogeneous Area Which has a Changed Conditioned, Additional Information has been Included Discussing the Change.

Inspector: STANLEY BERRY | Signature: Stanley Berry

AHERA Reinspection of Known or Assumed Asbestos Containing Materials
Oconee County School District

School: SENECA MIDDLE SCHOOL | Date: 6/23/94 | Page: 2 of 2

Homog. Area #	Material Type	Previous Reinspection Assessment	Current Condition	Locations/Comments
		__Non- __Fri G D SD PFD: L M H Other:	__Non- __Friable G <10D >10D >25D >25D PFD: L M H AHERA Cat(1-8):___ Chgd Cond: Y N	GYM/BAND BOILER RM RM HAS BEEN ABATED
	3" WIDE VINYL STRIPS BLACK	__Non- __Fri G D SD PFD: L M H Other: NONE	✓Non- __Friable (G) <10D >10D <25D >25D PFD: (L) M H AHERA Cat(1-8): 8 Chgd Cond: Y (N) SB	FLOOR EXPANSION JOINTS THROUGH OUT SCHOOL
	WALLBOARD, TAPE & SPACKLE	__Non- __Fri G D SD PFD: L M H Other: NONE	__Non- ✓Friable (G) <10D >10D <25D >25D PFD: L (M) H AHERA Cat(1-8): 5 Chgd Cond: Y (N)	VARIOUS LOCATIONS THROUGH OUT SCHOOL
	BLACK VINYL BASEBOARD & MASTIC ~~THROUGHOUT~~	__Non- __Fri G D SD PFD: L M H Other: NONE	✓Non- __Friable (G) <10D >10D <25D >25D PFD: (L) M H AHERA Cat(1-8): 8 Chgd Cond: Y (N) SB	THROUGHOUT SCHOOL
		__Non- __Fri G D SD PFD: L M H Other:	__Non- __Friable G <10D >10D <25D >25D PFD: L M H AHERA Cat(1-8):___ Chgd Cond: Y N	2 PORTABLES ON SITE #45 & #16

For Each Homogeneous Area Which has a Changed Conditioned, Additional Information has been Included Discussing the Change.

Inspector: STANLEY BERRY | Signature: Stanley Berry

SCHOOL: SENECA MIDDLE SCHOOL

HOMOGENEOUS AREA: C1 MATERIAL TYPE: PIPE INSUL ELBOWS

LOCATION OF DAMAGE/CONCERN: MECH RM / BOILER RM.

A. PREVIOUS ASSESSMENT: NON. GOOD

B. PHYSICAL ASSESSMENT - CURRENT CONDITION OF THE MATERIAL

1. Evidence of Physical Damage: YES___ NO✓
   Comments:

2. Evidence of Water Damage: YES___ NO✓
   Comments:

3. Evidence of Delamination\Deterioration: YES___ NO✓
   Comments:

OVERALL CONDITION: GOOD✓ DAMAGED: <10% E___ OR <25% L___
SIGNIFICANLTY DAMAGED: >10% E___ OR >25% L___

C. PHYSICAL ASSESSMENT - POTENTIAL FOR DISTURBANCE:

1. Accessibility LOW✓ MEDIUM___ HIGH___
   Comments:

2. Air Erosion LOW✓ MEDIUM___ HIGH___
   Comments:

3. Vibration LOW✓ MEDIUM___ HIGH___
   Comments:

OVERALL POTENTIAL FOR DISTURBANCE: LOW✓ MEDIUM___ HIGH___
Comments:

D. AHERA ASSESSMENT CATEGORY: 5
AHERA CONDITION CHANGED: YES✓ NO___

OTHER COMMENTS:

Read Management Planner's Comments for Additonal Information

SIGNATURE OF INSPECTOR: Stanley Berry
SIGNATURE OF LEA DESIGNEE:
DATE ADDED TO MANAGEMENT PLAN FILE:

SCHOOL: SENECA MIDDLE SCHOOL

HOMOGENEOUS AREA: C2 MATERIAL TYPE: EXPANSION THK INSUL

LOCATION OF DAMAGE/CONCERN: MECH RM/BOILER RM.

A. PREVIOUS ASSESSMENT: REMOVED

B. PHYSICAL ASSESSMENT - CURRENT CONDITION OF THE MATERIAL

1. Evidence of Physical Damage: YES___ NO___
   Comments:

2. Evidence of Water Damage: YES___ NO___
   Comments:

3. Evidence of Delamination\Deterioration: YES___ NO___
   Comments:

OVERALL CONDITION: GOOD___ DAMAGED: <10% E___ OR <25% L___
SIGNIFICANLTY DAMAGED: >10% E___ OR >25% L___

C. PHYSICAL ASSESSMENT - POTENTIAL FOR DISTURBANCE:

1. Accessibility LOW___ MEDIUM___ HIGH___
   Comments:

2. Air Erosion LOW___ MEDIUM___ HIGH___
   Comments:

3. Vibration LOW___ MEDIUM___ HIGH___
   Comments:

OVERALL POTENTIAL FOR DISTURBANCE: LOW___ MEDIUM___ HIGH___
Comments:

D. AHERA ASSESSMENT CATEGORY:
AHERA CONDITION CHANGED: YES___ NO___

OTHER COMMENTS: TANKS HAVE BEEN REMOVED

Read Management Planner's Comments for Additonal Information

SIGNATURE OF INSPECTOR: Stanley Berry
SIGNATURE OF LEA DESIGNEE:
DATE ADDED TO MANAGEMENT PLAN FILE:

SCHOOL: SENECA MIDDLE SCHOOL

HOMOGENEOUS AREA: _____ MATERIAL TYPE: BOILER RM

LOCATION OF DAMAGE/CONCERN: BOILER RM.

A. PREVIOUS ASSESSMENT: _____

B. PHYSICAL ASSESSMENT - CURRENT CONDITION OF THE MATERIAL

1. Evidence of Physical Damage: YES___ NO___
   Comments: _____
2. Evidence of Water Damage: YES___ NO___
   Comments: _____
3. Evidence of Delamination\Deterioration: YES___ NO___
   Comments: _____

OVERALL CONDITION: GOOD___ DAMAGED: <10% E___ OR <25% L___
SIGNIFICANLTY DAMAGED: >10% E___ OR >25% L___

C. PHYSICAL ASSESSMENT - POTENTIAL FOR DISTURBANCE:

1. Accessibility LOW___ MEDIUM___ HIGH___
   Comments: _____
2. Air Erosion LOW___ MEDIUM___ HIGH___
   Comments: _____
3. Vibration LOW___ MEDIUM___ HIGH___
   Comments: _____

OVERALL POTENTIAL FOR DISTURBANCE: LOW___ MEDIUM___ HIGH___
Comments: _____

D. AHERA ASSESSMENT CATEGORY: _____
AHERA CONDITION CHANGED: YES___ NO___

OTHER COMMENTS: GYM/BAND BOILER RM HAS BEEN ABATED.

Read Management Planner's Comments for Additonal Information

SIGNATURE OF INSPECTOR: Stanley Berry
SIGNATURE OF LEA DESIGNEE: _____
DATE ADDED TO MANAGEMENT PLAN FILE: _____

SCHOOL: SENECA MIDDLE SCHOOL

HOMOGENEOUS AREA:_____ MATERIAL TYPE:_____

LOCATION OF DAMAGE/CONCERN:_____

A. PREVIOUS ASSESSMENT:_____

B. PHYSICAL ASSESSMENT - CURRENT CONDITION OF THE MATERIAL

1. Evidence of Physical Damage: YES___ NO___
   Comments:_____
2. Evidence of Water Damage: YES___ NO___
   Comments:_____
3. Evidence of Delamination\Deterioration: YES___ NO___
   Comments:_____

OVERALL CONDITION: GOOD___ DAMAGED: <10% E___ OR <25% L___
SIGNIFICANLTY DAMAGED: >10% E___ OR >25% L___

C. PHYSICAL ASSESSMENT - POTENTIAL FOR DISTURBANCE:

1. Accessibility LOW___ MEDIUM___ HIGH___
   Comments:_____
2. Air Erosion LOW___ MEDIUM___ HIGH___
   Comments:_____
3. Vibration LOW___ MEDIUM___ HIGH___
   Comments:_____

OVERALL POTENTIAL FOR DISTURBANCE: LOW___ MEDIUM___ HIGH___
Comments:_____

D. AHERA ASSESSMENT CATEGORY:_____
AHERA CONDITION CHANGED: YES___ NO___

OTHER COMMENTS: 2 PORTABLES (#45 & #16) ON SITE

Read Management Planner's Comments for Additonal Information

SIGNATURE OF INSPECTOR: Stanley Berry
SIGNATURE OF LEA DESIGNEE:_____
DATE ADDED TO MANAGEMENT PLAN FILE:_____

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

ASBESTOS ABATEMENT LICENSE

NO. 20411

This certifies that

Stanley Berry

AAA ENVIRONMENTAL

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

CONSULTANT(AHERA)/BUILDING INSPECTOR

The holder of this license shall comply with all the requirements of said Regulations.

This license is not transferable to any other licensee or company unless otherwise specified and shall expire one year from 04/22/94.

04/26/94
Date

William P. Brantley, Director
Air Compliance & Management Division
Bureau of Air Quality Control
South Carolina Department of
Health & Environmental Control

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

ASBESTOS ABATEMENT LICENSE

NO. 20412

This certifies that

Robert J. Fungaroli

AAA ENVIRONMENTAL, INC.

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 for the category of

CONSULTANT(AHERA)/MANAGEMENT PLANNER

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company unless otherwise specified and shall expire one year from 02/17/94.

The holder of this license is qualified in accordance with requirements of the Asbestos Hazard Emergency Response Act of 1986 (AHERA) to perform as an asbestos Building Inspector.

03/10/94
Date

William P. Brantley, Director
Air Compliance & Management Division
Bureau of Air Quality Control
South Carolina Department of
Health & Environmental Control

SECTION 10

RESOURCES NEEDED

NARRATIVE

Document Number 10 is prepared in accordance with 40 CFR, Part 763.93 (e) (11) of the U.S. EPA Asbestos-Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation in included at the end of this booklet for your reference.

This document describes resources needed for implementation of the management plan such as funding, equipment, facilities or support personnel.

Resources needed for implementation of this management plan include the following:

1. Inventory of supplies for repair and O&M maintenance:

   - 4 mil poly drop cloths
   - ACM waste disposal bags with signs
   - ACM glove bags with signs
   - knives, wire brushes, cutting pliers
   - disposable protective clothing
   - encapsulants, bridging and surfacing
   - HEPA vacuums and replacement filters
   - disposable cloths/mops
   - water spray misters
   - duct tape
   - amended water solution
   - personal respirators
   - disposable cartridges
   - ladders

2. Waste handling procedures for removed ACM.

3. Trained maintenance personnel of O&M and repair activities.

4. Accredited personnel in-house or through outside consultants available on call for response to major fiber release episodes and activities other than small scale/short duration.

5. Accredited personnel in-house or through outside consultants available for reinspection every three years.

6. Funding:

   Cost estimated are generally expressed in terms which correspond closely to the unit activities needed to be carried out. Below is a list of some typical unit operations involved in the various types of abatement.

Removal	Encapsulation	Enclosure
Develop work plan	Develop work plan	Develop work plan
Isolate work area	Isolate work area	Isolate work area
Erect scaffold	Spray encapsulant	Construct mechanical enclosure or
Remove insulation - areas (wall,ceiling)	Clean work area	Spray encasement

6. Funding (continued)

Removal	Encapsulation	Enclosure
- boiler	Conduct air sampling	Clean work area
- pipe		
- fittings	Remove barriers	Conduct air monitoring
Dispose of asbestos in landfill		Remove barriers
Spray surfaces with encapsulant		
Seal exposed pipe ends		
Clean dirt and debris		
Conduct air sampling		
Remove plastic barriers		
Install insulation		
- areas (wall,ceiling)		
- boiler		
- pipe		
- fittings		

Labor - Asbestos abatement is a labor-intensive operation, and labor costs tend to be the largest component of total cost. Typically, labor will constitute from 40% to 50% of the total cost of ACM removal. Labor costs include professional fees, wages, retirement funds, unemployment, health, and general liability insurance, and special allowances for increased work hazard and potential asbestos disease liability. Union scale wage rates tend to run high.

A typical removal "team" may consist of a foreman and four laborers. Such a team may be expected to remove 50-100 linear feet or 100-200 square feet of ACM per day, depending most significantly on whether or not work is being performed at floor level.

Equipment - Specialized and often expensive equipment is essential when working with ACM. Much of the protective equipment must be disposed of after a job rather than reused. For reusable equipment, amortized purchase cost, depreciation and maintenance costs contribute to equipment charges. Such equipment includes supplied air compressors, showers, negative air units, HEPA vacuum cleaners, spray equipment, and scaffolding.

Material Costs - Abatement jobs normally require a considerable quantity and variety of consumables. Personal protective clothing, plastic containment materials, duct tape, glove bags, surfactants, encapsulants, etc., will be required on most jobs. Costs for supplies and materials would normally run approximately 5% of the total bid price.

Potential Liability Costs - Cost to indemnify the contractor for potential losses involving property damage, and long term disease manifestation, may be included as overhead cost factors. If liability insurance is required and available, these costs will be the insurance policy premium.

Profit - Contractor's profit margin must reflect a desirable rate of return after taxes on available working capital. A higher degree of risk or

retention of liability in asbestos removal projects relative to other construction business may justify a higher rate of return.

Other Costs - Air monitoring must be conducted at the conclusion of each abatement project to ensure that fiber levels are sufficiently low. Air sampling may cost $400 per day, and laboratory analysis of samples may range from $25 to $600 per sample, depending on the number of samples and the method of analysis (PCM or TEM).

The most commonly used yard stick for comparing costs is the cost per square (or linear) foot for ACM removed and replaced, or encapsulated. A similar yard stick is used for spray-applied enclosures (encasement). Although actual costs vary widely by region, building and individual project (based on factors described above), ranges of typical costs are:

Operations and Maintenance	$ 500/yr. to $5000/yr.
Removal and Replacement	
Surfacing Material	$8 - $25/sq. ft.
Thermal System Insulation	$8 - $20/linear ft.
Floor Tile	$4 - $6/sq. ft.
Encapsulation	$3 - 10/sq. ft.
Encasement	$5 - $10/sq. ft.
Professional Services	
Design and Project Inspection	8 to 20% of project cost
Air Sampling and Monitoring	8 to 20% of project cost

Costs for enclosures other than spray-applied encasement are even more variable. They depend entirely on the type of enclosure and the means of attaching the enclosure material around the ACM.

The above estimates of ACM abatement costs are approximately. Better estimates can be obtained by contacting a few local contractors, describing the amount, type, and general characteristics of the ACM to be abated, and asking for a "best guess" cost range.

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING:

10 - RESOURCES NEEDED

DISCUSSION OF RESOURCES NEEDED:

Resources needed for implementation of this management plan area as follows:

1. Maintain proper inventory of supplies and trained personnel for O&M or repair activities that may be required for "minor fiber release episodes" and "small scale/short duration" activities.

2. The estimated cost for O&M for this school is as follows:

ACBM & Location	Quantity	Cost
Floor tile at Cafeteria and Room 503	3,600 s.f.	$200/yr.
TSI at Boiler Bldg.	400 s.f.	$200/yr.
TSI at unit heaters in Gym	16 elbows	$100/yr.
Total Estimated O&M Cost		$500/yr.

NOTE: If the LEA desires to have all ACBM removed from the school, the following additional estimated cost is presented.

ACBM & Location	Quantity	Cost
Remove & replace floor tile	3,600 @ $6	$21,600
Remove & replace TSI @ boiler bldg.	400 s.f. @ $25	$10,000
Remove & replace TSI (elbows) at unit heaters	16 elbows @ $20/ea.	$ 320
Design and project inspection	$31,920 @ 15%	$ 4,788
Air sampling and monitoring	$31,920 @ 15%	$ 4,788
TEM Clearance Testing	Lump Sum	$ 4,000
Total Estimated Cost for Removal and Replacement		$45,496

Marshall F. Clarke
Preparer's Typed Name

Signature

October 1, 1988
Date

803 232-8204
Telephone No.

Sequence #46

SECTION 11

STEPS TO INFORM OTHERS

NARRATIVE

Document Number 11 is prepared in accordance with 40 CFR, Part 763.93 (2) (10) of the U.S. EPA Asbestos Containing Materials in Schools; Final Rule and Notice dated October 30, 1987. A copy of this regulation is included at the end of this booklet.

This document describes steps to be taken to inform others of any asbestos related activities which take place at this school.

Sequence # 47

STATE OF SOUTH CAROLINA

LEA: Oconee County School District
SCHOOL: Seneca Senior High
BUILDING:

11 - STEPS TO INFORM OTHERS

DISCUSSION OF PROGRAM TO INFORM OTHERS:

When submitting a management plan to the Agency designated by the State Governor, and annually thereafter, the LEA shall notify in writing the parent, teacher and employee organizations of the availability of the plan. In the absence of such organizations, the LEA must give annual written public notice of the availability of the plan to the relevant groups. The LEA's management plan shall include a dated copy of this notification and a description of the steps taken to notify the appropriate groups.

Marshall F. Clarke — M. J. Clarke
Preparer's Typed Name — Signature

October 1, 1988 — 803 232-8204
Date — Telephone

Sequence #48

sdoc
School District of Oconee County Administrative Offices
North College and North Broad Streets, P.O. Box 220, Walhalla, SC 29691

October 11, 1988

TO: All Principals, Oconee County School District

FROM: James Brown, Interim Superintendent JMB.

SUBJECT: Distribution of Notices to Students and Staff
Related to Information Concerning Asbestos in Schools (A.H.E.R.A.)

The E.P.A. (A.H.E.R.A.) Law 40 CFR-763 requires that parents of your students and other building occupants or workers be informed of the requirements and conditions.

Under separate cover are copies of the school district's official notification to concerned citizens.

Please distribute a copy to each student for delivery to his/her parents and a copy to each teacher and worker who occupies your school building.

Distribution should take place no later than October 12, 1988.

Failure to respond could cause severe penalties.

JMB:oo

School District of Oconee County Administrative Offices
North College and North Broad Streets, P.O. Box 220, Walhalla, SC 29691

October 11, 1988

NOTICE TO: Parents, Children, Workers and Building Occupants
School District Board of Trustees and News Media

Environmental Protection Agency (EPA) Law 40-CFR-763 requires that all public schools meet the requirement by way of the following procedures.

1. *Inspect all schools for the presence of Asbestos Containing Building Materials (Friable and Non-Friable)*
2. *Prepare and submit a Management Plan to the State which reveals the presence of asbestos, assessment of suspect materials and appropriate response actions by October 12, 1988.*
3. *That all future response activities, including Periodic Surveillance and Reinspection, be made a part of the Management Plan.*
4. *That a copy of the Management Plan for each school be kept in the school's office and a copy for each school be kept at the school district's Designated Main Administrative Office.*
5. *That all concerned citizens be notified of the Plans, Locations and Availability.*

The Oconee County School District, by way of this Notice, advises the Public that the required procedures have been met.

Sincerely,

James M. Brown

James M. Brown
Interim Superintendent of Education

JMB:oo

SECTION 12

ACCREDITATION OF INSPECTOR

NARRATIVE

This document is a copy of the South Carolina Accredited Building Inspector's License. Section 206 of Title II of the Toxic Control Substance Act (TCSA) requires accreditation of these persons in accordance with the State of South Carolina adopted accreditation plan.

JASON L. SMITH

Jason L. Smith has attended the following course of study given by The Environmental Institute:

1. Asbestos in Buildings: Inspection and Assessment, February 8 - 10, 1988, Atlanta, GA
   - passed examination on February 10, 1988

2. Asbestos in Buildings: The Management Plan, February 11 - 12, 1988, Atlanta, GA
   - passed examination on February 12, 1988

Jason L. Smith has attended the following course of study given by the Environmental, Health and Safety Division of the Georgia Tech Research Institute, Atlanta, GA:

1. Supervision of Asbestos Abatement Projects, March 21 - 25, 1988, Atlanta, GA.
   - passed examination on March 25, 1988.

South Carolina Department of Health and Environmental Control

2600 Bull Street
olumbia, S.C. 29201

Commissioner
Michael D. Jarrett

ASBESTOS REMOVAL LICENSE

NO. 1426

This certifies that the licensee named herein has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 for the category specified below. The holder of this license shall comply with all the requirements of said Regulation.

This license shall remain effective for one year from the date required training was completed.

The licensee named herein has completed training deemed sufficient for the following category:

CONSULTANT(AHERA)/BUILDING INSPECTOR

This license is granted to **Jason L. Smith**
on the basis of training completed on 02/10/88 .

William P. Brantley, Director
Air Compliance & Management Division
Bureau of Air Quality Control
South Carolina Department of
Health & Environmental Control

SECTION 13

ACCREDITATION OF MANAGEMENT PLANNER

NARRATIVE

This document is a copy of the South Carolina Accredited Management Planner's License. Section 206 of Title II of the Toxic Control Substances Act (TCSA) requires accreditation of these persons in accordance with the State of South Carolina adopted accreditation plan.

MARSHALL F. CLARKE, AIA

Marshall F. Clarke, a registered architect in South Carolina since 1968 and a principal in an architectural firm since 1971, has completed the following courses presented by Environmental, Health and Safety Division of the Georgia Tech Research Institute, Atlanta, GA:

1. Supervision of Asbestos Abatement, May 11 - 15, 1987, Seattle, WA
   - passed examination on May 15, 1987

2. Clearance Testing for Asbestos: AHERA Requirements, October 28 - 29, 1987, Washington, DC (no examination given)

3. Advanced Supervision of Asbestos Abatement Projects, December 16 - 17, 1987,
   Atlanta, GA
   - passed examination on December 17, 1987

4. Inspecting Buildings for Asbestos-Containing Materials, March 21 - 23, 1988,
   - passed examination on March 23, 1988

5. Managing Asbestos in Buildings, March 24 - 25, 1988, Atlanta, GA.
   - passed examination on March 25, 1988.

6. Design of Asbestos Response Actions, June 7 - 11, 1988, Atlanta, GA
   - passed examination on June 11, 1988.

South Carolina Department of Health and Environmental Control

2600 Bull Street
Columbia, S.C. 29201

Commissioner
Michael D. Jarrett

ASBESTOS REMOVAL LICENSE

NO. 1421

This certifies that the licensee named herein has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 for the category specified below. The holder of this license shall comply with all the requirements of said Regulation.

This license shall remain effective for one year from the date required training was completed.

The licensee named herein has completed training deemed sufficient for the following category:

CONSULTANT(AHERA)/MANAGEMENT PLANNER

This license is granted to Marshall Clarke
on the basis of training completed on 03/25/88 .

William P. Brantley, Director
Air Compliance & Management Division
Bureau of Air Quality Control
South Carolina Department of
Health & Environmental Control

55

SECTION 14

RECORD KEEPING

NARRATIVE

Reference 40 CFR, Part 763.94 of the AHERA Rule.

In general, the record keeping system must track three types of data: data on the physical condition of the ACBM, actions taken on the ACBM, and the data associated with the personnel involved with the asbestos management program.

The tracking of the ACBM's may be thought of as the tracking of a business's physical inventory requiring that the condition of the material be recorded at intervals (record of the surveillance), the recording of substantive changes in material status (removal, enclosure, encapsulation, or repair), various required reports to governing bodies (notices of abatement and disposal actions to the EPA), and the recording of an up-to-date inventory on a periodic basis (reinspections).

Required record keeping for personnel includes the identity, training, medical monitoring and exposure of persons. This information should be recorded in a form which will be available for a period of at least 30 years.

The various types of documents and records to be included in the record keeping system are outlined below.

A. RECORD KEEPING OF MANAGEMENT PLAN

1. Each LEA must keep an updated copy of the management in its administrative office for each school under its administrative control or direction. This plan must be available, without restriction, to the public, school personnel and their representatives, parents, and representatives of EPA and the State, for inspection during normal business hours.

2. Each school must keep in its administrative office an updated copy of the management plan for than school. The school must make the management plan available for inspection.

3. Each LEA and school must keep accurate records of relevant events with the management plan.

B. RECORD KEEPING OF OTHER INFORMATION

1. Records must be kept of all relevant events occurring after submission of the management plan. These records become part of the management plan. The relevant events include:

   a) Response actions and preventive measures.

   b) Training of personnel.

c) Periodic surveillance.

d) Reinspection and assessments.

e) Cleaning activities.

f) Small-scale, short-duration operations and maintenance activities.

g) All operations and maintenance activities other than small-scale and short duration activities.

h) Fiber release episodes.

2. All records shall be retained in the administrative offices of both the LEA and the school as part of the management plan. (NOTE: For each area where ACBM has been removed, the records must be kept for 3 years after the next required reinspection.)

The records that must be maintained are as follows:

a) For each preventive measure and/or response action taken:

- Detailed written description of the measure of action.
- Methods used.
- Location.
- Justification for why a specific measure or action was selected.
- Start and completion dates of all work.
- Names and addresses of all contractors involved and accreditation information.
- If ACM was removed, name and location of storage or disposal sites.

b) For any air sampling conducted:

- Name and signature of person collecting samples.
- Date and location where samples were collected.
- Name and address of laboratory analyzing samples.
- Date and method of analysis.
- Results of analysis.
- Name and signature of analyst.

c) For persons required to be trained for maintenance and repair operations, training records must be maintained:

- Employee's name and job title.
- Date training completed.
- Location of training and training organization's name.
- Number of hours of training.

d) For each time periodic surveillance is performed:

- Inspector's name.
- Date of the surveillance.
- Notation of changes (or lack of) in the condition of the ACBM.

e) For each time that cleaning is performed:

- Name of person(s) doing cleaning.
- Date of cleaning.
- Locations cleaned.
- Methods used in cleaning.

f) For each time operations and maintenance activities are performed:

- Name of person(s) performing activities.
- Start and completion dates of action.
- Locations.
- Description of activity, including preventive measures taken.
- If ACBM removed, name and location of storage/disposal site.

g) For each time maintenance activities other than small-scale, short duration activities are undertaken:

- Name, signature and state of accreditation for each persons involved in activity.
- Start and completion dates of project.
- Location(s).
- Description of project, including preventive measures taken.
- If ACBM removed, name and location of storage/disposal site.

h) For each fiber release episode:

- Date of episode.
- Location.
- Method of repair.
- Preventive measures or response action taken.
- Name(s) of person(s) performing work.
- If ACBM is removed, name and location of storage/disposal site.

i) Suggested documentation but not required:

- Complete historical blueprint of facility, if available.
- Documentation on materials/products used in construction or renovation of the facility that may contain asbestos (include any correspondence with manufacturers).
- Location and photographs of warning signs and barriers placed to prevent unauthorized access to areas of ACBM.
- Required state and federal forms dealing with notification and compliance.

- All correspondence pertaining to asbestos in the facility.
- Copies of notification statements, press released, meeting agendas (with attendance rosters).

The reasons for maintaining complete and detailed records of asbestos management are many. Documentation can expedite response actions and make future renovation in any facility easier. The legal liabilities involved with asbestos are another reasons to maintain thorough records. The more thorough the documentation, the more defensible the actions taken. Further, poor or sloppy record keeping could imply callousness toward employees, building occupants and the public. In the case of LEA's, records are kept because they are required by AHERA.

REASSESSMENT OF ASBESTOS-CONTAINING MATERIALS

Location of asbestos-containing material(s) (address, building, room(s), or general description: _____

_____

_____

_____

_____

Type of asbestos-containing material(s):

1. Sprayed- or troweled-on ceilings or walls.
2. Sprayed- or troweled-on structural members.
3. Insulation on pipes, tanks, or boilers.
4. Other (describe): _____

_____

Abatement Status:

1. The material has been encapsulated _____, enclosed _____, neither _____

Assessmemnt:

1. Evidence of physical damage: _____
2. Evidence of water damage: _____
3. Evidence of delamination or other deterioration: _____
4. Degree of accessibility of the material: _____
5. Degree of activity near the material: _____
6. Location in an air plenum, air shaft, or air stream: _____
7. Other observations (including the condition of the encapsulant or enclosure, if any): _____

_____

_____

Signed: _____ Date: _____
(Evaluator)

FIBER RELEASE EPISODE REPORT

1. Address, building, and room number (s) (or description of area) where episode occurred: _____

2. The release episode was reported by _____ on _____ (date).

3. Describe the episode: _____

4. The asbestos-containing material was _____ / was not _____ cleaned up according to approved procedures. Describe the cleanup: _____

Signed: _____ Date: _____
(Asbestos Program Manager)

PERMIT APPLICATION FOR PERFORMING MAINTENANCE/RENOVATION WORK

1. Exact location of area involved (including building number, room number, location within room, etc) _____

2. Description of work involved _____

3. Starting Date _____ Anticipated Completion Date _____

4. *Approximate amount of asbestos present (linear feet, square feet, size of tank, etc.) _____

5. *Asbestos control methods to be used (i.e., glovebag, HEPA vacuum, wet methods, etc.) _____

6. *Protective equipment to be used (respirator, coveralls, etc.) _____

7. Name and telephone number/extension of supervisor _____

TO BE FILLED OUT BY ASBESTOS PROGRAM MANAGER:

Permit _____ Accepted _____ Rejected _____
Signed _____ Print _____
Permit Number _____
Emergency contact _____

Please return this form to:

Name
Address or Mail Stop
Telephone or Extension

*Note: These items may have to be filled out by Asbestos Program Manager.

OSHA MEDICAL QUESTIONNAIRE

BASIC EXAMINATION FOR ASBESTOS WORKERS

COMPANY: _____

DATE: _____

APPLICANT NAME: _____ SS#: _____

ADDRESS: _____ TELEPHONE: _____

DATE OF BIRTH: _____

MEDICATIONS:

KNOWN DRUG ALLERGIES:

BROKEN BONES:

SURGERY:

DOES PATIENT WEAR GLASSES OR CONTACTS:

DOES PATIENT HAVE KNOWN PROBLEMS REGARDING HEIGHTS OR CONFINED SPACES:

HAS PATIENT EVER HAD PROBLEM WITH EARS:

DOES PATIENT SMOKE: _____ HOW MUCH _____

CARDIO-PULMONARY EXAMINATION

1. BLOOD PRESSURE: SYSTOLIC ____ DIASTOLIC ____ PULSE ____
2. HEART: MURMURS
   RATE
   RHYTHM
   ENLARGEMENT HEIGHT _____ WEIGHT _____
3. LUNGS:
4. PULMONARY FUNCTION: Within Normal Limit _____
   Outside Normal Limits _____ (copy attached)
5. PA CHEST X-RAY: Within Normal Limits ____ Outside Normal Limits___
6. RECOMMENDATIONS:

It is my opinion that the above named patient is __is__ not __medically__ qualified to wear a respirator in the performance of his/her job:

_____

Part 1

INITIAL MEDICAL QUESTIONNAIRE

1. Name _____

2. Social Security # ___ ___ ___ ___ ___ ___ ___ ___ ___
(1 2 3 4 5 6 7 8 9)

3. CLOCK NUMBER ___ ___ ___ ___ ___ ___
(10 11 12 13 14 15)

4. PRESENT OCCUPATION _____

5. PLANT _____

6. ADDRESS _____

7. _____
(Zip Code)

8. TELEPHONE NUMBER _____

9. INTERVIEWER _____

10. Date _____ ___ ___ ___ ___ ___ ___
(16 17 18 19 20 21)

11. Date of Birth _____ ___ ___ ___ ___ ___ ___
(22 23 24 25 26 27)

12. Place of Birth _____

13. Sex
1. Male ____
2. Female ____

14. What is your marital status?
1. Single ____
2. Married ____
3. Widowed ____
4. Separated/Divorced ____

15. Race
1. White ____
2. Black ____
3. Asian ____
4. Hispanic ____
5. Indian ____
6. Other ____

16. What is the highest grade completed in school? _____
(For example, 12 years is completion of high school)

MEDICAL QUESTIONNAIRES (Mandatory)

The following medical questionnaires are taken from Appendix D to 29 CFR 1926.58 and are a mandatory part of the medical surveillance program.

These questionnaires must be administered to all employees who are exposed to asbestos above the action level and who will be included in their employer's medical surveillance program.

Part 1 contains the Initial Medical Questionnaire which must be obtained for all new hires who will be covered by the medical surveillance requirements. Part 2 includes the abbreviated Periodical Medical Questionnaire which must be administered to all employees who are provided periodic medical examinations under the medical surveillance provisions of the Construction Industry Standard (1926.58).

OCCUPATIONAL HISTORY

17 A. Have you ever worked full time (30 hours per week or more) for 6 months or more? 1. Yes _____ 2. No _____

IF YES TO 17A:

B. Have you ever worked for a year or more in any dusty job? 1. Yes _____ 2. No _____ 3. Does Not Apply _____

Specify job/industry _____ Total Years Worked _____

Was dust exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

C. Have you ever been exposed to gas or chemical fumes in your work? 1. Yes _____ 2. No _____

Specify job/industry _____ Total Years Worked _____

Was exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

D. What has been your usual occupation or job — the one you have worked at the longest?

1. Job occupation _____
2. Number of years employed in this occupation _____
3. Position/job title _____
4. Business, field or industry _____

(Record on lines the years in which you have worked in any of these industries, e.g., 1960-1969)

Have you ever worked:

		YES	NO
E.	In a mine?	_____	_____
F.	In a quarry?	_____	_____
G.	In a foundry?	_____	_____
H.	In pottery?	_____	_____
I.	In a cotton, flax, or hemp mill?	_____	_____
J.	With asbestos?	_____	_____

18. PAST MEDICAL HISTORY

		YES	NO
A.	Do you consider yourself to be in good health?	_____	_____
	If "NO" state reason _____		
B.	Have you any defect of vision?	_____	_____
	IF "YES" state nature of defect _____		
C.	Have you any hearing defect?.	_____	_____
	If "YES" state nature of defect _____		
D.	Are you suffering from or have you ever suffered from:		
	a. Epilepsy (or fits, seizures, convulsions?)	_____	_____
	b. Rheumatic fever?	_____	_____
	c. Kidney disease?	_____	_____
	d. Bladder disease?	_____	_____
	e. Diabetes?	_____	_____
	f. Jaundice?	_____	_____

19. CHEST COLDS AND CHEST ILLNESSES

19 A. If you get a cold, does it <u>usually</u> to to your chest? (Usually means more than 1/2 the time) 1. Yes _____ 2. No _____ 3. Don't get colds _____

20 A. During the past 3 years, have you had any chest illnesses that have kept you off work, indoors at home, or in bed? 1. Yes _____ 2. No _____

IF YES TO 20A:

B. Did you produce phlegm with any of these chest illnesses? 1. Yes _____ 2. No _____ 3. Does Not Apply _____

C. In the last 3 years, how many such illnesses with (increased) phlegm did you have which lasted a week or more? Number of illnesses _____ No. such illnesses _____

21. Did you have any lung trouble before the age of 16? 1. Yes ____ 2. No ____

22. Have you ever had any of the following?

1A. Attacks of bronchitis? 1. Yes ____ 2. No ____

IF YES TO 1A:

B. Was it confirmed by a doctor? 1. Yes ____ 2. No ____
3. Does Not Apply ____

C. At what age was your first attack? Age in Years ____
Does Not Apply ____

2A. Pneumonia (include bronchopneumonia)? 1. Yes ____ 2. No ____

IF YES TO 2A:

B. Was it confirmed by a doctor? 1. Yes ____ 2. No ____
3. Does Not Apply ____

C. At what age did you first have it? Age in Years ____
Does Not Apply ____

3A. Hay Fever? 1. Yes ____ 2. No ____

B. Was it confirmed by a doctor? 3. Does Not Apply ____

C. At what age did it start? Age in Years ____
Does Not Apply ____

23. A. Have you ever had chronic brochitis? 1. Yes ____ 2. No ____

IF YES TO 23A:

B. Do you still have it? 1. Yes ____ 2. No ____
3. Does Not Apply ____

C. Was it confirmed by a doctor? 1. Yes ____ 2. No ____
3. Does Not Apply ____

D. At what age did it start? Age in Years ____
Does Not Apply ____

24. A. Have you ever had emphysema? 1. Yes ____ 2. No ____

IF YES TO 24A:

B. Do you still have it? 1. Yes ____ 2. No ____
3. Does Not Apply ____

C. Was it confirmed by a doctor? 1. Yes ____ 2. No ____
3. Does Not Apply ____

D. At what age did it start?

Age in Years ____
Does Not Apply ____

25. A. Have you ever had asthma? 1. Yes ____ 2. No ____

IF YES TO 25a:

B. Do you still have it? 1. Yes ____ 2. No ____
3. Does Not Apply ____

C. Was it confirmed by a doctor? 1. Yes ____ 2. No ____
3. Does Not Apply ____

D. At what age did it start?

Age in Years ____
Does Not Apply ____

E. If you no longer have it, at what age did it stop?

Age Stopped ____
Does Not Apply ____

26. Have you ever had:

A. Any other chest illness? 1. Yes ____ 2. No ____
If yes, Please specify ____

B. Any chest operations? 1. Yes ____ 2. No ____
If yes, Please specify ____

C. Any chest injuries? 1. Yes ____ 2. No ____
If yes, Please specify ____

27. Has a doctor ever told you that you had heart trouble? 1. Yes ____ 2. No ____

IF YES TO 27A:

B. Have you ever had treatment for heart trouble in the past 10 years? 1. Yes ____ 2. No ____
3. Does Not Apply ____

28. A. Has a doctor every told you that you had high blood pressure? 1. yes ____ 2. No ____

IF YES TO 28A:

B. Have you had any treatment for high blood pressure (hypertension) in the past ten years? 1. Yes ____ 2. No ____
3. Does Not Apply ____

29. When did you last have your chest x-rayed? (Year) ____ ____ ____ ____
25 26 27 28

30. Where did you last have your chest x-rayed (if known)? ____

What was the outcome? ____

FAMILY HISTORY

31. Were either of your natural parents ever told by a doctor that they had a chronic lung condition such as:

		FATHER			MOTHER		
		1. Yes	2. No	3. Don't Know	1. Yes	2. No	3. Don't Know
A.	Chronic Bronchitis?	___	___	___	___	___	___
B.	emphysema?	___	___	___	___	___	___
C.	Asthma?	___	___	___	___	___	___
D.	Lung cancer?	___	___	___	___	___	___

		FATHER			MOTHER		
		1. Yes	2. No	3. Don't Know	1. Yes	2. No	3. Don't Know
E.	Other chest conditions?	___	___	___	___	___	___
F.	Is parent currently alive?	___	___	___	___	___	___
G.	Please Specify	___ Age if Living ___ Age at Death ___ Don't Know			___ Age if Living ___ Age at Death ___ Don't Know		
H.	Please specify cause of death	_____			_____		

COUGH

32. A. Do you usually have a cough? (Count a cough with first smoke or on first going out of doors. Exclude clearing of throat.) (If no, skip to question 32C.) 1. Yes ___ 2. No. ___

B. Do you usually cough as much a 4 to 6 times a day 4 or more days out of the week? 1. Yes ___ 2. No ___

C. Do you usually cough at all on getting up or first thing in the morning? 1. Yes ___ 2. No ___

D. Do you usually cough at all during the rest of the day or at night? 1. Yes ___ 2. No ___

IF YES TO ANY OF ABOVE (32A, B, C, or D), ANSWER THE FOLLOWING. IF NO TO ALL, CHECK DOES NOT APPLY AND SKIP TO NEXT PAGE.

E. Do you usually cough like this on most days for 3 consecutive months or more during the year? 1. Yes ____ 2. No ____ 3. Does Not Apply ____

F. For how many years have you had the cough? Number of Years ____ Does Not Apply ____

33. A. Do you usually bring up phlegm from your chest? (Count phlegm with the first smoke or on first going out doors. Exclude phlegm from the nose. Count swallowed phlegm.) (If no, skip to 33C.) 1. Yes ____ 2. No ____

B. Do you usually bring up phlegm like this as much as twice a day 4 or more days out of the week? 1. Yes ____ 2. No ____

C. Do you usually bring up phlegm at all on getting up or first thing in the morning? 1. Yes ____ 2. No ____

D. Do you usually bring up phlegm at all during the rest of the day or at night? 1. Yes ____ 2. No ____

IF YES TO ANY OF THE ABOVE (33A, B, C, OR D), ANSWER THE FOLLOWING: IF NO TO ALL, CHECK DOES NOT APPLY AND SKIP TO 34A.

E. Do you bring up phlegm like this on most days for 3 consecutive months or more during the year? 1. Yes ____ 2. No ____ 3. Does Not Apply ____

F. For how many years have you had trouble with phlegm? Number of Years ____ Does Not Apply ____

EPISODES OF COUGH AND PHLEGM

34. A. Have you had periods or episodes of (increased*) cough and phlegm lasting for 3 weeks or more each year? *(For persons who usually have cough and/or phlegm) 1. Yes ____ 2. No ____

B. IF YES TO 34A: For how long have you had at least 1 such episode per year? Number of Years ____ Does Not Apply ____

WHEEZING

35. A. Does your chest ever sound wheezy or whistling

1. When you have a cold? — 1. Yes ____ 2. No ____
2. Occasionally apart from colds? — 1. Yes ____ 2. No ____
3. Most days or nights? — 1. Yes ____ 2. No ____

B. IF YES TO 1, 2, or 3 in 35A:
For how many years has this been present?

Number of Years ____
Does Not Apply ____

36. A. Have you ever had an attack of wheezing that has made you feel short of breath? — 1. Yes ____ 2. No ____

IF YES TO 36A:

B. How old were you when you had your first such attack?

Age in Years ____
Does Not Apply ____

C. Have you have 2 or more such episodes? — 1. Yes ____ 2. No ____ 3. Does Not Apply ____

D. Have you ever required medicine or treatment for the(se) attack(s)? — 1. Yes ____ 2. No ____ 3. Does Not Apply ____

BREATHLESSNESS

37. If disabled from walking by any condition other than heart or lung disease, please describe and proceed to question 39A.
Nature of condition(s) _____

38. A. Are you troubled by shortness of breath when hurrying on the level or walking up a slight hill? — 1. Yes ____ 2. No ____

IF YES TO 38A:

B. Do you have to walk slower than people of your age on the level because of breathlessness? — 1. Yes ____ 2. No ____ 3. Does Not Apply ____

C. Do you ever have to stop for breath when walking at your own pace on the level? — 1. Yes ____ 2. No ____ 3. Does Not Apply ____

D. Do you ever have to stop for breath after walking about 100 yards (or after a few minutes) on the level? — 1. Yes ____ 2. No ____ 3. Does Not Apply ____

E. Are you too breathless to leave the house or breathless on dressing or climbing one flight of stairs? — 1. Yes ____ 2. No ____ 3. Does Not Apply ____

TOBACCO SMOKING

39. A. Have you ever smoked cigarettes? (No means less than 20 packs of cigarettes or 12 oz. of tobacco in a lifetime or less than 1 cigarette a day for 1 year.)

1. Yes ____ 2 No. ____

IF YES TO 39A:

B. Do you now smoke cigarettes (as of one month ago)?

1. Yes ____ 2. No ____

C. How old were you when you first started regular cigarette smoking?

Age in Years ____
Does Not Apply ____

D. If you have stopped smoking cigarettes completely, how old were you when you stopped?

Age Stopped ____
Check if still smoking ____
Does Not Apply ____

E. How many cigarettes do you smoke per day now?

Cigarettes per day ____
Does Not Apply ____

F. On the average of the entire time you smoked, how many cigarettes did you smoke per day?

Cigarettes per day ____
Does Not Apply ____

G. Do or did you inhale the cigarette smoke?

1. Does Not Apply ____
2. Not At All ____
3. Slightly ____
4. Moderately ____
5. Deeply ____

40. A. Have you ever smoked a pipe regularly? (Yes means more than 12 oz. of tobacco in a lifetime.)

1. Yes ____ 2. No ____

IF YES TO 40A:
FOR PERSONS WHO HAVE EVER SMOKED A PIPE

B. 1. How old were you when you started to smoke a pipe regularly?

Age ____

2. If you have stopped smoking a pipe completely, how old were you when stopped?

Age Stopped ____
Check if still smoking pipe
Does Not Apply ____

C. On the average over the entire time you smoked a pipe, how much pipe tobacco did you smoke per week?

oz. per week ____
(a standard pouch of tobacco contains 1-1/2 oz.)
Does Not Apply ____

D. How much pipe tobacco are you smoking now?

Oz. per week ____
Not currently smoking a pipe ____

E. Do you or did you inhale the pipe smoke?

1. Never smoked ____
2. Not at all ____
3. Slightly ____
4. Moderately ____
5. Deeply ____

41. A. Have you ever smoked cigars regularly? (Yes means more than 1 cigar a week for a year)

1. Yes ____ 2. No ____

IF YES TO 41A:
FOR PERSONS WHO HAVE EVER SMOKED CIGARS

B. 1. How old were you when you started smoking cigars regularly?

Age ____

2. If you have stopped smoking cigars completely, how old were you when stopped?

Age Stopped ____
Check if still smoking cigars ____
Does Not Apply ____

C. On the average over the entire time you smoked cigars, how many cigars did you smoke per week?

Cigars per week ____
Does Not Apply ____

D. How many cigars are you smoking per week now?

Cigars week ____
Check if not smoking cigars currently ____

E. Do you or did you inhale the cigar smoke?

1. Never smoked ____
2. Not at all ____
3. Slightly ____
4. Moderately ____
5. Deeply ____

Date _____ Signature _____

From Federal Register/Vol. 51, No. 119/Friday, June 20, 1986/Rules and Regulations

Part 2

PERIODIC MEDICAL QUESTIONNAIRE

1. Name _____

2. Social Security # ___ ___ ___ ___ ___ ___ ___ ___ ___
(1 2 3 4 5 6 7 8 9)

3. CLOCK NUMBER ___ ___ ___ ___ ___ ___
(10 11 12 13 14 15)

4. PRESENT OCCUPATION _____

5. PLANT _____

6. ADDRESS _____

7. _____
(Zip Code)

8. TELEPHONE NUMBER _____

9. INTERVIEWER _____

10. Date _____ ___ ___ ___ ___ ___ ___
(16 17 18 19 20 21)

11. What is your marital status?
1. Single ____
2. Married ____
3. Widowed ____
4. Separated/ Divorced ____

OCCUPATIONAL HISTORY

12 A. In the past year, did you worked full time (30 hours per week or more) for 6 months or more?
1. Yes ____ 2. No ____

IF YES TO 12A:

12. B. In the past year, did you work in any dusty job?
1. Yes ____ 2. No ____
3. Does Not Apply ____

12. C. Was dust exposure: 1. Mild ____ 2. Moderate ____ 3. Severe ____

12. D. In the past year, were you exposed to gas or chemical fumes in your work?
1. Yes ____ 2. No ____

12. E. Was exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

12. F. In the past year, what was your: 1. Job/occupation _____
2. Position/job title? _____

13. RECENT MEDICAL HISTORY

13. A. Do you consider yourself to be in good health? Yes ___ No ___

If NO, state reason _____

13. B. In the past year, have you developed:

	Yes	No
Emphysema?	___	___
Rheumatic fever?	___	___
Kidney disease?	___	___
Bladder disease?	___	___
Diabetes?	___	___
Jaundice?	___	___
Cancer?	___	___
	___	___

14. CHEST COLDS AND CHEST ILLNESSES

14. A. If you get a cold, does it usually to to your chest? (Usually means more than 1/2 the time) 1. Yes ___ 2. No ___ 3. Don't get colds _____

15. A. During the past 3 years, have you had any chest illnesses that have kept you off work, indoors at home, or in bed? 1. Yes ___ 2. No ___ 3. Does not Apply ___

15. B. IF YES TO 15A: Did you produce phlegm with any of these chest illnesses? 1. Yes ___ 2. No ___ 3. Does Not Apply ___

15. C. In the past years, how many such illnesses with (increased) phlegm did you have which lasted a week or more? Number of illnesses No. such illnesses ___

16. RESPIRATORY SYSTEM

In the past year, have you had:

	Yes or No	Further Comment on Positive Answers
Asthma	_____	
Bronchitis	_____	
Hay Fever	_____	
Other Allergies	_____	
Pneumoria	_____	
Tuberculosis	_____	
Chest Surgery	_____	
Other Lung Problems	_____	
Heart Disease	_____	

Do you have:

	Yes or No	Further Comment on Positive Answers
Frequent colds	_____	
Chronic cough	_____	
Shortness of breath when walking or climbing one flight of stairs	_____	

Do you:

Wheeze	_____	
Cough up phlegm	_____	
Smoke cigarettes	_____	Packs per day ___ How many years __

Date _____ Signature _____

SECTION 15

U. S. EPA 40 CFP PART 763

AHERA REGULATIONS

Sequence #72

federal register

Friday
October 30, 1987

Part III

Environmental Protection Agency

40 CFR Part 763

Asbestos-Containing Materials in Schools
Final Rule and Notice

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 763

[OPTS-62048E; FRL-3269-8]

Asbestos-Containing Materials in Schools

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is issuing a final rule under section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2643, to require all local education agencies (LEAs) to identify asbestos-containing materials (ACM) in their school buildings and take appropriate actions to control release of asbestos fibers. The LEAs are required to describe their activities in management plans, which must be made available to all concerned persons and submitted to State Governors. This final rule requires LEAs to use specially-trained persons to conduct inspections for asbestos, develop the management plans, and design or conduct major actions to control asbestos. Exclusions are provided for LEAs which have previously conducted inspections and for LEAs subject to any state requirement at least as stringent as the comparable requirement in this final rule.

DATES: In accordance with 40 CFR 23.5, this rule shall be promulgated for purposes of judicial review at 1 p.m. Eastern Standard Time on November 13, 1987. This rule shall be effective on December 14, 1987. The incorporation by reference in the rule is approved by the Director of the Federal Register as of December 14, 1987.

FOR FURTHER INFORMATION CONTACT: Edward A. Klein, Director, TSCA Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-543, 401 M St., SW., Washington, DC 20460, Telephone: (202-554-1404).

SUPPLEMENTARY INFORMATION:

I. Background

A. Description of the Enabling Legislation

On October 22, 1986, President Reagan signed into law the Asbestos Hazard Emergency Response Act (AHERA) which enacted, among other provisions, Title II of the Toxic Substances Control Act (TSCA) 15 U.S.C. sections 2641 through 2654. Section 203 of Title II, 15 U.S.C. 2643, requires EPA to propose rules by April 20, 1987 (180 days after enactment), and to promulgate final rules by October 17, 1987 (360 days after enactment), regarding: (1) The inspection of all public and private school buildings for ACM; (2) the identification of circumstances requiring response actions; (3) description of the appropriate response actions; (4) the implementation of response actions; (5) the establishment of a reinspection and periodic surveillance program for ACM; (6) the establishment of an operations and maintenance program for friable ACM; (7) the preparation and implementation of asbestos management plans by LEAs and the submission of the management plans to State Governors, who may review the plans and approve or disapprove them; and (8) the transportation and disposal of waste ACM from schools. This final rule implements the Title II requirements to issue the section 203 rules (except for transportation and disposal, as discussed further below).

Section 206 of TSCA Title II, 15 U.S.C. 2646, also requires EPA to issue by April 20, 1987, a final model accreditation plan for persons who inspect for asbestos, develop management plans, and design or conduct response actions. States are required to adopt an accreditation program at least as stringent as the EPA model within 180 days after the beginning of their next legislative session. Accreditation of laboratories which analyze asbestos bulk samples and asbestos air samples is also required by TSCA Title II. The National Bureau of Standards (NBS), U.S. Department of Commerce, is required to establish the bulk sampling accreditation program by October 17, 1987, and the air sampling accreditation program by October 12, 1988.

States were required to notify LEAs by October 17, 1987, regarding where to submit management plans. LEAs must submit those plans to their State no later than October 12, 1988. The plans must include the results of school building inspections and a description of all response actions planned, completed, or in progress. After receiving a management plan, States are allowed 90 days to disapprove the plan. If the plan is disapproved, the State must provide a written explanation of the disapproval and the LEA must revise the plan within 30 days to conform with the State's suggested changes. The 30-day period can be extended to 90 days by the State. LEAs are required to begin implementation of their management plans by July 9, 1989, and to complete implementation in a timely fashion.

Transport and disposal rules under TSCA section 203(h) have not yet been proposed. In accordance with TSCA section 204(f), therefore, LEAs shall provide for transportation and disposal of asbestos in accordance with the most recent version of EPA's "Asbestos Waste Management Guidance." Applicable provisions of that document are included as Appendix D of this rule. Regulations governing transport of asbestos-containing waste, including school waste already regulated by the National Emission Standard for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61, Subpart M) under the Clean Air Act (42 U.S.C. section 7401, et seq.), were promulgated by the Department of Transportation (DOT) (49 CFR Part, 173 Subpart J). The NESHAP and DOT rules must be followed, according to the "Asbestos Waste Management Guidance." These rules will be sufficient to ensure the proper loading and unloading of vehicles and to ensure the physical integrity of containers.

Section 203(1) requires Department of Defense schools to carry out asbestos identification, inspection and management activities in a manner comparable to the manner in which an LEA is required to carry out such activities. EPA interprets the language of this section which states that such activities shall be carried out "to the extent feasible and consistent with the national security" as recognition that existing agreements with foreign governments may make it difficult to carry out certain provisions of this regulation.

Since this rule has been signed by the EPA Administrator by October 17, 1987, the rule has been promulgated within the statutory time frame required by section 203 of TSCA Title II. In accordance with 40 CFR 23.5, however, solely for purposes of judicial review deadlines under section 19 of TSCA Title I, the rule is considered to be promulgated at 1 p.m. eastern time, 14 days after publication in the **Federal Register**. Thus, the period in which petitions for review of this rule may be filed under section 19 commences 14 days after publication.

B. Previous EPA Asbestos Activities

EPA has undertaken a variety of technical assistance and regulatory activities designed to control ACMs in buildings and minimize inhalation of asbestos fibers.

1. *Technical Assistance Program.* Since 1979, EPA staff have assisted schools and other building owners in identifying and controlling ACM in their buildings. Through a cooperative agreement with the American Association of Retired Persons (AARP), EPA has hired architects, engineers, and

other professionals to provide on-site assistance to school officials and other building owners. With AARP assistance, many school officials and building owners have effectively and safely dealt with ACM in ways that are appropriate for the particular situation in their building.

In addition, EPA has published state-of-the-art guidance to help identify and control asbestos in buildings. EPA's principal asbestos guidance document, "Guidance for Controlling Asbestos-Containing Materials in Buildings," (EPA 560/5–85–024, also known as the "Purple Book") was expanded and updated in June 1985, based on recommendations from recognized national experts. The document provides criteria for building owners to use in deciding which abatement method is most appropriate for each particular situation.

An important EPA goal has been to provide training for people involved in all aspects of the identification and control of asbestos. EPA has established five Asbestos Information and Training Centers to provide information concerning the identification and abatement of asbestos hazards and to train people in proper asbestos abatement techniques. The five centers are located at the Georgia Institute of Technology in Atlanta, the University of Kansas in Kansas City, Tufts University in Medford, Massachusetts, the University of Illinois in Chicago, and the University of California at Berkeley. Courses attended by more than 8,000 building owners and managers, maintenance personnel, school officials, architects, consultants, and abatement contractors have been taught at the centers since December 1984.

Finally, because of the large number of asbestos abatement projects and the short-term nature of many of them, EPA believes that contractors should be State-certified and that States should oversee projects to ensure that they are properly performed. EPA has provided models for State certification legislation and start-up funding for the initiation of 38 State oversight programs.

2. *EPA's regulatory program.* In the Federal Register of May 27, 1982 (47 FR 23360), EPA issued a school identification and notification rule (hereinafter called the 1982 Asbestos-in-Schools Rule). This rule required school officials by June 28, 1983, to inspect all school buildings for friable materials, take a minimum of three samples of each type of friable material found, analyze samples using polarized light microscopy (PLM) to determine if asbestos is present, and keep records of the findings. (40 CFR Part 763, Subpart F)

School district officials who found friable ACM were required to notify employees of the location of the materials, post a notification form in the primary administrative and custodial offices and faculty common rooms, provide maintenance and custodial employees with a guide for reducing asbestos exposure, and notify parent-teacher associations or parents directly of the inspection results.

EPA also issued a rule to protect public employees who perform asbestos abatement work in those States not covered by the current asbestos standard issued by the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor. This rule (40 CFR Part 763, Subpart G) complements the OSHA asbestos regulations that protect private sector workers, and public employees in States with OSHA-approved State plans, from exposure to asbestos in occupational settings. The rule requires specific work practices, personal protective equipment, environmental monitoring, medical exams, and other provisions. The EPA rule also includes a provision not in the OSHA rule, i.e., notification to EPA generally 10 days before an asbestos abatement project is begun when public employees are doing the work. OSHA issued revised regulations regarding occupational asbestos exposure published in the Federal Register of June 20, 1986 (51 FR 22612). EPA issued in the Federal Register of February 25, 1987 (52 FR 5618), a revision of its worker protection rule to make it consistent with the new OSHA regulations.

3. *Recent developments.* EPA issued an Advance Notice of Proposed Rulemaking (ANPR) on August 12, 1986 (51 FR 28914), entitled "Asbestos-Containing Materials in Schools: Inspection, Notification, Management Plans and Technical Assistance." The purpose of this ANPR was to solicit comments on the future direction of EPA's program to reduce risks from asbestos in schools and to solicit information about a variety of technical and policy issues.

Prior to enactment of TSCA Title II, EPA had also initiated development of two new guidance documents on asbestos control. One document was being developed to provide more detailed guidance about assessing ACM in buildings and selecting abatement actions. A second document was being developed to provide more detailed guidance about practices and procedures which should be included in an operations and maintenance program. Both documents had been developed with the assistance of panels of national experts who convened in Washington, DC to discuss technical and operational issues associated with these subjects. The work done in these two guidance documents has been valuable in developing provisions of this rule.

Also, in 1986, EPA, in cooperation with the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, published "A Guide to Respiratory Protection for the Asbestos Abatement Industry" to provide practical guidance in the selection and use of respiratory protection to persons who work in asbestos abatement. The "Guide" also provides information relevant to other work activities, such as maintenance or repair, where the exposure to asbestos or the potential for exposure exists. The "Guide" was updated in September 1986 to include the text of the OSHA June 1986 revision of its asbestos standard.

C. Development of the Rule

The April 1987 proposed rule was developed through the process of regulatory negotiation, an alternative process for developing regulations in which individuals and groups with negotiable interests directly affected by the rulemaking work together with EPA in a cooperative venture to develop a proposed rule by committee agreement. The negotiation group was established as a Federal Advisory Committee and consisted of representatives of national educational organizations, labor unions, asbestos product manufacturers, the environmental community, asbestos abatement contractors, professional associations of architects, consulting engineers, industrial hygienists, States, and EPA.

After an organizational meeting in Washington, DC on January 23, 1987 (announced in the Federal Register of January 13, 1987, 52 FR 1377), the committee was established with 23 interests represented. Meetings were scheduled on February 5 and 6, February 17 and 18, March 9 and 10, March 26 and 27, and April 1 thru 3. During the March 10, 1987, meeting, the plenary session of the Committee accepted two more parties on the committee, one taking a seat representing State attorneys general, the other (representing big city schools) sharing a seat with a previously seated member representing big city schools.

Members of Negotiating Committee

The members of the negotiating committee and their interest represented are as follows:

1. Allen Abend, Council of Chief State School Officers.
2. Bill Borwegen, Service Employees International Union/Jordan Barab, American Federation ot State, County, and Municipal Employees (school service employees).
3. Dr. William Brown, Baltimore City Schools/Michael Young, New York City Law Department (big city schools).
4. Brian Christopher, Committee on Occupational Safety and Health.
5. Donald Elisburg, Laborers' International Union and Laborers-AGC Education and Training Fund.
6. Kellen Flannery, Council for American Private Education.
7. Steve Hays, asbestos abatement engineer.
8. Jesse Hill, manufacturers of asbestos pipe and block insulation products.
9. Edward Kealy, National School Boards Association.
10. Lloyd A. Kelley, Jr., Superintendent of Schools Rutland S.W. Vermont, Supervisory Union (rural schools).
11. William Lewis, Manufacturers of asbestos surfacing products.
12. Lynn MacDonald, Sheet Metal Workers International Association.
13. Claudia Mansfield, American Association of School Administrators.
14. Roger Morse, American Institute of Architects.
15. David Ouimette, Colorado Department of Health (States with developing asbestos programs).
16. Joel Packer, National Education Association.
17. Robert Percival, Environmental Defense Fund.
18. Miriam Rosenberg, National PTA.
19. Paul Schur, Connecticut Department of Health/Dr. Donald Anderson, Illinois Department of Public Health (States with implemented asbestos programs).
20. Robert Sheriff, American Industrial Hygienists Association.
21. David Spinazzolo, Association of Wall and Ceiling Industries (asbestos abatement contractors).
22. Susan Vogt, U.S. E.P.A.
23. John Welch, Safe Buildings Alliance (former manufacturers of asbestos products).
24. Margaret Zaleski, National Association of State Attorneys General.

Facilitation Team and Executive Secretary

Owen Olpin, Consultant to EPA
Eileen B. Hoffman, Federal Mediation & Conciliation Services
Kathy Tyson, U.S. E.P.A. (Executive Secretary)
Leah Haygood, The Conservation Foundation
Dan Dozier, Federal Mediation & Conciliation Services
John Wagner, Federal Mediation & Conciliation Services

The committee met in plenary sessions as well as in four work groups. Each work group focused on a cluster of related issues and reported to the plenary on options and recommendations. The plenary retained all decision-making power of the committee and often gave guidance to work groups. Generally, for each day of a plenary session, work groups convened the day before to prepare reports for the plenary. Neutral facilitators were present at all work group and plenary meetings to assist the negotiations in moving forward.

At the end of the 2-month negotiating process on April 3, 1987, and after extensive efforts, the committee was in general agreement on the vast majority of issues before it for the purposes of the proposal. Agreement to solicit further comment about alternatives was often important in developing provisions to be included as proposals. At the close of the negotiations, some items remained at issue and were not subject to universal agreement. These consisted of the following: definitions and response actions for damaged and significantly damaged thermal system insulation ACM (relates to being deemed nonfriable in the inspection section) and damaged and significantly damaged friable surfacing and miscellaneous ACM. Also, the definition of asbestos debris and the nature of cleaning practices (initial and routine) for friable ACBM or damaged or significantly damaged thermal insulation under the operations and maintenance section were still at issue. While extending negotiations beyond April 3, 1987, may well have enabled the committee to resolve these issues, the Congressional April 20, 1987, deadline for issuing a proposed rule precluded this possibility. Although Federal Register practices precluded the Agency from highlighting these issues in the text of the proposed rule, the public docket contains a copy of the proposed rule which clearly identifies the sections which contain these unresolved issues.

On April 3, 1987, the facilitators prepared, for members' signatures, statements supporting the use of the agreed-on portions of the regulatory language as a basis for a Notice of Proposed Rulemaking. Members representing 20 of the 24 interests seated on the committee signed these statements. Members representing 4 of the interests seated on the committee did not sign the statements, due to the status of the unresolved issues described above. Mr. Paul Schur, a corepresentative of states with an implemented asbestos program (an interest that did not sign), signed in an individual capacity. All committee members, signatories and non-signatories alike, retained for themselves and for their constituencies all rights which bear on the rulemaking, including the right to comment fully during the public comment period.

Notably, signatories supporting the agreed-on regulatory language as a basis for a Notice of Proposed Rulemaking did so in considering that language as a whole. The proposed rule's agreed-on language was not necessarily ideal from any one party's perspective.

On April 17, 1987, the EPA Administrator signed the proposed rule developed through the negotiated rulemaking process. The proposed rule and the final Model Accreditation Plan were published in the Federal Register of April 30, 1987. EPA's decision to use the results of the negotiated rulemaking process as a basis for a proposed rule was explained in the April 30 document (52 FR 15833).

The 60-day public comment period ended on June 29. During this time period, EPA staff conducted 10 Regional briefings on the proposed rule for State officials and a number of additional briefings for interested parties. These parties included school administrators, school board officials and building owners. At the conclusion of the public comment period, the Agency had received over 170 comments on the proposed rule.

Several comments received by EPA requested the Agency to hold a public hearing on the proposed rule. As a result of these comments, EPA conducted public hearings on August 25 and 26. Over 25 individuals representing a variety of groups testified before EPA. The testimony and transcript from the public hearing were included in the rulemaking's docket.

D. Basis for EPA's Decision

After consideration of the proposed rule and all the evidence in the rulemaking record, including public comments on the proposed rule, EPA has decided to promulgate a final rule which is like the proposal in most respects. A relatively small number of changes have been made from the proposal to reflect public comments. In a number of cases EPA decided not to

make changes suggested by public comments. The Agency discusses its response either in this preamble or elsewhere in the rulemaking docket.

EPA has determined that the regulations being announced in this edition of the Federal Register use the least burdensome methods which protect human health and the environment. This determination is supported by the discussion in this preamble and the entire rulemaking record. EPA adopts as the reasoning supporting its final rule the same basic reasoning in the preamble to the proposed rule (52 FR 15833). The provisions of this rule represent a reasonable way to carry out the statutory responsibilities of TSCA Title II.

EPA's analysis of risk placed in the rulemaking record when the proposed rule was issued shows that asbestos in schools could present a risk of concern and that the measures required by this rule are necessary to protect public health and the environment. EPA, as discussed later in this preamble, continues to rely on that risk analysis for support of the final rule. While there may be a wide divergence of opinion as to the actual health effects from asbestos exposure in schools, EPA believes there is little doubt that the decisionmaking process established by this rule needs to be implemented. This process is based on the responsibility of local officials, with input from the local community and with assistance from specially-trained experts, to develop management plans to implement appropriate measures that will abate the risk of asbestos in particular schools depending upon local circumstances.

This decisionmaking process ensures that the costs associated with this rule will be reasonable while protecting health and the environment. EPA has revised its costs somewhat from the analysis in its proposal, but has not changed its decision that these costs are reasonable. The detailed revisions to the Agency's costs analysis are discussed later in this preamble and in the rulemaking record. All public and private schools will experience the cost of a building walkthrough and visual inspecting, which EPA has determined will not exceed a few hundred dollars per school. Many schools, finding no asbestos, will experience no further costs. Most of the remaining schools that find ACM are expected to implement operations and maintenance programs along with training, periodic surveillance and reinspection. EPA has in fact revised downward the cost of the typical school asbestos program. It is expected that this cost will be about $5,530 per school year, a cost that is clearly minimal if there is a possibility that adverse health effects may be avoided. EPA also notes that some portion of the cost of the typical school program will not involve expenditures by the schools but are so-called "opportunity costs." These are costs assigned to the time spent by school employees in carrying out the activities required by the regulation. While these are real costs of the program, EPA expects that many schools will be able to conduct the typical school program through use of existing employees. Thus, the costs of the program will appear to the individual school officials and local communities to be somewhat less than EPA's economic analysis shows.

The decisionmaking process, summarized above and discussed in detail elsewhere in the preamble and rulemaking record, will ensure the reasonableness of other more extensive response actions for particular schools.

II. Provisions of the Final Rule

A. Introduction

This unit describes the various provisions of the final rule. The changes to the proposed rule made by the Agency based on comments received during the comment period are noted. Following a discussion of applicable regulatory definitions in Unit B and general responsibilities in Unit C., inspections and reinspections, sampling and analysis, and assessment of materials are discussed in Units D., E., and F., respectively. In Unit G., the major elements of the management plan, availability of the plan, and review of the plan by Governors are discussed.

Unit H. describes requirements for response actions to be taken by LEAs under circumstances described in that section. Unit I. explains requirements for training and periodic surveillance, and Unit J. explains air sampling requirements for determining when a response action has been completed.

Unit K. discusses requirements to use accredited persons to inspect buildings for asbestos, develop management plans, and design or conduct response actions. Requirements to protect abatement workers, custodial and maintenance staff, and building occupants are explained in Unit L.

Waivers for all or part of a State asbestos program are described in Unit M., including information required in the waiver request and the process for granting or denying such waivers. Requirements for recordkeeping and enforcement provisions are described in Units N. and O., respectively.

B. Definitions

Several important definitions (§ 763.83) are discussed below.

"Asbestos-containing building material (ACBM)" encompasses surfacing ACM, thermal system insulation ACM, and miscellaneous ACM in or on interior parts of the school building. These include specified exterior portions of school buildings that, for the purposes of this rule, may fairly be considered interior parts. EPA focused upon interior building materials because, in the Agency's experience, such materials represent a very large percentage of ACM in schools and appear to pose the greatest hazards to occupants.

The definition of "school building," in the rule however, makes it clear that exterior hallways connecting buildings, porticos, and mechanical system insulation are considered to be in a building and are subject to jurisdiction under TSCA Title II. The Agency believes that these exterior areas, by virtue of the accessibility of the ACM found there, warrant inclusion under the rule. Often, these exterior areas are connected to interior areas and could be considered to be a single homogeneous area in terms of a removal project design.

"Asbestos debris" is defined as pieces of ACBM that can be identified by color, texture, or composition. The definition also includes dust, if the dust is determined by the accredited inspector to be asbestos-containing. The Agency included dust in the definition based on public comments.

"Damaged or significantly damaged thermal system insulation ACM" is defined as ACM on pipes, boilers, and other similar components and equipment where the insulation has lost its structural integrity or its covering in whole or in part, is crushed, water-stained, gouged, punctured, missing or not intact such that it is not able to contain fibers. Damage may further be illustrated by occasional punctures, gouges, or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from adjacent ACBM may also indicate damage. This definition allows that, even though the insulation is marred, scratched or otherwise marked, it may not be, in the judgment of the accredited expert, damaged so as to release fibers. This definition varies from the proposed rule's language by providing more specific guidance on the physical characteristics that may constitute

damage. An accredited inspector shall classify this material based upon a determination of damage or significant damage (§§ 763.85 and 763.88) and an accredited management planner shall recommend in writing appropriate response actions (§ 763.93).

"Damaged friable surfacing ACM" is defined as ACM which has deteriorated or sustained physical injury such that the cohesion of the material or its adhesion to the substrate is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separating of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; or significant or repeated water stains, scrapes, gouges, mars, or other signs of physical injury on the ACM. Asbestos debris originating from adjacent ACBM may also indicate damage. The definition allows that such surfacing material may show signs of water damage or physical injury without, in the judgment of the accredited expert, always demonstrating a lack of fiber cohesion or adhesion. This definition varies from the proposed rule's language by providing more specific guidance on the physical characteristics that may constitute damage. Accredited experts will classify material based upon a determination of damage and recommend appropriate response actions (§§ 763.85, 763.88, and 763.93).

"Miscellaneous ACM" includes a wide variety of materials in buildings, such as vinyl flooring, fire-resistant gaskets and seals, and asbestos cement. Damage to these materials is defined by the same cohesion and adhesion (if appropriate) properties as surfacing materials. The Agency believes this definition is sufficiently general to provide a reasonable approach to assessing damage to so wide a range of materials.

"Significantly damaged friable surfacing ACM" is defined as material in a functional space where the damage is extensive and severe. (The definition of significantly damaged friable miscellaneous ACM closely parallels the definition for significantly damaged surfacing ACM.) Again, this determination of significant damage will be made by accredited experts (§§ 763.85, 763.88, and 763.93).

This definition is a function of two major factors. The first factor deals with extent, or scope, of damage across a functional space. The Agency, in draft guidance, suggested that damage evenly distributed across one-tenth of a functional space or localized over one-quarter represented significant damage (See Seventh Draft Report, "Guidance for Assessing and Managing Exposure to Asbestos in Buildings," November 7, 1986, p. 9). This represents a level of damage which a panel of experts, convened by the Agency, believed was generally, although perhaps not always, unreasonable to repair or restore.

The second factor involves the degree or severity of the damage itself. A major delamination of asbestos material, for instance, constitutes damage which is more severe than slight marks or mars. ACM, in the accredited expert's judgment, may be so severely damaged that there is no feasible means of restoring it to an undamaged condition.

Material has potential for significant damage as opposed to only potential for damage if it is subject to major or continuing disturbance, due to factors such as accessibility (i.e., subject to disturbance by school building occupants or workers in the course of the normal activities), or, under certain circumstances, vibration or air erosion. For example, material within reach of students above an entrance is clearly accessible. Thermal system insulation running along the base of a wall in a boiler room is also accessible. Material on the ceiling of a school auditorium, beyond the reach of students, is not. ACM on a high school gymnasium ceiling, which might be reached with basketballs or other objects, is subject to either classification, although an LEA might be well advised in this instance to implement a preventive measure to avoid disturbance.

EPA believes a wide range of "preventive measures" exist. One example is the installation of a stop to prevent a door from striking (and damaging) thermal system insulation ACM behind it. Another might involve restricting access of a corridor with surfacing ACM on a low ceiling, where students continually marred and vandalized the material. The problem of high school students hitting the gym ceiling with basketballs may be eliminated by a policy prohibiting such activities, if it can be effectively implemented. LEAs, in consultation with maintenance staff and, if desired, accredited experts, will identify a variety of creative and effective means of eliminating potential damage or significant damage to ACM.

If, however, such preventive measures cannot be effectively implemented, other response actions, including removal, will be required. The Act is clear that EPA, as part of its rulemaking, direct LEAs to mitigate those circumstances which involve potential for significant damage.

Based on public comments, the Agency added the terms "air erosion" and "vibration" to increase the specificity of the "potential significant damage" definition in the rule.

The "enclosure" definition requiring an airtight, impermeable, permanent barrier around ACBM to prevent the release of asbestos fibers into the air does not contemplate a vacuum-sealed area which is impossible to access. Instead, this definition, based on the National Institute of Building Sciences' (NIBS') "Model Guide Specifications, Asbestos Abatement in Buildings," July 18, 1986, is associated with precise engineering specifications, found in section 09251 and elsewhere in the NIBS' Model Guide, to construct enclosures sufficient to prevent fiber release. Also, this term, from the standpoint of permanence, is not intended to apply to mini-enclosures described in the EPA worker protection rule or Appendix B of the regulation, as these enclosures are used temporarily for repair or abatement activities.

"Functional space" is a term of art used by the accredited expert to appropriately characterize an area as containing "significantly damaged friable surfacing ACM" or "significantly damaged friable miscellaneous ACM." The "functional space" may be a room, group of rooms, or a homogeneous area, as determined appropriate by the accredited expert. Note that the functional space includes the area above a dropped ceiling as well as crawl spaces.

C. LEA General Responsibilities

The final rule requires LEAs to designate a person to carry out certain duties and ensure that such person receives training adequate to perform the duties.

Section 763.84 requires LEAs to ensure that: (1) Inspections, reinspections, periodic surveillance and response action activities are carried out in accordance with the final rule; (2) custodial and maintenance employees are properly trained as required by this final rule; (3) workers and building occupants are informed annually about inspections, response actions, and post-response action activities including reinspections and periodic surveillance; (4) short-term workers (e.g., telephone repair workers) who may come in contact with asbestos in a school are provided information about locations of asbestos-containing building material (ACBM); (5) warning labels are posted as required by this final rule; and (6) management plans are available for review and that parent, teacher, and

employee organizations are notified of the availability of the plan.

Lastly, LEAs shall consider whether any conflict of interest may arise from the interrelationship among accredited personnel (e.g., the management planner and abatement contractor) used by the LEAs and whether that should influence the LEA's selection of accredited personnel. EPA added this provision after reviewing public comments.

D. Inspections and Reinspections

1. *Inspections.* Section 763.85 requires LEAs to have an accredited inspector visually inspect all areas of each school building to identify locations of all friable and nonfriable suspected ACBM, determine friability by touching, and either sample the suspected ACBM or assume that suspected materials contain asbestos. The inspector must then develop an inventory of areas where samples are taken or material is assumed to contain asbestos. Finally, the accredited inspector is required to assess the physical condition of friable known or assumed ACBM as required under § 763.88.

2. *Exclusions.* Section 763.99 defines conditions that would exclude an LEA from all or part of the initial inspection. The accredited inspector is a key element in the exclusion process. For all inspection exclusions, areas previously identified as having friable ACM or nonfriable ACM that has become friable have to be assessed as required under § 763.88. All information regarding inspection exclusions shall be placed in the management plan.

Five types of exclusions for LEAs are provided in the final rule. First, LEAs do not need to have an initial inspection conducted in specific areas of a school where ACBM has already been identified. Second, if previous sampling of a specific area of the school indicated that no ACM was present, and the sampling was done in substantial compliance with the final rule, the LEA does not have to perform an initial inspection of that area. Third, LEAs do not have to inspect specific areas of schools where records indicate that all ACM was removed. Fourth, LEAs can receive an inspection exclusion for schools built after October 12, 1988 (the date when management plans are to be submitted to Governors), if no ACBM was specified for use in the school. Fifth, States that receive a waiver from the inspection requirements of the rule can grant exclusions to schools that had performed inspections in substantial compliance with the rule.

3. *Reinspections.* Section 763.85(b) requires LEAs to have accredited inspectors conduct reinspections at least once every 3 years. The inspector must reinspect all known or assumed ACBM and shall determine by touching whether nonfriable material has become friable since the last inspection. The inspector may sample any newly friable materials or continue to assume the material to be ACM. The inspector shall record changes in the material's conditions, sample locations, and the inspection date for inclusion in the management plan. In addition, the inspector must assess newly friable known or assumed ACBM, reassess the condition of friable known or assumed ACBM, and include assessment and reassessment information in the management plan.

Section 763.85(c) states that thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap is treated as nonfriable. Based on public comments, EPA changed the wording in this section from "deemed" nonfriable to "treated as" nonfriable.

E. Sampling and Analysis

1. *Sampling.* Section 763.86 permits the LEA to assume that suspected ACBM is ACM. If the LEA does not assume suspected ACBM to be ACM, the LEA shall use an accredited inspector to collect bulk samples for analysis.

EPA expects that a school is likely to sample only friable suspected ACBM. For nonfriable suspected ACBM, EPA anticipates most schools will assume this material contains asbestos. However, the final rule does not preclude a school from sampling all of its suspected ACBM, both friable and nonfriable. Sampling of friable surfacing materials should follow the guidance provided in the EPA publication "Simplified Sampling Scheme for Friable Surfacing Materials" (EPA 560/5–85–030a). To determine whether an area of surfacing material contains asbestos, sufficient samples shall be taken in a statistically random manner to provide data representative of each homogeneous area being sampled.

In most cases, sampling of thermal system insulation requires an accredited inspector to take at least three randomly distributed samples per homogeneous area. The final rule includes three exceptions to this requirement for sampling of thermal system insulation. First, an accredited inspector can determine through visual inspection that the material is non-ACM (e.g., fiberglass). Second, only one sample is required for patched homogeneous areas of thermal system insulation. Third, an accredited inspector needs to collect an appropriate number of samples to determine whether cement or plaster tees are ACM.

For friable miscellaneous material or nonfriable suspected ACBM, an accredited inspector must collect bulk samples in an appropriate manner.

2. *Analysis.* Section 763.87 requires analysis of bulk samples by laboratories accredited by NBS. In the period before NBS has developed its accreditation program, laboratories which have received interim accreditation from EPA may be used to analyze samples. The interim program is explained in a notice in the Federal Register (52 FR 33470, September 3, 1987). After receiving the sample results, the LEA must consider an area to contain asbestos if asbestos is present in any sample in a concentration greater than 1 percent. Compositing of samples (mixing several samples together) is prohibited.

The 1982 EPA rule "Asbestos in Schools: Identification and Notification", 40 CFR 763, Subpart F, required analysis of bulk asbestos samples by PLM and provides a protocol for analysis in its Appendix A to Subpart F. EPA requires use of the same PLM method for this final rule. As it develops the accreditation process for laboratories performing analysis of bulk samples, NBS will consider whether to change the PLM protocol. If NBS recommends changes, EPA will amend this rule accordingly.

F. Assessment

Section 763.88 outlines a general assessment procedure to be conducted by an accredited inspector during each inspection or reinspection. The accredited inspector is required to classify ACBM and suspected ACBM assumed to be ACM in the school building into broad categories appropriate for response actions. In addition, after reviewing public comments, the Agency decided to require the inspector to give reasons in the written assessment supporting his classification decisions. Assessment may include a variety of considerations, including the location and amount of material, its condition, accessibility, potential for disturbance, known or suspected causes of damage, or preventive measures which might eliminate the reasonable likelihood of damage. The LEA is directed to select an accredited management plan developer who, after a review of the results of the inspection and the assessment, shall recommend in writing appropriate response actions.

C. Management Plans

Section 763.93 requires LEAs to develop an asbestos management plan for each school under its administrative control or direction. The plan must be developed by an accredited asbestos management planner. Some of the major components required in the plan include: A description of inspections and response actions; an assurance that accredited persons were used to conduct inspections, develop management plans, and design or conduct response actions; and a plan for reinspection, periodic surveillance, and operations and maintenance.

Each LEA is required to maintain a copy of the management plan in its administrative office, and each school is required to maintain a copy of the school's management plan in the school's administrative office. These plans are to be made available for inspection by the public without cost or restriction. LEAs must notify in writing, parent, teacher, and employee organizations of the availability of management plans upon submission of the plan to the State and at least once each school year. The requirement for written notification was added after the Agency reviewed comments from the public. In addition, based on public comments received on the proposed rule, the Agency has included in the final rule a requirement that in the absence of any such organizations, the LEA shall provide written notice to that group (e.g., parents) of the availability of the management plan.

Section 763.93 requires LEAs to submit their management plans to their States on or before October 12, 1988. Each LEA must begin implementation of its management plan on or before July 9, 1989, and complete implementation of the plan in a timely fashion.

H. Response Actions

The final rule identifies five major response actions—in § 763.91 operations and maintenance (O&M) and in § 763.90, repair, encapsulation, enclosure and removal—and describes appropriate conditions under which they may be selected by the LEA. The final rule also identifies the steps which shall be taken to properly conduct and complete the response actions.

The LEA is required to select and implement in a timely manner the appropriate response action. The response action selected shall be sufficient to protect human health and the environment. From among the response actions that protect human health and the environment, the LEA may select the response action that is least burdensome.

LEAs are required to use accredited persons to design or conduct response actions. Section 763.90 specifically provides that nothing in the rule shall be construed to prohibit the removal of ACBM from a school building at any time, should removal be the preferred response action of the LEA.

Different response actions are required for each of the five major categories of damaged or potentially damaged ACBM. These categories are:

1. Damaged or significantly damaged thermal system insulation ACM.
2. Damaged friable surfacing or miscellaneous ACM.
3. Significantly damaged friable surfacing or miscellaneous ACM.
4. Friable surfacing or miscellaneous ACM, and thermal system insulation ACM which has potential for significant damage; and
5. Friable surfacing or miscellaneous ACM, thermal system insulation ACM which has potential for damage.

In each of the categories above, procedures for appropriately controlling or abating the hazards posed by the ACBM are set forth. For damaged or significantly damaged thermal system insulation, the LEA must at least repair the damaged area. If it is not feasible, due to technological factors, to repair the damaged material, it must be removed. Further, the LEA must maintain all thermal system insulation in an intact state and undamaged condition. If damaged friable surfacing or miscellaneous ACM is present, the LEA shall encapsulate, enclose, remove, or repair the damaged area. After selecting the appropriate response actions that protect human health and the environment, the LEA may consider local circumstances, including occupancy and use patterns within the school building, and economic concerns, such as short- and long-term costs. When friable surfacing or miscellaneous ACBM is significantly damaged, the LEA must immediately isolate the functional space and then must remove the material in the functional space, unless enclosure or encapsulation would be sufficient to contain fibers.

Response actions for ACBM with potential for damage and potential for significant damage emphasize O&M and preventive measures to eliminate the reasonable likelihood that damage will occur. When potential damage is possible, the LEA must at least implement an O&M program. If there is potential for significant damage and preventive measures cannot be effectively implemented, response actions other than O&M or area isolation may be required.

Section 763.91 requires the LEA to implement an operations, maintenance and repair (O&M) program for any school building in which friable ACBM is present or assumed to be present in the building. Any material identified as nonfriable ACBM or nonfriable assumed ACBM which is rendered or is about to be rendered friable as a result of activities performed in the school building shall be treated as friable. For example, if nonfriable ACBM wallboard was about to be sanded, operations and maintenance procedures would be required. The O&M program, which must be documented in the LEA management plan, consists of worker protection (summarized in Unit II.K.), cleaning, operations and maintenance activities (also in Unit II.K.), and fiber release episodes.

An initial cleaning is required, which employs wet methods and is conducted at least once after completion of the inspection and before the initiation of a response action other than an O&M activity. In addition, the rule also requires that an accredited managemen planner make a written recommendatio to the LEA regarding whether additione cleaning is needed. The recommendation on additional cleanin was added to the rule based on public comments.

The final rule requires that O&M activities (other than small-scale, short duration activities) which disturb asbestos shall be designed and conducted by persons accredited to do such work. (A discussion of what constitutes small-scale, short-duration projects is given in Appendix B to Subpart E.) Finally, procedures are provided for responding to fiber releas episodes—the uncontrolled or unintentional disturbance of ACBM. Fo minor episodes (i.e., those involving 3 square or linear feet or less of ACBM), basic cleaning and containment practices for O&M staff are listed. Fo larger amounts, accredited personnel are required to respond.

I. Training and Periodic Surveillance

The LEA shall ensure that all members of its maintenance and custodial staff receive at least 2 hour awareness training. The LEA must a ensure that staff who conduct any activities which will disturb ACBM receive an additional 14 hours of training. Specific topics to be covere the 2-hour and 14-hour training cour are listed in § 763.92(a).

Section 763.92(b) requires periodi surveillance to be performed at leas

once every 6 months. The LEA may use unaccredited personnel such as custodians or maintenance workers to conduct surveillance activities. Periodic surveillance requires checking known or assumed ACBM to determine if the ACBM's physical condition has changed since the last inspection or surveillance. The date of the surveillance and any changes in the condition of the ACBM must be added to the management plan.

J. Completion of Response Actions

After performing a thorough visual inspection, air testing is used to determine if a response action has been completed (§ 763.90(i)). Clearance air monitoring will not be required for small-scale, short-duration projects. Phase Contrast Microscopy (PCM) is allowed for response actions involving 260 linear or 160 square feet or less, the amounts used to trigger removal requirements under EPA's NESHAP (40 CFR Part 61, Subpart M).

Section 763.90 requires the use of transmission electron microscopy (TEM) for most removal, enclosure, and encapsulation response actions. Laboratories are to be accredited by the National Bureau of Standards (NBS). Until NBS develops its program, LEAs shall use laboratories that use the interim protocol described in Appendix A to this Subpart E. EPA continues to believe that TEM is the method of choice for air sample analysis because, unlike PCM, TEM analysis can distinguish asbestos from other fibers and detect the small thin fibers found at abatement sites. Therefore the use of TEM will significantly improve the adequacy of cleanup and is recommended over PCM when available. However, due to limited availability of microscopes for air sample analysis and the cost and time associated with TEM analysis, the final rule allows a phase-in period for the TEM requirement. For 2 years after the rule becomes effective, LEAs may choose to use PCM for response actions comprising 3,000 square or 1,000 linear feet or less. For 1 year after this, LEAs may use PCM for clearance of projects of 1,500 square or 500 linear feet or less. LEAs retain full discretion to require use of TEM at any time for any project.

The criterion for determining whether a response action is complete when using PCM will require multiple samples (minimum of five) with clearance allowed only if all of the individual samples are below the limit of reliable quantitation of the PCM method (0.01 fibers/cm^3). The rule requires persons to use the NIOSH 7400 method for PCM clearance.

The rule has a three-step process for using TEM to determine successful completion of a removal response action. The first step is a careful visual inspection, as mentioned above. The two steps that follow involve a sequential evaluation of the five samples taken inside the worksite and five samples taken outside the worksite. Both sets of samples must be taken at the same time to ensure that atmospheric conditions are the same and that the comparisons are valid. The inside samples are analyzed first. If the average concentration of the inside samples does not exceed the filter background contamination level (discussed in detail in Appendix A to Subpart E), then the removal is considered complete.

Step three is taken if the average concentration of the samples taken inside the worksite are greater than the filter background contamination level. In this case, an encapsulation, enclosure, or removal response action is considered complete when the average of five samples taken inside the worksite is not significantly larger than the average of five samples taken outside the worksite. A statistical comparison using the Z-Test must be used to determine whether the two averages are significantly different. (A discussion on how to compare measured levels of airborne asbestos with the Z-Test is given in Appendix A to Subpart E.) If the concentrations are not significantly different, then the response action is considered complete. If the inside average concentration is significantly higher, recleaning is required and new air samples must be collected and evaluated after the worksite has been cleaned and reinspected.

K. Use of Accredited Persons

Section 206 of Title II of TSCA requires accreditation of persons who:

1. Inspect for ACM in school buildings.
2. Prepare management plans for such schools.
3. Design or conduct response actions with respect to friable ACM in such schools (other than O&M activities).

Section 206 of Title II of TSCA required EPA to develop a Model Contractor Accreditation Plan by April 20, 1987. The Agency met this deadline and the model plan was published in the Federal Register of April 30, 1987 (52 FR 15875). The plan appears as Appendix C to Subpart E. A notice listing EPA approved courses appears elsewhere in this issue of the Federal Register.

Persons can receive accreditation from a State that has instituted an accreditation program at least as stringent as the requirements of the Model Plan. In addition, persons in States that have not yet developed programs at least as stringent as the Model Plan can receive accreditation by passing an EPA-approved training course and exam that are consistent with the Model Plan. The Model Plan requires persons seeking accreditation to take an initial course, pass an examination, and participate in continuing education.

L. Worker and Occupant Protection

Worker protection requirements for removal, encapsulation and/or enclosure response actions are already in effect under the EPA worker protection rule (40 CFR Part 763, Subpart G); and the OSHA construction standard (29 CFR 1926.58). EPA's NESHAP standard, although designed to protect outdoor air, also provides incidental protection to workers.

Essentially, under § 763.91, the regulation extends coverage of EPA's worker protection rule at 40 CFR 763.121 to maintenance and custodial personnel in schools who perform O&M activities but are not covered by OSHA's construction standard or an asbestos regulation under an OSHA approved State plan. The EPA worker protection rule itself extended the same protections as the OSHA construction standard to asbestos abatement workers who are employees of State and local governments and who are not otherwise covered by OSHA regulation or OSHA approved State plans. This final rule further extends these standards to O&M workers who are LEA employees. These regulations basically establish a Permissible Exposure Limit (PEL) of 0.2 fibers per cubic centimeter (f/cm^3) over an 8-hour period for abatement project workers exposed to airborne asbestos and an action level of 0.1 f/cm^3 which triggers a variety of worker protection practices. These practices include air monitoring, regulated work areas, engineering and work practice controls, respiratory protection and protective clothing, hygiene facilities and practices, worker training, medical surveillance, and recordkeeping requirements.

As an alternative, however, OSHA's standard allows employers to institute the provisions of its Appendix G in the case of small-scale, short-duration projects rather than comply with the full worker protection standard. Appendix B to Subpart E is an adaptation of OSHA's Appendix G and, thus, allows more flexibility in dealing with minor (small-scale, short-duration) projects.

None of the requirements of the OSHA standard or the EPA worker protection rule would apply if asbestos concentrations are below the action level (0.1 f/cm³). There are, however, fairly stringent requirements established by OSHA and adopted by EPA for purposes of this rule to show that levels are below this action level for any activity, including small-scale, short-duration projects. These requirements are discussed in the following paragraphs.

Employers who have a workplace or work operation covered by the EPA worker protection rule must perform initial monitoring to determine the airborne concentrations of asbestos to which employees may be exposed. If employers can demonstrate that employee exposures are below the action level (0.1 f/cm³) by means of objective data, then initial monitoring is not required. If initial monitoring indicates that employee exposures are below the PEL, then periodic monitoring is not required.

The exemption from monitoring in § 763.121(f)(2)(iii) of the worker protection rule for employers who have historical monitoring data is included in recognition of the fact that many employers have conducted or are currently conducting exposure monitoring. This exemption would prevent these employers from having to repeat monitoring activity for O&M activities that are substantially similar to previous jobs for which monitoring was conducted.

However, for purposes of this rule, EPA requires that such monitoring data must have been obtained from projects conducted by the employer that meet the following conditions:

1. The data upon which judgments are based are scientifically sound and collected using methods that are sufficiently accurate and precise.

2. The processes and work practices in use when the historical data were obtained are essentially the same as those to be used during the job for which initial monitoring will not be performed.

3. The characteristics of the ACM being handled when the historical data were obtained are the same as those on the job for which initial monitoring will not be performed.

4. Environmental conditions prevailing when the historical data were obtained are the same as for the job for which initial monitoring will not be performed.

When OSHA issued the final asbestos standard on June 20, 1986 (51 FR 22664), it published data from routine facility maintenance which "demonstrates a potential for exposure of maintenance personnel to concentrations exceeding 0.5 f/cm³ (fibers per cubic centimeter)." OSHA further stated:

> With the exception of wet handling, which is feasible in only very limited situations due to problems such as electrical wiring, and the use of HEPA vacuums for the clean-up of any debris generated during maintenance activities, OSHA believes that there do not appear to be any feasible engineering controls or work practices available to reduce these potential exposure to levels below the 0.2 f/cm³ PEL and that respirators will be required to comply with the 0.2 f/cm³ PEL.

LEAs are required, under the provisions of § 763.91 of this rule, to ascertain, through monitoring procedures or historic monitoring data, and to document that these levels have not been reached.

Under § 763.91, basic occupant protection requirements are established (regardless of air level) for any O&M activity in a school building which disturbs ACBM. Primarily, access must be restricted, signs posted, and air movement outside the area modified. Necessary work practices shall be implemented to contain fibers, the area shall be properly cleaned after the activity is completed, and asbestos debris must be disposed of in a proper manner.

Section 763.95 requires the LEA to attach warning labels immediately adjacent to any friable and nonfriable ACBM or suspected ACBM in routine maintenance areas, such as boiler rooms, until the material is removed. They shall read, in large size or bright colors, as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

M. Waiver for State Programs

Section 763.98 provides a procedure to implement the statutory provision that a State can receive a waiver from some or all of the requirements of the final rule if the State has established and is implementing or intends to implement a program of asbestos inspection and management at least as stringent as the requirements of the final rule. The rule requests specific information to be included in the waiver request submitted to EPA, establishes a process for reviewing waiver requests, and sets forth procedures for oversight and rescission of waivers granted to States.

The final rule requires States seeking waivers to submit requests to the Regional Administrator for the EPA Region in which the State is located. Within 30 days of receiving a waiver request, EPA must determine whether the request is complete. Within 30 days after determining that a request is complete, EPA will issue in the Federal Register a notice that announces receipt of the request and solicit written comments from the public. Comments must be submitted within 60 days. If, during the comment period, EPA receives a written objection to the State's request or a written request for a public hearing, EPA will schedule a public hearing (as is required by TSCA Title II) to be held in the affected State after the close of the comment period. EPA will issue a notice in the Federal Register announcing its decision to grant or deny, in whole or in part, a request for waiver within 30 days after the close of the comment period or within 30 days following a public hearing.

N. Recordkeeping

Section 763.94 requires that LEAs collect and retain various records which are not part of the information submitted to the Governor in the management plan. Records required by the rule include those pertaining to certain events which occur after the submission of the management plan, including: Response actions and preventive measures; fiber release episodes; periodic surveillance; and various operations and maintenance activities. Records required must be maintained in a centralized location in the administrative office of the school and the local education agency.

For each homogeneous area where all ACBM has been removed, the LEA shall retain such records for 3 years after the next reinspection.

O. Enforcement

TSCA Title II, section 207(a) provides civil penalities of up to $5,000 per day for violations of Title II of TSCA when an LEA fails to conduct inspections in a manner consistent with the final rule, knowingly submits false information to the Governor, or fails to develop a management plan in a manner consistent with the final rule, knowingly submits false information to the Governor, or fails to develop a management plan in a manner consistent with this rule. TSCA Title II, section 16 provides civil penalties of up to $25,000 per day for violations of Title I of TSCA when a person other than an LEA violates the final rule. Criminal penalties may be assessed if any violation committed by any person (including a LEA) is knowing or willful.

The rule provides a process for filing complaints by citizens and requires tha such complaints be investigated and responded to within a reasonable peric

of time consistent with the nature of the violation alleged.

P. Transport and Disposal

Section 203(h) of TSCA Title II requires EPA to promulgate regulations which prescribe standards for transportation and disposal of asbestos-containing waste material. The final rule on transport and disposal was to be issued by October 17, 1987, as part of the final regulations under TSCA Title II. EPA had planned to use revised NESHAP regulations on disposal of asbestos waste to satisfy the requirements of section 203(h) of Title II. However, completion of the NESHAP revision has been delayed.

Accordingly, under section 204(a) of Title II, LEAs shall carry out the requirements described in section 204(f). Section 204(f) states that "the local education agency shall provide for the transportation and disposal of asbestos in accordance with the most recent version of the Environmental Protection Agency's "Asbestos Waste Management Guidance" (or any successor to such document)." Under TSCA Title I, section 15(1)(D), as amended by AHERA section 3, EPA may enforce the provisions of section 204(f). The chapters of the waste management guidance document which pertain to transport and disposal have been printed in this **Federal Register** notice as Appendix D to Subpart E.

EPA intends to issue the revised asbestos NESHAP as a proposed rule under section 203(h) of TSCA Title II to govern transport and disposal of asbestos waste from schools. Section 204(f) will be in effect until a final rule under section 203(h) is promulgated. Further, EPA also intends that the NESHAP waste disposal rules will ultimately regulate asbestos emissions from waste disposal when they are promulgated.

III. Response to Public Comments

This unit discusses EPA's responses to the most significant issues raised in the comments received from the public. A more comprehensive version of EPA's response to comments received has been placed in the public record.

Comments and responses are organized in this unit according to the relevant section of the regulation.

A. Scope and Purpose

Comments were received regarding three aspects of the Scope and Purpose section (§ 763.80). Comments from a group of technical practitioners, which included architects, engineers, and consultants involved in asbestos control, suggested that preschool nurseries, colleges, and universities should be included in the schools covered by the regulation. A second issue raised in the comments recommended that nonfriable materials not be subject to the inspection and management plan requirements of the regulation. Third, many commenters expressed concerns that the October 12, 1988, deadline for submitting management plans to States could not be met.

On all three of these issues, the statutory language of Title II is clear and the regulation reflects the statute. Title II only gives EPA authority to regulate "local education agencies." The definition of "local education agency" in section 202(7) refers only to public and private elementary and secondary schools. Section 203 of Title II requires inspection for "asbestos-containing materials" which includes both friable and nonfriable asbestos (see section 202). Management plan provisions of Title II also refer to "asbestos-containing material." Finally, section 205(a) of Title II specifies that "720 days after enactment" of this title (i.e., October 12, 1988) local education agencies must submit management plans to the Governors of their States. Based on the comments received, EPA is concerned about the ability of LEAs to complete and submit management plans by October 12, 1988. The deadline, however, is prescribed in the statute.

B. Definitions

1. *Asbestos containing building material.* In general, union groups and education groups urged the incorporation into the rule of all exterior ACM and other asbestos material such as asbestos gloves. Conversely, several school administration groups argued to limit the rule to interior areas only and not to include asbestos gloves and other such materials within the scope of the rule.

TSCA Title II was designed to provide school children and school employees with a safe environment while attending classes or working inside school buildings. The statute in several places specifically authorizes EPA to regulate asbestos "in" school buildings. Furthermore, an extension to all exterior areas would result in only small health benefits since most exterior ACM is enclosed in solid matrices such as cement, is nonfriable, and is not generally disturbed. Dealing with exterior materials would constitute an expensive undertaking for schools in terms of inspection and management plan development for such small health benefits. The Agency believes the proposed rule's coverage of all interior areas and a few specified exterior areas that function similar to interior areas protects the health of building occupants.

EPA also interprets TSCA Title II as not including nonbuilding asbestos products within the scope of the rule. The definition of friable ACM in the statute (section 202(6)) refers to ACM applied on ceilings, walls, structural members, piping, duct work, or any other part of a building. At no point does the statute cite as examples nonbuilding materials such as asbestos gloves. If certain schools such as vocational schools have other types of asbestos products in their buildings (e.g. automobile brake linings) they may want to voluntarily address these issues in a fashion similar to the AHERA requirements.

2. *Asbestos debris.* A number of commenters have sought to have dust included in the definition of asbestos debris. Some other commenters favor expanding the definition of asbestos debris to include dust in the immediate vicinity of friable ACM. Other commenters representing former asbestos manufacturers and schools argued that dust should not be included as part of the definitions of asbestos debris or as evidence of damage.

The Agency believes that an accredited expert be allowed to exercise judgment in determining whether asbestos fibers or dust constitute damage. EPA believes that accredited experts can determine whether dust has originated from adjacent ACBM. The Agency maintains, however, that not all dust in schools is ACM. An accredited person on-the-scene in a school building can make the determination of damage due to the presence of dust based on training and experience. As a result, EPA has included in the final rule's definitions of asbestos debris the flexibility for the accredited inspectors to determine dust to be asbestos containing.

3. *Significantly damaged friable surfacing and miscellaneous ACM.* Many commenters thought that significantly damaged asbestos should be defined to be damage that is either extensive "or" severe, rather than extensive "and" severe as in the proposal. These commenters included education groups and unions. They believe that either condition can pose a significant health threat.

The Agency disagrees with the comments. Significantly damaged friable surfacing and miscellaneous ACM must refer to the most severely damaged areas where the damage is also widespread. Damage that is widespread or only severe is of concern, but should not necessarily require a response

action of the same magnitude as those situations where both are present.

4. *Operations and maintenance.* Many commenters recommended that O&M apply to all ACBM, not just friable ACBM. Some of these commenters were primarily concerned with the need for periodic surveillance of all ACBM, not just friable ACBM as suggested by the proposed rule's definition.

The Agency disagrees with the recommendation to extend O&M to nonfriable ACBM. Section 203(f) states that O&M is for friable ACBM. Periodic surveillance (see section 203(g) and training requirements (see generally section 206), however, apply to all ACM. The final rule makes clear these statutory distinctions. Section 763.91 dealing with O&M refers to friable asbestos and § 763.92 dealing with periodic surveillance and training apply to all ACM (including friable and nonfriable materials).

5. *Potential damage and potential significant damage.* Many groups commented on these definitions. A group representing former asbestos manufacturers argue that the best indicator of potential damage is evidence of past damage. Some union groups and State attorneys general commented that in addition to accessibility, potential significant damage ought to include air erosion and vibration as disturbance factors.

The Agency believes adding the terms air erosion and vibration increases the specificity of the rule and clarifies the original intent of the proposed regulation. As a result, the Agency accepts the comments regarding air erosion and vibration and has added definitions for each of these terms. EPA believes that whether past damage is the best indicator of potential damage is irrelevant to defining potential damage. As asbestos material ages, it may become more susceptible to damage. The Agency, accordingly, believes that all circumstances must be considered in assessing potential damage.

6. *Repair and enclosure.* A sizable number of commenters suggested that EPA change the wording of both of these definitions to require the preventing of fiber release. In the proposed rule, repair "contained" fiber release and enclosure "controlled" fiber release. In addition, another commenter suggested adding the requirements of inaccessibility and permanence for enclosed ACM. One commenter wanted to expand the enclosure definition to account for spray applied enclosures.

EPA agrees with the recommendation regarding fiber release. Preventing fiber release clarifies the intent of the repair definition. An enclosure is an airtight, impermeable, permanent barrier and as such must by definition prevent the release of fibers.

7. *Vibration and air erosion.* Several commenters suggested these terms be defined in the rule.

EPA agrees with the commenters and has added definitions for both terms.

C. LEA Responsibilities

Several issues in this section were commented upon by LEAs, education associations, school administrators and school board groups and state government officials.

Comments were received on the requirement in the proposed rule for the LEA to designate a person to ensure that the requirements of this section are properly implemented. Some commenters felt that this requirement was unnecessary while other commenters felt that the requirement of the proposed rule was sufficiently flexible to allow for differences in size and capabilities of LEAs. Some commenters favored appointment of an asbestos program manager with more stringent training or qualification requirements for that person. EPA has retained for the final rule the requirement for a designee to ensure proper implementation of LEA responsibilities. This approach provides the benefits of having a single overseer for the asbestos program without the added burden of more stringent training or qualification requirements.

Many parties commented on the requirement that LEAs ensure that short-term workers (telephone repair workers, administrators, etc.) who may come in contact with asbestos are "instructed in safe work practices" regarding ACM. Commenters felt that this placed an undue burden on LEAs and that the responsibility for this kind of instruction for short-term workers rests with their employer. EPA agrees with these comments and has eliminated this requirement while retaining the provision that LEAs ensure that short-term workers are provided information about the locations of ACBM.

The potential for conflicts of interest between accredited inspectors, management planners, and persons who design or conduct abatement actions also was discussed by a variety of commenters. Some commenters suggested that EPA should require the accredited persons to sign a conflict of interest statement certifying no party has a financial relationship with other parties involved in the inspection, development of the management plan, or performance of the response action. The Agency recommends that LEAs consider requesting a full financial disclosure from all potential accredited professions. It may be more efficient for LEAs to use the same firm to conduct the inspections and develop the management plans to promote continuity in the process. However, LEAs should be wary of employing one firm to develop both the management plan and conduct response actions, since the management planner's recommendations about response actions could be influenced by the potential profitability of the recommendation. A similar conflict of interest problem could exist when an abatement firm and an air monitoring firm are directly or indirectly connected. The air monitoring firm could conceivably provide false results that indicate a building is safe for reoccupancy and the abatement contractor has successfully completed the job. EPA has modified the LEA responsibilities section of the rule to specifically state that LEAs must consider conflict of interest issues. However, any resolution of such issues is solely at the discretion of the LEA.

D. Inspections and Reinspections

Comments received on this section dealt with three subjects: the scope of the inspection; the standardization of the inspection; and the inspection process itself.

Regarding the scope of the inspection, comments were received on whether dormitories should be included in the inspection requirement. EPA concurs with the comments supporting the proposed rule's language including dormitories in the inspection. The Agency believes this is a reasonable extension of the definition of school building since the intent of AHERA is to protect children while attending school. Comments were also received regarding incorporation into the rule of all exterior ACM and other asbestos-containing products. As described in the "Definitions" part of this Unit, EPA believes these additions are unwarranted.

Comments were received regarding the use of a standardized inspection form, and commenters also urged EPA to issue a guidance document for inspectors and management planners. EPA disagrees with comments supporting a mandatory inspection form. The Agency believes LEAs, accredited inspectors, and States should be allowed the flexibility to develop inspection forms to suit their needs. However, EPA is developing a guidance document for LEAs which explains the requirements of this rule, and that document will contain, among other

things, a suggested format for inspection and management plans. In addition, EPA has developed a model course for accreditation of inspectors and management planners which will provide uniform guidance to inspectors and management planners regarding their responsibilities. Further, before any course is offered to accredit inspectors and management planners, it must be reviewed and approved by EPA in accordance with the provisions of the Model Accreditation Plan. This review process will help ensure that inspectors and management planners receive uniform guidance.

The Agency received comments about the requirement for reinspection every 3 years by an accredited inspector. Some commenters supported this requirement, others thought the reinspection should be more frequent, still others felt that the reinspection should be less frequent and that use of an accredited inspector was unnecessary. EPA believes a 3-year reinspection requirement to be conducted by an accredited inspector is necessary. The Agency is concerned that an annual reinspection as suggested by some commenters would prove unduly burdensome to LEAs while providing limited information. The rule provides for periodic surveillance activities at least twice a year to keep track of changes in the ACBM's condition. On the other hand, the Agency believes a reinspection every 5 years is too long a period of time for a school's ACBM not to be checked by an accredited inspector. ACBM could deteriorate substantially over a 5-year period of time. The Agency disagrees with comments suggesting that unaccredited persons should be permitted to perform reinspections. Accredited inspectors will have special training to determine changes in the physical condition of ACBM. The purpose of periodic surveillance, which may be conducted by unaccredited personnel, is to note observable changes in the condition of ACBM. For example, a periodic surveillance check would notice a water leak through an ACBM ceiling. The Agency believes the combination of the semiannual periodic surveillance check and the 3-year reinspection by an accredited inspector provides for adequate scrutiny of ACBM present in schools.

Industry commenters commended the proposed rule for allowing thermal system insulation "that has retained its structural integrity and that has an undamaged protective jacket or wrap that prevents fiber release" to be "deemed" nonfriable for the purposes of this regulation. Others commenters believed this is a misrepresentation of the true nature of the material, which is still friable under its covering.

The Agency agreed with comments that state friable thermal system insulation cannot properly be "deemed" nonfriable. This constitutes an inaccurate depiction of the true nature of this material. An undamaged jacket on thermal system insulation may be properly seen as an enclosure, which prevents fiber release and reduces hazard, but does not change the characteristics of material friability behind or under the enclosure.

However, while the Agency considers it inappropriate to "deem" or characterize friable thermal system insulation as nonfriable, it is appropriate to "treat" this material as nonfriable. EPA, in its guidance and technical assistance activities, has traditionally treated undamaged friable thermal system insulation as nonfriable, for the purposes of cleaning and other O&M activities.

Accordingly, the regulation at § 763.85(c) has been modified to state that thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap that prevents fiber release shall be treated as nonfriable.

Ultimately, however, the change in wording does not change the intent of the regulation that thermal insulation that has both an intact protective jacket and has retained structural integrity should be subject to periodic surveillance and preventive measures, and that custodial and maintenance workers must be trained to deal with such material. Furthermore, if the thermal insulation is disturbed or is about to be disturbed such that it would be rendered friable, all applicable O&M and response action provisions will apply. EPA believes that this is consistent with NESHAP, which considers such material to be friable when disturbed or removed.

E. Bulk Asbestos Sample Measurement

Comments suggested that EPA allow use of electron microscopy and X-ray diffraction (XRD) for the analysis of bulk samples.

For purposes of this rule, PLM will be used for analyzing bulk samples for asbestos. The analytical method to be employed is the EPA "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (40 CFR 763, Appendix A to Subpart F). EPA feels that the existing EPA PLM protocol is technically sufficient for determining asbestos fiber identity and quantity. Currently, allowance is made in the EPA PLM protocol for additional determination of a fiber's quantity by XRD. Additionally, validated methods for the use of electron microscopy in bulk asbestos analysis do not exist at this time. New developments in electron microscopy or XRD technology may lead EPA to reconsider the use of these tools for primary analysis at a future time.

A number of comments sought clarification on the laboratory accreditation program. Two laboratory accreditation programs are currently being developed by the NBS for laboratories which analyze bulk and air samples for asbestos. The bulk accreditation program is expected to be operational in early FY89. The air accreditation program is expected to be complete in late FY89.

Until the NBS bulk accreditation program is complete, EPA will establish an interim accreditation program for laboratories which analyze bulk samples by PLM. EPA will provide interim accreditation to laboratories which correctly identify four samples as either asbestos-containing or nonasbestos-containing. EPA announced the availability of this program in the Federal Register of September 3, 1987 (52 FR 33470). The deadline for laboratory participation in the first round was September 30, 1987. A formal listing of the first round of accredited labs will be available in January 1988. Individual laboratories will be informed of their performance by letter in December 1987. Laboratories which did not participate in the first round of accreditation will be considered in the second round of accreditation, which is scheduled for April 1988.

F. Assessment

One comment regarding assessment of the physical condition of the material by accredited inspectors was that EPA should require accredited inspectors to give reasons for their assessment conclusions. EPA agrees with the comment. This requirement would provide reviewers of management plans at the State level with additional, useful information in judging whether the management plan accurately reflects the condition of the school building. The Agency believes the increase in the recordkeeping burden is small. As a result, § 763.88(b) has been changed to require the accredited inspector to give written reasons for the decision to classify ACBM.

Some commenters suggested that management planners should be required to use one assessment method in developing recommendations for LEAs about response actions. These commenters suggested a variety of

algorithms and "decision tree" methods for consideration. Other commenters supported the proposed rule's language to allow various assessment methods. The Agency believes it is not possible to point to one assessment method as most capable of producing an appropriate response action recommendation: there are a number of suitable assessment methods available for use by accredited management planners. EPA's management planner accreditation course will provide instruction about a variety of such methods.

C. Response Actions

1. *Protection of human health and the environment in response action selection.* Several commenters, particularly several State attorneys general and unions, expressed concern that the structure of the response action subsection allowed costs and other considerations to be granted equal consideration with protecting human health and the environment.

EPA has clarified language in the response action subsection (§ 763.90) to underscore its original intent in the proposed rule that protecting human health and the environment is the prime consideration in selecting an appropriate response action. Comments from the Service Employees International Union were particularly useful in this regard.

The Agency believes its response action approach is consistent with congressional direction to apply the prior and inviolable standard of protecting human health and the environment, and allows the consideration and selection of the least burdensome method only after the overriding health determination is made.

2. *Air monitoring for determining response actions.* Several commenters, primarily from industry, encouraged the establishment of air monitoring standards as the primary basis for hazard assessment. Most commenters, however, supported EPA's position in the proposed rule.

Traditionally, EPA has recommended assessment of asbestos in schools by visual evaluation of qualitative factors such as the material's condition, physical characteristics, and location. A careful examination of physical characteristics of the material, conducted by a trained expert, provides a direct method for determining both the relative degree of hazard and the likelihood of future fiber release.

EPA continues to discourage the use of air monitoring as the primary technique for assessing asbestos hazards, since that method only measures current conditions and provides no information about potential and future levels of fiber release. Further, when the costs and technical requirements necessary for acquiring truly meaningful air monitoring data are considered, the Agency maintains that assessment of qualitative factors continues to be the appropriate method for assessment of hazards and selection of response actions which protect human health and the environment. However, air monitoring may provide useful supplemental information, when conducted in conjunction with a comprehensive visual inspection.

Several industry commenters proposed that EPA adopt air monitoring standards for damaged and significantly damaged ACM. The levels most often proposed were 0.01 fibers per cubic centimeter (f/cm ^{3}) for damaged friable ACM; 0.1 f/cm ^{3} for significantly damaged friable ACM, with fibers longer than 5 um as measured by transmission electron microscopy (TEM) in each case. No commenters, however, provided any substantive rationale for choosing such levels. The Agency believes that such standards used for purposes of assessing asbestos hazards could not ensure protection of human health and the environment as intended by TSCA Title II. As factors to be used in determining whether response actions are necessary, these numerical values provide a false sense of precision regarding the presence and severity of asbestos hazards and the appropriateness of a given response action. For the same reasons cited in the above discussion of the use of air monitoring, the Agency disagrees with the suggestion that a numerical standard is appropriate as the primary criterion for selection of response actions.

3. *Specificity in definitions related to response actions.* Many commenters felt that more objective and definite response action descriptions should be provided by EPA with regard to damage-related definitions and response actions. Some believed that too much discretion was vested in accredited experts, who would be making technical judgments to advise LEA decisions. One comment cited EPA's economic impact analysis of the rule as an illustration of the lack of objectivity of the response action descriptions. In this analysis, EPA's own regional asbestos coordinators varied greatly in their estimates of what percentages of materials in schools in their regions fell into the various damage conditions described in TSCA Title II.

In response to comments, the Agency has added much more illustrative detail to three important definitions—damaged and significantly damaged friable thermal system insulation ACM; damaged friable miscellaneous ACM; and damaged friable surfacing ACM—which will help accredited experts better identify asbestos hazards in schools. EPA agrees that this language, taken from the preamble of the proposed rule, adds necessary clarification to conditions which may constitute ACM damage and warrant appropriate response actions. These descriptions were not available to Agency regional asbestos coordinators when they gave their estimates of damage in schools. In addition, the extensive training program developed in the rule should achieve much greater consistency in evaluating and assessing asbestos in schools, although perfect consistency will never be achieved.

However, a rigid response action decision structure is not appropriate for this rule, primarily because many asbestos hazard situations are too circumstantial and appropriate response actions are too "hazard specific" to fit neatly into a discrete set of prescriptive categories.

There appears, then, no substitute for the judgment of the accredited management planner, who must recommend appropriate response actions within the general requirements established in § 763.90. That section provides a process by which a range of available choices may be considered by the accredited expert and selected by the LEA to best protect human health and the environment from each particular asbestos hazard in the school.

Under the provisions of the regulation, LEAs may take into account a variety of particular considerations, such as local circumstances, technological feasibility of appropriate response actions, economic considerations, and other relevant factors in selecting the least burdensome method. Such factors, however, may be considered only after the response action has been determined to protect human health and the environment.

Finally, accreditation alone does not imply "expertness." It only assures a suitable and common level of competence and awareness which is necessary for inspection, assessment and response action recommendation. School officials are well-advised to consider a variety of factors, including quality of training, experience, and prior performance of accredited personnel in selecting inspectors, management plan developers, abatement project designers, and contractors for school asbestos projects.

4. *Removal as the "only" appropriate response action for significantly*

damaged ACM. Several State attorneys general, among several other commenters, contended that "[I]n cases of significant damage, the only appropriate response is to remove the material, as this is the only action which adequately protects human health and the environment."

EPA disagrees that removal is the only appropriate response in all cases of significantly damaged ACM, particularly thermal system insulation. There may indeed be particular circumstances of significant damage in which removal is both inappropriate and undesirable.

EPA agrees that, particularly with regard to significantly damaged friable miscellaneous and surfacing ACM, isolation of the functional space and removal is often the most appropriate (and possibly, only acceptable) response. Encapsulation, for example, would be an acceptable response action for friable surfacing ACM only under very limited circumstances, given current technology. However, the Agency will not categorically preclude response actions of repair, encapsulation, or enclosure which, under certain circumstances, may also protect human health and the environment.

5. *Implementation of response actions in a timely fashion.* Several commenters asked the Agency to clarify the requirement that appropriate response actions be selected and implemented by LEAs "in a timely fashion," perhaps by establishing time limits for particular actions.

Many of the response action provisions themselves imply timeliness in response. Damaged or significantly damaged thermal system insulation ACM or its covering, for example, must be constantly maintained in an intact state and undamaged condition. In addition, the rule specifies, in the case of significantly damaged friable surfacing or miscellaneous ACM, that LEAs must *immediately* isolate the functional space and restrict access, unless isolation is not necessary to protect human health and the environment.

The Agency does not believe it is able to define "timely fashion" or specify time limits or deadlines in applying such requirements in all cases any better than it is able to prescribe a single response action for every particular damage category. LEAs, in the context of particular asbestos hazards, in consultation with accredited experts and in full view of school-community groups, are responsible for determining appropriate schedules for their asbestos response actions.

However, LEAs should be advised that in providing "a schedule for beginning and completing each preventive measure and response action" as required in § 763.93(e)(6), the LEA is specifying what constitutes implementation of preventive measures and response actions in a timely fashion for that LEA. EPA and State enforcement officials will be monitoring LEA adherence to these schedules to determine whether enforcement actions are warranted against those schools which fail to meet their own deadlines for completing preventive measures and response actions.

6. *Repair for significantly damaged friable thermal system insulation ACM.* Several commenters, State attorneys general and the unions in particular, questioned the efficacy of repair for significantly damaged friable thermal system insulation ACM.

Repair is often successful in preventing fiber release from damaged thermal system insulation and, after assurance that it will protect human health and the environment, an LEA may find repair tha least burdensome method of response. Techniques for thermal system insulation ACM repair are well-developed and easily accomplished. Furthermore, the nature of the material makes it especially susceptible to quick remadiation with simple techniques.

EPA recognizes that severely damaged friable thermal system ACM may warrant removal to protect human health and the environment, but this is not always the case. If feasible, as determined by the accredited expert, and protective of human health and the environment, repair may be an appropriate response action for this level of damage under particular circumstances. Further, new and emerging repair technologies may offer LEAs new ways to prevent fiber release, protect human health and the environment, and postpone the major disruption often associated with asbestos removal projects until a more appropriate time.

Finally, "feasibility" does *not* imply, as one commenter feared, "repair first, and only if repair is impossible, then remove." There is no predisposition toward repair, but rather a prior consideration of repair feasibility as a check to avoid a major disruption to the material, through removal, if it is not necessary or desirabla.

7. *Airborne asbestos fiber measurement for clearance of abatement sites.* EPA has received comments on the use of transmission electron microscopy (TEM), scanning electron microscopy, and phase contrast microscopy for the analysis of air samples taken for clearance air monitoring. Comments dealt with issues that included the possible uses of each of these analytical methods for clearance air monitoring, as well as issues specific to the use of TEM.

The final rule sets forth TEM as the analytical method to be used for analysis of samples taken for clearance air monitoring although the TEM requirement will be phased-in gradually. EPA convened a committee of leading microscopists from private and Federal laboratories to produce an analytical protocol specific for post-abatement clearance monitoring. Each microscopist had extensive experience in TEM, scanning electron microscopy (SEM), and airborne asbestos analysis. The unanimous conclusion of the microscopists was that, for purposes of clearance air monitoring, TEM was the technique of choice. Consequently, an interim TEM protocol has been formulated for clearance air monitoring of asbestos abatement sites in schools.

EPA chose to require analysis by TEM for four reasons: (1) TEM is capable of measuring the smallest diameter fibers; (2) based on existing, validated methods, a formal protocol has been developed; (3) TEM has been validated by intra- and inter-laboratory comparisons conducted by NBS; and (4) a formal laboratory accreditation program for TEM laboratories is currently under development by tha NBS.

Phase Contrast Microscopy (PCM) will be allowed for clearance of small projects (removal of less than 160 ft^2 or 260 linear feet of asbestos) and during a phase-in of the TEM requirement, for clearance of soma larger projects. This phase-in period will give laboratories a period of tima to acquire and install TEM instruments, and will permit economical clearance of small projects where clearance analysis costs are a significant portion of total abatement costs.

PCM analysis must be made using tha latest version of the NIOSH 7400 method. Two other methods of PCM analysis were considered: the OSHA/EPA Reference Method (ORM) and P&CAM 239. The ORM cannot be used for area clearance because it is intended for personal sampling of abatement workers during abatement work clearance following an abatement action. P&CAM 239 will not be allowed since both NIOSH and OSHA have determined that the NIOSH 7400 method is more accurate and reliable.

The PCM method is nonspecific for asbestos and it cannot detect the small

thin fibers found at abatement sites. EPA research data has shown that PCM is often inadequate for post-abatement monitoring of airborne asbestos. These data indicate that sites which were shown to be clean with PCM data were found by TEM data to be still contaminated. Therefore, reoccupancy of sites initially cleared by PCM, and thus, assumed to have been adequately cleaned, may in fact result in exposures to asbestos.

SEM, for purposes of this rulemaking, was determined to be inadequate for building clearance for the following reasons: (1) Currently available methodologies are not validated for the analysis of asbestos fibers; (2) SEM is limited in its ability to identify the crystalline structure of a particular fiber. (SEM analysis is therefore confined to identification of structures by elemental composition and morphology); (3) recent studies conducted by NBS have evaluated several types of scanning electron microscopes and the variability between these instruments. (NBS has found the image contrast of the microscopes is difficult to standardize between individual scanning electron microscopes); and (4) currently no laboratory accreditation program exists for accrediting SEM laboratories. EPA is aware of two methodologies for SEM: a draft method currently in its initial review by the American Society for Testing and Materials (ASTM) and an Asbestos International Association (AIA) protocol. Neither method has been validated. Additionally, NBS has determined that the AIA method has inherent difficulty when examining certain types of asbestos.

Currently, a laboratory accreditation program is in development for TEM by NBS. Additionally, the AIHA PAT Program evaluates laboratories conducting PCM analyses. The NBS has unconditionally stated that it will not formulate a laboratory accreditation program for SEM based on existing methodologies. Until suitable methodologies are developed, EPA will continue to monitor and investigate the progress of SEM methodologies and research for asbestos analysis. New developments in SEM technology may allow SEM to be considered as an acceptable asbestos measurement tool in the future.

Regarding the use of TEM, several commenters suggested that the aspect ratio (length to width) should be extended to 10:1. For the purpose of TEM measurement by the methods in Appendix A, any elongated particle having a minimum length of 0.5 μm, parallel sides, and an aspect ratio (length to width) of 5:1 or larger is defined as a fiber. This represents a change in the previous EPA proposed TEM methodologies which examine fibers with aspect ratios of 3:1 and above; it follows the direction set by NIOSH in proposing modified counting rules in the 7400 method. It is consistent with the panel of microscopists' observations that asbestos structures have aspect ratios equal to and greater than 5:1 whereas the majority of nonasbestos structures, minerals and particles, for example, gypsum, have aspect ratios of less than 5:1. Analysis of these nonasbestos structures tends to comprise a large portion of the time required for sample analysis. EPA believes that further research is needed to justify the extension of aspect ratio to 10:1. Consequently, for the purpose of TEM building clearance, fibers must have an aspect ratio of at least 5:1.

8. *Phase-in period for TEM.* Several commenters asked that the phase-in period for requiring TEM analysis be lengthened, abbreviated, or eliminated altogether. EPA believes the 3-year phase-in period for requiring TEM for all but the smallest abatement jobs allows commercial laboratories the necessary time to purchase and set up additional TEM instruments. In December 1987, estimates developed by EPA's Office of Research and Development (ORD) indicated that there were approximately 62 commercial laboratories in the country which advertised the ability to perform TEM analysis on airborne asbestos samples. Testimony received during the August 25 and 26 public hearings for this rulemaking as well as information gathered by EPA staff, indicate that many laboratories intended to purchase additional TEM equipment. In addition, several laboratories own more than one transmission electron microscope.

EPA believes that an increased demand for TEM instruments will drive the supply of instruments, and has stipulated the 3-year phase-in to allow commercial laboratories time to react to the increased demand. The Agency believes a shorter phase-in period, or requiring the immediate use of TEM for all jobs would create a substantial burden on schools and laboratories. The delay to clear abatement jobs and the high cost associated with TEM analysis for relatively small jobs would be burdensome. EPA has consequently decided to retain the length and type of phase-in described in the proposed rule.

H. Operatians and Maintenance and Warker Pratection

1. *Worker protection and "small-scale-short-duration" activities.* Several commenters, particularly union groups, advised the Agency to increase worker protection standards and alter the definition and requirements for small-scale, short-duration projects (as defined by Appendix B to Subpart E) prescribed by the Occupational Safety and Health Administration's (OSHA's) and EPA's relevant worker protection regulations. In particular, comments focused on permissible exposure limits (PEL), the allowance of historical air monitoring data, respiratory protection, and the practice of glove bag removal. Other commenters recommended no change, citing OSHA's primacy in this area.

This final regulation, through the provisions of the EPA worker protection rule, extends coverage already in place for O&M workers in private schools under the OSHA construction standard to public sector O&M workers now unprotected in schools. This OSHA standard also includes Appendix B of this rule. LEAs may implement the provisions of Appendix B of the rule instead of the full scope of the EPA/OSHA worker protection regulation when they conduct small-scale, short-duration activities (all of which are presumed to exceed the action level of 0.1 f/cm ^{3}).

The Agency maintains that OSHA is the most appropriate Federal agency for determining worker protection policy. As noted in the preamble to the proposed rule, EPA believes that OSHA's recently completed worker protection rulemaking, a lengthy and detailed process focused specifically on such issues, is as appropriate to school O&M workers via the EPA worker protection rule as it is to other private sector O&M workers. EPA continues in this belief and no commenters have indicated substantive reasons why the OSHA protections should not be followed.

Therefore, the Agency does not intend to reassess the OSHA determination with respect to issues such as PEL, the use of historical air monitoring data, respiratory protection, and the allowance of glove bag removal. EPA will, however, change the provisions of its worker protection rule (and hence, this regulation) to conform with any modifications subsequently adopted by OSHA.

Finally, with regard to the definition of "small-scale, short-duration" activities, the Agency provides further clarification of the OSHA definition in Appendix B to Subpart E by adding five additional points which may be used to define such projects. EPA believes these additional considerations are instructive

and useful, but will not require their consideration in defining "small-scale, short-duration" activities.

2. *Respiratory protection.* Many organizations, in their comments, advocated the mandatory use of respiratory protection for all operations and maintenance O&M work which might affect asbestos-containing materials ACM.

Once again, the Agency maintains that OSHA is the most appropriate Federal agency for determining worker protection regulations policy, including appropriate respiratory protection, and EPA finds that OSHA's respiratory protection regulations which govern O&M workers in the private sector are equally relevant in schools. EPA does not intend to reassess the OSHA determination in this regard.

However, the regulation does require specific respiratory protection training for all O&M workers who conduct any activities which will result in the disturbance of ACM. Such training must include: (1) Notification of information on the use of respiratory protection as contained in the EPA/National Institute for Occupational Safety and Health (NIOSH) "Guide to Respiratory Protection for the Asbestos Abatement Industry," September 1986 (EPA–560/OPTS–86–001); and (2) hands-on training in the use of respiratory protection.

EPA believes the effect of these training requirements will be to ensure that LEAs determine the appropriate level of protection for its O&M workers and that workers are adequately informed of protection levels and properly trained in respiratory protection practices.

Comments expressed concern that O&M workers could be at risk in situations where peak exposures occur and, thus, may need additional respiratory protection. The comments claim these exposures may exceed OSHA standards and are unpredictable. EPA, however, believes its regulations cover these situations since the regulations provide that respirators shall be supplied in areas where airborne concentrations "can reasonably be expected to exceed permissible limits" 40 CFR 763.121(e) (1) and (4). Since this regulation requires warning labels for asbestos materials (§ 763.95), workers and LEAs should be aware of situations in which asbestos materials will be disturbed to such an extent that respirators may be appropriate.

3. *Right to refuse work.* Several unions provided comments which advanced a proposal to include a right to refuse unsafe or illegal work in the regulation.

EPA believes that the issue of right to refuse work, which is protected under other labor legislation and worker protection regulations, is more properly addressed by the Department of Labor. This is a general worker protection issue, outside the scope of EPA's expertise. Comments noted that OSHA has promulgated a general regulation affecting an employee's right to refuse work (29 CFR 1977.12(b)(2)) and argue that EPA should extend this safeguard to school workers in the same way the Agency extended other OSHA safeguards to school workers. This point, however, is misplaced. EPA does not believe it should extend general OSHA safeguards to school workers. EPA is not charged with general worker protection, although it is appropriate to extend specific asbestos related standards to school workers.

AHERA section 211(a) does prohibit State or LEA discrimination in any way against someone because that person has provided information relating to a potention violation of the Act or regulation, including a school directive that workers perform unsafe or illegal activities. The Act allows for any employee or representative of employees who believes they have been fired or otherwise discriminated against to apply for review at the Department of Labor under section 11(c) of the Occupational Safety and Health Act.

4. *Routine cleaning.* Several commenters, particularly the State attorneys general and the unions, recommended that the Agency require routine or periodic cleaning in areas with friable ACM, as outlined in the EPA Purple Book.

The Agency has traditionally recommended, as a prudent measure, routine cleaning by wet methods in school areas with asbestos-containing materials, particularly when they are friable. Monthly wet cleaning has been recommended in previous EPA guidance for areas where friable surfacing ACM is present and semiannual wet cleaning is suggested in areas with damaged thermal system insulation ACM.

Other commenters stated the belief that improper cleaning on a regular basis might disturb the material and could actually increase fiber levels in the air. Further, periodic cleaning in limited-access areas, such as pipe tunnels, would not appreciably reduce exposure to school occupants and might actually increase hazard to custodial workers who conduct the cleaning.

EPA is persuaded by the comments that a decision on routine cleaning by the accredited management planner in the context of the particular asbestos hazard is appropriate. The final rule now requires that the accredited management planner shall make a written recommendation to the LEA regarding the appropriateness and frequency of additional cleaning, which must be included in the management plan.

I. Management Plans

The contents of the management plan were the subject of numerous comments from various parties. In general, commenters urged that the contents of the plan not exceed the items required in the statutory language of Title II. EPA believes that the language of Title II regarding management plans was made very prescriptive to enhance accountability, aid review by States, and improve enforcement of the regulation. The Agency has determined that the additional requirements in the regulation are consistent with the intent of the Act and that the additional information will be useful to parents, employees, accredited persons, State reviewers, and EPA enforcement officials.

The manner in which parents and employees should receive notification about the availability of asbestos management plans was the subject of many comments. In general, LEAs and school administrative groups favored the flexibility provided under the proposed rule, which allowed LEAs to notify parent and employee organizations without specifying the exact form of notification. Other commenters such as educational associations and environmental groups preferred written notification to individual parents and employees as a way of ensuring full awareness of the availability of the plan. EPA has modified this provision of the final rule to require written notification to parent and employee organizations, or, in the absence of such organizations, written public notice regarding plan availability. (Notification in the absence of the organizations could be in the form of a newspaper ad, an article in an LEA newsletter or various other forms.) The change provides a means of notification that should increase awareness of the plan, retain flexibility of LEAs regarding the exact form of the notification, and aid efforts to enforce the notification provisions.

Some commenters suggested that there is no need to notify parents of the availability of the plan. Title II, section 203(i)(5), states that the LEA "shall notify parent, teacher, and employee organizations of the availability of such plan."

Comments were also received regarding the need for an annual notification requirement even though the

plan has not changed since the previous notification. The purpose for the annual notification is to ensure that parents and employees new to the LEA each year have an opportunity to be informed about the availability of the plan. Other commenters suggested that annual notification about the plan should include any asbestos abatement planned for that year, and that the notification requirement be expanded to inform parents whenever actions are taken under the management plans. EPA believes that these ends are achieved in a less burdensome fashion through § 763.84(c), which requires that the LEA inform workers and building occupants, or their legal guardians, at least once each school year about inspections, response actions, and post-response action activities, including periodic surveillance activities that are planned or in progress.

Regarding access to the plan, commenters suggested the plan required to be maintained at the individual school should not be the plan for the entire LEA, but only the plan for that school. The final rule has been clarified to specify that a school needs to have available only that part of the LEA's plan which pertains to that school. Another comment regarding access to the plan came from private school groups interested in limiting access to parents, students, and employees, thereby excluding the general public. EPA believes that this is contrary to Title II, section 203(i)(5), which states that the plan shall be available "for inspection by the public, including teachers, or other school personnel, and parents." Since persons involved with the school are only among those "included" in the public, EPA interprets the statute to preclude limiting access to all other members of the public.

J. State Waivers

Commenters suggested that the opportunity for a public hearing regarding a State's request for waiver should be granted upon request, rather than in response to a written request which details specific objections, as required in the proposal. EPA believes that by requiring a written statement, it is ensuring that hearings have been requested for a valid reason, thereby discouraging individuals from arbitrarily or capriciously requesting a hearing.

Comments were also received which suggested that documents submitted by States seeking waivers should be made public. State waiver requests will be made available as part of the public record required when EPA issues a notice in the Federal Register announcing receipt of the request and opportunity for public comment.

Commenters suggested that waiver requests from local governments should be permitted. Section 203(m) of Title II is clear in limiting waiver requests to States which have established and are implementing a program of asbestos inspection and management.

Commenters suggested that waivers should be granted to programs which are "substantially equivalent" to the regulation, rather than "at least as stringent." Section 203(m) of Title II clearly states that waivers are to be granted to programs "at least as stringent."

Commenters suggested that States with programs requiring only inspection of friable materials be allowed to seek waivers. The Agency believes that section 203(m) of Title II, which states that EPA "may waive some or all" of the regulatory requirements of Title II allows States which require inspection of friable materials in a manner at least as stringent as section 203 of Title II to be granted a waiver. The LEAs of that State would still be required to comply with the Title II requirements for inspection of nonfriable materials as well as all other Title II requirements for which the State did not have a program at least as stringent.

Other comments on the State waiver provisions will be considered as they are raised in proceedings affecting individual States.

K. Exclusions

Comments on the proposed exclusion criteria ranged from general support to opposing any exclusions. Some commenters indicated EPA's 1982 rule was frequently not complied with, dealt only with friable ACM, and the inspectors were not required to have accreditation. As a result, these commenters believe few if any exclusions could be granted based on the 1982 rule. Several commenters believe the term "substantial compliance" is vague and unenforceable. In addition, other commenters agreed that the requirement in the proposed rule to assess friable ACM would require inspectors to visually inspect all areas anyway. Lastly, some commenters suggested that requiring an accredited inspector to determine whether the LEA qualifies for an exclusion is too stringent and thus, unreasonable.

TCSA Title II directs the Agency to promulgate regulations which will provide for the exclusion of any area of a school building from the inspection requirements. If LEAs were required to repeat actions conducted properly in the past, the Agency would place an unnecessary burden on those LEAs and penalize LEAs which made a good faith effort to address asbestos hazards in their building. EPA believes a number of States and localities have developed inspection programs in recent years that are similar to Title II. In addition, LEAs that complied with EPA's 1982 rule could receive an exclusion from part of the final rule's requirements. For example, friable material sampled and found to contain asbestos on the ceiling of the cafeteria would not have to be re-sampled. Although friable ACBM must be assessed even if previously identified, the above example illustrates a savings to the LEA.

"Substantial compliance" allows previous sampling that was done in a random manner with sufficient samples to be adequate to determine no ACBM is present. EPA believes previous adequate inspection and sampling efforts conducted by LEAs should not prove worthless. For example, if a LEA had records that it took three random samples in a 1,500 square foot classroom to comply with EPA's 1982 rule or a State law, and all samples were analyzed negative for asbestos, an accredited inspector may determine that this is sufficient to indicate no asbestos is present even though the current rule would require five samples for the same classroom.

EPA believes only an accredited inspector has the training necessary to determine whether previous inspections and sampling were adequate. EPA has evidence to suggest that many inspections performed under the 1982 rule were conducted by persons with little or no inspection training. If these same individuals were responsible for determining the validity of previous inspections, large areas of schools may not be examined by accredited inspectors. In many respects, this would defeat the purpose of TSCA Title II.

L. Enforcement

Some commenters stated that the "Compliance and Enforcement" section of the proposed rule (§ 763.97) incorrectly describes the provisions of TSCA Title II and that the final rule should explicitly state the following points. First, LEAs that violate the regulations under Title II are not liable under any enforcement provision of Title I. Second, Title II does not allow EPA to assess penalties against individuals. Third, criminal penalties are not permitted for violation of Title II.

EPA disagrees. The provisions of the "Compliance and Enforcement" section

are in accordance with applicable law, as discussed below.

Section 3 of AHERA, "Technical and Conforming Amendments," amends section 15(1) of TSCA Title I to provide that it is unlawful for any person to fail or refuse to comply with any requirement of TSCA Title II or any rule promulgated or order issued under Title II. Therefore, violations of Title II regulations, published in this document are generally subject to the civil and criminal penalties under section 16 of Title I and to civil injunctive actions under section 17 of Title I. This liability is qualified, however, by section 207 of Title II which describes LEA civil liabilities for violation of regulations and provides that LEAs are not liable for any civil penalty under Title I. Section 207, however, does not alter the criminal liabilities of Title I or the injunctive provisions of section 17 of Title I. Nor does section 207 provide any exemption from Title I provisions for inspectors, management planners or any other person other than an LEA that has responsibilities under TSCA Title II. Finally, regardless of the provisions of TSCA, applicable case law provides that liability for actions of organizations may extend to responsible officials.

Thus the three points noted in the comments are wrong. First, LEAs that violate Title II rules are liable for criminal penalties under section 16 of Title I and are subject to injunctive relief in Federal District Courts under section 17 of Title I. Second, individuals may be liable for violating TSCA Title II regulations. Individuals other than LEAs that violate Title II regulations are subject to any of the penalties under Title I, and responsible LEA officials may be liable for any LEA violation of Title II. Third, the effect of the conforming amendments to TSCA Title I is that criminal penalties may be assessed for violation or Title II.

M. Other Issues

1. *Cost estimates for inspection.* Several commenters, ranging from school districts to independent consultants, expressed concern that the economic impact analysis of the proposed rule underestimated the cost of inspecting for ACM. Comments claimed that labor rates and time required to conduct inspections were too low.

EPA agreed with these comments. As a result the Agency's estimates for the final rule increased due to an update of unit labor costs and a small increase in the time estimated to perform several inspection activities. As a result the estimated total cost for all inspection activities increased from the proposal to the final rule from approximately $58.2 million to approximately $78.5 million. The cost for the building walkthrough and visual inspection, assessment, and mapping and reporting activities increased, while the cost estimates for bulk sampling and analysis remained the same. The total inspection costs are now estimated to be $1,144 for public primary schools, $1,627 for public secondary schools and $1,587 for private schools.

2. *Cost estimates for management plans.* A number of commenters expressed concern that the proposed rule underestimated the cost of developing management plans due to low assumptions for labor rates and time needed to prepare the plan. EPA also received comments that training and recordkeeping costs were too low. These costs are considered by EPA as part of the cost of the management plan implementation. Several commenters also expressed concern that EPA underestimated the burden associated with the state review of management plans.

EPA agrees that labor costs and time needed to prepare plans were too low in the proposal and has increased these estimates. EPA has also increased the cost for training by raising labor rate estimates and including travel expenses in the cost of training. As a result, the average costs for first year development and implementation of a management plan for a typical school is estimated to be $3,270 for a public primary school, $4,521 for a public secondary school and $4,460 for a private school. The total cost for development and implementation of management plans increased from $970.8 million in the proposed rule to $1,272 million in the final rule.

With respect to the cost to States of reviewing management plans, EPA has not substantially changed its estimates. While the proposed rule stated a range of $63 to $95 for a State to review a plan, the final rule estimates this cost at approximately $77. The plan review burden will vary with the different number of schools found in each State. For example, California, with an estimated 10,932 schools, would incur a review cost of roughly $842,000. Delaware, with an estimated 288 schools, would incur a cost of about $23,000. States will incur this burden within the 90-day review period specified in the law. The burden for each State, if it must review many plans, may be substantial. However, this burden is imposed by statute.

3. *Costs for operations and maintenance (O&M) programs.* EPA received a comment that it should not have included a cost for levels of overhead and contingency costs for school O&M programs because schools are not run like a business and would not charge themselves overhead. In addition, the comment argued that EPA's assumed rate of three minor fibe release episodes per school per year was too high. It was also argued that EPA should not have included an opportunity cost associated with O&M work, since schools would not actually spend money on many O&M activities but would redirect their employees' activities. Finally, the commenter identified a mistake in the calculations of the cost of consumable supplies used in O&M programs.

EPA agrees that schools would not incur overhead and contingency costs for O&M work. EPA used these indirect costs to calculate the expenses associated with the incremental utility, payroll, and other expenses attributable to an O&M program. EPA believes that these estimates of indirect rates are reasonable.

EPA slightly modified its assumptions with respect to fiber release episodes. However, this change did not have a significant impact on the total cost of O&M programs.

With respect to using an opportunity cost approach in the calculation of O&M costs, EPA believes that these costs are, indeed, a real cost of conducting O&M. However, the Agency acknowledges that some portion of the O&M cost may not result in actual expenditures by a school if the school chooses to give up some other activity to absorb the additional O&M activity. Regardless of how the school chooses to react, these are costs imposed by the rule. Accordingly, the Agency has included the opportunity costs analysis in the final rule estimates.

EPA acknowledges its mistake in the cost of consumables and has adjusted the O&M costs accordingly. This yields a fairly substantial drop in per school annual expenses for O&M programs. The reason for the decrease in O&M costs noted below is almost entirely due to this decrease in cost of consumables.

The final rule's costs of O&M programs per school on a yearly basis (excluding the cost of special equipment acquisition) are now estimated to be $3,800 for a public primary school, $5,100 for a public secondary school and $3,800 for a private school. The total O&M costs have decreased from $525.4 million in the proposal to $292.7 million for the final rule.

4. *Costs for removal, enclosure and encapsulation projects.* Commenters argued that cost estimates in the

proposal for removal projects were incorrect because they assumed replacement costs and post-abatement air monitoring for asbestos materials removed during building demolition. These errors have been corrected in the final cost estimates.

In addition, EPA assumed in the proposal that all post-response action air samples would be analyzed using TEM. Since the rule allows limited PCM, the costs of response actions have decreased accordingly. This cost decrease is approximately $4,000 in direct expenses per project for those projects using PCM.

Total costs for removal, enclosure and encapsulation projects have decreased from $1,587.8 million in the proposal to $1,431 million in the final rule.

5. *Risk related to asbestos in buildings.* Comments argued that EPA did not adequately assess the evidence relating to the harm caused by asbestos in schools. Specifically, they claim that EPA's assessment of risk for this rule (1) did not consider estimates of the toxicological potency of asbestos developed by a number of scientists who disagree with the potency estimates accepted by the Agency; (2) ignored studies showing that prevailing exposure to asbestos in schools has often been measured at levels far below those assumed by the Agency in its assessment (70 to 500 ng/m ^{3}); and (3) did not consider documentation that asbestos exposures after major abatement, especially removal, may not be reduced at all and may even by elevated. Had such evidence been considered, according to one of these comments (Safe Buildings Alliance), EPA would have come to the conclusion that operations and maintenance programs are, in almost all schools, the appropriate response action to protect health and the environment. This evidence is cited to support the position that protection of health and the environment requires specification of an airborne exposure level of protection.

EPA disagrees that the evidence cited in these comments supports the need for an airborne asbestos standard in buildings. Rather, EPA believes that the data cited by these comments, even if assumed to be correctly interpreted by the commenters, supports the rule as promulgated.

The Agency has noted elsewhere in this preamble the problems with air monitoring as the primary assessment tool for asbestos in schools. Furthermore, no comments have provided any substantive health based justification for choosing any airborne level as an appropriate level to protect public health from asbestos in schools.

Nevertheless, EPA believes that the rule accomplishes the goals of these commenters to ensure that unnecessary removal activities do not occur. Indeed, one of these commenters (Safe Buildings Alliance) specifically stated that it believes removals could typically be the response action if the rules were *incorrectly* applied. The rules, however, are not designated to prefer one response action over another, but to allow schools the flexibility to deal with their particular situations. Certainly, asbestos in many schools may not present significant risks in its current condition, but could cause considerable harm if not dealt with properly. Also, there are plainly schools in which serious measures would be needed immediately. In this context the evidence cited by the comments is supportive of EPA's rule, as discussed below.

With respect to the potency of asbestos, EPA has decided that for purposes of this rule there is no need to resolve the divergence of opinion. See preamble to Proposed Rule, 52 FR 15833. In any event, EPA has considered differing views on asbestos health effects in other proceedings (see, e.g., 51 FR 3728 *et seq.*, January 29, 1986) and commenters have not presented new evidence. The important point for purposes of this rule, is that varying local circumstances will drive the decision on the appropriate response action.

With respect to asbestos exposure, EPA acknowledges that many building air measurements show low prevailing levels. However, peak levels during serious disturbances can be extremely high and may cause very serious risks to individuals involved. Regardless of the actual average measurements in all schools, regardless of whether one accepts the levels used by EPA in its assessment or the levels presented by the commenters, the basic structure of the rule should not be changed. Assessment of all the evidence leads to the conclusion that local educational agencies should at least adopt operations and maintenance programs and institute more serious response actions if local conditions warrant. The levels EPA used in its risk assessment are actual measurements (*see, e.g.* "Measuring Airborne Asbestos Levels in Buildings," EPA 560/13-80-026; "Airborne Asbestos Levels in Schools," EPA 560/5-83-003) and are reasonable for purposes of decisionmaking in the context of this rule. In any event, the lower airborne asbestos levels cited by the commenters do not make the case for an airborne regulatory level.

Finally, EPA interprets data on airborne levels of asbestos before and after removal actions differently from the commenters. The information available on airborne concentrations before and after asbestos removal is actually limited, dealing with a very small number of abatement actions. Nevertheless, EPA believes that this information indicates that, in the past, some abatement actions were not done properly and led to increased airborne levels. The rule, therefore, was designed to prevent shoddy abatement work. A draft report prepared by Batelle (March 1987) shows significant reduction in airborne asbestos concentrations in the enclosed abatement area in schools immediately after removal operations. Airborne levels measured in the Batelle study did increase back to approximately the same as pre-removal levels after school resumed (based on a statistical analysis of pre- and post-removal levels). However, these levels could only have been the result of reentrainment of asbestos from outside the immediate removal area. Removals, thus, were successful at the removal site but could not guarantee no fiber release from asbestos-containing materials remaining in the building. The Batelle draft, therefore, does not show an increase in exposure from the removal activities as suggested by the comments. At the very least, removal reduced some danger of peak exposures. The data in the Batelle draft may indicate a need for continuing O&M programs following abatement, particularly where all asbestos is not removed.

6. *Model accreditation plan.* EPA received comments about the provisions of the Model Accreditation Plan required under section 206 of TSCA Title II. Under Title II, the Agency was required to submit a final Model Accreditation Plan by April 20, 1987. The final plan was issued by EPA in accordance with that deadline. The final plan appeared in the Federal Register of April 30, 1987, entitled "Asbestos-Containing Material in Schools: Model Accreditation Plan."

IV. Economic Impact

The economic impact analysis estimates the incremental costs attributable to the proposed regulation, including costs of inspection, sampling, development, and implementation of management plans, training of school employees, periodic surveillance, and the implementation of abatement actions. Estimates of the number of schools affected and square footage of asbestos were developed based on the 1984 EPA survey of asbestos in schools

and data compiled from the Asbestos School Hazard Abatement Act (ASHAA) loan and grant program. Estimates of the percentage of asbestos which falls into each of the hazard categories were based on the results of a survey of the EPA's Regional Asbestos Coordinators (RACs).

Using a model school/model project approach, costs of inspection, sampling, and appropriate response actions were developed for schools with ACM in each of the different hazard categories. For schools with only nonfriable ACM, the only costs estimated were for management plan implementation, nominal plan implementation activities, training of the asbestos program manager, custodial training for proper repair and maintenance of ACM, and the periodic surveillance and reinspection of ACM. For purposes of the economic analysis, EPA assumed that all schools with only nonfriable ACM would choose to forego sampling and instead just treat suspect material as asbestos-containing.

Asbestos abatement-related costs expected to be incurred regardless of the existence of these regulations were subtracted from the total costs to calculate only the incremental cost of the final regulations. For example, data from the ASHAA loan and grant application data base were used to project an average annual rate of removal of asbestos that is assumed would have occurred even if TSCA Title II legislation and these regulations were not promulgated. That average annual rate was estimated to be approximately 3.4 percent for primary schools, 3.3 percent for secondary schools, and 1.8 percent for private schools. The costs associated with this underlying rate of removal were subtracted from the total costs. Also, the costs of removal of friable ACM prior to demolition that is required by the NESHAPs regulations were also netted out of the total costs.

The estimated present value of the costs of these final regulations is approximately $3.145 million (using a 10 percent discount rate) over 30 years. This includes the cost of initial inspection and sampling—$78.5 million; development and implementation of management plans—$1.272 million; periodic surveillance—$47.7 million; reinspection—$23.2 million; special operations and maintenance programs—$292.7 million; and abatement response actions—$1,431 million.

The total number of primary and secondary schools potentially affected by these regulations is estimated to be 106,983. Approximately 44,600 are estimated to have about 213 million square feet of surfacing or thermal systems insulation ACM. Of these, an estimated 10,700 have surfacing ACM only. It is likely that every school contains some amount of nonfriable ACM such as floor tile, transite board, and fire doors.

The cost of an asbestos inspection is estimated to range from $1,144 to $1,627 per school for schools with both surfacing and thermal systems insulation ACM. This cost varies depending upon the size of the school, the amount and type of ACM contained in the school, and the type of professional doing the work. The costs of sampling and analysis if friable materials are found will depend upon the number of samples taken and analyzed. Costs of analysis are estimated to range from $25 to $47 per sample. Assuming the average school has to analyze 20 samples, the cost of analysis will be $500 to $940 per school. The cost of mapping ACM is estimated to range from $110 to over $270 per school.

The cost of developing a management plan if asbestos-containing surfacing ACM or thermal systems insulation ACM is present is estimated to range from $1,025 for an average-size public primary school to $1,420 for an average-size public secondary school. These estimates are weighted averages of the costs of plans developed by trained school personnel and by outside consultants. A less extensive management plan would be required for schools containing only nonfriable materials. The average development cost for a management plan where only nonfriable materials are present is estimated to be about $500 for both public primary and private schools, and about $715 for public secondary schools.

The cost of training for school employees involves a variety of factors ranging from course and accreditation exam fees to the possible expenses for any out of town travel required for the training. The estimated course fee for a 2-hour awareness session required of all school maintenance employees in schools with ACM is approximately $50 per person. The additional 14 hours of training for school maintenance workers who may come in contact with asbestos in doing minor repair and maintenance work that disturbs asbestos is estimated to cost $250. A fee of $420 is estimated for the 24 hours of training required for the certification of asbestos abatement workers doing more than just minor repair and small glove-bag removal jobs. The fee for the 40-hour training course and certification required for asbestos abatement contractors is estimated to be $640.

Response action costs depend primarily on the condition of the asbestos in a school and to a lesser extent on many other factors. In general, for surfacing ACM in all but the significantly damaged category, it is likely that the primary response action undertaken by a school will be special O&M activities. Use of O&M activities would likely continue until or unless the ACBM deteriorates to a "significantly damaged" condition. The annual cost of a special O&M program (excluding acquisition of special equipment) is estimated to range from $3,800 for a typical public primary school to $5,100 for a typical public secondary school. Initial cleaning costs are expected to range from $950 to $1,400.

The cost of removal depends upon many factors including size of the project. The estimated cost of removal for a 4,000 ft^2 project in which surfacing material is removed would be approximately $51,300. The cost of removal for a 900 ft^2 boiler wrap project is estimated to be approximately $30,900. The total discounted costs of response actions were estimated assuming schools undertake a combination of response actions that depend on the condition of the ACM.

V. Rulemaking Record

EPA has established a record for this rulemaking (docket control number OPTS-62048E). The record is available in the Office of Toxic Substances Public Information Office, from 8 a.m. to 4 p.m., Monday through Friday, except legal holidays. The Public Information Office is located in Rm. NE-G004, 401 M St., SW., Washington, DC.

The record includes information considered by EPA in developing the proposed and final rules. The record now includes the following categories of information:

1. Federal Register notices.
2. Support documents.
3. Reports.
4. Memoranda and letters.
5. Records of the negotiating committee.
6. Public comments received on the proposed rule.
7. Response to comments document.
8. Transcript of the August 25 and 26 Public Meeting.

EPA requests that any person who commented on this rule submit to the Agency in writing any information which such person believes shows there are errors or omissions in the record. EPA will evaluate such submissions and supplement the record as appropriate.

VI. References

1. USEPA. "Guidance for Controlling Asbestos-Containing Materials in Buildings," EPA 560/5–85–024, June 1985.

2. USEPA. "A Guide to Respiratory Protection for the Asbestos Abatement Industry." EPA 560/OPTS–86–001, September 1986.

3. USEPA. "Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials," EPA 560/5–85–030a, October 1985.

4. USEPA. Friable Asbestos-Containing Materials in Schools, 40 CFR Part 763, Subpart F.

5. USEPA. National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subpart M.

6. USDOL. OSHA. Occupational Exposure to Asbestos, 29 CFR 1926.58.

7. USEPA. Toxic Substances; Asbestos Abatement Projects, 40 CFR Part 763, Subpart G.

VII. Regulatory Assessment Requirements

A. Executive Order 12291

Under Executive Order 12291, EPA has determined that this rule is a "major" rule and has developed a Regulatory Impact Analysis. EPA has prepared an economic impact analysis of the TSCA Title II regulations.

B. Regulatory Flexibility Act

EPA has analyzed the economic impact of this rule on small businesses. EPA's analysis of the economic consequences of this rule appears in Unit IV.

C. Paperwork Reduction Act

The reporting and recordkeeping provisions in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, and has been assigned OMB control number 2070–0091.

List of Subjects in 40 CFR Part 763

Asbestos, Environmental protection, Hazardous substances, Incorporation by reference, Occupational health and safety, Recordkeeping, Schools.

Dated: October 17, 1987.

Lee M. Thomas,

Administrator.

Therefore, 40 CFR Part 763 is amended as follows:

PART 763—[AMENDED]

1. The authority citation for Part 763 continues to read as follows:

Authority: 15 U.S.C. 2605 and 2607(c). Subpart E also issued under 15 U.S.C. 2641, 2643, 2646, and 2647.

2. By adding §§ 763.80 through 763.99 and Appendices A, B, and D to Subpart E to read as follows:

Subpart E—Asbestos-Containing Materials in Schools

Sec.

§ 763.80 Scope and purpose.

(a) This rule requires local education agencies to identify friable and nonfriable asbestos-containing material (ACM) in public and private elementary and secondary schools by visually inspecting school buildings for such materials, sampling such materials if they are not assumed to be ACM, and having samples analyzed by appropriate techniques referred to in this rule. The rule requires local education agencies to submit management plans to the Governor of their State by October 12, 1988, begin to implement the plans by July 9, 1989, and complete implementation of the plans in a timely fashion. In addition, local education agencies are required to use persons who have been accredited to conduct inspections, reinspections, develop management plans, or perform response actions. The rule also includes recordkeeping requirements. Local education agencies may contractually delegate their duties under this rule, but they remain responsible for the proper performance of those duties. Local education agencies are encouraged to consult with EPA Regional Asbestos Coordinators, or if applicable, a State's lead agency designated by the State Governor, for assistance in complying with this rule.

(b) Local education agencies must provide for the transportation and disposal of asbestos in accordance with EPA's "Asbestos Waste Management Guidance." For convenience, applicable sections of this guidance are reprinted as Appendix D of this subpart. There are regulations in place, however, that affect transportation and disposal of asbestos waste generated by this rule. The transportation of asbestos waste is covered by the Department of Transportation (49 CFR Part 173, Subpart J) and disposal is covered by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61, Subpart M).

§ 763.83 Definitions.

For purposes of this subpart:

"Act" means the Toxic Substances Control Act (TSCA), 15 U.S.C. 2601, *et seq.*

"Accessible" when referring to ACM means that the material is subject to disturbance by school building occupants or custodial or maintenance personnel in the course of their normal activities.

"Accredited" or "accreditation" when referring to a person or laboratory means that such person or laboratory is accredited in accordance with section 206 of Title II of the Act.

"Air erosion" means the passage of air over friable ACBM which may result in the release of asbestos fibers.

"Asbestos" means the asbestiform varieties of: Chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonitegrunerite); anthophyllite; tremolite; and actinolite.

"Asbestos-containing material" (ACM) when referring to school buildings means any material or product which contains more than 1 percent asbestos.

"Asbestos-containing building material" (ACBM) means surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a school building.

"Asbestos debris" means pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

"Damaged friable miscellaneous ACM" means friable miscellaneous ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is

inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

"Damaged friable surfacing ACM" means friable surfacing ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

"Damaged or significantly damaged thermal system insulation ACM" means thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, water-stained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from the ACBM in question may also indicate damage.

"Encapsulation" means the treatment of ACBM with a material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers, as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).

"Enclosure" means an airtight, impermeable, permanent barrier around ACBM to prevent the release of asbestos fibers into the air.

"Fiber release episode" means any uncontrolled or unintentional disturbance of ACBM resulting in visible emission.

"Friable" when referring to material in a school building means that the material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

"Functional space" means a room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above), such as classroom(s), a cafeteria, gymnasium, hallway(s), designated by a person accredited to prepare management plans, design abatement projects, or conduct response actions.

"High-efficiency particulate air" (HEPA) refers to a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 μm in diameter or larger.

"Homogeneous area" means an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture.

"Local education agency" means:

(1) Any local educational agency as defined in section 198 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 3381).

(2) The owner of any nonpublic, nonprofit elementary, or secondary school building.

(3) The governing authority of any school operated under the defense dependents' education system provided for under the Defense Dependents' Education Act of 1978 (20 U.S.C. 921, et seq.).

"Miscellaneous ACM" means miscellaneous material that is ACM in a school building.

"Miscellaneous material" means interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

"Nonfriable" means material in a school building which when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

"Operations and maintenance program" means a program of work practices to maintain friable ACBM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACBM disturbance or damage.

"Potential damage" means circumstances in which:

(1) Friable ACBM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.

(2) There are indications that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.

"Potential significant damage" means circumstances in which:

(1) Friable ACBM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.

(2) There are indications that there is a reasonable likelihood that the material or its covering will become significantly damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.

(3) The material is subject to major or continuing disturbance, due to factors including, but not limited to, accessibility or, under certain circumstances, vibration or air erosion.

"Preventive measures" means actions taken to reduce disturbance of ACBM or otherwise eliminate the reasonable likelihood of the material's becoming damaged or significantly damaged.

"Removal" means the taking out or the stripping of substantially all ACBM from a damaged area, a functional space, or a homogeneous area in a school building.

"Repair" means returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.

"Response action" means a method, including removal, encapsulation, enclosure, repair, operations and maintenance, that protects human health and the environment from friable ACBM.

"Routine maintenance area" means an area, such as a boiler room or mechanical room, that is not normally frequented by students and in which maintenance employees or contract workers regularly conduct maintenance activities.

"School" means any elementary or secondary school as defined in section 198 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 2854).

"School building" means:

(1) Any structure suitable for use as a classroom, including a school facility such as a laboratory, library, school eating facility, or facility used for the preparation of food.

(2) Any gymnasium or other facility which is specially designed for athletic

or recreational activities for an academic course in physical education.

(3) Any other facility used for the instruction or housing of students or for the administration of educational or research programs.

(4) Any maintenance, storage, or utility facility, including any hallway, essential to the operation of any facility described in this definition of "school building" under paragraphs (1), (2), or (3).

(5) Any portico or covered exterior hallway or walkway.

(6) Any exterior portion of a mechanical system used to condition interior space.

"Significantly damaged friable miscellaneous ACM" means damaged friable miscellaneous ACM where the damage is extensive and severe.

"Significantly damaged friable surfacing ACM" means damaged friable surfacing ACM in a functional space where the damage is extensive and severe.

"State" means a State, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Northern Marianas, the Trust Territory of the Pacific Islands, and the Virgin Islands.

"Surfacing ACM" means surfacing material that is ACM.

"Surfacing material" means material in a school building that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

"Thermal system insulation" means material in a school building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

"Thermal system insulation ACM" means thermal system insulation that is ACM.

"Vibration" means the periodic motion of friable ACBM which may result in the release of asbestos fibers.

§ 763.84 General local education agency responsibilities.

Each local education agency shall:

(a) Ensure that the activities of any persons who perform inspections, reinspections, and periodic surveillance, develop and update management plans, and develop and implement response actions, including operations and maintenance, are carried out in accordance with Subpart E of this part.

(b) Ensure that all custodial and maintenance employees are properly trained as required by this Subpart E and other applicable Federal and/or State regulations (e.g., the Occupational Safety and Health Administration asbestos standard for construction, the EPA worker protection rule, or applicable State regulations).

(c) Ensure that workers and building occupants, or their legal guardians, are informed at least once each school year about inspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress.

(d) Ensure that short-term workers (e.g., telephone repair workers, utility workers, or exterminators) who may come in contact with asbestos in a school are provided information regarding the locations of ACBM and suspected ACBM assumed to be ACM.

(e) Ensure that warning labels are posted in accordance with § 763.95.

(f) Ensure that management plans are available for inspection and notification of such availability has been provided as specified in the management plan under § 763.93(g).

(g)(1) Designate a person to ensure that requirements under this section are properly implemented.

(2) Ensure that the designated person receives adequate training to perform duties assigned under this section. Such training shall provide, as necessary, basic knowledge of:

(i) Health effects of asbestos.

(ii) Detection, identification, and assessment of ACM.

(iii) Options for controlling ACBM.

(iv) Asbestos management programs.

(v) Relevant Federal and State regulations concerning asbestos, including those in this Subpart E and those of the Occupational Safety and Health Administration, U.S. Department of Labor, the U.S. Department of Transportation and the U.S. Environmental Protection Agency.

(h) Consider whether any conflict of interest may arise from the interrelationship among accredited personnel and whether that should influence the selection of accredited personnel to perform activities under this subpart.

§ 763.85 Inspection and reinspections.

(a) *Inspection.* (1) Except as provided in paragraph (a)(2) of this section, before October 12, 1988, local education agencies shall inspect each school building that they lease, own, or otherwise use as a school building to identify all locations of friable and nonfriable ACBM.

(2) Any building leased or acquired on or after October 12, 1988, that is to be used as a school building shall be inspected as described under paragraphs (a) (3) and (4) of this section prior to use as a school building. In the event that emergency use of an uninspected building as a school building is necessitated, such buildings shall be inspected within 30 days after commencement of such use.

(3) Each inspection shall be made by an accredited inspector.

(4) For each area of a school building, except as excluded under § 763.99, each person performing an inspection shall:

(i) Visually inspect the area to identify the locations of all suspected ACBM.

(ii) Touch all suspected ACBM to determine whether they are friable.

(iii) Identify all homogeneous areas of friable suspected ACBM and all homogeneous areas of nonfriable suspected ACBM.

(iv) Assume that some or all of the homogeneous areas are ACM, and, for each homogeneous area that is not assumed to be ACM, collect and submit for analysis bulk samples under §§ 763.86 and 763.87.

(v) Assess, under § 763.88, friable material in areas where samples are collected, friable material in areas that are assumed to be ACBM, and friable ACBM identified during a previous inspection.

(vi) Record the following and submit to the person designated under § 763.84 a copy of such record for inclusion in the management plan within 30 days of the inspection:

(A) An inspection report with the date of the inspection signed by each accredited person making the inspection, State of accreditation, and if applicable, his or her accreditation number.

(B) An inventory of the locations of the homogeneous areas where samples are collected, exact location where each bulk sample is collected, dates that samples are collected, homogeneous areas where friable suspected ACBM is assumed to be ACM, and homogeneous areas where nonfriable suspected ACBM is assumed to be ACM.

(C) A description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, State of accreditation, and, if applicable, his or her accreditation number.

(D) A list of whether the homogeneous areas identified under paragraph (a)(4)(vi)(B) of this section are surfacing material, thermal system insulation, or miscellaneous material.

(E) Assessments made of friable material, the name and signature of each accredited inspector making the

assessment, State of accreditation, and if applicable, his or her accreditation number.

(b) *Reinspection.* (1) At least once every 3 years after a management plan is in effect, each local education agency shall conduct a reinspection of all friable and nonfriable known or assumed ACBM in each school building that they lease, own, or otherwise use as a school building.

(2) Each inspection shall be made by an accredited inspector.

(3) For each area of a school building, each person performing a reinspection shall:

(i) Visually reinspect, and reassess, under § 763.88, the condition of all friable known or assumed ACBM.

(ii) Visually inspect material that was previously considered nonfriable ACBM and touch the material to determine whether it has become friable since the last inspection or reinspection.

(iii) Identify any homogeneous areas with material that has become friable since the last inspection or reinspection.

(iv) For each homogeneous area of newly friable material that is already assumed to be ACBM, bulk samples may be collected and submitted for analysis in accordance with §§ 763.86 and 763.87.

(v) Assess, under § 763.88, the condition of the newly friable material in areas where samples are collected, and newly friable materials in areas that are assumed to be ACBM.

(vi) Reassess, under § 763.88, the condition of friable known or assumed ACBM previously identified.

(vii) Record the following and submit to the person designated under § 763.84 a copy of such record for inclusion in the management plan within 30 days of the reinspection:

(A) The date of the reinspection, the name and signature of the person making the reinspection, State of accreditation, and if applicable, his or her accreditation number, and any changes in the condition of known or assumed ACBM.

(B) The exact locations where samples are collected during the reinspection, a description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, State of accreditation, and, if applicable, his or her accreditation number.

(C) Any assessments or reassessments made of friable material, the name and signature of the accredited inspector making the assessments, State of accreditation, and if applicable, his or her accreditation number.

(c) *General.* Thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap that prevents fiber release shall be treated as nonfriable and therefore is subject only to periodic surveillance and preventive measures as necessary.

§ 763.86 Sampling.

(a) *Surfacing material.* An accredited inspector shall collect, in a statistically random manner that is representative of the homogeneous area, bulk samples from each homogeneous area of friable surfacing material that is not assumed to be ACM, and shall collect the samples as follows:

(1) At least three bulk samples shall be collected from each homogeneous area that is 1,000 ft^2 or less, except as provided in § 763.87(c)(2).

(2) At least five bulk samples shall be collected from each homogeneous area that is greater than 1,000 ft^2 but less than or equal to 5,000 ft^2, except as provided in § 763.87(c)(2).

(3) At least seven bulk samples shall be collected from each homogeneous area that is greater than 5,000 ft^2, except as provided in § 763.87(c)(2).

(b) *Thermal system insulation.* (1) Except as provided in paragraphs (b) (2) through (4) of this section and § 763.87(c), an accredited inspector shall collect, in a randomly distributed manner, at least three bulk samples from each homogeneous area of thermal system insulation that is not assumed to be ACM.

(2) Collect at least one bulk sample from each homogeneous area of patched thermal system insulation that is not assumed to be ACM if the patched section is less than 6 linear or square feet.

(3) In a manner sufficient to determine whether the material is ACM or not ACM, collect bulk samples from each insulated mechanical system that is not assumed to be ACM where cement or plaster is used on fittings such as tees, elbows, or valves, except as provided under § 763.87(c)(2).

(4) Bulk samples are not required to be collected from any homogeneous area where the accredited inspector has determined that the thermal system insulation is fiberglass, foam glass, rubber, or other non-ACBM.

(c) *Miscellaneous material.* In a manner sufficient to determine whether material is ACM or not ACM, an accredited inspector shall collect bulk samples from each homogeneous area of friable miscellaneous material that is not assumed to be ACM.

(d) *Nonfriable suspected ACBM.* If any homogeneous area of nonfriable suspected ACBM is not assumed to be ACM, then an accredited inspector shall collect, in a manner sufficient to determine whether the material is ACM or not ACM, bulk samples from the homogeneous area of nonfriable suspected ACBM that is not assumed to be ACM.

§ 763.87 Analysis.

(a) Local education agencies shall have bulk samples, collected under § 763.86 and submitted for analysis, analyzed for asbestos using laboratories accredited by the National Bureau of Standards (NBS). Local education agencies shall use laboratories which have received interim accreditation for polarized light microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program until the NBS PLM laboratory accreditation program for PLM is operational.

(b) Bulk samples shall not be composited for analysis and shall be analyzed for asbestos content by PLM, using the "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" found at Appendix A to Subpart F in 40 CFR Part 763.

(c)(1) A homogeneous area is considered not to contain ACM only if the results of all samples required to be collected from the area show asbestos in amounts of 1 percent or less.

(2) A homogeneous area shall be determined to contain ACM based on a finding that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent.

(d) The name and address of each laboratory performing an analysis, the date of analysis, and the name and signature of the person performing the analysis shall be submitted to the person designated under § 763.84 for inclusion into the management plan within 30 days of the analysis.

§ 763.88 Assessment.

(a)(1) For each inspection and reinspection conducted under § 763.85 (a) and (c) and previous inspections specified under § 763.99, the local education agency shall have an accredited inspector provide a written assessment of all friable known or assumed ACBM in the school building.

(2) Each accredited inspector providing a written assessment shall sign and date the assessment, provide his or her State of accreditation, and if applicable, accreditation number, and submit a copy of the assessment to the person designated under § 763.84 for inclusion in the management plan within 30 days of the assessment.

(b) The inspector shall classify and give reasons in the written assessment for classifying the ACBM and suspected ACBM assumed to be ACM in the school building into one of the following categories:

(1) Damaged or significantly damaged thermal system insulation ACM.

(2) Damaged friable surfacing ACM.

(3) Significantly damaged friable surfacing ACM.

(4) Damaged or significantly damaged friable miscellaneous ACM.

(5) ACBM with potential for damage.

(6) ACBM with potential for significant damage.

(7) Any remaining friable ACBM or friable suspected ACBM.

(c) Assessment may include the following considerations:

(1) Location and the amount of the material, both in total quantity and as a percentage of the functional space.

(2) Condition of the material, specifying:

(i) Type of damage or significant damage (e.g., flaking, blistering, water damage, or other signs of physical damage).

(ii) Severity of damage (e.g., major flaking, severely torn jackets, as opposed to occasional flaking, minor tears to jackets).

(iii) Extent or spread of damage over large areas or large percentages of the homogeneous area.

(3) Whether the material is accessible.

(4) The material's potential for disturbance.

(5) Known or suspected causes of damage or significant damage (e.g., air erosion, vandalism, vibration, water).

(6) Preventive measures which might eliminate the reasonable likelihood of undamaged ACM from becoming significantly damaged.

(d) The local education agency shall select a person accredited to develop management plans to review the results of each inspection, reinspection, and assessment for the school building and to conduct any other necessary activities in order to recommend in writing to the local education agency appropriate response actions. The accredited person shall sign and date the recommendation, provide his or her State of accreditation, and, if applicable, provide his or her accreditation number, and submit a copy of the recommendation to the person designated under § 763.84 for inclusion in the management plan.

§ 763.90 Response actions.

(a) The local education agency shall select and implement in a timely manner the appropriate response actions in this section consistent with the assessment conducted in § 763.88. The response actions selected shall be sufficient to protect human health and the environment. The local education agency may then select, from the response actions which protect human health and the environment, that action which is the least burdensome method. Nothing in this section shall be construed to prohibit removal of ACBM from a school building at any time, should removal be the preferred response action of the local education agency.

(b) If damaged or significantly damaged thermal system insulation ACM is present in a building, the local education agency shall:

(1) At least repair the damaged area.

(2) Remove the damaged material if it is not feasible, due to technological factors, to repair the damage.

(3) Maintain all thermal system insulation ACM and its covering in an intact state and undamaged condition.

(c)(1) If damaged friable surfacing ACM or damaged friable miscellaneous ACM is present in a building, the local education agency shall select from among the following response actions: encapsulation, enclosure, removal, or repair of the damaged material.

(2) In selecting the response action from among those which meet the definitional standards in § 763.83, the local education agency shall determine which of these response actions protects human health and the environment. For purposes of determining which of these response actions are the least burdensome, the local education agency may then consider local circumstances, including occupancy and use patterns within the school building, and its economic concerns, including short- and long-term costs.

(d) If significantly damaged friable surfacing ACM or significantly damaged friable miscellaneous ACM is present in a building the local education agency shall:

(1) Immediately isolate the functional space and restrict access, unless isolation is not necessary to protect human health and the environment.

(2) Remove the material in the functional space or, depending upon whether enclosure or encapsulation would be sufficient to protect human health and the environment, enclose or encapsulate.

(e) If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for damage is present in a building, the local education agency shall at least implement an operations and maintenance (O&M) program, as described under § 763.91.

(f) If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for significant damage is present in a building, the local education agency shall:

(1) Implement an O&M program, as described under § 763.91.

(2) Institute preventive measures appropriate to eliminate the reasonable likelihood that the ACM or its covering will become significantly damaged, deteriorated, or delaminated.

(3) Remove the material as soon as possible if appropriate preventive measures cannot be effectively implemented, or unless other response actions are determined to protect human health and the environment. Immediately isolate the area and restrict access if necessary to avoid an imminent and substantial endangerment to human health or the environment.

(g) Response actions including removal, encapsulation, enclosure, or repair, other than small-scale, short-duration repairs, shall be designed and conducted by persons accredited to design and conduct response actions.

(h) The requirements of this Subpart E in no way supersede the worker protection and work practice requirements under 29 CFR 1926.58 (Occupational Safety and Health Administration (OSHA) asbestos worker protection standards for construction), 40 CFR Part 763, Subpart G (EPA asbestos worker protection standards for public employees), and 40 CFR Part 61, Subpart M (National Emission Standards for Hazardous Air Pollutants—Asbestos).

(i) Completion of response actions. (1) At the conclusion of any action to remove, encapsulate, or enclose ACBM or material assumed to be ACBM, a person designated by the local education agency shall visually inspect each functional space where such action was conducted to determine whether the action has been properly completed.

(2)(i) A person designated by the local education agency shall collect air samples using aggressive sampling as described in Appendix A to this Subpart E to monitor air for clearance after each removal, encapsulation, and enclosure project involving ACBM, except for projects that are of small-scale, short-duration.

(ii) Local education agencies shall have air samples collected under this section analyzed for asbestos using laboratories accredited by the National Bureau of Standards to conduct such analysis using transmission electron microscopy (TEM) or, under circumstances pe mitted in this section,

laboratories enrolled in the American Industrial Hygiene Association Proficiency Analytical Testing Program for phase contrast microscopy (PCM).

(iii) Until the National Bureau of Standards TEM laboratory accreditation program is operational, local educational agencies shall use laboratories that use the protocol described in Appendix A to Subpart E of this part.

(3) Except as provided in paragraphs (i) (4), (5), (6), or (7) of this section, an action to remove, encapsulate, or enclose ACBM shall be considered complete when the average concentration of asbestos of five air samples cbllected within the affected functional space and analyzed by the TEM method in Appendix A of this Subpart E, is not statistically significantly different, as determined by the Z-test calculation found in Appendix A of this Subpart E, from the average asbestos concentration of five air samples collected at the same time outside the affected functional space and analyzed in the same manner, and the average asbestos concentration of the three field blanks described in Appendix A of this Subpart E is below the filter background level, as defined in Appendix A of this Subpart E, of 70 structures per square millimeter (70 s/mm ^{2}).

(4) An action may also be considered complete if the volume of air drawn for each of the five samples collected within the affected functional space is equal to or greater than 1,199 L of air for a 25 mm filter or equal to or greater than 2,799 L of air for a 37 mm filter, and the average concentration of asbestos as analyzed by the TEM method in Appendix A of this Subpart E, for the five air samples does not exceed the filter background level, as defined in Appendix A, of 70 structures per square millimeter (70 s/mm ^{2}). If the average concentration of asbestos of the five air samples within the affected functional space exceeds 70 s/mm ^{2}, or if the volume of air in each of the samples is less than 1,199 L of air for a 25 mm filter or less than 2,799 L of air for a 37 mm filter, the action shall be considered complete only when the requirements of paragraph (i) (3), (5), (6), or (7) of this section are met.

(5) At any time, a local education agency may analyze air monitoring samples collected for clearance purposes by phase contrast microscopy (PCM) to confirm completion of removal, encapsulation, or enclosure of ACBM that is greater than small-scale, short-duration and less than or equal to 160 square feet or 260 linear feet. The action shall be considered complete when the results of samples collected in the affected functional space and analyzed by phase contrast microscopy using the National Institute for Occupational Safety and Health (NIOSH) Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987, show that the concentration of fibers for each of the five samples is less than or equal to a limit of quantitation for PCM (0.01 fibers per cubic centimeter (0.01 f/cm ^{3}) of air). The method is available at the Office of the Federal Register Information Center, 11th and L St., NW., Room 8401, Washington, DC, 20408, and the EPA OPTS Reading Room, Rm. G004 Northeast Mall, 401 M St., SW., Washington, DC 20460. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. The method is incorporated as it exists on the effective date of this rule, and a notice of any change to the method will be published in the Federal Register.

(6) Until October 7, 1989, a local education agency may analyze air monitoring samples collected for clearance purposes by PCM to confirm completion of removal, encapsulation, or enclosure of ACBM that is less than or equal to 3,000 square feet or 1,000 linear feet. The action shall be considered complete when the results of samples collected in the affected functional space and analyzed by PCM using the NIOSH Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987, show that the concentration of fibers for each of the five samples is less than or equal to a limit quantitation for PCM (0.01 fibers per cubic centimeter, 0.01 f/cm ^{3}). The method is available at the Office of the Federal Register, 11th and L St., NW., Room 8301, Washington, DC, 20408, and in the EPA OPTS Reading Room, Rm. G004 Northeast Mall, 401 M St., SW., Washington, DC 20460. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. The method is incorporated as it exists on the effective date of this rule and a notice of any change to the method will be published in the Federal Register.

(7) From October 8, 1989, to October 7, 1990, a local education agency may analyze air monitoring samples collected for clearance purposes by PCM to confirm completion of removal, encapsulation, or enclosure of ACBM that is less than or equal to 1,500 square feet or 500 linear feet. The action shall be considered complete when the results of samples collected in the affected functional space and analyzed by PCM using the NIOSH Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987, show that the concentration of fibers for each of the five samples is less than or equal to a limit of quantitation for PCM (0.01 fibers per cubic centimeter, 0.01 f/cm ^{3}). The method is available at the Office of the Federal Register, 11th and L St., NW., Room 8301, Washington, DC, 20408, and in the EPA OPTS Reading Room, Rm. G004 Northeast Mall, 401 M St., SW., Washington, DC 20460. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. The method is incorporated as it exists on the effective date of this rule and a notice of any change to the method will be published in the Federal Register.

(8) To determine the amount of ACBM affected under paragraphs (i) (5), (6), and (7) of this section, the local education agency shall add the total square or linear footage of ACBM within the containment barriers used to isolate the functional space for the action to remove, encapsulate, or enclose the ACBM. Contiguous portions of material subject to such action conducted concurrently or at approximately the same time within the same school building shall not be separated to qualify under paragraphs (i) (5), (6), or (7) of this section.

§ 763.91 Operations and maintenance.

(a) *Applicability.* The local education agency shall implement an operations, maintenance, and repair (O&M) program under this section whenever any friable ACBM is present or assumed to be present in a building that it leases, owns, or otherwise uses as a school building. Any material identified as nonfriable ACBM or nonfriable assumed ACBM must be treated as friable ACBM for purposes of this section when the material is about to become friable as a result of activities performed in the school building.

(b) *Worker protection.* The protection provided by EPA at 40 CFR 763.121 for worker protection during asbestos abatement projects is extended to employees of local education agencies who perform operations, maintenance, and repair (O&M) activities involving ACM and who are not covered by the OSHA asbestos construction standard at 29 CFR 1926.58 or an asbestos worker approved by OSHA under section 19 of the Occupational Safety and Health Act. Local education agencies may consult

Appendix B of this Subpart if their employees are performing operations, maintenance, and repair activities that are of small-scale, short-duration.

(c) *Cleaning*—(1) *Initial cleaning.* Unless the building has been cleaned using equivalent methods within the previous 6 months, all areas of a school building where friable ACBM, damaged or significantly damaged thermal system insulation ACM, or friable suspected ACBM assumed to be ACM are present shall be cleaned at least once after the completion of the inspection required by § 763.85(a) and before the initiation of any response action, other than O&M activities or repair, according to the following procedures:

(i) HEPA-vacuum or steam-clean all carpets.

(ii) HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.

(iii) Dispose of all debris, filters, mopheads, and cloths in sealed, leak-tight containers.

(2) *Additional cleaning.* The accredited management planner shall make a written recommendation to the local education agency whether additional cleaning is needed, and if so, the methods and frequency of such cleaning.

(d) *Operations and maintenance activities.* The local education agency shall ensure that the procedures described below to protect building occupants shall be followed for any operations and maintenance activities disturbing friable ACBM:

(1) Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.

(2) Post signs to prevent entry by unauthorized persons.

(3) Shut off or temporarily modify the air-handling system and restrict other sources of air movement.

(4) Use work practices or other controls, such as, wet methods, protective clothing, HEPA-vacuums, mini-enclosures, glove bags, as necessary to inhibit the spread of any released fibers.

(5) Clean all fixtures or other components in the immediate work area.

(6) Place the asbestos debris and other cleaning materials in a sealed, leak-tight container.

(e) *Maintenance activities other than small-scale, short-duration.* The response action for any maintenance activities disturbing friable ACBM, other than small-scale, short-duration maintenance activities, shall be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.

(f) *Fiber release episodes*—(1) *Minor fiber release episode.* The local education agency shall ensure that the procedures described below are followed in the event of a minor fiber release episode (i.e., the falling or dislodging of 3 square or linear feet or less of friable ACBM):

(i) Thoroughly saturate the debris using wet methods.

(ii) Clean the area, as described in paragraph (e) of this section.

(iii) Place the asbestos debris in a sealed, leak-tight container.

(iv) Repair the area of damaged ACM with materials such as asbestos-free spackling, plaster, cement, or insulation, or seal with latex paint or an encapsulant, or immediately have the appropriate response action implemented as required by § 763.90.

(2) *Major fiber release episode.* The local education agency shall ensure that the procedures described below are followed in the event of a major fiber release episode (i.e., the falling or dislodging of more than 3 square or linear feet of friable ACBM):

(i) Restrict entry into the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.

(ii) Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.

(iii) The response action for any major fiber release episode must be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.

§ 763.92 Training and periodic surveillance.

(a) *Training.* (1) The local education agency shall ensure, prior to the implementation of the O&M provisions of the management plan, that all members of its maintenance and custodial staff (custodians, electricians, heating/air conditioning engineers, plumbers, etc.) who may work in a building that contains ACBM receive awareness training of at least 2 hours, whether or not they are required to work with ACBM. New custodial and maintenance employees shall be trained within 60 days after commencement of employment. Training shall include, but not be limited to:

(i) Information regarding asbestos and its various uses and forms.

(ii) Information on the health effects associated with asbestos exposure.

(iii) Locations of ACBM identified throughout each school building in which they work.

(iv) Recognition of damage, deterioration, and delamination of ACBM.

(v) Name and telephone number of the person designated to carry out general local education agency responsibilities under § 763.84 and the availability and location of the management plan.

(2) The local education agency shall ensure that all members of its maintenance and custodial staff who conduct any activities that will result in the disturbance of ACBM shall receive training described in paragraph (a)(1) of this section and 14 hours of additional training. Additional training shall include, but not be limited to:

(i) Descriptions of the proper methods of handling ACBM.

(ii) Information on the use of respiratory protection as contained in the EPA/NIOSH *Guide to Respiratory Protection for the Asbestos Abatement Industry*, September 1986 (EPA 560/OPTS-86-001), available from TSCA Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-543, 401 M St. SW., Washington, DC 20460, and other personal protection measures.

(iii) The provisions of this section and § 763.91, Appendices A, B, C, D of this Subpart E of this part, EPA regulations contained in 40 CFR Part 763, Subpart G, and in 40 CFR Part 61, Subpart M, and OSHA regulations contained in 29 CFR 1926.58.

(iv) Hands-on training in the use of respiratory protection, other personal protection measures, and good work practices.

(3) Local education agency maintenance and custodial staff who have attended EPA-approved asbestos training or received equivalent training for O&M and periodic surveillance activities involving asbestos shall be considered trained for the purposes of this section.

(b) *Periodic surveillance.* (1) At least once every 6 months after a management plan is in effect, each local education agency shall conduct periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains ACBM or is assumed to contain ACBM.

(2) Each person performing periodic surveillance shall:

(i) Visually inspect all areas that are identified in the management plan as ACBM or assumed ACBM.

(ii) Record the date of the surveillance, his or her name, and any

changes in the condition of the materials.

(iii) Submit to the person designated to carry out general local education agency responsibilities under § 763.84 a copy of such record for inclusion in the management plan.

§ 763.93 Management plans.

(a)(1) On or before October 12, 1988, each local education agency shall develop an asbestos management plan for each school, including all buildings that they lease, own, or otherwise use as school buildings, and submit the plan to an Agency designated by the Governor of the State in which the local education agency is located. The plan may be submitted in stages that cover a portion of the school buildings under the authority of the local education agency.

(2) If a building to be used as part of a school is leased or otherwise acquired after October 12, 1988, the local education agency shall include the new building in the management plan for the school prior to its use as a school building. The revised portions of the management plan shall be submitted to the Agency designated by the Governor.

(3) If a local education agency begins to use a building as a school after October 12, 1988, the local education agency shall submit a management plan for the school to the Agency designated by the Governor prior to its use as a school.

(b) On or before October 17, 1987, the Governor of each State shall notify local education agencies in the State regarding where to submit their management plans. States may establish administrative procedures for reviewing management plans. If the Governor does not disapprove a management plan within 90 days after receipt of the plan, the local education agency shall implement the plan.

(c) Each local education agency must begin implementation of its management plan on or before July 9, 1989, and complete implementation in a timely fashion.

(d) Each local education agency shall maintain and update its management plan to keep it current with ongoing operations and maintenance, periodic surveillance, inspection, reinspection, and response action activities. All provisions required to be included in the management plan under this section shall be retained as part of the management plan, as well as any information that has been revised to bring the plan up-to-date.

(e) The management plan shall be developed by an accredited management planner and shall include:

(1) A list of the name and address of each school building and whether the school building contains friable ACBM, nonfriable ACBM, and friable and nonfriable suspected ACBM assumed to be ACM.

(2) For each inspection conducted before the December 14, 1987:

(i) The date of the inspection.

(ii) A blueprint, diagram, or written description of each school building that identifies clearly each location and approximate square or linear footage of any homogeneous or sampling area where material was sampled for ACM, and, if possible, the exact locations where bulk samples were collected, and the dates of collection.

(iii) A copy of the analyses of any bulk samples, dates of analyses, and a copy of any other laboratory reports pertaining to the analyses.

(iv) A description of any response actions or preventive measures taken to reduce asbestos exposure, including if possible, the names and addresses of all contractors involved, start and completion dates of the work, and results of any air samples analyzed during and upon completion of the work.

(v) A description of assessments, required to be made under § 763.88, of material that was identified before December 14, 1987, as friable ACBM or friable suspected ACBM assumed to be ACM, and the name and signature, State of accreditation, and if applicable, accreditation number of each accredited person making the assessments.

(3) For each inspection and reinspection conducted under § 763.85:

(i) The date of the inspection or reinspection and the name and signature, State of accreditation and, if applicable, the accreditation number of each accredited inspector performing the inspection or reinspection.

(ii) A blueprint, diagram, or written description of each school building that identifies clearly each location and approximate square or linear footage of homogeneous areas where material was sampled for ACM, the exact location where each bulk sample was collected, date of collection, homogeneous areas where friable suspected ACBM is assumed to be ACM, and where nonfriable suspected ACBM is assumed to be ACM.

(iii) A description of the manner used to determine sampling locations, and the name and signature of each accredited inspector collecting samples, the State of accreditation, and if applicable, his or her accreditation number.

(iv) A copy of the analyses of any bulk samples collected and analyzed, the name and address of any laboratory that analyzed bulk samples, a statement that the laboratory meets the applicable requirements of § 763.87(a) the date of analysis, and the name and signature of the person performing the analysis.

(v) A description of assessments, required to be made under § 763.88, of all ACBM and suspected ACBM assumed to be ACM, and the name, signature, State of accreditation, and if applicable, accreditation number of each accredited person making the assessments.

(4) The name, address, and telephone number of the person designated under § 763.84 to ensure that the duties of the local education agency are carried out, and the course name, and dates and hours of training taken by that person to carry out the duties.

(5) The recommendations made to the local education agency regarding response actions, under § 763.88(d), the name, signature, State of accreditation of each person making the recommendations, and if applicable, his or her accreditation number.

(6) A detailed description of preventive measures and response actions to be taken, including methods to be used, for any friable ACBM, the locations where such measures and action will be taken, reasons for selecting the response action or preventive measure, and a schedule for beginning and completing each preventive measure and response action.

(7) With respect to the person or persons who inspected for ACBM and who will design or carry out response actions, except for operations and maintenance, with respect to the ACBM, one of the following statements:

(i) If the State has adopted a contractor accreditation program under section 206(b) of Title II of the Act, a statement that the person(s) is accredited under such plan.

(ii) A statement that the local education agency used (or will use) persons who have been accredited by another State which has adopted a contractor accreditation plan under section 206(b) of Title II of the Act or is accredited by an EPA-approved course under section 206(c) of Title II of the Act.

(8) A detailed description in the form of a blueprint, diagram, or in writing of any ACBM or suspected ACBM assumed to be ACM which remains in the school once response actions are undertaken pursuant to § 763.90. This description shall be updated as response actions are completed.

(9) A plan for reinspection under § 763.85, a plan for operations and maintenance activities under § 763.91,

and a plan for periodic surveillance under § 763.92, a description of the recommendation made by the management planner regarding additional cleaning under § 763.91(c)(2) as part of an operations and maintenance program, and the response of the local education agency to that recommendation.

(10) A description of steps taken to inform workers and building occupants, or their legal guardians, about inspections, reinspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress.

(11) An evaluation of the resources needed to complete response actions successfully and carry out reinspection, operations and maintenance activities, periodic surveillance and training.

(12) With respect to each consultant who contributed to the management plan, the name of the consultant and one of the following statements:

(i) If the State has adopted a contractor accreditation plan under section 206(b) of Title II of the Act, a statement that the consultant is accredited under such plan.

(ii) A statement that the contractor is accredited by another State which has adopted a contractor accreditation plan under section 206(b) of Title II of the Act, or is accredited by an EPA-approved course developed under section 206(c) of Title II of the Act.

(f) A local education agency may require each management plan to contain a statement signed by an accredited management plan developer that such person has prepared or assisted in the preparation of such plan or has reviewed such plan, and that such plan is in compliance with this Subpart E. Such statement may not be signed by a person who, in addition to preparing or assisting in preparing the management plan, also implements (or will implement) the management plan.

(g)(1) Upon submission of a management plan to the Governor for review, a local education agency shall keep a copy of the plan in its administrative office. The management plans shall be available, without cost or restriction, for inspection by representatives of EPA and the State, the public, including teachers, other school personnel and their representatives, and parents. The local education agency may charge a reasonable cost to make copies of management plans.

(2) Each local education agency shall maintain in its administrative office a complete, updated copy of a management plan for each school under its administrative control or direction. The management plans shall be available, during normal business hours, without cost or restriction, for inspection by representatives of EPA and the State, the public, including teachers, other school personnel and their representatives, and parents. The local education agency may charge a reasonable cost to make copies of management plans.

(3) Each school shall maintain in its administrative office a complete, updated copy of the management plan for that school. Management plans shall be available for inspection, without cost or restriction, to workers before work begins in any area of a school building. The school shall make management plans available for inspection to representatives of EPA and the State, the public, including parents, teachers, and other school personnel and their representatives within 5 working days after receiving a request for inspection. The school may charge a reasonable cost to make copies of the management plan.

(4) Upon submission of its management plan to the Governor and at least once each school year, the local education agency shall notify in writing parent, teacher, and employee organizations of the availability of management plans and shall include in the management plan a description of the steps taken to notify such organizations, and a dated copy of the notification. In the absence of any such organizations for parents, teachers, or employees, the local education agency shall provide written notice to that relevant group of the availability of management plans and shall include in the management plan a description of the steps taken to notify such groups, and a dated copy of the notification.

(h) Records required under § 763.94 shall be made by local education agencies and maintained as part of the management plan.

(i) Each management plan must contain a true and correct statement, signed by the individual designated by the local education agency under § 763.84, which certifies that the general, local education agency responsibilities, as stipulated by § 763.84, have been met or will be met.

§ 763.94 Recordkeeping.

(a) Records required under this section shall be maintained in a centralized location in the administrative office of both the school and the local education agency as part of the management plan. For each homogeneous area where all ACBM has been removed, the local education agency shall ensure that such records are retained for 3 years after the next reinspection required under § 763.85(b)(1), or for an equivalent period.

(b) For each preventive measure and response action taken for friable and nonfriable ACBM and friable and nonfriable suspected ACBM assumed to be ACM, the local education agency shall provide:

(1) A detailed written description of the measure or action, including methods used, the location where the measure or action was taken, reasons for selecting the measure or action, start and completion dates of the work, names and addresses of all contractors involved, and if applicable, their State of accreditation, and accreditation numbers, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(2) The name and signature of any person collecting any air sample required to be collected at the completion of certain response actions specified by § 763.90(i), the locations where samples were collected, date of collection, the name and address of the laboratory analyzing the samples, the date of analysis, the results of the analysis, the method of analysis, the name and signature of the person performing the analysis, and a statement that the laboratory meets the applicable requirements of § 763.90(i)(2)(ii).

(c) For each person required to be trained under § 763.92(a) (1) and (2), the local education agency shall provide the person's name and job title, the date that training was completed by that person, the location of the training, and the number of hours completed in such training.

(d) For each time that periodic surveillance under § 763.92(b) is performed, the local education agency shall record the name of each person performing the surveillance, the date of the surveillance, and any changes in the conditions of the materials.

(e) For each time that cleaning under § 763.91(c) is performed, the local education agency shall record the name of each person performing the cleaning, the date of such cleaning, the locations cleaned, and the methods used to perform such cleaning.

(f) For each time that operations and maintenance activities under § 763.91(d) are performed, the local education agency shall record the name of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACBM

is removed, the name and location of storage or disposal site of the ACM.

(g) For each time that major asbestos activity under § 763.91(e) is performed, the local education agency shall provide the name and signature, State of accreditation, and if applicable, the accreditation number of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(h) For each fiber release episode under § 763.91(f), the local education agency shall provide the date and location of the episode, the method of repair, preventive measures or response action taken, the name of each person performing the work, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(Approved by the Office of Management and Budget under control number 2070-0091)

§ 763.95 Warning labels.

(a) The local education agency shall attach a warning label immediately adjacent to any friable and nonfriable ACBM and suspected ACBM assumed to be ACM located in routine maintenance areas (such as boiler rooms) at each school building. This shall include:

(1) Friable ACBM that was responded to by a means other than removal.

(2) ACBM for which no response action was carried out.

(b) All labels shall be prominently displayed in readily visible locations and shall remain posted until the ACBM that is labeled is removed.

(c) The warning label shall read, in print which is readily visible because of large size or bright color, as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

§ 763.97 Compliance and enforcement.

(a) *Compliance with Title II of the Act.* (1) Section 207(a) of Title II of the Act (15 U.S.C. 2647) makes it unlawful for any local education agency to:

(i) Fail to conduct inspections pursuant to section 203(b) of Title II of the Act, including failure to follow procedures and failure to use accredited personnel and laboratories.

(ii) Knowingly submit false information to the Governor regarding any inspection pursuant to regulations under section 203(i) of Title II of the Act.

(iii) Fail to develop a management plan pursuant to regulations under section 203(i) of Title II of the Act.

(2) Section 207(a) of Title II of the Act (15 U.S.C. 2647) also provides that any local education agency which violates any provision of section 207 shall be liable for a civil penalty of not more than $5,000 for each day during which the violation continues. For the purposes of this subpart, a "violation" means a failure to comply with respect to a single school building.

(b) *Compliance with Title I of the Act.* (1) Section 15(1)(D) of Title I of the Act (15 U.S.C. 2614) makes it unlawful for any person to fail or refuse to comply with any requirement of Title II or any rule promulgated or order issued under Title II. Therefore, any person who violates any requirement of this Subpart is in violation of section 15 of Title I of the Act.

(2) Section 15(3) of Title I of the Act (15 U.S.C. 2614) makes it unlawful for any person to fail or refuse to establish or maintain records, submit reports, notices or other information, or permit access to or copying of records, as required by this Act or a rule thereunder.

(3) Section 15(4) (15 U.S.C. 2614) of Title I of the Act makes it unlawful for any person to fail or refuse to permit entry or inspection as required by section 11 of Title I of the Act.

(4) Section 16(a) of Title I of the Act (15 U.S.C. 2615) provides that any person who violates any provision of section 15 of Title I of the Act shall be liable to the United States for a civil penalty in an amount not to exceed $25,000 for each such violation. Each day such a violation continues shall, for purposes of this paragraph, constitute a separate violation of section 15. A local education agency is not liable for any civil penalty under Title I of the Act for failing or refusing to comply with any rule promulgated or order issued under Title II of the Act.

(c) *Criminal penalties.* If any violation committed by any person (including a local education agency) is knowing or willful, criminal penalties may be assessed under section 16(b) of Title I of the Act.

(d) *Injunctive relief.* The Agency may obtain injunctive relief under section 208(b) of Title II of the Act to respond to a hazard which poses an imminent and substantial endangerment to human health or the environment or section 17 (15 U.S.C. 2616) of Title I of the Act to restrain any violation of section 15 of Title I of the Act or to compel the taking of any action required by or under Title I of the Act.

(e) *Citizen complaints.* Any citizen who wishes to file a complaint pursuant to section 207(d) of Title II of the Act should direct the complaint to the Governor of the State or the EPA Asbestos Ombudsman, 401 M Street, SW., Washington, DC 20460. The citizen complaint should be in writing and identified as a citizen complaint pursuant to section 207(d) of Title II of TSCA. The EPA Asbestos Ombudsman or the Governor shall investigate and respond to the complaint within a reasonable period of time if the allegations provide a reasonable basis to believe that a violation of the Act has occurred.

(f) *Inspections.* EPA may conduct inspections and review management plans under section 11 of Title I of the Act (15 U.S.C. 2610) to ensure compliance.

§ 763.98 Waiver; delegation to State.

(a) *General.* (1) Upon request from a State Governor and after notice and comment and an opportunity for a public hearing in accordance with paragraphs (b) and (c) of this section, EPA may waive some or all of the requirements of this Subpart E if the State has established and is implementing or intends to implement a program of asbestos inspection and management that contains requirements that are at least as stringent as the requirements of this Subpart E.

(2) A waiver from any requirement of this Subpart E shall apply only to the specific provision for which a waiver has been granted under this section. All requirements of this Subpart E shall apply until a waiver is granted under this section.

(b) *Request.* Each request by a Governor to waive any requirement of this Subpart E shall be sent with three complete copies of the request to the Regional Administrator for the EPA Region in which the State is located and shall include:

(1) A copy of the State provisions or proposed provisions relating to its program of asbestos inspection and management in schools for which the request is made.

(2)(i) The name of the State agency that is or will be responsible for administering and enforcing the requirements for which a waiver is requested, the names and job titles of responsible officials in that agency, and phone numbers where the officials can be contacted.

(ii) In the event that more than one agency is or will be responsible for administering and enforcing the requirements for which a waiver is requested, a description of the functions to be performed by each agency, how the program will be coordinated by the lead agency to ensure consistency and

effective administration in the asbestos inspection and management program within the State, the names and job titles of responsible officials in the agencies, and phone numbers where the officials can be contacted. The lead agency will serve as the central contact point for the EPA.

(3) Detailed reasons, supporting papers, and the rationale for concluding that the State's asbestos inspection and management program provisions for which the request is made are at least as stringent as the requirements of this Subpart E.

(4) A discussion of any special situations, problems, and needs pertaining to the waiver request accompanied by an explanation of how the State intends to handle them.

(5) A statement of the resources that the State intends to devote to the administration and enforcement of the provisions relating to the waiver request.

(6) Copies of any specific or enabling State laws (enacted and pending enactment) and regulations (promulgated and pending promulgation) relating to the request, including provisions for assessing criminal and/or civil penalties.

(7) Assurance from the Governor, the Attorney General, or the legal counsel of the lead agency that the lead agency or other cooperating agencies have the legal authority necessary to carry out the requirements relating to the request.

(c) *General notice—hearing.* (1) Within 30 days after receipt of a request for a waiver, EPA will determine the completeness of the request. If EPA does not request further information within the 30-day period, the request will be deemed complete.

(2) Within 30 days after EPA determines that a request is complete, EPA will issue for publication in the **Federal Register** a notice that announces receipt of the request, describes the information submitted under paragraph (b) of this section, and solicits written comment from interested members of the public. Comments must be submitted within 60 days.

(3) If, during the comment period, EPA receives a written objection to a Governor's request and a request for a public hearing detailing specific objections to the granting of a waiver, EPA will schedule a public hearing to be held in the affected State after the close of the comment period and will announce the public hearing date in the **Federal Register** before the date of the hearing. Each comment shall include the name and address of the person submitting the comment.

(d) *Criteria.* EPA may waive some or all of the requirements of Subpart E of this part if:

(1) The State's lead agency and other cooperating agencies have the legal authority necessary to carry out the provisions of asbestos inspection and management in schools relating to the waiver request.

(2) The State's program of asbestos inspection and management in schools relating to the waiver request and implementation of the program are or will be at least as stringent as the requirements of this Subpart E.

(3) The State has an enforcement mechanism to allow it to implement the program described in the waiver request.

(4) The lead agency and any cooperating agencies have or will have qualified personnel to carry out the provisions relating to the waiver request.

(5) The State will devote adequate resources to the administration and enforcement of the asbestos inspection and management provisions relating to the waiver request.

(6) When specified by EPA, the State gives satisfactory assurances that necessary steps, including specific actions it proposes to take and a time schedule for their accomplishment, will be taken within a reasonable time to conform with applicable criteria under paragraph (d) (2) through (4) of this section.

(e) *Decision.* EPA will issue for publication in the **Federal Register** a notice announcing its decision to grant or deny, in whole or in part, a Governor's request for a waiver from some or all of the requirements of this Subpart E within 30 days after the close of the comment period or within 30 days following a public hearing, whichever is applicable. The notice will include the Agency's reasons and rationale for granting or denying the Governor's request. The 30-day period may be extended if mutually agreed upon by EPA and the State.

(f) *Modifications.* When any substantial change is made in the administration or enforcement of a State program for which a waiver was granted under this section, a responsible official in the lead agency shall submit such changes to EPA.

(g) *Reports.* The lead agency in each State that has been granted a waiver by EPA from any requirement of Subpart E of this part shall submit a report to the Regional Administrator for the Region in which the State is located at least once every 12 months to include the following information:

(1) A summary of the State's implementation and enforcement activities during the last reporting period relating to provisions waived under this section, including enforcement actions taken.

(2) Any changes in the administration or enforcement of the State program implemented during the last reporting period.

(3) Other reports as may be required by EPA to carry out effective oversight of any requirement of this Subpart E that was waived under this section.

(h) *Oversight.* EPA may periodically evaluate the adequacy of a State's implementation and enforcement of and resources devoted to carrying out requirements relating to the waiver. This evaluation may include, but is not limited to, site visits to local education agencies without prior notice to the State.

(i) *Informal conference.* (1) EPA may request that an informal conference be held between appropriate State and EPA officials when EPA has reason to believe that a State has failed to:

(i) Substantially comply with the terms of any provision that was waived under this section.

(ii) Meet the criteria under paragraph (d) of this section, including the failure to carry out enforcement activities or act on violations of the State program.

(2) EPA will:

(i) Specify to the State those aspects of the State's program believed to be inadequate.

(ii) Specify to the State the facts that underlie the belief of inadequacy.

(3) If EPA finds, on the basis of information submitted by the State at the conference, that deficiencies did not exist or were corrected by the State, no further action is required.

(4) Where EPA finds that deficiencies in the State program exist, a plan to correct the deficiencies shall be negotiated between the State and EPA. The plan shall detail the deficiencies found in the State program, specify the steps the State has taken or will take to remedy the deficiencies, and establish a schedule for each remedial action to be initiated.

(j) *Rescission.* (1) If the State fails to meet with EPA or fails to correct deficiencies raised at the informal conference, EPA will deliver to the Governor of the State and a responsible official in the lead agency a written notice of its intent to rescind, in whole or part, the waiver.

(2) EPA will issue for publication in the **Federal Register** a notice that announces the rescission of the waiver, describes those aspects of the State's

program determined to be inadequate, and specifies the facts that underlie the findings of inadequacy.

§ 763.99 Exclusions.

(a) A local education agency shall not be required to perform an inspection under § 763.85(a) in any sampling area as defined in 40 CFR 763.103 or homogeneous area of a school building where:

(1) An accredited inspector has determined that, based on sampling records, friable ACBM was identified in that homogeneous or sampling area during an inspection conducted before December 14, 1987. The inspector shall sign and date a statement to that effect with his or her State of accreditation and if applicable, accreditation number and, within 30 days after such determination, submit a copy of the statement to the person designated under § 763.84 for inclusion in the management plan. However, an accredited inspector shall assess the friable ACBM under § 763.88.

(2) An accredited inspector has determined that, based on sampling records, nonfriable ACBM was identified in that homogeneous or sampling area during an inspection conducted before December 14, 1987. The inspector shall sign and date a statement to that effect with his or her State of accreditation and if applicable, accreditation number and, within 30 days after such determination, submit a copy of the statement to the person designated under § 763.84 for inclusion in the management plan. However, an accredited inspector shall identify whether material that was nonfriable has become friable since that previous inspection and shall assess the newly-friable ACBM under § 763.88.

(3) Based on sampling records and inspection records, an accredited inspector has determined that no ACBM is present in the homogeneous or sampling area and the records show that the area was sampled, before December 14, 1987 in substantial compliance with § 763.85(a), which for purposes of this section means in a random manner and with a sufficient number of samples to reasonably ensure that the area is not ACBM.

(i) The accredited inspector shall sign and date a statement, with his or her State of accreditation and if applicable, accreditation number that the homogeneous or sampling area determined not to be ACBM was sampled in substantial compliance with § 763.85(a).

(ii) Within 30 days after the inspector's determination, the local education agency shall submit a copy of the inspector's statement to the EPA Regional Office and shall include the statement in the management plan for that school.

(4) The lead agency responsible for asbestos inspection in a State that has been granted a waiver from § 763.85(a) has determined that, based on sampling records and inspection records, no ACBM is present in the homogeneous or sampling area and the records show that the area was sampled before December 14, 1987, in substantial compliance with § 763.85(a). Such determination shall be included in the management plan for that school.

(5) An accredited inspector has determined that, based on records of an inspection conducted before December 14, 1987, suspected ACBM identified in that homogeneous or sampling area is assumed to be ACM. The inspector shall sign and date a statement to that effect, with his or her State of accreditation and if applicable, accreditation number and, within 30 days of such determination, submit a copy of the statement to the person designated under § 763.84 for inclusion in the management plan. However, an accredited inspector shall identify whether material that was nonfriable suspected ACBM assumed to be ACM has become friable since the previous inspection and shall assess the newly friable material and previously identified friable suspected ACBM assumed to be ACM under § 763.88.

(6) Based on inspection records and contractor and clearance records, an accredited inspector has determined that no ACBM is present in the homogeneous or sampling area where asbestos removal operations have been conducted before December 14, 1987, and shall sign and date a statement to that effect and include his or her State of accreditation and, if applicable, accreditation number. The local education agency shall submit a copy of the statement to the EPA Regional Office and shall include the statement in the management plan for that school.

(7) An architect or project engineer responsible for the construction of a new school building built after October 12, 1988, or an accredited inspector signs a statement that no ACBM was specified as a building material in any construction document for the building, or, to the best of his or her knowledge, no ACBM was used as a building material in the building. The local education agency shall submit a copy of the signed statement of the architect, project engineer, or accredited inspector to the EPA Regional Office and shall include the statement in the management plan for that school.

(b) The exclusion, under paragraph (a) (1) through (4) of this section, from conducting the inspection under § 763.85(a) shall apply only to homogeneous or sampling areas of a school building that were inspected and sampled before October 17, 1987. The local education agency shall conduct an inspection under § 763.85(a) of all areas inspected before October 17, 1987, that were not sampled or were not assumed to be ACM.

(c) If ACBM is subsequently found in a homogeneous or sampling area of a local education agency that had been identified as receiving an exclusion by an accredited inspector under paragraphs (a) (3), (4), (5) of this section, or an architect, project engineer or accredited inspector under paragraph (a)(7) of this section, the local education agency shall have 180 days following the date of identification of ACBM to comply with this Subpart E.

Appendix A to Subpart E—Interim Transmission Electron Microscopy Analytical Methods—Mandatory and Nonmandatory—and Mandatory Section to Determine Completion of Response Actions

I. Introduction

The following appendix contains three units. The first unit is the mandatory transmission electron microscopy (TEM) method which all laboratories must follow; it is the minimum requirement for analysis of air samples for asbestos by TEM. The mandatory method contains the essential elements of the TEM method. The second unit contains the complete non-mandatory method. The non-mandatory method supplements the mandatory method by including additional steps to improve the analysis. EPA recommends that the non-mandatory method be employed for analyzing air filters; however, the laboratory may choose to employ the mandatory method. The non-mandatory method contains the same minimum requirements as are outlined in the mandatory method. Hence, laboratories may choose either of the two methods for analyzing air samples by TEM.

The final unit of this Appendix A to Subpart E defines the steps which must be taken to determine completion of response actions. This unit is mandatory.

II. Mandatory Transmission Electron Microscopy Method

A. Definitions of Terms

1. "Analytical sensitivity"—Airborne asbestos concentration represented by each fiber counted under the electron

microscope. It is determined by the air volume collectad and the proportion of the filter examined. This method requires that the analytical sensitivity be no greater than 0.005 structures/cm³.

2. "Asbestiform"—A specific type of mineral fibrosity in which tha fibers and fibrils possess high tensile strength and flexibility.

3. "Aspect ratio"—A ratio of the length to the width of a particle. Minimum aspect ratio as defined by this method is equal to or greater than 5:1.

4. "Bundle"—A structure composed of three or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

5. "Clean area"—A controlled environment which is maintained and monitored to assure a low probability of asbestos contamination to materials in that space. Clean areas used in this method have HEPA filtered air under positive pressure and are capable of sustained operation with an open laboratory blank which on subsequent analysis has an average of less than 18 structures/mm² in an area of 0.057 mm² (nominally 10 200-mesh grid openings) and a maximum of 53 structures/mm² for any single preparation for that same area.

6. "Cluster"—A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group. Groupings must have more than two intersections.

7. "ED"—Electron diffraction.

8. "EDXA"—Energy dispersiva X-ray analysis.

9. "Fiber"—A structure greater than or equal to 0.5 μm in length with an aspect ratio (length to width) of 5:1 or greater and having substantially parallel sides.

10. "Grid"—An open structure for mounting on the sample to aid in its examination in the TEM. The term is used here to denote a 200-mesh copper lattice approximately 3 mm in diameter.

11. "Intersection"—Nonparallel touching or crossing of fibers, with the projection having an aspect ratio of 5:1 or greater.

12. "Laboratory sample coordinator"—That person responsible for the conduct of sample handling and the certification of the testing procedures.

13. "Filter background level"—The concentration of structures per square millimeter of filter that is considered indistinguishable from the concentration measured on a blank (filters through which no air has been drawn). For this method the filter background level is defined as 70 structures/mm².

14. "Matrix"—Fiber or fibers with one end free and the other end embedded in or hidden by a particulate. The exposed fiber must meet the fiber definition.

15. "NSD"—No structure detected.

16. "Operator"—A person responsible for the TEM instrumental analysis of the sample.

17. "PCM"—Phase contrast microscopy.

18. "SAED"—Selected area electron diffraction.

19. "SEM"—Scanning electron microscope.

20. "STEM"—Scanning transmission electron microscope.

21. "Structure"—a microscopic bundle, cluster, fiber, or matrix which may contain asbestos.

22. "S/cm³"—Structures per cubic centimeter.

23. "S/mm²"—Structures per square millimeter.

24. "TEM"—Transmission electron microscope.

B. Sampling

1. The sampling agency must have written quality control procedures and documents which verify compliance.

2. Sampling operations must be performed by qualified individuals completely independent of the abatement contractor to avoid possible conflict of interest (References 1, 2, 3, and 5 of Unit II.J.).

3. Sampling for airborne asbestos following an abatement action must usa commercially available cassettes.

4. Prescreen the loaded cassette collection filters to assure that they do not contain concentrations of asbestos which may interfere with the analysis of the sample. A filter blank average of less than 18 s/mm² in an area of 0.057 mm² (nominally 10 200-mesh grid openings) and a single preparation with a maximum of 53 s/mm² for that same area is acceptable for this method.

5. Use sample collection filters which are either polycarbonata having a pore size less than or equal to 0.4 μm or mixed cellulose ester having a pore size less than or equal to 0.45 μm.

6. Place these filters in series with a 5.0 μm backup filter (to serve as a diffuser) and a support pad. See tha following Figure 1:

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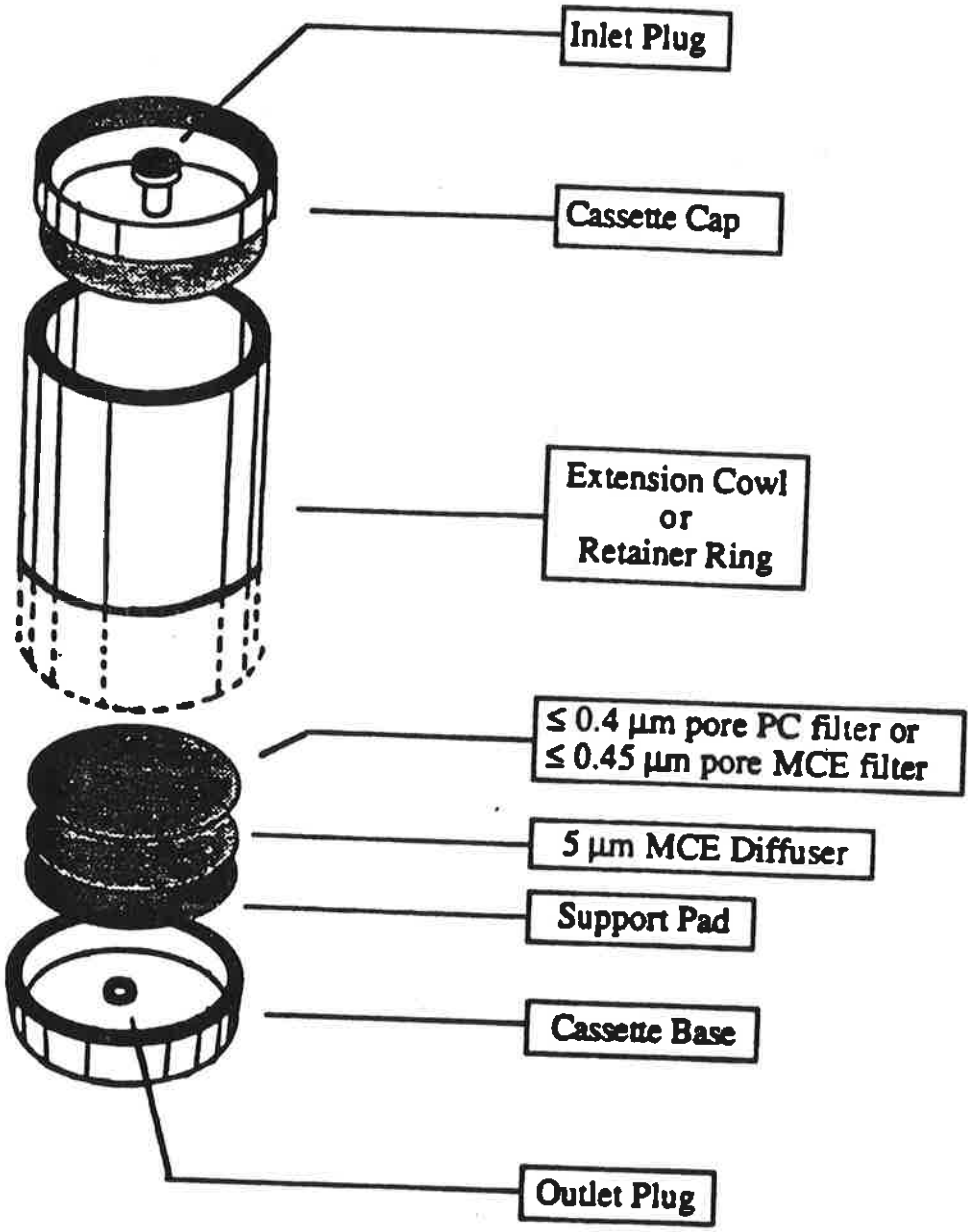
FIGURE I--SAMPLING CASSETTE CONFIGURATION



BILLING CODE 6560-50-C

7. Reloading of used cassettes is not permitted.

8. Orient the cassette downward at approximately 45 degrees from the horizontal.

9. Maintain a log of all pertinent sampling information.

10. Calibrate sampling pumps and their flow indicators over the range of their intended use with a recognized standard. Assemble the sampling system with a representative filter (not the filter which will be used in sampling) before and after the sampling operation.

11. Record all calibration information.

12. Ensure that the mechanical vibrations from the pump will be minimized to prevent transferral of vibration to the cassette.

13. Ensure that a continuous smooth flow of negative pressure is delivered by the pump by damping out any pump action fluctuations if necessary.

14. The final plastic barrier around the abatement area remains in place for the sampling period.

15. After the area has passed a thorough visual inspection, use aggressive sampling conditions to dislodge any remaining dust. (See suggested protocol in Unit III.B.7.d.)

16. Select an appropriate flow rate equal to or greater than 1 liter per minute (L/min) or less than 10 L/min for 25 mm cassettes. Larger filters may be operated at proportionally higher flow rates.

17. A minimum of 13 samples are to be collected for each testing site consisting of the following:

a. A minimum of five samples per abatement area.

b. A minimum of five samples per ambient area positioned at locations representative of the air entering the abatement site.

c. Two field blanks are to be taken by removing the cap for not more than 30 seconds and replacing it at the time of sampling before sampling is initiated at the following places:

i. Near the entrance to each abatement area.

ii. At one of the ambient sites. (DO NOT leave the field blanks open during the sampling period.)

d. A sealed blank is to be carried with each sample set. This representative cassette is not to be opened in the field.

18. Perform a leak check of the sampling system at each indoor and outdoor sampling site by activating the pump with the closed sampling cassette in line. Any flow indicates a leak which must be eliminated before initiating the sampling operation.

19. The following Table I specifies volume ranges to be used:

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TABLE 1--NUMBER OF 200 MESH EM GRID OPENINGS ($0.0057\ MM^2$) THAT NEED TO BE ANALYZED TO MAINTAIN SENSITIVITY OF 0.005 STRUCTURES/CC BASED ON VOLUME AND EFFECTIVE FILTER AREA

Effective Filter Area 385 sq mm	
Volume (liters)	# of grid openings
560	*24*
600	23
700	19
800	17
900	15
1,000	14
1,100	12
1,200	11
1,300	10
1,400	10
1,500	9
1,600	8
1,700	8
1,800	8
1,900	7
2,000	7
2,100	6
2,200	6
2,300	6
2,400	6
2,500	5
2,600	5
2,700	5
2,800	5
2,900	5
3,000	5
3,100	4
3,200	4
3,300	4
3,400	4
3,500	4
3,600	4
3,700	4
3,800	4

Recommended Volume Range

Effective Filter Area 855 sq mm	
Volume (liters)	# of grid openings
1,250	*24*
1,300	23
1,400	21
1,600	19
1,800	17
2,000	15
2,200	14
2,400	13
2,600	12
2,800	11
3,000	10
3,200	9
3,400	9
3,600	8
3,800	8
4,000	8
4,200	7
4,400	7
4,600	7
4,800	6
5,000	6
5,200	6
5,400	6
5,600	5
5,800	5
6,000	5
6,200	5
6,400	5
6,600	5
6,600	4
7,000	4
7,200	4
7,400	4
7,600	4

Recommended Volume Range

Note minimum volumes required:
25 mm : 560 liters
37 mm : 1250 liters

Filter diameter of 25 mm = effective area of 385 sq mm
Filter diameter of 37 mm = effective area of 855 sq mm

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20. Ensure that the sampler is turned upright before interrupting the pump flow.

21. Check that all samples are clearly labeled and that all pertinent information has been enclosed before transfer of the samples to the laboratory.

22. Ensure that the samples are stored in a secure and representative location.

23. Do not change containers if portions of these filters are taken for other purposes.

24. A summary of Sample Data Quality Objectives is shown in the following Table II:

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TABLE II--SUMMARY OF SAMPLING AGENCY DATA QUALITY OBJECTIVES

This table summarizes the data quality objectives from the performance of this method in terms of precision, accuracy, completeness, representativeness, and comparability. These objectives are assured by the periodic control checks and reference checks listed here and described in the text of the method.

Unit Operation	QC Check	Frequency	Conformance Expectation
Sampling materials	Sealed blank	1 per I/O site	95%
Sample procedures	Field blanks	2 per I/O site	95%
	Pump calibration	Before and after each field series	90%
Sample custody	Review of chain-of-custody record	Each sample	95% complete
Sample shipment	Review of sending report	Each sample	95% complete

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C. Sample Shipment

Ship bulk samples to the analytical laboratory in a separate container from air samples.

D. Sample Receiving

1. Designate one individual as sample coordinator at the laboratory. While that individual will normally be available to receive samples, the coordinator may train and supervise others in receiving procedures for those times when he/she is not available.

2. Bulk samples and air samples delivered to the analytical laboratory in the same container shall be rejected.

E. Sample Preparation

1. All sample preparation and analysis shall be performed by a laboratory independent of the abatement contractor.

2. Wet-wipe the exterior of the cassettes to minimize contamination possibilities before taking them into the clean room facility.

3. Perform sample preparation in a well-equipped clean facility.

Note: The clean area is required to have the following minimum characteristics. The area or hood must be capable of maintaining a positive pressure with make-up air being HEPA-filtered. The cumulative analytical blank concentration must average less than 18 s/mm² in an area of 0.057 mm² (nominally 10 200-mesh grid openings) and a single preparation with a maximum of 53 s/mm² for that same area.

4. Preparation areas for air samples must not only be separated from preparation areas for bulk samples, but they must be prepared in separate rooms.

5. Direct preparation techniques are required. The object is to produce an intact film containing the particulates of the filter surface which is sufficiently clear for TEM analysis.

a. TEM Grid Opening Area measurement must be done as follows:

i. The filter portion being used for sample preparation must have the surface collapsed using an acetone vapor technique.

ii. Measure 20 grid openings on each of 20 random 200-mesh copper grids by placing a grid on a glass and examining it under the PCM. Use a calibrated graticule to measure the average field diameters. From the data, calculate the field area for an average grid opening.

iii. Measurements can also be made on the TEM at a properly calibrated low magnification or on an optical microscope at a magnification of approximately 400X by using an eyepiece fitted with a scale that has been calibrated against a stage micrometer. Optical microscopy utilizing manual or automated procedures may be used providing instrument calibration can be verified.

b. TEM specimen preparation from polycarbonate (PC) filters. Procedures as described in Unit III.G. or other equivalent methods may be used.

c. TEM specimen preparation from mixed cellulose ester (MCE) filters.

i. Filter portion being used for sample preparation must have the surface collapsed using an acetone vapor technique or the Burdette procedure (Ref. 7 of Unit II.J.)

ii. Plasma etching of the collapsed filter is required. The microscope slide to which the collapsed filter pieces are attached is placed in a plasma asher. Because plasma ashers vary greatly in their performance, both from unit to unit and between different positions in the asher chamber, it is difficult to specify the conditions that should be used. Insufficient etching will result in a failure to expose embedded filters, and too much etching may result in loss of particulate from the surface. As an interim measure, it is recommended that the time for ashing of a known weight of a collapsed filter be established and that the etching rate be calculated in terms of micrometers per second. The actual etching time used for the particulate asher and operating conditions will then be set such that a 1–2 μm (10 percent) layer of collapsed surface will be removed.

iii. Procedures as described in Unit III. or other equivalent methods may be used to prepare samples.

F. TEM Method

1. An 80–120 kV TEM capable of performing electron diffraction with a fluorescent screen inscribed with calibrated gradations is required. If the TEM is equipped with EDXA it must either have a STEM attachment or be capable of producing a spot less than 250 nm in diameter at crossover. The microscope shall be calibrated routinely for magnification and camera constant.

2. Determination of Camera Constant and ED Pattern Analysis. The camera length of the TEM in ED operating mode must be calibrated before ED patterns on unknown samples are observed. This can be achieved by using a carbon-coated grid on which a thin film of gold has been sputtered or evaporated. A thin film of gold is evaporated on the specimen TEM grid to obtain zone-axis ED patterns superimposed with a ring pattern from the polycrystalline gold film. In practice, it is desirable to optimize the thickness of the gold film so that only one or two sharp rings are obtained on the superimposed ED pattern. Thicker gold film would normally give multiple gold rings, but it will tend to mask weaker diffraction spots from the unknown fibrous particulate. Since the unknown d-spacings of most interest in asbestos analysis are those which lie closest to the transmitted beam, multiple gold rings are unnecessary on zone-axis ED patterns. An average camera constant using multiple gold rings can be determined. The camera constant is one-half the diameter of the rings times the interplanar spacing of the ring being measured.

3. Magnification Calibration. The magnification calibration must be done at the fluorescent screen. The TEM must be calibrated at the grid opening magnification (if used) and also at the magnification used for fiber counting. This is performed with a cross grating replica (e.g., one containing 2,160 lines/mm). Define a field of view on the fluorescent screen either by markings or physical boundaries. The field of view must be measurable or previously inscribed with a scale or concentric circles (all scales should be metric). A logbook must be maintained, and the dates of calibration and the values obtained must be recorded. The frequency of calibration depends on the past history of the particular microscope. After any maintenance of the microscope that involved adjustment of the power supplied to the lenses or the high-voltage system or the mechanical disassembly of the electron optical column apart from filament exchange, the magnification must be recalibrated. Before the TEM calibration is performed, the analyst must ensure that the cross grating replica is placed at the same distance from the objective lens as the specimens are. For instruments that incorporate an eucentric tilting specimen stage, all specimens and the cross grating replica must be placed at the eucentric position.

4. While not required on every microscope in the laboratory, the laboratory must have either one microscope equipped with energy dispersive X-ray analysis or access to an equivalent system on a TEM in another laboratory.

5. Microscope settings: 80–120 kV, grid assessment 250–1,000X, then 15,000–20,000X screen magnification for analysis.

6. Approximately one-half (0.5) of the predetermined sample area to be analyzed shall be performed on one sample grid preparation and the remaining half on a second sample grid preparation.

7. Individual grid openings with greater than 5 percent openings (holes)

or covered with greater than 25 percent particulate matter or obviously having nonuniform loading must not be analyzed.

8. Reject the grid if:

a. Less than 50 percent of the grid openings covered by the replica are intact.

b. The replica is doubled or folded.

c. The replica is too dark because of incomplete dissolution of the filter.

9. Recording Rules.

a. Any continuous grouping of particles in which an asbestos fiber with an aspect ratio greater than or equal to 5:1 and a length greater than or equal to 0.5 μm is detected shall be recorded on the count sheet. These will be designated asbestos structures and will be classified as fibers, bundles, clusters, or matrices. Record as individual fibers any contiguous grouping having 0, 1, or 2 definable intersections. Groupings having more than 2 intersections are to be described as cluster or matrix. An intersection is a nonparallel touching or crossing of fibers, with the projection having an aspect ratio of 5:1 or greater. See the following Figure 2:

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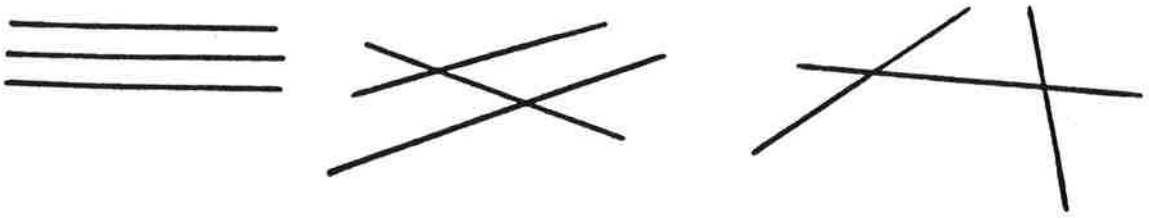
FIGURE 2--COUNTING GUIDELINES USED IN DETERMINING ASBESTOS STRUCTURES

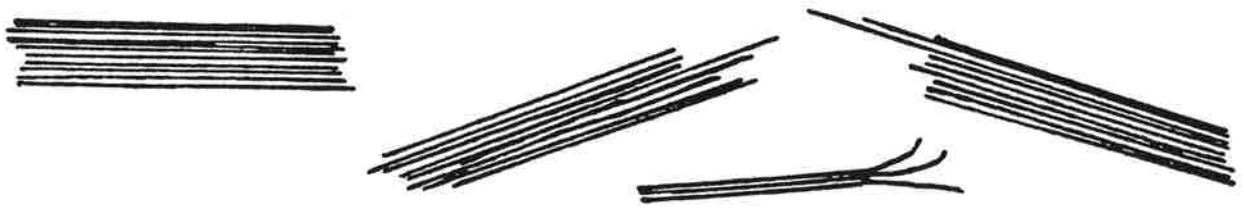
Count as 1 fiber; 1 Structure; no intersections.

Count as 2 fibers if space between fibers is greater than width of 1 fiber diameter or number of intersections is equal to or less than 1.

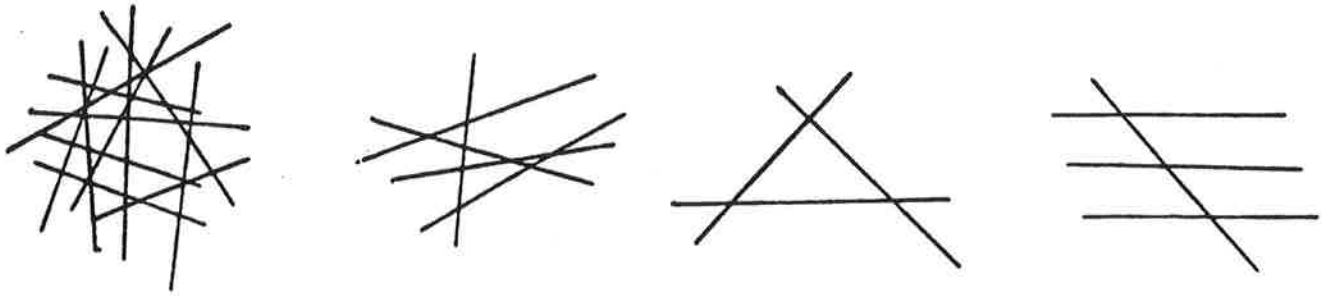
Count as 3 structures if space between fibers is greater than width of 1 fiber diameter or if the number of intersections is equal to or less than 2.



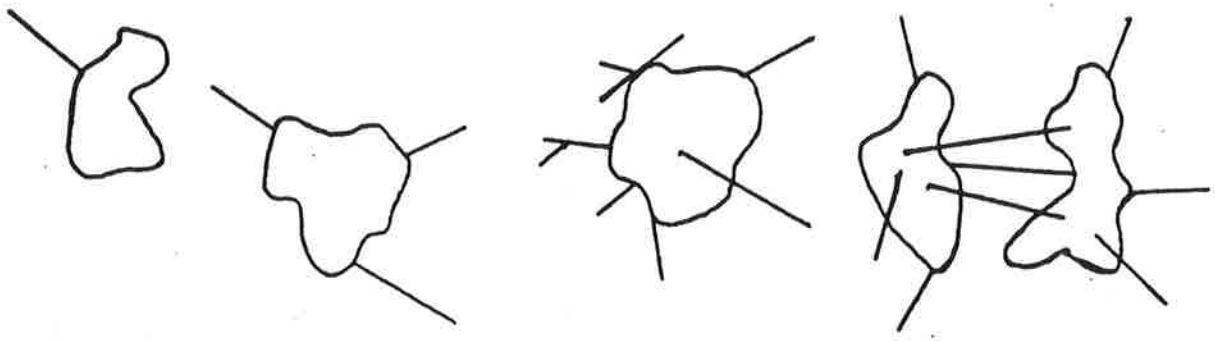
Count bundles as 1 structure; 3 or more parallel fibrils less than 1 fiber diameter separation.



Count clusters as 1 structure; fibers having greater than or equal to 3 intersections.



Count matrix as 1 structure.



DO NOT COUNT AS STRUCTURES:

Fiber protrusion
<5:1 Aspect Ratio

No fiber protusion

Fiber protrusion
<0.5 micrometer

—— <0.5 micrometer in length
▬ <5:1 Aspect Ratio

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i. *Fiber.* A structure having a minimum length greater than or equal to 0.5 μm and an aspect ratio (length to width) of 5:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded or dovetailed.

ii. *Bundle.* A structure composed of three or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

iii. *Cluster.* A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group. Groupings must have more than two intersections.

iv. *Matrix.* Fiber or fibers with one end free and the other end embedded in or hidden by a particulate. The exposed fiber must meet the fiber definition.

b. Separate categories will be maintained for fibers less than 5 μm and for fibers equal to or greater than 5 μm in length.

c. Record NSD when no structures are detected in the field.

d. Visual identification of electron diffraction (ED) patterns is required for each asbestos structure counted which would cause the analysis to exceed the 70 s/mm² concentration. (Generally this means the first four fibers identified as asbestos must exhibit an identifiable diffraction pattern for chrysotile or amphibole.)

e. The micrograph number of the recorded diffraction patterns must be reported to the client and maintained in the laboratory's quality assurance records. In the event that examination of the pattern by a qualified individual indicates that the pattern has been misidentified visually, the client shall be contacted.

f. Energy Dispersive X-ray Analysis (EDXA) is required of all amphiboles which would cause the analysis results to exceed the 70 s/mm² concentration. (Generally speaking, the first 4 amphiboles would require EDXA.)

g. If the number of fibers in the nonasbestos class would cause the analysis to exceed the 70 s/mm² concentration, the fact that they are not asbestos must be confirmed by EDXA or measurement of a zone axis diffraction pattern.

h. Fibers classified as chrysotile must be identified by diffraction or X-ray analysis and recorded on a count sheet. X-ray analysis alone can be used only after 70 s/mm² have been exceeded for a particular sample.

i. Fibers classified as amphiboles must be identified by X-ray analysis and electron diffraction and recorded on the count sheet. (X-ray analysis alone can be used only after 70 s/mm² have been exceeded for a particular sample.)

j. If a diffraction pattern was recorded on film, record the micrograph number on the count sheet.

k. If an electron diffraction was attempted but no pattern was observed, record N on the count sheet.

l. If an EDXA spectrum was attempted but not observed, record N on the count sheet.

m. If an X-ray analysis spectrum is stored, record the file and disk number on the count sheet.

10. Classification Rules.

a. *Fiber.* A structure having a minimum length greater than or equal to 0.5 μm and an aspect ratio (length to width) of 5:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded or dovetailed.

b. *Bundle.* A structure composed of three or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

c. *Cluster.* A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group. Groupings must have more than two intersections.

d. *Matrix.* Fiber or fibers with one end free and the other end embedded in or hidden by a particulate. The exposed fiber must meet the fiber definition.

11. After finishing with a grid, remove it from the microscope, and replace it in the appropriate grid holder. Sample grids must be stored for a minimum of 1 year from the date of the analysis; the sample cassette must be retained for a minimum of 30 days by the laboratory or returned at the client's request.

G. Sample Analytical Sequence

1. Under the present sampling requirements a minimum of 13 samples is to be collected for the clearance testing of an abatement site. These include five abatement area samples, five ambient samples, two field blanks, and one sealed blank.

2. Carry out visual inspection of work site prior to air monitoring.

3. Collect a minimum of 5 air samples inside the work site and 5 samples outside the work site. The indoor and outdoor samples shall be taken during the same time period.

4. Remaining steps in the analytical sequence are contained in Unit IV of this Appendix.

H. Reporting

1. The following information must be reported to the client for each sample analyzed:

a. Concentration in structures per square millimeter and structures per cubic centimeter.

b. Analytical sensitivity used for the analysis.

c. Number of asbestos structures.

d. Area analyzed.

e. Volume of air sampled (which must be initially supplied to lab by client).

f. Copy of the count sheet must be included with the report.

g. Signature of laboratory official to indicate that the laboratory met specifications of the method.

h. Report form must contain official laboratory identification (e.g., letterhead).

i. Type of asbestos.

I. Quality Control/Quality Assurance Procedures (Data Quality Indicators)

Monitoring the environment for airborne asbestos requires the use of sensitive sampling and analysis procedures. Because the test is sensitive, it may be influenced by a variety of factors. These include the supplies used in the sampling operation, the performance of the sampling, the preparation of the grid from the filter and the actual examination of this grid in the microscope. Each of these unit operations must produce a product of defined quality if the analytical result is to be a reliable and meaningful test result. Accordingly, a series of control checks and reference standards are to be performed along with the sample analysis as indicators that the materials used are adequate and the operations are within acceptable limits. In this way, the quality of the data is defined and the results are of known value. These checks and tests also provide timely and specific warning of any problems which might develop within the sampling and analysis operations. A description of these quality control/quality assurance procedures is summarized in the following Table III:

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TABLE III--SUMMARY OF LABORATORY DATA QUALITY OBJECTIVES

Unit Operation	QC Check	Frequency	Conformance Expectation
Sample receiving	Review of receiving report	Each sample	95% complete
Sample custody	Review of chain-of-custody record	Each sample	95% complete
Sample preparation	Supplies and reagents	On receipt	Meet specs. or reject
	Grid opening size	20 openings/20 grids/lot of 1000 or 1 opening/sample	100%
	Special clean area monitoring	After cleaning or service	Meet specs or reclean
	Laboratory blank	1 per prep series or 10%	Meet specs. or reanalyze series
	Plasma etch blank	1 per 20 samples	75%
	Multiple preps (3 per sample)	Each sample	One with cover of 15 complete grid sqs.
Sample analysis	System check	Each day	Each day
	Alignment check	Each day	Each day
	Magnification calibration with low and high standards	Each month or after service	95%
	ED calibration by gold standard	Weekly	95%
	EDS calibration by copper line	Daily	95%
Performance check	Laboratory blank (measure of cleanliness)	Prep 1 per series or 10% read 1 per 25 samples	Meet specs or reanalyze series
	Replicate counting (measure of precision)	1 per 100 samples	1.5 x Poisson Std. Dev.
	Duplicate analysis (measure of reproducibility)	1 per 100 samples	2 x Poisson Std. Dev.
	Known samples of typical materials (working standards)	Training and for comparison with unknowns	100%
	Analysis of NBS SRM 1876 and/or RM 8410 (measure of accuracy and comparability)	1 per analyst per year	1.5 x Poisson Std. Dev.
	Data entry review (data validation and measure of completeness)	Each sample	95%
	Record and verify ID electron diffraction pattern of structure	1 per 5 samples	80% accuracy
Calculations and data reduction	Hand calculation of automated data reduction procedure or independent recalculation of hand-calculated data	1 per 100 samples	85%

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1. When the samples arrive at the laboratory, check the samples and documentation for completeness and requirements before initiating the analysis.

2. Check all laboratory reagents and supplies for acceptable asbestos background levels.

3. Conduct all sample preparation in a clean room environment monitored by laboratory blanks. Testing with blanks must also be done after cleaning or servicing the room.

4. Prepare multiple grids of each sample.

5. Provide laboratory blanks with each sample batch. Maintain a cumulative average of these results. If there are more than 53 fibers/mm ^{2} per 10 200-mesh grid openings, the system must be checked for possible sources of contamination.

6. Perform a system check on the transmission electron microscope daily.

7. Make periodic performance checks of magnification, electron diffraction and energy dispersive X-ray systems as set forth in Table III under Unit II.I.

8. Ensure qualified operator performance by evaluation of replicate analysis and standard sample comparisons as set forth in Table III under Unit II.I.

9. Validate all data entries.

10. Recalculate a percentage of all computations and automatic data reduction steps as specified in Table III under Unit II.I.

11. Record an electron diffraction pattern of one asbestos structure from every five samples that contain asbestos. Verify the identification of the pattern by measurement or comparison of the pattern with patterns collected from standards under the same conditions. The records must also demonstrate that the identification of the pattern has been verified by a qualified individual and that the operator who made the identification is maintaining at least an 80 percent correct visual identification based on his measured patterns.

12. Appropriate logs or records must be maintained by the analytical laboratory verifying that it is in compliance with the mandatory quality assurance procedures.

J. References

For additional background information on this method, the following references should be consulted.

1. "Guidance for Controlling Asbestos-Containing Materials in Buildings," EPA 560/5–85–024, June 1985.

2. "Measuring Airborne Asbestos Following an Abatement Action," USEPA, Office of Toxic Substances, EPA 600/4–85–049, 1985.

3. Small, John and E. Steel. Asbestos Standards: Materials and Analytical Methods. N.B.S. Special Publication 619, 1982.

4. Campbell, W.J., R.L. Blake, L.L. Brown, E.E. Cather, and J.J. Sjoberg. Selected Silicate Minerals and Their Asbestiform Varieties. Information Circular 8751, U.S. Bureau of Mines, 1977.

5. Quality Assurance Handbook for Air Pollution Measurement System. Ambient Air Methods. EPA 600/4–77–027a. USEPA, Office of Research and Development, 1977.

6. Method 2A: Direct Measurement of Gas Volume through Pipes and Small Ducts. 40 CFR Part 60 Appendix A.

7. Burdette, G.J., Health & Safety Exec. Research & Lab. Services Div., London, "Proposed Analytical Method for Determination of Asbestos in Air."

8. Chatfield, E.J., Chatfield Tech. Cons., Ltd., Clark, T., PEI Assoc., "Standard Operating Procedure for Determination of Airborne Asbestos Fibers by Transmission Electron Microscopy Using Polycarbonate Membrane Filters," WERL SOP 87–1, March 5, 1987.

9. NIOSH Method 7402 for Asbestos Fibers, 12–11–86 Draft.

10. Yamate, G., Agarwall, S.C., Gibbons, R.D., IIT Research Institute, "Methodology for the Measurement of Airborne Asbestos by Electron Microscopy," Draft report, USEPA Contract 68–02–3266, July 1984.

11. "Guidance to the Preparation of Quality Assurance Project Plans," USEPA, Office of Toxic Substances, 1984.

III. Nonmandatory Transmission Electron Microscopy Method

A. Definitions of Terms

1. "Analytical sensitivity"—Airborne asbestos concentration represented by each fiber counted under the electron microscope. It is determined by the air volume collected and the proportion of the filter examined. This method requires that the analytical sensitivity be no greater than 0.005 s/cm^3.

2. "Asbestiform"—A specific type of mineral fibrosity in which the fibers and fibrils possess high tensile strength and flexibility.

3. "Aspect ratio"—A ratio of the length to the width of a particle. Minimum aspect ratio as defined by this method is equal to or greater than 5:1.

4. "Bundle"—A structure composed of three or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

5. "Clean area"—A controlled environment which is maintained and monitored to assure a low probability of asbestos contamination to materials in that space. Clean areas used in this method have HEPA filtered air under positive pressure and are capable of sustained operation with an open laboratory blank which on subsequent analysis has an average of less than 18 structures/mm^2 in an area of 0.057 mm^2 (nominally 10 200 mesh grid openings) and a maximum of 53 structures/mm^2 for no more than one single preparation for that same area.

6. "Cluster"—A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group. Groupings must have more than two intersections.

7. "ED"—Electron diffraction.

8. "EDXA"—Energy dispersive X-ray analysis.

9. "Fiber"—A structure greater than or equal to 0.5 μm in length with an aspect ratio (length to width) of 5:1 or greater and having substantially parallel sides.

10. "Grid"—An open structure for mounting on the sample to aid in its examination in the TEM. The term is used here to denote a 200-mesh copper lattice approximately 3 mm in diameter.

11. "Intersection"—Nonparallel touching or crossing of fibers, with the projection having an aspect ratio of 5:1 or greater.

12. "Laboratory sample coordinator"—That person responsible for the conduct of sample handling and the certification of the testing procedures.

13. "Filter background level"—The concentration of structures per square millimeter of filter that is considered indistinguishable from the concentration measured on blanks (filters through which no air has been drawn). For this method the filter background level is defined as 70 structures/mm^2.

14. "Matrix"—Fiber or fibers with one end free and the other end embedded in or hidden by a particulate. The exposed fiber must meet the fiber definition.

15. "NSD"—No structure detected.

16. "Operator"—A person responsible for the TEM instrumental analysis of the sample.

17. "PCM"—Phase contrast microscopy.

16. "SAED"—Selected area electron diffraction.

19. "SEM"—Scanning electron microscope.

20. "STEM"—Scanning transmission electron microscope.

21. "Structure"—a microscopic bundle, cluster, fiber, or matrix which may contain asbestos.

22. "S/cm³"—Structures per cubic centimeter.

23. "S/mm²"—Structures per square millimeter.

24. "TEM"—Transmission electron microscope.

B. Sampling

1. Sampling operations must be performed by qualified individuals completely independent of the abatement contractor to avoid possible conflict of interest (See References 1, 2, and 5 of Unit III.L.) Special precautions should be taken to avoid contamination of the sample. For example, materials that have not been prescreened for their asbestos background content should not be used; also, sample handling procedures which do not take cross contamination possibilities into account should not be used.

2. Material and supply checks for asbestos contamination should be made on all critical supplies, reagents, and procedures before their use in a monitoring study.

3. Quality control and quality assurance steps are needed to identify problem areas and isolate the cause of the contamination (see Reference 5 of Unit III.L.). Control checks shall be permanently recorded to document the quality of the information produced. The sampling firm must have written quality control procedures and documents which verify compliance. Independent audits by a qualified consultant or firm should be performed once a year. All documentation of compliance should be retained indefinitely to provide a guarantee of quality. A summary of Sample Data Quality Objectives is shown in Table II of Unit II.B.

4. Sampling materials.

a. Sample for airborne asbestos following an abatement action using commercially available cassettes.

b. Use either a cowling or a filter-retaining middle piece. Conductive material may reduce the potential for particulates to adhere to the walls of the cowl.

c. Cassettes must be verified as "clean" prior to use in the field. If packaged filters are used for loading or preloaded cassettes are purchased from the manufacturer or a distributor, the manufacturer's name and lot number should be entered on all field data sheets provided to the laboratory, and are required to be listed on all reports from the laboratory.

d. Assemble the cassettes in a clean facility (See definition of clean area under Unit III.A.).

e. Reloading of used cassettes is not permitted.

f. Use sample collection filters which are either polycarbonate having a pore size of less than or equal to 0.4 μm or mixed cellulose ester having a pore size of less than or equal to 0.45 μm.

g. Place these filters in series with a backup filter with a pore size of 5.0 μm (to serve as a diffuser) and a support pad. See the following Figure 1:

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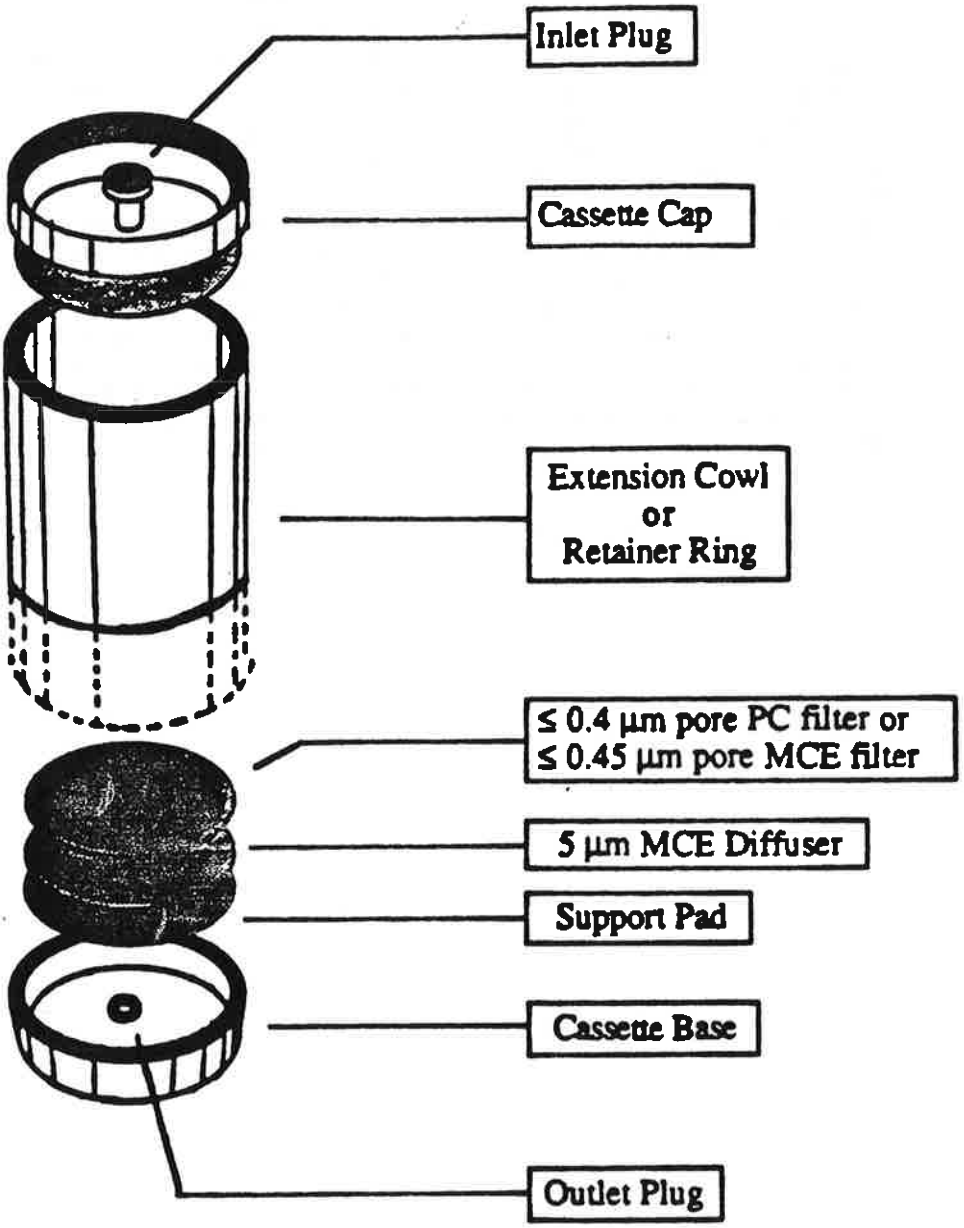
FIGURE I--SAMPLING CASSETTE CONFIGURATION



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h. When polycarbonate filters are used, position the highly reflective face such that the incoming particulate is received on this surface.

i. Seal the cassettes to prevent leakage around the filter edges or between cassette part joints. A mechanical press may be useful to achieve a reproducible leak-free seal. Shrink fit gel-bands may be used for this purpose and are available from filter manufacturers and their authorized distributors.

j. Use wrinkle-free loaded cassettes in the sampling operation.

5. Pump setup.

a. Calibrate the sampling pump over the range of flow rates and loads anticipated for the monitoring period with this flow measuring device in series. Perform this calibration using guidance from EPA Method 2A each time the unit is sent to the field (See Reference 6 of Unit III.L.).

b. Configure the sampling system to preclude pump vibrations from being transmitted to the cassette by using a sampling stand separate from the pump station and making connections with flexible tubing.

c. Maintain continuous smooth flow conditions by damping out any pump action fluctuations if necessary.

d. Check the sampling system for leaks with the end cap still in place and the pump operating before initiating sample collection. Trace and stop the source of any flow indicated by the flowmeter under these conditions.

e. Select an appropriate flow rate equal to or greater than 1 L/min or less than 10 L/min for 25 mm cassettes. Larger filters may be operated at proportionally higher flow rates.

f. Orient the cassette downward at approximately 45 degrees from the horizontal.

g. Maintain a log of all pertinent sampling information, such as pump identification number, calibration data, sample location, date, sample identification number, flow rates at the beginning, middle, and end, start and stop times, and other useful information or comments. Use of a sampling log form is recommended. See the following Figure 2:

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FIGURE 2--SAMPLING LOG FORM

Sample Number	Location of Sample	Pump I.D.	Start Time	Middle Time	End Time	Flow Rate

Inspector: _____ Date: _____

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h. Initiate a chain of custody procedure at the start of each sampling, if this is requested by the client.

i. Maintain a close check of all aspects of the sampling operation on a regular basis.

j. Continue sampling until at least the minimum volume is collected, as specified in the following Table I:

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TABLE 1--NUMBER OF 200 MESH EM GRID OPENINGS (0.0057 MM^2) THAT NEED TO BE ANALYZED TO MAINTAIN SENSITIVITY OF 0.005 STRUCTURES/CC BASED ON VOLUME AND EFFECTIVE FILTER AREA

	Effective Filter Area 385 sq mm	
	Volume (liters)	# of grid openings
	560	*24*
	600	23
	700	19
	800	17
	900	15
	1,000	14
	1,100	12
Recommended Volume Range	1,200	11
	1,300	10
	1,400	10
	1,500	9
	1,600	8
	1,700	8
	1,800	8
	1,900	7
	2,000	7
	2,100	6
	2,200	6
	2,300	6
	2,400	6
	2,500	5
	2,600	5
	2,700	5
	2,800	5
	2,900	5
	3,000	5
	3,100	4
	3,200	4
	3,300	4
	3,400	4
	3,500	4
	3,600	4
	3,700	4
	3,800	4

	Effective Filter Area 855 sq mm	
	Volume (liters)	# of grid openings
	1,250	*24*
	1,300	23
	1,400	21
	1,600	19
	1,800	17
	2,000	15
	2,200	14
	2,400	13
	2,600	12
	2,600	11
	3,000	10
	3,200	9
	3,400	9
	3,600	8
	3,800	8
	4,000	8
	4,200	7
	4,400	7
	4,600	7
	4,800	6
	5,000	6
	5,200	6
	5,400	6
	5,600	5
	5,800	5
	6,000	5
	6,200	5
	6,400	5
	6,600	5
	6,600	4
	7,000	4
	7,200	4
	7,400	4
	7,600	4

Recommended Volume Range

Note minimum volumes required:
25 mm : 560 liters
37 mm : 1250 liters

Filter diameter of 25 mm = effective area of 385 sq mm
Filter diameter of 37 mm = effective area of 855 sq mm

BILLING CODE 6560-50-C

k. At the conclusion of sampling, turn the cassette upward before stopping the flow to minimize possible particle loss. If the sampling is resumed, restart the flow before reorienting the cassette downward. Note the condition of the filter at the conclusion of sampling.

l. Double check to see that all information has been recorded on the data collection forms and that the cassette is securely closed and appropriately identified using a waterproof label. Protect cassettes in individual clean resealed polyethylene bags. Bags are to be used for storing cassette caps when they are removed for sampling purposes. Caps and plugs should only be removed or replaced using clean hands or clean disposable plastic gloves.

m. Do not change containers if portions of these filters are taken for other purposes.

6. Minimum sample number per site. A minimum of 13 samples are to be collected for each testing consisting of the following:

a. A minimum of five samples per abatement area.

b. A minimum of five samples per ambient area positioned at locations representative of the air entering the abatement site.

c. Two field blanks are to be taken by removing the cap for not more than 30 sec and replacing it at the time of sampling before sampling is initiated at the following places:

i. Near the entrance to each ambient area.

ii. At one of the ambient sites.

(Note: Do not leave the blank open during the sampling period.)

d. A sealed blank is to be carried with each sample set. This representative cassette is not to be opened in the field.

7. Abatement area sampling.

a. Conduct final clearance sampling only after the primary containment barriers have been removed; the abatement area has been thoroughly dried; and, it has passed visual inspection tests by qualified personnel. (See Reference 1 of Unit III.L.)

b. Containment barriers over windows, doors, and air passageways must remain in place until the TEM clearance sampling and analysis is completed and results meet clearance test criteria. The final plastic barrier remains in place for the sampling period.

c. Select sampling sites in the abatement area on a random basis to provide unbiased and representative samples.

d. After the area has passed a thorough visual inspection, use aggressive sampling conditions to dislodge any remaining dust.

i. Equipment used in aggressive sampling such as a leaf blower and/or fan should be properly cleaned and decontaminated before use.

ii. Air filtration units shall remain on during the air monitoring period.

iii. Prior to air monitoring, floors, ceiling and walls shall be swept with the exhaust of a minimum one (1) horsepower leaf blower.

iv. Stationary fans are placed in locations which will not interfere with air monitoring equipment. Fan air is directed toward the ceiling. One fan shall be used for each 10,000 ft ^{3} of worksite.

v. Monitoring of an abatement work area with high-volume pumps and the use of circulating fans will require electrical power. Electrical outlets in the abatement area may be used if available. If no such outlets are available, the equipment must be supplied with electricity by the use of extension cords and strip plug units. All electrical power supply equipment of this type must be approved Underwriter Laboratory equipment that has not been modified. All wiring must be grounded. Ground fault interrupters should be used. Extreme care must be taken to clean up any residual water and ensure that electrical equipment does not become wet while operational.

vi. Low volume pumps may be carefully wrapped in 6-mil polyethylene to insulate the pump from the air. High volume pumps cannot be sealed in this manner since the heat of the motor may melt the plastic. The pump exhausts should be kept free.

vii. If recleaning is necessary, removal of this equipment from the work area must be handled with care. It is not possible to completely decontaminate the pump motor and parts since these areas cannot be wetted. To minimize any problems in this area, all equipment such as fans and pumps should be carefully wet wiped prior to removal from the abatement area. Wrapping and sealing low volume pumps in 6-mil polyethylene will provide easier decontamination of this equipment. Use of clean water and disposable wipes should be available for this purpose.

e. Pump flow rate equal to or greater than 1 L/min or less than 10 L/min may be used for 25 mm cassettes. The larger cassette diameters may have comparably increased flow.

f. Sample a volume of air sufficient to ensure the minimum quantitation limits. (See Table I of Unit III.B.5.j.)

8. Ambient sampling.

a. Position ambient samplers at locations representative of the air entering the abatement site. If makeup air entering the abatement site is drawn from another area of the building which is outside of the abatement area, place the pumps in the building. pumps should be placed out of doors located near the building and away from any obstructions that may influence wind patterns. If construction is in progress immediately outside the enclosure, it may be necessary to select another ambient site. Samples should be representative of any air entering the work site.

b. Locate the ambient samplers at least 3 ft apart and protect them from adverse weather conditions.

c. Sample same volume of air as samples taken inside the abatement site.

C. Sample Shipment

1. Ship bulk samples in a separate container from air samples. Bulk samples and air samples delivered to the analytical laboratory in the same container shall be rejected.

2. Select a rigid shipping container and pack the cassettes upright in a noncontaminating nonfibrous medium such as a bubble pack. The use of resealable polyethylene bags may help to prevent jostling of individual cassettes.

3. Avoid using expanded polystyrene because of its static charge potential. Also avoid using particle-based packaging materials because of possible contamination.

4. Include a shipping bill and a detailed listing of samples shipped, their descriptions and all identifying numbers or marks, sampling data, shipper's name, and contact information. For each sample set, designate which are the ambient samples, which are the abatement area samples, which are the field blanks, and which is the sealed blank if sequential analysis is to be performed.

5. Hand-carry samples to the laboratory in an upright position if possible; otherwise choose that mode of transportation least likely to jar the samples in transit.

6. Address the package to the laboratory sample coordinator by name when known and alert him or her of the package description, shipment mode, and anticipated arrival as part of the chain of custody and sample tracking procedures. This will also help the laboratory schedule timely analysis for the samples when they are received.

D. Quality Control/Quality Assurance Procedures (Data Quality Indicators)

Monitoring the environment for airborne asbestos requires the use of

sensitive sampling and analysis procedures. Because the test is sensitive, it may be influenced by a variety of factors. These include the supplies used in the sampling operation, the performance of the sampling, the preparation of the grid from the filter and the actual examination of this grid in the microscope. Each of these unit operations must produce a product of defined quality if the analytical result is to be a reliable and meaningful test result. Accordingly, a series of control checks and reference standards is performed along with the sample analysis as indicators that the materials used are adequate and the operations are within acceptable limits. In this way, the quality of the data is defined, and the results are of known value. These checks and tests also provide timely and specific warning of any problems which might develop within the sampling and analysis operations. A description of these quality control/quality assurance procedures is summarized in the text below.

1. Prescreen the loaded cassette collection filters to assure that they do not contain concentrations of asbestos which may interfere with the analysis of the sample. A filter blank average of less than 18 s/mm^2 in an area of 0.057 mm^2 (nominally 10 200-mesh grid openings) and a maximum of 53 s/mm^2 for that same area for any single preparation is acceptable for this method.

2. Calibrate sampling pumps and their flow indicators over the range of their intended use with a recognized standard. Assemble the sampling system with a representative filter—not the filter which will be used in sampling—before and after the sampling operation.

3. Record all calibration information with the data to be used on a standard sampling form.

4. Ensure that the samples are stored in a secure and representative location.

5. Ensure that mechanical calibrations from the pump will be minimized to prevent transferral of vibration to the cassette.

6. Ensure that a continuous smooth flow of negative pressure is delivered by the pump by installing a damping chamber if necessary.

7. Open a loaded cassette momentarily at one of the indoor sampling sites when sampling is initiated. This sample will serve as an indoor field blank.

8. Open a loaded cassette momentarily at one of the outdoor sampling sites when sampling is initiated. This sample will serve as an outdoor field blank.

9. Carry a sealed blank into the field with each sample series. Do not open this cassette in the field.

10. Perform a leak check of the sampling system at each indoor and outdoor sampling site by activating the pump with the closed sampling cassette in line. Any flow indicates a leak which must be eliminated before initiating the sampling operation.

11. Ensure that the sampler is turned upright before interrupting the pump flow.

12. Check that all samples are clearly labeled and that all pertinent information has been enclosed before transfer of the samples to the laboratory.

E. Sample Receiving

1. Designate one individual as sample coordinator at the laboratory. While that individual will normally be available to receive samples, the coordinator may train and supervise others in receiving procedures for those times when he/she is not available.

2. Adhere to the following procedures to ensure both the continued chain-of-custody and the accountability of all samples passing through the laboratory:

a. Note the condition of the shipping package and data written on it upon receipt.

b. Retain all bills of lading or shipping slips to document the shipper and delivery time.

c. Examine the chain-of-custody seal, if any, and the package for its integrity.

d. If there has been a break in the seal or substantive damage to the package, the sample coordinator shall immediately notify the shipper and a responsible laboratory manager before any action is taken to unpack the shipment.

e. Packages with significant damage shall be accepted only by the responsible laboratory manager after discussions with the client.

3. Unwrap the shipment in a clean, uncluttered facility. The sample coordinator or his or her designee will record the contents, including a description of each item and all identifying numbers or marks. A Sample Receiving Form to document this information is attached for use when necessary. (See the following Figure 3.)

BILLING CODE 6560-50-M

FIGURE 3--SAMPLE RECEIVING FORM

Date of package delivery _____ Package shipped from _____

Carrier _____ Shipping bill retained _____

*Condition of package on receipt _____

*Condition of custody seal _____

Number of samples received _____ Shipping manifest attached _____

Purchase Order No. _____ Project I.D. _____

Comments _____

No.	Description	Sampling Medium PC	Sampling Medium MCE	Sampled Volume Liters	Receiving ID #	Assigned #
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						

(Use as many additional sheets as needed.)

Comments _____

Date of acceptance into sample bank _____

Signature of chain-of-custody recipient _____

Disposition of samples _____

*Note: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.

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Note.—The person breaking the chain-of-custody seal and itemizing the contents assumes responsibility for the shipment and signs documents accordingly.

4. Assign a laboratory number and schedule an analysis sequence.

5. Manage all chain-of-custody samples within the laboratory such that their integrity can be ensured and documented.

F. Sample Preparation

1. Personnel not affiliated with the Abatement Contractor shall be used to prepare samples and conduct TEM analysis. Wet-wipe the exterior of the cassettes to minimize contamination possibilities before taking them to the clean sample preparation facility.

2. Perform sample preparation in a well-equipped clean facility.

Note.—The clean area is required to have the following minimum characteristics. The area or hood must be capable of maintaining a positive pressure with make-up air being HEPA filtered. The cumulative analytical blank concentration must average less than 18 s/mm² in an area of 0.057 s/mm² (nominally 10 200-mesh grid openings) with no more than one single preparation to exceed 53 s/mm² for that same area.

3. Preparation areas for air samples must be separated from preparation areas for bulk samples. Personnel must not prepare air samples if they have previously been preparing bulk samples without performing appropriate personal hygiene procedures, i.e., clothing change, showering, etc.

4. Preparation. Direct preparation techniques are required. The objective is to produce an intact carbon film containing the particulates from the filter surface which is sufficiently clear for TEM analysis. Currently recommended direct preparation procedures for polycarbonate (PC) and mixed cellulose ester (MCE) filters are described in Unit III.F.7. and 8. Sample preparation is a subject requiring additional research. Variation on those steps which do not substantively change the procedure, which improve filter clearing or which reduce contamination problems in a laboratory are permitted.

a. Use only TEM grids that have had grid opening areas measured according to directions in Unit III.J.

b. Remove the inlet and outlet plugs prior to opening the cassette to minimize any pressure differential that may be present.

c. Examples of techniques used to prepare polycarbonate filters are described in Unit III.F.7.

d. Examples of techniques used to prepare mixed cellulose ester filters are described in Unit III.F.8.

e. Prepare multiple grids for each sample.

f. Store the three grids to be measured in appropriately labeled grid holders or polyethylene capsules.

5. Equipment.

a. Clean area.

b. Tweezers. Fine-point tweezers for handling of filters and TEM grids.

c. Scalpel Holder and Curved No. 10 Surgical Blades.

d. Microscope slides.

e. Double-coated adhesive tape.

f. Gummed page reinforcements.

g. Micro-pipet with disposal tips 10 to 100 μL variable volume.

h. Vacuum coating unit with facilities for evaporation of carbon. Use of a liquid nitrogen cold trap above the diffusion pump will minimize the possibility of contamination of the filter surface by oil from the pumping system. The vacuum-coating unit can also be used for deposition of a thin film of gold.

i. Carbon rod electrodes. Spectrochemically pure carbon rods are required for use in the vacuum evaporator for carbon coating of filters.

j. Carbon rod sharpener. This is used to sharpen carbon rods to a neck. The use of necked carbon rods (or equivalent) allows the carbon to be applied to the filters with a minimum of heating.

k. Low-temperature plasma asher. This is used to etch the surface of collapsed mixed cellulose ester (MCE) filters. The asher should be supplied with oxygen, and should be modified as necessary to provide a throttle or bleed valve to control the speed of the vacuum to minimize disturbance of the filter. Some early models of ashers admit air too rapidly, which may disturb particulates on the surface of the filter during the etching step.

l. Glass petri dishes, 10 cm in diameter, 1 cm high. For prevention of excessive evaporation of solvent when these are in use, a good seal must be provided between the base and the lid. The seal can be improved by grinding the base and lid together with an abrasive grinding material.

m. Stainless steel mesh.

n. Lens tissue.

o. Copper 200-mesh TEM grids, 3 mm in diameter, or equivalent.

p. Gold 200-mesh TEM grids, 3 mm in diameter, or equivalent.

q. Condensation washer.

r. Carbon-coated, 200-mesh TEM grids, or equivalent.

s. Analytical balance, 0.1 mg sensitivity.

t. Filter paper, 9 cm in diameter.

u. Oven or slide warmer. Must be capable of maintaining a temperature of 65–70 °C.

v. Polyurethane foam, 6 mm thickness.

w. Gold wire for evaporation.

6. Reagents.

a. General. A supply of ultra-clean, fiber-free water must be available for washing of all components used in the analysis. Water that has been distilled in glass or filtered or deionized water is satisfactory for this purpose. Reagents must be fiber-free.

b. Polycarbonate preparation method—chloroform.

c. Mixed Cellulose Ester (MCE) preparation method—acetone or the Burdette procedure (Ref. 7 of Unit III.L.).

7. TEM specimen preparation from polycarbonate filters.

a. Specimen preparation laboratory. It is most important to ensure that contamination of TEM specimens by extraneous asbestos fibers is minimized during preparation.

b. Cleaning of sample cassettes. Upon receipt at the analytical laboratory and before they are taken into the clean facility or laminar flow hood, the sample cassettes must be cleaned of any contamination adhering to the outside surfaces.

c. Preparation of the carbon evaporator. If the polycarbonate filter has already been carbon-coated prior to receipt, the carbon coating step will be omitted, unless the analyst believes the carbon film is too thin. If there is a need to apply more carbon, the filter will be treated in the same way as an uncoated filter. Carbon coating must be performed with a high-vacuum coating unit. Units that are based on evaporation of carbon filaments in a vacuum generated only by an oil rotary pump have not been evaluated for this application, and must not be used. The carbon rods should be sharpened by a carbon rod sharpener to necks of about 4 mm long and 1 mm in diameter. The rods are installed in the evaporator in such a manner that the points are approximately 10 to 12 cm from the surface of a microscope slide held in the rotating and tilting device.

d. Selection of filter area for carbon coating. Before preparation of the filters, a 75 mm x 50 mm microscope slide is washed and dried. This slide is used to support strips of filter during the carbon evaporation. Two parallel strips of double-sided adhesive tape are applied along the length of the slide. Polycarbonate filters are easily stretched during handling, and cutting of areas for further preparation must be performed with great care. The filter and the MCE backing filter are removed together from the cassette and placed on a cleaned glass microscope slide. The filter can be cut with a curved scalpel blade by rocking the blade from the

point placed in contact with the filter. The process can be repeated to cut a strip approximately 3 mm wide across the diameter of the filter. The strip of polycarbonate filter is separated from the corresponding strip of backing filter and carefully placed so that it bridges the gap between the adhesive tape strips on the microscope slide. The filter strip can be held with fine-point tweezers and supported underneath by the scalpel blade during placement on the microscope slide. The analyst can place several such strips on the same microscope slide, taking care to rinse and wet-wipe the scalpel blade and tweezers before handling a new sample. The filter strips should be identified by etching the glass slide or marking the slide using a marker insoluble in water and solvents. After the filter strip has been cut from each filter, the residual parts of the filter must be returned to the cassette and held in position by reassembly of the cassette. The cassette will then be archived for a period of 30 days or returned to the client upon request.

e. Carbon coating of filter strips. The glass slide holding the filter strips is placed on the rotation-tilting device, and the evaporator chamber is evacuated. The evaporation must be performed in very short bursts, separated by some seconds to allow the electrodes to cool. If evaporation is too rapid, the strips of polycarbonate filter will begin to curl, which will lead to cross-linking of the surface material and make it relatively insoluble in chloroform. An experienced analyst can judge the thickness of carbon film to be applied, and some test should be made first on unused filters. If the film is too thin, large particles will be lost from the TEM specimen, and there will be few complete and undamaged grid openings on the specimen. If the coating is too thick, the filter will tend to curl when exposed to chloroform vapor and the carbon film may not adhere to the support mesh. Too thick a carbon film will also lead to a TEM image that is lacking in contrast, and the ability to obtain ED patterns will be compromised. The carbon film should be as thin as possible and remain intact on most of the grid openings of the TEM specimen intact.

f. Preparation of the Jaffe washer. The precise design of the Jaffe washer is not considered important, so any one of the published designs may be used. A washer consisting of a simple stainless steel bridge is recommended. Several pieces of lens tissue approximately 1.0 cm x 0.5 cm are placed on the stainless steel bridge, and the washer is filled with chloroform to a level where the meniscus contacts the underside of the mesh, which results in saturation of the lens tissue. See References 8 and 10 of Unit III.L.

g. Placing of specimens into the Jaffe washer. The TEM grids are first placed on a piece of lens tissue so that individual grids can be picked up with tweezers. Using a curved scalpel blade, the analyst excises three 3 mm square pieces of the carbon-coated polycarbonate filter from the filter strip. The three squares are selected from the center of the strip and from two points between the outer periphery of the active surface and the center. The piece of filter is placed on a TEM specimen grid with the shiny side of the TEM grid facing upwards, and the whole assembly is placed boldly onto the saturated lens tissue in the Jaffe washer. If carbon-coated grids are used, the filter should be placed carbon-coated side down. The three excised squares of filters are placed on the same piece of lens tissue. Any number of separate pieces of lens tissue may be placed in the same Jaffe washer. The lid is then placed on the Jaffe washer, and the system is allowed to stand for several hours, preferably overnight.

h. Condensation washing. It has been found that many polycarbonate filters will not dissolve completely in the Jaffe washer, even after being exposed to chloroform for as long as 3 days. This problem becomes more serious if the surface of the filter was overheated during the carbon evaporation. The presence of undissolved filter medium on the TEM preparation leads to partial or complete obscuration of areas of the sample, and fibers that may be present in these areas of the specimen will be overlooked; this will lead to a low result. Undissolved filter medium also compromises the ability to obtain ED patterns. Before they are counted, TEM grids must be examined critically to determine whether they are adequately cleared of residual filter medium. It has been found that condensation washing of the grids after the initial Jaffe washer treatment, with chloroform as the solvent, clears all residual filter medium in a period of approximately 1 hour. In practice, the piece of lens tissue supporting the specimen grids is transferred to the cold finger of the condensation washer, and the washer is operated for about 1 hour. If the specimens are cleared satisfactorily by the Jaffe washer alone, the condensation washer step may be unnecessary.

8. TEM specimen preparation from MCE filters.

a. This method of preparing TEM specimens from MCE filters is similar to that specified in NIOSH Method 7402. See References 7, 8, and 9 of Unit III.L.

b. Upon receipt at the analytical laboratory, the sample cassettes must be cleaned of any contamination adhering to the outside surfaces before entering the clean sample preparation area.

c. Remove a section from any quadrant of the sample and blank filters.

d. Place the section on a clean microscope slide. Affix the filter section to the slide with a gummed paged reinforcement or other suitable means. Label the slide with a water and solvent-proof marking pen.

e. Place the slide in a petri dish which contains several paper filters soaked with 2 to 3 mL acetone. Cover the dish. Wait 2 to 4 minutes for the sample filter to fuse and clear.

f. Plasma etching of the collapsed filter is required.

i. The microscope slide to which the collapsed filter pieces are attached is placed in a plasma asher. Because plasma ashers vary greatly in their performance, both from unit to unit and between different positions in the asher chamber, it is difficult to specify the conditions that should be used. This is one area of the method that requires further evaluation. Insufficient etching will result in a failure to expose embedded filters, and too much etching may result in loss of particulate from the surface. As an interim measure, it is recommended that the time for ashing of a known weight of a collapsed filter be established and that the etching rate be calculated in terms of micrometers per second. The actual etching time used for a particular asher and operating conditions will then be set such that a 1–2 μm (10 percent) layer of collapsed surface will be removed.

ii. Place the slide containing the collapsed filters into a low-temperature plasma asher, and etch the filter.

g. Transfer the slide to a rotating stage inside the bell jar of a vacuum evaporator. Evaporate a 1 mm x 5 mm section of graphite rod onto the cleared filter. Remove the slide to a clean, dry, covered petri dish.

h. Prepare a second petri dish as a Jaffe washer with the wicking substrate prepared from filter or lens paper placed on top of a 6 mm thick disk of clean spongy polyurethane foam. Cut a V-notch on the edge of the foam and filter paper. Use the V-notch as a reservoir for adding solvent. The wicking substrate should be thin enough to fit into the petri dish without touching the lid.

i. Place carbon-coated TEM grids face up on the filter or lens paper. Label the grids by marking with a pencil on the filter paper or by putting registration

marks on the petri dish lid and marking with a waterproof marker on the dish lid. In a fume hood, fill the dish with acetone until the wicking substrate is saturated. The level of acetone should be just high enough to saturate the filter paper without creating puddles.

j. Remove about a quarter section of the carbon-coated filter samples from the glass slides using a surgical knife and tweezers. Carefully place the section of the filter, carbon side down, on the appropriately labeled grid in the acetone-saturated petri dish. When all filter sections have been transferred, slowly add more solvent to the wedge-shaped trough to bring the acetone level up to the highest possible level without disturbing the sample preparations. Cover the petri dish. Elevate one side of the petri dish by placing a slide under it. This allows drops of condensed solvent vapors to form near the edge rather than in the center where they would drip onto the grid preparation.

G. TEM Method

1. Instrumentation.

a. Use an 80–120 kV TEM capable of performing electron diffraction with a fluorescent screen inscribed with calibrated gradations. If the TEM is equipped with EDXA it must either have a STEM attachment or be capable of producing a spot less than 250 nm in diameter at crossover. The microscope shall be calibrated routinely (see Unit III.J.) for magnification and camera constant.

b. While not required on every microscope in the laboratory, the laboratory must have either one microscope equipped with energy dispersive X-ray analysis or access to an equivalent system on a TEM in another laboratory. This must be an Energy Dispersive X-ray Detector mounted on TEM column and associated hardware/software to collect, save, and read out spectral information. Calibration of Multi-Channel Analyzer shall be checked regularly for Al at 1.48 KeV and Cu at 8.04 KeV, as well as the manufacturer's procedures.

i. Standard replica grating may be used to determine magnification (e.g., 2160 lines/mm).

ii. Gold standard may be used to determine camera constant.

c. Use a specimen holder with single tilt and/or double tilt capabilities.

2. Procedure.

a. Start a new Count Sheet for each sample to be analyzed. Record on count sheet: analyst's initials and date; lab sample number; client sample number microscope identification; magnification for analysis; number of predetermined grid openings to be analyzed; and grid identification. See the following Figure 4:

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FIGURE 4--COUNT SHEET

Lab Sample No. _____ Filter Type _____ Operator _____
Client Sample No. _____ Filter Area _____ Date _____
Instrument I.D. _____ Grid I.D. _____ Comments _____
Magnification _____ Grid Opening (GO) Area _____
Acc. Voltage _____ No. GO to be Analyzed _____

GO	Structure No.	Structure Type*	Length		ED Observation				EDAX
			< 5μm	≥ 5 μm	Chrys.	Amph.	Nonasb.	Neg. ID	

GO	Structure No.	Structure Type*	Length		ED Observation				EDAX
			< 5μm	≥ 5 μm	Chrys.	Amph.	Nonasb.	Neg. ID	

*B = Bundle
C = Cluster
F = Fiber
M = Matrix

NFD = No fibers detected
N = No diffraction obtained

BILLING CODE 6560-50-C

b. Check that the microscope is properly aligned and calibrated according to the manufacturer's specifications and instructions.

c. Microscope settings: 80–120 kV, grid assessment 250–1000X, then 15,000–20,000X screen magnification for analysis.

d. Approximately one-half (0.5) of the predetermined sample area to be analyzed shall be performed on one sample grid preparation and the remaining half on a second sample grid preparation.

e. Determine the suitability of the grid.

i. Individual grid openings with greater than 5 percent openings (holes) or covered with greater than 25 percent particulate matter or obviously having nonuniform loading shall not be analyzed.

ii. Examine the grid at low magnification (<1000X) to determine its suitability for detailed study at higher magnifications.

iii. Reject the grid if:

(1) Less than 50 percent of the grid openings covered by the replica are intact.

(2) It is doubled or folded.

(3) It is too dark because of incomplete dissolution of the filter.

iv. If the grid is rejected, load the next sample grid.

v. If the grid is acceptable, continue on to Step 6 if mapping is to be used; otherwise proceed to Step 7.

f. Grid Map (Optional).

i. Set the TEM to the low magnification mode.

ii. Use flat edge or finder grids for mapping.

iii. Index the grid openings (fields) to be counted by marking the acceptable fields for one-half (0.5) of the area needed for analysis on each of the two grids to be analyzed. These may be marked just before examining each grid opening (field), if desired.

iv. Draw in any details which will allow the grid to be properly oriented if it is reloaded into the microscope and a particular field is to be reliably identified.

g. Scan the grid.

i. Select a field to start the examination.

ii. Choose the appropriate magnification (15,000 to 20,000X screen magnification).

iii. Scan the grid as follows.

(1) At the selected magnification, make a series of parallel traverses across the field. On reaching the end of one traverse, move the image one window and reverse the traverse.

Note.—A slight overlap should be used so as not to miss any part of the grid opening (field).

(2) Make parallel traverses until the entire grid opening (field) has been scanned.

h. Identify each structure for appearance and size.

i. Appearance and size: Any continuous grouping of particles in which an asbestos fiber within aspect ratio greater than or equal to 5:1 and a length greater than or equal to 0.5 μm is detected shall be recorded on the count sheet. These will be designated asbestos structures and will be classified as fibers, bundles, clusters, or matrices. Record as individual fibers any contiguous grouping having 0, 1, or 2 definable intersections. Groupings having more than 2 intersections are to be described as cluster or matrix. See the following Figure 5:

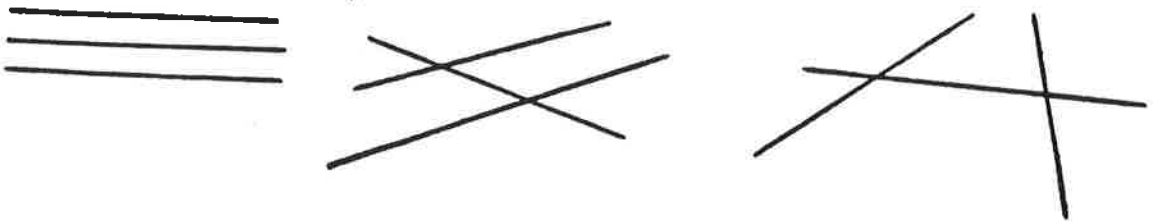
BILLING CODE 6560-50-M

FIGURE 5--COUNTING GUIDELINES USED IN DETERMINING ASBESTOS STRUCTURES

Count as 1 fiber; 1 Structure; no intersections.

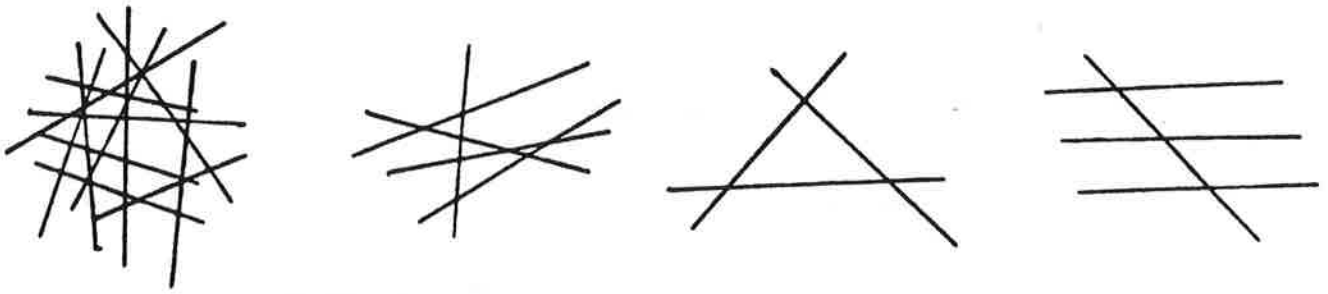
Count as 2 fibers if space between fibers is greater than width of 1 fiber diameter or number of intersections is equal to or less than 1.

Count as 3 structures if space between fibers is greater than width of 1 fiber diameter or if the number of intersections is equal to or less than 2.

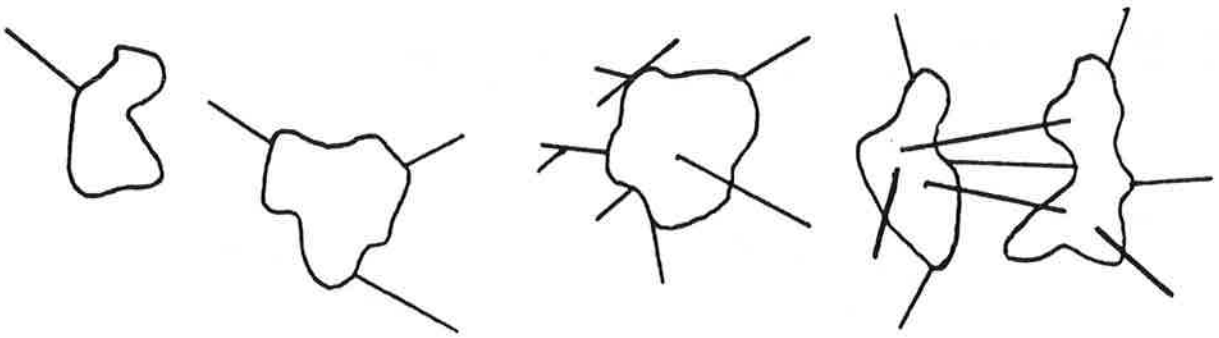


Count bundles as 1 structure; 3 or more parallel fibrils less than 1 fiber diameter separation.

Count clusters as 1 structure; fibers having greater than or equal to 3 intersections.



Count matrix as 1 structure.



DO NOT COUNT AS STRUCTURES:

Fiber protrusion
<5:1 Aspect Ratio

No fiber protusion

Fiber protrusion
<0.5 micrometer

—— <0.5 micrometer in length
▬ <5:1 Aspect Ratio

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An intersection is a non-parallel touching or crossing of fibers, with the projection having an aspect ratio of 5:1 or greater. Combinations such as a matrix and cluster, matrix and bundle, or bundle and cluster are categorized by the dominant fiber quality—cluster, bundle, and matrix, respectively. Separate categories will be maintained for fibers less than 5 μm and for fibers greater than or equal to 5 μm in length. Not required, but useful, may be to record the fiber length in 1 μm intervals. (Identify each structure morphologically and analyze it as it enters the "window".)

(1) *Fiber.* A structure having a minimum length greater than 0.5 μm and an aspect ratio (length to width) of 5:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded or dovetailed, no intersections.

(2) *Bundle.* A structure composed of 3 or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

(3) *Cluster.* A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group; groupings must have more than 2 intersections.

(4) *Matrix.* Fiber or fibers with one end free and the other end embedded in or hidden by a particulate. The exposed fiber must meet the fiber definition.

(5) *NSD.* Record NSD when no structures are detected in the field.

(6) *Intersection.* Non-parallel touching or crossing of fibers, with the projection having an aspect ratio 5:1 or greater.

ii. Structure Measurement.

(1) Recognize the structure that is to be sized.

(2) Memorize its location in the "window" relative to the sides. inscribed square and to other particulates in the field so this exact location can be found again when scanning is resumed.

(3) Measure the structure using the scale on the screen.

(4) Record the length category and structure type classification on the count sheet after the field number and fiber number.

(5) Return the fiber to its original location in the window and scan the rest of the field for other fibers; if the direction of travel is not remembered, return to the right side of the field and begin the traverse again.

i. Visual identification of Electron Diffraction (ED) patterns is required for each asbestos structure counted which would cause the analysis to exceed the 70 s/mm² concentration. (Generally this means the first four fibers identified as asbestos must exhibit an identifiable diffraction pattern for chrysotile or amphibole.)

i. Center the structure, focus, and obtain an ED pattern. (See Microscope Instruction Manual for more detailed instructions.)

ii. From a visual examination of the ED pattern, obtained with a short camera length, classify the observed structure as belonging to one of the following classifications: chrysotile, amphibole, or nonasbestos.

(1) Chrysotile: The chrysotile asbestos pattern has characteristic streaks on the layer lines other than the central line and some streaking also on the central line. There will be spots of normal sharpness on the central layer line and on alternate lines (2nd, 4th, etc.). The repeat distance between layer lines is 0.53 nm and the center doublet is at 0.73 nm. The pattern should display (002), (110), (130) diffraction maxima; distances and geometry should match a chrysotile pattern and be measured semiquantitatively.

(2) Amphibole Group (includes grunerite (amosite), crocidolite, anthophyllite, tremolite, and actinolite): Amphibole asbestos fiber patterns show layer lines formed by very closely spaced dots, and the repeat distance between layer lines is also about 0.53 nm. Streaking in layer lines is occasionally present due to crystal structure defects.

(3) Nonasbestos: Incomplete or unobtainable ED patterns, a nonasbestos EDXA, or a nonasbestos morphology.

iii. The micrograph number of the recorded diffraction patterns must be reported to the client and maintained in the laboratory's quality assurance records. The records must also demonstrate that the identification of the pattern has been verified by a qualified individual and that the operator who made the identification is maintaining at least an 80 percent correct visual identification based on his measured patterns. In the event that examination of the pattern by the qualified individual indicates that the pattern had been misidentified visually the client shall be contacted. If the pattern is a suspected chrysotile, take a photograph of the diffraction pattern at 0 degrees tilt. If the structure is suspected to be amphibole, the sample may have to be tilted to obtain a simple geometric array of spots.

j. Energy Dispersive X-Ray Analysis (EDXA).

i. Required of all amphiboles which would cause the analysis results to exceed the 70 s/mm² concentration. (Generally speaking, the first 4 amphiboles would require EDXA.)

ii. Can be used alone to confirm chrysotile after the 70 s/mm² concentration has been exceeded.

iii. Can be used alone to confirm all nonasbestos.

iv. Compare spectrum profiles with profiles obtained from asbestos standards. The closest match identifies and categorizes the structure.

v. If the EDXA is used for confirmation, record the properly labeled spectrum on a computer disk, or if a hard copy, file with analysis data.

vi. If the number of fibers in the nonasbestos class would cause the analysis to exceed the 70 s/mm² concentration, their identities must be confirmed by EDXA or measurement of a zone axis diffraction pattern to establish that the particles are nonasbestos.

k. Stopping Rules.

i. If more than 50 asbestiform structures are counted in a particular grid opening, the analysis may be terminated.

ii. After having counted 50 asbestiform structures in a minimum of 4 grid openings, the analysis may be terminated. The grid opening in which the 50th fiber was counted must be completed.

iii. For blank samples, the analysis is always continued until 10 grid openings have been analyzed.

iv. In all other samples the analysis shall be continued until an analytical sensitivity of 0.005 s/cm³ is reached.

l. Recording Rules. The count sheet should contain the following information:

i. Field (grid opening): List field number.

ii. Record "NSD" if no structures are detected.

iii. Structure information.

(1) If fibers, bundles, clusters, and/or matrices are found, list them in consecutive numerical order, starting over with each field.

(2) Length. Record length category of asbestos fibers examined. Indicate if less than 5 μm or greater than or equal to 5 μm.

(3) Structure Type. Positive identification of asbestos fibers is required by the method. At least one diffraction pattern of each fiber type from every five samples must be recorded and compared with a standard diffraction pattern. For each asbestos fiber reported, both a morphological descriptor and an identification descriptor shall be specified on the count sheet.

(4) Fibers classified as chrysotile must be identified by diffraction and/or X-ray analysis and recorded on the count

sheet. X-ray analysis alone can be used as sole identification only after 70s/mm² have been exceeded for a particular sample.

(5) Fibers classified as amphiboles must be identified by X-ray analysis and electron diffraction and recorded on the count sheet. (X-ray analysis alone can be used as sole identification only after 70s/mm² have been exceeded for a particular sample.)

(6) If a diffraction pattern was recorded on film, the micrograph number must be indicated on the count sheet.

(7) If an electron diffraction was attempted and an appropriate spectra is not observed, N should be recorded on the count sheet.

(8) If an X-ray analysis is attempted but not observed, N should be recorded on the count sheet.

(9) If an X-ray analysis spectrum is stored, the file and disk number must be recorded on the count sheet.

m. Classification Rules.

i. *Fiber.* A structure having a minimum length greater than or equal to 0.5 μm and an aspect ratio (length to width) of 5:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded or dovetailed.

ii. *Bundle.* A structure composed of three or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

iii. *Cluster.* A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group. Groupings must have more than two intersections.

iv. *Matrix.* Fiber or fibers with one end free and the other end embedded in or hidden by a particulate. The exposed fiber must meet the fiber definition.

v. *NSD.* Record NSD when no structures are detected in the field.

n. After all necessary analyses of a particle structure have been completed, return the goniometer stage to 0 degrees, and return the structure to its original location by recall of the original location.

o. Continue scanning until all the structures are identified, classified and sized in the field.

p. Select additional fields (grid openings) at low magnification; scan at a chosen magnification (15,000 to 20,000X screen magnification); and analyze until the stopping rule becomes applicable.

q. Carefully record all data as they are being collected, and check for accuracy.

r. After finishing with a grid, remove it from the microscope, and replace it in the appropriate grid hold. Sample grids must be stored for a minimum of 1 year from the date of the analysis; the sample cassette must be retained for a minimum of 30 days by the laboratory or returned at the client's request.

H. Sample Analytical Sequence

1. Carry out visual inspection of work site prior to air monitoring.

2. Collect a minimum of five air samples inside the work site and five samples outside the work site. The indoor and outdoor samples shall be taken during the same time period.

3. Analyze the abatement area samples according to this protocol. The analysis must meet the 0.005 s/cm³ analytical sensitivity.

4. Remaining steps in the analytical sequence are contained in Unit IV. of this Appendix.

I. Reporting

The following information must be reported to the client. See the following Table II:

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TABLE II--EXAMPLE LABORATORY LETTERHEAD

Laboratory I.D.	Client I.D.	FILTER MEDIA DATA				Analyzed Area, mm^2	Sample Volume, cc
		Type	Diameter, mm	Effective Area, mm^2	Pore Size, µm		

INDIVIDUAL ANALYTICAL RESULTS

Laboratory I.D.	Client I.D.	# Asbestos Structures	Analytical Sensitivity, s/cc	CONCENTRATION	
				Structures/mm^2	Structures/cc

The analysis was carried out to the approved TEM method. This laboratory is in compliance with the quality specified by the method.

Authorized Signature

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1. Concentration in structures per square millimeter and structures per cubic centimeter.
2. Analytical sensitivity used for the analysis.
3. Number of asbestos structures.
4. Area analyzed.
5. Volume of air samples (which was initially provided by client).
6. Average grid size opening.
7. Number of grids analyzed.
8. Copy of the count sheet must be included with the report.
9. Signature of laboratory official to indicate that the laboratory met specifications of the AHERA method.
10. Report form must contain official laboratory identification (e.g., letterhead).
11. Type of asbestos.

J. Calibration Methodology

Note: Appropriate implementation of the method requires a person knowledgeable in electron diffraction and mineral identification by ED and EDXA. Those inexperienced laboratories wishing to develop capabilities may acquire necessary knowledge through analysis of appropriate standards and by following detailed methods as described in References 8 and 10 of Unit III.L.

1. Equipment Calibration. In this method, calibration is required for the air-sampling equipment and the transmission electron microscope (TEM).

a. TEM Magnification. The magnification at the fluorescent screen of the TEM must be calibrated at the grid opening magnification (if used) and also at the magnification used for fiber counting. This is performed with a cross grating replica. A logbook must be maintained, and the dates of calibration depend on the past history of the particular microscope; no frequency is specified. After any maintenance of the microscope that involved adjustment of the power supplied to the lenses or the high-voltage system or the mechanical disassembly of the electron optical column apart from filament exchange, the magnification must be recalibrated. Before the TEM calibration is performed, the analyst must ensure that the cross grating replica is placed at the same distance from the objective lens as the specimens are. For instruments that incorporate an eucentric tilting specimen stage, all specimens and the cross grating replica must be placed at the eucentric position.

b. Determination of the TEM magnification on the fluorescent screen.

i. Define a field of view on the fluorescent screen either by markings or physical boundaries. The field of view must be measurable or previously inscribed with a scale or concentric circles (all scales should be metric).

ii. Insert a diffraction grating replica (for example a grating containing 2,160 lines/mm) into the specimen holder and place into the microscope. Orient the replica so that the grating lines fall perpendicular to the scale on the TEM fluorescent screen. Ensure that the goniometer stage tilt is 0 degrees.

iii. Adjust microscope magnification to 10,000X or 20,000X. Measure the distance (mm) between two widely separated lines on the grating replica. Note the number of spaces between the lines. Take care to measure between the same relative positions on the lines (e.g., between left edges of lines).

Note.—The more spaces included in the measurement, the more accurate the final calculation. On most microscopes, however, the magnification is substantially constant only within the central 8–10 cm diameter region of the fluorescent screen.

iv. Calculate the true magnification (M) on the fluorescent screen:

$$M = XG/Y$$

where:

X = total distance (mm) between the designated grating lines;
G = calibration constant of the grating replica (lines/mm);
Y = number of grating replica spaces counted along X.

c. Calibration of the EDXA System. Initially, the EDXA system must be calibrated by using two reference elements to calibrate the energy scale of the instrument. When this has been completed in accordance with the manufacturer's instructions, calibration in terms of the different types of asbestos can proceed. The EDXA detectors vary in both solid angle of detection and in window thickness. Therefore, at a particular accelerating voltage in use on the TEM, the count rate obtained from specific dimensions of fiber will vary both in absolute X-ray count rate and in the relative X-ray peak heights for different elements. Only a few minerals are relevant for asbestos abatement work, and in this procedure the calibration is specified in terms of a "fingerprint" technique. The EDXA spectra must be recorded from individual fibers of the relevant minerals, and identifications are made on the basis of semiquantitative comparisons with these reference spectra.

d. Calibration of Grid Openings.

i. Measure 20 grid openings on each of 20 random 200-mesh copper grids by placing a grid on a glass slide and examining it under the PCM. Use a calibrated graticule to measure the average field diameter and use this number to calculate the field area for an average grid opening. Grids are to be randomly selected from batches up to 1,000.

Note.—A grid opening is considered as one field.

ii. The mean grid opening area must be measured for the type of specimen grids in use. This can be accomplished on the TEM at a properly calibrated low magnification or on an optical microscope at a magnification of approximately 400X by using an eyepiece fitted with a scale that has been calibrated against a stage micrometer. Optical microscopy utilizing manual or automated procedures may be used providing instrument calibration can be verified.

e. Determination of Camera Constant and ED Pattern Analysis.

i. The camera length of the TEM in ED operating mode must be calibrated before ED patterns on unknown samples are observed. This can be achieved by using a carbon-coated grid on which a thin film of gold has been sputtered or evaporated. A thin film of gold is evaporated on the specimen TEM grid to obtain zone-axis ED patterns superimposed with a ring pattern from the polycrystalline gold film.

ii. In practice, it is desirable to optimize the thickness of the gold film so that only one or two sharp rings are obtained on the superimposed ED pattern. Thicker gold film would normally give multiple gold rings, but it will tend to mask weaker diffraction spots from the unknown fibrous particulates. Since the unknown d-spacings of most interest in asbestos analysis are those which lie closest to the transmitted beam, mulitiple gold rings are unnecessary on zone-axis ED patterns. An average camera constant using multiple gold rings can be determined. The camera constant is one-half the diameter, D, of the rings times the interplanar spacing, d, of the ring being measured.

K. Quality Control/Quality Assurance Procedures (Data Quality Indicators)

Monitoring the environment for airborne asbestos requires the use of sensitive sampling and analysis procedures. Because the test is sensitive, it may be influenced by a variety of factors. These include the supplies used in the sampling operation, the performance of the sampling, the preparation of the grid from the filter and the actual examination of this grid in the microscope. Each of these unit operations must produce a product of

defined quality if the analytical result is to be a reliable and meaningful test result. Accordingly, a series of control checks and reference standards is performed along with the sample analysis as indicators that the materials used are adequate and the operations are within acceptable limits. In this way, the quality of the data is defined and the results are of known value. These checks and tests also provide timely and specific warning of any problems which might develop within the sampling and analysis operations. A description of these quality control/quality assurance procedures is summarized in the following Table III:

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TABLE III--SUMMARY OF LABORATORY DATA QUALITY OBJECTIVES

Unit Operation	QC Check	Frequency	Conformance Expectation
Sample receiving	Review of receiving report	Each sample	95% complete
Sample custody	Review of chain-of-custody record	Each sample	95% complete
Sample preparation	Supplies and reagents	On receipt	Meet specs. or reject
	Grid opening size	20 openings/20 grids/lot of 1000 or 1 opening/sample	100%
	Special clean area monitoring	After cleaning or service	Meet specs or reclean
	Laboratory blank	1 per prep series or 10%	Meet specs. or reanalyze series
	Plasma etch blank	1 per 20 samples	75%
	Multiple preps (3 per sample)	Each sample	One with cover of 15 complete grid sqs.
Sample analysis	System check	Each day	Each day
	Alignment check	Each day	Each day
	Magnification calibration with low and high standards	Each month or after service	95%
	ED calibration by gold standard	Weekly	95%
	EDS calibration by copper line	Daily	95%
Performance check	Laboratory blank (measure of cleanliness)	Prep 1 per series or 10% read 1 per 25 samples	Meet specs or reanalyze series
	Replicate counting (measure of precision)	1 per 100 samples	1.5 x Poisson Std. Dev.
	Duplicate analysis (measure of reproducibility)	1 per 100 samples	2 x Poisson Std. Dev.
	Known samples of typical materials (working standards)	Training and for comparison with unknowns	100%
	Analysis of NBS SRM 1876 and/or RM 8410 (measure of accuracy and comparability)	1 per analyst per year	1.5 x Poisson Std. Dev.
	Data entry review (data validation and measure of completeness)	Each sample	95%
	Record and verify ID electron diffraction pattern of structure	1 per 5 samples	80% accuracy
Calculations and data reduction	Hand calculation of automated data reduction procedure or independent recalculation of hand-calculated data	1 per 100 samples	85%

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1. When the samples arrive at the laboratory, check the samples and documentation for completeness and requirements before initiating the analysis.

2. Check all laboratory reagents and supplies for acceptable asbestos background levels.

3. Conduct all sample preparation in a clean room environment monitored by laboratory blanks and special testing after cleaning or servicing the room.

4. Prepare multiple grids of each sample.

5. Provide laboratory blanks with each sample batch. Maintain a cumulative average of these results. If this average is greater than 53 f/mm ^{2} per 10 200-mesh grid openings, check the system for possible sources of contamination.

6. Check for recovery of asbestos from cellulose ester filters submitted to plasma asher.

7. Check for asbestos carryover in the plasma asher by including a blank alongside the positive control sample.

8. Perform a systems check on the transmission electron microscope daily.

9. Make periodic performance checks of magnification, electron diffraction and energy dispersive X-ray systems as set forth in Table III of Unit III.K.

10. Ensure qualified operator performance by evaluation of replicate counting, duplicate analysis, and standard sample comparisons as set forth in Table III of Unit III.K.

11. Validate all data entries.

12. Recalculate a percentage of all computations and automatic data reduction steps as specified in Table III.

13. Record an electron diffraction pattern of one asbestos structure from every five samples that contain asbestos. Verify the identification of the pattern by measurement or comparison of the pattern with patterns collected from standards under the same conditions.

The outline of quality control procedures presented above is viewed as the minimum required to assure that quality data is produced for clearance testing of an asbestos abated area. Additional information may be gained by other control tests. Specifics on those control procedures and options available for environmental testing can be obtained by consulting References 6, 7, and 11 of Unit III.L.

L. References

For additional background information on this method the following references should be consulted.

1. "Guidelines for Controlling Asbestos-Containing Materials in Buildings," EPA 560/5-85-024, June 1985.

2. "Measuring Airborne Asbestos Following an Abatement Action," USEPA/ Office of Toxic Substances, EPA 600/4-85-049, 1985.

3. Small, John and E. Steel. Asbestos Standards: Materials and Analytical Methods. N.B.S. Special Publication 619, 1982.

4. Campbell, W.J., R.L. Blake, L.L. Brown, E.E. Cather, and J.J. Sjoberg. Selected Silicate Minerals and Their Asbestiform Varieties. Information Circular 8751, U.S. Bureau of Mines, 1977.

5. Quality Assurance Handbook for Air Pollution Measurement System. Ambient Air Methods, EPA 600/4-77-027a, USEPA, Office of Research and Development, 1977.

6. Method 2A: Direct Measurement of Gas Volume Through Pipes and Small Ducts. 40 CFR Part 60 Appendix A.

7. Burdette, G.J. Health & Safety Exec., Research & Lab. Services Div., London, "Proposed Analytical Method for Determination of Asbestos in Air."

8. Chatfield, E.J., Chatfield Tech. Cons., Ltd., Clark, T., PEI Assoc. "Standard Operating Procedure for Determination of Airborne Asbestos Fibers by Transmission Electron Microscopy Using Polycarbonate Membrane Filters." WERL SOP 87-1, March 5, 1987.

9. NIOSH. Method 7402 for Asbestos Fibers, December 11, 1986 Draft.

10. Yamate, G., S.C. Agarwall, R.D. Gibbons, IIT Research Institute, "Methodology for the Measurement of Airborne Asbestos by Electron Microscopy." Draft report, USEPA Contract 68-02-3266, July 1984.

11. Guidance to the Preparation of Quality Assurance Project Plans. USEPA, Office of Toxic Substances, 1984.

IV. Mandatory Interpretation of Transmission Electron Microscopy Results to Determine Completion of Response Actions

A. Introduction

A response action is determined to be completed by TEM when the abatement area has been cleaned and the airborne asbestos concentration inside the abatement area is no higher than concentrations at locations outside the abatement area. "Outside" means outside the abatement area, but not necessarily outside the building. EPA reasons that an asbestos removal contractor cannot be expected to clean an abatement area to an airborne asbestos concentration that is lower than the concentration of air entering the abatement area from outdoors or from other parts of the building. After the abatement area has passed a thorough visual inspection, and before the outer containment barrier is removed, a minimum of five air samples inside the abatement area and a minimum of five air samples outside the abatement area must be collected. Hence, the response action is determined to be completed when the average airborne asbestos concentration measured inside the abatement area is not statistically different from the average airborne asbestos concentration measured outside the abatement area.

The inside and outside concentrations are compared by the Z-test, a statistical test that takes into account the variability in the measurement process. A minimum of five samples inside the abatement area and five samples outside the abatement area are required to control the false negative error rate, i.e., the probability of declaring the removal complete when, in fact, the air concentration inside the abatement area is significantly higher than outside the abatement area. Additional quality control is provided by requiring three blanks (filters through which no air has been drawn) to be analyzed to check for unusually high filter contamination that would distort the test results.

When volumes greater than or equal to 1,199 L for a 25 mm filter and 2,799 L for a 37 mm filter have been collected and the average number of asbestos structures on samples inside the abatement area is no greater than 70 s/mm ^{2} of filter, the response action may be considered complete without comparing the inside samples to the outside samples. EPA is permitting this initial screening test to save analysis costs in situations where the airborne asbestos concentration is sufficiently low so that it cannot be distinguished from the filter contamination/background level (fibers deposited on the filter that are unrelated to the air being sampled). The screening test cannot be used when volumes of less than 1,199 L for 25 mm filter or 2,799 L for a 37 mm filter are collected because the ability to distinguish levels significantly different from filter background is reduced at low volumes.

The initial screening test is expressed in structures per square millimeter of filter because filter background levels come from sources other than the air being sampled and cannot be meaningfully expressed as a concentration per cubic centimeter of air. The value of 70 s/mm^2 is based on the experience of the panel of microscopists who consider one structure in 10 grid openings (each grid opening with an area of 0.0057 mm^2) to

be comparable with contamination/background levels of blank filters. The decision is based, in part, on Poisson statistics which indicate that four structures must be counted on a filter before the fiber count is statistically distinguishable from the count for one structure. As more information on the performance of the method is collected, this criterion may be modified. Since different combinations of the number and size of grid openings are permitted under the TEM protocol, the criterion is expressed in structures per square millimeter of filter to be consistent across all combinations. Four structures per 10 grid openings corresponds to approximately 70 s/mm².

B. Sample Collection and Analysis

1. A minimum of 13 samples is required: five samples collected inside the abatement area, five samples collected outside the abatement area, two field blanks, and one sealed blank.

2. Sampling and TEM analysis must be done according to either the mandatory or nonmandatory protocols in Appendix A. At least 0.057 mm² of filter must be examined on blank filters.

C. Interpretation of Results

1. The response action shall be considered complete if either:

a. Each sample collected inside the abatement area consists of at least 1,199 L of air for a 25 mm filter, or 2,799 L of air for a 37 mm filter, and the arithmetic mean of their asbestos structure concentrations per square millimeter of filter is less than or equal to 70 s/mm²; or

b. The three blank samples have an arithmetic mean of the asbestos structure concentration on the blank filters that is less than or equal to 70 s/mm² and the average airborne asbestos concentration measured inside the abatement area is not statistically higher than the average airborne asbestos concentration measured outside the abatement area as determined by the Z-test. The Z-test is carried out by calculating

$$Z = \frac{\bar{Y}_I - \bar{Y}_O}{0.8(1/n_I + 1/n_O)^{1/2}}$$

where $\bar{Y}_I$ is the average of the natural logarithms of the inside samples and $\bar{Y}_O$ is the average of the natural logarithms of the outside samples. n_I is the number of inside samples and n_O is the number of outside samples. The response action is considered complete if Z is less than or equal to 1.65.

(Note.—When no fibers are counted, the calculated detection limit for that analysis is inserted for the concentration.)

2. If the abatement site does not satisfy either (1) or (2) above, the site must be recleaned and a new set of samples collected.

D. Sequence for Analyzing Samples

It is possible to determine completion of the response action without analyzing all samples. Also, at any point in the process, a decision may be made to terminate the analysis of existing samples, reclean the abatement site, and collect a new set of samples. The following sequence is outlined to minimize the number of analyses needed to reach a decision.

1. Analyze the inside samples.

2. If at least 1,199 L of air for a 25 mm filter or 2,799 L of air for a 37 mm filter is collected for each inside sample and the arithmetic mean concentration of structures per square millimeter of filter is less than or equal to 70 s/mm², the response action is complete and no further analysis is needed.

3. If less than 1,199 L of air for a 25 mm filter or 2,799 L of air for a 37 mm filter is collected for any of the inside samples, or the arithmetic mean concentration of structures per square millimeter of filter is greater than 70 s/mm², analyze the three blanks.

4. If the arithmetic mean concentration of structures per square millimeter on the blank filters is greater than 70 s/mm², terminate the analysis, identify and correct the source of blank contamination, and collect a new set of samples.

5. If the arithmetic mean concentration of structures per square millimeter on the blank filters is less than or equal to 70 s/mm², analyze the outside samples and perform the Z-test.

6. If the Z-statistic is less than or equal to 1.65, the response action is complete. If the Z-statistic is greater than 1.65, reclean the abatement site and collect a new set of samples.

Appendix B to Subpart E—Work Practices and Engineering Controls for Small-Scale, Short-Duration Operations Maintenance and Repair (O&M) Activities Involving ACM

This appendix is not mandatory, in that LEAs may choose to comply with all the requirements of 40 CFR 763.121. Section 763.91(b) extends the protection provided by EPA in its 40 CFR 763.121 for worker protection during asbestos abatement projects to employees of local education agencies who perform small-scale, short-duration operations, maintenance and repair (O&M) activities involving asbestos-containing materials and are not covered by the OSHA asbestos construction standard at 29 CFR 1926.58 or an asbestos worker protection standard adopted by a State as part of a State plan approved by OSHA under section 18 of the Occupational Safety and Health Act. Employers wishing to be exempt from the requirements of § 763.121 (e)(6) and (f)(2)(i) may instead comply with the provisions of this appendix when performing small-scale, short-duration O&M activities.

Definition of Small-Scale, Short-Duration Activities

For the purposes of this appendix, small-scale, short-duration maintenance activities are tasks such as, but not limited to:

1. Removal of asbestos-containing insulation on pipes.

2. Removal of small quantities of asbestos-containing insulation on beams or above ceilings.

3. Replacement of an asbestos-containing gasket on a valve.

4. Installation or removal of a small section of drywall.

5. Installation of electrical conduits through or proximate to asbestos-containing materials.

Small-scale, short-duration maintenance activities can be further defined, for the purposes of this subpart, by the following considerations:

1. Removal of small quantities of asbestos-containing materials (ACM) only if required in the performance of another maintenance activity not intended as asbestos abatement.

2. Removal of asbestos-containing thermal system insulation not to exceed amounts greater than those which can be contained in a single glove bag.

3. Minor repairs to damaged thermal system insulation which do not require removal.

4. Repairs to a piece of asbestos-containing wallboard.

5. Repairs, involving encapsulation, enclosure or removal, to small amounts of friable asbestos-containing material only if required in the performance of emergency or routine maintenance activity and not intended solely as asbestos abatement. Such work may not exceed amounts greater than those which can be contained in a single prefabricated minienclosure. Such an enclosure shall conform spatially and geometrically to the localized work area, in order to perform its intended containment function.

OSHA concluded that the use of certain engineering and work practice controls is capable of reducing employee exposures to asbestos to levels below the final standard's action level (0.1 f/cm³). (See 51 FR 22714, June 20, 1986.) Several controls and work practices, used either singly or in combination, can be employed effectively to reduce asbestos exposures during small maintenance and renovation operations. These include:

1. Wet methods.
2. Removal methods.
   i. Use of glove bags.
   ii. Removal of entire asbestos insulated pipes or structures.
   iii. Use of minienclosures.
3. Enclosure of asbestos materials.
4. Maintenance programs.

This appendix describes these controls and work practices in detail.

Preparation of the Area Before Renovation or Maintenance Activities

The first step in preparing to perform a small-scale, short-duration asbestos renovation or maintenance task, regardless of the abatement method that will be used, is the removal from the work area of all objects that are movable to protect them from asbestos contamination. Objects that cannot be removed must be covered completely with 6-mil-thick polyethylene plastic sheeting before the task begins. If objects have already been contaminated, they should be thoroughly cleaned with a High Efficiency Particulate Air (HEPA) filtered vacuum or be wet-wiped before they are removed from the work area or completely encased in the plastic.

Wet methods. Whenever feasible, and regardless of the abatement method to be used (e.g., removal, enclosure, use of glove bags), wet methods must be used during small-scale, short-duration maintenance and renovation activities that involve disturbing asbestos-containing materials. Handling asbestos materials wet is one of the most reliable methods of ensuring that asbestos fibers do not become airborne, and this practice should therefore be used whenever feasible. Wet methods can be used in the great majority of workplace situations. Only in cases where asbestos work must be performed on live electrical equipment, on live steam lines, or in other areas where water will seriously damage materials or equipment may dry removal be performed. Amended water or another wetting agent should be applied by means of an airless sprayer to minimize the extent to which the asbestos-containing material is disturbed.

Asbestos-containing material should be wetted from the initiation of the maintenance or renovation operation and wetting agents should be used continually throughout the work period to ensure that any dry asbestos-containing material exposed in the course of the work is wet and remains wet until final disposal.

Removal of small amount of asbestos-containing materials. Several methods can be used to remove small amounts of asbestos-containing materials during small-scale, short-duration renovation or maintenance tasks. These include the use of glove bags, the removal of an entire asbestos-covered pipe or structure, and the construction of minienclosures. The procedures that employers must use for each of these operations if they wish to avail themselves of the rule's exemptions are described in the following sections.

Glove bags. OSHA found that the use of glove bags to enclose the work area during small-scale, short-duration maintenance or renovation activities will result in employee exposure to asbestos that are below the rule's action level of 0.1 f/cm³. This appendix provides requirements for glove-bag procedures to be followed by employers wishing to avail themselves of the rule's exemption for each activity. OSHA has determined that the use of these procedures will reduce the 8-hour time weighted average (TWA) exposure of employees involved in these work operations to levels below the action level and will thus provide a degree of employee protection equivalent to that provided by compliance with all provisions of the rule.

Glove bag installation. Glove bags are approximately 40-inch-wide times 64-inch-long bags fitted with arms through which the work can be performed. When properly installed and used, they permit workers to remain completely isolated from the asbestos material removed or replaced inside the bag. Glove bags can thus provide a flexible, easily installed, and quickly dismantled temporary small work area enclosure that is ideal for small-scale asbestos renovation or maintenance jobs. These bags are single-use control devices that are disposed of at the end of each job. The bags are made of transparent 6-mil-thick polyethylene plastic with areas of Tyvek [1] material (the same material used to make the disposal protective suits used in major asbestos removal, renovation, and demolition operations and in protective gloves). Glove bags are readily available from safety supply stores or specialty asbestos removal supply houses. Glove bags come pre-labelled with the asbestos warning label prescribed by OSHA and EPA for bags used to dispose of asbestos waste.

Glove bag equipment and supplies. Supplies and materials that are necessary to use glove bags effectively include:

1. Tape to seal glove bag to the area from which asbestos is to be removed.
2. Amended water or other wetting agents.
3. An airless sprayer for the application of the wetting agent.
4. Bridging encapsulant (a paste-like substance for coating asbestos) to seal the rough edges of any asbestos-containing materials that remain within the glove bag at the points of attachment after the rest of the asbestos has been removed.
5. Tools such as razor knives, nips, and wire brushes (or other tools suitable for cutting wires, etc.).
6. A HEPA filter-equipped vacuum for evacuating the glove bag (to minimize the release of asbestos fibers) during removal of the bag from the work area and for cleaning any material that may have escaped during the installation of the glove bag.
7. HEPA-equipped dual-cartridge or more protective respirators for use by the employees involved in the removal of asbestos with the glove bag.

Glove bag work practices. The proper use of glove bags requires the following steps:

1. Glove bags must be installed so that they completely cover the pipe or other structure where asbestos work is to be done. Glove bags are installed by cutting the sides of the glove bag to fit the size of the pipe from which asbestos is to be removed. The glove bag is attached to the pipe by folding the open edges together and securely sealing them with tape. All openings in the glove bag must be sealed with duct tape or equivalent material. The bottom seam of the glove bag must also be sealed with duct tape or equivalent to prevent any leakage from the bag that may result from a defect in the bottom seam.
2. The employee who is performing the asbestos removal with the glove bag must don at least a half mask dual-cartridge HEPA-equipped respirator; respirators should be worn by employees who are in close contact with the glove bag and who may thus be exposed as a result of small gaps in the

[1] Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

seams of the bag or holes punched through the bag by a razor knife or a piece of wire mesh.

3. The removed asbestos material from the pipe or other surface that has fallen into the enclosed bag must be thoroughly wetted with a wetting agent (applied with an airless sprayer through the precut port provided in most gloves bags or applied through a small hole in the bag).

4. Once the asbestos material has been thoroughly wetted, it can be removed from the pipe, beam, or other surface. The choice of tool to use to remove the asbestos-containing material depends on the type of material to be removed. Asbestos-containing materials are generally covered with painted canvas and/or wire mesh. Painted canvas can be cut with a razor knife and peeled away from the asbestos-containing material underneath. Once the canvas has been peeled away, the asbestos-containing material underneath may be dry, in which case it should be resprayed with a wetting agent to ensure that it generates as little dust as possible when removed. If the asbestos-containing material is covered with wire mesh, the mesh should be cut with nips, tin snips, or other appropriate tool and removed.

A wetting agent must then be used to spray any layer of dry material that is exposed beneath the mesh, the surface of the stripped underlying structure, and the inside of the glove bag.

5. After removal of the layer of asbestos-containing material, the pipe or surface from which asbestos has been removed must be thoroughly cleaned with a wire brush and wet-wiped with a wetting agent until no traces of the asbestos-containing material can be seen.

6. Any asbestos-containing insulation edges that have been exposed as a result of the removal or maintenance activity must be encapsulated with bridging encapsulant to ensure that the edges do not release asbestos fibers to the atmosphere after the glove bag has been removed.

7. When the asbestos removal and encapsulation have been completed, a vacuum hose from a HEPA filtered vacuum must be inserted into the glove bag through the port to remove any air in the bag that may contain asbestos fibers. When the air has been removed from the bag, the bag should be squeezed tightly (as close to the top as possible), twisted, and sealed with tape, to keep the asbestos materials safely in the bottom of the bag. The HEPA vacuum can then be removed from the bag and the glove bag itself can be removed from the work area to be disposed of properly.

Minienclosures. In some instances, such as removal of asbestos from a small ventilation system or from a short length of duct, a glove bag may not be either large enough or of the proper shape to enclose the work area. In such cases, a minienclosure can be built around the area where small-scale, short-duration asbestos maintenance or renovation work is to be performed. Such enclosures should be constructed of 6-mil-thick polyethylene plastic sheeting and can be small enough to restrict entry to the asbestos work area to one worker.

For example, a minienclosure can be built in a small utility closet when asbestos-containing duct covering is to be removed. The enclosure is constructed by:

1. Affixing plastic sheeting to the walls with spray adhesive and tape.
2. Covering the floor with plastic and sealing the plastic covering the floor to the plastic on the walls.
3. Sealing any penetrations such as pipes or electrical conducts with tape.
4. Constructing a small change room (approximately 3 feet square) made of 6-mil-thick polyethylene plastic supported by 2-inch by 4-inch lumber (the plastic should be attached to the lumber supports with staples or spray adhesive and tape).

The change room should be contiguous to the minienclosure, and is necessary to allow the worker to vacuum off his protective coveralls and remove them before leaving the work area. While inside minienclosure, the worker should wear Tyvek [1] disposable coveralls and use the appropriate HEPA-filtered dual-cartridge or more protective respiratory protection.

The advantages of minienclosures are that they limit the spread of asbestos contamination, reduce the potential exposure of bystanders and other workers who may be working in adjacent areas, and are quick and easy to install. The disadvantage of minienclosures is that they may be too small to contain the equipment necessary to create a negative pressure within the enclosure; however the double layer of plastic sheeting will serve to restrict the release of asbestos fibers to the area outside the enclosure.

Removal of entire structures. When pipes are insulated with asbestos-containing materials, removal of the entire pipe may be more protective, easier, and more cost-effective than stripping the asbestos insulation from the pipe. Before such a pipe is cut, the asbestos-containing insulation must be wrapped with 6-mil polyethylene plastic and securely sealed with duct tape or equivalent. This plastic covering will prevent asbestos fibers from becoming airborne as a result of the vibration created by the power saws used to cut the pipe. If possible, the pipes should be cut at locations that are not insulated to avoid disturbing the asbestos. If a pipe is completely insulated with asbestos-containing materials, small sections should be stripped using the glove-bag method described above before the pipe is cut at the stripped sections.

Enclosure. The decision to enclose rather than remove asbestos-containing material from an area depends on the building owner's preference, i.e., for removal or containment. Owners consider such factors as cost effectiveness, the physical configuration of the work area, and the amount of traffic in the area when determining which abatement method to use.

If the owner chooses to enclose the structure rather than to remove the asbestos-containing material insulating it, a solid structure (airtight walls and ceilings) must be built around the asbestos covered pipe or structure to prevent the release of asbestos-containing materials into the area beyond the enclosure and to prevent disturbing these materials by casual contact during future maintenance operations.

Such a permanent (i.e., for the life of the building) enclosure should be built of new construction materials and should be impact resistant and airtight. Enclosure walls should be made of tongue-and-groove boards, boards with spine joints, or gypsum boards having taped seams. The underlying structure must be able to support the weight of the enclosure. (Suspended ceilings with laid-in panels do not provide airtight enclosures and should not be used to enclose structures covered with asbestos-containing materials.) All joints between the walls and ceiling of the enclosure should be caulked to prevent the escape of asbestos fibers. During the installation of enclosures, tools that are used (such as drills or rivet tools) should be equipped with HEPA-filtered vacuums. Before constructing the enclosure, all electrical conduits, telephone lines, recessed lights, and pipes in the area to be enclosed should be moved to ensure that the enclosure will not have to be re-opened later for routine or emergency maintenance. If such lights or other equipment cannot be moved to a new location for logistic reasons, or if moving them will disturb the asbestos-containing materials, removal rather than enclosure of the asbestos-

containing materials is the appropriate control method to use.

Maintenance program. An asbestos maintenance program must be initiated in all facilities that have friable asbestos-containing materials. Such a program should include:

1. Development of an inventory of all asbestos-containing materials in the facility.
2. Periodic examination of all asbestos-containing materials to detect deterioration.
3. Written procedures for handling asbestos materials during the performance of small-scale, short-duration maintenance and renovation activities.
4. Written procedures for asbestos disposal.
5. Written procedures for dealing with asbestos-related emergencies.

Members of the building's maintenance engineering staff (electricians, heating/air conditioning engineers, plumbers, etc.) who may be required to handle asbestos-containing materials should be trained in safe procedures. Such training should include at a minimum:

1. Information regarding types of ACM and its various uses and forms.
2. Information on the health effects associated with asbestos exposure.
3. Descriptions of the proper methods of handling asbestos-containing materials.
4. Information on the use of HEPA-equipped dual-cartridge respirators and other personal protection during maintenance activities.

Prohibited activities. The training program for the maintenance engineering staff should describe methods of handling asbestos-containing materials as well as routine maintenance activities that are prohibited when asbestos-containing materials are involved. For example, maintenance staff employees should be instructed:

1. *Not* to drill holes in asbestos-containing materials.
2. *Not* to hang plants or pictures on structures covered with asbestos-containing materials.
3. *Not* to sand asbestos-containing floor tile.
4. *Not* to damage asbestos-containing materials while moving furniture or other objects.
5. *Not* to install curtains, drapes, or dividers in such a way that they damage asbestos-containing materials.
6. *Not* to dust floors, ceilings, moldings or other surfaces in asbestos-contaminated environments with a dry brush or sweep with a dry broom.
7. *Not* to use an ordinary vacuum to clean up asbestos-containing debris.
8. *Not* to remove ceiling tiles below asbestos-containing materials without wearing the proper respiratory protection, clearing the area of other people, and observing asbestos removal waste disposal procedures.
9. *Not* to remove ventilation system filters dry.
10. *Not* to shake ventilation system filters.

Appendix D to Subpart E—Transport and Disposal of Asbestos Waste

For the purposes of this appendix, transport is defined as all activities from receipt of the containerized asbestos waste at the generation site until it has been unloaded at the disposal site. Current EPA regulations state that there must be no visible emissions to the outside air during waste transport. However, recognizing the potential hazards and subsequent liabilities associated with exposure, the following additional precautions are recommended.

Recordkeeping. Before accepting wastes, a transporter should determine if the waste is properly wetted and containerized. The transporter should then require a chain-of-custody form signed by the generator. A chain-of-custody form may include the name and address of the generator, the name and address of the pickup site, the estimated quantity of asbestos waste, types of containers used, and the destination of the waste. The chain-of-custody form should then be signed over to a disposal site operator to transfer responsibility for the asbestos waste. A copy of the form signed by the disposal site operator should be maintained by the transporter as evidence of receipt at the disposal site.

Waste handling. A transporter should ensure that the asbestos waste is properly contained in leak-tight containers with appropriate labels, and that the outside surfaces of the containers are not contaminated with asbestos debris adhering to the containers. If there is reason to believe that the condition of the asbestos waste may allow significant fiber release, the transporter should not accept the waste. Improper containerization of wastes is a violation of the NESHAPs regulation and should be reported to the appropriate EPA Regional Asbestos NESHAPs contact below:

Region I

Asbestos NESHAPs Contact, Air Management Division, USEPA, Region I, JFK Federal Building, Boston, MA 02203, (617) 223-3266.

Region II

Asbestos NESHAPs Contact, Air & Waste Management Division, USEPA, Region II, 26 Federal Plaza, New York, NY 10007, (212) 264-6770.

Region III

Asbestos NESHAPs Contact, Air Management Division, USEPA, Region III, 841 Chestnut Street, Philadelphia, PA 19107, (215) 597-9325.

Region IV

Asbestos NESHAPs Contact, Air, Pesticide & Toxic Management, USEPA, Region IV, 345 Courtland Street, NE., Atlanta, GA 30365, (404) 347-4298.

Region V

Asbestos NESHAPs Contact, Air Management Division, USEPA, Region V, 230 S. Dearborn Street, Chicago, IL 60604, (312) 353-6793.

Region VI

Asbestos NESHAPs Contact, Air & Waste Management Division, USEPA, Region VI, 1445 Ross Avenue, Dallas, TX 75202, (214) 655-7229.

Region VII

Asbestos NESHAPs Contact, Air & Waste Management Division, USEPA, Region VII, 726 Minnesota Avenue, Kansas City, KS 66101, (913) 236-2896.

Region VIII

Asbestos NESHAPs Contact, Air & Waste Management Division, USEPA, Region VIII, 999 18th Street, Suite 500, Denver, CO 80202, (303) 293-1814.

Region IX

Asbestos NESHAPs Contact, Air Management Division, USEPA, Region IX, 215 Fremont Street, San Francisco, CA 94105, (415) 974-7633.

Region X

Asbestos NESHAPs Contact, Air & Toxics Management Division, USEPA, Region X, 1200 Sixth Avenue, Seattle, WA 98101, (206) 442-2724.

Once the transporter is satisfied with the condition of the asbestos waste and agrees to handle it, the containers should be loaded into the transport vehicle in a careful manner to prevent breaking of the containers. Similarly, at the disposal site, the asbestos waste containers should be transferred carefully to avoid fiber release.

Waste transport. Although there are no regulatory specifications regarding the transport vehicle, it is recommended that vehicles used for transport of containerized asbestos waste have an enclosed carrying compartment or

utilize a canvas covering sufficient to contain the transported waste, prevent damage to containers, and prevent fiber release. Transport of large quantities of asbestos waste is commonly conducted in a 20-cubic-yard "roll off" box, which should also be covered. Vehicles that use compactors to reduce waste volume should not be used because these will cause the waste containers to rupture. Vacuum trucks used to transport waste slurry must be inspected to ensure that water is not leaking from the truck.

Disposal involves the isolation of asbestos waste material in order to prevent fiber release to air or water. Landfilling is recommended as an environmentally sound isolation method because asbestos fibers are virtually immobile in soil. Other disposal techniques such as incineration or chemical treatment are not feasible due to the unique properties of asbestos. EPA has established asbestos disposal requirements for active and inactive disposal sites under NESHAPs (40 CFR Part 61, Subpart M) and specifies general requirements for solid waste disposal under RCRA (40 CFR Part 257). Advance EPA notification of the intended disposal site is required by NESHAPs.

Selecting a disposal facility. An acceptable disposal facility for asbestos wastes must adhere to EPA's requirements of no visible emissions to the air during disposal, or minimizing emissions by covering the waste within 24 hours. The minimum required cover is 6 inches of nonasbestos material, normally soil, or a dust-suppressing chemical. In addition to these federal requirements, many state or local government agencies require more stringent handling procedures. These agencies usually supply a list of "approved" or licensed asbestos disposal sites upon request. Solid waste control agencies are listed in local telephone directories under state, county, or city headings. A list of state solid waste agencies may be obtained by calling the RCRA hotline: 1-800-424-9346 (382-3000 in Washington, DC). Some landfill owners or operators place special requirements on asbestos waste, such as placing all bagged waste into 55-gallon metal drums. Therefore, asbestos removal contractors should contact the intended landfill before arriving with the waste.

Receiving asbestos waste. A landfill approved for receipt of asbestos waste should require notification by the waste hauler that the load contains asbestos. The landfill operator should inspect the loads to verify that asbestos waste is properly contained in leak-tight containers and labeled appropriately. The appropriate EPA Regional Asbestos NESHAPs Contact should be notified if the landfill operator believes that the asbestos waste is in a condition that may cause significant fiber release during disposal. In situations when the wastes are not properly containerized, the landfill operator should thoroughly soak the asbestos with a water spray prior to unloading, rinse out the truck, and immediately cover the wastes with nonasbestos material prior to compacting the waste in the landfill.

Waste deposition and covering. Recognizing the health dangers associated with asbestos exposure, the following procedures are recommended to augment current federal requirements:

- Designate a separate area for asbestos waste disposal. Provide a record for future landowners that asbestos waste has been buried there and that it would be hazardous to attempt to excavate that area. (Future regulations may require property deeds to identify the location of any asbestos wastes and warn against excavation.)
- Prepare a separate trench to receive asbestos wastes. The size of the trench will depend upon the quantity and frequency of asbestos waste delivered to the disposal site. The trenching technique allows application of soil cover without disturbing the asbestos waste containers. The trench should be ramped to allow the transport vehicle to back into it, and the trench should be as narrow as possible to reduce the amount of cover required. If possible, the trench should be aligned perpendicular to prevailing winds.
- Place the asbestos waste containers into the trench carefully to avoid breaking them. Be particularly careful with plastic bags because when they break under pressure asbestos particles can be emitted.
- Completely cover the containerized waste within 24 hours with a minimum of 6 inches of nonasbestos material. Improperly containerized waste is a violation of the NESHAPs and EPA should be notified.

However, if improperly containerized waste is received at the disposal site, it should be covered immediately after unloading. Only after the wastes, including properly containerized wastes, are completely covered, can the wastes be compacted or other heavy equipment run over it. During compacting, avoid exposing wastes to the air or tracking asbestos material away from the trench.

- For final closure of an area containing asbestos waste, cover with at least an additional 30 inches of compacted nonasbestos material to provide a 36-inch final cover. To control erosion of the final cover, it should be properly graded and vegetated. In areas of the United States where excessive soil erosion may occur or the frost line exceeds 3 feet, additional final cover is recommended. In desert areas where vegetation would be difficult to maintain, 3-6 inches of well graded crushed rock is recommended for placement on top of the final cover.

Controlling public access. Under the current NESHAPs regulation, EPA does not require that a landfill used for asbestos disposal use warning signs or fencing if it meets the requirement to cover asbestos wastes. However, under RCRA, EPA requires that access be controlled to prevent exposure of the public to potential health and safety hazards at the disposal site. Therefore, for liability protection of operators of landfills that handle asbestos, fencing and warning signs are recommended to control public access when natural barriers do not exist. Access to a landfill should be limited to one or two entrances with gates that can be locked when left unattended. Fencing should be installed around the perimeter of the disposal site in a manner adequate to deter access by the general public. Chain-link fencing, 6-ft high and topped with a barbed wire guard, should be used. More specific fencing requirements may be specified by local regulations. Warning signs should be displayed at all entrances and at intervals of 330 feet or less along the property line of the landfill or perimeter of the sections where asbestos waste is deposited. The sign should read as follows:

ASBESTOS WASTE DISPOSAL SITE

BREATHING ASBESTOS DUST MAY CAUSE LUNG DISEASE AND CANCER

Recordkeeping. For protection from liability, and considering possible future requirements for notification on disposal site deeds, a landfill owner should maintain documentation of the specific location and quantity of the buried asbestos wastes. In addition, the estimated depth of the waste below the surface should be recorded whenever a landfill section is closed. As mentioned previously, such information should be recorded in the land deed or other record along with a notice warning against excavation of the area.

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ENVIRONMENTAL PROTECTION AGENCY

[OPTS-62055; FRL-3269-8]

Asbestos-Containing Materials in Schools; EPA Approved Courses Under the Asbestos Hazard Emergency Response Act (AHERA)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: In section 206(c)(3) of Title II, the Administrator, in consultation with affected organizations, was directed to publish (and revise as necessary) a list of asbestos courses and tests in effect before the date of enactment of this title which qualify for equivalency treatment for interim accreditation purposes and a list of asbestos courses and tests which the Administrator determines are consistent with the Model Plan and which will qualify a contractor for accreditation. This Federal Register notice includes the initial list of course approvals. In addition, the list includes State accreditation programs that EPA has approved as meeting the requirements of the Model Plan.

FOR FURTHER INFORMATION CONTACT: Edward A. Klein, Director, TSCA Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-543, 401 M St., SW., Washington, DC 20460. Telephone: (202) 554-1404.

SUPPLEMENTARY INFORMATION: Section 206 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2646, required EPA to develop by April 20, 1987 a Model Contractor Accreditation Plan. The Plan was issued on April 20, and was published in the Federal Register of April 30, 1987, as Appendix C to Subpart E, 40 CFR Part 763.

To conduct asbestos-related work in schools, persons must receive accreditation in order to inspect school buildings for asbestos, develop management plans, and design or conduct response actions. Such persons can be accredited by States, which are required to adopt contractor accreditation plans at least as stringent as the EPA Model Plan, or by completing an EPA-approved training course and passing an examination for such course. The EPA Model Contractor Accreditation Plan establishes those areas of knowledge of asbestos inspection, management plan development, and response action technology that persons seeking accreditation must demonstrate and States must include in their accreditation programs.

Elsewhere in this issue of the Federal Register EPA is promulgating a final "Asbestos-Containing Materials In Schools" rule (40 CFR Part 763, Subpart E) which requires all local education agencies (LEAs) to identify asbestos-containing materials (ACM) in their school buildings and take appropriate actions to control the release of asbestos fibers. The LEAs are also required to describe their activities in management plans, which must be made available to the public and submitted to State governors. Under Title II, LEAs are required to use specially-trained persons to conduct inspections for asbestos, develop the management plans, and design or conduct major actions to control asbestos.

The length of initial training courses for accreditation under the Model Plan varies by discipline. Briefly, inspectors must take a 3-day training course; management planners must take the inspection course plus an additional 2 days devoted to management planning; and abatement project designers are required to have at least 3 days of training. In addition, asbestos abatement contractors and supervisors must take a 4-day training course and asbestos abatement workers are required to take a 3-day training course. For all disciplines, persons seeking accreditation must also pass an examination and participate in annual re-training courses. A complete description of accreditation requirements can be found in the Model Accreditation Plan at 40 CFR Part 763, Subpart E, Appendix C.I.1.A. through E.

In section 206(c)(3) of Title II, the Administrator, in consultation with affected organizations, was directed to publish (and revise as necessary) a list of asbestos courses and tests in effect before the date of enactment of this title which qualify for equivalency treatment for interim accreditation purposes and a list of asbestos courses and tests which the Administrator determines are consistent with the Model Plan and which will qualify a contractor for accreditation. This Federal Register notice includes the initial list of course approvals. In addition, the list includes State accreditation programs that EPA has approved as meeting the requirements of the Model Plan.

Three types of EPA approvals are included in this Federal Register notice. Unit I discusses EPA approval of State accreditation programs. Unit II covers EPA approval of training courses. Unit III discusses EPA aporoval of training courses for interim accreditation. Lastly, Unit IV provides the list of State accreditation programs and training courses approved by EPA as of October 1987. Subsequent Federal Register notices will add other State programs and training courses to this initial list.

I. EPA Approval of State Accreditation Programs

As discussed in the Model Plan, EPA will approve State accreditation programs that the Agency determines are at least as stringent as the Model Plan. In addition, the Agency is able to approve individual disciplines within a State's accreditation program. For example, a State that currently only has an accreditation requirement for inspectors can receive EPA approval for that discipline immediately rather than waiting to develop accreditation requirements for all disciplines in the Model Plan before seeking EPA approval.

As listed in Unit IV, New Jersey has received EPA approval for two accreditation disciplines. Any training courses in these two disciplines approved by New Jersey are EPA-approved courses for purposes of accreditation. These training courses are EPA-approved courses for purposes of TSCA Title II in New Jersey and in all States without an EPA-approved accreditation program for that discipline. For a current list of courses approved by New Jersey, interested parties should contact the State agency listed under Unit IV. EPA plans to include the training courses approved by New Jersey in the next Federal Register notice listing EPA-approved courses.

The State of Kansas currently has a training program for asbestos abatement contractors and supervisors that does not meet all of the Model Plan's requirements for this discipline. However, the Kansas program's training course requirements do meet the requirements for EPA approval of training courses for interim accreditation (see Unit III). As a result, persons who have met the training and exam requirements of the Kansas abatement contractor and supervisor program are accredited as listed under Unit IV on an interim basis. The Kansas contractor and supervisor accreditation program still must be upgraded within the time period specified in TSCA Title II to be at least as stringent as the Model Plan.

II. EPA Approval of Training Courses

Training courses approved by EPA are listed under Unit IV. The examinations for these approved courses under Unit IV have also been approved by EPA. EPA has three categories of course approval: full, contingent, and approved for interim accreditation. Courses

approved for interim accreditation will be discussed in Unit III.

Full approval means EPA has reviewed and found acceptable the course's written submission seeking EPA approval and has conducted an on-site audit and determined that the training course meets or exceeds the Model Plan's training requirements for the relevant discipline.

Contingent approval means the Agency has reviewed the course's written submission seeking EPA approval and found the materials to be acceptable (i.e. the written course materials meet the Model Plan's training course requirements). However, EPA has not yet conducted an on-site audit.

Successful completion of either a fully approved course or a contingently approved course provides full accreditation for course attendees. If EPA subsequently audits a contingently approved course and withdraws approval due to deficiencies discovered during the audit, future course offerings would no longer have EPA approval. However, withdrawal of EPA approval would not affect the accreditation of persons who took previously offered training courses including the course audited by EPA.

EPA-approved training courses listed under Unit IV are approved on a national basis. EPA has organized Unit IV by EPA Region to assist the public in locating those training courses that are offered nearby.

EPA-approved State accreditation programs have the authority to have more stringent accreditation requirements than the Model Plan. As a result, some EPA-approved training courses listed under Unit IV may not meet the requirements of a particular State's accreditation program. Sponsors of training courses and persons who have received accreditation or are seeking accreditation should contact individual States to check on accreditation requirements.

A number of training courses offered by several universities before EPA issued the Model Plan equaled or exceeded the subsequently issued Model Plan's training course requirements. These courses are listed under Unit IV as being fully approved. It should be noted that persons who successfully completed these courses are fully accredited; they are not limited only to being interimly accredited.

III. EPA Approval of Training Courses for Interim Accreditation

TSCA Title II enables EPA to permit persons to be accredited on an interim basis if they have attended previous EPA-approved asbestos training and have passed (or pass) an asbestos exam. As a result, the Agency is approving training courses offered previously for purposes of accrediting persons on an interim basis. Only those persons who have taken training courses since January 1, 1985 will be considered under these interim accreditation provisions. In addition, EPA will not grant interim accreditation to any person who takes an equivalent training course after the date the asbestos-in-schools rule takes effect. This accreditation is interim since the person shall be considered accredited for only 1 year after the date on which the State where the person is employed establishes an accreditation program at least as stringent as the EPA Model Plan. If the State does not adopt an accreditation program within the time period required by Title II, persons with interim accreditation must become fully accredited within 1 year after the date the State was required to have established a program.

For purposes of the Model Plan, an equivalent training course is one that is essentially similar in length and content to the curriculum found in the Model Plan. In addition, an equivalent examination must be essentially similar to the examination requirements found in the Model Plan.

Persons who have taken equivalent courses in their discipline for purposes of interim accreditation, and can produce evidence that they have successfully completed the course by passing an examination, are accredited on an interim basis under TSCA Title II. Evidence of successful completion of a course would include a certificate or photo identification card that showed the person completed the training course on a certain date and passed the examination.

For persons who took one of the EPA-approved courses for interim accreditation listed under Unit IV, but did not take the course's examination, these persons may become interimly accredited by passing an examination at an EPA-funded training center. These EPA funded training centers are listed under Unit IV. Before taking the exam, persons must provide evidence to the EPA-funded center that they previously had taken one of the training courses listed under Unit IV that is approved by EPA for interim accreditation.

Courses approved by EPA as of October 17 for interim accreditation are listed under Unit IV. Examinations offered by these courses also are approved for purposes of interim accreditation. EPA expects to approve additional courses for interim accreditation purposes, and will list these courses in subsequent Federal Register notices. Training course vendors that believe their courses offered since January 1, 1985 are suitable sources for interim accreditation should contact their EPA Regional asbestos coordinator (See addresses in Unit IV).

IV. List of EPA-Approved State Accreditation Programs and Training Courses

Below is the first listing of EPA-approved State accreditation programs and training courses. As discussed above, periodic notifications of EPA approval of State accreditations programs and EPA approval of training courses will be published in subsequent Federal Register notices. The closing date for the acceptance of submissions to EPA for inclusion in this first notice was early October. Omission from this list does not imply disapproval by EPA, nor does the order of the courses reflect priority or quality. The format of the notification lists first the State accreditation programs approved by EPA, followed by EPA-approved training courses listed by Region. The name, address, phone number, and contact person is provided for each training provider followed by the courses and type of course approval (i.e. full, contingent, or for interim purposes). Unless otherwise specified by an alternative date, interim approvals are issued from January 1, 1985.

All five of the EPA-funded asbestos information centers and the three EPA-funded satellite training centers will use the EPA model inspector and management planner course recently developed with EPA funds. As a result, EPA anticipates that all of the EPA-funded training facilities will receive approvals for inspection and management planning courses offered beginning in October. Currently, the EPA-funded centers at the Georgia Institute of Technology and the University of Illinois at Chicago have inspection and management planning courses that EPA has fully approved. The five centers are: The Georgia Institute of Technology in Atlanta, Georgia; the University of Kansas in Overland Park, Kansas; Tufts University in Medford, Massachusetts; the University of Illinois at Chicago, and the University of California, Berkeley. The three satellite centers are: The University of Texas at Arlington; the Robert Wood Johnson Medical School in Piscataway, New Jersey, and Temple University in Philadelphia, Pennsylvania. The University of Texas at Arlington has received contingent

approval of its inspector and management planner course.

The recently developed EPA-funded model course for inspectors and management planners, and an earlier course developed with EPA funding for asbestos abatement contractors and supervisors are available for interested parties that plan to offer training courses. Interested parties should contact the following firm to receive copies of the training courses: Sterling Federal Systems, Incorporated, Suite 600, 6911 Executive Blvd., Rockville, MD 20852.

A fee for each course will be charged to cover the reproduction costs for the written and visual aid materials.

The following is the initial list of EPA-approved State accreditation programs and training courses:

Approved State Accreditation Programs

(1)(a) *State: Kansas*— State Agency: Kansas Department of Health and Environment, Forbes Field, Topeka, KS 66620. Attn: John C. Irwin (913) 296–1500.

(b) *Approved Accreditation Program Discipline*—Contractor/Supervisor (training and exam requirements (approved for interim accreditation).

Abatement worker [1] approved for interim accreditation).

Effective date of regulation: 1/6/1986.

(2)(a) *State: New Jersey*—State Agency: New Jersey Department of Health, CN 360, Trenton, New Jersey 08625–0360. Attn: James Brownlee (609) 984–2193.

(b) *Approved Accreditation Program Discipline*—Contractor/Supervisor. Abatement worker. Effective date of regulation: June 18, 1985.

EPA-Approved Training Courses

Region I—Boston, MA

Regional asbestos coordinator. Alison Roberts, EPA, Region I, Air and Management Division (APT–231), JFK Federal Building, Boston, MA 02203. (617) 565–3273 (FTS) 835–3275.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region I training courses and contact points for each, are as follows:

(1)(a) *Training provider.* Abatement Technology Corp., One Boston Place, Suite 1025, Boston, MA 02108. Attn: Scott Keyes (617) 723–3100.

(b) *Approved courses.* Contractor/Supervisor (contingent).

(2)(a) *Training provider.* Con-Test, P.O. Box 581, East Longmeadow, MA 01028. Attn: Brenda Bolduc (413) 525–1198.

(b) *Approved courses.* Contractor/Supervisor (contingent). Abatement Worker (contingent). Inspector/Management Planner (contingent). Refresher course (for each of the above disciplines) (contingent).

(3)(a) *Training provider.* Hygientics, Inc., 150 Causeway St., Boston, MA 02114. Attn: John W. Cowdery (617) 723–4664.

(b) *Approved courses.* Inspector (contingent).

(4)(a) *Training provider.* Institute for Environmental Education, 208 West Cummings Park, Woburn, MA 01801. Attn: Janet Oppenheim-McMullen (617) 935–7370.

(b) *Approved courses.* Contractor/Supervisor (full from 9/18/87). Inspector/Management planner (contingent).

(5)(a) *Training provider.* Maine Labor Group on Health Inc., P.O. Box 5, Augusta, Maine 04330. Attn: Dianna White (207) 289–2770.

(b) *Approved courses.* Contractor/Supervisor (contingent). Abatement Worker (contingent).

(6)(a) *Training provider.* New England Laborers' Training Trust Fund, 37 East Street, Hopkinton, MA 01748. Attn: Jim Merloni, Jr. (617) 435–6316.

(b) *Approved courses.* Abatement Workers (contingent).

(7)(a) *Training provider.* Tufts University, 474 Boston Ave., Medford, MA 02155. Attn: Brenda Cole (617) 381–3531.

(b) *Approved courses.* Contractor/Supervisor Course (Interim from 9/85–5/31/87). Contractor/Supervisor Course (Full from 6/22/87).

Region II—Edison, NJ

Regional asbestos coordinator. Arnold Freiberger, EPA, Region II, Woodbridge Ave., Raritan Depot, Bldg. 10, Edison, NJ 08837. (201) 321–6668. (FTS) 340–6671.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region II training courses and contact points for each, are as follows:

(1)(a) *Training provider.* UMDNJ Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854–5635. Attn: Lee Laustsen (201) 463–4500.

(b) *Approved courses.* Abatement Worker (full from beginning). Contractor/Supervisor (full from beginning).

Region III—Philadelphia, PA

Regional asbestos coordinator. Pauline Levin, EPA, Region III (3HW–40), 841 Chestnut Bldg., Philadelphia, PA 19107. (215) 597–9859. (FTS) 597–9859.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region III training courses and contact points for each, are as follows:

(1)(a) *Training provider.* Alice Hamilton Center for Occupational Health, 410 7th Street SE., Second Floor, Washington, DC 20003. Attn: Brian Christopher (202) 543–0005.

(b) *Approved courses.* Abatement Workers (contingent).

(2)(a) *Training provider.* The Association of Wall and Ceiling Industries, 24 K Street, NE., Suite 300, Washington, DC 20002. Attn: Chris Hullinger (202) 783–2924.

(b) *Approved courses.* Abatement Worker (full 5/19/87). Contractor/Supervisor (full 5/19/87).

(3)(a) *Training provider.* Biospherics, Inc., 12051 Indian Creek Court, Beltsville, MD 20705. Attn: Marian F. Meiselman (301) 369–3900.

(b) *Approved courses.* Contractor/Supervisor (full from 10/1/87). Abatement worker (full from 10/1/87).

(4)(a) *Training provider.* Drexel University, Environmental Studies Institute, Building 29, 32nd and Chestnut Streets, #216, Philadelphia, PA 19104. Attn: Robert Ross (215) 895–2269.

(b) *Approved courses.* Contractor/Supervisor (full from beginning). Abatement Worker (full from beginning).

(5)(a) *Training provider.* South East Michigan Committee on Occupational Safety and Health (SEMCOSH), 1550 Howard Street, Detroit, MI 48216. Attn: Barbara Boylan (313) 961–3345.

(b) *Approved courses.* Abatement Worker (contingent).

(6)(a) *Training provider.* The National Training Fund for the Sheet Metal and Air Conditioning Industry (in conjunction with the Workers' Institute for Safety and Health), 1126 Sixteenth Street NW., Washington, DC 20036. Attn: Scott Schneider (202) 887–1960.

(b) *Approved courses.* Abatement Worker (contingent).

[1] Applies only to workers who have taken the Kansas' Contractor/ Supervisor course and passed the State's worker exam.

(7)(a) *Training provider.* Temple University, College of Engineering, 12th and Norris Streets, Philadelphia, PA 19122. Attn: Lester Levin (215) 787–6479.

(b) *Approved courses.* Contractor/Supervisor (full from beginning). Workers (full from beginning).

(8)(a) *Training provider.* Medical College of Virginia, Virginia Commonwealth University, Department of Preventive Medicine, P.O. Box 212, Richmond, VA 23298. Attn: Leonard Vance (804) 786–9785.

(b) *Approved courses.* Contractor/Supervisor (contingent).

(9)(a) *Training provider.* WACO, Inc., P.O. Box 836, 5450 Lewis Road, Sandston, VA 23150. Attn: William Belanich (804) 222–8440.

(b) *Approved courses.* Contractor/Supervisor (contingent). Abatement Workers (contingent).

Region IV—Atlanta, GA

Regional asbestos coordinator. Jim Littell, EPA Region IV, 345 Courtland St. NE., Atlanta, GA 30365. (404) 347–3864. (FTS) 257–3864.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region IV training courses and contact points for each, are as follows:

(1)(a) *Training provider.* University of Florida, TREEO Center, 3900 SW 83rd Blvd., Gainesville, FL 32608. Attn: Sandra Scaggs (904) 392–9570.

(b) *Approved courses.* Contractor/Supervisor (full from 5/87).

(2)(a) *Training provider.* Georgia Tech Research Institute, Environmental Health and Safety Division, Room 029, O'Keefe Building, Atlanta, GA 30332. Attn: William Ewing (404) 894–3806.

(b) *Approved courses.* Contractor/Supervisor (full from 5/11/87). Contractor/Supervisor (Interim from 8/85—5/10/87). Refresher Course for Contractor/Supervisor (contingent). Inspector/Management Planner (full from 10/87).

(3)(a) *Training provider.* National Asbestos Council, Training Department, 2786 North Decatur Road, Decatur, GA 30033. Attn: Eva Clay (404) 292–0629.

(b) *Approved courses.* Abatement Workers (2 day) (interim from beginning). Abatement Workers (3 day) (full from 7/87).

Region V—Chicago, IL

Regional asbestos coordinator. Anthony Restaino, EPA Region V, 538 S. Clark St., Chicago, IL 60604. (312) 886–6879. (FTS) 886–6879.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region V training courses and contact points for each, are as follows:

(1)(a) *Training provider.* AHP Research, Inc., 1501 Johnsons Ferry Rd., Suite 230, P.O. Box 71928, Marietta, GA 30007. Attn: Dwight Brown (404) 565–0061.

(b) *Approved courses.* Inspector/Management Planner (interim from beginning).

(2)(a) *Training provider.* BDN Industrial Hygiene Consultants, 8105 Valleywood Lane, Portage, MI 49002. Attn: Keith Nichols (816) 329–1237.

(b) *Approved courses.* Contractor/Supervisor (contingent).

(3)(a) *Training provider.* DeLisle Consulting and Laboratories, Inc., 2401 East Milham Ave., Kalamazoo, MI 49002. Attn: Mark DeLisle (816) 343–9698.

(b) *Approved courses.* Contractor/Supervisor (contingent).

(4)(a) *Training provider.* Heat & Frost Insulators Local 17, Apprentice Training Center, 3850 South Racine Ave., Chicago, IL 60609. Attn: John P. Shine (312) 247–1007

(b) *Approved courses.* Abatement Workers (contingent).

(5)(a) *Training provider.* I.P.C. Chicago, 4309 West Henderson, Chicago, IL 60641. Attn: Robert G. Cooley (312) 975–3495.

(b) *Approved courses.* Abatement Workers (contingent).

(6)(a) *Training provider.* University of Illinois at Chicago, Midwest Asbestos Information Center, 2035 Taylor, School of Public Health, Chicago, IL 60612. Attn: Tony Billotti (312) 996–5762.

(b) *Approved courses.* Contractor/Supervisor (full from beginning). Inspector/Management Planner (full). Abatement Worker (2 day) (interim from beginning to 10/1/87). Abatement Worker (3 day) (contingent).

Region VI—Dallas, TX

Regional asbestos coordinator. John West, 8t-Pt, EPA, Region VI, 1445 Ross Avenue, Dallas, TX 75202–2733. (214) 655–7244. (FTS) 255–7235.

List of opproved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region VI training courses and contact points for each, are as follows:

(1)(a) *Training provider.* GEBCO Associates, Inc., 805–A, Elizabeth Drive, Bedford, TX 76022. Attn: Ed Kirch (817) 268–4006.

(b) *Approved courses.* Asbestos Workers (full from 8/20/87). Asbestos Workers (interim prior to 8/19/87).

(2)(a) *Training provider.* The International Association of Heat and Frost Insulators and Asbestos Workers Union, Local 22, 3219 Pasadena Blvd., Pasadena, TX 77503. Attn: Owen Tilley (713) 473–0888.

(b) *Approved courses.* Asbestos Worker (3 day course) (contingent). Asbestos Worker (2 day course) (interim prior to 10/87). Worker refresher course (contingent).

(3)(a) *Training provider.* Louisiana State University and Agricultural and Mechanical College, Baton Rouge, LA 70803–1520. Attn: George Smith (504) 388–6621.

(b) *Approved courses.* Contractor/Supervisor (contingent).

(4)(a) *Training provider.* The Texas A&M University System, The Texas Engineering Extension Service, Building Codes Inspection Training Division, College Station, TX 77843–8000. Attn: Charles Flanders (409) 845–6682.

(b) *Approved courses.* Contractor/Supervisor (full from 9/14/87). Contractor/Supervisor (interim prior to 9/14/87). Abatement Worker (contingent). Inspector/Management Planner (contingent).

(5)(a) *Training provider.* The University of Texas at Arlington Satellite Center, Bureau of Engineering Research, P.O. Box 19020, Arlington, TX 76019. Attn: Ernest Crosby (817) 273–2557.

(b) *Approved courses.* Contractor/Supervisor (full from beginning). Inspector/Management Planner (contingent).

(6)(a) *Training provider.* Tulane University, School of Public Health and Tropical Medicine, Department of Environmental Health Sciences, 1430 Tulane Avenue, New Orleans, LA 70112. Attn: Shau-Wong Chang (504) 588–5374.

(b) *Approved courses.* Contractor/Supervisor (full from 9/15/87). Contractor/Supervisor (interim prior 9/14/87).

Region VII—Kansas City, KS

Regional asbestos coordinator. Wolfgang Brandner, EPA Region VII, 726 Minnesota Ave., Kansas City, KS 66101. (913) 236–2834. (FTS) 757–2834.

List of approved courses. The following training courses have been

approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region VII training courses and contact points for each, are as follows:

(1)(a) *Training provider.* Hall-Kimbrell Environmental Services, 4840 West 15th St., Lawrence, KS 66046. Attn: Alice Hart (913) 749-2381.

(b) *Approved courses.* Contractor/Supervisor (full from 8/17/87). Abatement Worker (full from 8/17/87). Project Designer (full from 8/17/87). Inspector/Management Planner (full from 8/17/87).

(2)(a) *Training provider.* Mahew Environmental Training Assoc., Inc. (META), P.O. Box 1961, Lawrence, KS 66044. Attn: Brad Mayhew (913) 842-6382.

(b) *Approved courses.* Contractor/Supervisor (contingent). Abatement Worker (contingent).

(3)(a) *Training provider.* The University of Kansas National Asbestos Training Center, 6600 College Blvd., Suite 315, Overland Park, KS 66211. Attn: Lani Himegarner (913) 491-0181.

(b) *Approved courses.* Contractor/Supervisor (contingent). Contractor/Supervisor (interim from 6/85-9/9/87). Abatement Worker (contingent).

Region VIII—Denver, CO

Regional asbestos coordinator. David Combs, [8AT-TS], EPA, Region VIII, 1 Denver Place, 999-18th St., Suite 1300, Denver, CO 80202-2413. (303) 564-1730. (FTS) 564-1742.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region VIII training courses and contact points for each, are as follows:

(1)(a) *Training provider.* Northern Engineering and Testing, Inc. 600 South 25th Street, P.O. Box 30615, Billings, MT 59107. Attn: Kathleen Smit (406) 248-9161.

(b) *Approved courses.* Asbestos worker (contingent).

(2)(a) *Training provider.* Rocky Mountain Center for Occupational and Environmental Health, Building 512, University of Utah, Salt Lake City, UT 84112. Attn: Jeffery Lee (801) 581-5710.

(b) *Approved courses.* Contractor/Supervisor (contingent).

Region IX—San Francisco, CA

Regional asbestos coordinator. Joanne Semones, [T-52], EPA, Region IX, 215 Fremont St., San Francisco, CA 94105. (415) 974-7290, (FTS) 454-7290.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region IX training courses and contact points for each, are as follows:

(1)(a) *Training provider.* Environmental Sciences, 375 S. Meyer, Tucson, AZ 85701. Attn: Dale Keyes (602) 577-1764.

(b) *Approved courses.* Inspector/Management Planner (full).

(2)(a) *Training provider.* University of California at Berkeley Pacific Asbestos Information Center, U.C. Extension, 2223 Fulton St., Berkeley, CA 94720. Attn: Debra Dobin (415) 643-7143.

(b) *Approved courses.* Contractor/Supervisor (full from beginning).

Region X—Seattle, WA

Regional asbestos coordinator. Walter Jasper, EPA, Region X, 1200 Sixth Ave., Seattle, WA 98101. (206) 442-2870, (FTS) 399-2870.

List of approved courses. The following training courses have been approved by EPA. The courses are listed under (b). This approval is subject to the level of certification indicated after the course name. Courses are listed in alphabetical order and do not reflect a prioritization. Approvals for Region X training courses and contact points for each, are as follows:

No approvals for Region X.

Dated: October 17, 1987.

Lee M. Thomas,

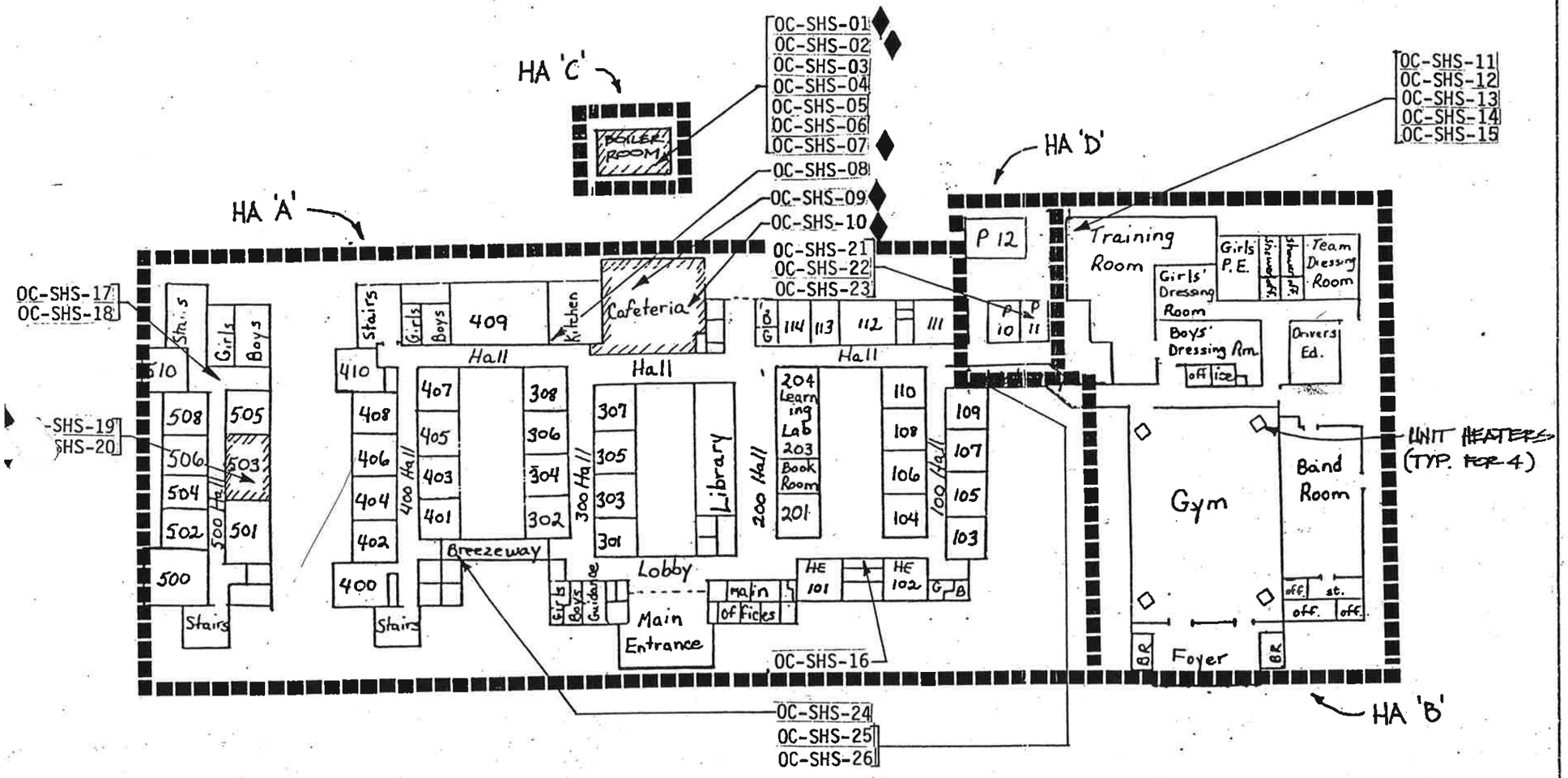
Administrator.

[FR Doc. 87-24939 Filed 10-29-87; 8:45 am]

BILLING CODE 6560-50-M

TATE OF SOUTH CAROLINA

- DRAWINGS, DIAGRAMS, SKETCHES and/or PHOTO OF DRAWING



LEA: Oconee County School District
SCHOOL: Seneca High School
BUILDING: Entire
146,789 sf

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

■■■ – DENOTES HOMOGENEOUS AREA

♦ – DENOTES ACBM

– DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

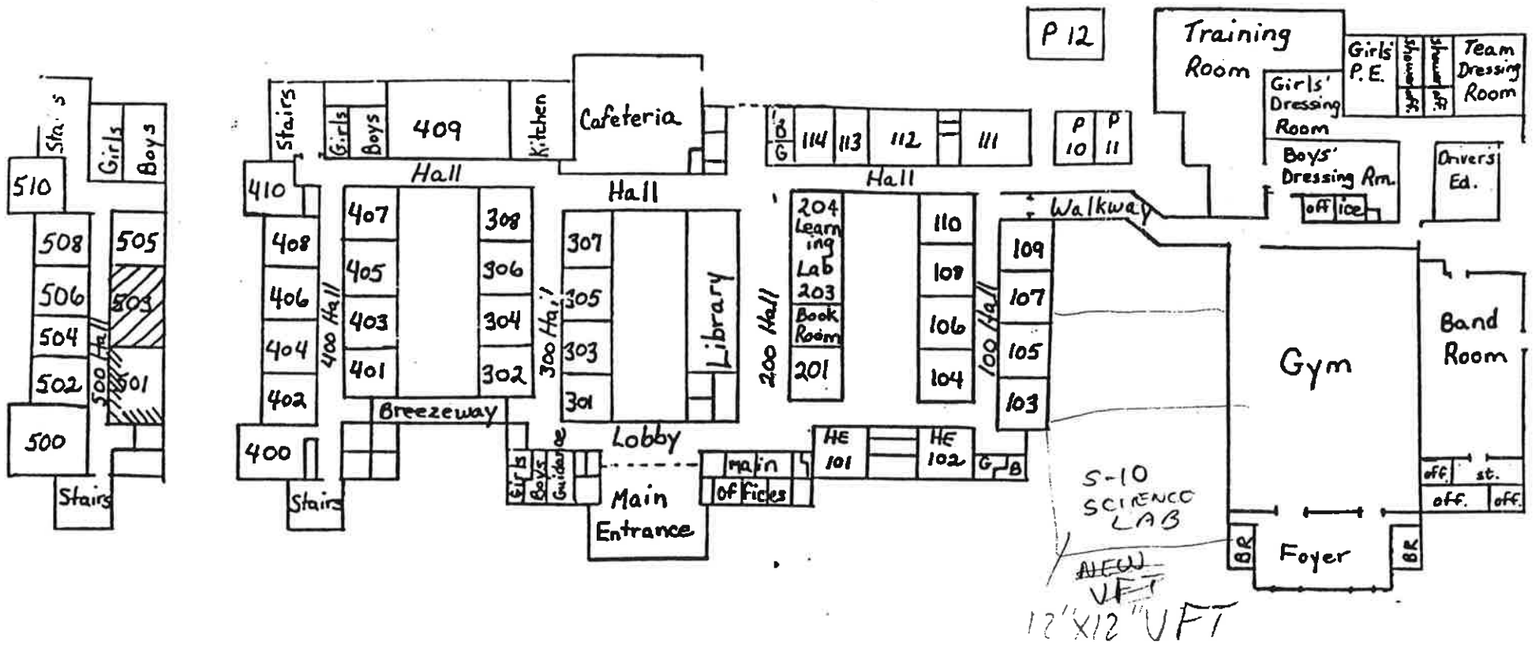
BULK SAMPLE LEGEND:

XXX XXX XX
- SAMPLE NO.
- SCHOOL
- SCHOOL DISTRICT

HOMOGENEOUS AREA LEGEND FOR ACBM

SAMPLE #	HAID#	AMT.	DESCRIPTION
OC-SHC-01	C1	40	elbows @ piping
OC-SHC-02	C2	400sf	Expan tank
OC-SHC-07	C3	2sf	Seal @ blr #1
OC-SHS-9&10	A2	3000sf	Floor tile
OC-SHS-19&20	A5	500sf	Rolled flooring

DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING



AREA A5 500 S.F. ROLLED FLOORING

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

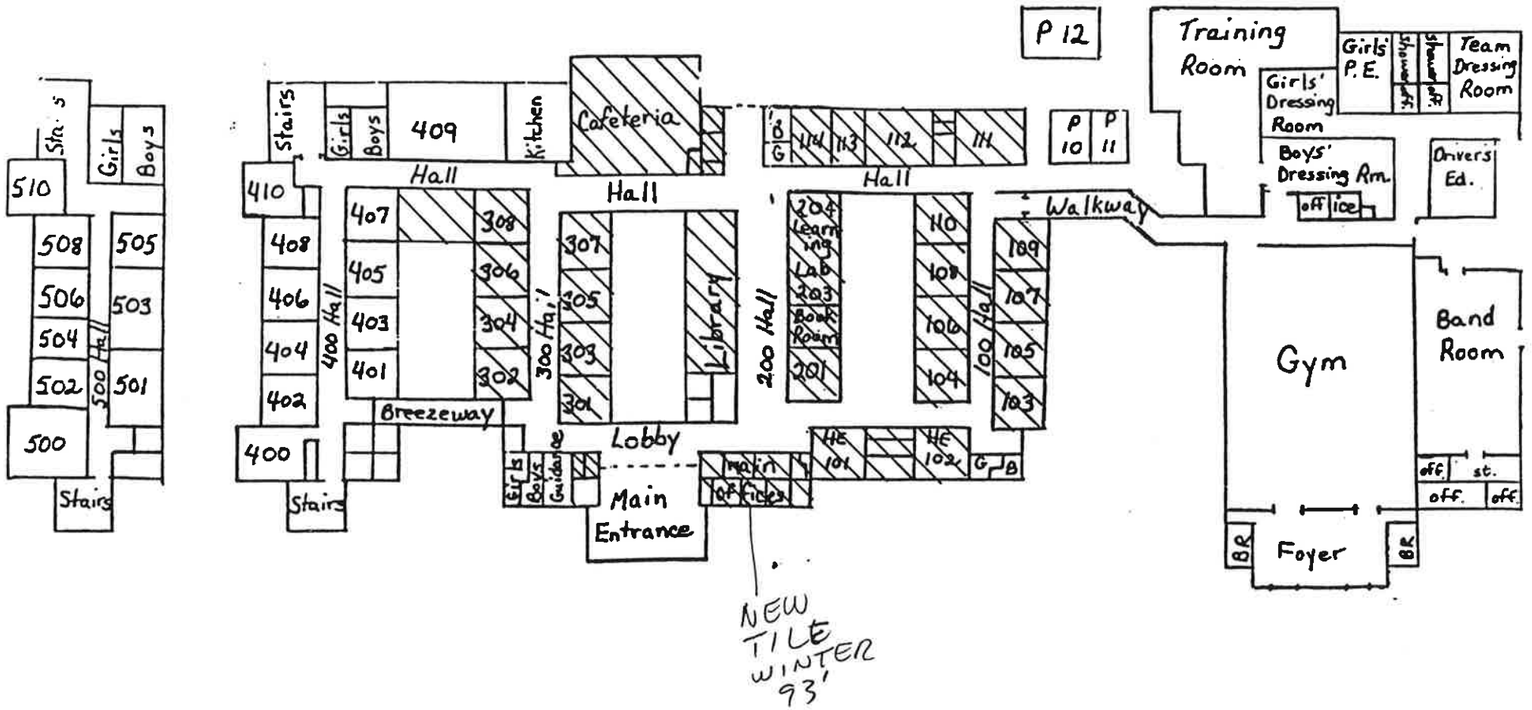
-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



AREA A2 3000 S.F. FLOOR TILE

-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

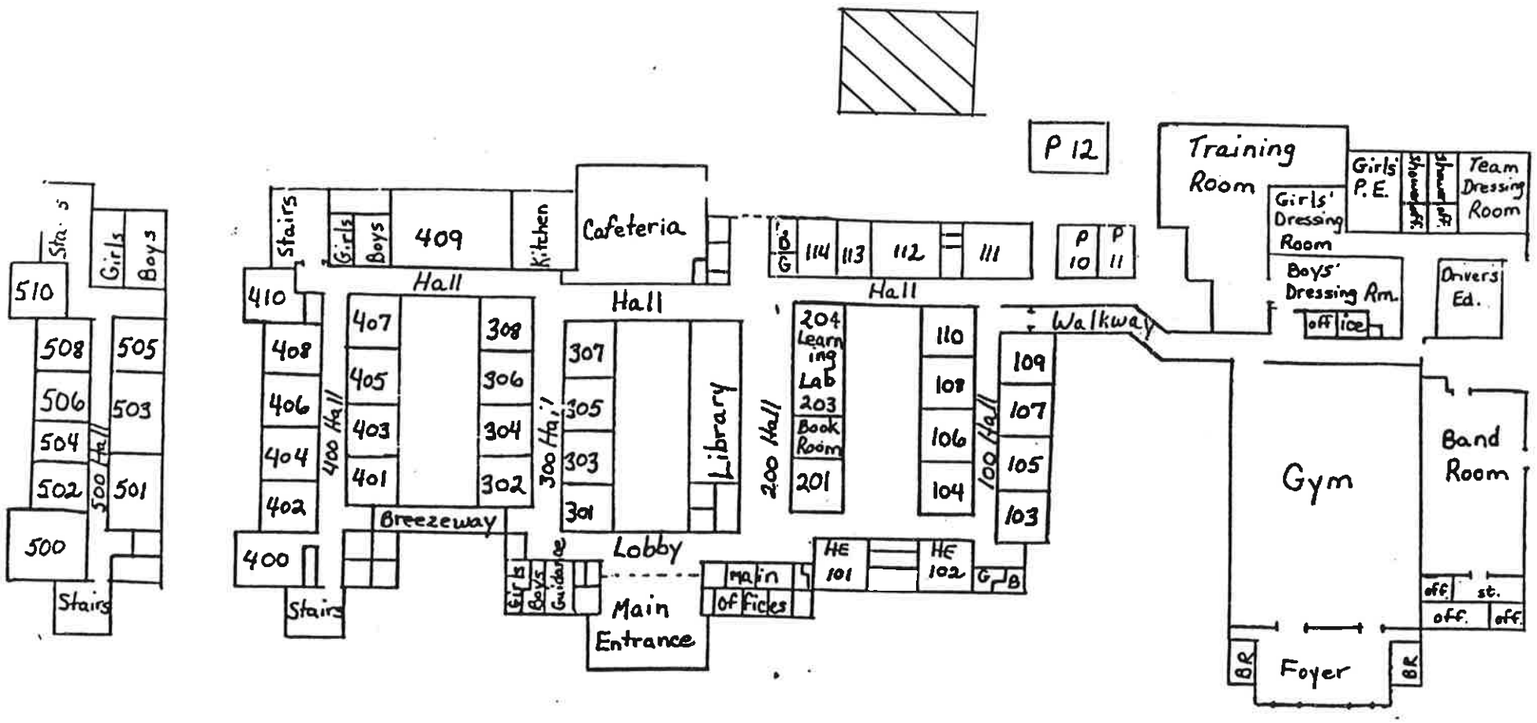
DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



AREA C3 2 S.F. SEAL AT BLR. #1

-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

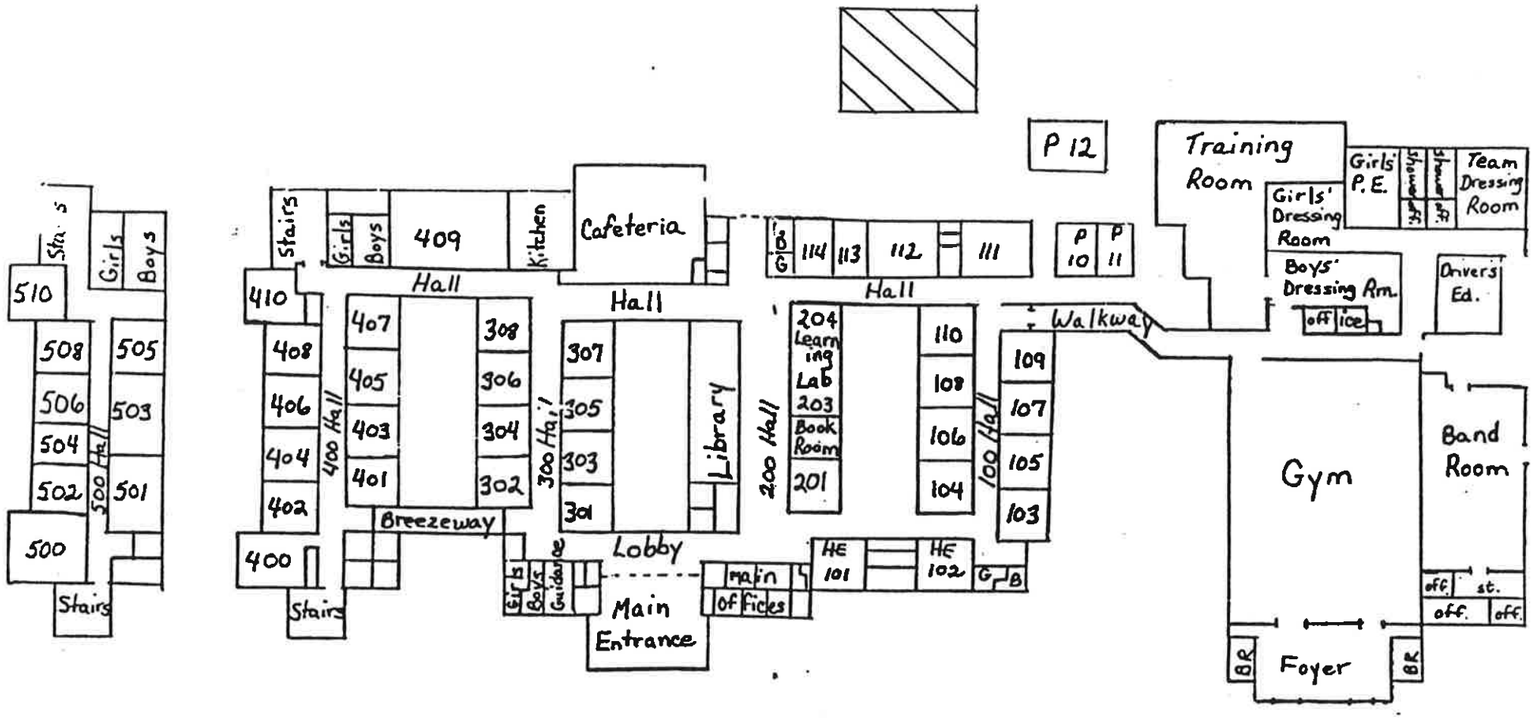
DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

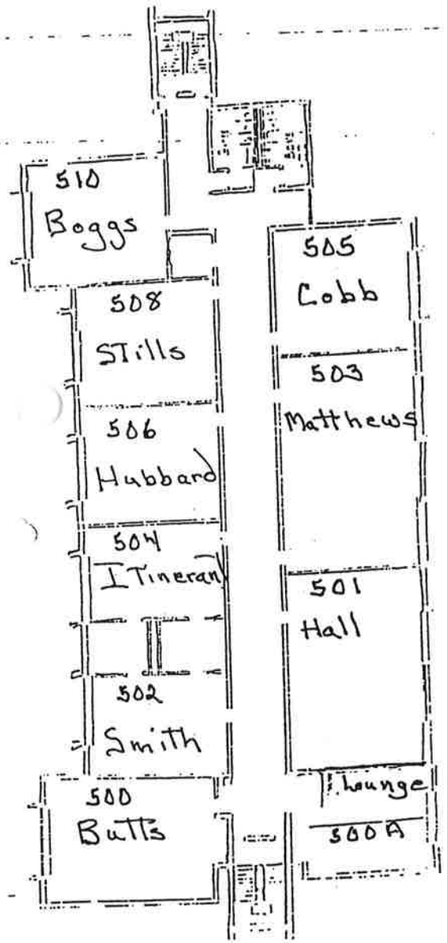
NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

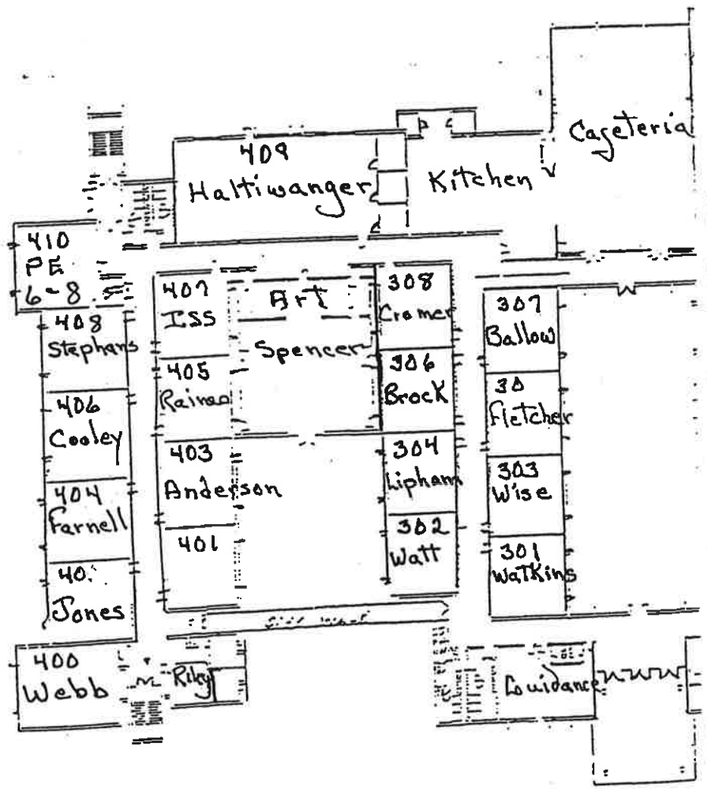


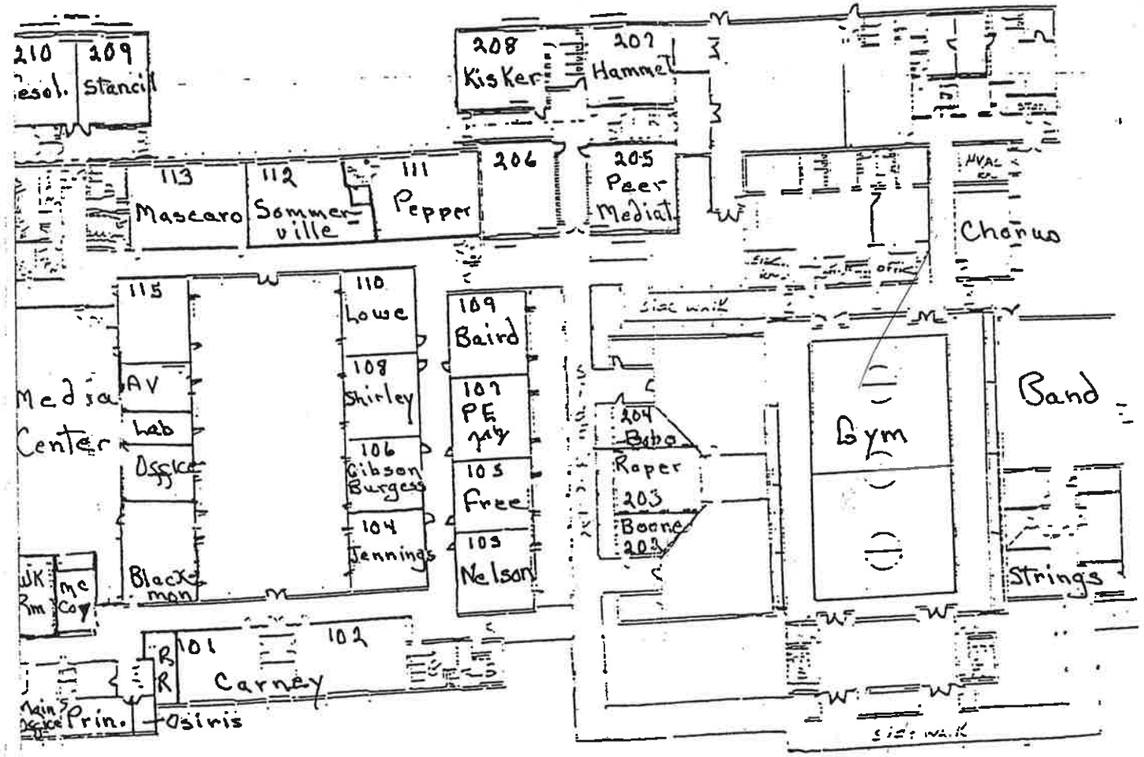
-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

AREA C1 30 ELBOWS AT PIPING



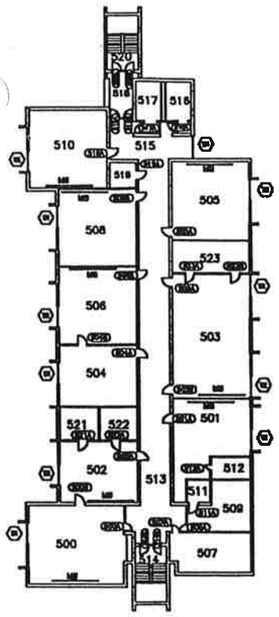
2nd Floor



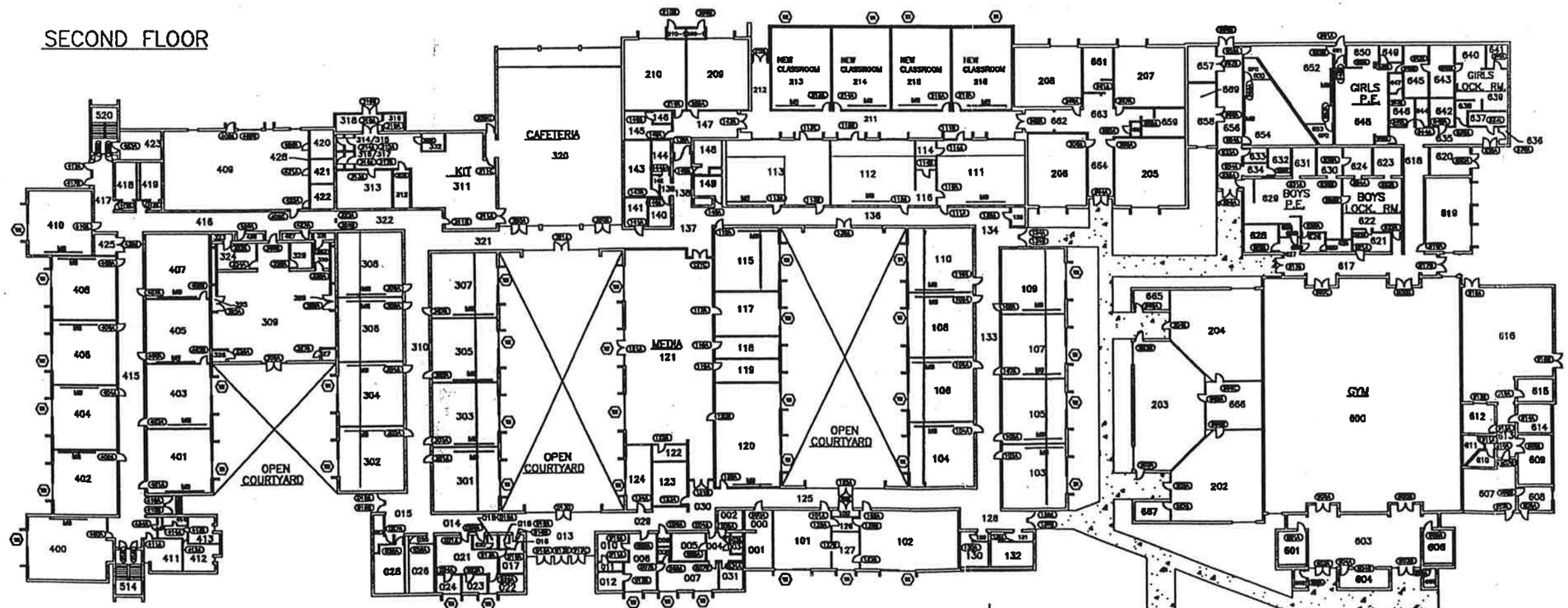


SENECA MIDDLE SCHOOL

1st Floor



SECOND FLOOR



FIRST FLOOR

Seneca Middle School

Abatement of Asbestos Containing
Floor Tile & Mastic

March, 2000

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3. DETERMINATION OF SAMPLING LOCATIONS BUILDINGS ALL

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

The purpose of the survey is to identify all ACBM in the building. In order to accomplish this goal as well as to meet the requirement of the "Asbestos-Containing Materials in Schools" rule (40 CFR Part 763), the materials to be sampled are grouped in "Homogeneous Areas." A "Homogeneous Area" is defined as "an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture." The material should appear similar in all other aspects. If there was any reason to suspect that materials might be different they were assigned to different homogeneous areas.

Each homogeneous area is assigned a unique code. Sampling locations within each homogeneous area were selected by dividing the homogeneous area into nine sub-areas. The sub-areas to be sampled are determined by the use of a random number table. The selection of the individual sampling is conducted in a random manner, but is nevertheless subject to a variety of factors. These include:

a. Size of the homogeneous area
b. Condition of material
c. Distribution of material
d. Accessibility
e. Exposure potential to building occupants
f. Other limitations imposed by the client.

The actual number of samples taken is governed by the requirements of section 763-86 - Sampling.

Finally, one must realize that there are limitations to each survey. Therefore, Environmental Testing & Management, Inc., cannot guarantee that all ACBM was located or identified during the building survey.

INSPECTOR		
TYPED NAME: Colleen M. Christian	SIGNATURE:	DATE: 02/21/2000
SOUTH CAROLINA LICENSE #: 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A1- 2' X 4' WHITE CEILING TILE WITH SMALL FISSURES- KITCHEN OFICE & STORAGE

A2- 12" X 12" LIGHT CREAM FLOOR TILE- CAFETERIA

A2A- MASTIC ASSOCIATED WITH HA-A2

A4- 2' X 4' WHITE ACOUSTICAL CEILING TILE WITH SMALL STIPPLES- CORRIDOR & CLASSROOMS

A5- TAN AND GREY MARBLLIZED ROLLED FLOORING-CHEMISTRY ROOM 501 & 503

A6- HARD STIPPLE PAINTED PLASTER- CANOPIES OVER EXTERIOR DOORWAYS

B1- PLASTER CEILINGS IN BOYS SHOWER ROOM

C1- THERMAL SYSTEM INSULATION (ELBOWS)- BOILER ROOM

C2- THERMAL SYSTEM INSULATION (EXPANSION TANK)- BOILER ROOM

C3- PLASTER CEILING MATERIAL- BOILER ROOM

C4- GASKET MATERIAL ON BOILER # 1 VIEWING GLASS

D1- SPRAY-ON ACOUSTICAL CEILING FINISH- PORTABLE

INSPECTOR		
TYPED NAME: Colleen M. Christian	SIGNATURE:	DATE: 02/21/2000
SOUTH CAROLINA LICENSE # : 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A12- ROOFING MATERIAL AT ROOMS 111-113

A7- BASEBOARD MATERIAL- HALLWAYS

A7A- MASTIC ASSOCIATED WITH HA-A7

D2- 12" X 12" GREY FLOOR TILE WITH WHITE AND DARK GREY STREAKS- PORTABLE # 25

D2A- MASTIC ASSOCIATED WITH HA-D2

D3- 12" X 12" WHITE FLOOR TILE WITH GREY AND TAN FLECKS- PORTABLE # 25

D3A- MASTIC ASSOCIATED WITH HA-D3

D4- SPRAY-ON ACOUSTICAL CEILING MATERIAL- PORTABLE # 25

INSPECTOR:		
TYPED NAME: Colleen M. Christian	SIGNATURE:	DATE: 02/21/2000
SOUTH CAROLINA LICENSE #: 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

B6- CEILING TILE- BAND ROOM

B7- FLOOR TILE

B7A- MASTIC ASSOCIATED WITH HA-B7

B4- THERMAL SYSTEM INSULATION (PIPE WRAP)- BAND ROOM

B5- FLOOR TILE- MINI-GYM

B5A- MASTIC ASSOCIATED WITH HA-B5

A13- CEILING TILE- ROOM 111

A8- FLOOR TILE- ROOM 410

°A- MASTIC ASSOCIATED WITH HA-A8

A9- CEILING TILE- ROOM 410

A10- FLOOR TILE- ROOM 309

A10A- MASTIC ASSOCIATED WITH HA-A10

A11- FLOOR TILE-ROOM 113

A11A- MASTIC ASSOCIATED WITH HA-A11

INSPECTOR:		
TYPED NAME: Colleen Christian	SIGNATURE	DATE: 02/21/2000
SOUTH CAROLINA LICENSE # 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

LISTING OF ASSESSMENT CODES FOR ASBESTOS CONTAINING BUILDING MATERIALS

CODES	EXPLANATION
N/A	NOT APPLICABLE
N/D	NOT DETECTED
D/SD TSI	DAMAGED OR SIGNIFICANTLY - DAMAGED TSI*
DFS	DAMAGED FRIABLE SURFACING
SDFS	SIGNIFICANTLY DAMAGED - FRIABLE SURFACING
D/SD F MISC	DAMAGED OR SIGNIFICANTLY DAMAGED FRIABLE-MISCELLANEOUS
PD	POTENTIAL FOR DAMAGE
PSD	POTENTIAL FOR SIGNIFICANT DAMAGE
OF/PS	OTHER FRIABLE/FRIABLE SUSPECTED
NF	NON-FRIABLE
CHRY	CHRYSOTILE
AMOS	AMOSITE
CROC	CROCIDOLITE

*TSI = Thermal System Insulation

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
9-7-88	SHS-01	MECH. RM/ BOILER RM	X		C1		40	AMOS.	3	ABATED	ELBOW INS.
								CHRY.	2		
	SHS-02	MECH. RM/ BOILER RM	X		C2	400		AMOS.	18	ABATED	TANK INS.
								CHRY.	25		
	SHS-03	MECH. RM	X		C1			NAD		REMOVED	MUD INS.
	SHS-04	MECH. RM	X		C3			NAD			PLASTER
	SHS-05	MECH. RM	X		C3			NAD			PLASTER
	SHS-06	MECH. RM	X		C3			NAD			PLASTER
	SHS-07	MECH. RM	X		C4			CROC.	75		GASKET
	SHS-08	KITCHEN O.	X		A1			NAD			CEILING TILE
	SHS-09	CAFETERIA	X		A2			CHRY.	2	NF	FLOOR TILE
	SHS-09	CAFETERIA	X		A2A			CHRY.	2	INACCESSIBLE	MASTIC
	SHS-10	CAFETERIA	X		A2			CHRY.	2	NF	FLOOR TILE
	SHS-10	CAFETERIA	X		A2A			CHRY.	2	INACCESSIBLE	MASTIC
	SHS-11	BOYS LOCKR	X		B1			NAD			PLASTER
	SHS-12	BOYS LOCKR	X		B1			NAD			PLASTER
	SHS-13	BOYS LOCKR	X		B1			NAD			PLASTER
	SHS-14	TOILET AREA	X		B1			NAD			PLASTER
	SHS-15	TOILET AREA	X		B1			NAD			PLASTER

INSPECTOR'S NAME: Colleen M. Christian
SIGNATURE:
TELEPHONE # : (864) 963-3688
DATE: 01/24/2000

SCDHEC LICENSE#: 20583
STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
9-7-88	SHS-16	ELEC. RM	X		A1			NAD			CEILING TILE
	SHS-17	CORRIDOR	X		A4			NAD			CEILING TILE
	SHS-18	CLASSROOM	X		A4			NAD			CEILING TILE
	SHS-19	CHEMISTRY	X		A5	500		CHRY.	12	D/MISC.	LINOLEUM
	SHS-20	CHEMISTRY	X		A5	500		CHRY.	12	D/MISC	LINOLEUM
	SHS-21	PORTABLE	X		D1			NAD			SPRAY-ON
	SHS-22	PORTABLE	X		D1			NAD			SPRAY-ON
	SHS-23	PORTABLE	X		D1			NAD			SPRAY-ON
	SHS-24	CANOPIES	X		A6			NAD			PLASTER
	SHS-25	CANOPIES	X		A6			NAD			PLASTER
	SHS-26	CANOPIES	X		A6			NAD			PLASTER
1-24-00	B6-01	BAND ROOM		X	B6			NAD			CEILING TILE
	B6-02	BAND ROOM		X	B6			NAD			CEILING TILE
	B7-03	BAND ROOM		X	B7			NAD			FLOOR TILE
	B7-03	BAND ROOM		X	B7A			CHRY.	10	NF	MASTIC
	B7-04	BAND ROOM		X	B7			NAD			FLOOR TILE
	B7-04	BAND ROOM		X	B7A			ASSUMED			MASTIC

INSPECTOR'S NAME: Colleen M. Christian
SIGNATURE:
TELEPHONE #: (864) 963-3688
DATE: 01/24/2000

SCDHEC LICENSE#: 20583
STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
1-24-00	B4-05	BAND ROOM		X	B4			NAD			PIPE WRAP
	B4-06	BAND ROOM		X	B4			NAD			PIPE WRAP
	B1-07	BOYS LOCKR		X	B1			NAD			PLASTER
	B1-08	BOYS LOCKR		X	B1			NAD			PLASTER
	B1-09	BOYS LOCKR		X	B1			NAD			PLASTER
	B5-10	MINI-GYM		X	B5			NAD			FLOOR TILE
	B5-10	MINI-GYM		X	B5A			CHRY.	8	NF	MASTIC
	B5-11	MINI-GYM		X	B5			NAD			FLOOR TILE
	B5-11	MINI-GYM		X	B5A			ASSUMED		NF	MASTIC
	A13-12	ROOM 111		X	A13			NAD			CEILING TILE
	A13-13	ROOM 111		X	A13			NAD			CEILING TILE
	A8-14	ROOM 410		X	A8			NAD			FLOOR TILE
	A8-14	ROOM 410		X	A8A			NAD			MASTIC
	A8-15	ROOM 410		X	A8			NAD			FLOOR TILE
	A8-15	ROOM 410		X	A8A			NAD			MASTIC
	A9-16	ROOM 410		X	A9			NAD			CEILING TILE
	A9-17	ROOM 410		X	A9			NAD			CEILING TILE

INSPECTOR'S NAME: Colleen M. Christian
SIGNATURE:
TELEPHONE #: (864) 963-3688
DATE: 01/24/2000

SCDHEC LICENSE#: 20583
STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
1-24-00	A10-18	ROOM 309		X	A10			NAD			FLOOR TILE
	A10-18	ROOM 309		X	A10A			NAD			MASTIC
	A10-19	ROOM 309		X	A10			NAD			FLOOR TILE
	A10-19	ROOM 309		X	A10A			CHRY.	5	NF	MASTIC
	C7-20	BOILER RM		X	C7			NAD			PIPE WRAP
	C7-21	BOILER RM		X	C7			NAD			PIPE WRAP
	A11-22	ROOM 113		X	A11			CHRY.	5	GOOD	FLOOR TILE
	A11-22	ROOM 113		X	A11A			CHRY.	7	NF	MASTIC
	A11-23	ROOM 113		X	A11			CHRY.	5	GOOD	FLOOR TILE
	A11-23	ROOM 113		X	A11A			CHRY.	7	NF	MASTIC
	A2-24	CAFETERIA		X	A2			CHRY.	6	GOOD	FLOOR TILE
	A2-24	CAFETERIA		X	A2A			CHRY.	8	NF	MASTIC
	A2-25	CAFETERIA		X	A2			CHRY.	6	GOOD	FLOOR TILE
	A2-25	CAFETERIA		X	A2A			CHRY.	8	NF	MASTIC
	A12-26	ROOF111/113		X	A12			NAD			ROOFING
	A12-27	ROOF111/113		X	A12			NAD			ROOFING

INSPECTOR'S NAME: Colleen M. Christian
SIGNATURE:
TELEPHONE #: (864) 963-3688
DATE: 01/24/200

SCDHEC LICENSE#: 20583
STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
2-21-00	C1-01	BOILER RM		X	C1		40	AMOS.		ABATED	ELBOW INS.
	C1-02	BOILER RM		X	C1		40	NOT ANALYZED		ABATED	ELBOW INS.
	C1-03	BOILER RM		X	C1		40	NOT ANALYZED		ABATED	ELBOW INS.
	C5-04	BOILER RM		X	C5		24	NAD			VALVE INS.
	C5-05	BOILER RM		X	C5		24	NAD			VALVE INS.
	C5-06	BOILER RM		X	C5		24	NAD			VALVE INS.
	C2-07	BOILER RM		X	C2	25		AMOS.		ABATED	TANK INS.
								CHRY.			
	C2-08	BOILER RM		X	C2	25		NOT ANALYZED		ABATED	TANK INS.
	C2-09	BOILER RM		X	C2	25		NOT ANALYZED		ABATED	TANK INS.
	B2-10	GYM B.R.		X	B2			NAD			ELBOW INS.
	B2-11	GYM B.R.		X	B2			NAD			ELBOW INS.
	B2-12	GYM B.R.		X	B2			NAD			ELBOW INS.
	B3-13	GYM B.R.		X	B3			NAD			PIPE WRAP
	B3-14	GYM B.R.		X	B3			NAD			PIPE WRAP
	B3-15	GYM B.R.		X	B3			NAD			PIPE WRAP
	A7-16	HALLS		X	A7			NAD			BASEBOARD
	A7-16	HALLS		X	A7A			NAD			MASTIC

INSPECTOR'S NAME: Colleen M. Christian
SIGNATURE:
TELEPHONE #: (864) 963-3688
DATE: 02/21/2000

SCDHEC LICENSE#: 20583
STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
2-21-00	A7-17	HALLS		X	A7			NAD			BASEBOARD
	A7-17	HALLS		X	A7A			NAD			MASTIC
	A7-18	HALLS		X	A7			NAD			BASEBOARD
	A7-18	HALLS		X	A7A			NAD			MASTIC
	D2-19	PORTABLE 25		X	D2			NAD			FLOOR TILE
	D2-19	PORTABLE 25		X	D2A			NAD			MASTIC
	D2-20	PORTABLE 25		X	D2			NAD			FLOOR TILE
	D2-20	PORTABLE 25		X	D2A			NAD			MASTIC
	D3-21	PORTABLE 25		X	D3			NAD			FLOOR TILE
	D3-21	PORTABLE 25		X	D3A			NAD			MASTIC
	D3-22	PORTABLE 25		X	D3			NAD			FLOOR TILE
	D3-22	PORTABLE 25		X	D3A			NAD			MASTIC
	D4-23	PORTABLE 25		X	D4			NAD			SPRAY-ON
	D4-24	PORTABLE 25		X	D4			NAD			SPRAY-ON
	D4-24	PORTABLE 25		X	D4			NAD			SPRAY-ON

INSPECTOR'S NAME: Colleen M. Christian | SIGNATURE: | TELEPHONE #: (864) 963-3688 | DATE: 02/21/2000

SCDHEC LICENSE#: 20583 | STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-01	28839080	AMOSITE CHRYSOTILE	3 2	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, CLAY
OC-SHS-02	28839081	AMOSITE CHRYSOTILE	18 25	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, CLAY
OC-SHS-03	28839082		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER, CLAY
OC-SHS-04	28839083		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-05	28839084		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-06	28839085		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-07	28839086	CROCIDOLITE	75	HETEROGENEOUS, FIBROUS, UNTREATED, SYNTHETIC FIBER, CELLULOSE
OC-SHS-08	28839087		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER
OC-SHS-09	28839088	CHRYSOTILE	4	HETEROGENEOUS, MIXED, UNTREATED, QUARTZ, FLOOR TILE, MASTIC (TILE 2%, MASTIC 2%)
OC-SHS-10	28839089	CHRYSOTILE	4	HETEROGENEOUS, MIXED, UNTREATED, QUARTZ, FLOOR TILE, MASTIC (TILE 2%, MASTIC 2%)

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-11	28839090		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-12	28839091		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-13	28839092		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-14	28839093		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-15	28839094		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-16	28839095		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER
OC-SHS-17	28839096		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, PERLITE
OC-SHS-18	28839097		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, PERLITE
OC-SHS-19	28839098	CHRYSOTILE	12	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, VINYL
OC-SHS-20	28839099	CHRYSOTILE	12	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, VINYL
OC-SHS-21	28839100		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE
OC-SHS-22	28839101		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-23	28839102		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE
OC-SHS-24	28839103		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ
OC-SHS-25	28839104		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ
OC-SHS-26	28839104A		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

Sequence # MCAOSHS3.259

Sequence # 24

SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928
Excellence in Service and Technology
AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT: 1765-00-17
CLIENT: Environmental Testing & Management
ADDRESS: P.O. Box 896
Mauldin, SC 29662
PO NO.:
PROJECT NAME: Oconee Co. Schools
PROJECT NO.:
JOB LOCATION: Seneca Middle Sch

DATE COLLECTED: 1/24/2000
DATE RECEIVED: 1/27/2000
DATE ANALYZED: 1/27/2000
DATE REPORTED: 4/13/2000

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
B6-01	1605762	Band rm CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
B6-02	1605763	Band rm CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
B7-03	1605764	Band rm FT/mastic		
	Layer 1:	Floor Tile	**No**	Gray, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	10% Asbestos			CHRYSOTILE 10%
	90% Non-Asbestos			NON FIBROUS MATERIAL 90%
B7-04	1605765	Band rm FT/mastic		
	Layer 1:	Floor Tile	**No**	Gray, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

***MENDED REPORT ***

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

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic		
	Not analyzed due to positive stop instructions.			
B4-05	1605766	Band rm PW		
	Layer 1:	Wrap Material	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 60%, METAL FOIL 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 30%	
B4-06	1605767	Band rm PW		
	Layer 1:	Wrap Material	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 60%, METAL FOIL 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 30%	
B4-07	1605768	Boys locker rm C mtr		
	Layer 1:	Plaster Basecoat	**No**	Gray, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Wet Sample			
	Layer 2:	Skimcoat	**No**	White, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
B1-08	1605769	Boys locker rm C mtr		
	Layer 1:	Plaster	**No**	Gray, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	No Skimcoat Found			
B1-09	1605770	Boys locker rm C mtr		
	Layer 1:	Plaster	**No**	White, Granular
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	No Basecoat Found			
B5-10	1605771	Mini gym FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos		CHRYSOTILE 8%	
	92% Non-Asbestos		NON FIBROUS MATERIAL 92%	
B5-11	1605772	Mini gym FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	

***MENDED REPORT ***

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

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic		
	Not analyzed due to positive stop instructions.			
A13-12	1605773	Room 111 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			FOAMED GLASS 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
A13-13	1605774	Room 111 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			FOAMED GLASS 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
A8-14	1605775	Room 410 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Yellow, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 96%, SYNTHETIC FIBER 2%
A8-15	1605776	Room 410 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Yellow, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 96%, SYNTHETIC FIBER 2%
A9-16	1605777	Room 410 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
A9-17	1605778	Room 410 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
A10-18	1605779	Room 309 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

***MENDED REPORT ***

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	**No**	Clear, Soft
	100% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%	
A10-19	1605780	Room 309 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Sample Not Homogenous With #18 Mastic			
C7-20	1605781	Boiler rm PW		
	Layer 1:	Pipe Wrap	**No**	Gray/Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 65%, NON FIBROUS MATERIAL 35%	
C7-21	1605782	Boiler rm PW		
	Layer 1:	Pipe Wrap	**No**	Green/Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 65%, NON FIBROUS MATERIAL 35%	

ANALYST: SAMI A. HOSN
Total no. of pages in report = 4

REVIEWED BY

AMENDED REPORT *

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

SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928
Excellence in Service and Technology
AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT:	1765-00-18	**DATE COLLECTED:**	2/ 8/2000
CLIENT:	Environmental Testing & Management	**DATE RECEIVED:**	2/ 9/2000
ADDRESS:	P.O. Box 896	**DATE ANALYZED:**	2/ 9/2000
	Mauldin, SC 29662	**DATE REPORTED:**	4/13/2000
PO NO.:	8571		
PROJECT NAME:	Oconee County School		
PROJECT NO.:			
JOB LOCATION:	Seneca Middle School		

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
A11-22	1612058	Rm 113 FT/M		
	Layer 1:	Floor tile	**Yes**	Beige, Organically Bound
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	7% Asbestos		CHRYSOTILE 7%	
	93% Non-Asbestos		CELLULOSE FIBER 3%, NON FIBROUS MATERIAL 90%	
A11-23	1612059	Rm 113 FT/M		
	Layer 1:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos		CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 96%	
	Layer 2:	Floor tile	**Yes**	Beige, Organically Bound
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Layer 3:	Mastic	**Yes**	Black, Bituminous
	7% Asbestos		CHRYSOTILE 7%	
	93% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 91%	
A2-24	1612060	Cafeteria FT/M		
	Layer 1:	Floor tile	**Yes**	Cream, Organically Bound
	6% Asbestos		CHRYSOTILE 6%	
	94% Non-Asbestos		NON FIBROUS MATERIAL 94%	

***MENDED REPORT ***

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos		CHRYSOTILE 8%	
	92% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 90%	
A2-25	1612061	Cafeteria FT/M		
	Layer 1:	Floor tile	**Yes**	Cream, Organically Bound
	6% Asbestos		CHRYSOTILE 6%	
	94% Non-Asbestos		NON FIBROUS MATERIAL 94%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos		CHRYSOTILE 8%	
	92% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 90%	
A12-26	1612062	Rf by rm 111-113 RM		
	Layer 1:	Roofing	**No**	Black, Bituminous, Brittle
	100% Non-Asbestos		CELLULOSE FIBER 15%, NON FIBROUS MATERIAL 85%	
A12-27	1612063	Rf by rm 111-113 RM		
	Layer 1:	Roofing	**No**	Black, Bituminous
	100% Non-Asbestos		CELLULOSE FIBER 15%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 75%	

ANALYST: SHANNON HALL
Total no. of pages in report = 2

Jean Mayes
REVIEWED BY

***MENDED REPORT ***

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

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AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT: 1765-00-19
CLIENT: Environmental Testing & Management
ADDRESS: P.O. Box 896
Mauldin, SC 29662
PO NO.: 8571
PROJECT NAME: Oconee Co Sch Dist
PROJECT NO.:
JOB LOCATION: Seneca Middle

DATE COLLECTED: 2/21/2000
DATE RECEIVED: 2/24/2000
DATE ANALYZED: 2/28/2000
DATE REPORTED: 4/13/2000

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
C1-01	1621181	Boiler rm elbow		
	Layer 1:	Elbow	**Yes**	Beige, Powdery
	2% Asbestos		AMOSITE 2%	
	98% Non-Asbestos		CELLULOSE FIBER 8%, MINERAL/GLASS WOOL 45%, NON FIBROUS MATERIAL 45%	
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
C1-02	1621182	Boiler rm elbow		
	Layer 1:	Elbow		
	Not analyzed due to positive stop instructions.			
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
C1-03	1621183	Boiler rm elbow		
	Layer 1:	Elbow		
	Not analyzed due to positive stop instructions.			
	Layer 2:	Cover	**No**	White/Green, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	

***MENDED REPORT ***

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

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
C5-04	1621184	Boiler rm valve body		
	Layer 1:	Powdery Material	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	White/Green, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-05	1621185	Boiler rm valve body		
	Layer 1:	Powdery Material	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	Green/Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-06	1621186	Boiler rm valve body		
	Layer 1:	Powdery Material	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-07	1621187	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover	**Yes**	Gray/Cream, Powdery, Fibrous
	55% Asbestos			AMOSITE 25%, CHRYSOTILE 30%
	45% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 20%, NON FIBROUS MATERIAL 20%
	Unable to separate individual layers.			
C2-08	1621188	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover		
	Not analyzed due to positive stop instructions.			
C2-09	1621189	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover		
	Not analyzed due to positive stop instructions.			
B2-10	1621190	Gym boiler rm elbow		
	Layer 1:	Elbow	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%

***MENDED REPORT ***

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
B2-11	1621191	Gym boiler rm elbow		
	Layer 1:	Elbow	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
B2-12	1621192	Gym boiler rm elbow		
	Layer 1:	Elbow/Cover	**No**	Gray/Cream, Powdery, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 10%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 40%
	Unable to separate individual layers.			
B3-13	1621193	Gym boil rm pipe wrp		
	Layer 1:	Fibrous Material	**No**	Brown/Black, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
	Layer 2:	Fibrous Material	**No**	Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
	Layer 3:	Fibrous Material	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
B3-14	1621194	Gym boil rm pipe wrp		
	Layer 1:	Fibrous Material	**No**	Brown, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 95%, NON FIBROUS MATERIAL 5%
	Layer 2:	Fibrous Material	**No**	Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
	Layer 3:	Fibrous Material	**No**	White/Silver, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 70%, METAL FOIL 5%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 15%
B3-15	1621195	Gym boil rm pipe wrp		
	Layer 1:	Wrap	**No**	Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 70%, METAL FOIL 5%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 15%
A7-16	1621196	Hallway baseboard		
	Layer 1:	Baseboard	**No**	Brown, Rubbery
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

AMENDED REPORT *

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AHERA Reinspection Summary
for the
Oconee County School District
Seneca Middle School

A reinspection of known or assumed asbestos containing material was performed per the requirements of the Asbestos Hazard Emergency Response Act at the above school on September 5, 1997. The following highlights the findings of the survey and provides proper management planner recommendations for applicable areas:

Homogeneous Areas with a Changed Condition:

HA# - A2, A5, and C1.

Inspector Comments:

Homogeneous areas that were abated prior to the 1994 Reinspection have been deleted from the table.

Management Planner Recommendations:

Patch/repair damaged areas and clean up floor in the boiler room. Continue to follow recommendations made in previous reports.

Name of Inspector: Richard B. Tucker
Signature of Inspector: R. B. Tucker
SC-DHEC: 22051

Name of Management Planner: Pamela Smith
Signature of Management Planner: Pamela Smith
SC-DHEC: 1700

Name of LEA Designee: Richard Alexander
Signature of LEA Designee: R Alexander
Date of Implementation within Management Plan: 9-5-97

AHERA Reinspection of Known or Assumed Asbestos Containing Materials
Oconee County School District

School: **Seneca Middle School** | Date: 09/05/97 | Page: 1 of 2

Homog. Area #	Material Type	Previous Reinspection Assessment	Current Condition	Locations/Comments
A2	12x12 Beige Speckle Vinyl Floor Tile	X Non- _Fri G **D** SD PFD **L** M H Other:	X Non- _Friable G **<10D** >10D <25D >25D PFD: **L** M H AHERA Cat(1-8): 5 Chgd Cond: **Y** N	See Document #3 of Original AHERA Report for locations. **301 has two cracked tile. 307 is chipped at the entrance. 200 was abated and renovated to a media center.**
A5	Beige/Gray Speckle Sheet Vinyl	X Non- _Fri **G** D SD PFD **L** M H Other:	X Non- _Friable G **<10D** >10D <25D >25D PFD: **L** M H AHERA Cat(1-8): 5 Chgd Cond: **Y** N	See Document #3 of Original AHERA Report for locations. **Sheet were separating at seams.**
C1	Pipe Insulation Elbows	__Non- X Fri **G** D SD PFD: **L** M H Other:	_Non- X Friable G **<10D** >10D <25D >25D PFD: L M **H** AHERA Cat(1-8): 1 Chgd Cond: **Y** N	See Document #3 of Original AHERA Report for locations. **Insulation damage near valve that controls hot and cold water for 100, 200, 300 halls. Damage of jackets on fiberglass insulation also. White material on floor also.**
C3	Seal at Boiler #1	__Non- X Fri **G** D SD PFD: L **M** H Other:	_Non- X Friable **G** <10D >10D <25D >25D PFD: L **M** H AHERA Cat(1-8): 5 Chgd Cond: Y **N**	See Document #3 of Original AHERA Report for locations. **No Change.**
	3" Wide Vinyl Strips Black	X Non- _Fri **G** D SD PFD: **L** M H Other:	X Non- _Friable **G** <10D >10D <25D >25D PFD: **L** M H AHERA Cat(1-8): 8 Chgd Cond: Y **N**	See Document #3 of Original AHERA Report for locations. **No Change.**
	Wallboard Tape and Spackle	__Non- X Fri **G** D SD PFD: L **M** H Other:	__Non- _Friable G <10D >10D <25D >25D PFD: L M H AHERA Cat(1-8): _ Chgd Cond: Y N	See Document #3 of Original AHERA Report for locations. **Not identified.**

For Each Homogeneous Area Which has a Changed Condition ,Additional Information has been Included Discussing the Change.

Inspector: Richard B. Tucker SC license #22051 | Signature: R. B. Tucker

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

1. LIST OF SCHOOL BUILDINGS

BUILDING NAME (and Address if different)	Check Here for Presence of				NO ACM	DATE INSPECTED	COMMENTS
	ACBM		SUSPECT ACBM				
	FRIABLE	NONFRIABLE	FRIABLE	NONFRIABLE			
Main Building		X		X		01/24/2000 02/08/2000 02/21/2000	
Boiler Building	X					01/24/2000 02/08/2000 02/21/2000	

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

2- DRAWINGS, DIAGRAMS, SKETCHES
And/or PHOTO OF DRAWING

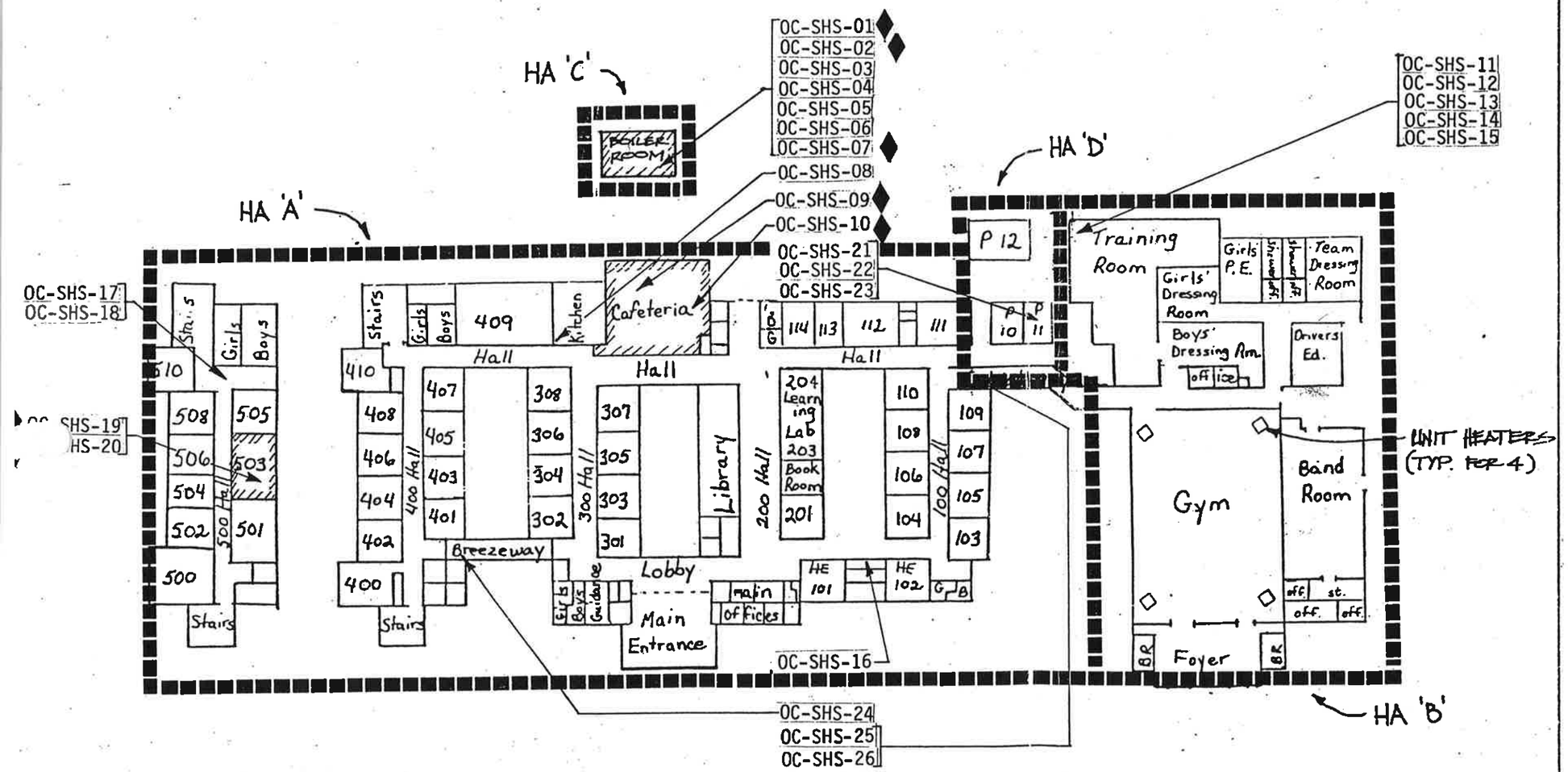
BUILDINGS ALL

The following drawings, diagrams, sketches, and/or photos are submitted

SEE ATTACHED

'ATE OF SOUTH CAROLINA

- DRAWINGS, DIAGRAMS, SKETCHES and/or PHOTO OF DRAWING



LEA: Oconee County School District
SCHOOL: Seneca High School
BUILDING: Entire
146,789 sf

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

■■■ – DENOTES HOMOGENEOUS AREA

◆ – DENOTES ACBM

– DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

BULK SAMPLE LEGEND:

XXX XXX XX
- SAMPLE NO.
- SCHOOL
- SCHOOL DISTRICT

HOMOGENEOUS AREA LEGEND FOR ACBM

SAMPLE #	HAID#	AMT.	DESCRIPTION
OC-SHC-01	C1	40	elbows @ piping
OC-SHC-02	C2	400sf	Expan tank
OC-SHC-07	C3	2sf	Seal @ blr #1
OC-SHS-9&10	A2	3000sf	Floor tile
OC-SHS-19&20	A5	500sf	Rolled flooring

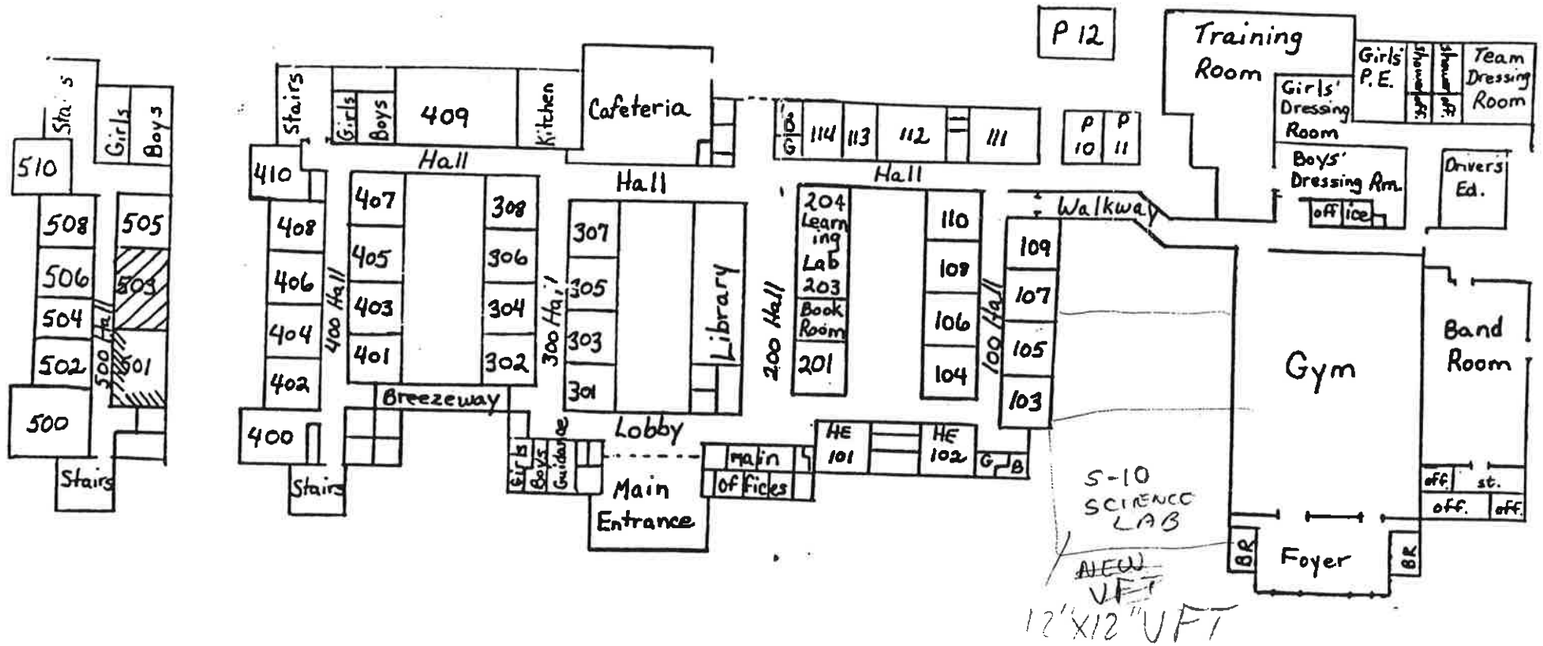
- DRAWINGS, DIAGRAMS, SKETCHES and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

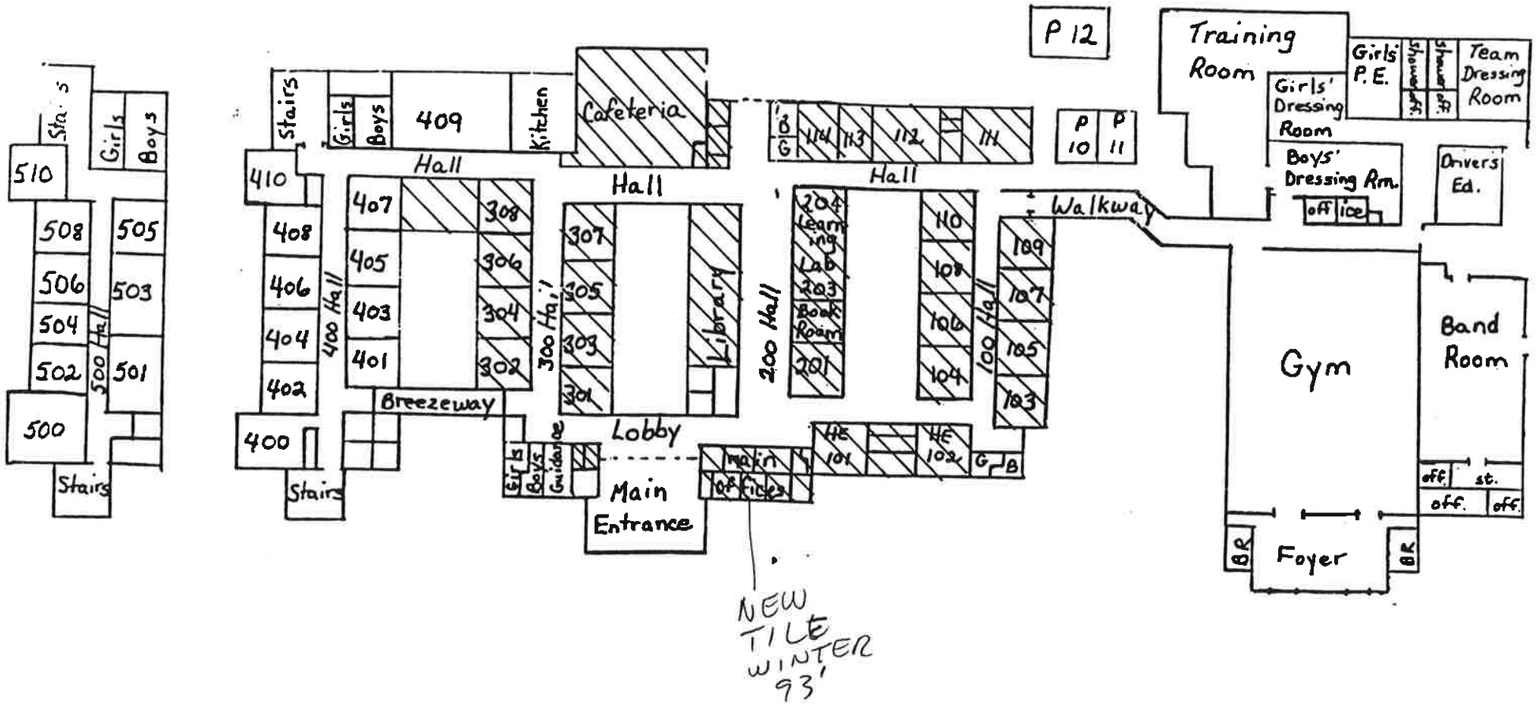


-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

AREA A5 500 S.F. ROLLED FLOORING

Sequence # 4

- DRAWINGS, DIAGRAMS, SKETCHES and/or PHOTO OF DRAWING



AREA A2 3000 S.F. FLOOR TILE

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.

-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

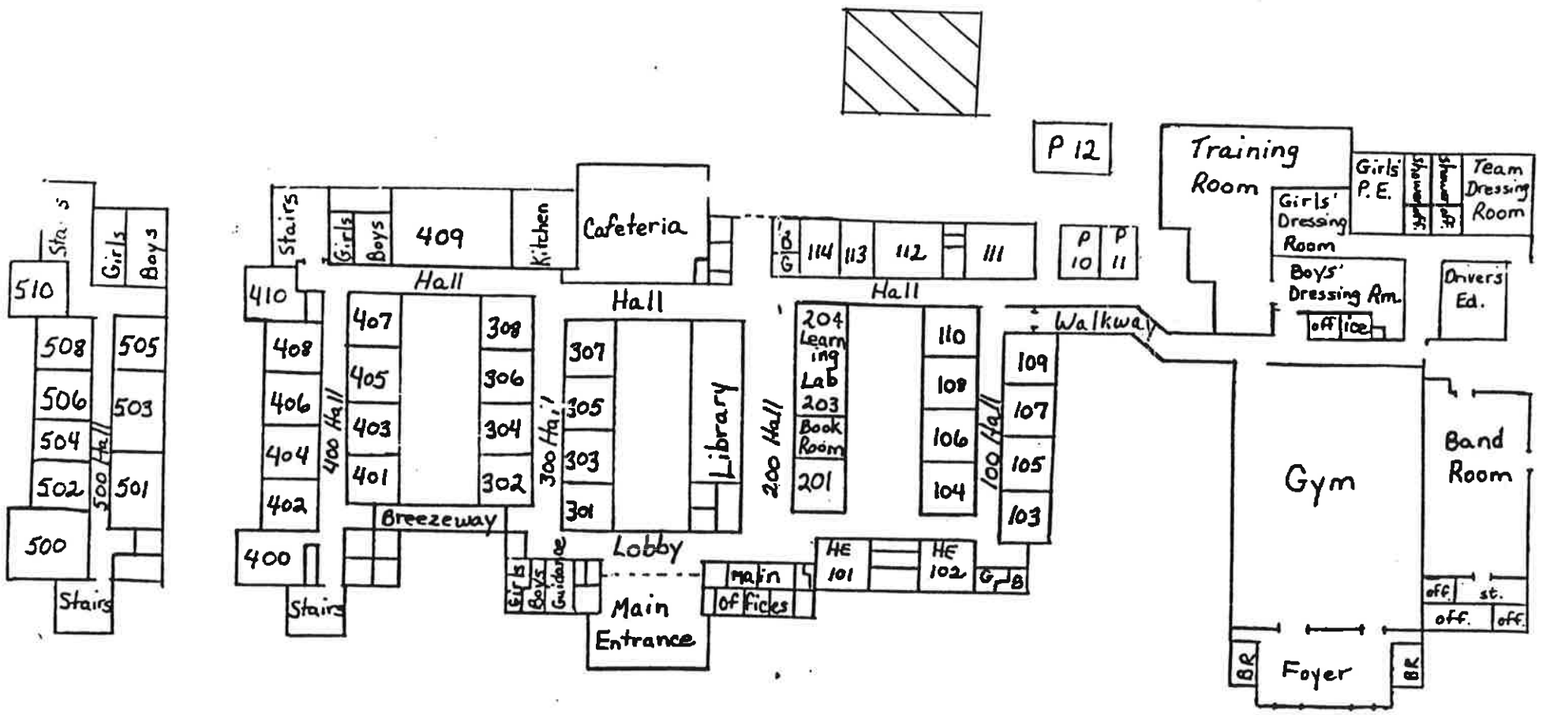
DRAWINGS, DIAGRAMS, SKETCHES
and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

AREA C3 2 S.F. SEAL AT BLR. #1

Sequence # 6

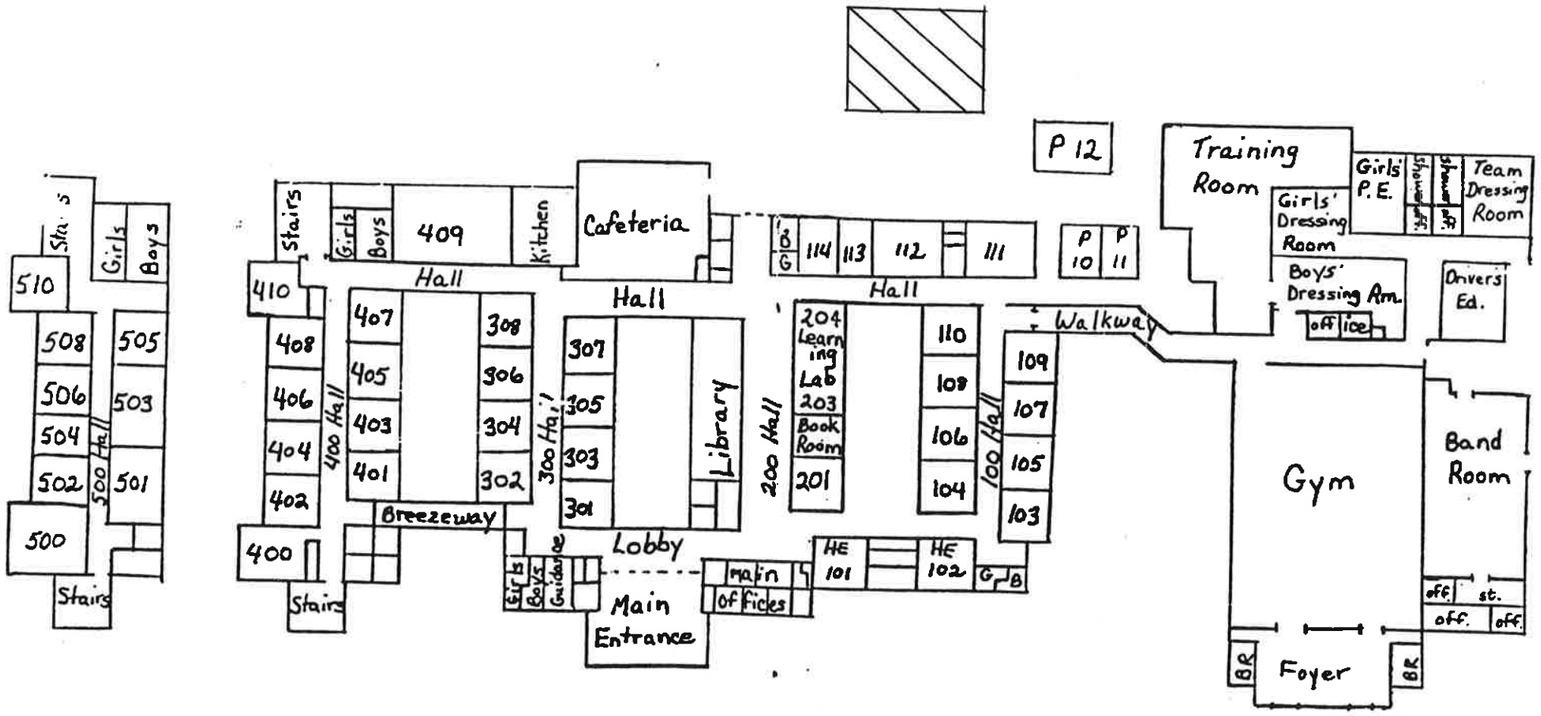
- DRAWINGS, DIAGRAMS, SKETCHES and/or PHOTO OF DRAWING

Date: _____

LEA: OCONEE COUNTY SCHOOL DISTRICT
SCHOOL: SENECA MIDDLE (FORMERLY SENECA HIGH)
BUILDING:

NOTES:

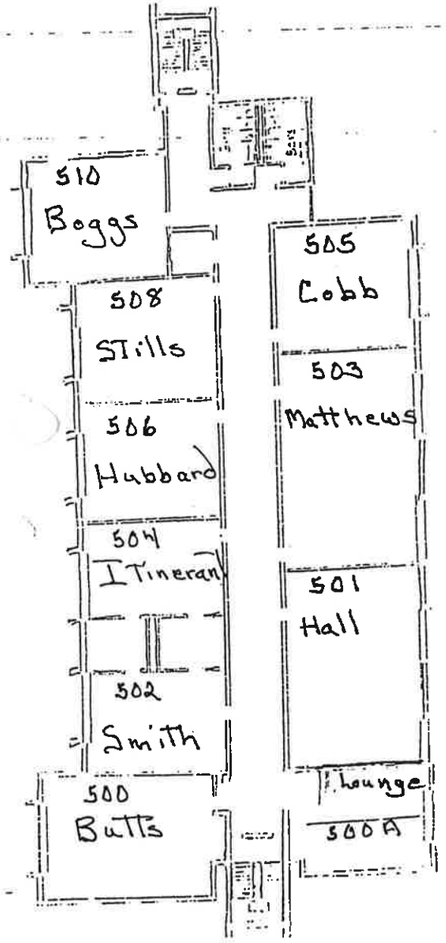
1. FOR PHOTOGRAPHS OF BULK SAMPLE LOCATIONS, SEE SECTION 2.
2. FOR BULK SAMPLE ANALYSIS, SEE SECTION 5 THIS BOOKLET.
3. HOMOGENEOUS MATERIALS ARE IDENTIFIED IN SECTION 4 OF THIS BOOKLET.



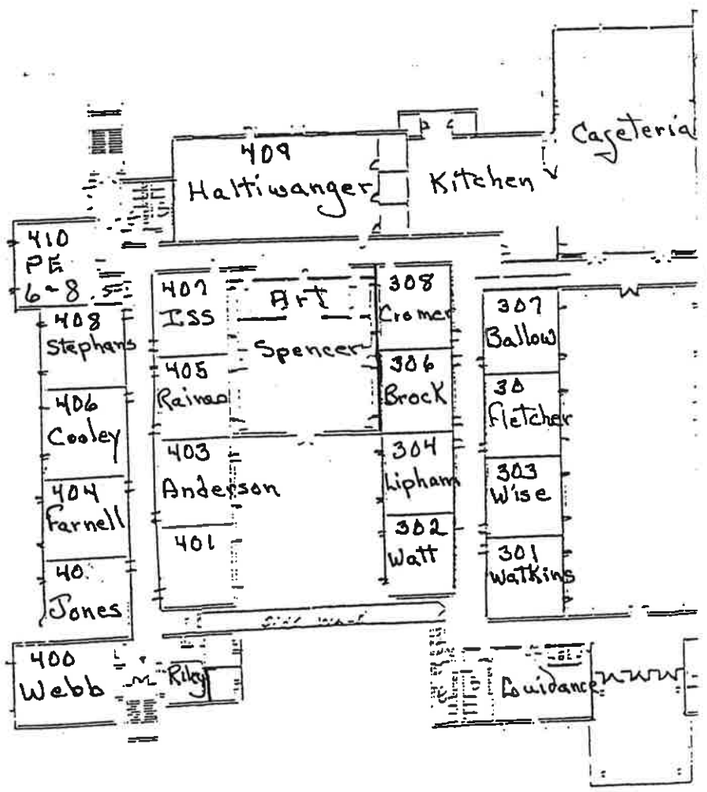
AREA C1 30 ELBOWS AT PIPING

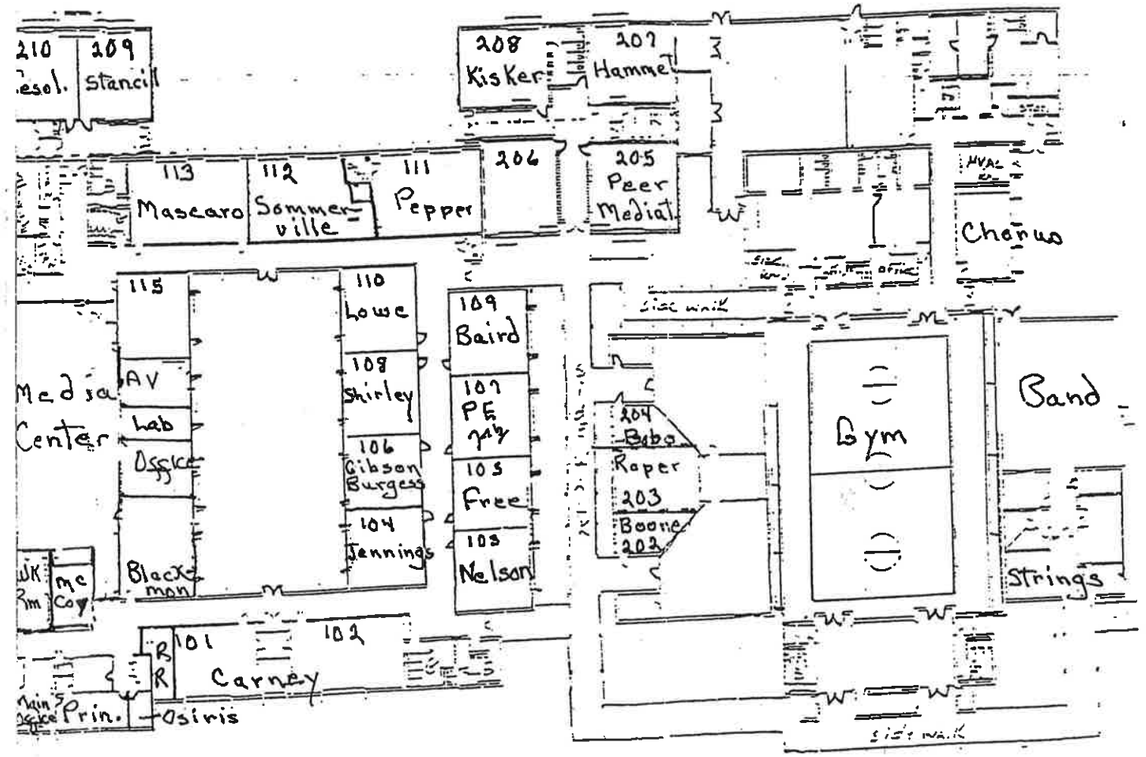
-DENOTES FUNCTIONAL AREA WHERE ACBM EXISTS

Sequence # 7



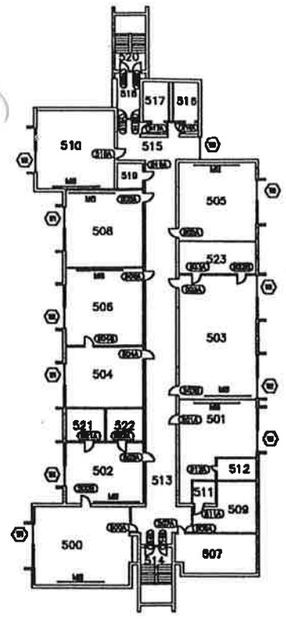
2nd Floor



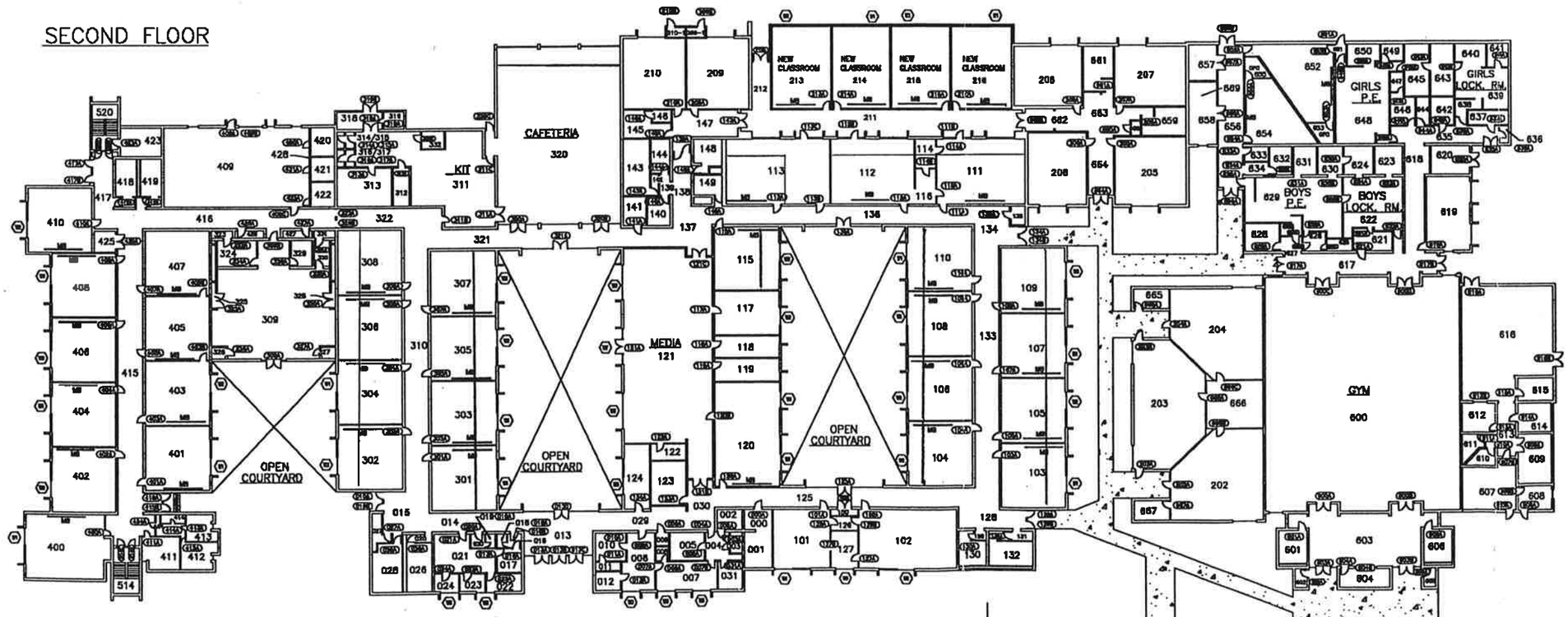


1st Floor

SENECA MIDDLE SCHOOL



SECOND FLOOR



FIRST FLOOR

Seneca Middle School

Abatement of Asbestos Containing
Floor Tile & Mastic

March, 2000

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3. DETERMINATION OF SAMPLING LOCATIONS BUILDINGS ALL

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

The purpose of the survey is to identify all ACBM in the building. In order to accomplish this goal as well as to meet the requirement of the "Asbestos-Containing Materials in Schools" rule (40 CFR Part 763), the materials to be sampled are grouped in "Homogeneous Areas." A "Homogeneous Area" is defined as "an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture." The material should appear similar in all other aspects. If there was any reason to suspect that materials might be different they were assigned to different homogeneous areas.

Each homogeneous area is assigned a unique code. Sampling locations within each homogeneous area were selected by dividing the homogeneous area into nine sub-areas. The sub-areas to be sampled are determined by the use of a random number table. The selection of the individual sampling is conducted in a random manner, but is nevertheless subject to a variety of factors. These include:

a. Size of the homogeneous area
b. Condition of material
c. Distribution of material
d. Accessibility
e. Exposure potential to building occupants
f. Other limitations imposed by the client.

e actual number of samples taken is governed by the requirements of section 763-86 - Sampling.

Finally, one must realize that there are limitations to each survey. Therefore, Environmental Testing & Management, Inc., cannot guarantee that all ACBM was located or identified during the building survey.

INSPECTOR		
TYPED NAME: Colleen M. Christian	SIGNATURE:	DATE: 02/21/2000
SOUTH CAROLINA LICENSE #: 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A1- 2' x 4' WHITE CEILING TILE WITH SMALL FISSURES- KITCHEN OFICE & STORAGE

A2- 12" x 12" LIGHT CREAM FLOOR TILE- CAFETERIA

A2A- MASTIC ASSOCIATED WITH HA-A2

A4- 2' x 4' WHITE ACOUSTICAL CEILING TILE WITH SMALL STIPPLES- CORRIDOR & CLASSROOMS

A5- TAN AND GREY MARBLLIZED ROLLED FLOORING-CHEMISTRY ROOM 501 & 503

A6- HARD STIPPLE PAINTED PLASTER- CANOPIES OVER EXTERIOR DOORWAYS

B1- PLASTER CEILINGS IN BOYS SHOWER ROOM

C1- THERMAL SYSTEM INSULATION (ELBOWS)- BOILER ROOM

)- THERMAL SYSTEM INSULATION (EXPANSION TANK)- BOILER ROOM

C3- PLASTER CEILING MATERIAL- BOILER ROOM

C4- GASKET MATERIAL ON BOILER # 1 VIEWING GLASS

D1- SPRAY-ON ACOUSTICAL CEILING FINISH- PORTABLE

INSPECTOR		
TYPED NAME: Colleen M. Christian	SIGNATURE:	DATE: 02/21/2000
SOUTH CAROLINA LICENSE # : 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A12- ROOFING MATERIAL AT ROOMS 111-113

A7- BASEBOARD MATERIAL- HALLWAYS

A7A- MASTIC ASSOCIATED WITH HA-A7

D2- 12" X 12" GREY FLOOR TILE WITH WHITE AND DARK GREY STREAKS- PORTABLE # 25

D2A- MASTIC ASSOCIATED WITH HA-D2

D3- 12" X 12" WHITE FLOOR TILE WITH GREY AND TAN FLECKS- PORTABLE # 25

D3A- MASTIC ASSOCIATED WITH HA-D3

D4- SPRAY-ON ACOUSTICAL CEILING MATERIAL- PORTABLE # 25

INSPECTOR:		
TYPED NAME: Colleen M. Christian	SIGNATURE:	DATE: 02/21/2000
SOUTH CAROLINA LICENSE #: 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

B6- CEILING TILE- BAND ROOM

B7- FLOOR TILE

B7A- MASTIC ASSOCIATED WITH HA-B7

B4- THERMAL SYSTEM INSULATION (PIPE WRAP)- BAND ROOM

B5- FLOOR TILE- MINI-GYM

B5A- MASTIC ASSOCIATED WITH HA-B5

A13- CEILING TILE- ROOM 111

A8- FLOOR TILE- ROOM 410

A- MASTIC ASSOCIATED WITH HA-A8

A9- CEILING TILE- ROOM 410

A10- FLOOR TILE- ROOM 309

A10A- MASTIC ASSOCIATED WITH HA-A10

A11- FLOOR TILE-ROOM 113

A11A- MASTIC ASSOCIATED WITH HA-A11

INSPECTOR:		
TYPED NAME: Colleen Christian	SIGNATURE	DATE: 02/21/2000
SOUTH CAROLINA LICENSE # 20583 EXPIRES: 12/15/2000 STATE & AGENCY (WHERE TRAINED): MUSC		
TELEPHONE # (864) 963-3688		

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

LISTING OF ASSESSMENT CODES FOR ASBESTOS CONTAINING BUILDING MATERIALS

CODES	EXPLANATION
N/A	NOT APPLICABLE
N/D	NOT DETECTED
D/SD TSI	DAMAGED OR SIGNIFICANTLY - DAMAGED TSI*
DFS	DAMAGED FRIABLE SURFACING
SDFS	SIGNIFICANTLY DAMAGED - FRIABLE SURFACING
D/SD F MISC	DAMAGED OR SIGNIFICANTLY DAMAGED FRIABLE-MISCELLANEOUS
PD	POTENTIAL FOR DAMAGE
PSD	POTENTIAL FOR SIGNIFICANT DAMAGE
OF/PS	OTHER FRIABLE/FRIABLE SUSPECTED
NF	NON-FRIABLE
CHRY	CHRYSOTILE
AMOS	AMOSITE
CROC	CROCIDOLITE

*TSI = Thermal System Insulation

STATE OF
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Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
9-7-88	SHS-01	MECH. RM/ BOILER RM	X		C1		40	AMOS.	3	ABATED	ELBOW INS.
								CHRY.	2		
	SHS-02	MECH. RM/ BOILER RM	X		C2	400		AMOS.	18	ABATED	TANK INS.
								CHRY.	25		
	SHS-03	MECH. RM	X		C1			NAD		REMOVED	MUD INS.
	SHS-04	MECH. RM	X		C3			NAD			PLASTER
	SHS-05	MECH. RM	X		C3			NAD			PLASTER
	SHS-06	MECH. RM	X		C3			NAD			PLASTER
	SHS-07	MECH. RM	X		C4			CROC.	75		GASKET
	SHS-08	KITCHEN O.	X		A1			NAD			CEILING TILE
	SHS-09	CAFETERIA	X		A2			CHRY.	2	NF	FLOOR TILE
	SHS-09	CAFETERIA	X		A2A			CHRY.	2	INACCESSIBLE	MASTIC
	SHS-10	CAFETERIA	X		A2			CHRY.	2	NF	FLOOR TILE
	SHS-10	CAFETERIA	X		A2A			CHRY.	2	INACCESSIBLE	MASTIC
	SHS-11	BOYS LOCKR	X		B1			NAD			PLASTER
	SHS-12	BOYS LOCKR	X		B1			NAD			PLASTER
	SHS-13	BOYS LOCKR	X		B1			NAD			PLASTER
	SHS-14	TOILET AREA	X		B1			NAD			PLASTER
	SHS-15	TOILET AREA	X		B1			NAD			PLASTER

INSPECTOR'S NAME:	SIGNATURE:	TELEPHONE # :	DATE:
Colleen M. Christian		(864) 963-3688	01/24/2000

SCDHEC LICENSE#: 20583 STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
9-7-88	SHS-16	ELEC. RM	X		A1			NAD			CEILING TILE
	SHS-17	CORRIDOR	X		A4			NAD			CEILING TILE
	SHS-18	CLASSROOM	X		A4			NAD			CEILING TILE
	SHS-19	CHEMISTRY	X		A5	500		CHRY.	12	D/MISC.	LINOLEUM
	SHS-20	CHEMISTRY	X		A5	500		CHRY.	12	D/MISC	LINOLEUM
	SHS-21	PORTABLE	X		D1			NAD			SPRAY-ON
	SHS-22	PORTABLE	X		D1			NAD			SPRAY-ON
	SHS-23	PORTABLE	X		D1			NAD			SPRAY-ON
	SHS-24	CANOPIES	X		A6			NAD			PLASTER
	SHS-25	CANOPIES	X		A6			NAD			PLASTER
	SHS-26	CANOPIES	X		A6			NAD			PLASTER
1-24-00	B6-01	BAND ROOM		X	B6			NAD			CEILING TILE
	B6-02	BAND ROOM		X	B6			NAD			CEILING TILE
	B7-03	BAND ROOM		X	B7			NAD			FLOOR TILE
	B7-03	BAND ROOM		X	B7A			CHRY.	10	NF	MASTIC
	B7-04	BAND ROOM		X	B7			NAD			FLOOR TILE
	B7-04	BAND ROOM		X	B7A			ASSUMED			MASTIC

INSPECTOR'S NAME:	SIGNATURE:	TELEPHONE #:	DATE:
Colleen M. Christian		(864) 963-3688	01/24/2000

SCDHEC LICENSE#: 20583 STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
1-24-00	B4-05	BAND ROOM		X	B4			NAD			PIPE WRAP
	B4-06	BAND ROOM		X	B4			NAD			PIPE WRAP
	B1-07	BOYS LOCKR		X	B1			NAD			PLASTER
	B1-08	BOYS LOCKR		X	B1			NAD			PLASTER
	B1-09	BOYS LOCKR		X	B1			NAD			PLASTER
	B5-10	MINI-GYM		X	B5			NAD			FLOOR TILE
	B5-10	MINI-GYM		X	B5A			CHRY.	8	NF	MASTIC
	B5-11	MINI-GYM		X	B5			NAD			FLOOR TILE
	B5-11	MINI-GYM		X	B5A			ASSUMED		NF	MASTIC
	A13-12	ROOM 111		X	A13			NAD			CEILING TILE
	A13-13	ROOM 111		X	A13			NAD			CEILING TILE
	A8-14	ROOM 410		X	A8			NAD			FLOOR TILE
	A8-14	ROOM 410		X	A8A			NAD			MASTIC
	A8-15	ROOM 410		X	A8			NAD			FLOOR TILE
	A8-15	ROOM 410		X	A8A			NAD			MASTIC
	A9-16	ROOM 410		X	A9			NAD			CEILING TILE
	A9-17	ROOM 410		X	A9			NAD			CEILING TILE

INSPECTOR'S NAME:	SIGNATURE:	TELEPHONE #:	DATE:
Colleen M. Christian		(864) 963-3688	01/24/2000

SCDHEC LICENSE#: 20583 STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
1-24-00	A10-18	ROOM 309		X	A10			NAD			FLOOR TILE
	A10-18	ROOM 309		X	A10A			NAD			MASTIC
	A10-19	ROOM 309		X	A10			NAD			FLOOR TILE
	A10-19	ROOM 309		X	A10A			CHRY.	5	NF	MASTIC
	C7-20	BOILER RM		X	C7			NAD			PIPE WRAP
	C7-21	BOILER RM		X	C7			NAD			PIPE WRAP
	A11-22	ROOM 113		X	A11			CHRY.	5	GOOD	FLOOR TILE
	A11-22	ROOM 113		X	A11A			CHRY.	7	NF	MASTIC
	A11-23	ROOM 113		X	A11			CHRY.	5	GOOD	FLOOR TILE
	A11-23	ROOM 113		X	A11A			CHRY.	7	NF	MASTIC
	A2-24	CAFETERIA		X	A2			CHRY.	6	GOOD	FLOOR TILE
	A2-24	CAFETERIA		X	A2A			CHRY.	8	NF	MASTIC
	A2-25	CAFETERIA		X	A2			CHRY.	6	GOOD	FLOOR TILE
	A2-25	CAFETERIA		X	A2A			CHRY.	8	NF	MASTIC
	A12-26	ROOF111/113		X	A12			NAD			ROOFING
	A12-27	ROOF111/113		X	A12			NAD			ROOFING

INSPECTOR'S NAME: Colleen M. Christian
SIGNATURE:
TELEPHONE #: (864) 963-3688
DATE: 01/24/200

SCDHEC LICENSE#: 20583
STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
2-21-00	C1-01	BOILER RM		X	C1		40	AMOS.		ABATED	ELBOW INS.
	C1-02	BOILER RM		X	C1		40	NOT ANALYZED		ABATED	ELBOW INS.
	C1-03	BOILER RM		X	C1		40	NOT ANALYZED		ABATED	ELBOW INS.
	C5-04	BOILER RM		X	C5		24	NAD			VALVE INS.
	C5-05	BOILER RM		X	C5		24	NAD			VALVE INS.
	C5-06	BOILER RM		X	C5		24	NAD			VALVE INS.
	C2-07	BOILER RM		X	C2	25		AMOS.		ABATED	TANK INS.
								CHRY.			
	C2-08	BOILER RM		X	C2	25		NOT ANALYZED		ABATED	TANK INS.
	C2-09	BOILER RM		X	C2	25		NOT ANALYZED		ABATED	TANK INS.
	B2-10	GYM B.R.		X	B2			NAD			ELBOW INS.
	B2-11	GYM B.R.		X	B2			NAD			ELBOW INS.
	B2-12	GYM B.R.		X	B2			NAD			ELBOW INS.
	B3-13	GYM B.R.		X	B3			NAD			PIPE WRAP
	B3-14	GYM B.R.		X	B3			NAD			PIPE WRAP
	B3-15	GYM B.R.		X	B3			NAD			PIPE WRAP
	A7-16	HALLS		X	A7			NAD			BASEBOARD
	A7-16	HALLS		X	A7A			NAD			MASTIC

INSPECTOR'S NAME:	SIGNATURE:	TELEPHONE #:	DATE:
Colleen M. Christian		(864) 963-3688	02/21/2000

SCDHEC LICENSE#: 20583 STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING:
AREA OF BUILDING: ALL

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN.FT	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
2-21-00	A7-17	HALLS		X	A7			NAD			BASEBOARD
	A7-17	HALLS		X	A7A			NAD			MASTIC
	A7-18	HALLS		X	A7			NAD			BASEBOARD
	A7-18	HALLS		X	A7A			NAD			MASTIC
	D2-19	PORTABLE 25		X	D2			NAD			FLOOR TILE
	D2-19	PORTABLE 25		X	D2A			NAD			MASTIC
	D2-20	PORTABLE 25		X	D2			NAD			FLOOR TILE
	D2-20	PORTABLE 25		X	D2A			NAD			MASTIC
	D3-21	PORTABLE 25		X	D3			NAD			FLOOR TILE
	D3-21	PORTABLE 25		X	D3A			NAD			MASTIC
	D3-22	PORTABLE 25		X	D3			NAD			FLOOR TILE
	D3-22	PORTABLE 25		X	D3A			NAD			MASTIC
	D4-23	PORTABLE 25		X	D4			NAD			SPRAY-ON
	D4-24	PORTABLE 25		X	D4			NAD			SPRAY-ON
	D4-24	PORTABLE 25		X	D4			NAD			SPRAY-ON

INSPECTOR'S NAME: Colleen M. Christian | SIGNATURE: | TELEPHONE #: (864) 963-3688 | DATE: 02/21/2000

SCDHEC LICENSE#: 20583 | STATE & AGENCY WHERE TRAINED: MUSC

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-01	28839080	AMOSITE CHRYSOTILE	3 2	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, CLAY
OC-SHS-02	28839081	AMOSITE CHRYSOTILE	18 25	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, CLAY
OC-SHS-03	28839082		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER, CLAY
OC-SHS-04	28839083		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-05	28839084		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-06	28839085		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, CLAY, QUARTZ
OC-SHS-07	28839086	CROCIDOLITE	75	HETEROGENEOUS, FIBROUS, UNTREATED, SYNTHETIC FIBER, CELLULOSE
OC-SHS-08	28839087		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER
OC-SHS-09	28839088	CHRYSOTILE	4	HETEROGENEOUS, MIXED, UNTREATED, QUARTZ, FLOOR TILE, MASTIC (TILE 2%, MASTIC 2%)
OC-SHS-10	28839089	CHRYSOTILE	4	HETEROGENEOUS, MIXED, UNTREATED, QUARTZ, FLOOR TILE, MASTIC (TILE 2%, MASTIC 2%)

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-11	28839090		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-12	28839091		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-13	28839092		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-14	28839093		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-15	28839094		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, CLAY, QUARTZ
OC-SHS-16	28839095		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, FILLER, BINDER
OC-SHS-17	28839096		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, PERLITE
OC-SHS-18	28839097		N/D	HETEROGENEOUS, MIXED, UNTREATED, FIBROUS GLASS, CELLULOSE, FILLER, BINDER, PERLITE
OC-SHS-19	28839098	CHRYSOTILE	12	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, VINYL
OC-SHS-20	28839099	CHRYSOTILE	12	HETEROGENEOUS, MIXED, UNTREATED, CELLULOSE, FILLER, BINDER, VINYL
OC-SHS-21	28839100		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE
OC-SHS-22	28839101		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #: (803)585-4900

STATE OF
SOUTH CAROLINA

5 - BULK SAMPLE ANALYSIS

LEA: OCONEE COUNTY SCHOOLS
SCHOOL: SENECA HIGH SCHOOL
BUILDING:
AREA OF BUILDING:
SAMPLE DATE:
ANALYSIS DATE: 15-SEPTEMBER-88
ANALYSIS METHOD: PLM w/Dispersion Staining

Sample ID		Asbestos		Comments
Owner	Lab	Type	%	
OC-SHS-23	28839102		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, FILLER, BINDER, VERMICULITE
OC-SHS-24	28839103		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ
OC-SHS-25	28839104		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ
OC-SHS-26	28839104A		N/D	HETEROGENEOUS, NON-FIBROUS, UNTREATED, PLASTER, QUARTZ

It is certified by the signature below that the laboratory identified below has received interim accreditation for polarized light microscope (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program and will apply for accreditation by the National Bureau of Standards.

Laboratory: EnviroSciences, Inc. | Address: P.O. Box 5804; Spartanburg, SC 29304

Analysis Performed By:

Typed Name: KENNY GAY | Signature: Kenny Gay

Date: 9-26-88 | Telephone #:.(803)585-4900

Sequence # MCAOSHS3.259

Sequence # 24

SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928
Excellence in Service and Technology
AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT:	1765-00-17	**DATE COLLECTED:**	1/24/2000
CLIENT:	Environmental Testing & Management	**DATE RECEIVED:**	1/27/2000
ADDRESS:	P.O. Box 896	**DATE ANALYZED:**	1/27/2000
	Mauldin, SC 29662	**DATE REPORTED:**	4/13/2000
PO NO.:			
PROJECT NAME:	Oconee Co. Schools		
PROJECT NO.:			
JOB LOCATION:	Seneca Middle Sch		

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
B6-01	1605762	Band rm CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
B6-02	1605763	Band rm CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
B7-03	1605764	Band rm FT/mastic		
	Layer 1:	Floor Tile	**No**	Gray, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	10% Asbestos			CHRYSOTILE 10%
	90% Non-Asbestos			NON FIBROUS MATERIAL 90%
B7-04	1605765	Band rm FT/mastic		
	Layer 1:	Floor Tile	**No**	Gray, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

AMENDED REPORT *

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic		
	Not analyzed due to positive stop instructions.			
B4-05	1605766	Band rm PW		
	Layer 1:	Wrap Material	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 60%, METAL FOIL 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 30%
B4-06	1605767	Band rm PW		
	Layer 1:	Wrap Material	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 60%, METAL FOIL 5%, MINERAL/GLASS WOOL 5%, NON FIBROUS MATERIAL 30%
B4-07	1605768	Boys locker rm C mtr		
	Layer 1:	Plaster Basecoat	**No**	Gray, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Wet Sample			
	Layer 2:	Skimcoat	**No**	White, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
B1-08	1605769	Boys locker rm C mtr		
	Layer 1:	Plaster	**No**	Gray, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	No Skimcoat Found			
B1-09	1605770	Boys locker rm C mtr		
	Layer 1:	Plaster	**No**	White, Granular
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	No Basecoat Found			
B5-10	1605771	Mini gym FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos			CHRYSOTILE 8%
	92% Non-Asbestos			NON FIBROUS MATERIAL 92%
B5-11	1605772	Mini gym FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

AMENDED REPORT *

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic		
	Not analyzed due to positive stop instructions.			
A13-12	1605773	Room 111 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			FOAMED GLASS 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
A13-13	1605774	Room 111 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			FOAMED GLASS 5%, MINERAL/GLASS WOOL 90%, NON FIBROUS MATERIAL 5%
A8-14	1605775	Room 410 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Yellow, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 96%, SYNTHETIC FIBER 2%
A8-15	1605776	Room 410 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%
	Layer 2:	Mastic	**No**	Yellow, Rubbery
	100% Non-Asbestos			CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 96%, SYNTHETIC FIBER 2%
A9-16	1605777	Room 410 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
A9-17	1605778	Room 410 CT		
	Layer 1:	Ceiling Tile	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 40%, FOAMED GLASS 10%, MINERAL/GLASS WOOL 40%, NON FIBROUS MATERIAL 10%
A10-18	1605779	Room 309 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos			NON FIBROUS MATERIAL 100%

AMENDED REPORT *

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	**No**	Clear, Soft
	100% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%	
A10-19	1605780	Room 309 FT/mastic		
	Layer 1:	Floor Tile	**No**	White, Organically Bound
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Sample Not Homogenous With #18 Mastic			
C7-20	1605781	Boiler rm PW		
	Layer 1:	Pipe Wrap	**No**	Gray/Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 65%, NON FIBROUS MATERIAL 35%	
C7-21	1605782	Boiler rm PW		
	Layer 1:	Pipe Wrap	**No**	Green/Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 65%, NON FIBROUS MATERIAL 35%	

ANALYST: SAMI A. HOSN
Total no. of pages in report = 4

REVIEWED BY

AMENDED REPORT *

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SCHNEIDER LABORATORIES

INCORPORATED

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AIHA 8936, ELLAP 8936, NVLAP 1150, NYELAP 11413, CAELAP 2078

LABORATORY ANALYSIS REPORT

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

ACCOUNT:	1765-00-18	**DATE COLLECTED:**	2/ 8/2000
CLIENT:	Environmental Testing & Management	**DATE RECEIVED:**	2/ 9/2000
ADDRESS:	P.O. Box 896	**DATE ANALYZED:**	2/ 9/2000
	Mauldin, SC 29662	**DATE REPORTED:**	4/13/2000
PO NO.:	8571		
PROJECT NAME:	Oconee County School		
PROJECT NO.:			
JOB LOCATION:	Seneca Middle School		

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
A11-22	1612058	Rm 113 FT/M		
	Layer 1:	Floor tile	**Yes**	Beige, Organically Bound
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	7% Asbestos		CHRYSOTILE 7%	
	93% Non-Asbestos		CELLULOSE FIBER 3%, NON FIBROUS MATERIAL 90%	
A11-23	1612059	Rm 113 FT/M		
	Layer 1:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos		CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 96%	
	Layer 2:	Floor tile	**Yes**	Beige, Organically Bound
	5% Asbestos		CHRYSOTILE 5%	
	95% Non-Asbestos		NON FIBROUS MATERIAL 95%	
	Layer 3:	Mastic	**Yes**	Black, Bituminous
	7% Asbestos		CHRYSOTILE 7%	
	93% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 91%	
A2-24	1612060	Cafeteria FT/M		
	Layer 1:	Floor tile	**Yes**	Cream, Organically Bound
	6% Asbestos		CHRYSOTILE 6%	
	94% Non-Asbestos		NON FIBROUS MATERIAL 94%	

AMENDED REPORT *

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos		CHRYSOTILE 8%	
	92% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 90%	
A2-25	1612061	Cafeteria FT/M		
	Layer 1:	Floor tile	**Yes**	Cream, Organically Bound
	6% Asbestos		CHRYSOTILE 6%	
	94% Non-Asbestos		NON FIBROUS MATERIAL 94%	
	Layer 2:	Mastic	**Yes**	Black, Bituminous
	8% Asbestos		CHRYSOTILE 8%	
	92% Non-Asbestos		CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 90%	
A12-26	1612062	Rf by rm 111-113 RM		
	Layer 1:	Roofing	**No**	Black, Bituminous, Brittle
	100% Non-Asbestos		CELLULOSE FIBER 15%, NON FIBROUS MATERIAL 85%	
A12-27	1612063	Rf by rm 111-113 RM		
	Layer 1:	Roofing	**No**	Black, Bituminous
	100% Non-Asbestos		CELLULOSE FIBER 15%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 75%	

ANALYST: SHANNON HALL
Total no. of pages in report = 2

Joan Mayes
REVIEWED BY

AMENDED REPORT *

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

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LABORATORY ANALYSIS REPORT

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

ACCOUNT:	1765-00-19	**DATE COLLECTED:**	2/21/2000
CLIENT:	Environmental Testing & Management	**DATE RECEIVED:**	2/24/2000
ADDRESS:	P.O. Box 896	**DATE ANALYZED:**	2/28/2000
	Mauldin, SC 29662	**DATE REPORTED:**	4/13/2000
PO NO.:	8571		
PROJECT NAME:	Oconee Co Sch Dist		
PROJECT NO.:			
JOB LOCATION:	Seneca Middle		

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
C1-01	1621181	Boiler rm elbow		
	Layer 1:	Elbow	**Yes**	Beige, Powdery
	2% Asbestos		AMOSITE 2%	
	98% Non-Asbestos		CELLULOSE FIBER 8%, MINERAL/GLASS WOOL 45%, NON FIBROUS MATERIAL 45%	
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
C1-02	1621182	Boiler rm elbow		
	Layer 1:	Elbow		
	Not analyzed due to positive stop instructions.			
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
C1-03	1621183	Boiler rm elbow		
	Layer 1:	Elbow		
	Not analyzed due to positive stop instructions.			
	Layer 2:	Cover	**No**	White/Green, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	

***MENDED REPORT ***

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
C5-04	1621184	Boiler rm valve body		
	Layer 1:	Powdery Material	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	White/Green, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-05	1621185	Boiler rm valve body		
	Layer 1:	Powdery Material	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	Green/Cream, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C5-06	1621186	Boiler rm valve body		
	Layer 1:	Powdery Material	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%
C2-07	1621187	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover	**Yes**	Gray/Cream, Powdery, Fibrous
	55% Asbestos			AMOSITE 25%, CHRYSOTILE 30%
	45% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 20%, NON FIBROUS MATERIAL 20%
	Unable to separate individual layers.			
C2-08	1621188	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover		
	Not analyzed due to positive stop instructions.			
C2-09	1621189	Boiler rm tank ins.		
	Layer 1:	Insulation/Cover		
	Not analyzed due to positive stop instructions.			
B2-10	1621190	Gym boiler rm elbow		
	Layer 1:	Elbow	**No**	Gray, Powdery
	100% Non-Asbestos			CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%

AMENDED REPORT *

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Client Sample ID.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
B2-11	1621191	Gym boiler rm elbow		
	Layer 1:	Elbow	**No**	Gray, Powdery
	100% Non-Asbestos		CELLULOSE FIBER 5%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 45%	
	Layer 2:	Cover	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 85%, NON FIBROUS MATERIAL 15%	
B2-12	1621192	Gym boiler rm elbow		
	Layer 1:	Elbow/Cover	**No**	Gray/Cream, Powdery, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 10%, MINERAL/GLASS WOOL 50%, NON FIBROUS MATERIAL 40%	
	Unable to separate individual layers.			
B3-13	1621193	Gym boil rm pipe wrp		
	Layer 1:	Fibrous Material	**No**	Brown/Black, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%	
	Layer 2:	Fibrous Material	**No**	Cream, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%	
	Layer 3:	Fibrous Material	**No**	White, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%	
)-14	1621194	Gym boil rm pipe wrp		
	Layer 1:	Fibrous Material	**No**	Brown, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 95%, NON FIBROUS MATERIAL 5%	
	Layer 2:	Fibrous Material	**No**	Cream, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%	
	Layer 3:	Fibrous Material	**No**	White/Silver, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 70%, METAL FOIL 5%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 15%	
B3-15	1621195	Gym boil rm pipe wrp		
	Layer 1:	Wrap	**No**	Cream, Fibrous
	100% Non-Asbestos		CELLULOSE FIBER 70%, METAL FOIL 5%, MINERAL/GLASS WOOL 10%, NON FIBROUS MATERIAL 15%	
A7-16	1621196	Hallway baseboard		
	Layer 1:	Baseboard	**No**	Brown, Rubbery
	100% Non-Asbestos		NON FIBROUS MATERIAL 100%	

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Mastic	**No**	Brown, Brittle
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
A7-17	1621197	Hallway baseboard		
	Layer 1:	Baseboard	**No**	Brown, Rubbery
	100% Non-Asbestos	CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%		
	Layer 2:	Mastic	**No**	Brown, Brittle
	100% Non-Asbestos	CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 96%		
A7-18	1621198	Hallway baseboard		
	Layer 1:	Baseboard	**No**	Brown, Rubbery
	100% Non-Asbestos	CELLULOSE FIBER 2%, NON FIBROUS MATERIAL 98%		
	Layer 2:	Mastic	**No**	Brown, Brittle
	100% Non-Asbestos	CELLULOSE FIBER 4%, NON FIBROUS MATERIAL 96%		
D2-19	1621199	Portable #25 FT		
	Layer 1:	Floor Tile	**No**	Blue, Organically Bound
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
	Layer 2:	Mastic/Brittle Mtrl	**No**	Black/Yellow, Bituminous, Brittle
	100% Non-Asbestos	CELLULOSE FIBER 8%, NON FIBROUS MATERIAL 92%		
	Unable to separate individual layers.			
D2-20	1621200	Portable #25 FT		
	Layer 1:	Floor Tile	**No**	Blue, Organically Bound
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
	Layer 2:	Mastic	**No**	Black, Bituminous
	100% Non-Asbestos	CELLULOSE FIBER 5%, NON FIBROUS MATERIAL 95%		
D3-21	1621201	Portable #25 FT		
	Layer 1:	Floor Tile	**No**	Beige, Organically Bound
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
	Layer 2:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos	CELLULOSE FIBER 5%, NON FIBROUS MATERIAL 95%		
D3-22	1621202	Portable #25 FT		
	Layer 1:	Floor Tile	**No**	Beige, Organically Bound
	100% Non-Asbestos	NON FIBROUS MATERIAL 100%		
	Layer 2:	Mastic	**No**	Yellow, Soft
	100% Non-Asbestos	CELLULOSE FIBER 5%, NON FIBROUS MATERIAL 95%		

AMENDED REPORT *

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

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
D4-23	1621203	Portable #25 SCM		
	Layer 1:	Ceiling Material	**No**	White, Granular
	100% Non-Asbestos	CELLULOSE FIBER 5%, MICA 5%, NON FIBROUS MATERIAL 90%		
D4-24	1621204	Portable #25 SCM		
	Layer 1:	Ceiling Material	**No**	White, Granular
	100% Non-Asbestos	CELLULOSE FIBER 5%, MICA 5%, NON FIBROUS MATERIAL 90%		
D4-25	1621205	Portable #25 SCM		
	Layer 1:	Ceiling Material	**No**	White, Granular
	100% Non-Asbestos	CELLULOSE FIBER 5%, MICA 5%, NON FIBROUS MATERIAL 90%		

ANALYST: CHRISTIE L. SHACKLEFORD
Total no. of pages in report = 5

REVIEWED BY

AMENDED REPORT *

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

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

6. RESPONSE ACTIONS RECOMMENDED AND PREVENTIVE MEASURES AND RESPONSE ACTIONS SCHEDULED

EACH LOCATION	RECOMMENDED RESPONSE ACTIONS	DESCRIPTIONS AND REASONS FOR PREVENTIVE MEASURES & RESPONSE ACTIONS	SCHEDULE	
			BEGIN	COMPLETE
HA- A2,A2A, A5, B7A, B5A,A10A, A11, A11A	FOLLOW O&M FOR NONFRIABLE ACBM	FLOOR TILE, MASTIC, AND LINOLEUM ARE NONFRIABLE, THEREFORE, A RESPONSE ACTION IS NOT REQUIRES. FOLLOW SPECIAL O&M PLAN TO PREVENT FLOOR TILE, MASTIC, AND LINOLEUM FROM BECOMING FRIABLE.		

MANAGEMENT PLANNER
Typed Name: Colleen M. Christian
SCDHEC LICENSE#: 20583 EXPIRATION DATE: 12/15/2000
TRAINED: MUSC
SIGNATURE_____
PHONE: (864) 963-3688

LEA ASBESTOS COORDINATOR
Typed Name:
SCDHEC LICENSE # : EXPIRATION DATE:
HOURS TRAINED: 40 DATE TRAINED:
TRAINED:
SIGNATURE:_____

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

7. OPERATIONS AND MAINTENANCE PLAN

BUILDING: ALL
TYPE OF MATERIALS: Non-Friable Asbestos-Containing Building Materials

DISCUSSION OF OPERATIONS MAINTENANCE AND REPAIR PLAN

FOR NON-FRIABLE ASBESTOS-CONTAINING
BUILDING MATERIALS

A formal O & M plan is not required for non-friable asbestos-containing building materials. Nevertheless, non-friable asbestos-containing building materials may be rendered friable if severely damaged either mechanically or chemically. Therefore, non-friable asbestos-containing building materials should not be sanded, drilled, cut or sawed, or have any other action taken which would destroy the structural integrity of the material and render it friable. If such action is taken, implement an operations and maintenance program that meets the requirements of the AHERA regulations.

TYPED NAME:	SIGNATURE:	DATE:
Colleen M. Christian		April 13, 2000

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

8 - PERIODIC SURVEILLANCE PLAN

BUILDING: All

DISCUSSION OF PERIODIC SURVEILLANCE PLAN

Section 763.92(b) requires periodic surveillance to be performed at least once every six months. The LEA may use unaccredited personnel such as custodians or maintenance workers to conduct surveillance activities. Periodic surveillance requires checking known or assumed ACBM to determine if the ACBM's physical condition has changed since the last inspection or surveillance. The date of the surveillance and any changes in the condition of the ACBM must be added to the management plan.

(B) Periodic Surveillance

1. At least once every 6 months after a management plan is in effect, each local education agency shall conduct periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains ACBM or is assumed to contain ACBM.

2. Each person performing periodic surveillance shall:

   i. Visually inspect all areas that are identified in the management plan as ACBM or assumed ACBM.
   ii. Record the date of the surveillance, his or her name, and any changes in the condition of the materials.
   iii. Submit to the person designated to carry out general local education agency responsibilities under 763.84 a copy of such record for inclusion in the management plan.

.e first periodic survey will commence on 09/00/2000 and occur at six month intervals thereafter.

TYPED NAME:	SIGNATURE:	DATE:
Colleen M. Christian		April 13, 2000

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

9 - REINSPECTION PLAN

BUILDING: All

DISCUSSION OF REINSPECTION PLAN

Section 763.85(b) requires LEAs to have accredited inspectors conduct reinspections at least once every three years. The inspector must reinspect all known or assumed ACBM and shall determine by touching whether nonfriable material has become friable since the last inspection. The inspector may sample any newly friable materials or continue to assume the material to be ACM. The inspector shall record changes in the material's conditions, sample locations and the inspection date for inclusion in the management plan. In addition, the inspector must assess newly friable known or assumed ACBM, reassess the condition of friable known or assumed ACBM, and include assessment and reassessment information in the management plan.

Section 763.85(c) states that thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap is treated as nonfriable. Based on public comments, EPA changed the wording in this section from "deemed" nonfriable to "treated as" nonfriable.

40 CFR 763.85 Inspections & Reinspections:

Reinspections.

1. At least once every three years after a management plan is in effect, each local education agency shall conduct a reinspection of all friable and nonfriable known or assumed ACBM in each school building that they lease, own, or otherwise use as a school building.
2. Each inspection shall be made by an accredited inspector
3. For each area of a school building, each person performing a reinspection shall:
   - i. Visually reinspect, and reassess, under 763.88, the condition of all friable known or assumed ACBM.
   - ii. Visually inspect material that was previously considered nonfriable ACBM and touch the material to determine whether it has become friable since the last inspection or reinspection.
   - iii. Identify any homogenous area with material that has become friable since the last inspection or reinspection.
   - iv. For each homogeneous area of newly friable material that is already assumed to be ACBM, bulk samples may be collected and submitted for analysis in accordance with 763.86 and 763.87.
   - v. Assess, under 763.88, the condition of the newly friable material in areas where samples are collected and newly friable materials in areas that are assumed to be ACBM.
   - vi. Reassess, under 763.88, the condition of the friable known or assumed ACBM previously identified.
   - vii. Record the following and submit to the person designated under 763.84 a copy of such record for inclusion in the management plan within 30 days of the reinspection:
     - A. The date of the reinspection, the name and signature of the person making the reinspection, State of accreditation, and if applicable, his or her accreditation number, and any changes in the condition of known or assumed ACBM.
     - B. The exact locations where samples are collected during the reinspection, a description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, State of accreditation, and, if applicable, his or her accreditation number.
     - C. Any assessments or reassessments made of friable material, the name and signature of the accredited inspector making the assessments, State of accreditation, and if applicable, his or her accreditation number.

TYPED NAME:	SIGNATURE:	DATE:
Illeen M. Christian		April 13, 2000

THE STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

9 - REINSPECTION PLAN

BUILDING: All

DISCUSSION OF REINSPECTION PLAN:

General:

Thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap that prevents fiber release shall be treated as nonfriable and therefore is subject only to periodic surveillance and preventive measures as necessary.

The first reinspection plan will commence on 03/00/2003 and occur at three year intervals thereafter.

TYPED NAME: Colleen M. Christian

SIGNATURE:

DATE: April 13, 2000

THE STATE OF SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

10 - RESOURCES NEEDED

BUILDING: All

EVALUATION OF RESOURCES NEEDED:

1. To complete response sections successfully:

   a. The designated representative of the LEA will need to engage the services of an accredited designer to design the indicated asbestos removal projects.

   b. Based upon the recommendations of the accredited designer, the LEA will need to engage the services of an accredited asbestos abatement contractor to conduct the asbestos removal projects.

2. To carry out reinspections:

   The designated representative of the LEA will need to engage the services of an accredited inspector to conduct the required reinspections of the facilities described in this management plan.

3. To carry out Operations and Maintenance activities:

   a. The designated representative of the LEA will need to engage the services of qualified persons to ensure that its maintenance employees are trained to conduct said O&M activities;

   OR

   b. The designated representative of the LEA shall engage the services of qualified and accredited persons to conduct said O&M activities.

4. To carry out periodic surveillance:

   a. The designated representative of the LEA shall appoint appropriately trained members of the maintenance staff to conduct the required periodic surveillance.

   OR

   b. The designated representative of the LEA shall engage the services of qualified persons to conduct the required periodic surveillance.

5. To carry out the required training:

   a. The designated representative of the LEA shall engage the services of qualified individuals to carry out the required training of its custodial and maintenance employees.

   OR

   b. The designated representative of the LEA shall appoint qualified employees of the LEA to carry out said training.

TYPED NAME: Ileen M. Christian | SIGNATURE: | DATE: April 13, 2000

THE STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

10 - RESOURCES NEEDED

BUILDING: All

EVALUATION OF RESOURCES NEEDED

There has been considerable debate over the necessity of providing an estimate of the costs for the response actions scheduled. Since the costs are dependent on a considerable number of variables, and since only a few of these variables can be determined at this time, the cost estimates provided can only be order of magnitude approximations, which are best suited for priority determinations.

Additional information, as well as cost estimates for the O & M program, can be found in the attached Appendix B - Cost Estimations and Financing Abatement Projects.

TYPED NAME:
Colleen M. Christian

SIGNATURE:

DATE:
April; 13, 2000

THE STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

11 - STEPS TO INFORM OTHERS

BUILDING: All

DISCUSSION OF PROGRAM TO INFORM OTHERS:

The following notice should be posted in a common area for all employees to read or should be mailed to each parent, posted in the local newspaper, or published in the PTA newsletter, in fulfillment of the notification requirements of 40 CFR Part 763.93 (e)(10)& (g)(4). The purpose of the annual notification is to ensure that parents and employees new to the LEA each year have an opportunity to be informed about the availability of the plan.

763.93 Management Plans
(e) The Management plan shall be developed by an accredited management planner and shall include:
(10)A description of steps taken to inform workers and building occupants, or their legal guardians, about inspections, reinspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress.
(g)(4) Upon submission of its management plan to the Governor and at least once each school year, the local education agency shall notify in writing parent, teacher, and employee organizations of the availability of management plans and shall include in the management plan a description of the steps taken to notify such organizations, and dated copy of the notification. In the absence of any such organizations for parents, teachers, or employees, the local education agency shall provide written notice to that relevant group of the availability of management plans and shall include in the management plan a description of the steps taken to notify such groups, and a dated copy of the notification.

TYPED NAME: lleen M. Christian | SIGNATURE: | DATE: April 13, 2000

STATE OF
SOUTH CAROLINA

LEA: The School District of Oconee County
School: Seneca Middle School
Address: W. S. 4th Street
Seneca, SC 29679

11 - STEPS TO INFORM OTHERS

BUILDING: All

DISCUSSION OF PROGRAM TO INFORM OTHERS

ASBESTOS HAZARDOUS EMERGENCY RESPONSE ACT (AHERA)
SCHOOL BUILDING SURVEY

The School District of Oconee County, in order to meet the requirements of AHERA, has arranged to have a survey conducted for asbestos-containing materials in our school. EPA has, as required under Section 203 of Title II of the Toxic Substance Control Act (TSCA), issued a final rule requiring all local school agencies (public and private) to identify all asbestos-containing materials (ACM) in their buildings and to take appropriate actions to control the release of asbestos fibers. Accredited personnel have inspected each building, taken samples of all suspected materials, and then after analysis, returned and labeled all asbestos-containing materials. As part of this survey, accredited personnel have also developed a management plan. The management plan will identify: all samples taken, those samples that contain asbestos and their locations, the type, and percentage of asbestos present, the current physical condition of the asbestos-containing material, and a written plan to control future asbestos fiber release.

Asbestos does not need to be removed from a building to control fiber release. Fiber release can be controlled by encapsulation, enclosure, and/or repair. When handled properly, fiber release can be far below the "acceptable for occupancy" level of 0.01 fibers/cc.

The complete management plan is on file in the administrative office and individual school offices, and can be examined on any school day during normal working hours.

TYPED NAME: Eileen M. Christian

SIGNATURE:

DATE: April 13, 2000

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
BUILDINGS REINSPECTED

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: W. S. 4th Street, Seneca, S.C. 29679
DATE REINSPECTED: March 20, 2003

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NON-FRIABLE	FRIABLE	NON-FRIABLE	
Main		X		X	

Inspector: David K. Robertson
SCDHEC License #: 22170 Exp. Date: 02/05/2004
Phone: 864-963-3688
Signature: David K. Robertson

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School

DATE REINSPECTED: March 20, 2003

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Lobby, Classrooms, Cafe.	NF _X__ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2 (inaccessible due to carpet)	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled (inaccessible due to 12" FT) Rm 501 now 601	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled Room 503; now 603	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
A10A	Mastic associated with HA-A10 Room 309	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11	Floor tile 12" Room 113; now 313	NF_X__ Fri_____ G X__ D___ SD___	LPD X__ PD___ PSD___		X
11A	Mastic associated w/HA-A11	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
A13	Sheetrock Joint Cmpd Sys - Throughout Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A14	Plaster Systems - Lobby Center Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
B5A	Mastic Associated w/HA-B5 Mini - Gym	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at Entry areas - overall good condition.

pector: David K. Robertson
DHEC License #: 22170 Exp. Date: 02/05/2004
Phone: 864-963-3688
Signature: David K. Robertson

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature:

SIX MONTH PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Date Inspected: September 16, 2005

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	Damaged	Gym, Cafe, Classes
Main	A2A	Mastic Associated w/HA-A2	Inaccessible	Inaccessible	See HA-A2. CAFE
Main	A5	Linoleum Beige/Grey Speckled	Good	Good	Rm 603, 601 wet areas & under 12"
Main	A10A	Mastic associated w/HA-A10	inaccessible	inaccessible	Room 309
Main	A11	Floor tile	NF	NF	Room 313
Main	A11A	Mastic associated w/HA-A11	inaccessible	inaccessible	Room 313
Main	A13	Sheetrock Joint Cmpd Sys	ASSUMED	ASSUMED	Throughout
Main	A14	Plaster Systems	ASSUMED	ASSUMED	Lobby Center
Main	B5A	Mastic associated w/HA-B5	inaccessible	inaccessible	Strings&Chorus area
Main	B7A	Mastic associated w/HA-B7	inaccessible	inaccessible	band room

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: David Robertson - Environmental Testing & Management, Inc.
Phone: 864-963-3688

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
BUILDINGS REINSPECTED

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: W. S. 4th Street, Seneca, S.C. 29679
DATE REINSPECTED: October 24, 2006

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NON-FRIABLE	FRIABLE	NON-FRIABLE	
Main		X		X	

Inspector: David K. Robertson
SCDHEC License #: 22170 Exp. Date: 01/27/2007
Phone: 864-963-3688
Signature: David K. Robertson

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School

DATE REINSPECTED: October 24, 2006

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Lobby, Classrooms, Cafe.	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2 (inaccessible due to carpet)	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled- Rm 601/603 in wet areas, & under 12" floor tile	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A10A	Mastic associated with HA-A10 Room 309	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11	Floor tile 12" Room 313	NF_X__ Fri_____ G X__ D___ SD___	LPD X__ PD___ PSD___		X
A11A	Mastic associated w/HA-A11	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
3	Sheetrock Joint Cmpd Sys - Throughout Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A14	Plaster Systems - Lobby Center Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
B5A	Mastic Associated w/HA-B5 Strings & Chorus wing	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: David K. Robertson
SCDHEC License #: 22170 Exp. Date: 01/27/2007
Phone: 864-963-3688
Signature: David K. Robertson

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
BUILDINGS REINSPECTED

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: W. S. 4th Street, Seneca, S.C. 29679
DATE REINSPECTED: September 11, 2009

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NON-FRIABLE	FRIABLE	NON-FRIABLE	
Main		X		X	

Inspector: David K. Robertson
SCDHEC License #: 22170 Exp. Date:1-07-10
Phone: 864-213-4408
Signature: David Robertson

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature:

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School

DATE REINSPECTED: September 11, 2009

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Lobby, Classrooms, Cafe.	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled- Rm 601/603 in wet areas, & under 12" floor tile	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11A	Mastic associated w/HA-A11	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
A13	Sheetrock Joint Cmpd Sys - Throughout Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A14	Plaster Systems - Lobby Center Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
B5A	Mastic Associated w/HA-B5 Strings & Chorus wing	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: David K. Robertson
SCDHEC License #: 22170 Exp. Date: 1-07-10
Phone: 864-213-4408
Signature: David Robertson

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
BUILDINGS REINSPECTED

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: W. S. 4th Street, Seneca, S.C. 29679
DATE REINSPECTED: April 3, 2012

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NON-FRIABLE	FRIABLE	NON-FRIABLE	
Main		X		X	

Inspector: Andrew G. Schauder
SCDHEC License #: 1336 Exp. Date:09-21-12
Phone: 864-213-4408
Signature: Andrew G Schauder

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature: R. Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School

DATE REINSPECTED: April 3, 2012

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Lobby, Classrooms, Cafe.	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled- Rm 601/603 in wet areas, & under 12" floor tile	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11A	Mastic associated w/HA-A11	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
A13	Sheetrock Joint Cmpd Sys - Throughout Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A14	Plaster Systems - Lobby Center Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
B5A	Mastic Associated w/HA-B5 Strings & Chorus wing	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: Andrew G. Schauder
SCDHEC License #: 1336 Exp. Date:09-21-12
Phone: 864-213-4408
Signature: Andrew G Schauder

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature: R Alexander

SIX MONTH PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

9/11/09

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Date Inspected: September 16, 2005

2.24.09 10.24.06 TW

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	Damaged	Gym, Cafe, Classes 400 & 500 W
Main	A2A	Mastic Associated w/HA-A2	Inaccessible	Inaccessible	See HA-A2. CAFE
Main	A5	Linoleum Beige/Grey Speckled	Good	Good	Rm 603, 601 wet areas & under 12"
Main	A10A	Mastic associated w/HA-A10	inaccessible	inaccessible	Room 309
Main	A11	Floor tile (12" Gray Red)	NF	NF Good	Room 313
Main	A11A	Mastic associated w/HA-A11	inaccessible	inaccessible	Room 313
Main	A13	Sheetrock Joint Cmpd Sys	ASSUMED	ASSUMED	Throughout
Main	A14	Plaster Systems	ASSUMED	ASSUMED	Lobby Center
Main	B5A	Mastic associated w/HA-B5	inaccessible	inaccessible	Strings&Chorus area
Main	B7A	Mastic associated w/HA-B7	inaccessible	inaccessible	band room

All New Red 12" (* 600 and FS)

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: David Robertson - Environmental Testing & Management, Inc.
Phone: 864-963-3688

PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Date Inspected: February 24, 2009

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	Damaged	Gym, Cafe, Classes
Main	A2A	Mastic Associated w/HA-A2	Inaccessible	Inaccessible	See HA-A2. CAFE
Main	A5	Linoleum Beige/Grey Speckled	Good	Good	Rm 603, 601 wet areas & under 12"
Main	A10A	Mastic associated w/HA-A10	inaccessible	inaccessible	Room 309
Main	A11	12" Floor tile	~~NF~~ Good	~~NF~~ Good	Room 313
Main	A11A	Mastic associated w/HA-A11	inaccessible	inaccessible	Room 313
Main	A13	Sheetrock Joint Cmpd Sys	ASSUMED	ASSUMED	Throughout
Main	A14	Plaster Systems	ASSUMED	ASSUMED	Lobby Center
Main	B5A	Mastic associated w/HA-B5	inaccessible	inaccessible	Strings&Chorus area
Main	B7A	Mastic associated w/HA-B7	inaccessible	inaccessible	band room

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: David Robertson - Environmental Testing & Management, Inc.
Phone: 864-213-4408

SIX MONTH PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Date Inspected: November 9, 2001

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	NF	Gym, Lobby, Classes
Main	A2A	Mastic Associated w/HA-A2	Inaccessible	Inaccessible	See HA-A2. CAFE
Main	A5	Linoleum Beige/Grey Speckled	Good	inaccessible	covered w/12" FT Rm 501, now 601
Main	A5	Linoleum Beige/Grey Speckled	Good	Good	Rm 503, now 603
Main	A10A	Mastic associated w/HA-A10	inaccessible	inaccessible	Room 309
Main	A11	Floor tile	NF	NF	Room 113, now 313
Main	A11A	Mastic associated w/HA-A11	inaccessible	inaccessible	Room 113, now 313
Main	A13	Sheetrock Joint Cmpd Sys	ASSUMED	ASSUMED	Throughout
Main	A14	Plaster Systems	ASSUMED	ASSUMED	Lobby Center
Main	B5A	Mastic associated w/HA-B5	inaccessible	inaccessible	mini-gym
Main	B7A	Mastic associated w/HA-B7	inaccessible	inaccessible	band room

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: Colleen Christian - Environmental Testing & Management, Inc.
Phone: 864-963-3688

SIX MONTH PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Date Inspected: May 18, 1999

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	Damaged	Gym, Lobby, Classes
Main	A2A	Mastic Associated w/HA-A2	N/A	Inaccessible	See HA-A2.
Main	A5	Linoleum Beige/Grey Speckled	Good		
Main	C1	TSI Pipe insulation	Damaged	Damaged	Boiler rm joint, hangers
Main	C3	Gasket Material	good	good	Boiler #1 viewing glass
Main	C4	Wrap on F/G lines	N/A	ASSUMED	Not previously sampled
Main	A7	3" Wide vinyl strips	good	ASSUMED	@ Terrazzo floors
Main	A8	Sheetrock Joint Cmpd Sys	good	ASSUMED	Throughout
Main	A9	Plaster Systems	N/A	ASSUMED	Lobby Center

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: Colleen Christian - Environmental Testing & Management, Inc.
Phone: 864-963-3688

SIX MONTH PERIODIC SURVEILLANCE REPORT
OCONEE COUNTY SCHOOLS

Date Inspected: May 18, 1999

Facility: Seneca Middle
Address: W. S. 4th Street
Seneca, SC 29679

Building	HA-ID#	Description of Each Homogeneous Area	Prior Condition	Current Condition	Comments
Main	A2	12" x 12" Beige Speckled Tile	Damaged	Damaged	Gym, Lobby, Classes
Main	A2A	Mastic Associated w/HA-A2	N/A	Inaccessible	See HA-A2.
Main	A5	Linoleum Beige/Grey Speckled	Good		
Main	C1	TSI Pipe insulation	Damaged	Damaged	Boiler rm joint, hangers
Main	C3	Gasket Material	good	good	Boiler #1 viewing glass
Main	C4	Wrap on F/G lines	N/A	ASSUMED	Not previously sampled
Main	A7	3" Wide vinyl strips	good	ASSUMED	@ Terrazzo floors
Main	A8	Sheetrock Joint Cmpd Sys	good	ASSUMED	Throughout
Main	A9	Plaster Systems	N/A	ASSUMED	Lobby Center

Condition Codes	Damage Codes	Damage Assessment
D = Deterioration	D/TSI = Damaged TSI	Damaged = < 10% Overall or
W = Water	SD/TSI = Sig. Damaged TSI	< 25% Local
P = Physical	D/FS = Damaged Friable Surfacing	
O = Other	SD/FS - Sig. Damaged Friable Surfacing	
	D/F Misc. = Damaged Friable Miscellaneous	> 10% Overall or > 25% Local
	SD/F Misc. = Sig. Damaged Friable Miscellaneous	

N/A = Not Previously Assessed

Surveyed by: Colleen Christian - Environmental Testing & Management, Inc.
Phone: 864-963-3688

O'NEAL
THE BUSINESS OF PROJECT DELIVERY

www.onealinc.com

10 Falcon Crest Drive
Greenville, SC 29607-1583
PO Box 10269
Greenville, SC 29603-0269
ph: 864.298.2000
fx : 864.298.2200

November 9, 2012

Mr. Richard Alexander
Director of Facilities and Maintenance
School District of Oconee County
127 South Cove Road
Seneca, SC 29672

Re: Seneca Middle School
2000 Classroom Addition and Renovations
Seneca, SC

Dear Richard,
As the former Director of Design for Diversified Technology Inc., the design firm for the subject project, I can attest that by stipulation in the Contract for Construction and the process utilized for review of contractor submitted materials of construction that to the best of my knowledge no Asbestos Containing Building Materials were used in the construction of this project.

Sincerely,

Phil McCollum

Justice General Contractors, Inc.
PO Box 339 • Hwy 182/59 • Fair Play, SC 29643
803 • 972 • 3355

May 29, 1996

School District of Oconee County
P.O. Box 649
Walhalla, S.C. 29691

Re: Seneca Middle School
Seneca, S.C.
Arch. Job # 93029
MBK Job #602

Gentlemen:

We have installed no Asbestos Containing Materials on the above referenced project.

Sincerely,

Thomas E. Justice

Thomas E. Justice
President

Limited Inspection for Asbestos Containing Materials
School District of Oconee County
Seneca Middle
Portable
810 West South Fourth Street
Seneca, S.C. 29678

Prepared for:

Mr. Richard Alexander
School District of Oconee County
127 South Cove Road
Seneca, S.C. 29672

December 10, 2012

Prepared by:

Environmental Testing and Management, Inc.

P.O. Box 896
Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

Limited Inspection for Asbestos Containing Materials
School District of Oconee County
Seneca Middle Portable
810 West South Fourth Street
Seneca, S.C. 29678

I. Introduction

Environmental Testing and Management Inc., (ETM) was retained by Mr. Richard Alexander of the School District of Oconee County to conduct a limited inspection for suspect asbestos containing materials in a portable located on the grounds of Seneca Middle School located at 810 West South Fourth Street, Seneca, S.C. This inspection focused on identifying and, where possible, sampling suspect asbestos containing materials in this building. This inspection was conducted by Andrew Schauder, CIH, and Roxane Schauder, MS, of ETM on November 19, 2012. Twelve (12) bulk materials were collected and (21) layers were analyzed for the presence of asbestos.

II. Observations

This portable is a single story structure with wood paneling (nailed in, not glued on) and sheetrock ceiling with spray-applied ceiling texture. Samples (1-3) were collected of the spray-applied ceiling texture. This material returned as negative for the presence of asbestos upon bulk analysis. Three samples (10-12) were also collected of the sheetrock and joint compound. These materials were found to be non-asbestos containing as well.

A light beige mottled floor tile is over the wood sub-floor in the locker area. Three samples (4-6) were collected of this floor tile and its associated black mastic. These materials returned as negative for the presence of asbestos. In accordance with SCDHEC regulations for non-friable organically bound (NOB) materials, a sample of the floor tile and the mastic was subsequently submitted for TEM analysis and each was confirmed to be negative. Baseboards here are wood.

A different, light tan floor tile is present over the wood sub-floor in the storage area. Three samples (7-9) were collected of this floor tile and its associated yellow mastic. These materials also returned as negative for the presence of asbestos as confirmed by TEM analysis.

P.O. Box 896
Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

III. Conclusions and Recommendations

The results of this survey are summarized in Table I. This Table lists the following data:

1. Sample number
2. Sample location
3. Material sampled
4. The result of the analysis of the material sampled

Materials sampled and confirmed in this building to be non-asbestos containing include:

1. Spray-applied ceiling texture.
2. Sheetrock and joint compound.
3. Floor tile and associated mastics.

Inspector: Andrew G Schauder License: #1336 Expires: 09/07/13

Inspector: Roxane Schauder License: #00189 Expires: 02/16/13

TABLE I:

Sample No.	Location Sampled	Material	Result
01 - 03	Locker area	Spray-applied ceiling texture	ND*
04 - 06	Locker area	Floor tile and mastic	ND*
07 - 09	Storage area	Floor tile and mastic	ND*
10 - 12	Locker area	Sheetrock and joint compound	ND*

ND*: none detected

P.O. Box 896
Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

CEI LABS

ASBESTOS LABORATORY REPORT

Prepared for

Environmental Testing & Management, Inc.

PROJECT: Oconee County School District - Seneca Middle: portable

CEI LAB CODE: A12-10638

DATE ANALYZED: 11/27/12

DATE REPORTED: 11/27/12

TOTAL SAMPLES ANALYZED: 12

 # SAMPLES >1% ASBESTOS:

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Oconee County School District - Seneca Middle: portable **CEI LAB CODE:** A12-10638

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A1376775	Off-white	Spray-on Texture	None Detected
2		A1376776	Off-white	Spray-on Texture	None Detected
3		A1376777	Off-white	Spray-on Texture	None Detected
4		A1376778A	Tan,Grey	Floor Tile	None Detected
		A1376778B	Black	Mastic	None Detected
5		A1376779A	Tan,Grey	Floor Tile	None Detected
		A1376779B	Black	Mastic	None Detected
6		A1376780A	Tan,Grey	Floor Tile	None Detected
		A1376780B	Black	Mastic	None Detected
7		A1376781A	Off-white,Grey	Floor Tile	None Detected
		A1376781B	Yellow	Mastic	None Detected
8		A1376782A	Off-white,Grey	Floor Tile	None Detected
		A1376782B	Yellow	Mastic	None Detected
9		A1376783A	Off-white,Grey	Floor Tile	None Detected
		A1376783B	Yellow	Mastic	None Detected
10	Layer 1	A1376784	White	Joint Compound	None Detected
	Layer 2	A1376784	White	Sheetrock	None Detected
11	Layer 1	A1376785	White	Joint Compound	None Detected
	Layer 2	A1376785	White	Sheetrock	None Detected
12	Layer 1	A1376786	White	Joint Compound	None Detected
	Layer 2	A1376786	White	Sheetrock	None Detected

CEI LABS

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: A12-10638
Date Received: 11-23-12
Date Analyzed: 11-27-12
Date Reported: 11-27-12

Project: Oconee County School District - Seneca Middle: portable

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	Non-Fibrous	ASBESTOS %
1 A1376775	Spray-on Texture	Homogeneous Off-white Non-fibrous Loosely Bound		70% Binder 30% Mica	**None Detected**
2 A1376776	Spray-on Texture	Homogeneous Off-white Non-fibrous Loosely Bound		70% Binder 30% Mica	**None Detected**
3 A1376777	Spray-on Texture	Homogeneous Off-white Non-fibrous Loosely Bound		70% Binder 30% Mica	**None Detected**
4 A1376778A	Floor Tile	Homogeneous Tan,Grey Non-fibrous Bound		100% Vinyl	**None Detected**
A1376778B	Mastic	Homogeneous Black Non-fibrous Bound		100% Mastic	**None Detected**
5 A1376779A	Floor Tile	Homogeneous Tan,Grey Non-fibrous Bound		100% Vinyl	**None Detected**
A1376779B	Mastic	Homogeneous Black Non-fibrous Bound		100% Mastic	**None Detected**
6 A1376780A	Floor Tile	Homogeneous Tan,Grey Non-fibrous Bound		100% Vinyl	**None Detected**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: A12-10638
Date Received: 11-23-12
Date Analyzed: 11-27-12
Date Reported: 11-27-12

Project: Oconee County School District - Seneca Middle: portable

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	Non-Fibrous		ASBESTOS %
A1376780B	Mastic	Homogeneous Black Non-fibrous Bound		100%	Mastic	**None Detected**
7 A1376781A	Floor Tile	Homogeneous Off-white,Grey Non-fibrous Bound		100%	Vinyl	**None Detected**
A1376781B	Mastic	Homogeneous Yellow Non-fibrous Bound		100%	Mastic	**None Detected**
8 A1376782A	Floor Tile	Homogeneous Off-white,Grey Non-fibrous Bound		100%	Vinyl	**None Detected**
A1376782B	Mastic	Homogeneous Yellow Non-fibrous Bound		100%	Mastic	**None Detected**
9 A1376783A	Floor Tile	Homogeneous Off-white,Grey Non-fibrous Bound		100%	Vinyl	**None Detected**
A1376783B	Mastic	Homogeneous Yellow Non-fibrous Bound		100%	Mastic	**None Detected**
10 Layer 1 A1376784	Joint Compound	Homogeneous White Non-fibrous Bound		80% 20%	Calc Carb Binder	**None Detected**

CEI LABS

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: A12-10638
Date Received: 11-23-12
Date Analyzed: 11-27-12
Date Reported: 11-27-12

Project: Oconee County School District - Seneca Middle: portable

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 2 A1376784	Sheetrock	Homogeneous White Fibrous Bound	20% 5%	Cellulose Fiberglass	75%	Gypsum	**None Detected**
11 Layer 1 A1376785	Joint Compound	Homogeneous White Non-fibrous Bound			80% 20%	Calc Carb Binder	**None Detected**
Layer 2 A1376785	Sheetrock	Homogeneous White Fibrous Bound	20% 5%	Cellulose Fiberglass	75%	Gypsum	**None Detected**
12 Layer 1 A1376786	Joint Compound	Homogeneous White Non-fibrous Bound			80% 20%	Calc Carb Binder	**None Detected**
Layer 2 A1376786	Sheetrock	Homogeneous White Fibrous Bound	20% 5%	Cellulose Fiberglass	75%	Gypsum	**None Detected**

CEI LABS

LEGEND: Non-Anth = Non-Asbestiform Anthophylite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: **EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

ANALYST: Lynn Burkholder
Lynn Burkholder

APPROVED BY: Tianbao Bai
Tianbao Bai, Ph.D.
Laboratory Director

NVLAP®
NVLAP Lab Code 101768-0

ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

Project: Oconee County School District - Seneca Middle: portable

CEI Lab Code: T12-0857
Date Received: 11-28-12
Date Analyzed: 11-30-12
Date Reported: 11-30-12

TEM BULK CHATFIELD

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material %	Acid Soluble Material %	Acid Insoluble Material %	Asbestos %
6 T04330	Floor Tile	0.25	16.5	82.3	1.2	None Detected
6 T04331	Mastic	0.1637	77	5.9	17.1	None Detected
7 T04332	Floor Tile	0.3017	15.7	83.4	.9	None Detected
7 T04333	Mastic	0.1876	82.7	6.4	10.9	None Detected

ANALYST: Tianbao Bai

APPROVED BY: Tianbao Bai, Ph.D.
Laboratory Director

PAS

FINAL SUBMITTAL

Asbestos Abatement
Seneca Middle School
810 W. 54th Street
Seneca, South Carolina

Prepared for: Environmental Testing & Management
400 S.E. Main Street
Mauldin, S.C. 29662

Submitted by:

PROFESSIONAL ABATEMENT SERVICES, INC.
P. O. BOX 824, 109J MILLER ROAD
MAULDIN, SC 29662
PHONE (864)234-1433 FAX (864)234-1432

Professional Abatement Services

- SCDHEC Contractor License
- Certificate of Insurance

South Carolina DHEC Paperwork

- Disposal Request
- License to Dispose
- Waste Shipment Record
- DHEC Transmittal Letter

Project Paperwork

- Daily Logs
- Supervisor's Paperwork
- Workers' Paperwork

Material Safety Data Sheets

The State of South Carolina

Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

THIS CERTIFIES THAT

Professional Abatement Services Inc

has met the requirements of South Carolina Regulation No. 61-86.1
for licensing in the category of:

Contractor

The holder of this license shall comply with all applicable requirements of said regulation. This license is not transferable and shall expire one year from the date shown below.

Director, Program Compliance Management Division
Bureau of Air Quality

DATE: *December 27, 2000*

LICENSE NO: *537*

This license is the property of the Department and must be surrendered on demand. Contractors must post a copy of this license in a conspicuous place at each worksite.

DHEC 3468 (11/1999)

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY) 06/28/2001

PRODUCER
BB&T Goldsmith Joyner
770 Pelham Road
PO Box 26989
Greenville, SC 29616

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED
Professional Abatement Services Inc.
P.O. Box 824
Mauldin, SC 29662

INSURER A: Gulf Insurance Group
INSURER B: Auto Owners Insurance
INSURER C: Clarendon Insurance
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GU0693292	02/14/01	02/14/02	EACH OCCURRENCE	$1,000,000
	X COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$50,000
	CLAIMS MADE X OCCUR				MED EXP (Any one person)	$5,000
					PERSONAL & ADV INJURY	$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:				GENERAL AGGREGATE	$2,000,000
	POLICY X PRO-JECT LOC				PRODUCTS -COMP/OP AGG	$2,000,000
B	AUTOMOBILE LIABILITY	9632533501	02/14/01	02/14/02	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO				BODILY INJURY (Per person)	$
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	$
	X HIRED AUTOS					
	X NON-OWNED AUTOS					
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
A	EXCESS LIABILITY	GU0693295	02/14/01	02/14/02	EACH OCCURRENCE	$1,000,000
	OCCUR CLAIMS MADE				AGGREGATE	$1,000,000
	DEDUCTIBLE					$
	X RETENTION $10000					$
						$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	W60200002600	02/13/01	02/13/02	X WC STATU-TORY LIMITS OTH-ER	
					E.L. EACH ACCIDENT	$500,000
					E.L. DISEASE-EA EMPLOYEE	$500,000
					E.L. DISEASE-POLICY LIMIT	$500,000
A	OTHER Professional Liability - CM Contractors Pollution Liability	GU0693292	02/14/01	02/14/02	$1,000,000 each claim $1,000,000 included in above aggregate.	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
Asbestos Abatement Liability Included.

CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER:

Oconee County School District
Mr. Richard Alexander
PO Box 649
Walhalla, SC 29691

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

PAS

Professional Abatement Services, Inc.
P. O. Box 824 ✦ Mauldin, SC 29662
(864)234-1433 ✦ Fax: (864)234-1432

July 10, 2001

Ms. Sonya Younger
S.C.D.H.E.C.
2600 Bull Street
Columbia, SC 29201

Dear Ms. Younger:

This letter is to request disposal of non-friable asbestos containing material. Per South Carolina regulation 61-86.1, effective date May 22, 1998, please note the following information:

1.	**Owner Name:**	Oconee County School District
	Owner Address:	101 E. North Broad Street Walhalla, S.C. 29691
	Contact Name:	Mr. Richard Alexander
	Phone Number:	(864) 638-4000
2.	**Facility Name:**	Seneca Middle School
	Facility Address:	810 W. 54th Street Seneca, S.C. 29678
3.	**Amount of Disposal:**	220 SF floor tile and mastic
4.	**Contractor Name:**	Professional Abatement Services, Inc.
	Contractor Address:	109J Miller Road Mauldin, SC 29662 (864)234-1433
	Contractor License Number:	537
5.	**Landfill Name:**	Palmetto Landfill
	Landfill Address:	375 Freys Creek Road Spartanburg, S.C. 29301
	Landfill Telephone Number:	(864) 439-9184

We estimate this project should be completed and ready for disposal by July 10, 2001. Should you have any questions regarding this request, please give me a call at (864)234-1433. We appreciate your assistance.

Sincerely,

Roxane Schauder

Roxane Schauder
President/Owner

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

ASBESTOS ABATEMENT PROJECT LICENSE

License Number: D0107023

THOMAS BAGWELL
PROFESSIONAL ABATEMENT SERVICES INC
P O BOX 824
MAULDIN SC 29662-

SITE: SENECA MIDDLE SCHOOL; 810 W. 54TH ST.
LOCATION: SENECA
AMOUNT: 220 SF NF FLOOR TILE/MASTIC

The Department has received your disposal request and has approved the disposal of the Waste generated at the site as referenced above at the Palmetto Landfill, 422401-1101. Approval is based on the following conditions.

1. Prior approval for disposal has been obtained from the landfill operator.
2. Authorization is valid only for the approximated amount specified above and for a reasonable amount of other asbestos-contaminated materials generated;
3. There must be no leakage or spillage during transport to the landfill;
4. You must submit a completed copy of your Waste Shipment Record along with a copy of this letter to this department at the conclusion of the disposal; and
5. This authorization for disposal shall expire 20 days from the completion date July 10, 2001 unless otherwise specified by this Department.

The SCDHEC Division of Solid Waste Planning & Recycling also has rules which govern the disposal of materials that have come in contact with lead-based paint. Please contact the Bureau of Land and Waste Management at (803)896-4000 for additional information.

Please be aware, the revised OSHA standards for asbestos removal may apply to the above mentioned project(s). Please contact the South Carolina Department of Labor at (803)734-9631 for additional information concerning this standard.

For additional information concerning South Carolina DHEC regulations dealing with asbestos abatement and disposal requirements, please contact the Asbestos Section at (803) 898-4289.

Sincerely,

Asbestos Section
Bureau of Air Quality

Permit#: D0107023
Issued: July 10, 2001
cc: Administrator of Palmetto Landfill
F.M. Carns, BSHWM

PAS

Professional Abatement Services, Inc.
P. O. Box 824 ✦ Mauldin, SC 29662
(864)234-1433 ✦ Fax: (864)234-1432

July 16, 2001

Ms. Sonya Younger
S.C.D.H.E.C.
Asbestos Section
2600 Bull Street
Columbia, SC 29201

Dear Ms. Younger:

Enclosed please find the waste manifest for the following project:

- Seneca Middle School, disposed under DHEC license D0107023.

The above project was recently completed by Professional Abatement Services, Inc. (PAS).

Should you have any questions regarding this paperwork, please give me a call at (864)234-1433.

Sincerely,

Roxane Schauder

Roxane Schauder
President/Owner

WASTE SHIPMENT RECORD

SCDHEC Asbestos Abatement Project License: CQ 6886

1. Waste Generator/Owner Name & Address: Oconee County School District 101 E. North Broad Street Walhalla, S.C. 29691	2. Work Site Name & Physical Address: Seneca Middle School 810 W. 54th Street Seneca, S.C. 29678	Waste Generator/Owner Telephone Number: (864) 638-4000
2. Abatement Contractor Name & Address: Professional Abatement Services, Inc. 109J Miller Road Mauldin, SC 29662		Abatement Contractor Telephone Number: (864) 234-1433
3. Name of Waste Disposal site (WDS), Mailing address, and physical site location: Palmetto Landfill 375 Freys Creek Road, Spartanburg, S.C. 29301		WDS Telephone Number: (864) 439-9184
4. Description of Waste Materials(please circle): Friable(Regulated) / Nonfriable(Nonregulated)	5. Bags or Containers: No. Type ____Drums ____Bags __✓__Bulk Load	6. Total Quantity) m3 (yd3) 3 cubic Yd

7. Special Handling instructions & additional Information:

9. GENERATOR'S/CONTRACTOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Print Name	Signature:	Date:
ROBERT KIRBY SR	Robert Kirby SR	7-10-01

TRANSPORTER INFORMATION (Acknowledgement of Receipt of Materials):

9. Name, title, address, telephone number: Waste Management of SC 390 Innovation Way Wellford, SC 29301 Tel: (864)232-1537	Signature: John Talley	Date: 7-12-01
10. Name, title, address, telephone number:	Signature:	Date:

DISPOSAL SITE OPERATOR

11. DISCREPANCY	Bags or Containers	Total Quantity

12. Waste Disposal Site Owner or Operator Certification of receipt of asbestos materials covered by this covered by this manifest except as noted

Print Name:	Signature:	Date:
C S Myers	C S Myers	7/12/01

Please forward a copy of this record to SCDHEC, Bureau of Air Quality, Asbestos Section, 2600 Bull Street, Columbia, SC 29201-1708 when completed. (803) 898-4289 office. (803) 898-4281 fax.

Job Number: 1SG087

PROFESSIONAL ABATEMENT SERVICES, INC.

DAILY SIGN IN LOG

CLIENT: Seneca Middle School | DATE: 7-10-01

FACILITY: 810 W. 54th Street | WEATHER: Hot

ADDRESS: Seneca, SC 29678 | TEMPERATURE: AM 71 PM 92

Page 1 of 1

PAS Employee	Time In	Time Out	Time In	Time Out	NOTES
ROBERT KIRBY	10:00	12:00	12:30	6:30	8 HOURS
HIPOLITO SILVA A.	10:00	12:00	12:30	6:30	8
JAQUIN CASTILLO	10:00	12:00	12:30	6:30	8

Job Number: 1SG087

WORK: Picked up FLOOR TILE THAT WAS IN HALLWAY. TOOK UP MASTIC ON FLOOR.

VISITORS LOG

Name of visitor	Time in	Time out	Time in	Time out	Comments

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. 45064

This certifies that

Robert E Kirby Sr

249-RR-1007

doing business as Professional Abatement Services Inc

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Supervisor

The holder of this license shall comply with all the requirements of said Regulation. This license allows the holder to perform abatement activities involving RACM that is in or on interior structural components or other parts of a regulated facility with the exception of RACM subject to the requirements of Section XI of SC DHEC Regulation No. 61-86.1.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from 06/22/01.

The holder of this license is qualified in accordance with requirements of the Asbestos Hazard Emergency Response Act of 1986 (AHERA) to perform as an abatement worker.

06/25/01

Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control

06/25/01 15:08

Bureau of Air Quality

ORIGINAL

CR-001126

Environmental Testing & Management, Inc.

400 South Main Street, Suite 101
P. O. Box 896
Mauldin, South Carolina 29662
(864)963-3688 ✣ Fax (864)963-2845

Certificate Number:
ASR062201.002

Certificate Expires:
June 22, 2002

hereby certifies that

Robert Kirby
249-72-1007

has successfully completed the Supervision of Asbestos Abatement Projects Refresher Course and has satisfactorily passed the required examination. This certifies that the above named student has completed the required training for asbestos accreditation under TSCA Title II.

Date(s) of Instruction:	June 22, 2001
Date(s) of Examination:	June 22, 2001
Principal Instructor:	Andrew G. Schauder, CIH
Training Director:	Andrew G. Schauder, CIH

Principal Instructor

Training Director

NORTH HILLS
MEDICAL CENTER

OCCUPATIONAL MEDICINE DEPARTMENT

JAMES W. McPHAIL, M.D.

PHYSICIAN'S WRITTEN OPINION ON MEDICAL FITNESS FOR
WORK IN ASBESTOS AND EMERGENCY RESPONSE OPERATIONS
AND FOR THE USE OF RESPIRATORS

EMPLOYEE'S FULL NAME: Robert E. Kirby

EMPLOYEE'S SS#: 249-72-1007

EXAMINATION DATE: 7-6-01

✓ ON THE ABOVE DATE, I DID NOT DETECT ANY MEDICAL CONDITION THAT WOULD PLACE THE NAMED EMPLOYEE AT RISK OF MATERIAL HEALTH IMPAIRMENT AS A RESULT OF:

- WORK IN OPERATIONS WITH POTENTIAL EXPOSURE TO ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE,
- WORK IN RESPIRATORY PROTECTION DEVICES (WITH POSITIVE OR NEGATIVE FACEPIECE PRESSURES), OR
- WORK IN HOT ENVIRONMENTS (POSSIBLY WITH RESPIRATORS AND HEAVY PROTECTIVE GARMENTS).

____ ON THE ABOVE DATE, I DID DETECT SUCH A MEDICAL CONDITION.

CERTIFIED TO WEAR:

✓ AIR PURIFYING HALF MASK WITH HEPA CARTRIDGES.

✓ POWERED AIR PURIFYING RESPIRATOR (PAPR).

✓ SUPPLIED AIR RESPIRATOR.

I HAVE INFORMED THE EMPLOYEE OF THE RESULTS OF THIS MEDICAL EXAMINATION AND ANY MEDICAL CONDITIONS THAT REQUIRE FUTHER EXAMINATION OR TREATMENT. THE COMPLETE REPORT OF EXAMINATIONS AND TESTS WILL BE MAINTAINED AT THIS FACILITY UNTIL WE RECEIVE OTHER INSTRUCTIONS. THE EMPLOYEE MAY OBTAIN COPIES OF ANY MATERIAL IN HIS FILE UPON REQUEST.

JAMES W. MCPHAIL, MD

Professional Abatement Services, Inc.

RESPIRATOR FIT TEST

Name of Person being Fit-Tested:	Robert (first)	E. (middle initial)	Kirby, Sr. (last)
Title:	Abatement Supervisor		
Social Security Number:	249-72-1007		
Signature:	Robert E. Kirby Sr		
Date Signed:	June 24, 1999		

Type of Respirator	Worker's Initial's	Date of Test	Irritant Smoke	Signature of Fit Tester
Type of Mask: 1/2 mask Manufacturer: North Model: 7700 Size: M	RK	6/24/99	PASS/FAIL	PGES
Type of Mask: 1/2 mask Manufacturer: North Model: 7700 Size: M	RK	6/29/00	PASS/FAIL	PGES
Type of Mask: 1/2 MASK Manufacturer: NORTH Model: 7700 Size: M	R.K	6/8/01	PASS/FAIL	Tommy Boswell
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	

SPECIAL PROBLEMS & COMMENTS:

Note: Wearer must be fit-tested at least annually.
Record must be retained a minimum of three years.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. *43620*

This certifies that

Hipolito S Arriaga

623-WE-7963

doing business as *No Company Affiliation (E & P S)*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Worker

The holder of this license shall comply with all the requirements of said Regulation. This license allows the holder to perform abatement activities involving RACM that is in or on interior structural members or other parts of a regulated facility with the exception of Asbestos-Containing Material subject to the requirements of Section XI of SC DHEC Regulation No. 61-86.1. This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from *03/02/01.*

03/09/01

Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control

03/09/01 09:15

Bureau of Air Quality

ORIGINAL

CR-001126

MSK Ambiental

35490.695CERT/

900 N.W. 5TH Avenue, Fort Lauderdale, Florida 33311 (954) 524-7208

Processed By:

Seagull

To Authenticate Certificate:
www.seagulltraining.com
1-800-966-9933

This is to Certify that

Hipolito Silva Arriaga

623-87-7963

100 Ashe Drive Apt#10 , Greenville,SC

has successfully completed a Spanish

Asbestos Worker Refresher

2-Mar-01 TO 2-Mar-01

Asbestos courses comply with Section 206 TSCA 15 USC 2646

Complies with Sec. 206 TSCA 15 USC 2646

Trainer(s): Vicencio Romero

Training Address: 1180 Long Fery Road,Salisbury,Nc

Successful course completion based on exam score.

UNDER CIVIL AND CRIMINAL PENALTIES OF LAW FOR MAKING OR SUBMISSION OF FALSE OR FRAUDULENT STATEMENTS OR REPRESENTATIONS (18 U.S.C. 1001 AND 15 U.S.C. 2615), I CERTIFY THAT THIS TRAINING COMPLIES WITH ALL APPLICABLE REQUIREMENTS OF TITLE IV (ASBESTOS TOXIC SUBSTANCES CONTROL ACT*, 40 CFR PART 763 OR TSCA, AND ANY OTHER APPLICABLE FEDERAL OR LOCAL REQUIREMENTS AS AMENDED.

Rafael O. Abreu / Course Sponsor

This Certificate Expires

2-Mar-02

3/2/02

Certificate Number..... 102232

Course Number **SB0109**

NORTH HILLS
MEDICAL CENTER

OCCUPATIONAL MEDICINE DEP

JAMES W. McPHAIL, M.D.

PHYSICIAN'S WRITTEN OPINION ON MEDICAL FITNESS FOR
WORK IN ASBESTOS AND EMERGENCY RESPONSE OPERATIONS
AND FOR THE USE OF RESPIRATORS

EMPLOYEE'S FULL NAME: Hipolito Silva Arriaga

EMPLOYEE'S SS#: 623877962

EXAMINATION DATE: 32301

✓ ON THE ABOVE DATE, I DID NOT DETECT ANY MEDICAL CONDITION THAT WOULD PLACE THE NAMED EMPLOYEE AT RISK OF MATERIAL HEALTH IMPAIRMENT AS A RESULT OF:

- WORK IN OPERATIONS WITH POTENTIAL EXPOSURE TO ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE,
- WORK IN RESPIRATORY PROTECTION DEVICES (WITH POSITIVE OR NEGATIVE FACEPIECE PRESSURES), OR
- WORK IN HOT ENVIRONMENTS (POSSIBLY WITH RESPIRATORS AND HEAVY PROTECTIVE GARMENTS).

____ ON THE ABOVE DATE, I DID DETECT SUCH A MEDICAL CONDITION.

CERTIFIED TO WEAR:

✓ AIR PURIFYING HALF MASK WITH HEPA CARTRIDGES.

✓ POWERED AIR PURIFYING RESPIRATOR (PAPR).

✓ SUPPLIED AIR RESPIRATOR.

I HAVE INFORMED THE EMPLOYEE OF THE RESULTS OF THIS MEDICAL EXAMINATION AND ANY MEDICAL CONDITIONS THAT REQUIRE FUTHER EXAMINATION OR TREATMENT. THE COMPLETE REPORT OF EXAMINATIONS AND TESTS WILL BE MAINTAINED AT THIS FACILITY UNTIL WE RECEIVE OTHER INSTRUCTIONS. THE EMPLOYEE MAY OBTAIN COPIES OF ANY MATERIAL IN HIS FILE UPON REQUEST.

James W. McPhail 3/23/01

JAMES W. MCPHAIL, MD

Professional Abatement Services, Inc.

RESPIRATORY FIT TEST

Name of Person being Fit-Tested:	Hipolito S. Arriaga	
	(first) (middle initial)	(last)
Title:	Asbestos	
Social Security Number:	623-87-7963	
Signature:	Hipolito Silva Arriaga	
Date Signed:	2-3-99	

Type of Respirator	Worker's Initials	Date of Test	Saccharin Mist	Signature of Fit Tester
Type of Mask: Half face Manufacturer: North Model: 7700 Size: M	H.A.	2-3-99	(PASS) FAIL	Tommy Bagwell
Type of Mask: Half face Manufacturer: North Model: 7700 Size: M	H.A.	2-7-00	(PASS) FAIL	Tommy Bagwell
Type of Mask: Half face Manufacturer: North Model: 7700 Size: M	H.A.	2-9-01	PASS FAIL	Tommy Bagwell
Type of Mask: Manufacturer: Model: Size:			PASS FAIL	

SPECIAL PROBLEMS & COMMENTS:

Note: Wearer must be fit-tested at least each six (6) months.
Record must be retained a minimum of three years.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. 41225

This certifies that

Joaquin Castillo

464-WC-8845

doing business as No Company Affiliation

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Worker

The holder of this license shall comply with all the requirements of said Regulation. This license allows the holder to perform abatement activities involving RACM that is in or on interior structural members or other parts of a regulated facility with the exception of Asbestos-Containing Material subject to the requirements of Section XI of SC DHEC Regulation No. 61-86.1.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from 03/09/01.

03/15/01

Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control

03/15/01 08:36

Bureau of Air Quality

ORIGINAL

CR-001126

AAA Environmental

P.O. Box 8190 Spartanburg, South Carolina 29305 (864)582-1222

JOAQUIN TREJO CASTILLO

464-89-8845

has completed the requisite training for asbestos accreditation under TSCA Title II and has met the requirements of and passed the examination for an EPA approved

Spanish AHERA Worker Refresher Training Course

02-1293
Certificate Number

March 9, 2001
Course Date(s)

March 9, 2001
Examination Date

Principal Instructor

Pamela A. Smith, President

March 9, 2002
Expiration Date

NORTH HILLS
MEDICAL CENTER

OCCUPATIONAL MEDICINE DE

JAMES W. McPHAIL, M.D.

PHYSICIAN'S WRITTEN OPINION ON MEDICAL FITNESS FOR
WORK IN ASBESTOS AND EMERGENCY RESPONSE OPERATIONS
AND FOR THE USE OF RESPIRATORS

EMPLOYEE'S FULL NAME: Joaquin Castello

EMPLOYEE'S SS#: 464-89-0845

EXAMINATION DATE: 5-7-01

✓ ON THE ABOVE DATE, I DID NOT DETECT ANY MEDICAL CONDITION THAT WOULD PLACE THE NAMED EMPLOYEE AT RISK OF MATERIAL HEALTH IMPAIRMENT AS A RESULT OF:

- WORK IN OPERATIONS WITH POTENTIAL EXPOSURE TO ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE,
- WORK IN RESPIRATORY PROTECTION DEVICES (WITH POSITIVE OR NEGATIVE FACEPIECE PRESSURES), OR
- WORK IN HOT ENVIRONMENTS (POSSIBLY WITH RESPIRATORS AND HEAVY PROTECTIVE GARMENTS).

____ ON THE ABOVE DATE, I DID DETECT SUCH A MEDICAL CONDITION.

CERTIFIED TO WEAR:

✓ AIR PURIFYING HALF MASK WITH HEPA CARTRIDGES.

✓ POWERED AIR PURIFYING RESPIRATOR (PAPR).

____ SUPPLIED AIR RESPIRATOR..

I HAVE INFORMED THE EMPLOYEE OF THE RESULTS OF THIS MEDICAL EXAMINATION AND ANY MEDICAL CONDITIONS THAT REQUIRE FUTHER EXAMINATION OR TREATMENT. THE COMPLETE REPORT OF EXAMINATIONS AND TESTS WILL BE MAINTAINED AT THIS FACILITY UNTIL WE RECEIVE OTHER INSTRUCTIONS. THE EMPLOYEE MAY OBTAIN COPIES OF ANY MATERIAL IN HIS FILE UPON REQUEST.

JAMES W. MCPHAIL, MD

Professional Abatement Services, Inc.

RESPIRATORY FIT TEST

Name of Person being Fit-Tested:	Joaquin		Castillo
	(first)	(middle initial)	(last)
Title:	Asbestos Worker		
Social Security Number:	464-89-8845		
Signature:	JOAQUIN CASTILLO		
Date Signed:	3-23-01		

Type of Respirator	Worker's Initial's	Date of Test	Irritant Smoke	Signature of Fit Tester
Type of Mask: HALF FACE Manufacturer: North Model: 7700 Size: S	JC	3-23-01	PASS/FAIL	Tommy Bagwell
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	

SPECIAL PROBLEMS & COMMENTS: _____

Note: Wearer must be fit-tested at least annually.
Record must be retained a minimum of three years.

MATERIAL SAFETY DATA SHEET

Hazard rating:	HMIS
HEALTH	1
FLAMMABILITY	2
REACTIVITY	0
PERSONAL PROTECTION	H

SECTION 1 **PROOUCT IDENTIFICATION**

NAME

PRO 145 Low Odor Mastic Remover

DISTRIBUTED BY

BWI/BYROC 10942 Beaver Oam Road,
Hunt Valley, MO 21030

24 HOUR EMERGENCY RESPONSE NUMBER
800-228-5365

SECTION 2 **HAZARD IOENTIFICATION**

NAME	CAS #	EXPOSURE GUIOELINES	
PETROLEUM DISTILLATES	64742-47-8	100 PPM (525 mg/m3) is a recommended PEL for 8-hour TWA	
AROMATIC HYDROCARBONS	64742-95-5	100 PPM, 525 MG/M3 for 8 hour TWA	
ETHYLENE GLYCOL MONOBUTYL ETHER*	111-76-2	25 PPM (SKIN)	5-10% by weight

*Subject to the reporting requirements of SARA 313 and 40 CFR 372:

SECTION 3 **PHYSICAL DATA**

BOILING POINT (F)..... 400-450
VAPOR PRESSURE (mm Hg).....negligible
ODOR.....mild/characteristic
% VOLATILE.....100
VAPOR DENSITY.....heavier than air
EVAPORATION RATE .....slower than ether
WEIGHT PER GALLON.....7.00
APPEARANCE.....clear

SECTION 4 **FIRE ANO EXPLOSION OATA**

FLASH POINT (METHOD USEO)	AUTO IGNITION TEMPERATURE
145 degrees F. Method PMCC Note: Minimum	421 degrees F. Note: Approximate

EXTINGUISHING MEOIA Small fires: Extinguish with dry chemical, CO2 or foam. Large fires: The use of dry chemical or foam is recommended.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS The use of SCBA is recommended for fire fighters. Water spray may be useful in minimizing vapors and cooling containers exposed to heat and flame. Avoid spreading burning liquid with water used for cooling purposes.

UNUSUAL FIRE ANO EXPLOSION This material is a NFPA IIIA combustible liquid.

SECTION 5 **HEALTH HAZARD INFORMATION/FIRST AID**

EYE CONTACT Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.
SKIN Flush skin with plenty of water; use soap if available. Remove contaminated clothing. Call a physician if irritation persists. Wash clothing before reuse.
INHALATION Remove to fresh air. If breathing has stopped, administer artificial respiration. Keep at rest. Get prompt medical attention.
INGESTION If swallowed, **DO NOT** induce vomiting. Keep at rest. Get prompt medical attention.
ASPIRATION HAZARD This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage. **THIS MATERIAL HAS NOT BEEN IOENTIFIED AS CARCINOGEN OR PROBABLE CARCINOGEN BY NTP, IARC, OR OSHA.**

SECTION 6 **HEALTH HAZARDS /ROUTES OF ENTRY**

EYE CONTACT Direct contact with this liquid may cause irritation. Exposure to it's vapors may cause burning tearing or redness.
SKIN CONTACT Repeated or prolonged contact with liquid may cause irritation, reddening and dermatitis.
INHALATION High vapor concentrations may cause headaches, stupor, irritation of throat and kidney effects. Extreme aspiration into the lungs may cause pneumonia or death.
INGESTION This material causes irritation of the stomach and intestines and signs of nervous system depression
Acute exposure may result in narcosis, pulmonary edema and severe kidney and liver damage.

SECTION 7 **SPECIAL PROTECTION INFORMATION**

VENTILATION Air contaminant levels should be controlled below the PEL or TLV for this product. (See Section 2) Mechanical ventilation may be necessary if working with this product in enclosed areas.
RESPIRATORY PROTECTION Respiratory protection may be necessary to minimize exposure to organic vapors. Use NIOSH approved organic vapor air purifying respirator, self contained breathing apparatus, or air supplied respirators dependent on concentration.
PROTECTIVE GLOVES The use of impermeable gloves (Nitril or Neoprene) is recommended to prevent contact and possible irritation.
EYE PROTECTION When contact with liquid is possible, use a face shield, otherwise use safety glasses or goggles.
PROTECTIVE EQUIPMENT It is suggested that a clean source of water is available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

SECTION 8 **REACTIVITY DATA**

STABILITY - Stable **HAZARDOUS POLYMERIZATION** - Will not occur. **INCOMPATIBILITY** - Strong oxidizing agents.
HAZARDOUS OECOMPOSITION PROOUCTS - Thermal decomposition in the presence of air may yield carbon monoxide and/or carbon dioxide.

SECTION 9 **SPILL OR LEAK PROCEDURES**

Stay upwind and away from spill. Keep all sources of ignition and hot metal surfaces away from spill. If spill is indoors, ventilate area of spill. Foam, especially high expansion foam, may be used to suppress vapors. Keep contained and dispose of in accordance with local, county, state and federal regulations.

SECTION 10 **SHIPPING INFORMATION**

DOT PROPER SHIPPING NAME: Combustible Liquid, n.o.s. **OOT HAZARO CLASS:** Combustible Liquid
DOT IDENTIFICATION NUMBER: NA 1993 (not regulated in pkg. of less than 119 gal.) **PACKING GROUP:** III

SECTION 11 **STORAGE AND SPECIAL PRECAUTIONS**

Keep containers tightly closed. Keep containers cool, dry and away from sources of ignition. Use and store this product with adequate ventilation. Avoid inhalation of vapors. Do not pressurize, cut weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks or other sources of ignition. "Empty" drums should be completely drained, properly bunged and properly shipped to a qualified drum reconditioner.

SECTION 12 **DOCUMENTARY INFORMATION**

The information in this document is believed to be correct as of the date issued. However, no warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this product or the hazards related its use. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.

Limited Inspection for Asbestos Containing Materials
School District of Oconee County
Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678

Prepared for:

Mr. Richard Alexander
School District of Oconee County
127 South Cove Road
Seneca, S.C. 29672

July 29th, 2013

Prepared by:

Environmental Testing and Management, Inc.

P.O. Box 896
Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

Limited Inspection for Asbestos Containing Materials
Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678

I. Introduction

Environmental Testing and Management Inc. (ETM) was retained by Mr. Richard Alexander of the Oconee County School District to conduct a limited inspection for asbestos containing materials at Seneca Middle School. The linoleum and its associated mastic in the 500 wing hallway had previously been determined to be asbestos containing. However, it was discovered that there is what appears to be the same linoleum exposed in portions of room 601 at Seneca Middle School. The remainder of the flooring in this room is floor tile. Therefore, the purpose of the inspection in room 601 was to sample the linoleum as well as the floor tile. Further, it is planned to remove the carpeting in the offices located off the 500 wing. Therefore, the carpet mastic was sampled. This inspection was conducted by Andrew G. Schauder, CIH of ETM on July 11th, 2013.

II. Results

The results of the analysis of the linoleum and its associated mastic in room 601 confirm that both the linoleum and the mastic are asbestos containing (see attached laboratory report from CEI Labs dated July 12th, 2013). The floor tile in this room was found to be non-asbestos. Given the nature of the planned abatement in this room, it was decided not to proceed with the TEM analysis of the floor tile at this time. In addition, due to the limited mastic associated with the floor tile, the mastic was not sampled.

In the 500 wing office area, the carpet was pulled back and three samples of the carpet mastic were collected (samples 7-9). As you will note from the attached CEI Labs report, the mastic was found to be non-asbestos. In accordance with the current SCDHEC regulations for non-friable organically bound (NOB) materials, the carpet mastic was subsequently subjected to TEM analysis and was confirmed to be non-asbestos containing.

P.O. Box 896
Mauldin, South Carolina 29662
Phone (864) 213-4408 Fax (864) 213-4409

III. Conclusions and Recommendations

Given these findings, it was decided to proceed with the abatement of the linoleum in room 601. One row of floor tile and its mastic adjacent to this will also be removed and disposed of as if they were asbestos containing materials..

Given that the carpet mastic in the 500 wing offices is non-asbestos, the school district will remove the carpeting and dispose of it as construction debris.

Inspector: _____ License: #1336 Expires: 09/07/13

CEI LABS

ASBESTOS LABORATORY REPORT

Prepared for

Environmental Testing & Management, Inc.

PROJECT: Oconee County School District - Seneca Middle School

CEI LAB CODE: A13-7970

DATE ANALYZED: 07/12/13

DATE REPORTED: 07/12/13

TOTAL SAMPLES ANALYZED: 9

 # SAMPLES >1% ASBESTOS: 2

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Oconee County School District - Seneca Middle School **CEI LAB CODE:** A13-7970

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1	Layer 1	A1509577	Tan	Linoleum	Chrysotile 25%
	Layer 2	A1509577	Yellow	Mastic	Chrysotile 5%
2		A1509578		Sample Not Analyzed per COC	
3		A1509579		Sample Not Analyzed per COC	
4		A1509580	Tan	Floor Tile	None Detected
5		A1509581	Tan	Floor Tile	None Detected
6		A1509582	Tan	Floor Tile	None Detected
7		A1509583	Grey,Yellow	Mastic	None Detected
8		A1509584	Grey,Yellow	Mastic	None Detected
9		A1509585	Grey,Yellow	Mastic	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: A13-7970
Date Received: 07-12-13
Date Analyzed: 07-12-13
Date Reported: 07-12-13

Project: Oconee County School District - Seneca Middle School

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
1 Layer 1 A1509577	Linoleum	Heterogeneous Tan Fibrous Bound	25%	Cellulose	50%	Vinyl	**25% Chrysotile**
Layer 2 A1509577	Mastic	Heterogeneous Yellow Fibrous Bound			95%	Mastic	**5% Chrysotile**
Lab Notes: Analyst Opinion: contamination from positive mastic							
2 A1509578	Sample Not Analyzed per COC						
3 A1509579	Sample Not Analyzed per COC						
4 A1509580	Floor Tile	Heterogeneous Tan Non-fibrous Bound			100%	Vinyl	**None Detected**
5 A1509581	Floor Tile	Heterogeneous Tan Non-fibrous Bound			100%	Vinyl	**None Detected**
6 A1509582	Floor Tile	Heterogeneous Tan Non-fibrous Bound			100%	Vinyl	**None Detected**
7 A1509583	Mastic	Heterogeneous Grey,Yellow Non-fibrous Bound			100%	Mastic	**None Detected**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: A13-7970
Date Received: 07-12-13
Date Analyzed: 07-12-13
Date Reported: 07-12-13

Project: Oconee County School District - Seneca Middle School

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	 Non-Fibrous	ASBESTOS %
8 A1509584	Mastic	Heterogeneous Grey,Yellow Non-fibrous Bound		100% Mastic	**None Detected**
9 A1509585	Mastic	Heterogeneous Grey,Yellow Non-fibrous Bound		100% Mastic	**None Detected**

CEI LABS

LEGEND: Non-Anth = Non-Asbestiform Anthophylite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: **EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

ANALYST: Megan Fisher

APPROVED BY: Tianbao Bai, Ph.D.
Laboratory Director

NVLAP®
NVLAP Lab Code 101768-0

ETM
Environmental Testing & Management, Inc.
P. O. Box 896 Mauldin, SC 29662
Phone: (864) 213-4408 Fax: (864) 213-4409

A1509577.
A 1509565

Memorandum

To:	Carolina Environmental	**Client:**	Oconee County School District
Date:	July 11, 2013	**Facility:**	Seneca Middle School
From:	Andrew Schauder, CIH	**Turnaround:**	4 hour

Enclosed with this memo please find 9 samples for analysis for the presence of asbestos. These samples are:

Sample #	Location	Description
1	Room 601	linoleum
2	Room 601	linoleum
3	Room 601	linoleum
4	Room 601	floor tile
5	Room 601	floor tile
6	Room 601	floor tile
7	500 wing office area	mastic
8	500 wing office area	mastic
9	500 wing office area	mastic

NOTE: EMPLOY POSITIVE STOP ON INDICATED SETS

Please send the written reports and the invoice to my attention at the address above. If you have any questions, please give me a call at (864) 213-4408.

Kim Pruitt
07/12/13 10:15 am

ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: T13-1081
Date Received: 07-15-13
Date Analyzed: 07-15-13
Date Reported: 07-15-13

Project: Oconee County School District - Seneca Middle School

TEM BULK CHATFIELD

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material %	Acid Soluble Material %	Acid Insoluble Material %	Asbestos %
SMS 7 T11660	Mastic	0.3117	49.9	15.4	34.7	None Detected

This report may not be reproduced, except in full, without written approval by CEI LABS. CEI LABS makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results.

ANALYST: Kamila Reichert
Kamila Reichert

APPROVED BY:
Tianbao Bai, Ph.D.
Laboratory Director

CEI LABS

ASBESTOS LABORATORY REPORT

Prepared for

Environmental Testing & Management, Inc.

PROJECT: Oconee County Schools, Seneca Middle School

CEI LAB CODE: A13-8409

DATE ANALYZED: 07/22/13

DATE REPORTED: 07/22/13

TOTAL SAMPLES ANALYZED: 1

 # SAMPLES >1% ASBESTOS:

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Oconee County Schools, Seneca Middle School **CEI LAB CODE:** A13-8409

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A1515565	Off-white	Flooring Material	None Detected

CEI LABS

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

CEI Lab Code: A13-8409
Date Received: 07-22-13
Date Analyzed: 07-22-13
Date Reported: 07-22-13

Project: Oconee County Schools, Seneca Middle School

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
1 A1515565	Flooring Material	Homogeneous Off-white Fibrous Loose	2%	Cellulose	30% 68%	Silicates Binder	None Detected

CEI LABS

LEGEND: Non-Anth = Non-Asbestiform Anthophylite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: **EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

ANALYST: Gary A. Swanson

APPROVED BY: Tianbao Bai, Ph.D.
Laboratory Director

NVLAP®
NVLAP Lab Code 101768-0

ETM
Environmental Testing & Management, Inc.
P. O. Box 896 Mauldin, SC 29662
Phone: (864) 213-4408 Fax: (864) 213-4409

A13-8489
A15155165 (1)

Memorandum

To:	Carolina Environmental	**Client:**	Oconee County Schools
Date:	July 19, 2013	**Facility:**	Seneca Middle School
From:	Andrew Schauder, CIH	**Turnaround:**	4 hour

Enclosed with this memo please find 1 sample for analysis for the presence of asbestos. This sample is:

Sample #	Location	Description
1	500 Wing Hallway	flooring material

NOTE:
Please send the written reports and the invoice to my attention at the address above. If you have any questions, please give me a call at (864) 213-4408.

9:50 JUL 22 2013

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**			Date Sampled: **July 11, 2013**
	Address: **Seneca, S.C.**			Name: **Seneca Middle School**
	ETM Analyst : **Roxane Schauder**			Location: **500 Hallway**
	File Name: OCSDSMS07-11-13	ETM Date Generated: 07/12/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Background sampling prior to friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	By boys' room	Area	9 : 34	12 : 34	180	10.0	1800	1.0	1.3	100	<0.001
2	Outside room 505	Area	9 : 36	12 : 36	180	10.0	1800	1.0	1.3	100	<0.001
3	Outside room 500	Area	9 : 38	12 : 38	180	10.0	1800	0.5	0.6	100	<0.001

Roxane Schauder

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**		Date Sampled: **July 15, 2013**	
	Address: **Seneca, S.C.**		Name: **Seneca Middle School**	
	Analyst : **Randy Barber**		Location: **500 Hallway**	
	File Name: OCSDSMS07-15-13	ETM Date Generated: 07/16/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Prep work area prior to friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Work Area: Hallway at room	Area	11 : 12	16 : 00	288	6.0	1728	6.0	7.6	100	0.002
2	Work Area: At room 508	Area	11 : 15	16 : 05	290	6.0	1740	2.5	3.2	100	<0.001
3	Work Area: At room 501	Area	11 : 17	16 : 02	285	6.0	1710	4.0	5.1	100	<0.001

RB Hays

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**		Date Sampled: **July 16, 2013**	
	Address: **Seneca, S.C.**		Name: **Seneca Middle School**	
	Analyst : **Randy Barber**		Location: **500 Hallway**	
	File Name: OCSDSMS07-16-13	ETM Date Generated: 07/17/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Prep work area prior to friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Work Area: Art room	Area	8 : 10	15 : 50	460	5.0	2300	0.0	0.0	100	<0.001
2	Work Area: At room 508	Area	8 : 07	15 : 52	465	5.0	2325	3.5	4.5	100	<0.001

RB / DJ

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**		Date Sampled: **July 17, 2013**	
	Address: **Seneca, S.C.**		Name: **Seneca Middle School**	
	Analyst : **Randy Barber**		Location: **500 Hallway**	
	File Name: OCSDSMS07-17-13	ETM Date Generated: 07/18/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH:MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Clean room	Area	8 : 10	16 : 15	485	5.0	2425	6.5	8.3	100	0.001
2	Dirty room	Area	8 : 12	16 : 16	484	5.0	2420	11.0	14.0	100	0.002
3	At negative air machine	Area	8 : 14	16 : 12	478	5.0	2390	2.0	2.5	100	<0.001
4	Ambient at room #508	Area	8 07	16 15	488	5.0	2440	0.0	0.0	100	<0.001

RB Riggs

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**			Date Sampled: **July 18, 2013**
	Address: **Seneca, S.C.**			Name: **Seneca Middle School**
	Analyst : **Randy Barber**			Location: **500 Hallway**
	File Name: OCSDSMS07-18-13	ETM Date Generated: 07/19/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Clean room	Area	8 : 08	15 : 43	455	5.0	2275	6.5	8.3	100	0.001
2	Dirty room	Area	8 : 10	15 : 44	454	5.0	2270	7.0	8.9	100	0.002
3	At negative air machine	Area	8 : 12	15 : 47	455	5.0	2275	2.0	2.5	100	<0.001
4	Ambient	Area	8 07	15 42	455	5.0	2275	0.0	0.0	100	<0.001

RB 7/22/13

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**			Date Sampled: **July 19, 2013**
	Address: **Seneca, S.C.**			Name: **Seneca Middle School**
	Analyst : **Randy Barber**			Location: **500 Hallway**
	File Name: OCSDSMS07-19-13	ETM Date Generated: 0723/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Clean room	Area	8 : 12	14 : 12	360	5.0	1800	7.0	8.9	100	0.002
2	Dirty room	Area	8 : 13	14 : 04	351	5.0	1755	4.0	5.1	100	<0.001
3	At negative air machine	Area	8 : 14	14 : 02	348	5.0	1740	0.0	0.0	100	<0.001
4	Ambient	Area	8 10	14 15	365	5.0	1825	2.5	3.2	100	<0.001

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**		Date Sampled: **July 23, 2013**	
	Address: **Seneca, S.C.**		Name: **Seneca Middle School**	
	Analyst : **Randy Barber**		Location: **500 Hallway**	
	File Name: OCSDSMS07-23-13	ETM Date Generated: 0723/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Fine cleaning following friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HR:MM	Time Off HR: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Clean room	Area	8 : 23	12 : 27	244	5.0	1220	2.0	2.5	100	<0.001
2	Dirty room	Area	8 : 25	12 : 28	243	5.0	1215	VOID	0.0	100	VOID
3	At negative air machine	Area	8 : 30	12 : 30	240	5.0	1200	0.0	0.0	100	<0.001
4	Ambient	Area	8 22	12 35	253	5.0	1265	3.0	3.8	100	<0.001

Sample #2 void due to wet filter.

RB/AGS

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**			Date Sampled: **July 23, 2013**
	Address: **Seneca, S.C.**			Name: **Seneca Middle School**
	Analyst : **Randy Barber**			Location: **Room 601 (2nd Floor)**
	File Name: OCSDSMS07-2302-13	ETM Date Generated: 0723/13		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Prep work prior to friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
5	Work Area	Area	13 : 02	16 : 05	183	5.0	915	0.0	0.0	100	<0.001
6	Work Area: Hallway	Area	13 : 04	16 : 07	183	5.0	915	0.0D	0.0	100	<0.001

RB/BOB

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

FIBER COUNT RESULTS

Client Information			Project Information	
	Name: **School District of Oconee County**		Date Sampled: **July 24, 2013**	
	Address: **Seneca, S.C.**		Name: **Seneca Middle School**	
	Analyst : **Randy Barber**		Location: **Room 601 (2nd floor)**	
	File Name: **OCSDSMS07-24-13**	ETM Date Generated: **07/25/13**		

Blank Fiber Count	0	Blank Field Count	100	Field Area	Filter Area
				0.00785 sq.mm.	385 sq.mm.

Comments: Friable abatement of asbestos containing linoleum under assumed ACM floor tile, floor tile mastic, carpet and carpet mastic.

Sample	Location	Type	Time On HH:MM	Time Off HH: MM	Tot Mins	Flow (LPM)	Vol (L)	Fiber Count	Fiber/ Sqmm	Field Count	Fiber/ CC
1	Clean room	Area	8 : 10	14 : 22	372	5.0	1860	2.0	2.5	100	<0.001
2	Dirty room	Area	8 : 12	14 : 23	371	5.0	1855	3.0	3.8	100	<0.001
3	At negative air machine	Area	8 : 20	14 : 35	375	5.0	1875	0.0	0.0	100	<0.001
4	Ambient	Area	8 07	14 20	373	5.0	1865	0.0	0.0	100	<0.001

ETM Analyst Signature

P. O. Box 896
Mauldin, South Carolina 29662
Phone(864)213-4408 Fax (864)213-4409

EMSL Analytical, Inc.
376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.emsl.com charlottelab@emsl.com

EMSL Order:	411303452
CustomerID:	ETMI78
CustomerPO:	
ProjectID:	

Attn: **Andrew Schauder, CIH**
Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

Phone:	(864) 213-4408
Fax:	(864) 213-4409
Received:	07/26/13 10:00 AM
Analysis Date:	7/26/2013
Collected:	7/4/2013

Project: **Seneca Middle School - 500 Hall**

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm^2)	Non Asb	Asbestos Type(s)	# Structures ≥ 0.5µ < 5	# Structures ≥5µ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm^2)	Asbestos Concentration (S/cc)
1 *411303452-0001*	North Side Of Hall	1220.00	0.0650	0	None Detected			0.0049	**<15.00**	**<0.0049**
2 *411303452-0002*	North Side Of Hall	1210.00	0.0650	0	None Detected			0.0049	**<15.00**	**<0.0049**
3 *411303452-0003*	East Side Of Hall	1200.00	0.0650	0	None Detected			0.0049	**<15.00**	**<0.0049**
4 *411303452-0004*	East Side Of Hall	1200.00	0.0650	0	None Detected			0.0049	**<15.00**	**<0.0049**
5 *411303452-0005*	South Side Of Hall	1200.00	0.0650	0	None Detected			0.0049	**<15.00**	**<0.0049**

Analyst(s)

Daniel Beacham (5)

Lee Plumley, Laboratory Manager
or other approved signatory

Initial report from 07/29/2013 08:34:32

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only): 41130345 2

EMSL ANALYTICAL, INC
376 CROMPTON STREET
CHARLOTTE, NC 28273
PHONE: 704-525-2205
FAX: 704-525-2302

Company : Environmental Testing & Management, Inc.	EMSL-Bill to: ☐ Same ☒ Different If Bill to is Different note instructions in Comments**
Street: 402 Parker Ivey Drive	*Third Party Billing requires written authorization from third party*
City: Greenville / State/Province: SC	Zip/Postal Code: 29607 / Country: USA
Report To (Name): Andrew Schauder, CIH	Fax #: 864-213-4409
Telephone #: 864-213-4408	Email Address: AGS-CIH@enviro-testing.com
Project Name/Number: Seneca Middle School - 500 Hall	
Please Provide Results: ☐ Fax ☒ Email / Purchase Order:	U.S. State Samples Taken: SC

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hours ☐ 6 Hours ☑ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☐ 4 Days ☐ 5 Days ☐ 10 Days

*For TEM Air 3 hours/6 hours, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM - Air
- ☑ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ EPA Protocol (Semi-Quantitative)
- ☐ EPA Protocol (Quantitative)

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: Randy Bonbe **Samplers Signature:** R Bonbe

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1	North side of hall	1220OLL	7/4/13
2	North side of hall	1210 L	" "
3	East side of hall	1200 L	" "
4	East side of hall	1200 L	" "
5	South side of hall	1200 L	" "

Client Sample # (s): 1-5 **Total # of Samples:** 5

Relinquished (Client): **Date:** 7/25/13 **Time:**

Received (Lab): Kyle Nolan **Date:** 7/26/13 **Time:** 10:00 AM F/x

Comments/Special Instructions: Mail invoice to: P. O> Box 896, Mauldin, SC 29662 8710 2922 7966

EMSL Analytical, Inc.
376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.emsl.com charlottelab@emsl.com

EMSL Order:	411303451
CustomerID:	ETMI78
CustomerPO:	
ProjectID:	

Attn: **Andrew Schauder, CIH**
Environmental Testing & Management, Inc.
P.O. Box 896
Mauldin, SC 29662

Phone:	(864) 213-4408
Fax:	(864) 213-4409
Received:	07/26/13 10:00 AM
Analysis Date:	7/26/2013
Collected:	7/25/2013

Project: **Seneca Middle School - Room 601**

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm^2)	Non Asb	Asbestos Type(s)	# Structures ≥ 0.5µ < 5	# Structures ≥5µ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm^2)	Asbestos Concentration (S/cc)
1 *411303451-0001*	North Side Of Room	1310.00	0.0650	0	None Detected			0.0045	**<15.00**	**<0.0045**
2 *411303451-0002*	North Side Of Room	1300.00	0.0650	0	None Detected			0.0046	**<15.00**	**<0.0046**
3 *411303451-0003*	East Side Of Room	1270.00	0.0650	0	None Detected			0.0047	**<15.00**	**<0.0047**
4 *411303451-0004*	South Side Of Room	1260.00	0.0650	0	None Detected			0.0047	**<15.00**	**<0.0047**
5 *411303451-0005*	South Side Of Room	1240.00	0.0650	0	None Detected			0.0048	**<15.00**	**<0.0048**

Analyst(s)

Daniel Beacham (5)

Evan L Plumley

Lee Plumley, Laboratory Manager
or other approved signatory

Initial report from 07/29/2013 08:34:04

THIS IS THE LAST PAGE OF THE REPORT.

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

41130345l

EMSL ANALYTICAL, INC.
376 CROWN POINT CIRCLE
CHARLOTTE, NC 28273
PHONE: 704 525 5205
FAX: 704 525 2350

Company : Environmental Testing & Management, Inc.	**EMSL-Bill to:** ☐ Same ☒ Different If Bill to is Different note instructions in Comments**
Street: 402 Parker Ivey Drive	*Third Party Billing requires written authorization from third party*
City: Greenville **State/Province:** SC	**Zip/Postal Code:** 29607 **Country:** USA
Report To (Name): Andrew Schauder, CIH	**Fax #:** 864-213-4409
Telephone #: 864-213-4408	**Email Address:** AGS-CIH@enviro-testing.com
Project Name/Number: Seneca Middle School - Room 601	
Please Provide Results: ☐ Fax ☒ Email	**Purchase Order:** **U.S. State Samples Taken:** SC

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hours ☐ 6 Hours ☑ 24 Hrs ☐ 48 Hrs ☐ 3 Days ☐ 4 Days ☐ 5 Days ☐ 10 Days

**For TEM Air 3 hours/6 hours, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM - Air
- ☑ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ EPA Protocol (Semi-Quantitative)
- ☐ EPA Protocol (Quantitative)

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: Randy Barber **Samplers Signature:** R. Barber

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1	North side of room	1310 L	7/25/13
2	~~North side of room~~	~~1300 L~~	" "
3	East side of room	1270 L	" "
4	South side of room	1260 L	" "
5	South side of room	1240 L	" "

Client Sample # (s): 1-5 **Total # of Samples:** 5

Relinquished (Client): **Date:** 7/25/13 **Time:**

Received (Lab): [signature] **Date:** 7/26/13 **Time:** 10:00AM FAX

Comments/Special Instructions: Mail invoice to: P. O> Box 896, Mauldin, SC 29662 8710 2922 7966

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle

Date Inspected: 12-26-12

Addess: West, South 4th Street
Seneca, SC 29678

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	CHANGES YES	CHANGES NO
Main	A2	12" X 12" Beige speckled tile Gym lobby, Classrooms, Cafeteria	NF X FR ___ G ___ D X SD ___	NF ✓ FR ___ G ___ D ✓ SD ___		✓
Main	A2A	Mastic associated w/HA-A2	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓
Main	A11A	Mastic associated w/HA-A11	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓
Main	B7A	Mastic associated w/HA-B7 Band room	NF X FR ___ G X D ___ SD ___	NF ✓ FR ___ G ✓ D ___ SD ___		✓

NF = non Friable F = friable
G = good condition D = damaged SD = significant damage

COMMENTS:

Inspected By: RICHARD ALEXANDER

Title: DIRECTOR OF FACILITIES

LEA Designee: Richard Alexander
Phone: 864-886-4420
Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School

DATE REINSPECTED: April 3, 2012

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Lobby, Classrooms, Cafe.	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled- Rm 601/603 in wet areas, & under 12" floor tile	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11A	Mastic associated w/HA-A11	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
A13	Sheetrock Joint Cmpd Sys - Throughout Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A14	Plaster Systems - Lobby Center Assumed	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
B5A	Mastic Associated w/HA-B5 Strings & Chorus wing	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: Andrew G. Schauder
SCDHEC License #: 1336 Exp. Date:09-21-12
Phone: 864-213-4408
Signature: Andrew G Schauder

LEA Designee: Richard Alexander
Phone: 864-885-5038
Signature:_____

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: West, South 4th Street
Seneca, SC 29678

Date Inspected: 5-20-13

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Gym lobby, Classrooms, Cafeteria	NF X FR G D X SD	NF ✓ FR G D ✓ SD		✓
Main	A2A	Mastic associated w/HA-A2	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓
Main	A11A	Mastic associated w/HA-A11	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓
Main	B7A	Mastic associated w/HA-B7 Band room	NF X FR G X D SD	NF ✓ FR G ✓ D SD		✓

NF = non Friable F = Friable
G = good condition D= damaged SD = singificant damage

COMMENTS:

Inspected By: RA

Title:

LEA Designee: Richard Alexander
Phone: 864 886-4420
Signature: R Alexander

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: West, South 4th Street
Seneca, SC 29678

Date Inspected: 11-25-13

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Gym lobby, Classrooms, Cafeteria	NF X FR___ G___ D X SD___	NF ✓ FR___ G___ D✓ SD___		✓
Main	A2A	Mastic associated w/HA-A2	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___		✓
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___	601 ✓	
Main	A11A	Mastic associated w/HA-A11	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___		✓
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___		✓
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___		✓
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___		✓
Main	B7A	Mastic associated w/HA-B7 Band room	NF X FR___ G X D___ SD___	NF ✓ FR___ G ✓ D___ SD___		✓

NF = non Friable F = Friable
G = good condition D= damaged SD = singificant damage

COMMENTS:

Room 601 A RATED

Inspected By: RA

Title: _____

LEA Designee: Richard Alexander
Phone: 864 886-4420
Signature: R Alexander

PAS

FINAL SUBMITTAL

Asbestos Abatement
Seneca Middle School
810 W. 54th Street
Seneca, South Carolina

Prepared for: Environmental Testing & Management
400 S.E. Main Street
Mauldin, S.C. 29662

Submitted by:

PROFESSIONAL ABATEMENT SERVICES, INC.
P. O. BOX 824, 109J MILLER ROAD
MAULDIN, SC 29662
PHONE (864)234-1433 FAX (864)234-1432

Professional Abatement Services

- SCDHEC Contractor License
- Certificate of Insurance

South Carolina DHEC Paperwork

- Disposal Request
- License to Dispose
- Waste Shipment Record
- DHEC Transmittal Letter

Project Paperwork

- Daily Logs
- Supervisor's Paperwork
- Workers' Paperwork

Material Safety Data Sheets

The State of South Carolina

Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

THIS CERTIFIES THAT

Professional Abatement Services Inc

has met the requirements of South Carolina Regulation No. 61-86.1
for licensing in the category of:

Contractor

The holder of this license shall comply with all applicable requirements of said regulation. This license is not transferable and shall expire one year from the date shown below.

Director, Program Compliance Management Division
Bureau of Air Quality

DATE: *December 27, 2000*

LICENSE NO: *537*

This license is the property of the Department and must be surrendered on demand. Contractors must post a copy of this license in a conspicuous place at each worksite.

DHEC 3468 (11/1999)

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY) 06/28/2001

2A

PRODUCER
BB&T Goldsmith Joyner
770 Pelham Road
PO Box 26989
Greenville, SC 29616

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED
Professional Abatement Services Inc.
P.O. Box 824
Mauldin, SC 29662

INSURER A: Gulf Insurance Group
INSURER B: Auto Owners Insurance
INSURER C: Clarendon Insurance
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GU0693292	02/14/01	02/14/02	EACH OCCURRENCE	$1,000,000
	X COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$50,000
	CLAIMS MADE X OCCUR				MED EXP (Any one person)	$5,000
					PERSONAL & ADV INJURY	$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:				GENERAL AGGREGATE	$2,000,000
	POLICY X PRO-JECT LOC				PRODUCTS -COMP/OP AGG	$2,000,000
B	AUTOMOBILE LIABILITY	9632533501	02/14/01	02/14/02	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
	X ANY AUTO				BODILY INJURY (Per person)	$
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	$
	X HIRED AUTOS					
	X NON-OWNED AUTOS					
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
A	EXCESS LIABILITY	GU0693295	02/14/01	02/14/02	EACH OCCURRENCE	$1,000,000
	OCCUR CLAIMS MADE				AGGREGATE	$1,000,000
	DEDUCTIBLE					$
	X RETENTION $10000					$
						$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	W60200002600	02/13/01	02/13/02	X WC STATU-TORY LIMITS OTH-ER	
					E.L. EACH ACCIDENT	$500,000
					E.L. DISEASE -EA EMPLOYEE	$500,000
					E.L. DISEASE -POLICY LIMIT	$500,000
A	OTHER Professional Liability - CM Contractors Pollution Liability	GU0693292	02/14/01	02/14/02	$1,000,000 each claim $1,000,000 included in above aggregate.	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
Asbestos Abatement Liability Included.

CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER | CANCELLATION

Oconee County School District
Mr. Richard Alexander
PO Box 649
Walhalla, SC 29691

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

PAS

Professional Abatement Services, Inc.
P. O. Box 824 ✦ Mauldin, SC 29662
(864)234-1433 ✦ Fax: (864)234-1432

July 10, 2001

Ms. Sonya Younger
S.C.D.H.E.C.
2600 Bull Street
Columbia, SC 29201

Dear Ms. Younger:

This letter is to request disposal of non-friable asbestos containing material. Per South Carolina regulation 61-86.1, effective date May 22, 1998, please note the following information:

1.	**Owner Name:**	Oconee County School District
	Owner Address:	101 E. North Broad Street Walhalla, S.C. 29691
	Contact Name:	Mr. Richard Alexander
	Phone Number:	(864) 638-4000
2.	**Facility Name:**	Seneca Middle School
	Facility Address:	810 W. 54th Street Seneca, S.C. 29678
3.	**Amount of Disposal:**	220 SF floor tile and mastic
4.	**Contractor Name:**	Professional Abatement Services, Inc.
	Contractor Address:	109J Miller Road Mauldin, SC 29662 (864)234-1433
	Contractor License Number:	537
5.	**Landfill Name:**	Palmetto Landfill
	Landfill Address:	375 Freys Creek Road Spartanburg, S.C. 29301
	Landfill Telephone Number:	(864) 439-9184

We estimate this project should be completed and ready for disposal by July 10, 2001. Should you have any questions regarding this request, please give me a call at (864)234-1433. We appreciate your assistance.

Sincerely,

Roxane Schauder

Roxane Schauder
President/Owner

D H E C
PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

ASBESTOS ABATEMENT PROJECT LICENSE

License Number: D0107023

THOMAS BAGWELL
PROFESSIONAL ABATEMENT SERVICES INC
P O BOX 824
MAULDIN SC 29662-

SITE: SENECA MIDDLE SCHOOL; 810 W. 54TH ST.
LOCATION: SENECA
AMOUNT: 220 SF NF FLOOR TILE/MASTIC

The Department has received your disposal request and has approved the disposal of the Waste generated at the site as referenced above at the Palmetto Landfill, 422401-1101. Approval is based on the following conditions.

1. Prior approval for disposal has been obtained from the landfill operator.
2. Authorization is valid only for the approximated amount specified above and for a reasonable amount of other asbestos-contaminated materials generated;
3. There must be no leakage or spillage during transport to the landfill;
4. You must submit a completed copy of your Waste Shipment Record along with a copy of this letter to this department at the conclusion of the disposal; and
5. This authorization for disposal shall expire 20 days from the completion date July 10, 2001 unless otherwise specified by this Department.

The SCDHEC Division of Solid Waste Planning & Recycling also has rules which govern the disposal of materials that have come in contact with lead-based paint. Please contact the Bureau of Land and Waste Management at (803)896-4000 for additional information.

Please be aware, the revised OSHA standards for asbestos removal may apply to the above mentioned project(s). Please contact the South Carolina Department of Labor at (803)734-9631 for additional information concerning this standard.

For additional information concerning South Carolina DHEC regulations dealing with asbestos abatement and disposal requirements, please contact the Asbestos Section at (803) 898-4289.

Sincerely,

Asbestos Section
Bureau of Air Quality

Permit#: D0107023
Issued: July 10, 2001
cc: Administrator of Palmetto Landfill
F.M. Carns, BSHWM

PAS

Professional Abatement Services, Inc.
P. O. Box 824 ✦ Mauldin, SC 29662
(864)234-1433 ✦ Fax: (864)234-1432

July 16, 2001

Ms. Sonya Younger
S.C.D.H.E.C.
Asbestos Section
2600 Bull Street
Columbia, SC 29201

Dear Ms. Younger:

Enclosed please find the waste manifest for the following project:

- Seneca Middle School, disposed under DHEC license D0107023.

The above project was recently completed by Professional Abatement Services, Inc. (PAS).

Should you have any questions regarding this paperwork, please give me a call at (864)234-1433.

Sincerely,

Roxane Schauder

Roxane Schauder
President/Owner

WASTE SHIPMENT RECORD

SCDHEC Asbestos Abatement Project License: CQ 6886

1. Waste Generator/Owner Name & Address: Oconee County School District 101 E. North Broad Street Walhalla, S.C. 29691	2. Work Site Name & Physical Address: Seneca Middle School 810 W. 54th Street Seneca, S.C. 29678	Waste Generator/Owner Telephone Number: (864) 638-4000
2. Abatement Contractor Name & Address: Professional Abatement Services, Inc. 109J Miller Road Mauldin, SC 29662		Abatement Contractor Telephone Number: (864) 234-1433
3. Name of Waste Disposal site (WDS), Mailing address, and physical site location: Palmetto Landfill 375 Freys Creek Road, Spartanburg, S.C. 29301		WDS Telephone Number: (864) 439-9184
4. Description of Waste Materials(please circle): Friable(Regulated) / Nonfriable(Nonregulated)	5. Bags or Containers: No. Type ____Drums ____Bags __✓__Bulk Load	6. Total Quantity) m3 (yd3) 3 cubic Yd

7. Special Handling instructions & additional information:

9. GENERATOR'S/CONTRACTOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Print Name	Signature:	Date:
ROBERT KIRBY SR	Robert Kirby SR	7-10-01

TRANSPORTER INFORMATION (Acknowledgement of Receipt of Materials):

9. Name, title, address, telephone number: Waste Management of SC 390 Innovation Way Wellford, SC 29301 Tel: (864)232-1537	Signature: John Talley	Date: 7-12-01
10. Name, title, address, telephone number:	Signature:	Date:

DISPOSAL SITE OPERATOR

11. DISCREPANCY	Bags or Containers	Total Quantity

12. Waste Disposal Site Owner or Operator Certification of receipt of asbestos materials covered by this covered by this manifest except as noted

Print Name:	Signature:	Date:
C.S. Myers	C.S. Myers	7/12/01

Please forward a copy of this record to SCDHEC, Bureau of Air Quality, Asbestos Section, 2600 Bull Street, Columbia, SC 29201-1708 when completed. (803) 898-4289 office. (803) 898-4281 fax.

Job Number: 13G087

PROFESSIONAL ABATEMENT SERVICES, INC.

DAILY SIGN IN LOG

CLIENT: Seneca Middle School	DATE: 7-10-01
FACILITY: 810 W. 54th Street	WEATHER: Hot
ADDRESS: Seneca, SC 29678	TEMPERATURE: AM 71 PM 92
	Page 1 of 1

PAS Employee	Time In	Time Out	Time In	Time Out	NOTES
ROBERT KIRBY	10:00	12:00	12:30	6:30	8 HOURS
HIPOLITO SILVA A.	10:00	12:00	12:30	6:30	8
JAQUIN CASTILLO	10:00	12:00	12:30	6:30	8

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. 45064

This certifies that

Robert E Kirby Sr

249-SRP-1007

doing business as Professional Abatement Services Inc

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Supervisor

The holder of this license shall comply with all the requirements of said Regulation. This license allows the holder to perform abatement activities involving RACM that is in or on interior structural components or other parts of a regulated facility with the exception of RACM subject to the requirements of Section XI of SC DHEC Regulation No. 61-86.1.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from 06/22/01.

The holder of this license is qualified in accordance with requirements of the Asbestos Hazard Emergency Response Act of 1986 (AHERA) to perform as an abatement worker.

06/25/01

Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control

06/25/01 15:08

Bureau of Air Quality

ORIGINAL

CR-001126

ETM
Environmental Testing & Management, Inc.
400 South Main Street, Suite 101
P. O. Box 896
Mauldin, South Carolina 29662
(864)963-3688 ✣ Fax (864)963-2845

Certificate Number:
ASR062201.002
Certificate Expires:
June 22, 2002

hereby certifies that

Robert Kirby
249-72-1007

has successfully completed the Supervision of Asbestos Abatement Projects Refresher Course and has satisfactorily passed the required examination. This certifies that the above named student has completed the required training for asbestos accreditation under TSCA Title II.

Date(s) of Instruction: June 22, 2001

Date(s) of Examination: June 22, 2001

Principal Instructor: Andrew G. Schauder, CIH

Training Director: Andrew G. Schauder, CIH

Principal Instructor

Training Director

NORTH HILLS
MEDICAL CENTER

OCCUPATIONAL MEDICINE DEPARTMENT

JAMES W. McPHAIL, M.D.

PHYSICIAN'S WRITTEN OPINION ON MEDICAL FITNESS FOR
WORK IN ASBESTOS AND EMERGENCY RESPONSE OPERATIONS
AND FOR THE USE OF RESPIRATORS

EMPLOYEE'S FULL NAME: Robert E. Kirby

EMPLOYEE'S SS#: 249 72 1007

EXAMINATION DATE: 7-6-01

✓ ON THE ABOVE DATE, I DID NOT DETECT ANY MEDICAL CONDITION THAT WOULD PLACE THE NAMED EMPLOYEE AT RISK OF MATERIAL HEALTH IMPAIRMENT AS A RESULT OF:

- WORK IN OPERATIONS WITH POTENTIAL EXPOSURE TO ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE,
- WORK IN RESPIRATORY PROTECTION DEVICES (WITH POSITIVE OR NEGATIVE FACEPIECE PRESSURES), OR
- WORK IN HOT ENVIRONMENTS (POSSIBLY WITH RESPIRATORS AND HEAVY PROTECTIVE GARMENTS).

____ ON THE ABOVE DATE, I DID DETECT SUCH A MEDICAL CONDITION.

CERTIFIED TO WEAR:

✓ AIR PURIFYING HALF MASK WITH HEPA CARTRIDGES.

✓ POWERED AIR PURIFYING RESPIRATOR (PAPR).

✓ SUPPLIED AIR RESPIRATOR.

I HAVE INFORMED THE EMPLOYEE OF THE RESULTS OF THIS MEDICAL EXAMINATION AND ANY MEDICAL CONDITIONS THAT REQUIRE FUTHER EXAMINATION OR TREATMENT. THE COMPLETE REPORT OF EXAMINATIONS AND TESTS WILL BE MAINTAINED AT THIS FACILITY UNTIL WE RECEIVE OTHER INSTRUCTIONS. THE EMPLOYEE MAY OBTAIN COPIES OF ANY MATERIAL IN HIS FILE UPON REQUEST.

JAMES W. MCPHAIL, MD

Professional Ab.. ..t Services, Inc.

RESPIRA.. ..IT TEST

Name of Person being Fit-Tested:	Robert E. Kirby, Sr. (first) (middle initial) (last)
Title:	Abatement Supervisor
Social Security Number:	249-72-1007
Signature:	Robert E. Kirby Sr.
Date Signed:	June 24, 1999

Type of Respirator	Worker's Initial's	Date of Test	Irritant Smoke	Signature of Fit Tester
Type of Mask: 1/2 mask Manufacturer: North Model: 7700 Size: M	RK	6/24/99	PASS/FAIL	PGES
Type of Mask: 1/2 mask Manufacturer: North Model: 7700 Size: M	RK	6/29/00	PASS/FAIL	PGES
Type of Mask: 1/2 MASK Manufacturer: NORTH Model: 7700 Size: M	R.K	6/8/01	PASS/FAIL	Tommy Boswell
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	

SPECIAL PROBLEMS & COMMENTS:

Note: Wearer must be fit-tested at least annually.
Record must be retained a minimum of three years.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. *43620*

This certifies that

Hipolito S Arriaga

623-WE-7963

doing business as *No Company Affiliation (E & P)*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Worker

The holder of this license shall comply with all the requirements of said Regulation. This license allows the holder to perform abatement activities involving RACM that is in or on interior structural members or other parts of a regulated facility with the exception of Asbestos-Containing Material subject to the requirements of Section XI of SC DHEC Regulation No. 61-86.1. This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from *03/02/01.*

03/09/01

Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control

03/09/01 09:15

Bureau of Air Quality

ORIGINAL

CR-001126

MSK Ambiental

35490.695CERT/

900 N.W. 5TH Avenue, Fort Lauderdale, Florida 33311 (954) 524-7208

Processed By:

Seagull

To Authenticate Certificate:
www.seagulltraining.com
1-800-966-9933

This is to Certify that

Hipolito Silva Arriaga

623-87-7963

100 Ashe Drive Apt#10 , Greenville,SC

has successfully completed a Spanish

Asbestos Worker Refresher

2-Mar-01 TO 2-Mar-01

Asbestos courses comply with Section 206 TSCA 15 USC 2646

Complies with Sec. 206 TSCA 15 USC 2646

Trainer(s): Vicencio Romero

Training Address: 1180 Long Fery Road,Salisbury,Nc

Successful course completion based on exam score.

UNDER CIVIL AND CRIMINAL PENALTIES OF LAW FOR MAKING OR SUBMISSION OF FALSE OR FRAUDULENT STATEMENTS OR REPRESENTATIONS (18 U.S.C. 1001 AND 15 U.S.C. 2615), I CERTIFY THAT THIS TRAINING COMPLIES WITH ALL APPLICABLE REQUIREMENTS OF TITLE IV (ASBESTOS TOXIC SUBSTANCES CONTROL ACT), 40 CFR PART 763 OR 763, AND ANY OTHER APPLICABLE FEDERAL, STATE OR LOCAL REQUIREMENTS AS AMENDED.

Rafael O. Abreu , Course Sponsor

This Certificate Expires

2-Mar-02

3/2/02

Certificate Number..... 102232

Course Number **SB0109**

NORTH HILLS
MEDICAL CENTER

OCCUPATIONAL MEDICINE DEF

JAMES W. McPHAIL M.D.

PHYSICIAN'S WRITTEN OPINION ON MEDICAL FITNESS FOR WORK IN ASBESTOS AND EMERGENCY RESPONSE OPERATIONS AND FOR THE USE OF RESPIRATORS

EMPLOYEE'S FULL NAME: Hipolito Silva Arriaga

EMPLOYEE'S SS#: 623877962

EXAMINATION DATE: 32301

✓ ON THE ABOVE DATE, I DID NOT DETECT ANY MEDICAL CONDITION THAT WOULD PLACE THE NAMED EMPLOYEE AT RISK OF MATERIAL HEALTH IMPAIRMENT AS A RESULT OF:

- WORK IN OPERATIONS WITH POTENTIAL EXPOSURE TO ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE,
- WORK IN RESPIRATORY PROTECTION DEVICES (WITH POSITIVE OR NEGATIVE FACEPIECE PRESSURES), OR
- WORK IN HOT ENVIRONMENTS (POSSIBLY WITH RESPIRATORS AND HEAVY PROTECTIVE GARMENTS).

_____ ON THE ABOVE DATE, I DID DETECT SUCH A MEDICAL CONDITION.

CERTIFIED TO WEAR:

✓ AIR PURIFYING HALF MASK WITH HEPA CARTRIDGES.

✓ POWERED AIR PURIFYING RESPIRATOR (PAPR).

✓ SUPPLIED AIR RESPIRATOR..

I HAVE INFORMED THE EMPLOYEE OF THE RESULTS OF THIS MEDICAL EXAMINATION AND ANY MEDICAL CONDITIONS THAT REQUIRE FUTHER EXAMINATION OR TREATMENT. THE COMPLETE REPORT OF EXAMINATIONS AND TESTS WILL BE MAINTAINED AT THIS FACILITY UNTIL WE RECEIVE OTHER INSTRUCTIONS. THE EMPLOYEE MAY OBTAIN COPIES OF ANY MATERIAL IN HIS FILE UPON REQUEST.

J W McPhail 3/23/01

JAMES W. MCPHAIL, MD

Professional Abatement Services, Inc.

RESPIRATORY FIT TEST

Name of Person being Fit-Tested:	Hipolito	S.	Arriaga
	(first)	(middle initial)	(last)
Title:	Asbestos		
Social Security Number:	623-87-7963		
Signature:	Hipolito Silva Arriaga		
Date Signed:	2-3-99		

Type of Respirator	Worker's Initials	Date of Test	Saccharin Mist	Signature of Fit Tester
Type of Mask: Half Face Manufacturer: North Model: 7700 Size: M	H.A.	2-3-99	(PASS) FAIL	Tommy Bagwell
Type of Mask: Half Face Manufacturer: North Model: 7700 Size: M	H.A.	2-7-00	(PASS) FAIL	Tommy Bagwell
Type of Mask: Half face Manufacturer: North Model: 7700 Size: M	H.A.	2-9-01	PASS FAIL	Tommy Bagwell
Type of Mask: Manufacturer: Model: Size:			PASS FAIL	

SPECIAL PROBLEMS & COMMENTS:

Note: Wearer must be fit-tested at least each six (6) months.
Record must be retained a minimum of three years.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASBESTOS ABATEMENT LICENSE

No. *41225*

This certifies that

Joaquin Castillo

464-XX-5545

doing business as *No Company Affiliation*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

Worker

The holder of this license shall comply with all the requirements of said Regulation. This license allows the holder to perform abatement activities involving RACM that is in or on interior structural members or other parts of a regulated facility with the exception of Asbestos-Containing Material subject to the requirements of Section XI of SC DHEC Regulation No. 61-86.1.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from *03/09/01.*

03/15/01

Richard D. Sharpe

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality
South Carolina Department of Health & Environmental Control

03/15/01 08:36

Bureau of Air Quality

ORIGINAL

CR-001126

AAA Environmental

P.O. Box 8190 Spartanburg, South Carolina 29305 (864)582-1222

JOAQUIN TREJO CASTILLO

464-89-8845

has completed the requisite training for asbestos accreditation under TSCA Title II and has met the requirements of and passed the examination for an EPA approved

Spanish AHERA Worker Refresher Training Course

02-1293
Certificate Number

March 9, 2001
Course Date(s)

March 9, 2001
Examination Date

Principal Instructor

Pamela A. Smith, President

March 9, 2002
Expiration Date

NORTH HILLS
MEDICAL CENTER

OCCUPATIONAL MEDICINE DE

JAMES W. McPHAIL M.D.

PHYSICIAN'S WRITTEN OPINION ON MEDICAL FITNESS FOR
WORK IN ASBESTOS AND EMERGENCY RESPONSE OPERATIONS
AND FOR THE USE OF RESPIRATORS

EMPLOYEE'S FULL NAME: Joaquin Castello

EMPLOYEE'S SS#: 464-89-0845

EXAMINATION DATE: 5-7-01

✓ ON THE ABOVE DATE, I DID NOT DETECT ANY MEDICAL CONDITION THAT WOULD PLACE THE NAMED EMPLOYEE AT RISK OF MATERIAL HEALTH IMPAIRMENT AS A RESULT OF:

- WORK IN OPERATIONS WITH POTENTIAL EXPOSURE TO ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE,
- WORK IN RESPIRATORY PROTECTION DEVICES (WITH POSITIVE OR NEGATIVE FACEPIECE PRESSURES), OR
- WORK IN HOT ENVIRONMENTS (POSSIBLY WITH RESPIRATORS AND HEAVY PROTECTIVE GARMENTS).

_____ ON THE ABOVE DATE, I DID DETECT SUCH A MEDICAL CONDITION.

CERTIFIED TO WEAR:

✓ AIR PURIFYING HALF MASK WITH HEPA CARTRIDGES.

✓ POWERED AIR PURIFYING RESPIRATOR (PAPR).

_____ SUPPLIED AIR RESPIRATOR.

I HAVE INFORMED THE EMPLOYEE OF THE RESULTS OF THIS MEDICAL EXAMINATION AND ANY MEDICAL CONDITIONS THAT REQUIRE FUTHER EXAMINATION OR TREATMENT. THE COMPLETE REPORT OF EXAMINATIONS AND TESTS WILL BE MAINTAINED AT THIS FACILITY UNTIL WE RECEIVE OTHER INSTRUCTIONS. THE EMPLOYEE MAY OBTAIN COPIES OF ANY MATERIAL IN HIS FILE UPON REQUEST.

JAMES W. MCPHAIL, MD

Professional Abatement Services, Inc.

RESPIRATORY FIT TEST

Name of Person being Fit-Tested:	Joaquin		Castillo
	(first)	(middle initial)	(last)
Title:	Asbestos Worker		
Social Security Number:	464-89-8845		
Signature:	JOAQUIN CASTILLO		
Date Signed:	3-23-01		

Type of Respirator	Worker's Initial's	Date of Test	Irritant Smoke	Signature of Fit Tester
Type of Mask: HALF FACE Manufacturer: North Model: 7700 Size: S	JC	3-23-01	PASS/FAIL	Jimmy Boswell
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	
Type of Mask: Manufacturer: Model: Size:			PASS/FAIL	

SPECIAL PROBLEMS & COMMENTS: _____

Note: Wearer must be fit-tested at least annually.
Record must be retained a minimum of three years.

MATERIAL SAFETY DATA SHEET

Hazard rating:	HMIS
HEALTH	1
FLAMMABILITY	2
REACTIVITY	0
PERSONAL PROTECTION	H

SECTION 1 **PROOUCT IDENTIFICATION**

NAME

PRO 145 Low Odor Mastic Remover

DISTRIBUTED BY

BWI/BYROC 10942 Beaver Oam Road,
Hunt Valley, MD 21030

24 HOUR EMERGENCY RESPONSE NUMBER
800-228-5365

SECTION 2 **HAZARO IOENTIFICATION**

NAME	CAS #	EXPOSURE GUIOELINES	
PETROLEUM DISTILLATES	64742-47-8	100 PPM (525 mg/m3) is a recommended PEL for 8-hour TWA	
AROMATIC HYDROCARBONS	64742-95-5	100 PPM, 525 MG/M3 for 8 hour TWA	
ETHYLENE GLYCOL MONOBUTYL ETHER*	111-76-2	25 PPM (SKIN)	5-10% by weight

*Subject to the reporting requirements of SARA 313 and 40 CFR 372:

SECTION 3 **PHYSICAL DATA**

BOILING POINT (F)..... 400-450
VAPOR PRESSURE (mm Hg).....negligible
ODOR.....mild/characteristic
% VOLATILE.....100
VAPOR DENSITY.....heavier than air
EVAPORATION RATE .....slower than ether
WEIGHT PER GALLON.....7.00
APPEARANCE.....clear

SECTION 4 **FIRE ANO EXPLOSION OATA**

FLASH POINT (METHOD USED)	AUTO IGNITION TEMPERATURE
145 degrees F. Method PMCC Note: Minimum	421 degrees F. Note: Approximate

EXTINGUISHING MEOIA Small fires: Extinguish with dry chemical, CO2 or foam. Large fires: The use of dry chemical or foam is recommended.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS The use of SCBA is recommended for fire fighters. Water spray may be useful in minimizing vapors and cooling containers exposed to heat and flame. Avoid spreading burning liquid with water used for cooling purposes.

UNUSUAL FIRE ANO EXPLOSION This material is a NFPA IIIA combustible liquid.

SECTION 5 **HEALTH HAZARD INFORMATION/FIRST AID**

EYE CONTACT Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.
SKIN Flush skin with plenty of water; use soap if available. Remove contaminated clothing. Call a physician if irritation persists. Wash clothing before reuse.
INHALATION Remove to fresh air. If breathing has stopped, administer artificial respiration. Keep at rest. Get prompt medical attention.
INGESTION If swallowed, **DO NOT** induce vomiting. Keep at rest. Get prompt medical attention.
ASPIRATION HAZARD This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage. **THIS MATERIAL HAS NOT BEEN IOENTIFIED AS A CARCINOGEN OR PROBABLE CARCINOGEN BY NTP, IARC, OR OSHA.**

SECTION 6 **HEALTH HAZARDS/ROUTES OF ENTRY**

EYE CONTACT Direct contact with this liquid may cause irritation. Exposure to it's vapors may cause burning tearing or redness.
SKIN CONTACT Repeated or prolonged contact with liquid may cause irritation, reddening and dermatitis.
INHALATION High vapor concentrations may cause headaches, stupor, irritation of throat and kidney effects. Extreme aspiration into the lungs may cause pneumonia or death.
INGESTION This material causes irritation of the stomach and intestines and signs of nervous system depression
Acute exposure may result in narcosis, pulmonary edema and severe kidney and liver damage.

SECTION 7 **SPECIAL PROTECTION INFORMATION**

VENTILATION Air contaminant levels should be controlled below the PEL or TLV for this product. (See Section 2) Mechanical ventilation may be necessary if working with this product in enclosed areas.
RESPIRATORY PROTECTION Respiratory protection may be necessary to minimize exposure to organic vapors. Use NIOSH approved organic vapor air purifying respirator, self contained breathing apparatus, or air supplied respirators dependent on concentration.
PROTECTIVE GLOVES The use of impermeable gloves (Nitril or Neoprene) is recommended to prevent contact and possible irritation.
EYE PROTECTION When contact with liquid is possible, use a face shield, otherwise use safety glasses or goggles.
PROTECTIVE EQUIPMENT It is suggested that a clean source of water is available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

SECTION 8 **REACTIVITY DATA**

STABILITY - Stable **HAZARDOUS POLYMERIZATION** - Will not occur. **INCOMPATIBILITY** - Strong oxidizing agents.
HAZARDOUS OECOMPOSITION PROOUCTS - Thermal decomposition in the presence of air may yield carbon monoxide and/or carbon dioxide.

SECTION 9 **SPILL OR LEAK PROCEDURES**

Stay upwind and away from spill. Keep all sources of ignition and hot metal surfaces away from spill. If spill is indoors, ventilate area of spill. Foam, especially high expansion foam, may be used to suppress vapors. Keep contained and dispose of in accordance with local, county, state and federal regulations.

SECTION 10 **SHIPPING INFORMATION**

OOT PROPER SHIPPING NAME: Combustible Liquid, n.o.s. **OOT HAZARO CLASS:** Combustible Liquid
DOT IDENTIFICATION NUMBER: NA 1993 (not regulated in pkg. of less than 119 gal.) **PACKING GROUP:** III

SECTION 11 **STORAGE ANO SPECIAL PRECAUTIONS**

Keep containers tightly closed. Keep containers cool, dry and away from sources of ignition. Use and store this product with adequate ventilation. Avoid inhalation of vapors. Do not pressurize, cut weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks or other sources of ignition. "Empty" drums should be completely drained, properly bunged and properly shipped to a qualified drum reconditioner.

SECTION 12 **DOCUMENTARY INFORMATION**

The information in this document is believed to be correct as of the date issued. However, no warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this product or the hazards related to its use. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.

TE OF SOUTH CAROLINA
:A REINSPECTION REPORT
JUILDINGS REINSPECTED

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth St, Seneca, S.C. 29678
DATE REINSPECTED: July 31, 2015

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NON-FRIABLE	FRIABLE	NON-FRIABLE	
Main		X		X	
Football Portable					X
Soccer Field Portable					X

Inspector: Roxane Schauder, MS
SCDHEC License #: 00189 Exp. Date:9-08-15
Phone: 864-213-4408

Signature: Roxane Schauder

LEA Designee: Richard Alexander

Phone: 864-886-4420

Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School
810 West South Fourth Street, Seneca, S.C. 29678
DATE REINSPECTED: July 31, 2015

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Lobby, Classrooms, Cafe. (Abated 500 wing hall 2013)	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Linoleum Beige/Grey Speckled- Rm 601/603 under 12" floor tile (wet areas abated)	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A10A	Mastic associated with HA-A10 Room 309	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11A	Mastic associated w/HA-A11 Room 313	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
A17	Sheetrock - Throughout ASSUMED	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A17A	Joint compound associated with HA-A17	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
B5A	Mastic Associated w/HA-B5 Strings (under carpet) (Abated chorus room 2015)	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
A18	Laboratory bench tops ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___	X	

NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage	**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: Roxane Schauder, MS
SCDHEC License #: 00189 Exp. Date: 9-08-15
Phone: 864-213-4408
Signature: Roxane Schauder

LEA Designee: Richard Alexander
Phone: 864-886-4420
Signature:_____

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School
810 West South Fourth Street, Seneca, S.C. 29678
DATE REINSPECTED: July 31, 2015

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A19	Stair treads ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___	X	
A19A	Mastic associated with HA-17 ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___	X	

NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage	**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION	

COMMENTS:

Inspector: Roxane Schauder, MS
SCDHEC License #: 00189 Exp. Date: 9-08-15
Phone: 864-213-4408
Signature: Roxane Schauder

LEA Designee: Richard Alexander

Phone: 864-886-4420
Signature:_____

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth
Westminster, S.C. 2968

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDINGS: ALL

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

The purpose of the survey is to identify all ACBM in the building. In order to accomplish this goal as well as to meet the requirement of the "Asbestos-Containing Materials in Schools" rule (40 CFR Part 763), the materials to be sampled are grouped in "Homogeneous Areas." A "Homogeneous Area" is defined as "an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture." The material should appear similar in all other aspects. If there was any reason to suspect that materials might be different they were assigned to different homogeneous areas.

Each homogeneous area is assigned a unique code. Sampling locations within each homogeneous area were selected by dividing the homogeneous area into nine sub-areas. The sub-areas to be sampled are determined by the use of a random number table. The selection of the individual sampling is conducted in a random manner, but is nevertheless subject to a variety of factors. These include:

a.. Size of the homogeneous area
a.. Condition of material
a.. Distribution of material
a.. Accessibility
a.. Exposure potential to building occupants
a.. Other limitations imposed by the client

The actual number of samples taken is governed by the requirements of section 763-86 - Sampling.

Finally, one must realize that there are limitations to each survey. Therefore, Environmental Testing & Management, Inc. cannot guarantee that all ACBM was located or identified during the building survey.

INSPECTOR		
TYPED NAME: Roxane Schauder, MS	SIGNATURE: Roxane Schauder	DATE: 8/20/15
SOUTH CAROLINA LICENSE #: 00189 STATE & AGENCY (WHERE TRAINED):	EXPIRES: 09/08/15 GREENVILLE TECHNICAL COLLEGE	
TELEPHONE #: (864) 213-4408		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth Street
Seneca, SC 29678
DATE OF REINSPECTION: July 31, 2015

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING: MAIN

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A1- 2' X 4' WHITE CEILING TILE WITH SMALL FISSURES - KITCHEN OFFICE AND STORAGE

A2- 12" X 12" LIGHT CREAM FLOOR TILE - CAFETERIA

A2A- MASTIC ASSOCIATED WITH HA-A2

A4- 2' X 4' WHITE ACOUSTICAL CEILING TILE WITH SMALL STIPPLES - CORRIDOR AND CLASSROOMS

A5- TAN AND GREY MARBLEIZED ROLLED FLOORING - CHEMISTRY ROOM 601 & 603

A6- HARD STIPPLE PAINTED PLASTER - CANOPIES OVER EXTERIOR DOORWAYS

A7- BASEBOARD MATERIAL - HALLWAYS

A7A- MASTIC ASSOCIATED WITH HA-A7

A8- FLOOR TILE - ROOM 410

A8A- MASTIC ASSOCIATED WITH HA-A8

A9- CEILING TILE - ROOM 410

A10- FLOOR TILE - ROOM 309

A10A- MASTIC ASSOCIATED WITH HA-A10

A11- FLOOR TILE - ROOM 313 (REPLACED)

A11A- MASTIC ASSOCIATED WITH HA-A11

A12- ROOFING MATERIAL AT ROOMS 111 - 113

A13- CEILING TILE - ROOM 111

A14- CARPET MASTIC - ROOM 507

A15- PURPLE COVEBASE - GUIDANCE CONFERENCE ROOM

A15A- MASTIC ASSOCIATED WITH HA-A15

A16- DARK BLUE COVEBASE - CHORUS ROOM (REMOVED IN CHORUS ROOM)

A16A- MASTIC ASSOCIATED WITH HA-A16

INSPECTOR		
TYPED NAME Roxane Schauder, MS	SIGNATURE Roxane Schauder	DATE 8/20/15
SOUTH CAROLINA LICENSE #: 00189 STATE & AGENCY (WHERE TRAINED):	EXPIRES: 9/8/15 GREENVILLE TECHNICAL COLLEGE GREENVILLE, SC	
TELEPHONE # (864) 213-4408		

STATE OF
SOUTH CAROLINA

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3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING: MAIN

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A17- SHEETROCK - THROUGHOUT (ASSUMED)

A17A- JOINT COMPOUND ASSOCIATED WITH HA-A17 (ASSUMED)

A18- LABORATORY BENCH TOPS - SCIENCE ROOMS (ASSUMED)

A19- STAIR TREADS - STAIRWELLS (ASSUMED)

A19A- MASTIC ASSOCIATED WITH HA-A20 (ASSUMED)

B1- PLASTER CEILING IN BOYS' SHOWER ROOM

B2- THERMAL SYSTEM INSULATION (ELBOW INSULATION) - GYM BOYS' BATHROOM

B3 - THERMAL SYSTEM INSULATION (PIPE WRAP) - GYM BOYS' BATHROOM

B4- THERMAL SYSTEM INSULATION (PIPE WRAP) - BAND ROOM

B5- FLOOR TILE - STRINGS AND CHORUS ROOM

B5A- MASTIC ASSOCIATED WITH HA=B5

B6- CEILING TILE - BAND ROOM

B7- FLOOR TILE - BAND ROOM

B7A- MASTIC ASSOCIATED WITH HA-B7

C1- THERMAL SYSTEM INSULATION (ELBOWS)- BOILER ROOM (REMOVED)

C2- THERMAL SYSTEM INSULATION (EXPANSION TANK) - BOILER ROOM (ABATED)

C3- PLASTER CEILING MATERIAL - BOILER ROOM

C4- GASKET MATERIAL ON BOILER #1 VIEWING GLASS (ABATED)

C5- THERMAL SYSTEM INSULATION (VALVE INSULATION) - BOILER ROOM

C7- THERMAL SYSTEM INSULATION (PIPE WRAP) - BOILER ROOM

INSPECTOR		
TYPED NAME Roxane Schauder, MS	SIGNATURE Roxane Schauder	DATE 8/20/15
SOUTH CAROLINA LICENSE #: 00189 STATE & AGENCY (WHERE TRAINED):	EXPIRES: 9/8/15 GREENVILLE TECHNICAL COLLEGE GREENVILLE, SC	
TELEPHONE # (864) 213-4408		

STATE OF
SOUTH CAROLINA

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3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING: PORTABLES

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

D1-	SPRAY-APPLIED ACOUSTICAL CEILING TEXTURE - PORTABLE #25
D2-	12" X 12" GREY FLOOR TILE WITH WHITE AND DARK GREY STREAKS - PORTABLE #25
D2A-	MASTIC ASSOCIATED WITH HA-D2
D3-	12" X 12" WHITE FLOOR TILE WITH GREY AND TAN FLECKS - PORTABLE #25
D3A-	MASTIC ASSOCIATED WITH HA-D3
D4-	SPRAY-APPLIED ACOUSTICAL CEILING TEXTURE - PORTABLE #25
E1-	12" X 12" BLUE FLOOR TILE - SOCCER FIELD PORTABLE BATHROOM
E1A-	MASTIC ASSOCIATED WITH HA-E1 AND HA-E2 - SOCCER FIELD PORTABLE
E2-	12" X 12" YELLOW FLOOR TILE - SOCCER FIELD PORTABLE BATHROOM
E3-	SPRAY-APPLIED CEILING TEXTURE - SOCCER FIELD PORTABLE
E4-	SHEETROCK - SOCCER FIELD PORTABLE
E4A-	JOINT COMPOUND ASSOCIATED WITH HA-E4
E5-	12" X 12" GREY FLOOR TILE - SOCCER FIELD PORTABLE BATHROOM
E5A-	MASTIC ASSOCIATED WITH HA-E5
F1-	SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL - FOOTBALL PORTABLE
F2-	SHEETROCK - FOOTBALL PORTABLE
F2A	JOINT COMPOUND ASSOCIATED WITH HA-E2
F3-	LIGHT BEIGE MOTTLED FLOOR TILE - FOOTBALL PORTABLE LOCKER AREA
F3A-	MASTIC ASSOCIATED WITH HA-E3
F4	LIGHT TAN FLOOR TILE - FOOTBALL PORTABLE STORAGE AREA
F4A-	MASTIC ASSOCIATED WITH HA-E4

INSPECTOR		
TYPED NAME Roxane Schauder, MS	SIGNATURE Roxane Schauder	DATE 8/20/15
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TELEPHONE # (864) 213-4408		

STATE OF
SOUTH CAROLINA

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810 West South Fourth Street
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DATE OF REINSPECTION: July 31, 2015

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: ALL
AREA OF BUILDING: TOTAL AREA

LISTING OF ASSESSMENT CODES FOR ASBESTOS CONTAINING BUILDING MATERIALS

CODES	EXPLANATION
N/A	NOT APPLICABLE
N/D	NOT DETECTED
D/SD TSI	DAMAGED OR SIGNIFICANTLY-DAMAGED TSI*
DFS	DAMAGED FRIABLE SURFACING
SDFS	SIGNIFICANTLY DAMAGED - FRIABLE SURFACING
D/SD F MISC	DAMAGED OR SIGNIFICANTLY DAMAGED FRIABLE-MISCELLANEOUS
PD	POTENTIAL FOR DAMAGE
PSD	POTENTIAL FOR SIGNIFICANT DAMAGE
O F/FS	OTHER FRIABLE/FRIABLE SUSPECTED
NF	NON-FRIABLE
CHRY	CHRYSOTILE
AMOS	AMOSITE
CROC	CROCIDOLITE

* TSI = Thermal System Insulation

STATE OF
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Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
9/70/88	SHS-01	MECH. ROOM/ BOILER ROOM	X		C1		40	AMOS	3	ABATED	ELBOW INS.
								CHRY	2		
	SHS-02	MECH. ROOM/ BOILER ROOM	X		C2	400		AMOS	18	ABATED	TANK INS.
								CHRY	25		
	SHS-03	MECH. ROOM	X		C1			ND		REMOVED	MUD INS.
	SHS-04	MECH. ROOM	X		C3			ND			PLASTER
	SHS-05	MECH. ROOM	X		C3			ND			PLASTER
	SHS-06	MECH. ROOM	X		C3			ND			PLASTER
	SHS-07	MECH. ROOM	X		C4			CROC	75		GASKET
	SHS-08	KITCHEN OFFICE	X		A1			ND			CEILING TILE
	SHS-09	CAFETERIA	X		A2			CHRY	2	NF	FLOOR TILE
	SHS-09	CAFETERIA	X		A2A			CHRY	2	Inaccessible	MASTIC
	SHS-10	CAFETERIA	X		A2			CHRY	2	NF	FLOOR TILE
	SHS-10	CAFETERIA	X		A2A			CHRY	2	Inaccessible	MASTIC
	SHS-11	BOYS LOCKER	X		B1			ND			PLASTER
	SHS-12	BOYS LOCKER	X		B1			ND			PLASTER
	SHS-13	BOYS LOCKER	X		B1			ND			PLASTER
	SHS-14	TOILET AREA	X		B1			ND			PLASTER
	SHS-15	TOILET AREA	X		B1			ND			PLASTER
	SHS-16	ELEC. ROOM	X		A1			ND			CEILING TILE
	SHS-17	CORRIDOR	X		A4			ND			CEILING TILE

INSPECTOR'S TYPED NAME:	SIGNATURE:	TELEPHONE#:	DATE:
Roxane Schauder, MS	Roxane Schauder	(864) 213-4408	08/20/2015
SCDHEC LICENSE#: 00189	STATE & AGENCY WHERE TRAINED: Greenville Technical College		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
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Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN .F T.	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
9/70/88	SHS-18	CLASSROOM	X		A4			ND			CEILING TILE
	SHS-19	CHEMISTRY	X		A5	500		CHRY	12	D/MISC	LINOLEUM
	SHS-20	CHEMISTRY	X		A5	500		CHRY	12	D/MISC	LINOLEUM
	SHS-24	CANOPIES	X		A6			ND			PLASTER
	SHS-25	CANOPIES	X		A6			ND			PLASTER
	SHS-26	CANOPIES	X		A6			ND			PLASTER
1/24/00	B6-01	BAND ROOM		X	B6			ND			CEILING TILE
	B6-02	BAND ROOM		X	B6			ND			CEILING TILE
	B7-03	BAND ROOM		X	B7			ND			FLOOR TILE
	B7-03	BAND ROOM		X	B7A			CHRY	10	NF	MASTIC
	B7-04	BAND ROOM		X	B7			ND			FLOOR TILE
	B7-04	BAND ROOM		X	B7A			ASSUMED		NF	MASTIC
	B4-05	BAND ROOM		X	B4			ND			PIPE WRAP
	B4-06	BAND ROOM		X	B4			ND			PIPE WRAP
	BI-07	BOYS LOCKER		X	B1			ND			PLASTER
	B1-08	BOYS LOCKER		X	B1			ND			PLASTER
	B1-09	BOYS LOCKER		X	B1			ND			PLASTER
	B5-10	MINI-GYM		X	B5			ND			FLOOR TILE
	B5-10	MINI-GYM		X	B5A			CHRY.	8	NF	MASTIC
	B5-11	MINI-GYM		X	B5			ND			FLOOR TILE
	B5-11	MINI-GYM		X	B5A			ASSUMED		NF	MASTIC

INSPECTOR'S TYPED NAME: Roxane Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 08/20/2015

SCDHEC LICENSE#: 00189
STATE & AGENCY WHERE TRAINED: Greenville Technical College

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
1/24/00	A13-12	ROOM 111		X	A13			ND			CEILING TILE
	A13-13	ROOM 111		X	A13			ND			CEILING TILE
	A8-14	ROOM 410		X	A8			ND			FLOOR TILE
	A8-14	ROOM 410		X	A8A			ND			MASTIC
	A8-15	ROOM 410		X	A8			ND			FLOOR TILE
	A8-15	ROOM 410		X	A8A			ND			MASTIC
	A9-16	ROOM 410		X	A9			ND			CEILING TILE
	A9-17	ROOM 410		X	A9			ND			CEILING TILE
	A10-18	ROOM 309		X	A10			ND			FLOOR TILE
	A10-18	ROOM 309		X	A10A			ND			MASTIC
	A10-19	ROOM 309		X	A10			ND			FLOOR TILE
	A10-19	ROOM 309		X	A10A			ND			MASTIC
	C7-20	BOILER ROOM		X	C7			ND			PIPE WRAP
	C7-21	BOILER ROOM		X	C7			ND			PIPE WRAP
	A11-22	ROOM 113 (now 313)		X	A11			CHRY	5	GOOD	FLOOR TILE
	A11-22	ROOM 113 (now 313)		X	A11A			CHRY	7	NF	MASTIC
	A11-23	ROOM 113 (now 313)		X	A11			CHRY	5	GOOD	FLOOR TILE
	A11-23	ROOM 113 (now 313)		X	A11A			CHRY	7	NF	MASTIC
	A2-24	CAFETERIA		X	A2			CHRY	6	GOOD	FLOOR TILE
	A2-24	CAFETERIA		X	A2A			CHRY	8	NF	MASTIC

INSPECTOR'S TYPED NAME: Roxane Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 08/20/2015

SCDHEC LICENSE#: 00189
STATE & AGENCY WHERE TRAINED: Greenville Technical College

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
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Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
1/24/00	A2-25	CAFETERIA		X	A2			CHRY	6	GOOD	FLOOR TILE
	A2-25	CAFETERIA		X	A2A			CHRY	8	NF	MASTIC
	A12-26	ROOF 111/113		X	A12			ND			ROOFING
	A12-27	ROOF 111/113		X	A12			ND			ROOFING
2/21/00	C1-01	BOILER ROOM		X	C1		40	AMOS		ABATED	ELBOW INS.
	C1-02	BOILER ROOM		X	C1		40	Not analy.		ABATED	ELBOW INS.
	C1-03	BOILER ROOM		X	C1		40	Not analy.		ABATED	ELBOW INS.
	C5-04	BOILER ROOM		X	C5		24	ND			VALVE INS.
	C5-05	BOILER ROOM		X	C5		24	ND			VALVE INS.
	C5-06	BOILER ROOM		X	C5		24	ND			VALVE INS.
	C2-07	BOILER ROOM		X	C2	25		AMOS		ABATED	TANK INS.
								CHRY			
	C2-08	BOILER ROOM		X	C2	25		Not analy.		ABATED	TANK INS.
	C2-09	BOILER ROOM		X	C2	25		Not analy.		ABATED	TANK INS.
	B2-10	GYM B.R.		X	B2			ND			ELBOW INS.
	B2-11	GYM B.R.		X	B2			ND			ELBOW INS.
	B2-12	GYM B.R.		X	B2			ND			ELBOW INS.
	B3-13	GYM B.R.		X	B3			ND			PIPE WRAP
	B3-14	GYM B.R.		X	B3			ND			PIPE WRAP
	B3-15	GYM B.R.		X	B3			ND			PIPE WRAP

INSPECTOR'S TYPED NAME: Roxane Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 8/20/15

SCDHEC LICENSE#: 1336
STATE & AGENCY WHERE TRAINED: Greenville Technical College

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESSMENT	COMMENTS
			YES	NO				TYPE	%		
2/21/00	A7-16	HALLS		X	A7			ND			BASEBOARD
	A7-16	HALLS		X	A7A			ND			MASTIC
	A7-17	HALLS		X	A7			ND			BASEBOARD
	A7-17	HALLS		X	A7A			ND			MASTIC
	A7-18	HALLS		X	A7			ND			BASEBOARD
	A7-18	HALLS		X	A7A			ND			MASTIC
6/16/15	4	GUIDANCE CONF		X	A15			ND			COVEBASE
	4	GUIDANCE CONF		X	A15A			ND			MASTIC
	5	GUIDANCE CONF		X	A15			ND			COVEBASE
	5	GUIDANCE CONF		X	A15A			ND			MASTIC
	6	GUIDANCE CONF		X	A15			ND			COVEBASE
	6	GUIDANCE CONF		X	A15A			ND			MASTIC
	7	ROOM 507		X	A14			CHRY	<0.25		Carpet mastic
	8	ROOM 507		X	A14			CHRY	<0.25		Carpet mastic
	9	ROOM 507		X	A14			CHRY	<0.25		Carpet mastic
	10	CHORUS ROOM		X	B5			ND			FLOOR TILE
	10	CHORUS ROOM		X	B5A			CHRY	2	NF	MASTIC
	11	CHORUS ROOM		X	B5			ND			FLOOR TILE
	11	CHORUS ROOM		X	B5A			CHRY	3	NF	MASTIC.
	12	CHORUS ROOM		X	B5			ND			FLOOR TILE
	12	CHORUS ROOM		X	B5A			CHRY	3	NF	MASTIC

INSPECTOR'S TYPED NAME: Roxane. Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 8/20/15

SCDHEC LICENSE#: 00189
STATE & AGENCY WHERE TRAINED: Greenville Technical College

STATE OF
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4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: MAIN
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESS MENT	COMMENTS
			YES	NO				TYPE	%		
6/6/15	13	CHORUS ROOM		X	A16			ND			COVEBASE
	13	CHORUS ROOM		X	A16A			ND			MASTIC
	14	CHORUS ROOM		X	A16			ND			COVEBASE
	14	CHORUS ROOM		X	A16A			ND			MASTIC
	15	CHORUS ROOM		X	A16			ND			COVEBASE
	15	CHORUS ROOM		X	A16A			ND			MASTIC
7/31/15		THROUGHOUT		X	A17			ASSUMED		GOOD	SHEETROCK
		THROUGHOUT		X	A17A			ASSUMED		GOOD	JOINT COMP.
		SCIENCE ROOMS		X	A18			ASSUMED		GOOD	LAB BENCH TOPS
		STAIRWELLS		X	A19			ASSUMED		GOOD	STAIR TREADS
		STAIRWELLS		X	A19A			ASSUMED		GOOD	MASTIC

INSPECTOR'S TYPED NAME: Roxane Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 8/20/15

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4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: PORTABLE 25
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESS MENT	COMMENTS
			YES	NO				TYPE	%		
9/7/88	SHS-21	PORTABLE 25		X	D1			ND			SPRAY-ON
	SHS-22	PORTABLE 25		X	D1			ND			SPRAY-ON
	SHS-23	PORTABLE 25		X	D1			ND			SPRAY-ON
2/21/00	D2-19	PORTABLE 25		X	D2			ND			FLOOR TILE
	D2-19	PORTABLE 25		X	D2A			ND			MASTIC.
	D2-20	PORTABLE 25		X	D2			ND			FLOOR TILE
	D2-20	PORTABLE 25		X	D2A			ND			MASTIC
	D3-21	PORTABLE 25		X	D3			ND			FLOOR TILE
	D3-21	PORTABLE 25		X	D3A			ND			MASTIC
	D3-22	PORTABLE 25		X	D3			ND			FLOOR TILE
	D3-22	PORTABLE 25		X	D3A			ND			MASTIC
	D4-23	PORTABLE 25		X	D4			ND			SPRAY-ON
	D4-24	PORTABLE 25		X	D4			ND			SPRAY-ON
	D4-25	PORTABLE 25		X	D4			ND			SPRAY-ON

INSPECTOR'S TYPED NAME: Roxane Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 8/20/15

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STATE & AGENCY WHERE TRAINED: Greenville Technical College

STATE OF
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4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: SOCCER PORTABLE
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESS MENT	COMMENTS
			YES	NO				TYPE	%		
11/19/12	1	SOCCER PORT.		X	E1			ND			FLOOR TILE
	1	SOCCER PORT.		X	E1A			ND			MASTIC
	2	SOCCER PORT.		X	E1			ND			FLOOR TILE
	2	SOCCER PORT.		X	E1A			ND			MASTIC
	3	SOCCER PORT.		X	E1			ND			FLOOR TILE
	3	SOCCER PORT.		X	E1A			ND			MASTIC
	4	SOCCER PORT.		X	E2			ND			FLOOR TILE
	5	SOCCER PORT.		X	E2			ND			FLOOR TILE
	6	SOCCER PORT.		X	E2			ND			FLOOR TILE
	7	SOCCER PORT.		X	E2			ND			COVEBASE
	7	SOCCER PORT.		X	E2A			ND			MASTIC.
	8	SOCCER PORT.		X	E2			ND			COVEBASE
	8	SOCCER PORT.		X	E2A			ND			MASTIC
	9	SOCCER PORT.		X	E2			ND			COVEBASE
	9	SOCCER PORT.		X	E2A			ND			MASTIC
	10	SOCCER PORT.		X	E3			ND			SPRAY-ON
	11	SOCCER PORT.		X	E3			ND			SPRAY-ON
	12	SOCCER PORT.		X	E3			ND			SPRAY-ON
	13	SOCCER PORT.		X	E4			ND			SHEETROCK
	13	SOCCER PORT.		X	E4A			ND			JOINT COMP.

INSPECTOR'S TYPED NAME:	SIGNATURE:	TELEPHONE#:	DATE:
Roxane Schauder, MS	Roxane Schauder	(864) 213-4408	8/20/15
SCDHEC LICENSE#: 00189	STATE & AGENCY WHERE TRAINED: Greenville Technical College		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: SOCCER PORTABLE
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESS MENT	COMMENTS
			YES	NO				TYPE	%		
11/19/12	14	SOCCER PORT.		X	E4			ND			SHEETROCK
	14	SOCCER PORT.		X	E4A			ND			JOINT COMP.
	15	SOCCER PORT.		X	E4			ND			SHEETROCK
	15	SOCCER PORT.		X	E4A			ND			JOINT COMP.
	16	SOCCER PORT.		X	E5			ND			FLOOR TILE
	16	SOCCER PORT.		X	E5A			ND			MASTIC
	17	SOCCER PORT.		X	E5			ND			FLOOR TILE
	17	SOCCER PORT.		X	E5A			ND			MASTIC
	18	SOCCER PORT.		X	E5			ND			FLOOR TILE
	18	SOCCER PORT.		X	E5A			ND			MASTIC

INSPECTOR'S TYPED NAME: Roxane Schauder, MS
SIGNATURE: Roxane Schauder
TELEPHONE#: (864) 213-4408
DATE: 8/20/15

SCDHEC LICENSE#: 00189
STATE & AGENCY WHERE TRAINED: Greenville Technical College

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: FOOTBALL PORTABLE
AREA OF BUILDING: TOTAL AREA

EACH SAMPLE

DATE	SAMPLE ID#	LOCATION	PHOTO		HA ID#	SQ. FT.	LN. FT.	ASBESTOS		ASSESS MENT	COMMENTS
			YES	NO				TYPE	%		
11/19/12	1	FOOTBALL PORT.		X	F1			ND			SPRAY-ON
	2	FOOTBALL PORT.		X	F1			ND			SPRAY-ON
	3	FOOTBALL PORT.		X	F1			ND			SPRAY-ON
	4	FOOTBALL PORT.		X	F3			ND			FLOOR TILE
	4	FOOTBALL PORT.		X	F3A			ND			MASTIC
	5	FOOTBALL PORT.		X	F3			ND			FLOOR TILE
	5	FOOTBALL PORT.		X	F3A			ND			MASTIC
	6	FOOTBALL PORT.		X	F3			ND			FLOOR TILE
	6	FOOTBALL PORT.		X	F3A			ND			MASTIC
	7	FOOTBALL PORT.		X	F4			ND			FLOOR TILE
	7	FOOTBALL PORT.		X	F4A			ND			MASTIC
	8	FOOTBALL PORT.		X	F4			ND			FLOOR TILE
	8	FOOTBALL PORT.		X	F4A			ND			MASTIC
	9	FOOTBALL PORT.		X	F4			ND			FLOOR TILE
	9	FOOTBALL PORT.		X	F4A			ND			MASTIC
	10	FOOTBALL PORT.		X	F2			ND			SHEETROCK
	10	FOOTBALL PORT.		X	F2A			ND			JOINT COMP.
	11	FOOTBALL PORT.		X	F2			ND			SHEETROCK
	11	FOOTBALL PORT.		X	F2A			ND			JOINT COMP.
	12	FOOTBALL PORT.		X	F2			ND			SHEETROCK
	12	FOOTBALL PORT.		X	F2A			ND			JOINT COMP.

INSPECTOR'S TYPED NAME:	SIGNATURE:	TELEPHONE#:	DATE:
Roxane Schauder, MS	Roxane Schauder	(864) 213-4408	8/20/15

SCDHEC LICENSE#: 00189

STATE & AGENCY WHERE TRAINED: Greenville Technical College

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: West, South 4th Street
Seneca, SC 29678

Date Inspected: 7-5-17

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR G D X SD	NF X FR G X D SD		
Main	A2A	Mastic associated w/HA-A2	NF X FR G X D SD	NF X FR G X D SD		
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR G X D SD	NF X FR G X D SD		
Main	A11A	Mastic associated w/HA-A11	NF X FR G X D SD	NF X FR G X D SD		
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR G X D SD	NF X FR G X D SD		
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR G X D SD	NF X FR G X D SD		
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR G X D SD	NF X FR G X D SD		

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:
CAFETERIA WAS IMPROVED IN THE SPRING OF 2017 BY AN ABATEMENT OF EXPANSION IN THE CENTER OF THE ROOM.

Inspected By: R Alexander

Title:

LEA Designee: Richard Alexander
Phone: 864 886-4420
Signature: R Alexander

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: West, South 4th Street
Seneca, SC 29678

Date Inspected: 7-5-17

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR G D X SD	NF X FR G X D SD		
Main	A2A	Mastic associated w/HA-A2	NF X FR G X D SD	NF X FR G X D SD		
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR G X D SD	NF X FR G X D SD		
Main	A11A	Mastic associated w/HA-A11	NF X FR G X D SD	NF X FR G X D SD		
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR G X D SD	NF X FR G X D SD		
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR G X D SD	NF X FR G X D SD		
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR G X D SD	NF X FR G X D SD		

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:
CAFETERIA WAS IMPROVED IN THE SPRING OF 2017 BY AN ABATEMENT OF EXPANSION IN THE CENTER OF THE ROOM.

Inspected By: R Alexander

Title:

LEA Designee: Richard Alexander
Phone: 864 886-4420
Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
BUILDINGS REINSPECTED

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth St, Seneca, S.C. 29678
DATE REINSPECTED: July 30, 2018

BUILDING NAME	ACBM		SUSPECT ACBM		NO ACBM
	FRIABLE	NON-FRIABLE	FRIABLE	NON-FRIABLE	
Main		X		X	
Portable 25				X	
Football Portable					X
Soccer Field Portable					X

Inspector: Roxane Schauder, MS
SCDHEC License #: 00189 Exp. Date: 11-08-18
Phone: 864-213-4408

Signature: Roxane Schauder 9-4-18

LEA Designee: Richard Alexander

Phone: 864-886-4420

Signature: R Alexander

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School
810 West South Fourth Street, Seneca, S.C. 29678
DATE REINSPECTED: July 30, 2018

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Classrooms. (Abated 500 wing hall 2013) (Abated gym lobby & café 2017)	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Tan & grey marbleized rolled flooring- Chemistry room 601/603	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A10A	Mastic associated with HA-A10 Room 309	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11A	Mastic associated w/HA-A11 Room 313	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A18	Laboratory bench tops ASSUMED	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A19	Stair treads ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
A19A	Mastic associated with HA-17 ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
D4 D4A	Sheetrock - Portable 25 - ASSUMED Joint Compound - Portable 25 - ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___	X	
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: Roxane Schauder, MS
SCDHEC License #: 00189 Exp. Date: 11-08-18
Phone: 864-213-4408
Signature: Roxane Schauder 9-4-18

LEA Designee: Richard Alexander

Phone: 864-886-4420
Signature: _____

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth Street
Seneca, S.C. 29678
DATE REINSPECTED: July 30, 2018

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDINGS: ALL

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

The purpose of the survey is to identify all ACBM in the building. In order to accomplish this goal as well as to meet the requirement of the "Asbestos-Containing Materials in Schools" rule (40 CFR Part 763), the materials to be sampled are grouped in "Homogeneous Areas." A "Homogeneous Area" is defined as "an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture." The material should appear similar in all other aspects. If there was any reason to suspect that materials might be different they were assigned to different homogeneous areas.

Each homogeneous area is assigned a unique code. Sampling locations within each homogeneous area were selected by dividing the homogeneous area into nine sub-areas. The sub-areas to be sampled are determined by the use of a random number table. The selection of the individual sampling is conducted in a random manner, but is nevertheless subject to a variety of factors. These include:

a.. Size of the homogeneous area
a.. Condition of material
a.. Distribution of material
a.. Accessibility
a.. Exposure potential to building occupants
a.. Other limitations imposed by the client

The actual number of samples taken is governed by the requirements of section 763-86 - Sampling.

Finally, one must realize that there are limitations to each survey. Therefore, Environmental Testing & Management, Inc. cannot guarantee that all ACBM was located or identified during the building survey.

INSPECTOR		
TYPED NAME: Roxane Schauder, MS	SIGNATURE: Roxane Schauder	DATE: 9-4-18
SOUTH CAROLINA LICENSE #: 00189 EXPIRES: 11/08/18 STATE & AGENCY (WHERE TRAINED): Greenville Technical College		
TELEPHONE #: (864) 213-4408		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth Street
Seneca, SC 29678
DATE OF REINSPECTION: July 30, 2018

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING: MAIN

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A1- 2' X 4' WHITE CEILING TILE WITH SMALL FISSURES - KITCHEN OFFICE AND STORAGE

A2- 12" X 12" LIGHT CREAM FLOOR TILE - CAFETERIA

A2A- MASTIC ASSOCIATED WITH HA-A2

A4- 2' X 4' WHITE ACOUSTICAL CEILING TILE WITH SMALL STIPPLES - CORRIDOR AND CLASSROOMS

A5- TAN AND GREY MARBLEIZED ROLLED FLOORING - CHEMISTRY ROOM 601 & 603

A6- HARD STIPPLE PAINTED PLASTER - CANOPIES OVER EXTERIOR DOORWAYS

A7- BASEBOARD MATERIAL - HALLWAYS

A7A- MASTIC ASSOCIATED WITH HA-A7

A8- FLOOR TILE - ROOM 410

A8A- MASTIC ASSOCIATED WITH HA-A8

A9- CEILING TILE - ROOM 410

A10- FLOOR TILE - ROOM 309

A10A- MASTIC ASSOCIATED WITH HA-A10

A11- FLOOR TILE - ROOM 313 (REPLACED)

A11A- MASTIC ASSOCIATED WITH HA-A11

A12- ROOFING MATERIAL AT ROOMS 111 - 113

A13- CEILING TILE - ROOM 111

A14- CARPET MASTIC - ROOM 507

A15- PURPLE COVEBASE - GUIDANCE CONFERENCE ROOM

A15A- MASTIC ASSOCIATED WITH HA-A15

A16- DARK BLUE COVEBASE - CHORUS ROOM (REMOVED IN CHORUS ROOM)

A16A- MASTIC ASSOCIATED WITH HA-A16

INSPECTOR		
TYPED NAME Roxane Schauder, MS	SIGNATURE Roxane Schauder	DATE 9-4-18
SOUTH CAROLINA LICENSE #: 00189 STATE & AGENCY (WHERE TRAINED):	EXPIRES: 11/8/18 GREENVILLE TECHNICAL COLLEGE GREENVILLE, SC	
TELEPHONE # (864) 213-4408		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth Street.
Seneca, SC 29678
DATE OF REINSPECTION: July 30, 2018

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING: MAIN

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

A18- LABORATORY BENCH TOPS - SCIENCE ROOMS (ASSUMED)

A19- STAIR TREADS - STAIRWELLS (ASSUMED)

A19A- MASTIC ASSOCIATED WITH HA-A20 (ASSUMED)

B1- PLASTER CEILING IN BOYS' SHOWER ROOM

B2- THERMAL SYSTEM INSULATION (ELBOW INSULATION) - GYM BOYS' BATHROOM

B3 - THERMAL SYSTEM INSULATION (PIPE WRAP) - GYM BOYS' BATHROOM

B4- THERMAL SYSTEM INSULATION (PIPE WRAP) - BAND ROOM

B5- FLOOR TILE - STRINGS AND CHORUS ROOM - ABATED

B5A- MASTIC ASSOCIATED WITH HA=B5 - ABATED

B6- CEILING TILE - BAND ROOM

B7- FLOOR TILE - BAND ROOM

B7A- MASTIC ASSOCIATED WITH HA-B7

C1- THERMAL SYSTEM INSULATION (ELBOWS)- BOILER ROOM (REMOVED)

C2- THERMAL SYSTEM INSULATION (EXPANSION TANK) - BOILER ROOM (ABATED)

C3- PLASTER CEILING MATERIAL - BOILER ROOM

C4- GASKET MATERIAL ON BOILER #1 VIEWING GLASS (ABATED)

C5- THERMAL SYSTEM INSULATION (VALVE INSULATION) - BOILER ROOM

C7- THERMAL SYSTEM INSULATION (PIPE WRAP) - BOILER ROOM

INSPECTOR		
TYPED NAME Roxane Schauder, MS	SIGNATURE Roxane Schauder	DATE 9-4-18
SOUTH CAROLINA LICENSE #: 00189 STATE & AGENCY (WHERE TRAINED):	EXPIRES: 11/8/18 GREENVILLE TECHNICAL COLLEGE GREENVILLE, SC	
TELEPHONE # (864) 213-4408		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
ADDRESS: 810 West South Fourth Street
Seneca, SC 29678
DATE OF REINSPECTION: July 30, 2018

3 - DETERMINATION OF SAMPLING LOCATIONS BUILDING: PORTABLES

DISCUSSION OF EACH HOMOGENEOUS AREA AND ASSIGN ID#
DISCUSS SAMPLING LOCATIONS WITHIN EACH HOMOGENEOUS AREA

D1- SPRAY-APPLIED ACOUSTICAL CEILING TEXTURE - PORTABLE #25
D2- 12" X 12" GREY FLOOR TILE WITH WHITE AND DARK GREY STREAKS - PORTABLE #25
D2A- MASTIC ASSOCIATED WITH HA-D2
D3- 12" X 12" WHITE FLOOR TILE WITH GREY AND TAN FLECKS - PORTABLE #25
D3A- MASTIC ASSOCIATED WITH HA-D3
D4- SHEETROCK - PORTABLE #25 - ASSUMED
D4A- JOINT COMPOUND ASSOCIATED WITH HA-D4 - ASSUMED

E1- 12" X 12" BLUE FLOOR TILE - SOCCER FIELD PORTABLE BATHROOM
E1A- MASTIC ASSOCIATED WITH HA-E1 AND HA-E2 - SOCCER FIELD PORTABLE
E2- 12" X 12" YELLOW FLOOR TILE - SOCCER FIELD PORTABLE BATHROOM
E3- SPRAY-APPLIED CEILING TEXTURE - SOCCER FIELD PORTABLE
E4- SHEETROCK - SOCCER FIELD PORTABLE
E4A- JOINT COMPOUND ASSOCIATED WITH HA-E4
E5- 12" X 12" GREY FLOOR TILE - SOCCER FIELD PORTABLE BATHROOM
E5A- MASTIC ASSOCIATED WITH HA-E5

F1- SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL - FOOTBALL PORTABLE
F2- SHEETROCK - FOOTBALL PORTABLE
F2A JOINT COMPOUND ASSOCIATED WITH HA-E2
F3- LIGHT BEIGE MOTTLED FLOOR TILE - FOOTBALL PORTABLE LOCKER AREA
F3A- MASTIC ASSOCIATED WITH HA-E3
F4 LIGHT TAN FLOOR TILE - FOOTBALL PORTABLE STORAGE AREA
F4A- MASTIC ASSOCIATED WITH HA-E4

INSPECTOR		
TYPED NAME Roxane Schauder, MS	SIGNATURE Roxane Schauder	DATE 9-4-18
SOUTH CAROLINA LICENSE #: 00189 STATE & AGENCY (WHERE TRAINED):	EXPIRES: 11/8/18 GREENVILLE TECHNICAL COLLEGE GREENVILLE, SC	
TELEPHONE # (864) 213-4408		

STATE OF
SOUTH CAROLINA

LEA: THE SCHOOL DISTRICT OF OCONEE COUNTY
SCHOOL: Seneca Middle School
810 West South Fourth Street
Seneca, S.C. 29678
DATE OF REINSPECTION: July 30, 2018

4 - DESCRIPTION OF ASSESSMENT CODES

BUILDING: ALL
AREA OF BUILDING: TOTAL AREA

LISTING OF ASSESSMENT CODES FOR ASBESTOS CONTAINING BUILDING MATERIALS

CODES	EXPLANATION
N/A	NOT APPLICABLE
N/D	NOT DETECTED
D/SD TSI	DAMAGED OR SIGNIFICANTLY-DAMAGED TSI*
DFS	DAMAGED FRIABLE SURFACING
SDFS	SIGNIFICANTLY DAMAGED - FRIABLE SURFACING
D/SD F MISC	DAMAGED OR SIGNIFICANTLY DAMAGED FRIABLE-MISCELLANEOUS
PD	POTENTIAL FOR DAMAGE
PSD	POTENTIAL FOR SIGNIFICANT DAMAGE
O F/FS	OTHER FRIABLE/FRIABLE SUSPECTED
NF	NON-FRIABLE
CHRY	CHRYSOTILE
AMOS	AMOSITE
CROC	CROCIDOLITE

* TSI = Thermal System Insulation

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: West, South 4th Street
Seneca, SC 29678

Date Inspected: 6-11-19

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR G D X SD	NF X FR G D X SD		
Main	A2A	Mastic associated w/HA-A2	NF X FR G X D SD	NF X FR G X D SD		
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR G X D SD	NF X FR G ~~X~~ D SD		
Main	A11A	Mastic associated w/HA-A11	NF X FR G X D SD	NF X FR G X D SD		
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR G X D SD	NF X FR G ~~X~~ D SD		
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR G X D SD	NF X FR G X D SD		
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR G X D SD	NF X FR G X D SD		

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:

Inspected By: _____

Title: _____

LEA Designee: Richard Alexander
Phone: 864 886-4420
Signature: _____

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: West, South 4th Street
Seneca, SC 29678

Date Inspected: 11-15-19

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR G D X SD	NF X FR G D X SD		
Main	A2A	Mastic associated w/HA-A2	NF X FR G X D SD	NF X FR G X D SD		
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR G X D SD	NF X FR G √ D SD		
Main	A11A	Mastic associated w/HA-A11	NF X FR G X D SD	NF X FR G √ D SD		
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR G X D SD	NF X FR G √ D SD		
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR G X D SD	NF X FR G √ D SD		
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR G X D SD	NF X FR G √ D SD		

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:

Inspected By: _____

Title: _____

LEA Designee: Richard Alexander
Phone: 864 886-4420
Signature: _____

STATE OF SOUTH CAROLINA
AHERA REINSPECTION REPORT
REINSPECTION OF AREAS
OF ACBM OR SUSPECT ACBM

LEA: The School District of Oconee County
SCHOOL: Seneca Middle School
810 West South Fourth Street, Seneca, S.C. 29678
DATE REINSPECTED: July 30, 2018

HA #	HOMOGENEOUS AREA DESCRIPTION	CURRENT CONDITION: TYPE AND AMOUNT OF DAMAGE	DISTURBANCE POTENTIAL: TYPE AND AMOUNT OF DISTURBANCE	CHANGES	
				YES	NO
A2	12" X 12" Beige Speckled Tile Gym, Classrooms. (Abated 500 wing hall 2013) (Abated gym lobby & café 2017)	NF _X___ Fri_____ G__ D_X__ SD___	LPD X_ PD__ PSD___		X
A2A	Mastic Associated w/HA-A2	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A5	Tan & grey marbleized rolled flooring- Chemistry room 601/603	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A10A	Mastic associated with HA-A10 Room 309	NF__X__ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A11A	Mastic associated w/HA-A11 Room 313	NF__X__ Fri_____ G_X_ D___ SD___	LPD X__ PD___ PSD___		X
B7A	Mastic Associated w/HA-B7 Band Room	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A18	Laboratory bench tops ASSUMED	NF__X___ Fri_____ G_X_ D___ SD___	LPD_X_ PD___ PSD___		X
A19	Stair treads ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
A19A	Mastic associated with HA-17 ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___		X
D4 D4A	Sheetrock - Portable 25 - ASSUMED Joint Compound - Portable 25 - ASSUMED	NF_X___ Fri___ G_X_ D__ SD___	LPD_X_ PD___ PSD___	X	
NF=Non-friable; Fri=Friable G=good condition, D=damaged, SD=sig. damaged LPD=low potential for damage PD=potential for damage PSD=potential for significant damage		**DAMAGE CODES** D=DETERIORATION W=WATER P=PHYSICAL O=OTHER	**DISTURBANCE CODES** A=ACCESSIBILITY V=VIBRATION E=AIR EROSION		

COMMENTS: HA-A2: Gym floor tile damaged at entry areas

Inspector: Roxane Schauder, MS
SCDHEC License #: 00189 Exp. Date: 11-08-18
Phone: 864-213-4408
Signature: Roxane Schauder 9-4-18

LEA Designee: Richard Alexander

Phone: 864-886-4420
Signature:_____

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle **Date Inspected:** 6/15/2022
Address: 810 West, South 4th Street
Seneca, SC 29678

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF _X_ FR___ G___ D_X_ SD___	NF _X_ FR___ G___ D_X_ SD___	X	
Main	A2A	Mastic associated w/HA-A2	NF _X_ FR___ G_X_ D___ SD___	NF _X_ FR___ G_X_ D___ SD___		X
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF _X_ FR___ G_X_ D___ SD___	NF _X_ FR___ G_X_ D___ SD___		X
Main	A11A	Mastic associated w/HA-A11	NF _X_ FR___ G_X_ D___ SD___	NF _X_ FR___ G_X_ D___ SD___		X
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF _X_ FR___ G_X_ D___ SD___	NF _X_ FR___ G_X_ D___ SD___		X
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF _X_ FR___ G_X_ D___ SD___	NF _X_ FR___ G_X_ D___ SD___		X
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF _X_ FR___ G_X_ D___ SD___	NF _X_ FR___ G_X_ D___ SD___		X

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS: Room 311: 3 loose tiles (work order placed 6/15/22); completed work approved 6/21/22

Inspected By: Josh Wittrock

Title: Director of Facilities

LEA Designee: Josh Wittrock
Phone: 864 886-4420
Signature: Josh Wittrock

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: 810 West, South 4th Street
Seneca, SC 29678

Date Inspected: 11/30/22

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR___ G___ D X SD___	NF X FR___ G___ D X SD___		X
Main	A2A	Mastic associated w/HA-A2	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	A11A	Mastic associated w/HA-A11	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:

Inspected By: [signature]

Title: Custodial Foreman

LEA Designee: Josh Wittrock
Phone: 864 886-4420
Signature: [signature]

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: 810 West, South 4th Street
Seneca, SC 29678

Date Inspected: 6/20/23

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR___ G___ D X SD___	NF X FR___ G___ D X SD___		X
Main	A2A	Mastic associated w/HA-A2	NF X FR___ G X D___ SD___	NF X FR___ G___ D X SD___		X
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	A11A	Mastic associated w/HA-A11	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR___ G X D___ SD___	NF X FR___ G___ D___ SD___	X	X JW
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		X

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:

Inspected By: [signature]

Title: Director of Facilities

LEA Designee: Josh Wittrock
Phone: 864 886-4420
Signature: [signature]

State of South Carolina
AHERA Report

LEA: The School District of Oconee County

SIX MONTH PERIODIC SURVEILLANCE REPORT OF ACBM OR SUSPECT ACBM IN OCONEE COUNTY SCHOOLS

Facility: Seneca Middle
Address: 810 West, South 4th Street
Seneca, SC 29678

Date Inspected: 12-19-23

Building	HA-ID#	Description of Homogeneous Area	Prior Condition	Current Condition	Changes YES	Changes NO
Main	A2	12" X 12" Beige speckled tile Classrooms, Cafeteria	NF X FR___ G___ D X SD___	NF X FR___ G___ D X SD___		
Main	A2A	Mastic associated w/HA-A2	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		
Main	A5	Linoleum Beige/Grey speckled Rm 601/603, wet areas & under 12" FT	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		
Main	A11A	Mastic associated w/HA-A11	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		
Main	A13	Sheetrock Joint Cmpd Sys - Throughout (Assumed)	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		
Main	A14	Plaster Systems - Lobby Center (Assumed)	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		
Main	B5A	Mastic associated w/HA-B5 Strings & Chorus wing	NF X FR___ G X D___ SD___	NF X FR___ G X D___ SD___		

NF = non Friable F = Friable
G = good condition D= damaged SD = significant damage

COMMENTS:

A2 is marked (Damaged) - only thing I could find that maybe considered damaged is linoleum in Rm 603 or cafeteria that has been patched.

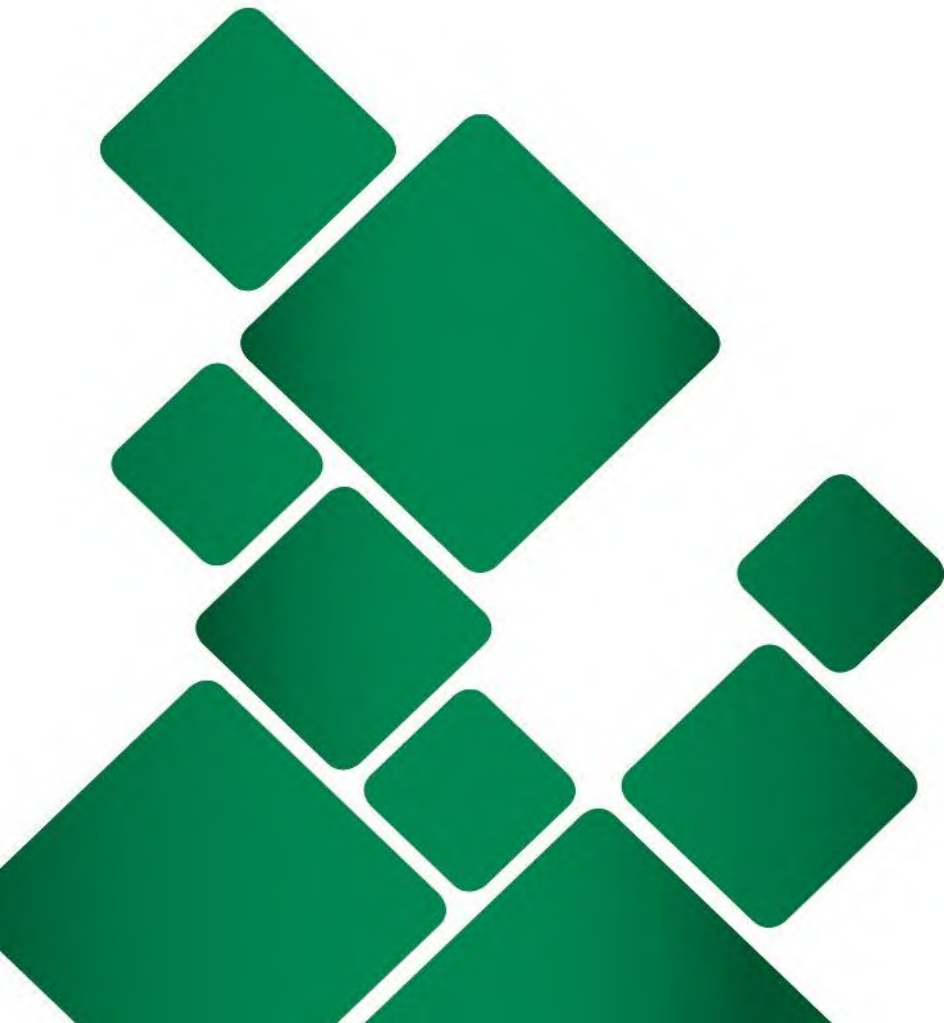
Inspected By: Kenneth T. Williams Jr.

Title: Assistant Director of Facilities

LEA Designee: Josh Wittrock
Phone: 864 886-4420
Signature:

ATTACHMENT D

HISTORICAL AERIAL PHOTOGRAPHY



synTerra

Science & Engineering Consultants

Old Seneca Middle School

810 West South 4th Street

Seneca, SC 29678

Inquiry Number: 7879223.1

January 27, 2025

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

01/27/25

Site Name:

Old Seneca Middle School
810 West South 4th Street
Seneca, SC 29678
EDR Inquiry # 7879223.1

Client Name:

SynTerra
148 River Street
Greenville, SC 29601
Contact: Andrew Kosse

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2019	1"=300'	Flight Year: 2019	USDA/NAIP
2015	1"=300'	Flight Year: 2015	USDA/NAIP
2011	1"=300'	Flight Year: 2011	USDA/NAIP
2006	1"=300'	Flight Year: 2006	USDA/NAIP
1999	1"=500'	Flight Date: March 04, 1999	USGS
1994	1"=300'	Acquisition Date: February 26, 1994	USGS/DOQQ
1981	1"=300'	Flight Date: March 11, 1981	USDA
1977	1"=300'	Flight Date: March 14, 1977	USGS
1965	1"=300'	Flight Date: January 24, 1965	USGS
1956	1"=300'	Flight Date: February 29, 1956	USGS
1951	1"=300'	Flight Date: May 14, 1951	USGS
1947	1"=300'	Flight Date: February 01, 1947	USGS

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.


INQUIRY #: 7879223.1
YEAR: 2019
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 2015
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 2011
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 2006
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 1999
= 500'
N
EDR
Subject boundary not shown because it exceeds image extent or image is not georeferenced.


INQUIRY #: 7879223.1
YEAR: 1994
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 1981
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 1977
= 300'
N
EDR


INQUIRY #: 7879223.1
YEAR: 1965
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EDR


INQUIRY #: 7879223.1
YEAR: 1956
= 300'
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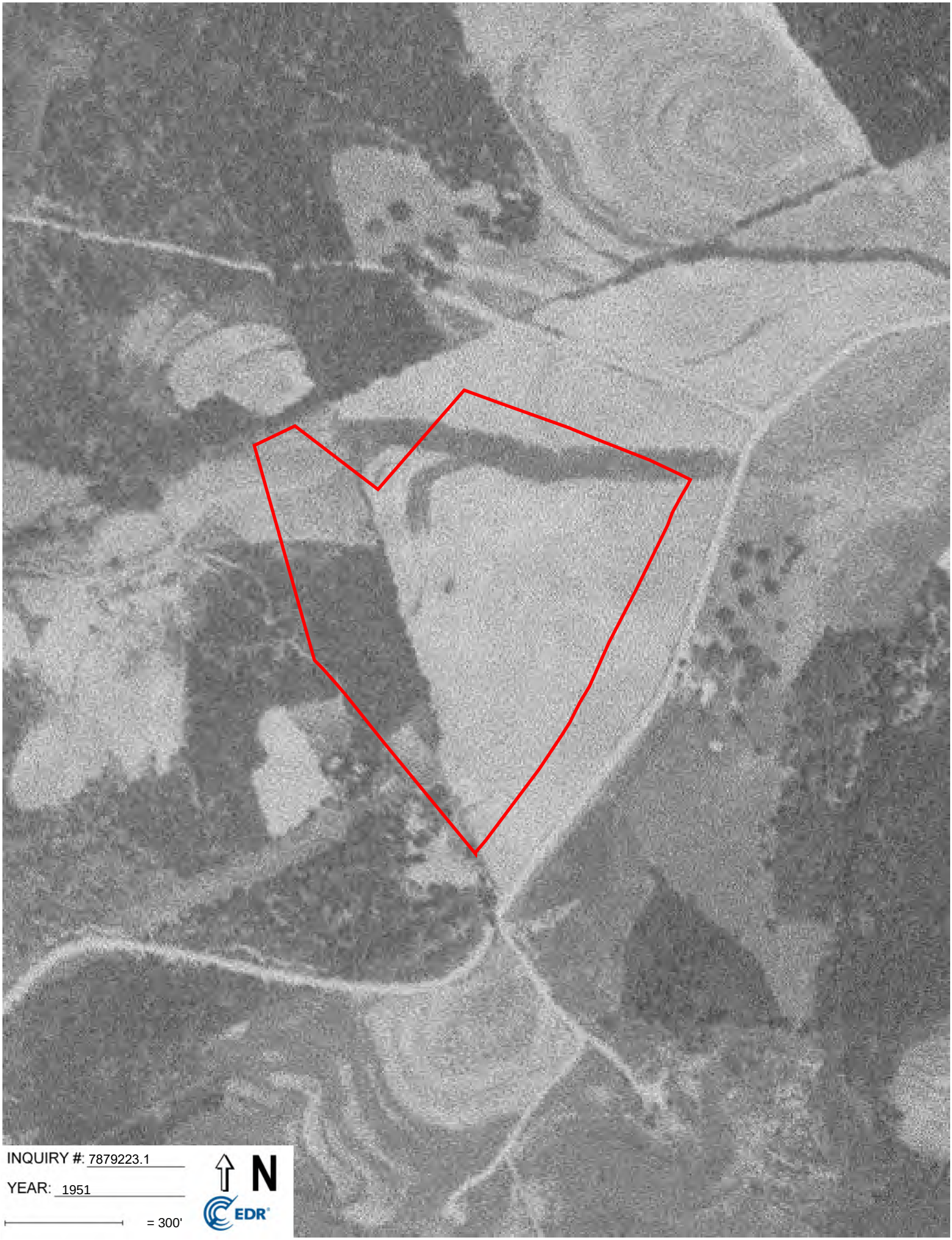
EDR


INQUIRY #: 7879223.1
YEAR: 1951
= 300'
N
EDR

INQUIRY #: 7879223.1

YEAR: 1947

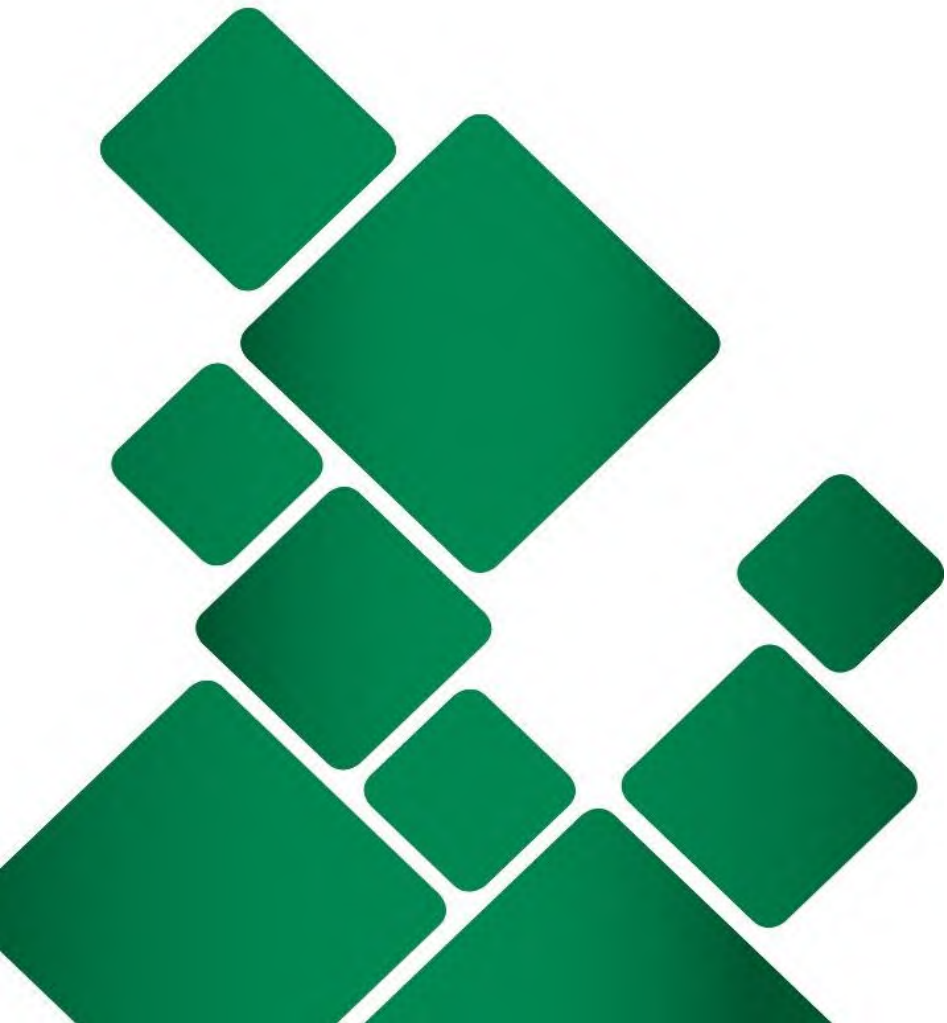
= 300'

N

EDR

ATTACHMENT E

GIS PROPERTY INFORMATION



synTerra

Science & Engineering Consultants

Oconee County, SC

Parcel Information

Parcel ID	520-37-01-001
Neighborhood	9900001 - Exempt, Utility, Industrial
Property Address	810 W SOUTH 4TH ST
Legal Description	SENECA MIDDLE SCHOOL (22.11 AC) (Note: Not to be used on legal documents.)
Acres	22.11
Class	612 School
Tax District	SENECA INC (District 20)
Exemptions	

View Map

Owner

CITY OF SENECA
221 E NORTH 1ST ST
SENECA, SC 29678

Land

Land Use	Acres	Square Footage	Frontage	Depth
EX - Exempt	22.11	963,112	0	0

Accessory Information

Description	Year Built	Dimensions/Units	Identical Units
xC-MISC	0	0x0 / 0	0

Valuation

Assessed Year	2024
Land Value	$331,650
Improvement Value	$0
Accessory Value	$0
Total Value (Market)	**$331,650**
Land Value	$0
Improvement Value	$0
Accessory Value	$0
Total Value (Capped)	**$0**

Sales

Sale Date	Deed Book / Page	Plat Book / Page	Sale Price	Reason	Grantor	Grantee
11/18/2024	3147 226	B528 3	$200,000	0: Valid Arms-length	OCONEE CO SCHOOL DIST	CITY OF SENECA

Recent Sales In Area

Sale date range:

From: 01/23/2022 **To:** 01/23/2025

Sales by Neighborhood

Sales by Subdivision

Distance: 1500 Feet Sales by Distance

Generate Owner List by Radius

Distance:

100 Feet

Use Address From:

(•) **Owner** ( ) **Property**

Select export file format:

Address labels (5160)

International mailing labels that exceed 5 lines are not supported on the Address labels (5160). For international addresses, please use the xlsx, csv or tab download formats.

Download

[x] Show All Owners

[ ] Show Parcel ID on Label

Skip Labels 0

No data available for the following modules: Residential Improvement Information, Commercial Improvement Information, Mobile Homes, Sketches.

ATTACHMENT F

SC DES ACCREDITATION CARDS

Science & Engineering Consultants

SCDES ISSUED

Asbestos ID Card

Andrew J. Kosse

		Expiration Date:
CONSULTBI	BI-01423	12/04/25

SCDES ISSUED

Asbestos ID Card

ROBE[redacted] SMITH

		Expiration Date:
AIRSAMPLER	AS-00102	09/06/25
CONSULTBI	BI-00405	09/05/25
CONSULTMP	MP-00238	09/05/25
CONSULTPD	PD-00132	09/07/25
SUPERAHERA	SA-02851	09/06/25