Date March 6th, 2023

Reference: VA Project Number 613-16-302
Chilled Water Line Replacement Bldg 500
Bid RFI Responses

Question 1: 02/22/2023 L.R. Costanzo Co. Inc

1) During the Pre-Bid walk through, it was noticed that the existing ceiling tiles needing removed in the loading dock area appear to be extremely old. This may cause issues with re-installation. Should bid include providing new ceiling tiles?
2) If new ceiling tiles are required, can the Martinsburg DVA provide specifications for these existing tiles?

Response: 03/06/2023 Valley Engineering

The design intent is to reuse the existing ceiling system, and not replace. Do not included replacement in bid.

Question 2: 02/27/2023 Broadway Electric

- Lighting – the electrical construction statement of bid items says suspended light fixtures are being replaced – see notes on M4.02, M4.03, M6.01, M6.02, M6.03, M6.04
  - 2. Electrical Construction: Work includes all labor, material, and supervision to perform the required electrical construction work on this project including power service for pipe heat trace and differential pressure sensor, rerouting of existing conduits and conductors required to locate the new chilled water supply and return piping, as shown, and removal and replacement of suspended light fixtures.

What is the spec of the lighting fixture?

What is the quantity?

Response: 03/06/2023 Valley Engineering

The intent of the plans is to remove the existing light fixtures as needed to perform the indicated work, and then reinstall the existing fixtures in their original position. The existing fixtures will be reused. Field verify the quantity of fixtures to be removed and reinstalled in place.

4901 Crowe Drive • Mount Crawford, VA 22841
Phone (540) 434-6365
www.valleyesp.com

Question 3: 02/28/2023 Borlie Mechanical Contracting, LLC
Can the VA confirm that none of the material to be demoed or relocated contains asbestos?
Response: 03/06/2023, Valley Engineering
Asbestos material is expected in ductwork and pipe insulation throughout the facility. Refer to Specification section 028213.13-1.1B for estimated quantities. Asbestos-Containing Material Survey reports for the Basement and 1st floor Interstitial plans have been included with his Bid RFI response letter for additional information.

Question 4: 02/28/2023 Borlie Mechanical Contracting, LLC
Isolation valves are to be installed in the existing system at the loading dock and in the interstitial. Will the VA be responsible to isolate, drain and fill their existing system for the contractor to perform the required work?
Response: 03/06/2023 Valley Engineering
It is the contractor's responsibility to isolate, drain and fill the existing system to perform the required work. Hospital isolation valves are in room GE-105 (M1.01e). Utilize branch isolation valves in the basement interstitial and tunnels to limit the extent of drainage required. Contractor to coordinate shutdowns with the VA as indicated in the Pipe Changeover Notes on M0.01 and as directed elsewhere on the plans and in project specifications.

Question 5: 02/28/2023 Borlie Mechanical Contracting, LLC
Is there a Heat trace specification?
Response: 03/6/2023 Valley Engineering
Electrical Heat tracing systems are specified in section 232113 Paragraph 2.8

Question 6: 2/28/2023 Borlie Mechanical Contracting, LLC
M2.03C Note 6 and M2.03H Note 3 say to relocate Vacuum, Oxygen, and Medical Air piping prior to installing the Chilled water. Will recertification of these systems be required?
Response: 03/6/2023 Valley Engineering
Yes, recertification of the vacuum, oxygen, and medical air systems will be required.

Question 7: 02/28/2023 Borlie Mechanical Contracting, LLC
Several of the drawings reference Phase 1 & 2. Does this project have phasing?
Response: 03/6/2023 Valley Engineering
Demolition of the existing chilled water piping in the tunnels is phased to limit equipment downtime and allow new piping to be installed in place of existing. Refer to M2.01 T series, M3.01t, M4.01, and M4.02 for more information on phasing.

Sincerely,
Valley Engineering

Brent W. Kuhn, PE
Senior Mechanical Engineer

ASBESTOS-CONTAINING MATERIALS SURVEY

BUILDING 500 Basement Interstitial

Martinsburg VA Medical Center
510 Butler Avenue
Martinsburg, West Virginia 25405

Ms. Krista Bowen,
Industrial Hygienist

BEC Project # WV15032

Fieldwork Conducted: February 9, 2016 & December 15, 2016

Final Technical Report Date: February 9, 2017

Prepared by:

BOGGS ENVIRONMENTAL CONSULTANTS
Middletown MD ~ Morgantown, WV
Corporate Office: 200 W. Main Street, Middletown, MD 21769
Tel: (301) 694-5687 ~ Fax: (301) 694-9799

BOGGS
ENVIRONMENTAL CONSULTANTS

ASBESTOS-CONTAINING MATERIALS SURVEY

BUILDING 500 Basement Interstitial

TABLE OF CONTENTS

BOGGS ENVIRONMENTAL CONSULTANTS, INC.

Onsite Fieldwork Conducted By & Final Technical Report Reviewed By:

Derrick A. Klein
Environmental Specialist
State of West Virginia US EPA AHERA Asbestos Inspector (#AI008308)
State of West Virginia US EPA AHERA Asbestos Inspector (#AI008781)

SECTION 1.0 SITE DESCRIPTION

Project Site:	**Building 500 Basement Interstitial** 510 Butler Avenue Martinsburg, West Virginia 25405
Requester Name:	Ms. Krista Bowen, Industrial Hygienist
Requester Address:	**Department of Veteran Affairs** 510 Butler Avenue Martinsburg, West Virginia 25405

Subject Site Description & Scope of Work:

The subject site is Building 500 Basement Interstitial located on the campus at Martinsburg VA Medical Center at 510 Butler Avenue, Martinsburg West Virginia 25405, hereinafter referred to as the subject site.

BEC received authorization from Ms. Krista Bowen, Martinsburg VA Medical Center, Industrial Hygienist, to provide support services to update the existing asbestos-containing materials database developed by previous inspectors. Ms. Bowen requested the asbestos inspection to ensure compliance with United States Environmental Protection Agency's (US EPA) and State of West Virginia regulations, prior to disturbance of building construction materials anticipated (scheduled) to occur during renovation activities and to update the inventory of asbestos-containing materials.

SECTION 2.0 ASBESTOS-CONTAINING MATERIAL SURVEY

BOGGS ENVIRONMENTAL CONSULTANTS, INC. (BEC) conducted an asbestos-containing building construction materials (ACBMs) re-inspection survey of the interior and exterior of the subject site to evaluate materials that were previously not sampled, collection and further evaluation of non-friable organically bound materials via Transmission Electron Microscopy (TEM), and updates of the existing locations and quantities of building construction materials. The asbestos inspection was conducted in accordance with the US EPA "Asbestos Hazard Emergency Response Act (AHERA) of 1986" (40 CFR Part 763) and the "Asbestos School Hazard Abatement Reauthorization Act (ASHARA) of 1992" (40 CFR Part 763, Appendix C-E, Model Accreditation Plan).

BEC staff members Mr. Derrick Klein, US EPA AHERA and State of West Virginia licensed asbestos inspector, conducted a preliminary field walk inspection for the purpose of developing an understanding of the previously sampled components and to identify any previously unidentified suspected asbestos-containing materials. Subsequently, Mr. Klein collected multiple bulk samples of suspect ACBMs observed at the subject site on, February 9, 2016 & December 15, 2016.

FIELD SAMPLING

BEC advises, based upon current US EPA asbestos hazard control regulations, the minimum number of samples necessary to definitively determine the presence (or absence) of ACBMs is dependent on the nature and quantity of the suspect building construction material. Additionally, the US EPA has established a standardized schedule for bulk sample collection of suspect ACBMs based upon homogeneous areas.

BEC advises, based upon onsite visual inspection and bulk sampling activities, thirteen (13) samples of the suspect ACBMs were collected and submitted to the analytical laboratory which upon laboratory analysis revealed a total of thirteen (13) individual PLM/DS analyses were required due to multiple layered bulk samples. BEC advises, based upon US EPA asbestos analytical regulations, the laboratory analyst has the sole discretion/responsibility in determining whether the bulk sample is composed of one or multiple layers.

SECTION 2.0 ASBESTOS-CONTAINING MATERIAL SURVEY

LABORATORY ANALYSIS

Pursuant to the field screen and bulk sample collection, BEC submitted the bulk samples to EMSL of Cinnaminson, New Jersey for asbestos content analysis. EMSL is accredited by the American Industrial Hygiene Association and the National Institute of Standards and Technology (NIST)-National Voluntary Laboratory Accreditation Program as proficient in the analysis of asbestos in bulk samples.

EMSL performed Polarized Light Microscopy with Dispersion Staining (PLM/DS) of the bulk samples in accordance with the "***Method for the Determination of Asbestos in Bulk Building Materials***" (US EPA. Method 600/R-93/116, July 1993).

BEC advises PLM/DS analysis revealed asbestos **WAS DETECTED** in the suspect ACBM bulk samples collected and submitted to EMSL. BEC provides the results of the PLM/DS analyses in **Table A – Asbestos-Containing Material Testing Results:**

TABLE A- ASBESTOS-CONTAINING MATERIAL TESTING RESULTS

HA#	Sample #	Material Class.	Sampling Location	Building Construction Material	Asbestos (%)
1	BIS-2916-1	M	Supply Duct Between F12+E12 - F14+E14	White Duct Insulation Seam Sealant	**2% Chrysotile**
2	BIS-2916-2	M	Between F14+E14 - F12+E12	Yellow Duct Tape Mastic	None Detected
3	BIS-2916-3	M	Between F14+E14 - F12+E12	Brown Metal Duct Seam Sealant	**2% Chrysotile**
4	BIS-2916-4	M	Between F14+E14 - F12+E12	Off-White Pipe Mastic	None Detected
5	BIS-2916-5	M	Between F14+E14 - F12+E12	White Joint Compound	None Detected
6	BIS-2916-6	M	On Wall at F14 to E14	Drywall	None Detected
7	BIS-2916-7	M	Between F12 and E12	Red Fire Stop	None Detected
8	BIS-2916-8	S	Wall at F14	Spray Applied Fire Proofing	None Detected
9	BIS-2916-9	M	Between G14 and F14	Tan/Yellow Metal Duct Seam Sealant	None Detected
1	BIS-2916-10	M	Between G14 and F14	White Duct Insulation Seam Sealant	None Detected
2	BIS-2916-11	M	Between G14 and F14	Yellow Duct Tape Mastic	None Detected
4	BIS-2916-12	M	Between G14 and F14	Off-White Pipe Mastic	None Detected
10	BIS-2916-13	M	Between C2 and C3	Yellow Pin Mastic	None Detected

See **APPENDIX B – SAMPLING LOG** for the comprehensive sampling log sheet complete with historical sampling data.

SECTION 2.0 ASBESTOS-CONTAINING MATERIAL SURVEY

LABORATORY ANALYSIS (continued)

Upon receipt of PLM/DS laboratory data, EMSL was directed by Krista Bowen to conduct further analysis via "Gravimetric Reduction and Transmission Electron Microscopy" (ELAP 198.4) on eight (8) non-friable organically-bound (NOB) suspect materials reported as none-detected by PLM.

The request for TEM analysis is based upon the understanding that small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. In addition, binding materials in certain building products can cause matrix interference, which may obscure underlying asbestos fibers from view and result in a false-negative analytical result. Therefore, PLM is not consistently reliable in detecting asbestos in NOB materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can definitively pronounce NOB materials as non-asbestos containing.

BEC advises TEM analysis revealed asbestos **WAS DETECTED** in the suspect NOB bulk samples submitted to EMSL. BEC provides the results of the NOB TEM analyses hereunder in **Table B - Asbestos Survey NOB TEM Analytical Results.**

TABLE B – ASBESTOS SURVEY - NOB TEM ANALYTICAL RESULTS

HA#	Sample #	Material Class.	Sampling Location	Building Construction Material	Asbestos (%)
2	BIS-2916-2	M	Between F14+E14 - F12+E12	Yellow Duct Tape Mastic	None Detected
4	BIS-2916-4	M	Between F14+E14 - F12+E12	Off-White Pipe Mastic	None Detected
7	BIS-2916-7	M	Between F12 and E12	Red Fire Stop	None Detected
9	BIS-2916-9	M	Between G14 and F14	Tan/Yellow Metal Duct Seam Sealant	None Detected
1	BIS-2916-10	M	Between G14 and F14	White Duct Insulation Seam Sealant	None Detected
2	BIS-2916-11	M	Between G14 and F14	Yellow Duct Tape Mastic	None Detected
4	BIS-2916-12	M	Between G14 and F14	Off-White Pipe Mastic	**4.8% Chrysotile**
10	BIS-2916-13	M	Between C2 and C3	Yellow Pin Mastic	None Detected

ASBESTOS SURVEY LIMITATIONS

The above limited inspection was characterized by close visual inspection of Building 500 Basement Interstitial, in accordance with US EPA regulations and generally accepted engineering work practices associated with the conduct of an asbestos survey. It is relevant to note, BEC did **NOT** conduct exploratory demolition to gain access to enclosed building conditions (e.g., wall cavities, pipe chases, HVAC ductwork shafts, ceiling plenums, etc.). Additionally, BEC sampling strategy was designed to include materials not previously sampled and non-organically bound materials which were not evaluated via TEM. As such, BEC assumes no responsibility that the historical information provided is accurate or complete.

BEC collected random bulk samples of suspect ACBMs. BEC has made every effort to identify all locations and types of asbestos-containing construction materials. BEC asbestos survey sampling strategy included samples of the materials chosen at random. However, BEC advises, due to the inconsistencies of manufacturer processes and contractor installation methods, materials of similar construction may contain varied quantities of asbestos.

SECTION 2.0 ASBESTOS-CONTAINING MATERIAL SURVEY

ASBESTOS SURVEY LIMITATIONS (continued)

Furthermore, BEC advises locating all asbestos-containing materials can only be definitively achieved by conducting exploratory demolition and sampling every section of pipe insulation, every fitting or valve covering, every square yard of fireproofing, and every square foot of other surface coating materials. Therefore, BEC makes no warranty, expressed or implied, that all asbestos has been found. Additionally, BEC recommends bulk sampling and analysis of all suspect ACBMs (not otherwise evaluated during this survey) encountered within a building area, prior to renovation or demolition.

SECTION 3.0 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. BEC concludes, based upon onsite visual inspection, review of analytical data, and review of historical analytical data. US EPA-regulated ACBMs (defined as >1% asbestos content) were identified at the subject site and are listed in **Table C – Asbestos-Containing Materials**.

TABLE C: ASBESTOS-CONTAINING MATERIALS

Building Construction Material	Location	EPA Regulated	OSHA Regulated	Estimated Quantity
White Duct Mastic	Throughout Basement Interstitial	**YES**	**YES**	TBD
Brown Metal Duct Seam Sealant	Throughout Basement Interstitial	**YES**	**YES**	TBD
Off-White Pipe Mastic	Throughout Basement Interstitial	**YES**	**YES**	TBD
Yellow/Green/Brown Seam Sealant	Throughout Basement Interstitial	**YES**	**YES**	TBD

**BEC advises that due to accessibility and extensive renovation history of the interstitial space that quantifying all locations of asbestos containing materials was not feasible.*

2. BEC concludes, based upon review of US EPA and State of West Virginia law, specific regulations governing the disturbance, removal, and disposal of asbestos, **DO APPLY** to any work, of which is planned and/or can be reasonably anticipated to, result in the disturbance of the materials identified in the course of this inspection.

3. BEC concludes, based upon review of United States Occupational, Safety and Health Administration (Construction Industry-29 CFR 1926.1101 and General Industry-29 CFR 1910.1001) regulations governing non-occupational and occupational exposure to asbestos, **DO APPLY** to any renovation/demolition, housekeeping, maintenance and repair activities directly and/or indirectly impacting (disturbance/damage) the asbestos containing materials.

RECOMMENDATIONS

1. BEC recommends should the renovation activities result in the discovery of additional suspect ACBMs, halting all work activities with subsequent bulk sample collection and analysis of discovered ACBMs, to determine asbestos content.

2. BEC recommends, due to extensive renovation history and reinstallation of similar materials in both size/shape/color, that prior to any new renovation activities that collection of bulk sample of suspect ACBM's to determine asbestos content.

APPENDIX A

EMSL SAMPLE RESULTS

&

EMSL CHAIN OF CUSTODY

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041603238
Customer ID:	VAMD78
Customer PO:	613-C60024
Project ID:	Asbestos Survey

Attn: Krista Bowen
VA Medical Center
510 Butler Avenue
Martinsburg, WV 25405-9991

Phone:	(304) 263-3412
Fax:	(304) 262-4881
Collected:	2/ 9/2016
Received:	2/11/2016
Analyzed:	2/24/2016

Proj: Basement Interstitial (Asbestos Survey)

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: BIS-2916-1 ***Lab Sample ID:*** **041603238-0001**

Sample Description: 500 Basement Interstitial b/w F12-E12- F14-E14/White Duct Insulation Seam Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	White	0%	98%	**2% Chrysotile**	

Client Sample ID: BIS-2916-2 ***Lab Sample ID:*** **041603238-0002**

Sample Description: 500 Basement Interstitial b/w F14-E14 F12-E12/Yellow Duct Tape Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	Yellow	0%	100%	None Detected	
TEM Grav. Reduction	2/24/2016	Yellow	0.0%	100%	None Detected	

Client Sample ID: BIS-2916-3 ***Lab Sample ID:*** **041603238-0003**

Sample Description: 500 Basement Interstitial b/w F14-E14 F12-E12/Brown Metal Duct Seam Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	Brown	0%	98%	**2% Chrysotile**	

Client Sample ID: BIS-2916-4 ***Lab Sample ID:*** **041603238-0004**

Sample Description: 500 Basement Interstitial b/w F14-E14 F12-E12/Off-White Pipe Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	White	0%	100%	None Detected	
TEM Grav. Reduction	2/24/2016	White	0.0%	100%	None Detected	

Client Sample ID: BIS-2916-5 ***Lab Sample ID:*** **041603238-0005**

Sample Description: 500 Basement Interstitial b/w F14-E14 F12-E12/White Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	White	0%	100%	None Detected	

Client Sample ID: BIS-2916-6 ***Lab Sample ID:*** **041603238-0006**

Sample Description: 500 Basement Interstitial on Wall @ F14 to E14/Drywall

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	White	20%	80%	None Detected	

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041603238
Customer ID:	VAMD78
Customer PO:	613-C60024
Project ID:	Asbestos Survey

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: BIS-2916-7 ***Lab Sample ID:*** **041603238-0007**

Sample Description: 500 Basement Interstitial b/w F12- E12/Red Fire Stop

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	Red	0%	100%	None Detected	
TEM Grav. Reduction	2/24/2016	Red	0.0%	100%	None Detected	

Client Sample ID: BIS-2916-8 ***Lab Sample ID:*** **041603238-0008**

Sample Description: 500 Basement Interstitial Wall @ F14/Spray Applied Fireproofing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	Gray	60%	40%	None Detected	

Client Sample ID: BIS-2916-9 ***Lab Sample ID:*** **041603238-0009**

Sample Description: 500 Basement Interstitial b/w G14 & F14/Tan/ Yellow Metal Duct Seam Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	Tan/Yellow	0%	100%	None Detected	
TEM Grav. Reduction	2/24/2016	Tan/Yellow	0.0%	100%	None Detected	

Client Sample ID: BIS-2916-10 ***Lab Sample ID:*** **041603238-0010**

Sample Description: 500 Basement Interstitial b/w G14 & F14/White Duct Insulation Seam Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/18/2016	White	7%	93%	None Detected	
TEM Grav. Reduction	2/24/2016	White	0.0%	100%	None Detected	

Client Sample ID: BIS-2916-11 ***Lab Sample ID:*** **041603238-0011**

Sample Description: 500 Basement Interstitial b/w C14 & F14/Yellow Duct Tape Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/18/2016	Yellow	0%	100%	None Detected	
TEM Grav. Reduction	2/24/2016	Yellow	0.0%	100%	None Detected	

Client Sample ID: BIS-2916-12 ***Lab Sample ID:*** **041603238-0012**

Sample Description: 500 Basement Interstitial b/w C14 & F14/Off-White Pipe Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/18/2016	White	7%	93%	None Detected	
TEM Grav. Reduction	2/24/2016	White	0.0%	95.2%	**4.8% Chrysotile**	

Client Sample ID: BIS-2916-13 ***Lab Sample ID:*** **041603238-0013**

Sample Description: 500 Basement Interstitial b/w C2 & C3/Yellow Pin Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	2/17/2016	Yellow	0%	100%	None Detected	
TEM Grav. Reduction	2/24/2016	Yellow	0.0%	100%	None Detected	

OrderID: 041603238

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 041603238

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: Martinsburg VA Medical Center	**EMSL-Bill to:** ☐ Same ☒ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 510 Butler Ave Attn: Safety Office	
City: Martinsburg **State/Province:** WV	**Zip/Postal Code:** 25405 **Country:** United States
Report To (Name): Krista Bowen	**Telephone #:** 304-263-0811 x4715
Email Address: krista.bowen@va.gov	**Fax #:** 304-262-1401 **Purchase Order:** 613-C60024
Project Name/Number: Basement Interstitial Asbestos Survey	**Please Provide Results:** ☐ Fax ☒ Email
U.S. State Samples Taken: WV	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 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.*

PLM - Bulk (reporting limit)	TEM – Bulk
PLM EPA 600/R-93/116 (<1%)	■ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 2/9/16

Samplers Name: Derrick Klein **Samplers Signature:** DK

Sample #	HA #	Sample Location	Material Description
BIS-2916-1	1	500 Basement Interstitial: between F12-E12 F14-E14	White Duct Insulation Seam Sealant
BIS-2916-2	2	500 Basement Interstitial: between F14-E14 F12-E12	Yellow Duct Tape mastic
BIS-2916-3	3	500 Basement Interstitial: between F14-E14 F12-E12	Brown metal Duct Seam Sealant
BIS-2916-4	4	500 Basement Interstitial: between F14-E14/F12-E12	Off white Pipe Mastic
BIS-2916-5	5	500 Basement Interstitial: between F14-E14/F12-E12	White Joint Compound
BIS-2916-6	6	500 Basement Interstitial: on wall at F14 to E14	Drywall
BIS 2916-7	7	500 Basement Interstitial: between F12-E12	Red Fire Stop
BIS-2916-8	8	500 Basement Interstitial: wall at F14	Spray Applied Fireproofing
BIS-2916-9	9	500 Basement Interstitial: between G14+F14	Tan/Yellow metal Duct Seam Sealant
BIS-2916-10	1	500 Basement Interstitial: between G14+F14	White Duct Insulation Seam Sealant

Client Sample # (s): BIS-2916-1 - BIS-2916-13 **Total # of Samples:** 13

Relinquished (Client): DK **Date:** 2/10/16 **Time:** 1730

Received (Lab): BBeattie emailed **Date:** 2/11/16 **Time:** 930

Comments/Special Instructions:
Proceed to TEM for NOB materials using one week turnaround
Bill is per contract documents to Purchase Order: 613-C60024

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Page 1 of 2 pages

EMSL ANALYTICAL, INC.
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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

041603238

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

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

Sample #	HA #	Sample Location	Material Description
BIS-2916-11	2	500 Basement Interstitial: between C14 + F14	Yellow Duct tape Mastic
BIS-2916-12	4	500 Basement Interstitial: between C14 + F14	Off white Pipe Mastic
BIS-2916-13	10	500 Basement Interstitial: between C2 + C3	Yellow Pin Mastic

CINNAMINSON, NJ
16 FEB 11 AM 11:02

***Comments/Special Instructions:**
Proceed to TEM for NOB materials using one week turnaround.
Billing is per contract documents to Purchase Order: 613-C60024

Page 2 of 2 pages

EMSL Analytical, Inc.
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041603238
Customer ID:	VAMD78
Customer PO:	613-C60024
Project ID:	Asbestos Survey

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Analyst(s):

Keishla Vazquez Caraballo	PLM (10)
Patrick Carr	PLM (3)
Wayne Froehlich	TEM Grav. Reduction (8)

Reviewed and approved by:

Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

Initial report from: 02/18/201607:59:27

APPENDIX B

SAMPLING LOG

Sampling Log Sheet

BEC Inspector: Derrick Klein **Building #:** 500 - Basement Interstitial

Date: 2/9/2016 & 12/15/16

HA#	Sample #	Lab initials/Chain of Custody #	Sample location					Material Description	General Material Category or substrate	Lab Results		Notes
			Bldg #	Floor	Wing	Space #	Location of Sample			Asb. Type	Asb. Content (%)	
1	BIS-2916-1	41603238	500	Basement		Interstitial	Supply Duct Between F12+E12 - F14+E14	White Duct Insulation Seam Sealant	Duct Insulation Seam Sealant	*Chrysotile*	*2%*	Throughout
2	BIS-2916-2	41603238	500	Basement		Interstitial	Between F14+E14 - F12+E12	Yellow Duct Tape Mastic	Duct Tape Mastic	NAD	NAD (Via TEM)	Throughout
3	BIS-2916-3	41603238	500	Basement		Interstitial	Between F14+E14 - F12+E12	Brown Metal Duct Seam Sealant	Metal Duct Seam Sealant	*Chrysotile*	*2%*	Under Fiberglass Insulation on Metal Duct
4	BIS-2916-4	41603238	500	Basement		Interstitial	Between F14+E14 - F12+E12	Off-White Pipe Mastic	Pipe Mastic	NAD	NAD (Via TEM)	
5	BIS-2916-5	41603238	500	Basement		Interstitial	Between F14+E14 - F12+E12	White Joint Compound	Joint Compound (Drywall)	NAD	NAD	On F14 - E14 Wall
6	BIS-2916-6	41603238	500	Basement		Interstitial	On Wall at F14 to E14	Drywall	Drywall	NAD	NAD	On F14 - E14 Wall
7	BIS-2916-7	41603238	500	Basement		Interstitial	Between F12 and E12	Red Fire Stop	Fire Stop	NAD	NAD (Via TEM)	Spot Locations
8	BIS-2916-8	41603238	500	Basement		Interstitial	Wall at F14	Spray Applied Fire Proofing	Spray Applied Fireproofing	NAD	NAD	On All Columns
9	BIS-2916-9	41603238	500	Basement		Interstitial	Between G14 and F14	Tan/Yellow Metal Duct Seam Sealant	Duct Seam Sealant	NAD	NAD (Via TEM)	
1	BIS-2916-10	41603238	500	Basement		Interstitial	Between G14 and F14	White Duct Insulation Seam Sealant	Duct Insulation Seam Sealant	NAD	NAD (Via TEM)	
2	BIS-2916-11	41603238	500	Basement		Interstitial	Between G14 and F14	Yellow Duct Tape Mastic	Duct Tape Mastic	NAD	NAD (Via TEM)	
4	BIS-2916-12	41603238	500	Basement		Interstitial	Between G14 and F14	Off-White Pipe Mastic	Pipe Mastic	*Chrysotile*	*4.8%*	Via TEM
10	BIS-2916-13	41603238	500	Basement		Interstitial	Between C2 and C3	Yellow Pin Mastic	Pin Mastic	NAD	NAD (Via TEM)	On Supply Cold
11	120711500BICENB001	191112347	500	Basement		Interstitial	Basement Interstitial	Rockwool Duct Insulation	Insulation	NAD	NAD	
11	120711500BICENB002	191112347	500	Basement		Interstitial	Basement Interstitial	Rockwool Insulation	Insulation	NAD	NAD	
11	120711500BICENB003	191112347	500	Basement		Interstitial	Basement Interstitial	Rockwool Insulation Debrirs	Insulation	NAD	NAD	
1	102708SPDCEWB001	101593-0	500	Basement		Interstitial	Basement Interstitial	White Duct Mastic	Duct Mastic	*Chrysotile*	*2-3%*	
1	102708SPDCEWB002	101593-0	500	Basement		Interstitial	Basement Interstitial	White Duct Mastic	Duct Mastic	*Chrysotile*	*2-3%*	
1	102708SPDCEWB003	101593-0	500	Basement		Interstitial	Basement Interstitial	White Duct Mastic	Duct Mastic	*Chrysotile*	*2-3%*	
1	102708SPDCEWB004	101593-0	500	Basement		Interstitial	Basement Interstitial	White Duct Mastic	Duct Mastic	*Chrysotile*	*2-3%*	
1	102708SPDCEWB005	101593-0	500	Basement		Interstitial	Basement Interstitial	White Duct Mastic	Duct Mastic	*Chrysotile*	*2-3%*	

APPENDIX C

BEC STAFF QUALIFICATIONS

WEST VIRGINIA

Asbestos Program

Derrick Alan Klein

IS LICENSED AS AN

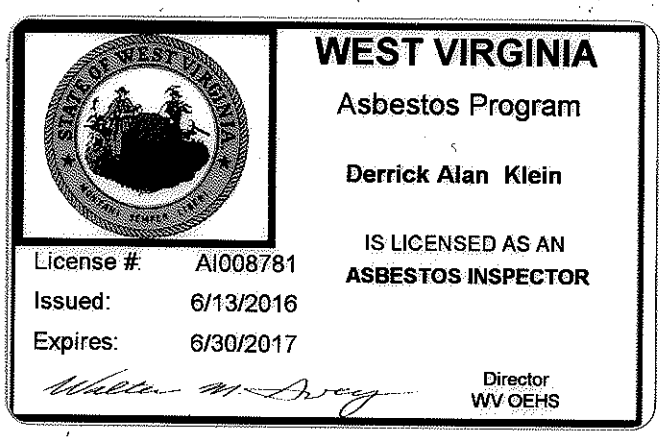
ASBESTOS INSPECTOR

License # AI008308

Issued: 6/16/2015

Expires: 6/30/2016

Director
WV OEHS



WEST VIRGINIA

Asbestos Program

Derrick Alan Klein

IS LICENSED AS AN
ASBESTOS INSPECTOR

License #: AI008781
Issued: 6/13/2016
Expires: 6/30/2017

Director
WV OEHS

ASBESTOS-CONTAINING MATERIALS SURVEY

BUILDING 500 1st Floor Interstitial

Martinsburg VA Medical Center
510 Butler Avenue
Martinsburg, West Virginia 25405

Ms. Krista Bowen,
Industrial Hygienist

BEC Project # WV15032

Fieldwork Conducted: December 15, 2016

Final Technical Report Date: February 9, 2017

Prepared by:

BOGGS ENVIRONMENTAL CONSULTANTS
Middletown MD ~ Morgantown, WV
Corporate Office: 200 W. Main Street, Middletown, MD 21769
Tel: (301) 694-5687 ~ Fax: (301) 694-9799

ASBESTOS-CONTAINING MATERIALS SURVEY

BUILDING 500 1st Floor Interstitial

TABLE OF CONTENTS

BOGGS ENVIRONMENTAL CONSULTANTS, INC.

Onsite Fieldwork Conducted By & Final Technical Report Reviewed By:

Derrick A. Klein
Environmental Specialist
State of West Virginia US EPA AHERA Asbestos Inspector (#AI008781)

SECTION 1.0 SITE DESCRIPTION

Project Site:	**Building 500 1st Floor Interstitial** 510 Butler Avenue Martinsburg, West Virginia 25405
Requester Name:	Ms. Krista Bowen, Industrial Hygienist
Requester Address:	**Department of Veteran Affairs** 510 Butler Avenue Martinsburg, West Virginia 25405

Subject Site Description & Scope of Work:

The subject site is Building 500 1st floor Interstitial located on the campus at Martinsburg VA Medical Center at 510 Butler Avenue, Martinsburg West Virginia 25405, hereinafter referred to as the subject site.

BEC received authorization from Ms. Krista Bowen, Martinsburg VA Medical Center, Industrial Hygienist, to provide support services to update the existing asbestos-containing materials database developed by previous inspectors. Ms. Bowen requested the asbestos inspection to ensure compliance with United States Environmental Protection Agency's (US EPA) and State of West Virginia regulations, prior to disturbance of building construction materials anticipated (scheduled) to occur during renovation activities and to update the inventory of asbestos-containing materials.

SECTION 2.0 ASBESTOS-CONTAINING MATERIAL SURVEY

BOGGS ENVIRONMENTAL CONSULTANTS, INC. (BEC) conducted an asbestos-containing building construction materials (ACBMs) re-inspection survey of the interior and exterior of the subject site to evaluate materials that were previously not sampled, collection and further evaluation of non-friable organically bound materials via Transmission Electron Microscopy (TEM), and updates of the existing locations and quantities of building construction materials. The asbestos inspection was conducted in accordance with the US EPA "Asbestos Hazard Emergency Response Act (AHERA) of 1986" (40 CFR Part 763) and the "Asbestos School Hazard Abatement Reauthorization Act (ASHARA) of 1992" (40 CFR Part 763, Appendix C-E, Model Accreditation Plan).

BEC staff member Mr. Derrick Klein, a US EPA AHERA and State of West Virginia licensed asbestos inspector, conducted a preliminary field walk inspection for the purpose of developing an understanding of the previously sampled components and to identify any previously unidentified suspected asbestos-containing materials. Subsequently, Mr. Klein did not collect any bulk samples of suspect ACBMs observed at the subject site on December 15, 2016.

FIELD SAMPLING

BEC advises, based upon current US EPA asbestos hazard control regulations, the minimum number of samples necessary to definitively determine the presence (or absence) of ACBMs is dependent on the nature and quantity of the suspect building construction material. Additionally, the US EPA has established a standardized schedule for bulk sample collection of suspect ACBMs based upon homogeneous areas.

See **APPENDIX B – SAMPLING LOG** for the comprehensive sampling log sheet complete with historical sampling data.

SECTION 2.0 ASBESTOS-CONTAINING MATERIAL SURVEY

ASBESTOS SURVEY LIMITATIONS

The above limited inspection was characterized by close visual inspection of Building 500 1st floor interstitial, in accordance with US EPA regulations and generally accepted engineering work practices associated with the conduct of an asbestos survey. It is relevant to note, BEC did **NOT** conduct exploratory demolition to gain access to enclosed building conditions (e.g., wall cavities, pipe chases, HVAC ductwork shafts, ceiling plenums, etc.). Additionally, BEC sampling strategy was designed to include materials not previously sampled and non-organically bound materials which were not evaluated via TEM. As such, BEC assumes no responsibility that the historical information provided is accurate or complete.

BEC collected random bulk samples of suspect ACBMs. BEC has made every effort to identify all locations and types of asbestos-containing construction materials. BEC asbestos survey sampling strategy included multiple samples of the same materials chosen at random. However, BEC advises, due to the inconsistencies of manufacturer processes and contractor installation methods, materials of similar construction may contain varied quantities of asbestos.

Furthermore, BEC advises locating all asbestos-containing materials can only be definitively achieved by conducting exploratory demolition and sampling every section of pipe insulation, every fitting or valve covering, every square yard of fireproofing, and every square foot of other surface coating materials. Therefore, BEC makes no warranty, expressed or implied, that all asbestos has been found. Additionally, BEC recommends bulk sampling and analysis of all suspect ACBMs (not otherwise evaluated during this survey) encountered within a building area, prior to renovation or demolition.

SECTION 3.0 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. BEC concludes, based upon onsite visual inspection, review of analytical data, and review of historical analytical data. US EPA-regulated ACBMs (defined as >1% asbestos content) were identified at the subject site and are listed in **Table C – Asbestos-Containing Materials**.

TABLE C: ASBESTOS-CONTAINING MATERIALS

Building Construction Material	Location	EPA Regulated	OSHA Regulated	Estimated Quantity
White Duct Mastic	Throughout 1st Floor Interstitial	**YES**	**YES**	TBD*
Brown Metal Duct Seam Sealant	Throughout 1st Floor Interstitial	**YES**	**YES**	TBD*
Off-White Pipe Mastic	Throughout 1st Floor Interstitial	**YES**	**YES**	TBD*
Yellow/Green/Brown Seam Sealant	Throughout 1st Floor Interstitial	**YES**	**YES**	TBD*

**BEC advises that due to accessibility and extensive renovation history of the interstitial space that quantifying all locations of asbestos containing materials was not feasible.*

2. BEC concludes, based upon review of US EPA and State of West Virginia law, specific regulations governing the disturbance, removal, and disposal of asbestos, **DO APPLY** to any work, of which is planned and/or can be reasonably anticipated to, result in the disturbance of the materials identified in the course of this inspection.

3. BEC concludes, based upon review of United States Occupational, Safety and Health Administration (Construction Industry-29 CFR 1926.1101 and General Industry-29 CFR 1910.1001) regulations governing non-occupational and occupational exposure to asbestos, **DO APPLY** to any renovation/demolition, housekeeping, maintenance and repair activities directly and/or indirectly impacting (disturbance/damage) the asbestos containing materials.

SECTION 3.0 CONCLUSIONS AND RECOMMENDATIONS

RECOMMENDATIONS

1. BEC recommends should the renovation activities result in the discovery of additional suspect ACBMs, halting all work activities with subsequent bulk sample collection and analysis of discovered ACBMs, to determine asbestos content.
2. BEC recommends, due to extensive renovation history and reinstallation of similar materials in both size/shape/color, that prior to any new renovation activities that collection of bulk sample of suspect ACBM's to determine asbestos content.

APPENDIX A

SAMPLING LOG

Sampling Log Sheet

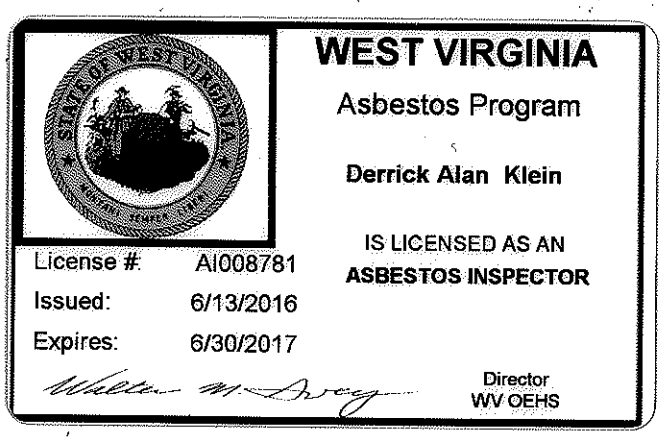
BEC Inspector: Derrick Klein **Building #:** 500 1st Floor Intersitial

Date: 12/15/2016

HA#	Sample #	Lab initials/Chain of Custody #	Sample location					Material Description	General Material Category or substrate	Lab Results		Notes
			Bldg #	Floor	Wing	Space #	Location of Sample			Asb. Type	Asb. Content (%)	
1	071508OPICEW B001	101593-0	500	1st		intersititial	West of 21 CW Hallway Supply	White Duct Mastic	duct insulation mastic (fiberglass)	*Chrysotile*	*3- 5%*	
1	071508OPICEW B002	101593-0	500	1st		intersititial	East of #22 CCW Room 1A-132	White Duct Mastic	duct insulation mastic (fiberglass)	*Chrysotile*	*3-5%*	
1	071508OPICEW B003	101593-0	500	1st		intersititial	Interstitial Space East of #22 CCW Room 1A-132	White Duct Mastic	duct insulation mastic (fiberglass)	*Chrysotile*	*1-2%*	
1	071508OPICEW B004	101593-0	500	1st		intersititial	Interstitial Space CCW #45 Room 1A-129	White Duct Mastic	duct insulation mastic (fiberglass)	*Chrysotile*	*3-5%*	
1	041009CPC1CEWB001	101593-0	500	1st		intersititial	CPC-1 Vavbox TU8	White Duct Mastic	duct insulation mastic (fiberglass)	NAD	NAD	
1	041009CPC1CEWB002	101593-0	500	1st		intersititial	CPC-1 Vavbox TU9	White Duct Mastic	duct insulation mastic (fiberglass)	NAD	NAD	
1	041009CPC1CEWB003	101593-0	500	1st		intersititial	CPC-1 Vavbox TU13	White Duct Mastic	duct insulation mastic (fiberglass)	*Chrysostile*	*2-4%*	
1	041009CPC1CEWB004	101593-0	500	1st		intersititial	CPC-1 Hot Water Perimeter Heating	White Duct Mastic on Insulation (Piping)	duct insulation mastic (fiberglass)	NAD	NAD	

APPENDIX B

BEC STAFF QUALIFICATIONS



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Expires: 6/30/2017

Director
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