COMPREHENSIVE ASBESTOS SURVEY

SINGLE FAMILY RESIDENCE
7604 ALLWOOD AVENUE
NORTH CHARLESTON, SC 29418

Prepared For:

CITY OF NORTH CHARLESTON
Attn: Angela McJunkin, CCEA, CFM
P.O. Box 190016
North Charleston, SC 29419

Performed By:

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COMPREHENSIVE ASBESTOS SURVEY

Single Family Residence
7604 Allwood Avenue
North Charleston, SC 29418

TABLE OF CONTENTS

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EXECUTIVE SUMMARY

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on December 22, 2016 of the Single Family Residence located at 7604 Allwood Avenue in North Charleston, 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
Ceiling Texture	**RACM – Friable**
Drywall/Joint Compound	**RACM – Friable**
Roof Cement (black)	**Category I – Non Friable**

RACM – Regulated Asbestos Containing Material *PACM – Presumed Asbestos Containing Material

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

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BACKGROUND

Trident Environmental Services, Inc. was contracted by the City of North Charleston to perform an asbestos survey of the Single Family Residence located at 7604 Allwood Avenue in North Charleston, South Carolina. The survey was performed in order to satisfy the NESHAP requirements for renovation and/or demolition. The structure is built slab on grade and consists of approximately 1,300 square feet. Interior walls and ceilings are drywall/joint compound. Floor finishes include ceramic tiles, vinyl sheet flooring and 12" self-stick floor tiles. Roof construction consists of asphalt shingles and felt paper.

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.

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ASBESTOS SURVEY

Asbestos Investigative Procedures

Trident Environmental Services, Inc. conducted an inspection for suspect ACBM's on December 22, 2016 of the Single Family Residence located at 7604 Allwood Avenue in North Charleston, 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 Electron Microscopy Services Laboratory Analytical, Inc. (EMSL) 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). EMSL is accredited by NVLAP for the analysis of bulk asbestos by PLM (NVLAP Lab Code: 200841-0). NOB samples were submitted to EMSL for analyses by Transmission Electron Microscopy (TEM) as required by SCDHEC.

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.

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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

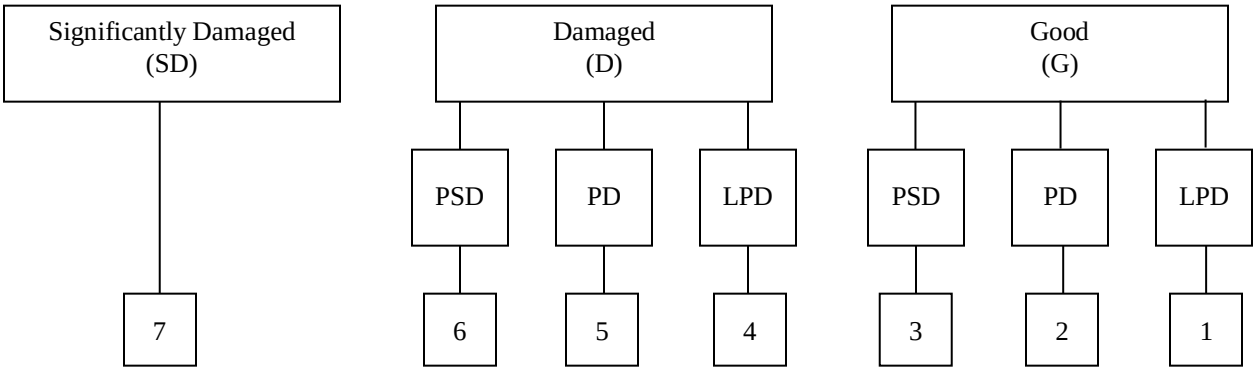
F = Friable
NF = Non-friable

G = Good (very localized limited damage)
D = Damaged (<10% distributed and/or <25% localized)
S = Significantly Damaged (≥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



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HOMOGENOUS AREA ESTIMATED FOOTAGE TABLE
Single Family Residence – 7604 Allwood Avenue – North Charleston, SC

HOMOGENOUS AREA ID #	DESCRIPTION	ESTIMATED AMOUNT
01	Ceramic Tile Grout	384 SF
02	Carpet Mastic (tan)	585 SF
03	Attic Insulation	1,336 SF
04	HVAC Duct Mastic (white)	15 SF
05	12” Self-Stick Floor Tile (white)	16 SF
06	Vinyl Sheet Floor (wood)	242 SF
07	Vinyl Mastic (beige)	242 SF
08	**Ceiling Texture**	**418 SF**
09	Drywall	5,879 SF
10	**Joint Compound**	**5,879 SF**
11	Window/Door Caulk	56 SF
12	Roof Shingle	1,737 SF
13	Felt Paper	1,737 SF
14	**Roof Cement (black)**	**9 SF**

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ASBESTOS SUMMARY
Single Family Residence – 7604 Allwood Avenue – North Charleston, SC

DESCRIPTION	TYPE	ESTIMATED AMOUNT
Ceiling Texture	**RACM – Friable**	**418 SF**
Drywall/Joint Compound	**RACM – Friable**	**5,879 SF**
Roof Cement (black)	**Category I – Non Friable**	**9 SF**

RACM – Regulated Asbestos Containing Material *PACM – Presumed Asbestos Containing Material

SCDHEC requires any non-friable material that is identified in an asbestos inspection report in a condition other than good and non-friable must be handled as a Regulated Asbestos Containing Material (RACM) and identified as friable on the asbestos abatement application. This requirement is reflected in the Asbestos Summary Table listed above.

Asbestos fibers were identified in the Ceiling Texture. Approximately 418 square feet of this material is present and in good condition. This material is considered RACM – Friable Asbestos and is located on the ceilings in the closets, bathroom, bedroom 1 and bedroom 2 and in the electrical junction boxes and as overspray in the attic area throughout the structure.

Asbestos fibers were identified in the Drywall/Joint Compound. Approximately 5,879 square feet of this material is present and in good condition. This material is considered RACM – Friable Asbestos and is located throughout the interior of the structure

Asbestos fibers were identified in the Roof Cement (black). Approximately 9 square feet of this material is present and in good condition. This material is considered Category I – Non Friable Asbestos and is located at the roof penetrations.

The estimated quantities provided should be verified by contractor and/or building owner. Any discrepancies are to be addressed 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.

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ASBESTOS SAMPLE DATA TABLE
Single Family Residence – 7604 Allwood Avenue – North Charleston, SC

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Unit # / Room	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
01-01	Ceramic Tile Grout	Kitchen	Y	0.0%	ND	7	N/A
01-02	Ceramic Tile Grout	Hall	Y	0.0%	ND	7	N/A
01-03	Ceramic Tile Grout	Bathroom	Y	0.0%	ND	7	N/A
02-04	Carpet Mastic (tan)	Bedroom 1	N	0.0%	ND	7	N/A
02-05	Carpet Mastic (tan)	Bedroom 2	N	0.0%	ND	7	N/A
02-06 T	Carpet Mastic (tan)	Bedroom 3	N	0.0%	ND	7	N/A
03-07	Attic Insulation	Attic	Y	0.0%	ND	7	N/A
03-08	Attic Insulation	Attic	Y	0.0%	ND	7	N/A
03-09	Attic Insulation	Attic	Y	0.0%	ND	7	N/A
04-10	HVAC Duct Mastic (white)	Attic	N	0.0%	ND	7	N/A
04-11	HVAC Duct Mastic (white)	Attic	N	0.0%	ND	7	N/A
04-12 T	HVAC Duct Mastic (white)	Attic	N	0.0%	ND	7	N/A
05-13	12” Self-Stick Floor Tile (white)	Foyer	N	0.0%	ND	7	N/A
05-14	12” Self-Stick Floor Tile (white)	Foyer	N	0.0%	ND	7	N/A
05-15 T	12” Self-Stick Floor Tile (white)	Foyer	N	0.0%	ND	7	N/A
06-16	Vinyl Sheet Floor (wood)	Living Room	Y	0.0%	ND	7	N/A
06-17	Vinyl Sheet Floor (wood)	Living Room	Y	0.0%	ND	7	N/A
06-18 T	Vinyl Sheet Floor (wood)	Laundry Room	Y	0.0%	ND	7	N/A
07-19	Vinyl Mastic (beige)	Living Room	N	0.0%	ND	7	N/A
07-20	Vinyl Mastic (beige)	Living Room	N	0.0%	ND	7	N/A
07-21 T	Vinyl Mastic (beige)	Laundry Room	N	0.0%	ND	7	N/A
08-22	**Ceiling Texture**	**Bedroom 1**	**Y**	**4.0%**	**CHRY**	**4**	**3**
08-23	**Ceiling Texture**	**Bedroom 2**	**Y**	**NT**	**PACM**	**4**	**3**
08-24	**Ceiling Texture**	**Bathroom**	**Y**	**NT**	**PACM**	**4**	**3**
09-25	Drywall	Bedroom 1	Y	0.0%	ND	7	N/A

Assessment Categories

(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
(9) Miscellaneous – Significantly Damaged

Asbestos Present

AMOS – Amosite
CHRY – Chrysotile
CROC – Crocidolite
ANTH – Anthophylite
TREM – Tremolite
ACTI – Actinolite
ND – None Detected
NT – Not Tested
PACM – Presumed ACM
Asbestos Detected

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ASBESTOS SAMPLE DATA TABLE
Single Family Residence – 7604 Allwood Avenue – North Charleston, SC

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Unit # / Room	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
09-26	Drywall	Kitchen	Y	0.0%	ND	7	N/A
09-27	Drywall	Living Room	Y	0.0%	ND	7	N/A
10-28	**Joint Compound**	**Bedroom 1**	**Y**	**2.0%**	**CHRY**	**4**	**3**
10-29	**Joint Compound**	**Kitchen**	**Y**	**NT**	**PACM**	**4**	**3**
10-30	**Joint Compound**	**Living Room**	**Y**	**NT**	**PACM**	**4**	**3**
10-31	**Joint Compound**	**Foyer**	**Y**	**NT**	**PACM**	**4**	**3**
10-32	**Joint Compound**	**Bedroom 3**	**Y**	**NT**	**PACM**	**4**	**3**
10-33	**Joint Compound**	**Hall**	**Y**	**NT**	**PACM**	**4**	**3**
10-34	**Joint Compound**	**Bathroom**	**Y**	**NT**	**PACM**	**4**	**3**
11-35	Window/Door Caulk	Exterior	N	0.0%	ND	7	N/A
11-36	Window/Door Caulk	Exterior	N	0.0%	ND	7	N/A
11-37 T	Window/Door Caulk	Exterior	N	0.0%	ND	7	N/A
12-38	Roof Shingle	Roof	N	0.0%	ND	7	N/A
12-39	Roof Shingle	Roof	N	0.0%	ND	7	N/A
12-40 T	Roof Shingle	Roof	N	0.0%	ND	7	N/A
13-41	Felt Paper	Roof	N	0.0%	ND	7	N/A
13-42	Felt Paper	Roof	N	0.0%	ND	7	N/A
13-43 T	Felt Paper	Roof	N	0.0%	ND	7	N/A
14-44	**Roof Cement (black)**	**Roof**	**N**	**3.0%**	**CHRY**	**7**	**1**
14-45	**Roof Cement (black)**	**Roof**	**N**	**NT**	**PACM**	**7**	**1**
14-46	**Roof Cement (black)**	**Roof**	**N**	**NT**	**PACM**	**7**	**1**

Assessment Categories

(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
(9) Miscellaneous – Significantly Damaged

Asbestos Present

AMOS – Amosite
CHRY – Chrysotile
CROC – Crocidolite
ANTH – Anthophylite
TREM – Tremolite
ACTI – Actinolite
ND – None Detected
NT – Not Tested
PACM – Presumed ACM
Asbestos Detected

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CONCLUSIONS/RECOMMENDATIONS

Asbestos Inspection

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on December 22, 2016 of the Single Family Residence located at 7604 Allwood Avenue in North Charleston, South Carolina **did** reveal the presence of ACBM's. Renovation or demolition activities that will disturb the ACBM'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 ACBM'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 ACBM 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.

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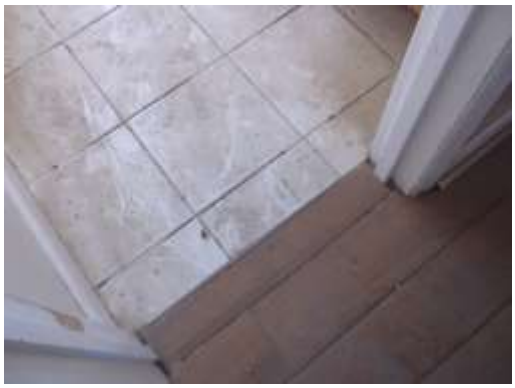
PHOTOGRAPHS
Single Family Residence – 7604 Allwood Avenue – North Charleston, SC



HOMOGENEOUS AREA 01
CERAMIC TILE GROUT

HOMOGENEOUS AREA 02
CARPET MASTIC (TAN)

HOMOGENEOUS AREA 03
ATTIC INSULATION

HOMOGENEOUS AREA 04
HVAC DUCT MASTIC (WHITE)

HOMOGENEOUS AREA 05
12” SELF-STICK FLOOR TILE (WHITE)

HOMOGENEOUS AREAS 06, 07
VINYL SHEET FLOORING (WOOD)
MASTIC (BEIGE)

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PHOTOGRAPHS
Single Family Residence – 7604 Allwood Avenue – North Charleston, SC

HOMOGENEOUS AREA 08
CEILING TEXTURE

HOMOGENEOUS AREAS 09, 10
DRYWALL/JOINT COMPOUND

HOMOGENEOUS AREA 11
WINDOW/DOOR CAULK

HOMOGENEOUS AREA 12
ROOF SHINGLE

HOMOGENEOUS AREA 13
FELT PAPER

HOMOGENEOUS AREA 14
ROOF CEMENT (BLACK)

FRIABLE ACM DRYWALL/JOINT COMPOUND

FRIABLE ACM CEILING TEXTURE & DRYWALL/JOINT COMPOUND

RC NON FRIABLE ACM ROOF CEMENT

NOTE:FRIABLE ACM CEILING TEXTURE EXISTS IN ELECTRICAL JUNCTION BOXES AND AS OVERSPRAY IN THE ATTIC AREA THROUGHOUT THE STRUCTURE

SINGLE FAMILY RESIDENCE
7604 ALLWOOD AVENUE - NORTH CHARLESTON, SC

Not to Scale

DIAGRAM 1:

LOCATION OF ACM

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KEVIN LEEDY	
Project Contact:	
ROBIN BROWN	
Project #	WO#
Date:	Rev. Date:
12/29/2016	

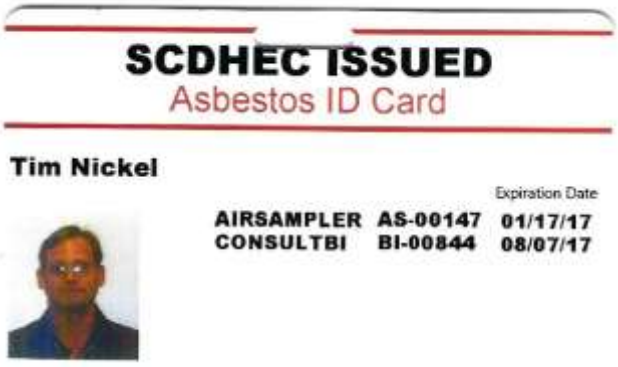
COMPREHENSIVE ASBESTOS SURVEY

Inspection Date: 12/22/2016

Preparation Date: 12/30/2016

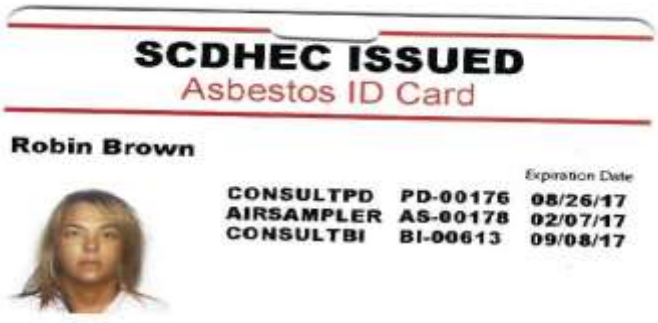
Inspected & Prepared By:

Tim Nickel
S.C. Inspector License BI – 00844



Reviewed By:

Robin A. Brown
S.C. Inspector License BI – 00613



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United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200841-0

EMSL Analytical, Inc.
Charlotte, NC

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

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 Communique dated January 2009).

2016-07-01 through 2017-06-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 200841-0**

Bulk Asbestos Analysis

Code	*Description*
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

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A

For the National Voluntary Laboratory Accreditation Program

Effective 2016-07-01 through 2017-06-30

Page 1 of 1

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

EMSL Order: 411610198
Customer ID: TRID50
Customer PO:
Project ID:

Attention: Tim Nickel
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Project: 7604 Allwood Avenue, North Charleston, SC

Phone: (843) 873-3648
Fax:
Received Date: 12/27/2016 9:30 AM
Analysis Date: 12/27/2016
Collected Date: 12/22/2016

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
01-01	Kitchen - Ceramic Tile Grout	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
01-02	Hallway - Ceramic Tile Grout	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
01-03	Bathroom - Ceramic Tile Grout	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
02-04	Bedroom 1 - Carpet Mastic (Tan)	Gray/Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
02-05	Bedroom 2 - Carpet Mastic (Tan)	Gray/Tan Fibrous Homogeneous	2% Cellulose	10% Ca Carbonate 88% Non-fibrous (Other)	None Detected
03-07	Attic - Attic Insulation	Gray Fibrous Homogeneous	98% Min. Wool	2% Non-fibrous (Other)	None Detected
03-08	Attic - Attic Insulation	Gray Fibrous Homogeneous	98% Min. Wool	2% Non-fibrous (Other)	None Detected
03-09	Attic - Attic Insulation	Gray Fibrous Homogeneous	98% Min. Wool	2% Non-fibrous (Other)	None Detected
04-10	Attic - HVAC Duct Mastic (White)	Gray Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
04-11	Attic - HVAC Duct Mastic (White)	Gray Fibrous Homogeneous	1% Cellulose	10% Ca Carbonate 89% Non-fibrous (Other)	None Detected
05-13	Foyer - 12" Floor Tile Self Stick (White)	Gray/White Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
05-14	Foyer - 12" Floor Tile Self Stick (White)	Gray/White Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
06-16	Foyer - Vinyl Sheet Floor (Wood)	Brown/Gray Fibrous Homogeneous	10% Cellulose 1% Glass	89% Non-fibrous (Other)	None Detected
06-17	Foyer - Vinyl Sheet Floor (Wood)	Brown/Gray Fibrous Homogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
07-19	Vinyl Mastic (Beige)	Beige Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
07-20	Vinyl Mastic (Beige)	Beige Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected

Initial report from: 12/27/2016 15:55:38

ASB_PLM_0008 - 1.11 Printed: 12/27/2016 3:55 PM

Page 1 of 3

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 411610198
Customer ID: TRID50
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
08-22	Bedroom 1 - Ceiling Texture	Beige Non-Fibrous Homogeneous		35% Ca Carbonate 61% Non-fibrous (Other)	4% Chrysotile
08-23	Bedroom 2 - Ceiling Texture				Positive Stop (Not Analyzed)
08-24	Bathroom - Ceiling Texture				Positive Stop (Not Analyzed)
09-25	Bedroom 1 - Drywall	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
09-26	Kitchen - Drywall	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
09-27	Living Room - Drywall	Brown/Gray Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
10-28	Bedroom 1 - Joint Compound	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 78% Non-fibrous (Other)	2% Chrysotile
10-29	Kitchen - Joint Compound				Positive Stop (Not Analyzed)
10-30	Living Room - Joint Compound				Positive Stop (Not Analyzed)
10-31	Foyer - Joint Compound				Positive Stop (Not Analyzed)
10-32	Bedroom 3 - Joint Compound				Positive Stop (Not Analyzed)
10-33	Hall - Joint Compound				Positive Stop (Not Analyzed)
10-34	Bathroom - Joint Compound				Positive Stop (Not Analyzed)
11-35	Exterior - Window/ Door Caulk	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
11-36	Exterior - Window/ Door Caulk	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
12-38	Roof - Roof Shingle	Gray/Black Fibrous Homogeneous	5% Glass	5% Quartz 10% Ca Carbonate 80% Non-fibrous (Other)	None Detected
12-39	Roof - Roof Shingle	Gray/Black Fibrous Homogeneous	5% Glass	8% Quartz 15% Ca Carbonate 72% Non-fibrous (Other)	None Detected
13-41	Roof - Felt Paper	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
13-42	Roof - Felt Paper	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected

Initial report from: 12/27/2016 15:55:38

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

EMSL Order: 411610198
Customer ID: TRID50
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
14-44 411610198-0036	Roof - Roof Cement (Black)	Black Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
14-45 411610198-0037	Roof - Roof Cement (Black)				Positive Stop (Not Analyzed)

Analyst(s)
Derrick Young (11)
Kyle Collins (17)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 12/27/2016 15:55:38

ASB_PLM_0008 - 1.11 Printed: 12/27/2016 3:55 PM

Page 3 of 3

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 411610198
Customer ID: TRID50
Customer PO:
Project ID:

Attention: Tim Nickel
Trident Environmental Services, Inc.
500 Oakbrook Lane
Suite E
Summerville, SC 29485
Project: 7604 Allwood Avenue, North Charleston, SC

Phone: (843) 873-3648
Fax:
Received Date: 12/27/2016 9:30 AM
Analysis Date: 12/29/2016
Collected Date: 12/22/2016

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
02-06 411610198-0038	Bedroom 3 - Carpet Mastic (Tan)	Brown/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
04-12 411610198-0039	Attic - HVAC Duct Mastic (White)	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
05-15 411610198-0040	Foyer - 12" Floor Tile Self Stick (White)	White/Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
06-18 411610198-0041	Foyer - Vinyl Sheet Floor (Wood)	Brown/White Fibrous Heterogeneous	100	None	No Asbestos Detected
07-21 411610198-0042	Vinyl Mastic (Beige)	Tan Non-Fibrous Homogeneous	100	None	No Asbestos Detected
11-37 411610198-0043	Exterior - Window/ Door Caulk	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
12-40 411610198-0044	Roof - Roof Shingle	Black Fibrous Heterogeneous	100	None	No Asbestos Detected
13-43 411610198-0045	Roof - Felt Paper	Black Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)
Derrick Young (8)

Lee Plumley, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC

Initial report from: 12/29/2016 14:25:02

ASB_PLM/PI/ANCOR_0012 Printed 12/29/2016 2:25:06PM

Page 1 of 1

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

OrderID: 411610198

EMSL ANALYTICAL, INC.

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*): 411610198

EMSL Analytical, Inc.
376 Crompton Street
Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525-2382

Company Name: TRIDENT ENVIRONMENTAL SERVICES		**EMSL Customer ID:**	
Street: 500 OAKBROOK LANE SUITE E		**City:** SUMMERVILLE	**State/Province:** SC
Zip/Postal Code: 29485	**Country:** US	**Telephone #:** 8438733648	**Fax #:**
Report To (Name): TIM NICKEL		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: TIMNICKEL@TRIDENTENVIRONMENTAL		**Purchase Order:**	
Project Name/Number: 7604 Allwood Avenue		**EMSL Project ID** (*Internal Use Only*):	
U.S. State Samples Taken: SC		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☐ Same ☑ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☑ 24 Hour PLM ☐ 48 Hour ☑ 72 Hour TEM ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, 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 ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit) 24HP/TAT
☑ 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)
☐ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT (AHERA only)**
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk 72 HP/TAT
☑ 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 EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
☐

☑ **Check For Positive Stop – Clearly Identify Homogenous Group** | **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

Samplers Name: Tim Nickel | **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See Attached Chain of Custody		

Client Sample # (s): 01-06 | **Total # of Samples:** 06

Relinquished (Client): | **Date:** 12-22-16 | **Time:** 1800

Received (Lab): BM Cole | **Date:** 12/27/16 | **Time:** 930 EST FX

Comments/Special Instructions:
BillTo: TRIDENT ENVIRONMENTAL SERVICES, INC. 500 OAKBROOK LANE, SUITE E, SUMMERVILLE, SC, 29485, US
Attention: KEVIN LEEDY Phone: 8438733648 Email: TIMNICKEL@TRIDENTENVIRONMENTAL.COM Purchase Order:

8108 0946 8878

Page 1 of ____ pages

Controlled Document – Asbestos COC – R10 – 05/09/2016

Page 1 Of 4

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

OrderID: 411610198

411610198

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) 821-1707

CHAIN OF CUSTODY FORM
Asbestos Bulk Samples

Project Name: 7604 Allwood Avenue Date: 12-22-16

Location: North Charleston, SC

DESCRIPTION OF EACH SAMPLE AREA						ASSESSMENT OF MATERIALS		
Homog Area	Sample ID	Location	Description	Friable (+)	Friable (-)	Asbestos Type	COND Assess	HAZ Assess
01	01	Kitchen	Ceramic Tile Grout	X			7	
01	02	Hallway	"	X			"	
01	03	Bathroom	"	X			"	
02	04	Bedroom 1	Carpet/Mastic (Tan)		X		7	
02	05	Bedroom 2	"		X		"	
(T) 02	06	Bedroom 3	"		X		"	
03	07	Attic	Attic Insulation	X			7	
03	08	"	"	X			"	
03	09	"	"	X			"	
04	10	"	HVAC Duct Insulation (Wrapped)		X		7	HSF
04	11	"	"		X		"	
(T) 04	12	"	"		X		"	
05	13	Foyer	12" Floor Tile (White)		X		7	HSF
05	14	"	Grout		X		"	
(T) 05	15	"	"		X		"	
06	16	"	~~Tan Floor Tile~~	X	X		7	
06	17	"	Vinyl Sheet Flooring (Cream)	X	X		"	
(T) 06	18	"	"	X	X		"	
07	19	"	Vinyl Mastic (Beige)		X		7	
(T) 07	20	"	"		X		"	
(T) 07	21	"	"		X		"	

Condition Assessment Categories
(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
(9) Miscellaneous - Significant - Deteriorated

Asbestos Present
(1) Amosite (6) Actinolite
(2) Chrysotile
(3) Crocidolite
(4) Anthophyllite
(5) Tremolite
PACM - Presumed Asbestos Containing Material

HAZARD Assessment Categories
G = Good Condition
D = Damaged
S = Significantly Damaged
LPD = Low Potential for Disturbance
PD = Potential for Damage
PSD = Potential for Significant Damage

Samples Collected by: [signature] Date / Time: 12-22-16

Samples Received by: Date / Time:

Page 2 Of 4

OrderID: 411610198

4116 10198

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) 821-1767

CHAIN OF CUSTODY FORM
Asbestos Bulk Samples

Project Name: 7604 Allwood Avenue Date: 12-22-16

Location: North Charleston, SC

DESCRIPTION OF EACH SAMPLE AREA						ASSESSMENT OF MATERIALS		
Homog Area	Sample ID	Location	Description	Friable (+)	Friable (-)	Asbestos Type	COND Assess	HAZ Assess
08	22	~~Ceiling Tex~~ Bedroom 1	Ceiling Texture	X			H	
08	23	Bedroom 2	"	X			"	
08	24	Bathroom	"	X			"	
09	25	Bedroom 1	Drywall	X			L	
09	26	Kitchen	"	X			"	
09	27	Living Room	"	X			"	
10	28	Bedroom 1	Joint Compound	X			H	
10	29	Kitchen	"	X			"	
10	30	Living Room	"	X			"	
10	31	Foyer	"	X			"	
10	32	Bedroom 3	"	X			"	
10	33	Hall	"	X			"	
10	34	Bathroom	"	X			"	
11	35	Exterior	Window/Door Caulk		X		L	
11	36	"	"		X		"	
11	37	"	"		X		"	
12	38	Roof	Roof Shingle					
12	39	"	"					
12	40	"	"					
13	41	"	Felt Paper					
13	42	"	"					

Condition Assessment Categories
(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
(9) Miscellaneous - Significant Damage

Asbestos Present
(1) Amosite (6) Actinolite
(2) Chrysotile
(3) Crocidolite
(4) Anthophyllite
(5) Tremolite
PACM - Presumed Asbestos Containing Material

HAZARD Assessment Categories
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D = Damaged
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PSD = Potential for Significant Damage

Samples Collected by: Date / Time: 12-22-16

Samples Received by: Date / Time:

Page 3 Of 4

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CHAIN OF CUSTODY FORM
Asbestos Bulk Samples

Project Name: 7604 Allwood Avenue Date: 12-22-16

Location: North Charleston, SC

	DESCRIPTION OF EACH SAMPLE AREA						ASSESSMENT OF MATERIALS		
	Homog Area	Sample ID	Location	Description	Friable (+)	Friable (-)	Asbestos Type	COND Assess	HAZ Assess
(1)	13	43	Roof	Felt Paper		X		2	
	14	44		Roof Cement (Black)		X		2	
	14	45				X		2	
(1)	14	46	"			X		2	

Condition Assessment Categories
(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
(9) Miscellaneous - Significant - Damaged

Asbestos Present
(1) Amosite (6) Actinolite
(2) Chrysotile
(3) Crocidolite
(4) Anthophyllite
(5) Tremolite
PACM - Presumed Asbestos Containing Material

HAZARD Assessment Categories
G = Good Condition
D = Damaged
S = Significantly Damaged
LPD = Low Potential for Disturbance
PD = Potential for Damage
PSD = Potential for Significant Damage

Samples Collected by: Date / Time: 12-22-16

Samples Received by: Date / Time:

Page 4 Of 4