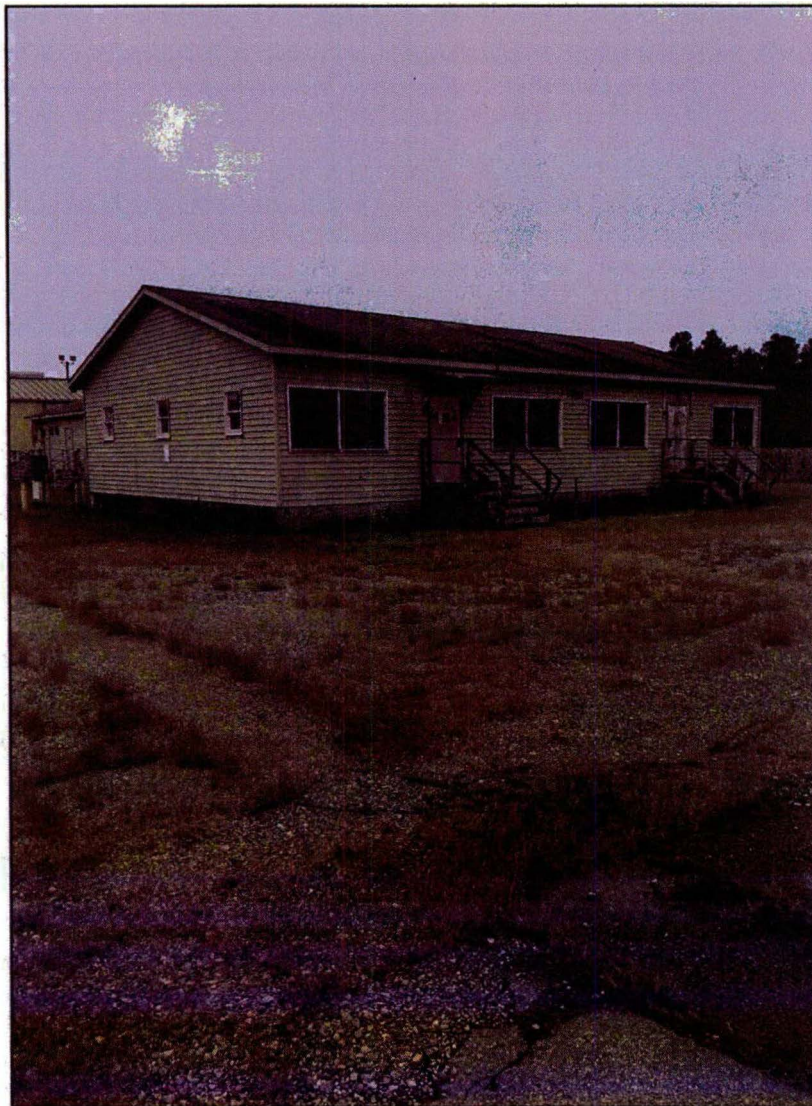


ENVIRONMENTAL COMPLIANCE & AREA COMPLETION PROJECTS

Baseline Asbestos Inspection Report of Building 704-7D



Q-APG-D-00016
November 18, 2019



Savannah River
Nuclear Solutions, LLC
A Fluor Daniel Partnership

INTEROFFICE MEMORANDUM

November 18, 2019

Q-APG-D-00016
RSM Track Number 10755

TO: Andrew Macmillan, 730-4B Room 3026

FROM: Ken Padgett, 730-4B

BASELINE ASBESTOS INSPECTION REPORT OF BUILDING 704-7D

On October 30, 2019 a baseline asbestos inspection was performed in building 704-7D. This building is a circa 1990's structure with a footprint of approximately 4,200 SF. The building has a wood frame construction with vinyl siding and an asphalt shingle roof. The foundation of the building is concrete pillars and the crawl space is enclosed with plywood sheeting. Several wooden decks with stairs provide access. The interior is divided into offices and common areas. There is an attached wing comprised of multiple offices and restroom facilities, each having its own access. Interior finishes include; wood veneer paneling and an acoustical ceiling tile system. The flooring consists of resilient floor tile, resilient sheet flooring, and carpet, all installed over a plywood sub-floor.

Nineteen (19) homogenous types of material were evaluated during this inspection. Please see the attached Inspection Survey Table for descriptions, estimated quantities, and location(s) of the materials inspected. Results from SDD-APG-2009-00553 have been reproduced and added to the Inspection Survey Table. The results from this inspection report will serve as the baseline reference of ACM in the building.

SUMMARY

All accessible, visible, suspect ACM was evaluated at the time of this inspection. Visible Thermal Systems Insulation (TSI) includes; elastomeric foam insulation (Armaflex), paper-backed fiberglass, Foil Scrim Kraft (FSK) insulation, and rigid fiberglass board insulation. These materials are not suspected to contain asbestos and were not sampled. This evaluation was based on facility and material knowledge, document review, and the collection of bulk samples for laboratory analysis.

Samples collected in the SDD-APG-2009-00553 report were analyzed at the SRNS LLC. Industrial Hygiene Laboratory, which is accredited by the American Industrial Hygiene Association (AIHA) Laboratory Quality Assurance Program (LQAP) in the Field of Testing (FoT)/Polarized Light Microscopy (PLM). The laboratory ID number is 100642. TEM samples were analyzed by the Davis and Floyd/RJ Lee Group, Inc.

Samples in this inspection report were analyzed by Maxxam Analytic A Bureau Veritas Group Company. The laboratory is located at 3380 Chastain Meadows Parkway, Suite 300 Kennesaw, GA 30144. Please see the attached laboratory report for a review of accreditations and certifications.

Although building 704-7D has been deactivated and placed in shutdown condition, the inspector could not verify that the building was de-energized. Therefore, suspect materials may exist inside electrical disconnect boxes.

Page 1 of 2




Savannah River
Nuclear Solutions, LLC
A Fluor Daniel Partnership

INTEROFFICE MEMORANDUM

Q-APG-D-00016
RSM Track Number 10755

If this report is used for contract bid or regulatory permit purposes, it is the obligation of the user to verify the actual quantities of the materials presented in the Inspection Survey Table. In accordance with 40CFR part 61.145, a ten-day notification must be filed with SC DHEC prior to demolition.

The removal of all identified ACM and Presumed Asbestos Containing Material (PACM) must be performed by asbestos trained personnel, with proper permitting, and waste disposal procedures.

<u>ASBESTOS INSPECTOR</u>	<u>INSTITUTION</u>	<u>CERT. NO.</u>	<u>STATE</u>	<u>EXP. DATE</u>
William K. Padgett 	AAA Environmental	06-1397	SC	04/17/20

(Included on the SRS long-term in-house group license ABS 8021)

C: C.R.F., 773-52A
Site D&D Correspondence File
J.K. Barrineau, 730-4B
Mark Wright, 705-3C Room 126

Page 2 of 2

SAVANNAH RIVER SITE
AIKEN, SC 29808 • WWW.SRS.GOV

INSPECTION SURVEY TABLE FOR BUILDING 704-7D

Homogeneous Number	SUSPECT MATERIAL	DESCRIPTION OF MATERIAL and SAMPLE NUMBERS	AMOUNT	TEST RESULTS	FRIABLE-NONFRIABLE
H01OB	Miscellaneous	Description: Roof shingles - black Sample Numbers: 7047D090302-03A, 7047D090302-03B, 7047D090302-03C, 7047D090302-03D, 7047D090302-03E Sample Number: 7047D090302-03E was analyzed via TEM	Approximately 5,200 SF	Negative	Non-Friable Good Condition
Location: Roof and awnings					
H02OB	Miscellaneous	Description: Roofing felt - black Sample Numbers: 7047D090302-04A, 7047D090302-04B, 7047D090302-04C, 7047D090302-04D, 7047D090302-04E Sample Number: 7047D090302-04D was analyzed via TEM	Approximately 5,200 SF	Negative	Non-Friable Good Condition
Location: Roof and awnings					
H03OB	Miscellaneous	Description: Roofing sealant – black (under white/grey coating) Sample Numbers: 7047D090302-05A, 7047D090302-05B, 7047D090302-05C,	Approximately 50 SF	Positive	Non-Friable Good Condition
Location: Roof valleys and around penetrations					
H04OB	Miscellaneous	Description: Rubberized sealants (various colors) Sample numbers: N/A, not suspected to contain asbestos	N/A	N/A	N/A
Location: Observed around windows and doors					
H05OB	Miscellaneous	Description: Grey sealant Sample Numbers: 7047D090302-02A, 7047D090302-02B, 7047D090302-02C Sample Number: 7047D090302-02B was analyzed via TEM	Approximately 12 LF	Negative	Non-Friable Good Condition
Location: South end HVAC duct, between ductwork and vinyl siding					
H06OB	Miscellaneous	Description: Rigid fiberglass board insulation mastic – black/grey Sample Numbers: 7047D090302-01A, 7047D090302-01B, 7047D090302-01C Sample Number: 7047D090302-01C was analyzed via TEM	Approximately 15 SF	Negative	Non-Friable Good Condition
Location: South end HVAC duct, under metal jacket					

INSPECTION SURVEY TABLE FOR BUILDING 704-7D

Homogeneous Number	SUSPECT MATERIAL	DESCRIPTION OF MATERIAL and SAMPLE NUMBERS	AMOUNT	TEST RESULTS	FRIABLE-NONFRIABLE
H07	TSI	Description: Elastomeric foam (Armaflex®) Sample Number: N/A not suspected to contain asbestos. REF: SDS #4732-1 Armaflex® (or equivalent foam insulation)	N/A	N/A	N/A
Location: Observed on HVAC line set(s)					
H08	TSI	Description: Foil Scrim Kraft (FSK) fiberglass insulation Sample Number: N/A not suspected to contain asbestos. REF: SDS #25860-1 or equivalent	N/A	N/A	N/A
Location: Observed on interior ductwork					
H09	TSI	Description: Paper-backed fiberglass insulation (batts) Sample Numbers: N/A, not suspected to contain asbestos. REF: Owens Corning® SDS#8545-1, or equivalent.	N/A	N/A	N/A
Location: Observed in wall cavities and above ceiling					
H10	Miscellaneous	Description: Acoustical ceiling tile, 24" x 48" – white with tan specks Sample Numbers: 7047D090302-09, 7047D090302-10, 7047D090302-11	Approximately 530 SF	Negative	Friable Good Condition
Location: Men's restroom (room 17) & women's restroom (room 18)					
H11	Miscellaneous	Description: Acoustical ceiling tile, 24" x 48" – pinhole pattern Sample Numbers: 7047D090302-15, 7047D090302-16, 7047D090302-17	Not quantified	Negative	Friable Good Condition
Location: Observed throughout					
H12	Miscellaneous	Description: Acoustical ceiling tile, 24" x 48" – small fissure Sample Numbers: 7047D090302-18, 7047D090302-19, 7047D090302-20	Not quantified	Negative	Friable Good Condition
Location: Observed throughout					
H13OB	Miscellaneous	Description: Sheet linoleum flooring - brown with tan specks Sample Numbers: 7047D090302-06, 7047D090302-07, 7047D090302-08 Sample Number: 7047D191104-01A was analyzed via TEM	Approximately 130 SF	Negative	Non-Friable Good condition
Location: Women's restroom (room 18)					

INSPECTION SURVEY TABLE FOR BUILDING 704-7D

Homogeneous Number	SUSPECT MATERIAL	DESCRIPTION OF MATERIAL and SAMPLE NUMBERS	AMOUNT	TEST RESULTS	FRIABLE-NONFRIABLE
H14OB	Miscellaneous	Description: Sheet linoleum flooring – grey with specks Sample Numbers: 7047D090302-12, 7047D090302-13, 7047D090302-14 Sample Number: 7047D191104-02A was analyzed via TEM	Approximately 1,300 SF	Negative	Non-Friable Good condition
Location: Rooms 12 – 16, 19 – 23 (under carpet in rooms 13 & 23)					
H15OB	Miscellaneous	Description: Resilient floor tile/mastic: 12" x 12" - tan with brown streaks Sample Numbers: 7047D090302-21A, 7047D090302-21B, 7047D090302-21C 7047D090302-22A, 7047D090302-22B, 7047D090302-22C Sample Numbers: 7047D090302-21A and 7047D090302-22A were analyzed via TEM	Approximately 1,000 SF	Negative	Non-Friable Good Condition
Location: Rooms: 4, 5, 6, 10, 11, and closet (room 5A)					
H16OB	Miscellaneous	Description: Resilient floor tile/mastic: 12" x 12" – white with red flake Sample Numbers: 7047D191030-01A, 7047D191030-01B, 7047D191030-01C Sample Number: 7047D191030-01C was analyzed via TEM	Approximately 400 SF	Negative	Non-Friable Good Condition
Location: Men's restroom (room 17)					
H17OB	Miscellaneous	Description: Carpet mastic - brown Sample Numbers: 7047D090302-23A, 7047D090302-23B, 7047D090302-23C Sample Number: 7047D090302-23A was analyzed via TEM	Approximately 1,200 SF	Negative	Non-Friable Good Condition
Location: Under carpeted areas					
H18OB	Miscellaneous	Description: Cove base mastic - brown Sample Numbers: 7047D090302-26A, 7047D090302-26B, 7047D090302-26C Sample Number: 7047D090302-26A was analyzed via TEM	Approximately 10 SF	Negative	Non-Friable Good Condition
Location: Kitchen (room 4) at base of cabinets					
H19OB	Miscellaneous	Description: Electric conduit sealant - grey Sample Numbers: 7047D090302-25A, 7047D090302-25B, 7047D090302-25C Sample Number: 7047D090302-25C was analyzed via TEM	Approximately 1 SF	Negative	Non-Friable Good Condition
Location: Room 6 – base of south wall in conduit penetrating the floor					



November 13, 2019

Kenny Barrineau
SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC
Building 730-4B, 2135
Aiken, SC 29808

Bureau Veritas Work Order No. A1911019

Reference Activity Code: 0BJL15PNDC

Dear Kenny Barrineau:

Bureau Veritas North America, Inc. received 3 samples on November 01, 2019 for the analyses presented in the following report.

The results apply only to the samples analyzed in this project. Please note that any unused portion of the samples will be discarded after a sixty-day holding period, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning the report, please contact the analyst whose name appears on the report or myself at (770) 499-7701.

Sincerely,

Kuntal Parikh

Kuntal Parikh

Senior Microscopist

Electronic signature authorized through password protection

cc: Ken Padgett

Mike

Siobhan Kitchen

Bureau Veritas North America, Inc.

Industrial Hygiene Laboratory
3380 Chastain Meadows Parkway, Suite 300
Kennesaw, GA 30144

Main: (770) 499-7701

Fax: (770) 499-7511

www.bvlabs.com



CASE NARRATIVE

Date: 13-Nov-19

CLIENT: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Project: Activity Code: 0BJL15PNDC

Work Order No A1911019

ANALYTICAL METHOD FOR ASBESTOS IN BULK SAMPLES USING POLARIZED LIGHT MICROSCOPY (PLM)

The results of this report relate only to the samples listed in the body of this report.

Unless otherwise noted below, the following statements apply: 1) all samples were received in acceptable condition, 2) all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results, and 3) the industrial hygiene results have not been blank corrected unless otherwise noted.

Use of EPA/600/R-93/116 satisfies applicable requirements of the USEPA's "Interim Method for the Determination of Asbestos in Bulk Insulation Sample", EPA-600/M4-82-020, December 1982, published as Appendix E to Subpart E of 40CFR763. Bulk samples analyzed by New York State methods follow stratified point counting methods (198.1) or Method 198.6 for PLM non-friable organically bound materials (NYSDOH Lab Code -11645). Percentages are visual estimations of asbestos >3:1 aspect ratio. The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for which asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed. NESHAP requires point counting of a bulk sample when the result is <10% by a method other than point counting. EPA, however states that if 3 mounts of the sample are analyzed and the asbestos percentage is <10% by visual estimation, the client may elect to assume the amount to be greater than 1% or require verification by point counting. If the result by point counting is different than the result obtained by visual estimation, the point count result will be used. Sample friability or non-friability noted on the report is a requirement for the State of California and refers only to the condition of the sample under macroscopic examination. It does not imply friability or non-friability for the sample as collected or observed in the field as determined by the person collecting the sample. The Kennesaw, Georgia lab is accredited by NVLAP -Lab Code 101125-0.

(a)Polarized- light microscopy is not consistently reliable in detecting asbestos in floor coverings, similar non-friable organically bound materials, soil and vermiculite. Quantitative electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. When analysis of such materials by PLM yields results negative for the presence of asbestos, Bureau Veritas recommends utilizing quantitative transmission electron microscopy (TEM). For more information, contact the laboratory.

References



CLIENT: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Project: Activity Code: 0BJL15PNDC

Work Order No A1911019

McCrone, Walter C. 1980. The Asbestos Particle Atlas. Ann Arbor, MI: Ann Arbor Science Publishers, Inc.

United States Environmental Protection Agency. Environmental Monitoring Systems Laboratory. 1982. Interim Method for the Determination of Asbestos in Bulk Insulation Samples. EPA-600/M4-82-020. Washington: GPO, December.

United States Environmental Protection Agency. Method for the Determination of Asbestos in Bulk Building Materials. EPA-600/R-93/116, July 1993 (PLM)

Fed. Reg. Vol. 55, No.224, 11/20/90, p.48415 (NESHAP)
EPA Memorandum 5/8/1991 –NESHAP Clarifications

NYSDOH Methods 198.1/198.6

QUANTITATIVE ANALYSIS OF NON-FRIABLE ORGANICALLY BOUND BULK SAMPLES FOR ASBESTOS USING TRANSMISSION ELECTRON MICROSCOPY (TEM) (NY ELAP 198.4)

Approximately 100-500 mg of sample is weighed in a tared crucible. The sample is placed in a muffle furnace at a temperature of 480°C for at least 5 hours, or until the weight has stabilized. The sample is allowed to cool to room temperature and immediately weighed to calculate percent of organic loss.

The sample is placed in a tared crucible and ground to disaggregate the residue. Approximately 1 ml of non-dilute HCL acid is slowly added to remove calcite and dolomite from the remaining sample residue. After 15 minutes, the sample is immediately diluted with ultra-pure water. The sample is then dispersed in 50 ml of ultra-pure water and filtered onto a pre-weighed 47 mm, 0.4um pore size polycarbonate filter. The filter is dried on a slide warmer and weighed again. If the residue mass is <1% of the subsample's original mass, the analysis is terminated and the result is reported as non-ACM.

A one cm² portion of the filter is cut and placed in a clean silica crucible. Approximately 5ml of ethanol are added and ultra-sonicated for 1 minute. Approximately 3 µl of the suspension is drop-mounted onto a carbon-coated TEM grid and allowed to dry.

Grids are examined at 3000X for suitability of the prep where >50% intact filter coverage and <25% particle loading is determined. Large bundles of asbestos may be noted during this phase of the analysis. At 10,000X to 20,000X, positive confirmation and further visual estimation of asbestos is determined. If there are no other particles on the filter, then the asbestos observed is 100% visual



CLIENT: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Project: Activity Code: 0BJL15PNDC

Work Order No A1911019

estimation. Otherwise, the estimate includes all sizes relative to other particles or fibers. Morphology, selected area electron diffraction, and energy-dispersive x-ray spectroscopy are used to confirm asbestos fibers. From TEM examination as outlined above, the final visual area estimation is made of asbestos on the TEM grids and the percent asbestos in the residue is then extrapolated using gravimetric records to identify the percent asbestos in the total sample (NYS DOH Lab Code 11645).

SPECIAL NOTES

1)Material types analyzed by 198.1 method: a) Friable materials other than SM-V (Surfacing Material) with <10% vermiculite; b) Surfacing Material (SM) without vermiculite; and c) ceiling tile without cellulose.

2)Material types analyzed by 198.6/198.4 method: NOB material (other than SM-V) with <10% vermiculite; b) any material other than SM-V with >10% vermiculite; and c) Ceiling Tiles with cellulose.

3)Material types analyzed by 198.8 method: Surfacing Material containing vermiculite (SM-V).

REFERENCES

Chatfield Method for Quantitative Analysis of Bulk Samples for Asbestos Using Transmission Electron Microscopy (unpublished).

New York ELAP Method 198.4, May 2016.

NOTE: Some of the samples may have contained inseparable layers which were combined during preparation.

Note: The attached chain-of-custody form shows the sample data that was provided by the client.



ANALYTICAL RESULTS

Client: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Client Reference No.: Activity Code: 0BJL15PNDC

Work Order No.: A1911019

Date: 13-Nov-19

Analytical Method: NYELAP METHOD 198.4 by TEM

Date Received: 11/1/2019 8:45:23 AM

Sample Type: Bulk

Report Date: 11/13/2019 3:26:40 PM

Reporting Limit (% by Weight): 0.1

Grid Box Identification: 11-06-19C-1

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification (%)*	Total Asbestos (%)**
A1911019-003A	7047D191030-01C	10/30/19 @12:00 am	11/13/19 @10:29 am	TM	White/Red Tile	None Detected --	< 0.1

TEM Microscope Documentation

Accelerating

Instrument	*Magnification	Voltage	Calibration Date
TEM 2/D686	14965x	100 KeV	10/6/2019

*Magnification = Calibrated screen magnification at 15,000X. For ISO Method 10312 the calibrated screen magnification is at 20,000X

<: Result is less than the indicated limit of detection.

--: Present but below the detection limit

*: The visual area estimation of asbestos content in the final residue.

** : The calculated total percent asbestos in the sample as received.

Analyst(s) Name/Date: Thomas J. Michel

11/13/2019

A1911019

SRS Chain of Custody / Laboratory Analysis Request

Return Results / Electronic Report To

Requested TAT: Rush Routine Other 5 Day from rec. Activity Code 0BJL15PNDC

Name (CTF) Kenny Barrineau
Email / Phone kenny.barrineau@srs.gov/ (803) 952-5650

Samples received in good condition? Y N

Sample Comments
Use positive stop for all homogenous groups. TEM is required only as indicated for organically bound samples or analyst may choose another sample from that ABC group that was positive via PLM. P.O. # will sent to Kelly Smith via Email for services related to this task.

Name (STR) Kenny Barrineau
Email / Phone kenny.barrineau@srs.gov (803) 952-5650

Laboratory
Lab Name Bureau Veritas (Atlanta)
Address 1 3380 Chastain Meadows Pkwy, Suite 300
Address Kennesaw, GA 30144
POC Alan Segrave / 800-252-9919

Name (Req by) Ken Padgett
Email / Phone william03.padgett@srs.gov (803) 646-1831

Peer Reviewed / Self Check by
Name (Print) *Heath McCord*

Organization SRNS / EC&ACP
Address Savannah River Site
Aiken, SC 29802

This Line Laboratory use ONLY Laboratory ID#: Results attached (date): Results Pages (Total)

No	Field ID	Matrix	Sample Date / Time	Requested Analysis	Sample Media / Size	Time (min)	Vol / Area	Sample Comments
	7047D191030-01A		10/30/2019	PLM	< 1 Gram	N/A	N/A	H010B - RFT, 12"x12" white with red flake
	7047D191030-01B		10/30/2019	PLM	< 1 Gram	N/A	N/A	H010B - RFT, 12"x12" white with red flake
	7047D191030-01C		10/30/2019	PLM/TEM	< 1 Gram	N/A	N/A	H010B - RFT, 12"x12" white with red flake

Relinquished by		
Name	Signature	Date and Time
Ken Padgett	<i>[Signature]</i>	10/30/19 1450
Kane Bire	<i>[Signature]</i>	10/30/19 1511
735-B Rm 401	735-B Rm 401	10/31/19 0600
Kane Bire	<i>[Signature]</i>	10/31/19 1100

Received by		
Name	Signature:	Date and Time
Kane Bire	<i>[Signature]</i>	10/30/19 1510
735-B Rm 401	735-B Rm 401	10/30/19 1511
Kane Bire	<i>[Signature]</i>	10/31/19 0600
C/S shipping	C/S shipping	10/31/19 1130

K. Smith 11/1/19 Page 1 of 1



November 18, 2019

Kenny Barrineau
SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC
Building 730-4B, 2135
Aiken, SC 29808

Bureau Veritas Work Order No. A1911081

Reference Activity Code: 0BJL15PNDC

Dear Kenny Barrineau:

Bureau Veritas North America, Inc. received 2 samples on November 11, 2019 for the analyses presented in the following report.

The results apply only to the samples analyzed in this project. Please note that any unused portion of the samples will be discarded after a sixty-day holding period, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning the report, please contact the analyst whose name appears on the report or myself at (770) 499-7701.

Sincerely,

Kuntal Parikh

Senior Microscopist

Electronic signature authorized through password protection

cc: Ken Padgett

Mike

Siobhan Kitchen

Bureau Veritas North America, Inc.

Industrial Hygiene Laboratory

3380 Chastain Meadows Parkway, Suite 300

Kennesaw, GA 30144

14 of 33

Main: (770) 499-7701

Fax: (770) 499-7511

www.bvlabs.com



CASE NARRATIVE

Date: 18-Nov-19

CLIENT: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Project: Activity Code: 0BJL15PNDC

Work Order No A1911081

QUANTITATIVE ANALYSIS OF BULK SAMPLES FOR ASBESTOS USING TRANSMISSION ELECTRON MICROSCOPY (TEM) EPA-600/R-93/116 Section 2.5.5.1

Upon receipt in the laboratory, samples are ground until homogeneous. Each sample is weighed in a tared silica crucible. The sample is placed in a muffle furnace at a temperature of 480 degrees C for 5 hours. The sample is allowed to cool to room temperature and immediately weighed to record ashed sample weight. Approximately 1 ml of nondiluted HCL acid is slowly added to remove calcite and dolomite from the ashed sample. After evolution of CO₂ gas has ceased, the sample is immediately diluted with ultra-pure water. The sample is then dispersed in 50 ml of ultra-pure water and filtered onto a pre-weighed 47 mm, 0.45 um pore size, MCE filter. The filter is dried on a slide warmer and weighed once again.

A 1 cm² portion of the filter is cut and placed in a clean silica crucible. Approximately 250 ul of both 20 ppm methyl cellulose solution and isopropyl alcohol are added and ultra-sonicated for 1 minute to remove the deposited sample into suspension. Approximately 3 ul of the suspension is pipetted onto a carbon-coated copper TEM grid and allowed to dry. Grids are examined in the TEM at 15,000X magnification. Asbestos is identified using morphology, selected area electron diffraction, and energy-dispersive x-ray spectroscopy. From TEM examination, a visual area estimation is made of asbestos in the final residue. Percent asbestos in the final residue is then extrapolated using gravimetric records to percent asbestos in the total sample.

References

Chatfield Method for Quantitative Analysis of Bulk Samples for Asbestos Using Transmission Electron Microscopy (unpublished).

United States Environmental Protection Agency. Method for the Determination of Asbestos in Bulk Building Materials. EPA-600/R-93/116, July 1993 (PLM).

Note: The attached chain-of-custody form shows the sample data that was provided by the client.



ANALYTICAL RESULTS

Client: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Client Reference No.: Activity Code: 0BJL15PNDC

Work Order No.: A1911081

Date: 18-Nov-19

Analytical Method: NYELAP METHOD 198.4 by TEM

Date Received: 11/11/2019 2:10:27 PM

Sample Type: Bulk

Report Date: 11/18/2019 10:23:08 AM

Reporting Limit (% by Weight): 0.1

Grid Box Identification: 11-12-19D-1

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification (%)*	Total Asbestos (%)**
A1911081-001A	7047D191104-01A	11/04/19 @12:00 am	11/16/19 @2:29 pm	TM	Brown Sheet Flooring w/ Mastic	None Detected --	< 0.1
A1911081-002A	7047D191104-02A	11/04/19 @12:00 am	11/16/19 @2:29 pm	TM	Gray Sheet Flooring w/ Mastic	None Detected --	< 0.1

TEM Microscope Documentation

Instrument	*Magnification	Accelerating Voltage	Calibration Date
TEM 2/D686	14965x	100 KeV	10/6/2019

*Magnification = Calibrated screen magnification at 15,000X. For ISO Method 10312 the calibrated screen magnification is at 20,000X

<: Result is less than the indicated limit of detection.

--: Present but below the detection limit

*: The visual area estimation of asbestos content in the final residue.

** : The calculated total percent asbestos in the sample as received.

Analyst(s) Name/Date: Thomas J. Riebel 11/18/2019

APR 11 081

SRS Chain of Custody / Laboratory Analysis Request

Requested TAT: Rush Routine Other 5 Day from rec. Activity Code 0BJL15PNDC

Samples received in good condition? Y N

Laboratory
 Lab Name Bureau Veritas (Atlanta)
 Address 1 3380 Chastain Meadows Pkwy, Suite 300
 Address Kennesaw, GA 30144
 POC Alan Segrave / 800-252-9919

Sample Comments
 Use positive stop for all homogenous groups. TEM is required only as indicated for organically bound samples or analyst may choose another sample from that ABC group that was positive via PLM. P.O. # will sent to Kelly Smith via Email. for services related to this task.

Peer Reviewed / Self Check by
 Name (Print) *HEATH MCGEE*

Return Results / Electronic Report To

Name (CTF)	Kenny Barrineau
Email / Phone	kenny.barrineau@srs.gov/ (803) 952-5650
Name (STR)	Kenny Barrineau
Email / Phone	kenny.barrineau@srs.gov (803) 952-5650
Name (Req by)	Ken Padgett
Email / Phone	william03.padgett@srs.gov (803) 646-1831
Organization	SRNS / EC&ACP
Address	Savannah River Site Aiken, SC 29802

This Line Laboratory use ONLY Laboratory ID#: Results attached (date): Results Pages (Total)

No.	Field ID	Matrix	Sample Date / Time	Requested Analysis	Sample Media / Size	Time (min)	Vol / Area	Sample Comments
	7047D191104-01A		11/04/2019	TEM	< 1 Gram	N/A	N/A	H010B - Resilient sheet flooring - Brown
	7047D191104-02A		11/04/2019	TEM	< 1 Gram	N/A	N/A	H020B - Resilient sheet flooring - Grey

Relinquished by		
Name	Signature	Date and Time
Ken Padgett	<i>[Signature]</i>	11/4/19 1320
Kane Bice	<i>[Signature]</i>	11-4-19 1331
735-B Rm 401	735-B Rm 401	11/7/19 0540
Kane Bice	<i>[Signature]</i>	11/7/19 1100

Received by		
Name	Signature:	Date and Time
Kane Bice	<i>[Signature]</i>	11-4-19 1330
735-B Rm 401	735-B Rm 401	11-4-19 1331
Kane Bice	<i>[Signature]</i>	11/7/19 0540
C/S Shipping	C/S Shipping	11/7/19 1130

K. Smith 11/8/19

Washington Savannah River Company
 Industrial Hygiene Laboratory
 Building 735-B, Room 310
 Aiken, SC 29808
 Phone: (803) 952-7449/7459
 Fax: (803) 952-7881

Industrial Hygiene Chain of Custody Lab Report

Page <u>1</u> of <u>7</u>	Cost Code PRD70391E	Lab Log-In No. _____
Contaminant(s) SUSPECT ASBESTOS 704-7D	Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab	Lab Method No. and Name NIOSH 9002 PLM
Submitted By (Print/Signature) Charles Carter <i>Charles Carter</i>	EBL-IH 2009-0121-	Lab Book and Page No. 09-0122 - 09-0176
Audited By (Print/Signature) R. Cochran <i>R. Cochran</i>		Disk No. How (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail
		Verbal Results Given (To Whom) Date/Time Verbal Results Given /

Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-03A		3-16-09	< 170 ash	170 ash	H010B Roof Shingles
7047D090302-03B		3-16-09	< 170 ash		H010B Roof Shingles
7047D090302-03C		3-16-09	< 170 ash		H010B Roof Shingles
7047D090302-03D		3-16-09	< 170 ash		H010B Roof Shingles
7047D090302-03E		3-16-09	< 170 ash		H010B Roof Shingles
7047D090302-04A		3-16-09	< 170 ash		H020B Felt Paper
7047D090302-04B		3-16-09	< 170 ash		H020B Felt Paper
7047D090302-04C		3-16-09	< 170 ash		H020B Felt Paper

NOTE: Results relate only to the items tested.
 NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>R. Cochran</i>	Date Analyzed 3-13-09	Reviewed By (Print) M. Bernard	Signature (Lab Director or Designee) <i>M. Bernard</i>	Date 3-17-09
Analyst/Signature <i>R. Cochran</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments
Samples used in good condition mes 3/17/09

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>Charles Carter</i>	3/4/2009	0900	R. Cochran	<i>R. Cochran</i>	3/5/09	0850

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
 Retention - Permanent

OSR 4-434 (Rev 10-11-2006)

Washington Savannah River Company
Industrial Hygiene Laboratory
Building 735-B, Room 310
Aiken, SC 29808
Phone: (803) 952-7449/7459
Fax: (803) 952-7881

Industrial Hygiene Chain of Custody Lab Report

Page <u>2</u> of <u>7</u>	Cost Code PRD70391E	Lab Log-In No. _____
Contaminant(s) SUSPECT ASBESTOS 704-7D	Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab	Lab Method No. and Name NIOSH 9002 PLM
Submitted By (Print/Signature) Charles Carter <i>Charles Carter</i>	EBL-IH 2009-0121-	Lab Book and Page No. 09-0122 - 09-0176
Audited By (Print/Signature) R. Cochran <i>R. Cochran</i>		Disk No. How (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail
		Verbal Results Given (To Whom) Date/Time Verbal Results Given /

Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-04D		3-16-09	< 1% 1% ash	1% ash	H02OB Felt Paper
7047D090302-04E		3-16-09	< 1% 1% ash	1% ash	H02OB Felt Paper
7047D090302-05A		3-16-09	chry 1-5%	1% ash	H03OB Black Roof Mastic
7047D090302-05B		3-16-09	< 1% 1% ash	1% ash	H03OB Black Roof Mastic
7047D090302-05C		3-16-09	chry 1-5%	1% ash	H03OB Black Roof Mastic
7047D090302-02A		3-16-09	< 1%	1% ash	H04OB Grey Caulking <i>RM</i>
7047D090302-02B		3-16-09	< 1%	1% ash	H04OB Grey Caulking <i>RM</i>
7047D090302-02C		3-16-09	< 1%	1% ash	H04OB Grey Caulking <i>EMC</i>

NOTE: Results relate only to the items tested.
NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>RM Cooke</i>	Date Analyzed 3-13-09	Reviewed By (Print) M Bernard	Signature (Lab Director or Designee) <i>Maurice Bernard</i>	Date 3-17-09
Analyst/Signature <i>RM Cooke</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>Charles Carter</i>	3/4/2009	0900	RM Cooke	<i>RM Cooke</i>	3/5/09	0950

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
Retention - Permanent

Industrial Hygiene Chain of Custody Lab Report

Washington Savannah River Company
 Industrial Hygiene Laboratory
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 Aiken, SC 29808
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 Fax: (803) 952-7881

Page <u>3</u> of <u>7</u>	Cost Code PRD70391E	Lab Log-In No. _____
Contaminant(s) SUSPECT ASBESTOS 704-7D	Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab	Lab Method No. and Name N105H 9002 PLM
Submitted By (Print/Signature) Charles Carter <i>Charles Carter</i>	EBL-IH	Lab Book and Page No. 09-0122 - 09-0176
Audited By (Print/Signature) R. Cochran <i>R. Cochran</i>		Disk No. 2009-0121-
		Verbal Results Given (To Whom) _____ How (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail
		Date/Time Verbal Results Given /

Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-01A		3-16-09	<170	170 <i>ad</i>	H05OB Mastic On Polyisocyanurate
7047D090302-01B		3-16-09	<170	↓	H05OB Mastic On Polyisocyanurate
7047D090302-01C		3-16-09	<170		H05OB Mastic On Polyisocyanurate
7047D090302-06		3-16-09	<170		H06 Sheet linoleum W/ Mastic
7047D090302-07		3-16-09	<170		H06 Sheet linoleum W/ Mastic
7047D090302-08		3-16-09	<170		H06 Sheet linoleum W/ Mastic
7047D090302-09		3-16-09	<170		H07 Suspended Ceiling Tile
7047D090302-10		3-16-09	<170		H07 Suspended Ceiling Tile

NOTE: Results relate only to the items tested.
 NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>R. Cochran</i>	Date Analyzed 3-13-09	Reviewed By (Print) M. Bernard	Signature (Lab Director or Designee) <i>Maureen Bernard</i>	Date 3-17-09
Analyst/Signature <i>R. M. Cooke</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>Charles Carter</i>	3/4/2009	0900	R. M. Cooke	<i>R. M. Cooke</i>	3/5/09	0850

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
 Retention - Permanent

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Industrial Hygiene Chain of Custody Lab Report

Page <u>4</u> of <u>7</u>	Cost Code PRD70391E	Lab Log-In No. _____
Contaminant(s) SUSPECT ASBESTOS 704-7D	Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab EBL-IH 2009-0121-	Lab Method No. and Name N109H 9002 PLM
Submitted By (Print/Signature) Charles Carter <i>[Signature]</i>		Lab Book and Page No. <u>09-0122 - 09-0176</u>
Audited By (Print/Signature) R. Cochran <i>[Signature]</i>		Disk No. _____ How (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail
		Verbal Results Given (To Whom) _____ Date/Time Verbal Results Given _____

Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-11		3-16-09	<170	170 <i>asbestos</i>	H07 Suspended Ceiling Tile
7047D090302-12		3-16-09	<170	↓	H08 Sheet Linoleum W/ Mastic
7047D090302-13		3-16-09	<170		H08 Sheet Linoleum W/ Mastic
7047D090302-14		3-16-09	<170		H08 Sheet Linoleum W/ Mastic
7047D090302-15		3-16-09	<170		H09 Suspended Ceiling Tile
7047D090302-16		3-16-09	<170		H09 Suspended Ceiling Tile
7047D090302-017		3-16-09	<170		H09 Suspended Ceiling Tile
7047D090302-18		3-16-09	<170		H10 Suspended Ceiling Tile

NOTE: Results relate only to the items tested.
 NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>[Signature]</i>	Date Analyzed 3-13-09	Reviewed By (Print) M Bernard	Signature (Lab Director or Designee) <i>[Signature]</i>	Date 3-17-09
Analyst/Signature <i>[Signature]</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>[Signature]</i>	3/4/2009	0500	R M Cooke	<i>[Signature]</i>	3/4/09	0550

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
 Retention - Permanent

Industrial Hygiene Chain of Custody Lab Report

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Page <u>5</u> of <u>7</u>	Cost Code PRD70391E	Lab Log-In No. _____
Contaminant(s) SUSPECT ASBESTOS 704-7D	Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab	Lab Method No. and Name NIOSH 9002 PLM
Submitted By (Print/Signature) Charles Carter <i>Charles Carter</i>	EBL-IH	Lab Book and Page No. 09-0122 - 09-0176
Audited By (Print/Signature) R. Cochran <i>R. Cochran</i>		Disk No. How (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail
2009-0121-		Date/Time Verbal Results Given 1

Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-19		3-16-09	< 170	170 <i>act</i>	H10 Suspended Ceiling Tile
7047D090302-20		3-16-09	< 170		H10 Suspended Ceiling Tile
7047D090302-21A		3-16-09	< 170		H110B Floor Tile
7047D090302-21B		3-16-09	< 170		H110B Floor Tile
7047D090302-21C		3-16-09	< 170		H110B Floor Tile
7047D090302-22A		3-16-09	< 170		H120B Mastic On Floor Tile
7047D090302-22B		3-16-09	< 170		H120B Mastic On Floor Tile
7047D090302-22C		3-16-09	< 170		H120B Mastic On Floor Tile

NOTE: Results relate only to the items tested.

NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>R. Cochran</i>	Date Analyzed 3-13-09	Reviewed By (Print) M Bernard	Signature (Lab Director or Designee) <i>Maurice Bernard</i>	Date 3-17-09
Analyst/Signature <i>RM Cooke</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>Charles Carter</i>	3/4/2009	0900	RM Cooke	<i>RM Cooke</i>	3/5/09	0850

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
Retention - Permanent

Industrial Hygiene Chain of Custody Lab Report

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Page <u>6</u> of <u>7</u>	Cost Code PRD70391E	Lab Log-In No. _____
Contaminant(s) SUSPECT ASBESTOS 704-7D	Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab	Lab Method No. and Name N105H 9002 PLM
Submitted By (Print/Signature) Charles Carter <i>[Signature]</i>	EBL-IH 2009-0121-	Lab Book and Page No. <u>09-0122</u> - <u>09-0176</u>
Audited By (Print/Signature) R. Cochran <i>[Signature]</i>		Disk No. _____
		Verbal Results Given (To Whom) _____ How (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail
		Date/Time Verbal Results Given /

Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-23A		3-16-09	< 1%	1% ASB	H13OB Mastic Under Carpet <i>RMC</i>
7047D090302-23B		3-16-09	< 1%		H13OB Mastic Under Carpet
7047D090302-23C		3-16-09	< 1%		H13OB Mastic Under Carpet
7047D090302-24A		3-16-09	< 1%		H14OB Linoleum Seam Filler
7047D090302-24B		3-16-09	< 1%		H14OB Linoleum Seam Filler
7047D090302-24C		3-16-09	< 1%		H14OB Linoleum Seam Filler
7047D090302-25A		3-16-09	< 1%		H15OB Electrical Putty (Grey)
7047D090302-25B		3-16-09	< 1%	✓	H15OB Electrical Putty (Grey)

NOTE: Results relate only to the items tested.
 NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>[Signature]</i>	Date Analyzed 3-16-09	Reviewed By (Print) M Bernard	Signature (Lab Director or Designee) <i>[Signature]</i>	Date 3-17-09
Analyst/Signature <i>[Signature]</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>[Signature]</i>	3/4/2009	0900	R M Cooke	<i>[Signature]</i>	3/5/09	0850

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
 Retention - Permanent

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Industrial Hygiene Chain of Custody Lab Report

Page <u>7</u> of <u>7</u>		Cost Code PRD70391E		Lab Log-In No. _____	
Contaminant(s) SUSPECT ASBESTOS 704-7D		Lab Report No. Required <input checked="" type="radio"/> EBL <input type="radio"/> F/H Lab		Lab Method No. and Name NIOSH 9002 PLM	
Submitted By (Print/Signature) Charles Carter <i>[Signature]</i>		EBL-IH		Lab Book and Page No. 09-0122 - 09-0176	
Audited By (Print/Signature) R. Cochran <i>[Signature]</i>				Disk No. 09-0122 - 09-0176	
Date 2009-01-21		Date/Time Verbal Results Given 1		Verbal Results Given (To Whom) HOW (Check One) <input type="radio"/> Person <input type="radio"/> Voice Mail	
Sample ID	Sample Media/Size	Requested TAT*	Results/Unit	Reporting Limit	Remarks
7047D090302-25C		3-16-09	<12	1% ASB	H150B Electrical Putty (Grey) <i>RM</i>
7047D090302-26A		3-16-09	<12	↓	H160B Mastic On Vinyl Base
7047D090302-26B		3-16-09	<12		H160B Mastic On Vinyl Base
7047D090302-26C		3-16-09	<12		H160B Mastic On Vinyl Base
7047D090302-27A		3-16-09	Chry 15-302		H170B Black Mastic
7047D090302-27B		3-16-09	Chry 5-152		H170B Black Mastic
7047D090302-27C		3-16-09	Chry 5-152		H170B Black Mastic

NOTE: Results relate only to the items tested.
 NOTE: Results are not corrected for contamination based on the field blank or other analytical blank.

Analyst/Signature <i>[Signature]</i>	Date Analyzed 3-16-09	Reviewed By (Print) M Bernard	Signature (Lab Director or Designee) <i>[Signature]</i>	Date 3-17-09
Analyst/Signature <i>[Signature]</i>	Date Report Mailed 3-17-09	Report Received By (Print)	Signature (Field Use Only)	Date Received

Comments

Chain of Custody

NOTE: Samples from Radiological Contamination areas must be submitted to 772-F unless free release criteria are met.

Relinquished By				Received By			
Name	Signature	Date	Time	Name	Signature	Date	Time
Charles Carter	<i>[Signature]</i>	3/4/2009	0900	RM Cooke	<i>[Signature]</i>	3/5/09	0850

*TAT - Turn Around Time Disk No. - Only applicable to asbestos fiber counting.
 Retention - Permanent

DAVIS & FLOYD

LABORATORY ANALYSIS REPORT

April 2, 2009

James Koch II
Savannah River Nuclear Solutions, LLC
735-B Room 133
Aiken, SC 29804-6809

Re: Job 09070 Asbestos Analysis – TEM

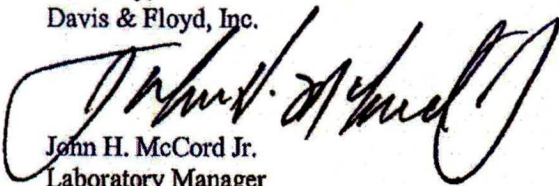
On March 25, 2009, the Davis & Floyd, Inc. laboratory received ten solid waste sample from the Savannah River Nuclear Solutions LLC. The sample listed on the Chain-of-Custody (COC) form arrived at Davis & Floyd Laboratory intact. A fourteen-day turnaround was requested on the COC.

The samples were subcontracted to the RJ Lee Group, Inc. in Monroeville, PA for analysis of Asbestos by TEM. The sample(s) were received by the RJ Lee Group and logged in for analysis on March 27, 2009 as follows:

SRNS ID	RJ Lee Sample Number
09070-7047D090302-03E	0165220.HT
09070-7047D090302-04D	0165221.HT
09070-7047D090302-02B	0165222.HT
09070-7047D090302-01C	0165223.HT
09070-7047D090302-21A	0165224.HT
09070-7047D090302-22A	0165225.HT
09070-7047D090302-23A	0165226.HT
09070-7047D090302-24C	0165227.HT
09070-7047D090302-25C	0165228.HT
09070-7047D090302-26A	0165229.HT

Enclosed are the Chain-of-Custody Records and the RJ Lee Group laboratory analysis report. Please contact me if you have any questions.

Sincerely,
Davis & Floyd, Inc.


John H. McCord Jr.
Laboratory Manager

Enclosure:

CHAIN-OF-CUSTODY

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Q-APG-D-00016

REV. 0

Page 1 of 4

Laboratory

09070	Customer Name: Carter, Charles	RL	Company: Davis & Floyd 816 East Durst Ave. Greenwood, SC 29649
	Customer Department: SDD		
Contract Number AC39041N	Customer Address: 707-49B	Ship to: Address: Greenwood, SC 29649	Attention: Carl Burrell, 864-229-4413
	Customer Phone/Beeper: 507-4764 20730		

Washington Savannah River Company Aiken, SC 29808 Environmental Services Section Waste Sample Management Group COC creation date: 3/20/09 Matrix: S=Soil, SO=Solid, SL=Sludge, O=Organic, A=Aqueous, SM=Smear Sample Analysis Requested TEM for Asbestos (362)	Sample ID: 09070-7047D090302-03E	Sample ID: 09070-7047D090302-04D	Sample ID: 09070-7047D090302-02B
	Collect Date: 3/2/09	Collect Date: 3/2/09	Collect Date: 3/2/09
	Collect Time: 0800	Collect Time: 0800	Collect Time: 0800
	No. Containers: 1	No. Containers: 1	No. Containers: 1
	Matrix: SOLID	Matrix: SOLID	Matrix: SOLID
		✓	✓

14 Day TAT RAD SCREEN REQUIRED? NO STR Authorization: RML for J. Koch

1 Relinquished by: (Print) <i>R M Cooke</i> (Sign) <i>R M Cooke</i>	Date/Time Date: <i>3/23/09</i> Time: <i>1:35</i>	Received by: (Print) <i>CE Lewis</i> (Sign) <i>CE Lewis</i>	2 Relinquished by: (Print) <i>CE Lewis</i> (Sign) <i>CE Lewis</i>	Date/Time Date: <i>3/23/09</i> Time: <i>14:20</i>	Received by: (Print) <i>Minnie Hightower</i> (Sign) <i>Minnie Hightower</i>
3 Relinquished by: (Print) <i>Minnie Hightower</i> (Sign) <i>Minnie Hightower</i>	Date/Time Date: <i>3/24/09</i> Time: <i>10:00</i>	Received by: (Print) <i>GIS</i> (Sign) <i>Shipping</i>	4 Relinquished by: (Print) <i>GIS</i> (Sign) <i>Shipping</i>	Date/Time Date: <i>3/25/09</i> Time: <i>11:15</i>	Received by: (Print) <i>Lisa Smith</i> (Sign) <i>Lisa Smith</i>

Cooler 0530
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CHAIN-OF-CUSTODY

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Laboratory

09070		Customer Name: Carter, Charles	RL	Company: Davis & Floyd
		Customer Department: SDD		816 East Durst Ave.
Contract Number AC39041N		Customer Address: 707-49B		Ship to: Address: Greenwood, SC 29649
		Customer Phone/Beeper: 507-4764 20730		Attention: Carl Burrell, 864-229-4413

Washington Savannah River Company Aiken, SC 29808 Environmental Services Section Waste Sample Management Group COC creation date. 3/20/09 Matrix: S=Soil, SO=Solid, SL=Sludge, O=Organic, A=Aqueous, SM=Smear Sample Analysis Requested TEM for Asbestos (362)	Sample ID: 09070-7047D090302-01C	Sample ID: 09070-7047D090302-21A	Sample ID: 09070-7047D090302-22A
	Collect Date: 3/2/09	Collect Date: 3/2/09	Collect Date: 3/2/09
	Collect Time: 0800	Collect Time: 0800	Collect Time: 0800
	No. Containers: 1	No. Containers: 1	No. Containers: 1
	Matrix: SOLID	Matrix: SOLID	Matrix: SOLID

14 Day TAT RAD SCREEN REQUIRED? **NO** STR Authorization **RWL for J. Koch**

1 Relinquished by:	Date/Time	Received by:	2 Relinquished by:	Date/Time	Received by:
(Print) RM Cooke	3/23/09	(Print) CE Lewis	(Print) CE Lewis	3/23/09	(Print) Minnie Hightower
(Sign) RM Cooke	Time 1355	(Sign) CE Lewis	(Sign) CE Lewis	Time 1420	(Sign) Minnie Hightower
3 Relinquished by:	Date/Time	Received by:	4 Relinquished by:	Date/Time	Received by:
(Print) Minnie Hightower	3/24/09	(Print) C/S	(Print)	3.25.09	(Print) Tisa Smith Call
(Sign) Minnie Hightower	Time 1000	(Sign) Shipping	(Sign)	Time 11:15	(Sign) Tisa Smith Call

Cooler # 0530
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CHAIN-OF-CUSTODY

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Q-APG-D-00016

Page 1 of REV. 0
 Date 3

Laboratory

09070	Customer Name: Carter, Charles	RL	Company: Davis & Floyd
	Customer Department: SDD		816 East Durst Ave.
Contract Number AC39041N	Customer Address: 707-49B	Ship to: Address: Greenwood, SC 29649	Attention: Carl Burrell, 864-229-4413
	Customer Phone/Beeper: 507-4764 20730		

Washington Savannah River Company Aiken, SC 29808 Environmental Services Section Waste Sample Management Group COC creation date. 3/20/09 Matrix: S=Soil, SO=Solid, SL=Sludge, O=Organic, A=Aqueous, SM=Smear Sample Analysis Requested TEM for Asbestos (362)	Sample ID: 09070-7047D090302- 23A	Sample ID: 09070-7047D090302- 24C	Sample ID: 09070-7047D090302- 25C
	Collect Date 3/2/09	Collect Date 3/2/09	Collect Date 3/2/09
	Collect Time 0800	Collect Time 0800	Collect Time 0800
	No. Containers 1	No. Containers 1	No. Containers 1
	Matrix SOLID ✓	Matrix SOLID ✓	Matrix SOLID ✓

14 Day TAT RAD SCREEN REQUIRED? NO STR Authorization RML for J. Koch

1 Relinquished by: (Print) R M Cooke (Sign) R M Cooke	Date/Time Date 3/23/09 Time 1355	Received by: (Print) OE Lewis (Sign) OE Lewis	2 Relinquished by: (Print) OE Lewis (Sign) OE Lewis	Date/Time Date 3/23/09 Time 1400	Received by: (Print) Minnie Hightower (Sign) Minnie Hightower
3 Relinquished by: (Print) Minnie Hightower (Sign) Minnie Hightower	Date/Time Date 3/24/09 Time 1000	Received by: (Print) C/S Shipping (Sign) Shipping	4 Relinquished by: (Print) Tisa S. McCall (Sign) Tisa S. McCall	Date/Time Date 3-25-09 Time 11:15	Received by: (Print) Tisa S. McCall (Sign) Tisa S. McCall

Cooler 0530
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CHAIN-OF-CUSTODY

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Q-APG-D-00016

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REV 4
RWL 4

Laboratory

09070	Customer Name: Carter, Charles	RL	Company: Davis & Floyd
	Customer Department: SDD		816 East Durst Ave.
Contract Number AC39041N	Customer Address: 707-49B	Ship to: Address: Greenwood, SC 29649	Attention: Carl Burrell, 864-229-4413
	Customer Phone/Beeper: 507-4764 20730		

Washington Savannah River Company Aiken, SC 29808 Environmental Services Section Waste Sample Management Group COC creation date: 3/20/09 Matrix: S=Soil, SO=Solid, SL=Sludge, O=Organic, A=Aqueous, SM=Smear Sample Analysis Requested TEM for Asbestos (362)	Sample ID:	Sample ID:	Sample ID:
	09070-707TD090302-26A	/	/
	Collect Date: 3/2/09	/	/
	Collect Time: 0800	/	/
	No. Containers: 1	/	/
Matrix: SOLID	/	/	

14 Day TAT RAD SCREEN REQUIRED? NO STR Authorization RWL for J. Koch

1 Relinquished by:	Date/Time	Received by:	2 Relinquished by:	Date/Time	Received by:
(Print) ERM Cooke	3/23/09	(Print) O Lewis	(Print) O Lewis	3/23/09	(Print) Minnie Nighthaw
(Sign) ICN Coon	1355	(Sign) O Lewis	(Sign) O Lewis	1420	(Sign) Minnie Nighthaw
3 Relinquished by:	Date/Time	Received by:	4 Relinquished by:	Date/Time	Received by:
(Print) Minnie Nighthaw	3/24/09	(Print) C.S.	(Print)	3.25.09	(Print) Lisa S. Call
(Sign) Minnie Nighthaw	1000	(Sign) Shipping	(Sign)	1115	(Sign) Lisa S. Call

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Final Laboratory Report

TEM Compositional Analysis

Mr. John H. McCord, Jr.
 Davis & Floyd, Inc.
 P.O. Drawer 428
 Greenwood, SC 29649
 USA

Report Date: 4/1/2009
 Sample Receipt Date: 3/27/2009
 RJ Lee Group Job No.: ATH903026
 Authorization/P.O. No.:
 Samples Received: 10
 Client Job No./Name: 62664_01

Method: Chatfield Technical Consulting Limited, SOP-1988-02.Rev1.

Client Sample Number	RJLG Sample Number	Sample Description	Starting Weight (gm)	Weight Percent						Amphibole Type
				Organic	Acid Soluble	Residue	Chry	Amph	Total Asbestos	
09070-7047D09 0302-03E	0165220.HT		0.24690	28	63	9	0	0	0	
09070-7047D09 0302-04D	0165221.HT		0.21130	95	Trace	4	0	0	0	
09070-7047D09 0302-02B	0165222.HT		0.21560	21	49	31	0	0	0	
09070-7047D09 0302-01C	0165223.HT		0.20010	48	7	45	0	0	0	
09070-7047D09 0302-21A	0165224.HT		0.21660	18	80	3	0	0	0	
09070-7047D09 0302-22A	0165225.HT		0.20850	18	80	2	0	0	0	
09070-7047D09 0302-23A	0165226.HT		0.23380	59	0	42	0	0	0	
09070-7047D09 0302-24C	0165227.HT		0.20020	94	2	4	0	0	0	
09070-7047D09 0302-25C	0165228.HT		0.23820	27	32	42	0	0	0	
09070-7047D09 0302-26A	0165229.HT		0.24090	50	35	15	0	0	0	

Notes:

- "<" indicates results less than analytical sensitivity. "---" indicates that sample was not analyzed.
- Sample(s) for this project were analyzed at our: Monroeville, PA (AIHA #100364, NVLAP #101208-0, NY ELAP #10844) facility.
- If RJ Lee Group, Inc. did not collect the samples analyzed, the verifiability of the laboratory's results are limited to the reported values.
- Trace indicates <1% asbestos was identified.
- Abbreviations: N/A-Not Applicable, Chry-Chrysotile Asbestos, Amph-Amphibole Asbestos, NSD-No Structures Detected.
- Samples will be held for 90 days and then disposed of per Federal regulations.
- These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.

RJ Lee Group, Inc.**Final Laboratory Report (cont'd)**

RJ Lee Group Job No: ATH903026

Davis & Floyd, Inc.

Client Job No/Name: 62664_01

Report Date: 4/1/2009

Title: TEM Compositional Analysis

Client Sample Number	RJLG Sample Number	Sample Description	Starting Weight (gm)	Weight Percent			Total Asbestos	Amphibole Type
				Acid Organic Soluble Residue	Chry	Amph		

Authorized Signature: _____



/mb

Kimberly A. Allison, Manager - TEM Analysis

Notes:

1. "<" indicates results less than analytical sensitivity. "----" indicates that sample was not analyzed.
2. Sample(s) for this project were analyzed at our: Monroeville, PA (AIHA #100364, NVLAP #101208-0, NY ELAP #10844) facility.
3. If RJ Lee Group, Inc. did not collect the samples analyzed, the verifiability of the laboratory's results are limited to the reported values.
4. Trace indicates <1% asbestos was identified.
5. Abbreviations: N/A-Not Applicable, Chry-Chrysotile Asbestos, Amph-Amphibole Asbestos, NSD-No Structures Detected.
6. Samples will be held for 90 days and then disposed of per Federal regulations.
7. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.

DISCLAIMER

Caution must be applied when interpreting the results of samples prepared using indirect sample preparation techniques. Studies have shown that indirect preparation techniques may result in substantial increases in the fiber count when compared to fiber counts which would have been obtained using direct sample preparation.

RJ Lee Group, Inc. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for select test methods for airborne asbestos analysis (TEM), asbestos fiber analysis (PLM), New York Department of HEALTH Environmental Laboratory Program (ELAP), and by the American Industrial Hygiene Association (AIHA). This test report relates only to the items tested. This report may not be used to claim product endorsement by NVLAP, any agency of the US Government, or any other laboratory accrediting agency. Any reproduction of this document must be in full in order for the report to be valid. This report is not valid unless it bears the name of a NVLAP-approved signatory.

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limiting provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee will be assessed for the return of any sample.

P.9



ATH 903026

Chain of Custody Record

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Client Davis & Floyd, Inc. Greenwood, SC 29649		Project / Site Location 62664_01		Laboratory Certification Numbers: SC - 24110, NC - 25, NELAP - E87633, TN - 2023, VA - 77 816 E. Darst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119 Email: Laboratory@davisfloyd.com Internet: www.davisfloyd.com				Office Use Only: Laboratory Work Request:	
Contact John H. McCord, Jr.		Report To John H. McCord, Jr.		Copy To jmcord@davisfloyd.com		Reporting Requirements: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Data Package (Specify Level 1 2 3 4)		PO / Quota Number TC 10	
Collected By Tisa S. McCall/Sample Custodian		Atmospheric Conditions		Turnaround Requirements: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush (Specify)				Special Instructions	
NOTICE:		(Optional)		Required Parameters: Containers and Preservatives (P)				State	
		(Times sampling included - composite only)		Composite		Grab		Method Type	
		Number of Containers		PARAPARAMETERS		A		ITEM	
		Sample Description		Sample Collection		Date		Time	
		Date		Time		Type		Total	
		09070-7047D090302-03E		2-Mar		8:00		7 1	
		09070-7047D090302-04D		2-Mar		8:00		7 1	
		09070-7047D090302-02B		2-Mar		8:00		7 1	
		09070-7047D090302-01C		2-Mar		8:00		7 1	
		09070-7047D090302-21A		2-Mar		8:00		7 1	
		09070-7047D090302-22A		2-Mar		8:00		7 1	
		09070-7047D090302-23A		2-Mar		8:00		7 1	
		09070-7047D090302-24C		2-Mar		8:00		7 1	
		09070-7047D090302-25C		2-Mar		8:00		7 1	
		09070-7047D090302-26A		2-Mar		8:00		7 1	
Relinquished By Tisa S. McCall		Date 3/26/09		Time 1450		Relinquished By		Date	
Received By		Date		Time		Received in Laboratory By M. Brandon		Date 03-27-09	
Comments		Flow Measurement (Note 1) Beginning _____ Ending _____ Start Date: _____ Multiplier _____		Note: Indicate immediate delivery for discharge measurements in which the temperature does not have adequate time to reach 2°C		Receipt Information Cooler ID (if available): _____ On Ice: Yes / No Temp(C) _____ Immediate Delivery: Yes / No Custody Seal: Intact / Broken / None			

Matrix Type Definitions 1-Drinking Water 2-Clean Water 5-Groundwater 7-Soil/Sediment 8-Liquids Sludge 9-Oil 12-Air
 (P) Preservatives Definitions A-None B-H2SO4 C-HCl D-HNO3 E-NaOH F-Filtered G-Other

(Note 1) For Discharge Measurements

Davis & Floyd, Inc.
 FL02_CC (04/05)