

ENVIRONMENTAL COMPLIANCE & AREA COMPLETION PROJECTS

Baseline Asbestos Inspection Report of Building 484-23D



Q-APG-D-00042
April 14, 2021



Savannah River
Nuclear Solutions, LLC
A Fluor Daniel Partnership

INTEROFFICE MEMORANDUM

Q-APG-D-00042
RSM Track Number 10755

April 14, 2021

TO: Kelsey Holcomb, 730-4B

FROM: Heath McGregor, 730-4B

BASELINE ASBESTOS INSPECTION REPORT OF BUILDING 484-23D

On February 22, 2021, an inspection was performed to determine the presence of any suspect Asbestos Containing Material (ACM) in building 484-23D. The 12' x 16' building (unknown date of construction) is comprised of a wood framework that is finished with metal panel siding and a metal roof. The structure is supported by non-grouted masonry blocks and wood blocks. The building interior is finished with wood paneling, a gypsum board panel ceiling, and is wired for electricity. The building was not connected to a power source at the time of this inspection. 484-23D was formerly used as an office building, ancillary to the Coal Shaker House in D-Area.

Five (5) homogenous types of material were evaluated during this inspection. Please see the attached Inspection Survey Table for descriptions, locations, estimated quantities, and analytical results of the materials evaluated.

SUMMARY

All accessible, visible, suspect ACM was evaluated at the time of this inspection. Fiberglass with various backings was the only Thermal System Insulation (TSI) identified during this inspection. Fiberglass products do not contain asbestos. A suspect arc-flash material was the only suspect material identified during the evaluation of the electrical wiring and electrical system components. Samples from this material were collected to determine asbestos content (see Inspection Survey Table). This evaluation was based on visual and tactile inspection, material knowledge, and bulk sampling.

All samples were analyzed by Polarized Light Microscopy (PLM). As required the South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, if the samples were organically bound, additional Transmission Electron Microscopy (TEM) was used to confirm the negative PLM results. All samples were analyzed by Bureau Veritas North America, Inc. 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.

In accordance with 40 CFR part 61-145 a **ten-day notification** must be filed with the South Carolina Department of Health and Environmental Control (SCDHEC) to obtain a demolition license. If the intent is to excess the building, it may be relocated intact without a demolition license and this letter will be sent to file and retained for five years as required in an agreement with SC DHEC. This is in concurrence with Lance Cramer of the permitting section as he is copied on the memorandum.

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.

Asbestos trained personnel must perform the removal of all identified ACM, with proper permitting, and waste disposal protocols.

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Savannah River
Nuclear Solutions, LLC
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INTEROFFICE MEMORANDUM

<u>ASBESTOS INSPECTOR</u>	<u>INSTITUTION</u>	<u>CERT. NO</u>	<u>STATE</u>	<u>EXP. DATE</u>
Heath McGregor	Greenville Tech College	203-EVT502-093	SC	07/28/2021

Included on the SRS Long-term in-house Group license ABS 8021

<u>ASBESTOS INSPECTOR</u>	<u>INSTITUTION</u>	<u>CERT. NO.</u>	<u>STATE</u>	<u>EXP. DATE</u>
Carlos Santos	The Environmental Institute	18299	GA	01/28/2022

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
Lance Cramer, 730-4B
William Griffin, 730-4B
John Blankenship, 730-4B

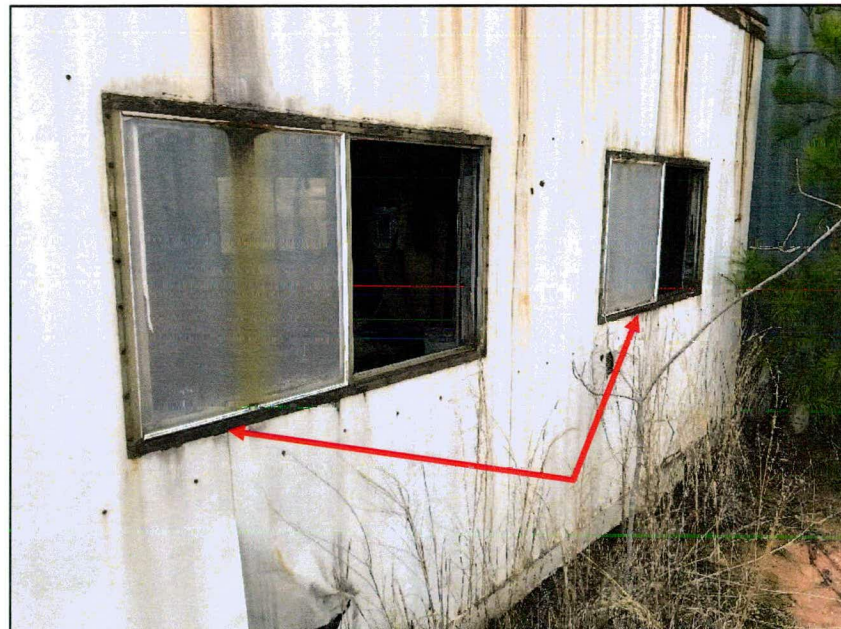
INSPECTION SURVEY TABLE OF BUILDING 484-23D

Homogeneous Number	Suspect/ Non-Suspect Material	Description and Sample Numbers of Material	Estimated Amount	Test Results	Friable/ Non-friable Condition
H02OB	Miscellaneous	Description: White/grey colored sealant Sample Numbers: 0032210222-02A, 0032210222-02B, 0032210222-02C Sample Number: 0032210222-02A analyzed via TEM.	~60 Linear Feet	Positive See Note 1.	Non-friable Good Condition
Location: Observed underneath metal framework exterior on door, windows, and A/C framework (See Photographs 1., 2., and 3.).					
H01OB	Miscellaneous	Description: 12" x 12" Light brown colored floor tile w/mastic Sample Numbers: 0032210222-01A, 0032210222-01B, 0032210222-01C Sample Number: 0032210222-01A analyzed via TEM.	N/A See Note 2.	Negative See Note 3.	N/A
Location: Observed flooring.					
H03	Miscellaneous	Description: Gypsum board w/white colored textured coating Sample Numbers: 0032210222-03, 0032210222-04, 0032210222-05	N/A	Negative	N/A
Location: Observed ceiling.					
H04	Miscellaneous	Description: Brown colored insulating board Sample Numbers: 0032210222-06, 0032210222-07, 0032210222-08	N/A	Negative	N/A
Location: Behind breakers in electrical panel box (inside building).					
H05OB	Miscellaneous	Description: Various colored sealant (rubberized) Sample Numbers: N/A, not suspected to contain asbestos. Note: Must be handled as PACM if adhered to sealant H02OB.	N/A	N/A	N/A
Location: Observed around various penetrations and seams of the exterior of the building.					

1. Positive = calculated asbestos content greater than 1% in analyzed sample.
2. N/A = not applicable.
3. Negative = no asbestos fibers were detected during laboratory analysis.



Photograph 1. View facing northeast. Red arrows point to sealant (H02OB).



Photograph 2. View facing northwest. Red arrows point to sealant (H02OB).



Photograph 3. View facing southeast. Red arrows point to sealant (H02OB).



March 11, 2021

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

Bureau Veritas Work Order No. A2103009

Reference Activity Code: 0CHZDACEDS

Dear Kenny Barrineau:

Bureau Veritas North America, Inc. received 12 samples on March 01, 2021 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: Heath McGregor
Siobhan Kitchen

Bureau Veritas North America, Inc.

Industrial Hygiene Laboratory
3380 Chastain Meadows Parkway, Suite 300
Kennesaw, GA 30144
6 of 15

Main: (770) 499-7701
Fax: (770) 499-7511
www.bvlabs.com



CASE NARRATIVE

Date: 11-Mar-21

CLIENT: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Project: Activity Code: 0CHZDACEDS

Work Order No A2103009

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 >10:1 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: 0CHZDACEDS

Work Order No A2103009

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



CLIENT: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC

Project: Activity Code: 0CHZDACEDS

Work Order No A2103009

determined. If there are no other particles on the filter, then the asbestos observed is 100% visual 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: 0CHZDACEDS

Work Order No.: A2103009

Date: 11-Mar-21

Analytical Method: NYELAP METHOD 198.4 by TEM

Date Received: 3/1/2021 11:09:18 AM

Sample Type: Bulk

Report Date: 3/1/2021 2:17:35 PM

Reporting Limit (% by Weight): 0.1

Grid Box Identification: 03-02-21C-1

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)	Asbestos Identification	Asbestos (%)*	Total Asbestos (%)**
A2103009-001A	0032210222-01A	02/22/21 @12:00 am	03/11/21 @10:28 am	NG	Light Brown ile	None Detected	--	< 0.1
A2103009-001B	0032210222-01A	02/22/21 @12:00 am	03/11/21 @10:28 am	NG	Yellow/Brown Mastic	None Detected	--	< 0.1
A2103009-004A	0032210222-02A	02/22/21 @12:00 am	03/11/21 @10:28 am	NG	Gray Sealant	Chrysotile	60	7.5
A2103009-004B	0032210222-02A	02/22/21 @12:00 am	03/11/21 @10:28 am	NG	White Sealant	Chrysotile	70	9.1

TEM Microscope Documentation

Instrument	*Magnification	Accelerating Voltage	Calibration Date
TEM 2/D686	15003x	100 KeV	3/5/2021

*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: N. Gupta 3/11/2021

SRS Chain of Custody / Laboratory Analysis Request

Requested TAT: Rush Routine Other 5 Day from rec.

Activity Code 0CHZDACEDS

Return Results / Electronic Report To

A2103009

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.

Laboratory

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

Peer Reviewed / Self Check by

Name (Print) M. Autry

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)	Heath McGregor
Email / Phone	heath.mcgregor@srs.gov (803) 952-6029
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
	0032210222-01A		2/22/21	PLM/TEM	< 1 Gram	N/A	N/A	H01OB-Light brown colored floor tile w/mastic
	0032210222-01B		2/22/21	PLM	< 1 Gram	N/A	N/A	H01OB-Light brown colored floor tile w/mastic
	0032210222-01C		2/22/21	PLM	< 1 Gram	N/A	N/A	H01OB-Light brown colored floor tile w/mastic
	0032210222-02A		2/22/21	PLM/TEM	< 1 Gram	N/A	N/A	H02OB-White/grey sealant (wind/door)
	0032210222-02B		2/22/21	PLM	< 1 Gram	N/A	N/A	H02OB-White/grey sealant (wind/door)
	0032210222-02C		2/22/21	PLM	< 1 Gram	N/A	N/A	H02OB-White/grey sealant (wind/door)
	0032210222-03		2/22/21	PLM	< 1 Gram	N/A	N/A	H03- Gypsum board (ceiling)
	0032210222-04		2/22/21	PLM	< 1 Gram	N/A	N/A	H03- Gypsum board (ceiling)
	0032210222-05		2/22/21	PLM	< 1 Gram	N/A	N/A	H03- Gypsum board (ceiling)

Reinquished by

Name	Signature	Date and Time
Heath McGregor		2/23/21 1530
J. Darden		2/23/21 1556
735-B Rm 401		2-25-21 0645
Kate Bice		2-25-21 0900

Received by

Name	Signature	Date and Time
J Darden		2/23/21 1530
735-B Rm 401		2/23/21 1556
Kate Bice		2-25-21 0645
UPS shipping		2-25-21 0900

K. Smith 3/1/2021 8:00 AM Page 1 of 2

SRS Chain of Custody / Laboratory Analysis Request

Requested TAT: Rush Routine Other 5 Day from rec.

Activity Code OCHZDACEDS

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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.

Laboratory

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

Peer Reviewed / Self Check by

Name (Print) M. Autry

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)	Heath McGregor
Email / Phone	heath.mcgregor@srs.gov (803) 952-6029
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
	0032210222-06		2/22/21	PLM	< 1 Gram	N/A	N/A	H04-Brown colored arc suppressor insulation
	0032210222-07		2/22/21	PLM	< 1 Gram	N/A	N/A	H04-Brown colored arc suppressor insulation
	0032210222-08		2/22/21	PLM	< 1 Gram	N/A	N/A	H04-Brown colored arc suppressor insulation

Relinquished by

Name	Signature	Date and Time
Heath McGregor		2/23/21 153
J. Darden		2/23/21 1550
735-B Rm 401	735-B Rm 401	2-25-21 0645
Harri Bice		2-25-21 0900

Received by

Name	Signature:	Date and Time
J. Darden		2/23/21 1530
735-B Rm 401	735-B Rm 401	2/23/21 1550
Harri Bice		2-25-21 0645
C/S Shipping	C/S Shipping	2-25-21 0900