ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES
MINGO JUNCTION STEEL WORKS PARCEL B (BOTTOM HOUSE)
NORTH MAIN STREET
WEIRTON, HANCOCK COUNTY, WEST VIRGINIA

Prepared For:

BUSINESS DEVELOPMENT CORPORATION
OF THE NORTHERN PANHANDLE
WEIRTON, WEST VIRGINIA

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
EXPORT, PENNSYLVANIA

CEC Project 164-123.2H2M

November 2017

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1.0 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

This Analysis of Brownfields Cleanup Alternatives (ABCA) for the Mingo Junction Steel Works North Weirton Parcel B – Bottom House (Site) was prepared by Civil & Environmental Consultants, Inc. (CEC) on behalf of the current Site owner, the Business Development Corporation of the Northern Panhandle (BDC). The BDC plans to submit an application to the U.S. Environmental Protection Agency (USEPA) for a Brownfields Cleanup Grant to be used for cleanup of the Site.

1.2 SITE DESCRIPTION AND HISTORICAL USE

The Site covers approximately 0.38 acres and is located along North Main Street in the City of Weirton, Hancock County, West Virginia. The Site contains the former Bottom House, a 16,500 square foot steel-framed and sided structure with concrete foundations and floors. The Site is located in a mixed-use area consisting of commercial, industrial and residential properties. The Site layout is shown on Figure 1.

The Bottom House was constructed in the early 1900s as part of the former Weirton Steel facility. The building was historically used to replace refractory in ladles used to transport molten iron from the nearby blast furnaces to the open hearth furnace. The iron and steel making operations of the facility ceased around 2011 and the Bottom House has remained vacant since that time.

1.3 PREVIOUS SITE INVESTIGATION AND REMEDIATION ACTIVITIES

CEC performed a Phase I Environmental Site Assessment (ESA) of the Site in November 2017. No Recognized Environmental Conditions (RECs) were identified. However, the Phase I ESA did identify the potential for asbestos-containing materials (ACM) given the age and construction of the building.

Mid Atlantic Environmental Consultants, Inc., a West Virginia-licensed asbestos inspector, completed an ACM survey in October 2017. Twenty (20) samples of suspect ACM were collected and analyzed for asbestos. Asbestos was identified in six samples associated primarily with pipe wrap/insulation. Some of the identified ACM is friable and creates a potential health hazard. Excerpts from Mid Atlantic's ACM survey report are provided in Appendix A. This ABCA addresses the abatement of ACM that is required prior to the renovation and reuse of the building.

1.4 SITE RE-USE PLANS

The BDC has been in contact with a prospective purchaser that has interest in repurposing the Site as a metal manufacturing/fabricating operation and chemical processing facility. Other potential reuses include operations to support the growing natural gas industry in the Ohio River Valley.

2.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

The asbestos removal and renovation work will be performed in accordance with the requirements of West Virginia Code 45CSR15 and 64CSR63. All required notifications will be made and the work will be performed by a West Virginia Bureau of Public Health licensed asbestos contractor. The lead-contaminated debris that will result from the demolition of the ticket booth will be disposed at an off-site permitted landfill in accordance with 40CFR260 and other applicable laws and regulations.

3.0 EVALUATION OF CLEANUP ALTERNATIVES

3.1 CLEANUP ALTERNATIVES AND ESTIMATED COSTS

Removing the ACM prior to renovating the building is required by West Virginia law. There are no other viable alternatives (other than no action, in which case the building could not be renovated and reused according to current plans).

The estimated cost to complete the ACM removal is as follows:

Work Plan and Notifications	$1,500
ACM Removal/Disposal	$57,000
Third Party Air Sampling	$1,000
Project Management	$2,000
Total	$61,500

Contractor proposals that were used as the basis for the above cost estimates are provided in Appendix B.

3.2 RECOMMENDED CLEANUP ALTERNATIVE

Again, removing the ACM prior to renovation is the only viable alternative.

3.3 CONSIDERATION OF CHANGING CLIMATE

Given the short duration and permanent nature of the project, the effects of climate change will not be a factor.

FIGURE

SUBMITTAL & REVISION RECORD		
NO	DATE	DESCRIPTION
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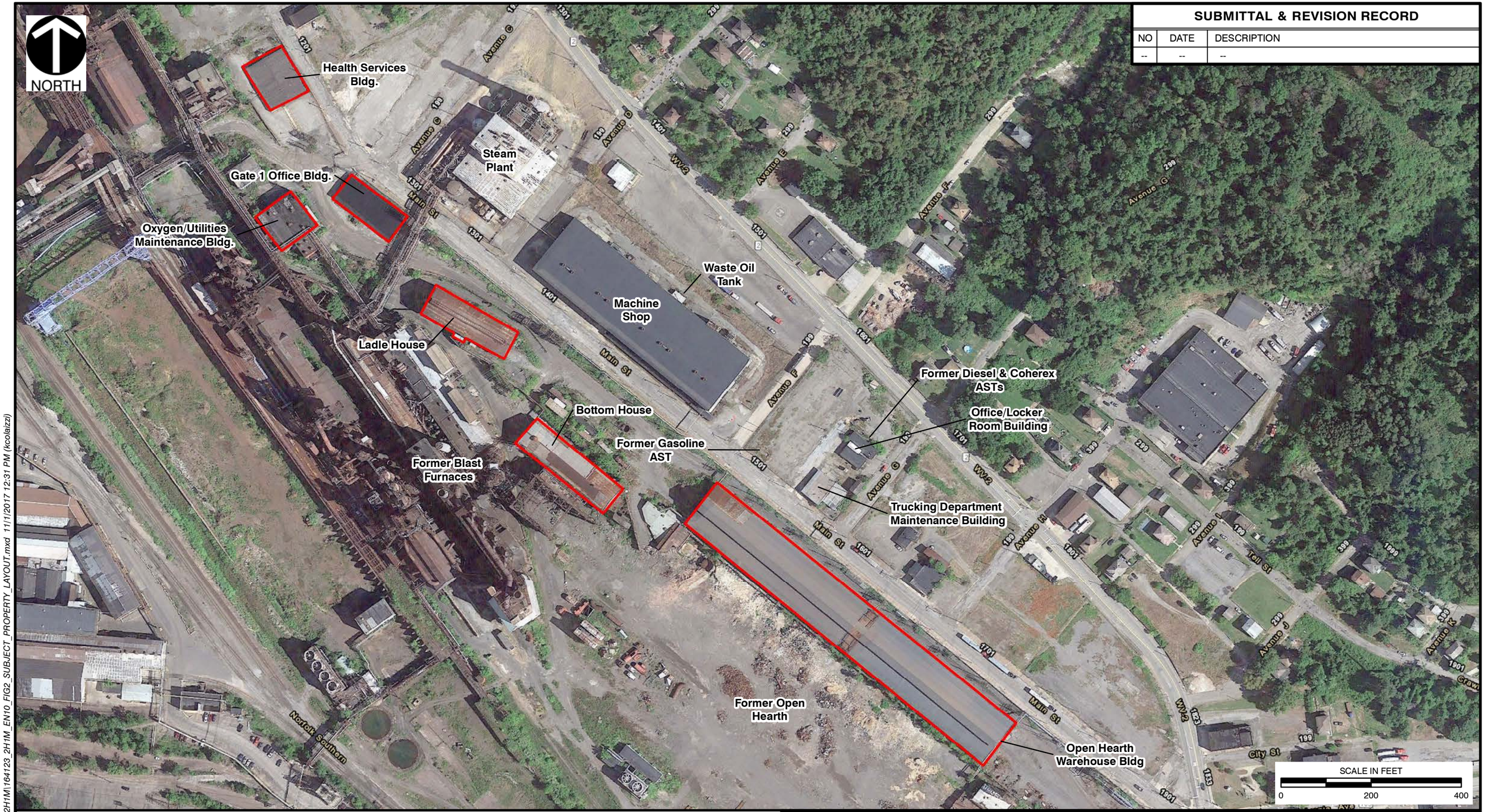


LEGEND

APPROXIMATE SUBJECT PROPERTY

REFERENCE

1. AERIAL PHOTOGRAPHY COPYRIGHT GOOGLE EARTH PRO, EXPORTED 02/16/2017 IMAGERY DATE 08/21/2015.

Civil & Environmental Consultants, Inc.
4000 Triangle Lane, Suite 200 - Export, PA 15632
724-327-5200 • 800-899-3610
www.cecinc.com

BUSINESS DEVELOPMENT CORPORATION OF THE NORTHERN PANHANDLE
WEIRTON NORTH PROPERTY
WEIRTON, HANCOCK COUNTY, WEST VIRGINIA

SUBJECT PROPERTY LAYOUT MAP

DRAWN BY:	KMC	CHECKED BY:	EAS	APPROVED BY:	DRAFT*	FIGURE NO:	2
DATE:	11/01/2017	SCALE:	1 " = 200 '	PROJECT NO:	164-123.2H1M	* Hand signature on file	

P:\2016\164-123\GIS\Maps\EN10_2H1M\164123_2H1M_EN10_FIG2_SUBJECT_PROPERTY_LAYOUT.mxd 11/1/2017 12:31 PM (kcolaizzi)

APPENDIX A

EXCERPT FROM ASBESTOS SURVEY REPORT

Mid-Atlantic Environmental Consultants

MINGO JUNCTION STEEL WORKS
NORTH END BUILDINGS
BOTTOM STOVE BUILDING
WEIRTON, WEST VIRGINIA
(HANCOCK COUNTY)

ASBESTOS SURVEY REPORT

MID ATLANTIC JOB NUMBER: CEC-17-21

OCTOBER 2017

PREPARED FOR:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
4000 TRIANGLE LANE
SUITE 200
EXPORT, PA 15632

PREPARED BY:

MID ATLANTIC ENVIRONMENTAL CONSULTANTS, INC.
5320 N. PIONEER ROAD
GIBSONIA, PA 15044
(724) 444-3460 – OFFICE
(724) 444-3463 – FAX
midatlantic@zoominternet.net – EMAIL

Mid-Atlantic Environmental Consultants

5320 North Pioneer Road
Gibsonia, PA 15044
Phone: 724-444-3460
Fax: 724-444-3463
Email: midatlantic@zoominternet.net

November 2, 2017

Civil & Environmental Consultants
4000 Triangle Lane
Suite 200
Export, PA 15632

Attn: Mr. Dave Olson

Re: Summary of Asbestos Building Survey – Bottom Stove Building

To Whom It May Concern:

On Thursday, October 19th, 2017, Mid Atlantic Environmental Consultants, Inc. mobilized and implemented an asbestos demolition survey of the Former Bottom Stove Building located at the Mingo Junction Steel Facility (North End Buildings) in Weirton, West Virginia. The purpose of this survey was to identify any asbestos containing building materials that may impact the potential future demolition of the building. All visible and accessible suspect asbestos containing building materials were retrieved and analyzed by Polarized Light Microscopy (PLM) with dispersion staining techniques. An asbestos inspection report indicating the results of the survey is enclosed. Mr. Edgar King, an EPA / West Virginia Certified Asbestos Inspector, conducted all survey work. This survey and report are for informational purposes only and are based on the best available information at the time of the survey. The information is intended to provide a basis to solicit bids and develop a plan for abatement work. Additional ACMs may be present which are not able to be identified during the survey. Once abatement and / or demolition activities begin and areas are exposed, additional ACMs may be discovered. A change in the scope of services to identify and categorize additional ACMs may be required.

We appreciate the opportunity to assist Civil & Environmental Consultants, Inc. with this project and look forward to assisting you on future assignments. Should you have any further questions or concerns do not hesitate to contact us at (724) 444-3460 or by e-mail at midatlantic@zoominternet.net.

Sincerely,

Edgar J. King
Asbestos Building Inspector
WV License # AI009156

Timothy E. Daniels
Managing Partner
WV License #: AD003952

North End Buildings - Former Bottom Stove Building

Mid Atlantic Environmental Consultants, Inc. (MAEC) was retained by Civil & Environmental Consultants, Inc. to conduct an asbestos demolition survey at the Former Bottom Stove Building located at the Mingo Junction Steel Facility (North End Buildings) in Weirton, West Virginia (Hancock County). Mid Atlantic representative Mr. Edgar King, accompanied by Mr. Dennis Smith, performed the visual inspection and collection of suspect asbestos containing building materials. Mr. King is an EPA / West Virginia Certified Asbestos Inspector (License #: AI009156).

At the time of Mid Atlantic's on-site investigation / asbestos survey, the Former Bottom Stove Building was un-occupied and in poor condition. There was no access to the rooftop at this time although it visually appeared to be the same metal as the rest of the building with no visible signs of tar. The building has been vacant for a number of years and some delamination of the existing building structure has occurred. MAEC's survey team, to the best of their ability, performed this asbestos survey for due diligence purposes given the existing conditions of the building. The purpose of this survey was to identify any suspect asbestos containing building materials that may impact planned future demolition of the building.

Bulk samples of suspect asbestos containing building materials were collected throughout the building. A total of nine (9) samples, (20) including splits were collected at this time. Of those samples, six (6) were identified as being ACM. An asbestos containing material is defined as any material containing greater than one percent (>1%) asbestos. For a summary of all identified ACM, refer to Table 1—Asbestos Containing Materials. The complete listing of materials sampled is indicated in Appendix A—Building Inspection Results. Refer to Appendix B- for Sample Location Diagram.

TABLE 1—ASBESTOS CONTAINING MATERIALS

MATERIAL	LOCATION	APPROX. QUANTITY	FRIABLE / NON-FRIABLE	ASBESTOS CONTENT
Black Tar Paper	Bottom Stove Building 12" Wrapped Lines	250 Ln Ft	Non-Friable	55 % Chrysotile
Grey Insulation	Bottom Stove Building 12" Wrapped Lines	250 Ln Ft	Friable	60 % Chrysotile

AmeriSci Laboratories of Richmond, Virginia analyzed the bulk samples by Polarized Light Microscopy (PLM) methods. PLM analysis utilizes dispersion staining techniques as described by the Environmental Protection Agency (EPA) Method 600/M4-82-020. Refer to Appendix C for laboratory analysis results.

All asbestos abatement work should be conducted by a licensed asbestos abatement contractor prior to implementing any demolition activity procedures. Prior to the initiation of any asbestos abatement work, ensure that all of the delegated state and local pollution control agencies in the area and / or the EPA regional office are notified.

Refer to appendices for further information.

Appendix A—Building Inspection Results

Appendix B—Sample Location Diagram

Appendix C—Laboratory Analysis Results

Appendix D—Accreditation

Should you have any further questions, feel free to contact our office at (724) 444-3460.

DISCLAIMER

DATE OF ISSUE— November 2, 2017

This asbestos survey report was prepared by Mid Atlantic Environmental Consultants, Inc. The purpose of this survey is to provide general information for the potential upcoming demolition project related to the Former Bottom Stove Building located at the Mingo Junction Steel Facility (North End Buildings) in Weirton, West Virginia regarding the presence of accessible and / or exposed building materials (including the rooftop) that commonly contain asbestos. There is the distinct possibility that conditions exist which could not be identified within the scope of the study or which were not apparent during the site visit. Unexposed and / or physically inaccessible areas are not warranteed in regards to this specific asbestos survey. No warranties expressed or implied are made by Mid Atlantic or its employees, as to the use of any information, apparatus, product or process, disclosed in this report. If project bidding is to be performed in regards to asbestos abatement, it is recommended that all potential abatement contractors re-quantify all given quantities provided in this report. All given quantities of building materials are approximations only. This report is provided for the sole purpose of identifying visible / accessible asbestos containing building materials as outlined herein.

Appendix A – Building Inspection Results

Mid Atlantic Environmental Consultants, Inc.
5320 N. Pioneer Road
Gibsonia, PA 15044
(724) 444-3460 *Phone* (724) 444-3463 *Fax*
Email: midatlantic@zoominternet.net

Building Inspection Results

Client: Civil & Environmental Consultants, Inc.
Project: Mingo Junction Steel Works – North End Buildings
Bottom Stove Building – Weirton, West Virginia
Job Number: CEC-17-21

Date: October 19, 2017
Inspector: Edgar King
EPA / West Virginia Lic. No: AI009156

SAMPLE	LOCATION	DESCRIPTION	APPROX QUANTITY	CONDITION	POTENTIAL FOR DAMAGE	ASBESTOS CONTENT
01A	Bottom Stove Building 4" Steam Lines	Black Tar Paper	460 Ln Ft (A)	Poor	High	None
01B	Bottom Stove Building 4" Steam Lines	White Insulation	(A)	Poor	High	None
02A	Bottom Stove Building 4" Steam Lines	Black Tar Paper	(A)	Poor	High	None
02B	Bottom Stove Building 4" Steam Lines	White Insulation	(A)	Poor	High	None
03A	Bottom Stove Building 4" Steam Lines	Black Tar Paper	(A)	Poor	High	None
03B	Bottom Stove Building 4" Steam Lines	White Insulation	(A)	Poor	High	None
04A	Bottom Stove Building 4" Steam Lines	Black Tar Paper	(A)	Poor	High	None
04B	Bottom Stove Building 4" Steam Lines	White Insulation	(A)	Poor	High	None
05A	Bottom Stove Building 4" Steam Lines	Black Tar Paper	(A)	Poor	High	None
05B	Bottom Stove Building 4" Steam Lines	White Insulation	(A)	Poor	High	None

Please be advised that the letter / symbol under the approximate quantities column denotes approximate duplicate quantities through-out this survey for that particular material.

Mid Atlantic Environmental Consultants, Inc.
5320 N. Pioneer Road
Gibsonia, PA 15044
(724) 444-3460 *Phone* (724) 444-3463 *Fax*
Email: midatlantic@zoominternet.net

Building Inspection Results

Client: Civil & Environmental Consultants, Inc.
Project: Mingo Junction Steel Works – North End Buildings
Bottom Stove Building – Weirton, West Virginia
Job Number: CEC-17-21

Date: October 19, 2017
Inspector: Edgar King
EPA / West Virginia Lic. No: AI009156

SAMPLE	LOCATION	DESCRIPTION	APPROX QUANTITY	CONDITION	POTENTIAL FOR DAMAGE	ASBESTOS CONTENT
06A	Bottom Stove Building 4" Steam Lines	Black Tar Paper	(A)	Poor	High	None
06B	Bottom Stove Building 4" Steam Lines	White Insulation	(A)	Poor	High	None
07A	Bottom Stove Building 12" Wrapped Lines	Black Tar Paper	250 Ln Ft (B)	Poor	High	55 %
07B	Bottom Stove Building 12" Wrapped Lines	Grey Insulation	(B)	Poor	High	60 %
07C	Bottom Stove Building 12" Wrapped Lines	Brown / Black Insulation	(B)	Poor	High	None
08A	Bottom Stove Building 12" Wrapped Lines	Black Tar Paper	(B)	Poor	High	55 %
08B	Bottom Stove Building 12" Wrapped Lines	Grey Insulation	(B)	Poor	High	60 %
09A	Bottom Stove Building 12" Wrapped Lines	Black Tar Paper	(B)	Poor	High	55 %
09B	Bottom Stove Building 12" Wrapped Lines	Grey Insulation	(B)	Poor	High	60 %
09C	Bottom Stove Building 12" Wrapped Lines	Brown / Black Insulation	(B)	Poor	High	None

Please be advised that the letter / symbol under the approximate quantities column denotes approximate duplicate quantities through-out this survey for that particular material.

ASBESTOS INSPECTION QUESTIONNAIRE

DATE of inspection: 10-19-17 INSPECTOR: Edgar Kings

CLIENT: CEC

LOCATION: Mingo Junction Steel (Former Bottom stove Bldg)

ADDRESS: Weirton W.V.

COUNTY: Hancock

Please circle one—

Purpose of survey: (Demolition) Renovation Real estate transaction Other
If other, explain _____

This survey is Complete (Limited)
If limited, explain Roof was Too high To Access Appeard to be metal Like Bldg siding

The building is currently Occupied (Unoccupied)

The general condition of the building is Good Fair (Poor)

Number of buildings included in the survey 1

Number of floors in the building 1

Main exterior building component (i.e. yellow brick, concrete block, etc...) Metal Siding

Please answer yes or no.

Was the basement included? NA Was the attic included? NA

Was the roof included? NO Access Is a map included? yes

Were any areas inaccessible? yes If yes, explain Roof was Too high

Were you accompanied by anyone yes If yes, who Dennis Smith

Were any commonly found materials, not present? (Floor tile, plaster, window caulking, etc...)? yes If yes, list and explain No Tile, Plaster, Caulking, Glazing

Any other important / relevant **observations**:

ASBESTOS INSPECTION QUESTIONNAIRE

DATE of inspection: 10-19-17 INSPECTOR: Edgar Rios

CLIENT: CEC

LOCATION: Mingo Junction steel North End Bldgs (Bottom stave Bldg)

ADDRESS: Weirton WV

COUNTY: Hancock

Please circle one—

Purpose of survey: (Demolition) Renovation Real estate transaction Other
If other, explain _____

This survey is Complete (Limited)
If limited, explain No Roof Access, Appeared to be all metal

The building is currently Occupied (Unoccupied)

The general condition of the building is Good Fair (Poor)

Number of buildings included in the survey 1

Number of floors in the building 1 1/2

Main exterior building component (i.e. yellow brick, concrete block, etc...) Metal Siding

Please answer yes or no.

Was the basement included? NA Was the attic included? NA

Was the roof included? NO Is a map included? yes

Were any areas inaccessible? yes If yes, explain Roof Too high to Access

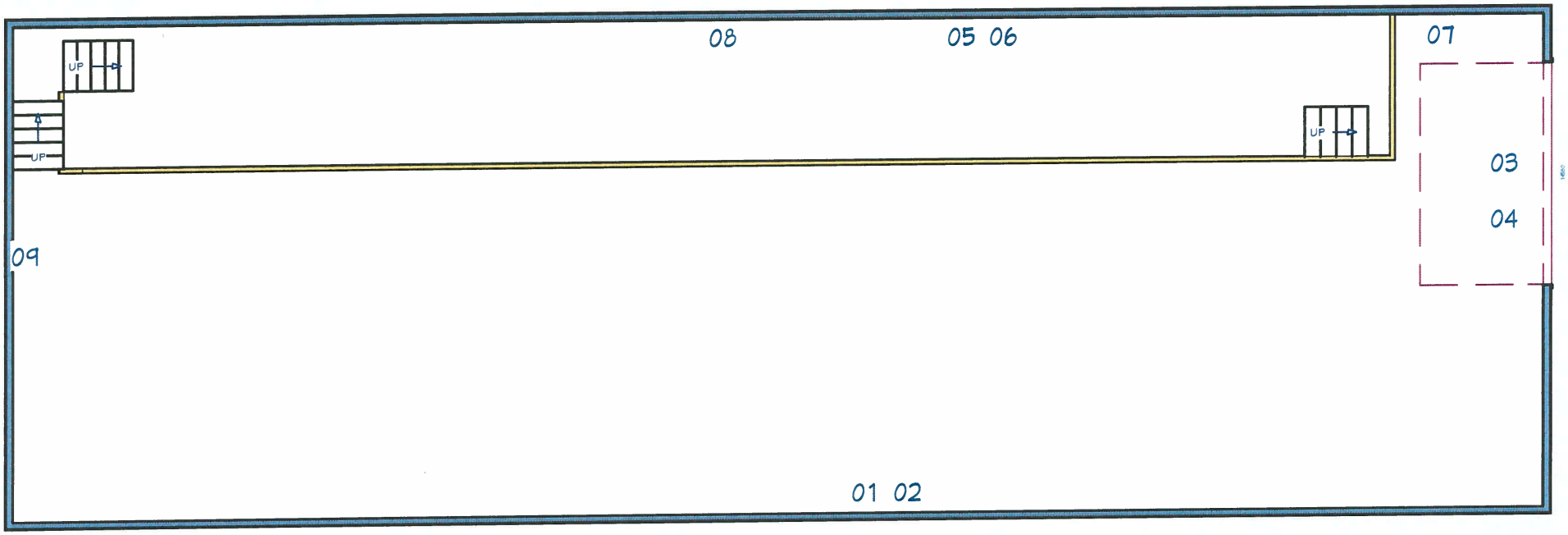
Were you accompanied by anyone yes If yes, who Dennis Smith

Were any commonly found materials, not present? (Floor tile, plaster, window caulking, etc...)? yes If yes, list and explain No Tile, Plaster, Window Caulking, Glazing

Any other important / relevant **observations**:

Appendix B – Sample Location Diagram

Mingo Junction Steel
Bottom Stove Building



Appendix C – Laboratory Analysis Results

Mid-Atlantic Environmental Consultants

5320 N. Pioneer Road
Gibsonia, PA 15044
Phone: 724-444-3460 Fax: 724-444-3463

117101 879

Chain of Custody Form

SAMPLE	LAB ID NUMBER	TYPE OF ANALYSIS	TURNAROUND TIME
01		PLM Asbestos	Standard
09			

Project Site: Mingo Junction Steel Mill Bottom Stove Bldg Sampler Signature: [signature] JN# CEC-17-21

Client / Address: CEC Phone: Fax:

Relinquished By: Edgar King Date: 10-20-17 Time: 0600

Relinquished By: Ashley Burd Date: 10/20/17 Time: 8:05am

Received By (AmeriSci) Date: Time:

Additional Information:

- ***Please indicate Mid Atlantic's job # on all results and invoices***
- ***Email results to midatlantic@zoominternet.net***

RECEIVED
OCT 23 2017
By ARW

Please Reply To:

AmeriSci Richmond
13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: (804) 763-1200 • FAX: (804) 763-1800

FACSIMILE TELECOPY TRANSMISSION

To: Tim Daniels
Mid Atlantic Environmental Consultants, Inc
Fax #:
Email: MIDATLANTIC@ZOOMINTERNET.NET

From: John S. Shearwood
AmeriSci Job #: 117101879
Subject: PLM 5 day Results
Client Project: CEC-17-21; CEC; Mingo Junction Steel Weirton Bottom Stove Bldg

Date: Saturday, October 28, 2017
Time: 09:22:30
Comments:

Number of Pages: 7 (including cover sheet)

AmeriSci Richmond
13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: (804) 763-1200 • FAX: (804) 763-1800

PLM Bulk Asbestos Report

Mid Atlantic Environmental Consultants,
Attn: Tim Daniels
5320 North Pioneer Road

Gibsonia, PA 15044

Date Received 10/23/17
Date Examined 10/28/17

AmeriSci Job # 117101879
P.O. #

RE: CEC-17-21; CEC; Mingo Junction Steel Weirton Bottom Stove Bldg

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
01	117101879-01L1	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 4" Steam Lines		
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper		
	Asbestos Types:		
	Other Material: Cellulose 60 %, Non-fibrous 40 %		
01	117101879-01L2	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 4" Steam Lines		
	Analyst Description: White, Heterogeneous, Fibrous, Insulation		
	Asbestos Types:		
	Other Material: Cellulose 40 %, Non-fibrous 60 %		
02	117101879-02L1	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 4" Steam Lines		
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper		
	Asbestos Types:		
	Other Material: Cellulose 60 %, Non-fibrous 40 %		
02	117101879-02L2	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 4" Steam Lines		
	Analyst Description: White, Heterogeneous, Fibrous, Insulation		
	Asbestos Types:		
	Other Material: Cellulose 40 %, Non-fibrous 60 %		
03	117101879-03L1	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 4" Steam Lines		
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper		
	Asbestos Types:		
	Other Material: Cellulose 60 %, Non-fibrous 40 %		

See Reporting notes on last page

PLM Bulk Asbestos Report

CEC-17-21; CEC; Mingo Junction Steel Weirton Bottom Stove Bldg

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
03	117101879-03L2 **Location:** Bottom Stove Bldg 4" Steam Lines	***No***	NAD (by CVES) by John S. Shearwood on 10/28/17
	Analyst Description: White, Heterogeneous, Fibrous, Insulation **Asbestos Types:** **Other Material:** Cellulose 40 %, Non-fibrous 60 %		
04	117101879-04L1 **Location:** Bottom Stove Bldg 4" Steam Lines	***No***	NAD (by CVES) by John S. Shearwood on 10/28/17
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper **Asbestos Types:** **Other Material:** Cellulose 60 %, Non-fibrous 40 %		
04	117101879-04L2 **Location:** Bottom Stove Bldg 4" Steam Lines	***No***	NAD (by CVES) by John S. Shearwood on 10/28/17
	Analyst Description: White, Heterogeneous, Fibrous, Insulation **Asbestos Types:** **Other Material:** Cellulose 40 %, Non-fibrous 60 %		
05	117101879-05L1 **Location:** Bottom Stove Bldg 4" Steam Lines	***No***	NAD (by CVES) by John S. Shearwood on 10/28/17
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper **Asbestos Types:** **Other Material:** Cellulose 60 %, Non-fibrous 40 %		
05	117101879-05L2 **Location:** Bottom Stove Bldg 4" Steam Lines	***No***	NAD (by CVES) by John S. Shearwood on 10/28/17
	Analyst Description: White, Heterogeneous, Fibrous, Insulation **Asbestos Types:** **Other Material:** Cellulose 40 %, Non-fibrous 60 %		
06	117101879-06L1 **Location:** Bottom Stove Bldg 4" Steam Lines	***No***	NAD (by CVES) by John S. Shearwood on 10/28/17
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper **Asbestos Types:** **Other Material:** Cellulose 60 %, Non-fibrous 40 %		

See Reporting notes on last page

PLM Bulk Asbestos Report

CEC-17-21; CEC; Mingo Junction Steel Weirton Bottom Stove Bldg

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
06	117101879-06L2	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 4" Steam Lines		
	Analyst Description: White, Heterogeneous, Fibrous, Insulation **Asbestos Types:** **Other Material:** Cellulose 40 %, Non-fibrous 60 %		
07	117101879-07L1	*Yes*	55 % (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper **Asbestos Types:** Chrysotile 55.0 % **Other Material:** Non-fibrous 45 %		
07	117101879-07L2	*Yes*	60 % (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Gray, Heterogeneous, Fibrous, Insulation **Asbestos Types:** Chrysotile 60.0 % **Other Material:** Non-fibrous 40 %		
07	117101879-07L3	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Brown/Black, Heterogeneous, Fibrous, Insulation **Asbestos Types:** **Other Material:** Animal hair 80 %, Cellulose 20 %		
08	117101879-08L1	*Yes*	55 % (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper **Asbestos Types:** Chrysotile 55.0 % **Other Material:** Non-fibrous 45 %		
08	117101879-08L2	*Yes*	60 % (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Gray, Heterogeneous, Fibrous, Insulation **Asbestos Types:** Chrysotile 60.0 % **Other Material:** Non-fibrous 40 %		

See Reporting notes on last page

PLM Bulk Asbestos Report

CEC-17-21; CEC; Mingo Junction Steel Weirton Bottom Stove Bldg

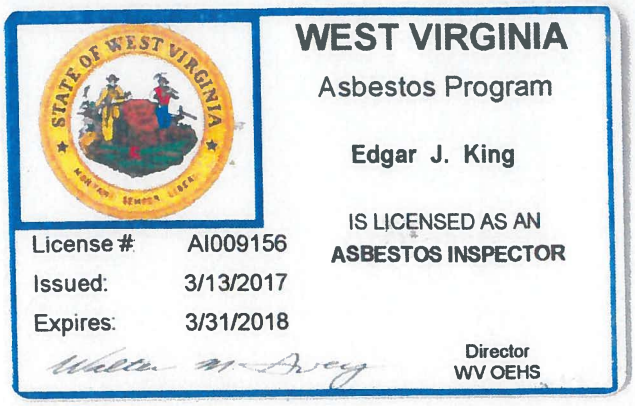
Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
09	117101879-09L1	*Yes*	55 % (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Black, Heterogeneous, Non-Fibrous, Tar Paper		
	Asbestos Types: Chrysotile 55.0 %		
	Other Material: Non-fibrous 45 %		
09	117101879-09L2	*Yes*	60 % (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Gray, Heterogeneous, Fibrous, Insulation		
	Asbestos Types: Chrysotile 60.0 %		
	Other Material: Non-fibrous 40 %		
09	117101879-09L3	*No*	NAD (by CVES) by John S. Shearwood on 10/28/17
	Location: Bottom Stove Bldg 12" Wrapped Lines		
	Analyst Description: Brown/Black, Heterogeneous, Non-Fibrous, Insulation		
	Asbestos Types:		
	Other Material: Animal hair 80 %, Cellulose 20 %		

Reporting Notes:

Analyzed by: John S. Shearwood John S. Shearwood Date: 10/28/2017 Reviewed by: John S. Shearwood

*NAD = no asbestos detected, Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) and ELAP PLM Analysis Protocol 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). This PLM report relates ONLY to the items tested.

Appendix D – Accreditation



WEST VIRGINIA

Asbestos Program

Edgar J. King

IS LICENSED AS AN

ASBESTOS INSPECTOR

License # AI009156

Issued: 3/13/2017

Expires: 3/31/2018

Director
WV OEHS

WEST VIRGINIA

Asbestos Program

Timothy E. Daniels

IS LICENSED AS AN

ASBESTOS PROJECT DESIGNER

License #: AD003952

Issued: 10/10/2017

Expires: 10/31/2018

Director
WV OEHS

WEST VIRGINIA

Asbestos Program

Mid-Atlantic Environmental Consultants, Inc.

IS LICENSED AS AN

ASBESTOS LABORATORY - AIR AND BULK

License #: LT000563

Issued: 5/31/2017

Expires: 5/31/2018

Director
WV OEHS

State of West Virginia

Bureau for Public Health
Office of Environmental Health Services
Radiation, Toxics and Indoor Air Division

This is to certify that

Mid-Atlantic Environmental Consultants

5320 N. Pioneer Road

Gibsonia, PA 15044

Has complied with Chapter 16, Article 32, of the Asbestos Abatement Licensing Rules and Regulations and is hereby licensed as an Asbestos Air and Bulk Sample Analytical Laboratory.

Asbestos Laboratory License Number:

LT000563

Issued: **5/31/2017** ***Expires:*** **5/31/2018**

Walter M. Ivey

Walter M. Ivey, Director
Office of Environmental Health Services

APPENDIX B

CONTRACTOR COST ESTIMATES