

# COMPREHENSIVE ASBESTOS SURVEY

OLD HENDERSONVILLE SCHOOL  
713 BLACK CREEK ROAD  
HENDERSONVILLE, SOUTH CAROLINA



*Prepared For:*

COLLETON COUNTY GOVERNMENT  
Attention: Mr. Ron Shoupe  
Post Office Box 157  
Walterboro, South Carolina 29488

*Performed By:*

**TES**

**Trident Environmental Services, Inc.**

*Consultants in Industrial Hygiene and Safety*  
500 Oakbrook Lane, Suite E  
Summerville, SC 29485  
(843) 873-3648

# COMPREHENSIVE ASBESTOS SURVEY

Old Hendersonville School  
713 Black Creek Road  
Hendersonville, South Carolina

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## EXECUTIVE SUMMARY

The comprehensive asbestos survey conducted on May 28, 2013 of the Old Hendersonville School located at 713 Black Creek Road in Hendersonville, South Carolina **did** reveal the presence of asbestos containing building materials. The following summary exhibits the asbestos containing building materials (ACBM) that were identified in the inspection.

### Asbestos

Description	Type
9" Floor Tile (white)	RACM – Friable
Floor Tile Mastic (black)	RACM – Friable
TSI – Tank & Mudded Fittings	RACM – Friable

RACM – Regulated Asbestos Containing Material

The identified asbestos containing building materials (ACBM's) to include the item(s) listed above. All removal work of this material should be performed by a properly trained and licensed abatement contractor prior to the planned renovation work to avoid potential exposure and/or contamination.

## BACKGROUND

Trident Environmental Services, Inc. was contracted by the Colleton County Government to perform a comprehensive asbestos survey of the Old Hendersonville School located at 713 Black Creek Road in Hendersonville, South Carolina. The survey was performed in order to satisfy the NESHAP requirements for renovation and/or demolition. The building is the Old Hendersonville School and is currently vacant and significantly damaged. The concrete block structure is built slab on grade and consists of approximately 7,200 square feet. Interior walls are ceramic tiles, wood panels, plaster and drywall/joint compound. Ceilings are plaster. Floors finishes include 9" vinyl floor tiles, ceramic tiles and carpet. Roof construction consists of built up roof core with layers of rock/tar/moisture barrier, roof flashing and roof insulation.

### Asbestos

The inspection was conducted to identify asbestos-containing building materials (ACBM) which may be disturbed during the renovation/demolition activities. The identification of ACBM's will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos fibers. Identification of ACBM also complies with Title 40 Code of the Federal Regulations, Part 61, and South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, along with Title 29 Code of Federal Regulations, Part 1926 enforced by the Occupational Safety and Hazard Administration (OSHA). The Asbestos Survey describes the investigative procedures utilized, results of the suspect ACBM sampled/analyzed, and recommendations regarding the structures as related to asbestos.

## ASBESTOS SURVEY

### Asbestos Investigative Procedures

Trident Environmental Services, Inc. conducted an inspection for suspect ACBM on May 28, 2013 of the Old Hendersonville School located at 713 Black Creek Road in Hendersonville, South Carolina. It is our understanding that the subject structure will undergo renovation or demolition activities in the near future. The asbestos survey was performed by observing and sampling suspect building materials. Significant destructive testing was not utilized during the inspection. There is a possibility that suspect materials exist in inaccessible areas such as wall cavities and pipe chases. If any additional suspect ACBM's are discovered during the course of demolition activities, bulk samples should be extracted to identify the presence, or absence, of asbestos prior to continuation of work activities.

A sampling strategy was developed to provide representative samples for analysis. Samples were then extracted from a variety of suspect ACBM's. Bulk samples collected were recorded on a Chain-of-Custody record and submitted to Triangle Environmental Service Center, Inc. (TESC) a Polarized Light Microscopy (PLM) laboratory. The laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), which is administered by the National Institute of Standards and Technology (NIST). TESC is accredited by NVLAP for the analysis of bulk asbestos by PLM (NVLAP Lab Code: 200794-0). Non-Friable Organically Bound (NOB) samples were submitted to AmeriSci Richmond laboratory for analyses by Transmission Electron Microscopy (TEM) as required by SCDHEC. AmeriSci Richmond is accredited by NVLAP for the analysis of bulk asbestos by PLM (NVLAP Lab Code: 101904-0).

The suspect materials were analyzed by trained microscopists utilizing PLM techniques coupled with dispersion staining in accordance with EPA Test Method Title 40 Code of Federal Regulations, Chapter I (1-1-87 edition), Part 763, Subpart F- Appendix A. This method identifies asbestos mineral fibers based on six optical characteristics: morphology, birefringence, refractive index, extinction angle, sign of elongation and dispersion staining colors. The laboratory analysis reports the specific type of asbestos identified (there are six asbestos minerals) and the percentage of asbestos present. The EPA and OSHA defines materials as asbestos containing if an asbestos content of greater than one percent (>1%) is detected in a representative sample.

The SCDHEC require NOB materials with negative or trace results by PLM to be analyzed by at least one TEM. SCDHEC in accordance with ASTM E 2356-04 defines NOB materials as "materials that are not friable and that consist of fibers and other particulate matter embedded in a solid matrix of asphalt, vinyl or other organic substances." Examples of NOB materials include but are not limited to flooring materials such as vinyl floor tiles, vinyl sheet flooring, adhesives, mastics, asphalt shingles, roofing materials, glazing, caulks, and cove base.

The EPA classifies ACBM into two categories, friable and non-friable. A friable material creates a greater health hazard due to the fact that it may be “crumbled, pulverized or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations.”

*Friable Asbestos* material means any material containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

*Category I Non Friable Asbestos-Containing Material (ACM)* means asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

*Category II Non Friable ACM* means any material, excluding Category I non friable ACM, containing more than one percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (cement siding, transite board shingles, etc.)

*Regulated Asbestos-Containing Material (RACM)* means (a) Friable asbestos material, (b) Category I non friable ACM that has become friable, (c) Category I non friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

The following section summarizes the sample numbers, locations, type material, asbestos type, percent of asbestos detected, present condition of the asbestos containing material, potential for disturbance, and hazard assessment ratings. The asbestos sample laboratory analyses and chain of custody records are included at the end of this report.

**Asbestos Abbreviations and Hazard Assessment Key**

The EPA and SCDHEC require that confirmed ACBM is given a hazard assessment based on its present condition and potential for future disturbance. This hazard assessment is used as a tool for prioritization in future remedial actions regarding the ACBM. The following key demonstrates the criteria that make up the hazard assessment.

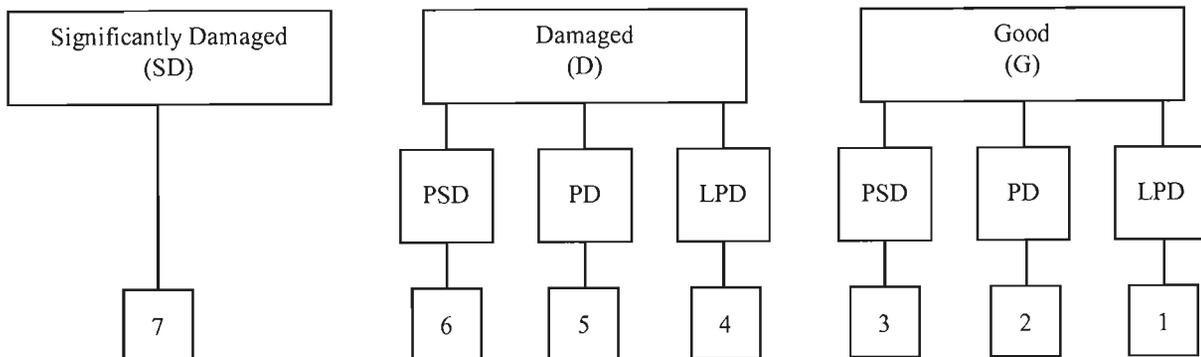
**Present Condition**

- F = Friable
- NF = Non-friable
- G = Good (very localized limited damage)
- D = Damaged (<10% distributed and/or <25% localized)
- S = Significantly Damaged ( $\geq$ 10% distributed and/or 25% localized)

**Potential for Future Disturbance**

- LPD = Low Potential for Disturbance (Contact, Vibration, and/or Air Erosion – low concern)
- PD = Potential for Damage (Contact, Vibration, and/or Air Erosion – moderate concern)
- PSD = Potential for Significant Damage (Contact, Vibration and/or Air Erosion – high concern)

**Hazard Assessment**



**HOMOGENOUS AREA ESTIMATED FOOTAGE TABLE**  
**Old Hendersonville School – 713 Black Creek Road – Hendersonville, SC**

HOMOGENOUS AREA ID #	DESCRIPTION	ESTIMATED AMOUNT
<b>01</b>	<b>9" Floor Tile (white)</b>	<b>6,600 square feet</b>
<b>02</b>	<b>Floor Tile Mastic (black)</b>	<b>6,600 square feet</b>
03	Carpet Glue (yellow)	600 square feet
04	Roof Insulation	7,200 square feet
05	Roof Core	7,200 square feet
06	Roof Flashing	1,080 square feet
07	Plaster	22,600 square feet
08	Window Glaze	244 square feet
09	Tile Grout	896 square feet
10	Drywall	170 square feet
11	Joint Compound	170 square feet
<b>08A</b>	<b>TSI – Tank &amp; Mudded Fittings</b>	<b>185 square feet</b>

**ASBESTOS SUMMARY**

**Old Hendersonville School – 713 Black Creek Road – Hendersonville, SC**

DESCRIPTION	TYPE	ESTIMATED AMOUNT
<b>9” Floor Tile (white)</b>	<b>RACM – Friable</b>	<b>6,600 square feet</b>
<b>Floor Tile Mastic (black)</b>	<b>RACM – Friable</b>	<b>6,600 square feet</b>
<b>TSI – Tank &amp; Mudded Fittings</b>	<b>RACM – Friable</b>	<b>185 square feet</b>

RACM – Regulated Asbestos Containing Material

Asbestos fibers were identified in the 9” Floor Tiles and the associated Black Floor Tile Mastic. Approximately 6,600 square feet of each material is present and in significantly damaged condition. These materials are considered RACM – Friable Asbestos and are located in the classrooms.

Asbestos fibers were identified in the TSI – Tank & Mudded Fittings. Approximately 185 square feet of this material is present and in damaged condition. This material is considered RACM – Friable Asbestos and is located in the boiler room.

**Note: The abatement contractor is responsible for verifying the quantities listed above prior to removal of ACM. Please note that removal costs vary depending on the contractor, the quantity/condition of the ACM, and the accessibility/location of the ACM.**

**ASBESTOS SAMPLE DATA TABLE**  
**Old Hendersonville School – 713 Black Creek Road – Hendersonville, SC**

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Location/Room #	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
01-01	9" Floor Tile (white)	Classroom	Y	2.0%	CHRY	9	7
01-02	9" Floor Tile (white)	Classroom	Y	NT	PACM	9	7
01-03	9" Floor Tile (white)	Classroom	Y	NT	PACM	9	7
02-04	Floor Tile Mastic (black)	Classroom	Y	5.0%	CHRY	9	7
02-05	Floor Tile Mastic (black)	Classroom	Y	NT	PACM	9	7
02-06	Floor Tile Mastic (black)	Classroom	Y	NT	PACM	9	7
03-07	Carpet Glue (yellow)	Office	N	0.0%	ND	7	N/A
03-08	Carpet Glue (yellow)	Office	N	0.0%	ND	7	N/A
03-09 TEM	Carpet Glue (yellow)	Office	N	0.0%	ND	7	N/A
04-10	Roof Insulation	Ceiling	Y	0.0%	ND	9	N/A
04-11	Roof Insulation	Ceiling	Y	0.0%	ND	9	N/A
04-12	Roof Insulation	Ceiling	Y	0.0%	ND	9	N/A
05-13	Roof Core	Roof	N	0.0%	ND	9	N/A
05-14	Roof Core	Roof	N	0.0%	ND	9	N/A
05-15 TEM	Roof Core	Roof	N	0.0%	ND	9	N/A
06-16	Roof Flashing	Roof	N	0.0%	ND	9	N/A
06-17	Roof Flashing	Roof	N	0.0%	ND	9	N/A
06-18 TEM	Roof Flashing	Roof	N	<1.0%	CHRY	9	N/A
07-19	Plaster	Kitchen	Y	0.0%	ND	4	N/A
07-20	Plaster	Kitchen	Y	0.0%	ND	4	N/A
07-21	Plaster	Kitchen	Y	0.0%	ND	4	N/A
07-22	Plaster	Kitchen	Y	0.0%	ND	4	N/A
07-23	Plaster	Kitchen	Y	0.0%	ND	4	N/A
08-24	Window Glaze	Exterior	Y	0.0%	ND	7	N/A
08-25	Window Glaze	Exterior	Y	0.0%	ND	7	N/A
08-26 TEM	Window Glaze	Exterior	Y	0.0%	ND	7	N/A

**Assessment Categories**

- |  |   |
|--|---|
| (1) Thermal Systems Insulation – Good Condition        | (5) Surfacing – Damaged                   |
| (2) Thermal Systems Insulation – Damaged               | (6) Surfacing – Significantly Damaged     |
| (3) Thermal Systems Insulation – Significantly Damaged | (7) Miscellaneous – Good Condition        |
| (4) Surfacing – Good Condition                         | (8) Miscellaneous – Damaged               |
|  | (9) Miscellaneous – Significantly Damaged |

**Asbestos Present**

- |                      |                          |
|----------------------|--------------------------|
| AMOS – Amosite       | ACTI – Actinolite        |
| CHRY – Chrysotile    | ND – None Detected       |
| CROC – Crocidolite   | NT – Not Tested          |
| ANTH – Anthophyllite | PACM – Presumed ACM      |
| TREM – Tremolite     | <b>Asbestos Detected</b> |

**ASBESTOS SAMPLE DATA TABLE**  
**Old Hendersonville School – 713 Black Creek Road – Hendersonville, SC**

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Location/Room #	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
09-27	Tile Grout	Bathroom	Y	0.0%	ND	7	N/A
09-28	Tile Grout	Bathroom	Y	0.0%	ND	7	N/A
09-29	Tile Grout	Bathroom	Y	0.0%	ND	7	N/A
10-30	Drywall	Hall	Y	0.0%	ND	7	N/A
10-31	Drywall	Hall	Y	0.0%	ND	7	N/A
10-32	Drywall	Hall	Y	0.0%	ND	7	N/A
11-33	Joint Compound	Hall	Y	0.0%	ND	4	N/A
11-34	Joint Compound	Hall	Y	0.0%	ND	4	N/A
11-35	Joint Compound	Hall	Y	0.0%	ND	4	N/A
07-36	Plaster	Bathroom	Y	0.0%	ND	4	N/A
07-37	Plaster	Bathroom	Y	0.0%	ND	4	N/A
<b>08A-38</b>	<b>TSI – Tank &amp; Mudded Fittings</b>	<b>Boiler Room</b>	<b>Y</b>	<b>5.0%</b>	<b>AMOS</b>	<b>2</b>	<b>3</b>
<b>08A-39</b>	<b>TSI – Tank &amp; Mudded Fittings</b>	<b>Boiler Room</b>	<b>Y</b>	<b>NT</b>	<b>PACM</b>	<b>2</b>	<b>3</b>
<b>08A-40</b>	<b>TSI – Tank &amp; Mudded Fittings</b>	<b>Boiler Room</b>	<b>Y</b>	<b>NT</b>	<b>PACM</b>	<b>2</b>	<b>3</b>

**Assessment Categories**

- |  |   |
|--|---|
| (1) Thermal Systems Insulation – Good Condition        | (5) Surfacing – Damaged                   |
| (2) Thermal Systems Insulation – Damaged               | (6) Surfacing – Significantly Damaged     |
| (3) Thermal Systems Insulation – Significantly Damaged | (7) Miscellaneous – Good Condition        |
| (4) Surfacing – Good Condition                         | (8) Miscellaneous – Damaged               |
|  | (9) Miscellaneous – Significantly Damaged |

**Asbestos Present**

- |                      |                          |
|----------------------|--------------------------|
| AMOS – Amosite       | ACTI – Actinolite        |
| CHRY – Chrysotile    | ND – None Detected       |
| CROC – Crocidolite   | NT – Not Tested          |
| ANTH – Anthophyllite | PACM – Presumed ACM      |
| TREM – Tremolite     | <b>Asbestos Detected</b> |

## CONCLUSIONS/RECOMMENDATIONS

### Asbestos Inspection

The comprehensive asbestos survey conducted on May 28, 2013 of the Old Hendersonville School located at 713 Black Creek Road in Hendersonville, South Carolina **did** reveal the presence of ACM's. Renovation or demolition activities that will disturb the ACM's will require removal per state and federal regulations. Asbestos materials can become hazardous when, due to damage, disturbance, or deterioration over time, they release asbestos fibers into the air of the building. All areas that contain asbestos should be utilized in a controlled manner to reduce the potential for disturbance. OSHA requires notification to all trades/contractors about the condition of the ACM's to prevent possible occupational exposures.

Demolition activities in public and commercial buildings are regulated by OSHA, EPA, and SCDHEC. Code 40 of Federal Regulations Part 61, Subpart M, Final Rule, "National Emissions Standards for Hazardous Air Pollutants" (NESHAP), and SCDHEC Regulation 61-86.1 require the proper removal and disposal of ACM that is affected by renovation or demolition. Demolition of the subject structures will require written notification, proper transportation, and disposal per state and federal regulations.

**PHOTOGRAPHS**

**Old Hendersonville School – 713 Black Creek Road – Hendersonville, SC**



HOMOGENEOUS AREAS 01, 02  
9" FLOOR TILE (WHITE)/MASTIC (BLACK)



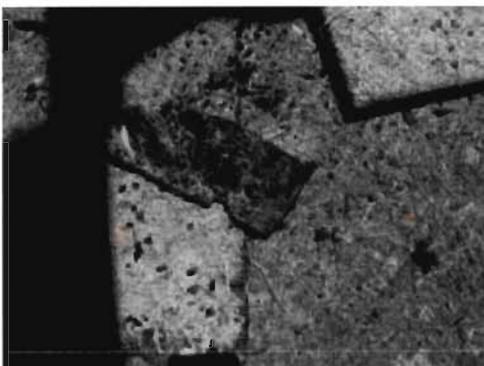
HOMOGENEOUS AREA 03  
CARPET GLUE (YELLOW)



HOMOGENEOUS AREA 04  
ROOF INSULATION



HOMOGENEOUS AREA 05  
ROOF CORE



HOMOGENEOUS AREA 06  
ROOF FLASHING



HOMOGENEOUS AREA 07  
PLASTER

## PHOTOGRAPHS

### Old Hendersonville School – 713 Black Creek Road – Hendersonville, SC



HOMOGENEOUS AREA 08  
WINDOW GLAZE



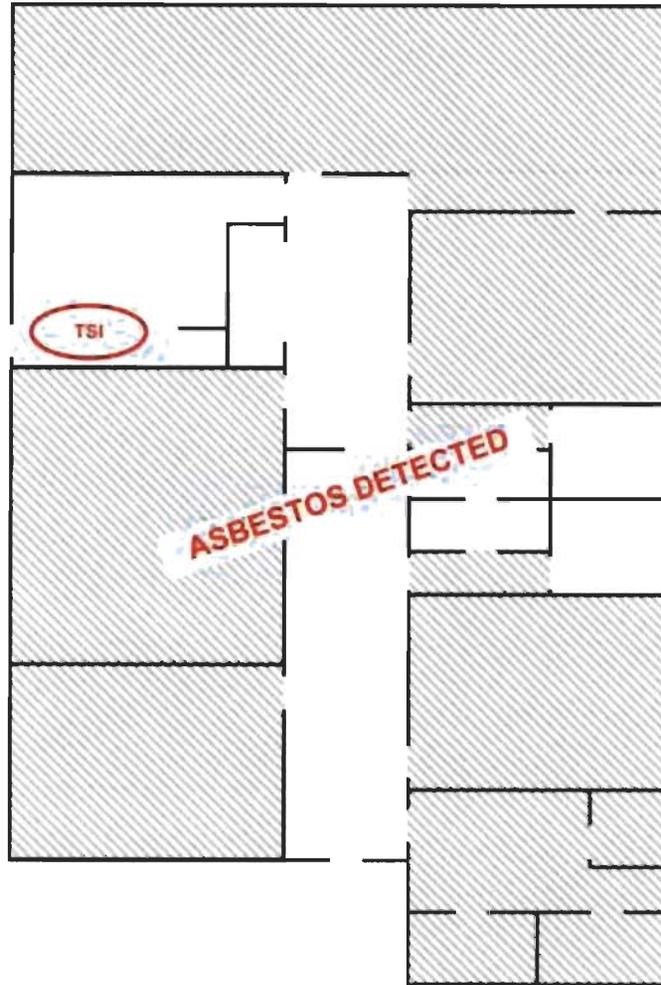
HOMOGENEOUS AREA 09  
TILE GROUT



HOMOGENEOUS AREAS 10, 11  
DRYWALL/ JOINT COMPOUND



HOMOGENEOUS AREA 08A  
TSI – TANK & MUDDED FITTINGS



-  FRIABLE ACM FLOOR TILE (WHITE)/MASTIC (BLACK)
-  FRIABLE ACM TSI - TANK AND MUDDER FITTINGS

713 BLACK CREEK ROAD - LOCATIONS OF ACM  
HENDERSONVILLE, SOUTH CAROLINA

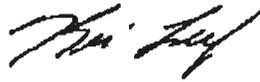
Not to Scale

## COMPREHENSIVE ASBESTOS SURVEY

Inspection Date: 05/28/2013

Preparation Date: 05/31/2013

Inspected & Prepared By:



Kevin E Leedy  
S.C. Inspector License ASB – 20589

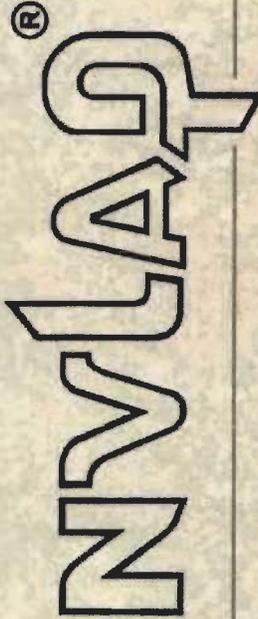
### SCDHEC ISSUED Asbestos ID Card

Kevin Leedy



	Expires
AIR SAMPLER	ASB-20498 02/02/14
CONSULTBI	ASB-20589 02/01/14
CONSULTPD	ASB-22878 07/20/13

United States Department of Commerce  
National Institute of Standards and Technology



**Certificate of Accreditation to ISO/IEC 17025:2005**

NVLAP LAB CODE: 200794-0

**Triangle Environmental Service Center, Inc.**  
Midlothian, VA

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

**BULK ASBESTOS FIBER ANALYSIS**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-AF Communiqué dated January 2009).*

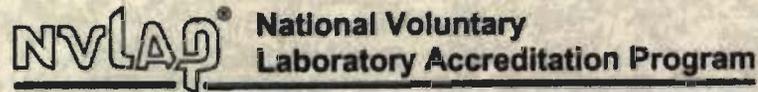


*W. R. MULL*

*For the National Institute of Standards and Technology*

2013-04-01 through 2014-03-31  
Effective dates

NVLAP-61C (REV. 2008-01-28)



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**Triangle Environmental Service Center, Inc.**  
13509 East Boundary Road, Suite B  
Midlothian, VA 23112  
Mr. Feng Jiang  
Phone: 804-739-1751 Fax: 804-739-1753  
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URL: www.tesclab.com

**BULK ASBESTOS FIBER ANALYSIS (PLM)**

**NVLAP LAB CODE 200794-0**

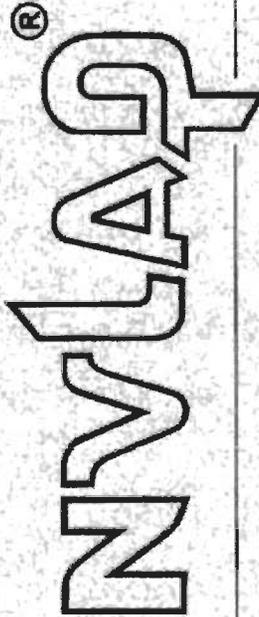
<i>NVLAP Code</i>	<i>Designation / Description</i>
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2013-04-01 through 2014-03-31

*Effective dates*

*For the National Institute of Standards and Technology*

United States Department of Commerce  
National Institute of Standards and Technology



## Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101904-0

**AmeriSci Richmond**  
Midlothian, VA

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

### **BULK ASBESTOS FIBER ANALYSIS**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*



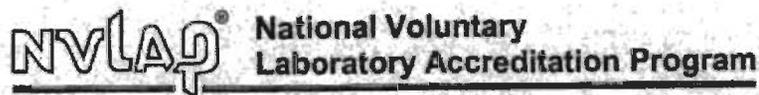
A handwritten signature in black ink, appearing to read "M. R. MULL".

*For the National Institute of Standards and Technology*

2012-07-01 through 2013-06-30

Effective dates

NVLAP-01C (REV. 2009-01-28)



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**AmeriSci Richmond**  
dba AmeriSci Richmond  
13635 Genito Road  
Midlothian, VA 23112  
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Phone: 804-763-1200 Fax: 804-763-1800  
E-Mail: [bkeith@amerisci.com](mailto:bkeith@amerisci.com)  
URL: <http://www.amerisci.com>

**BULK ASBESTOS FIBER ANALYSIS (PLM)**

**NVLAP LAB CODE 101904-0**

<i>NVLAP Code</i>	<i>Designation / Description</i>
18/A01	EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples

2012-07-01 through 2013-06-30

*Effective dates*

Page 1 of 1

For the National Institute of Standards and Technology

NVLAP-015 (REV. 2005-05-19)

**TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.**

13509 East Boundary Road, Suite B, Midlothian, VA 23112  
 804-739-1751 • fax: 804-739-1753

**BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

CLIENT: Trident Environmental Services, Inc.  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485

TESC LOGIN # 130529J

DATE OF RECEIPT: 5/29/2013  
 DATE OF ANALYSIS: 5/29/2013  
 DATE OF REPORT: 5/29/2013

CLIENT JOB/ #: 713 Black Creek Rd.

JOB SITE: Hendersonville, SC

ANALYST: F. Jiang

TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
1	01-01 / Gray vinyl	2% Chrysotile		98%
2	01-02 /	Positive Stop		
3	01-03 /	Positive Stop		
4	02-04 / Black adhesive	5% Chrysotile		95%
5	02-05 /	Positive Stop		
6	02-06 /	Positive Stop		
7	03-07 / Yellow adhesive	NAD		100%
8	03-08 / Yellow adhesive	NAD		100%
9	03-09 /	Not Analyzed		100%
10	04-10 / Wood, gray powder	NAD		100%

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

NVLAP Lab Code: 200794-0

[LEGEND NAD=No Asbestos Detected, Lino.=Linosium, JC=Joint Compound]

Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director  
 Yuedong Fang, Senior Geologist

**TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.**

13509 East Boundary Road, Suite B, Midlothian, VA 23112  
 804-739-1751 • fax: 804-739-1753

**BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

CLIENT: Trident Environmental Services, Inc.  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485

TESC LOGIN #: 130529J

DATE OF RECEIPT: 5/29/2013  
 DATE OF ANALYSIS: 5/29/2013  
 DATE OF REPORT: 5/29/2013

CLIENT JOB #: 713 Black Creek Rd.

JOB SITE: Hendersonville, SC

ANALYST: F. Jiang

TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
11	04-11 / Wood, gray powder	NAD		100%
12	04-12 / Wood, gray powder	NAD		100%
13	05-13 / Black tar-like	NAD	20% Fiberglass	80%
14	05-14 / Black tar-like	NAD	20% Fiberglass	80%
15	05-15 /	Not Analyzed		100%
16	06-16 / Black tar-like	NAD	20% Fiberglass	80%
17	06-17 / Black tar-like	NAD	20% Fiberglass	80%
18	06-18 /	Not Analyzed		100%
19	07-19 / Brown granular	NAD		100%
20	07-20 / Brown granular	NAD		100%

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-92-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

NVLAP Lab Code: 200794-0

[LEGEND NAD=No Asbestos Detected, Lino.=Linolesum, JC=Joint Compound]

Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director  
 Yuedong Fang, Senior Geologist

Wednesday, May 29, 2013

Page 2 of 3

**TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.**

13509 East Boundary Road, Suite B, Midlothian, VA 23112  
 804-739-1751 • fax: 804-739-1753

**BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

CLIENT: Trident Environmental Services, Inc  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485

TESC LOGIN #: 130529J

DATE OF RECEIPT: 5/29/2013  
 DATE OF ANALYSIS: 5/29/2013  
 DATE OF REPORT: 5/29/2013

CLIENT JOB #: 713 Black Creek Rd.

JOB SITE: Hendersonville, SC

ANALYST: F. Jiang

TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
21	07-21 / Brown granular	NAD		100%
22	07-22 / Gray granular	NAD		100%
23	07-23 / Gray granular	NAD		100%
24	08-24 / White powder	NAD		100%
25	08-25 / White powder	NAD		100%
26	08-26 / White powder	NAD		100%
27	09-27 / Gray granular	NAD		100%
28	09-28 / Gray granular	NAD		100%
29	09-29 / Gray granular	NAD		100%
30	10-30 / White powder, brown fibers	NAD	25% Cellulose	75%

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

NVLAP Lab Code: 200794-0

[LEGEND NAD=No Asbestos Detected, Lino =Linolesum, JC=Joint Compound]

Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director  
 Yuedong Fang, Senior Geologist

**TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.**

13509 East Boundary Road, Suite B, Middletown, VA 23112  
 804-739-1751 • fax: 804-739-1753

**BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

CLIENT: Trident Environmental Services, Inc.  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485

TESC LOGIN #: 130529J

DATE OF RECEIPT: 5/29/2013  
 DATE OF ANALYSIS: 5/29/2013  
 DATE OF REPORT: 5/29/2013

CLIENT JOB #: 713 Black Creek Rd.

JOB SITE: Hendersonville, SC

ANALYST: F. Jiang

TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
31	10-31 / White powder, brown fibers	NAD	25% Cellulose	75%
32	10-32 / White powder, brown fibers	NAD	25% Cellulose	75%
33	11-33 / White powder	NAD		100%
34	11-34 / White powder	NAD		100%
35	11-35 / White powder	NAD		100%
36	07-36 / Brown granular	NAD		100%
37	07-37 / Brown granular	NAD		100%
38	08-38 / Gray powder, fibers	5% Amosite		95%
39	08-39 /	Positive Stop		
40	08-40 /	Positive Stop		

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

NVLAP Lab Code: 200794-0

[LEGEND NAD=No Asbestos Detected, Lino =Linolesum, JC=Joint Compound]

Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director  
 Tuedong Fang, Senior Geologist

**TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.**

13509 East Boundary Road, Suite B, Midlothian, VA 23112  
 804-739-1751 • fax: 804-739-1753

**BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

CLIENT: Trident Environmental Services, Inc  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485

TESC LOGIN #: 130529J

DATE OF RECEIPT: 5/29/2013  
 DATE OF ANALYSIS: 5/29/2013  
 DATE OF REPORT: 5/29/2013

CLIENT JOB #: 713 Black Creek Rd.

JOB SITE: Hendersonville, SC

ANALYST: F. Jiang

TESC SAMPLE #	CLIENT SAMPLE ID & GROSS DESCRIPTION	ESTIMATED % ASBESTOS	NON ASBESTOS % FIBERS	NON FIBROUS % MATERIALS
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**Total Samples/Layers Analyzed: 31**

Samples are analyzed in accordance with "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", EPA 600/M4-82-020, Dec. 1982 and "Method for the Determination of Asbestos in Bulk Building Materials", EPA 600/R-93/116, July 1993. None Detected: not detected at/or below the detected limit of method (Reporting limit: 1% Asbestos). Glass fiber is analyzed for quality control blank. TESC recommends by point count or Transmission Electron Microscopy (TEM), for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by Polarized Light Microscopy (PLM). Both services are available for an additional fee. This report shall not be reproduced, except in full written approval of Triangle Environmental Service Center, Inc. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This test report relates only to the item(s) tested.

NVLAP Lab Code: 200794-0

[LEGEND NAD=No Asbestos Detected, Lino.=Linolesum, JC=Joint Compound]

Reviewed By Authorized Signatory:



Feng Jiang, MS Senior Geologist, Laboratory Director  
 Yuedong Fang, Senior Geologist

**TRIANGLE ENVIRONMENTAL SERVICE CENTER, INC.**

13509 East Boundary Road, Suite B • Middleham • VA • 13112  
 Tel: 804-739-1751 • Fax: 804-739-1753

**SUMMARY OF BULK ASBESTOS ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY**

CLIENT: Trident Environmental Services, Inc.  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485

CLIENT PROJECT#: 713 Black Creek Rd  
 Hendersonville, SC

TAT: 3 Day TAT Results

TESC LOGIN#: 130529V

DATE OF RECEIPT: 05/29/13

DATE OF ANALYSIS: 05/31/13

DATE OF REPORT: 05/31/13

ANALYST: B. Schrage

TESC SAMPLE #	CLIENT SAMPLE #	SAMPLE WEIGHT (GRAM)	HEAT SENSITIVE ORGANIC %	ACID SOLUBLE INORGANIC %	NON-ASBESTOS INORGANIC %	INSOLUBLE NON-ASBESTOS INORGANIC %	ASBESTOS % by TEM
1	03-09	0.165	37.85	40.7	21.5		NAD
2	05-15	0.789	75.4	18.6	6.0		NAD
3	06-18	0.661	85.4	3.7	4.4		Chrysotile Trace

Total Sample(s) Analyzed: 3

This report must not be reproduced except in full with the approval of TESC, Inc. The test report relates only to the item(s) tested. This test was performed by NVLAP accredited TEM lab. NVLAP Lab ID # 101904-8. TEM analysis by EPA 600/R-93/116 (not covered by NVLAP Bulk accreditation).

LEGEND: NAD= No Asbestos Detected, NA= Not Analyzed, PS= Positive Stop, Trace= < 1%, NVA=No Visual Asbestos



Reviewed By Authorized Signatory: *Feng Jiang, MS, Senior Chemist, Laboratory Director*

**TES**  
 Trident Environmental Services, Inc.  
 Consultants in Industrial Hygiene and Safety  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485  
 Phone (843) 873-3648  
 Fax (843) 821-1757

**CHAIN OF CUSTODY FORM**  
 Asbestos Bulk Samples

130529J

Project Name: 713 Black Creek Rd Date: 5/28/13  
 Location: Hendersonville, SC

DESCRIPTION OF EACH SAMPLE AREA					ASSESSMENT OF MATERIALS			
Sampling Area	Sample ID	Location	Description	Friable (+)	Friable (-)	Asbestos Type	COND Assess	HAZ Assess
*	01 01	Class Room	9" Fibertile	X				
	02		(white)	X				
	03			X				
*	02 04		tile mortar	X				
	05		(white)	X				
	06			X				
*	03 07	office	carpet glue		X			
	08				X			
	09				X			
	04 10	ceiling	roof insulation	X				
	11			X				
	12			X				
*	05 13	Roof	core		X			
	14				X			
	15					X		
*	06 16		plaster		X			
	17				X			
	18				X			
	07 19	Kitchen	plaster	Y				
	20			Y				
	21			X				

<b>CONDITION Assessment Categories</b> (1) Thermal Systems Insulation - Good Condition (2) Thermal Systems Insulation - Damaged (3) Thermal Systems Insulation - Significantly Damaged (4) Surfacing - Good Condition (5) Surfacing - Damaged (6) Surfacing - Significantly Damaged (7) Miscellaneous - Good Condition (8) Miscellaneous - Damaged	<b>Asbestos Present</b> (1) Amosite (2) Chrysotile (3) Crocidolite (4) Anthophyllite (5) Tremolite (6) Actinolite	<b>HAZARD Assessment Categories</b> G = Good Condition D = Damaged S = Significantly Damaged LPD = Low Potential for Disturbance
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Samples Collected by Leedy Date / Time: 5/28/13  
 Samples Received by [Signature] Date / Time: 5/29/13 10:30

**TES**  
 Trident Environmental Services, Inc.  
 Consultants in Industrial Hygiene and Safety  
 500 Oakbrook Lane, Suite E  
 Summerville, SC 29485  
 Phone (843) 873-3648  
 Fax (843) 821-1787

**CHAIN OF CUSTODY FORM**  
**Asbestos Bulk Samples**

130529J

Project Name: 713 Black Creek Rd Date: 5/28/13  
 Location: Hendersonville, SC

DESCRIPTION OF EACH SAMPLE AREA						ASSESSMENT OF MATERIALS		
Homog Area	Sample ID	Location	Description	Friable (+)	Potable (-)	Asbestos Type	COND Assess	HAZ Assess
	07 22	Kitchen	plaster					
	23	↓	↓					
	08 24	Exter. w	window glaze	x				
	25	↓	↓	x				
	26	↓	↓	x				
	09 27	Bathroom	tile grout	x				
	28	↓		x				
	29	↓		x				
	10 30	Hall	Drywall					
	31		↓					
	32		↓					
	11 33		st comp					
	34		↓					
	35		↓					
	07 36	Bath	plaster					
	37	Bath	↓					
	08 38	Boiler Rm	insulation					
	39	↓	↓					
	40	↓	↓					

<b>CONDITION Assessment Categories</b> (1) Thermal Systems Insulation - Good Condition (2) Thermal Systems Insulation - Damaged (3) Thermal Systems Insulation - Significantly Damaged (4) Surfacing - Good Condition (5) Surfacing - Damaged (6) Surfacing - Significantly Damaged (7) Miscellaneous - Good Condition (8) Miscellaneous - Damaged	<b>Asbestos Present</b> (1) Amosite (2) Chrysotile (3) Crocidolite (4) Anthophyllite (5) Tremolite (6) Actinolite	<b>HAZARD Assessment Categories</b> G = Good Condition D = Damaged S = Significantly Damaged LPD = Low Potential for Disturbance
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Samples Collected by: Leedy  
 Samples Received by: [Signature]

Date / Time: 5/28/13  
 Date / Time: 5/29/13

