



January 25, 2024

Ms. Lisa Dunning  
Task Order Contracting Officer's Representative (TOCOR)  
U.S. Environmental Protection Agency, Region 7  
11201 Renner Boulevard  
Lenexa, Kansas 66219

**Subject: Contract 68HERH19D0018; Task Order 68E0719F0190  
Elkem Carbide Site, 365 Carbide Lane, Keokuk, Lee County, Iowa  
Targeted Brownfields Assessment, Hazardous Materials Survey**

Dear Ms. Dunning:

Toeroek Associates, Inc. (Toeroek) and our teaming subcontractor, Tetra Tech, Inc. (Tetra Tech) (hereafter, the "Toeroek Team") are pleased to present the attached Hazardous Materials Survey of the Elkem Carbide Site at 365 Carbide Lane in Keokuk, Lee County, Iowa. This deliverable has been reviewed internally as part of both Tetra Tech's and Toeroek's quality assurance programs; it is also consistent with Toeroek's quality management plan for the Resource Conservation and Recovery Act (RCRA) Enforcement and Permitting Assistance (REPA) contract. Documentation of this review is retained in the Toeroek Team's project files.

If you have any questions or comments, please contact Greg Hanna at 720-898-4102 or Kaitlyn Mitchell at 816-412-1742.

Sincerely,

Greg Hanna  
Toeroek Team Program Manager

Kaitlyn Mitchell  
Toeroek Team Project Manager

Enclosure: Hazardous Materials Survey

cc: Amber Krueger, EPA Region 7 (cover letter only)  
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**TARGETED BROWNFIELDS ASSESSMENT  
HAZARDOUS MATERIALS SURVEY**

**ELKEM CARBIDE  
365 CARBIDE LANE  
KEOKUK, LEE COUNTY, IOWA**



**Prepared for:**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION 7**

Task Order	:	68E0719F0190
Subtask	:	16.05
EPA Region	:	7
Date Prepared	:	January 25, 2024
Contract No.	:	68HERH19D0018
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## 1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked Toeroek Associates, Inc. (Toeroek) and its teaming subcontractor, Tetra Tech, Inc. (Tetra Tech) (hereafter, the “Toeroek Team”) to provide technical support to the EPA Region 7 Brownfields Program under Contract Number (No.) 68HERH19D0018, Task Order No. 68E0719F0190. Specifically, EPA Region 7 requested the Toeroek Team conduct a hazardous materials survey (the “Survey”) as part of a Targeted Brownfields Assessment (TBA) of the former Elkem Carbide site (the “Site”) at 365 Carbide Lane in Keokuk, Lee County, Iowa. This Hazardous Materials Survey (HMS) report only addresses the former Foundry Building and Boiler Building located on the Site; eight other buildings are present on the Site and were previously surveyed. Sampling locations are depicted on Figure 1, and building locations are depicted on Figure 2 in [Appendix A](#).

Construction of the Site buildings occurred prior to 1978; therefore, asbestos-containing materials (ACM) and lead-based paint (LBP) likely were used during construction. Additionally, caulk-containing polychlorinated biphenyls (PCBs) may have been used during construction. The scope of this Survey included an inspection of the Foundry Building and Boiler Building for the presence of ACM, LBP, and PCBs in caulk. The Toeroek Team also conducted a Phase II Environmental Site Assessment (ESA); the associated report, will be provided under separate cover.

The Toeroek Team conducted the Survey on November 7 and 8, 2023; [Appendix B](#) includes a photographic documentation log of observations made during the Survey effort. Prior to the Survey effort, on July 19, 2023, the Toeroek Team submitted a site-specific quality assurance project plan (QAPP) in support of planned Survey activities to EPA. EPA approved the QAPP on August 3, 2023 (Toeroek Team 2023). The Toeroek Team’s Project Manager was Ms. Kaitlyn Mitchell, and Ms. Macy La Masney was the Field Team Leader. Mr. Geoffrey Jay, an Iowa-licensed asbestos and lead inspector, conducted the Survey. The field team consisted of Ms. La Masney and Mr. Jay—inspector certifications are in [Appendix C](#). Based on the Survey conducted, the Toeroek Team concludes that prior to any renovations or demolition of the Foundry Building and Boiler Building, additional building material characterization work may be needed to comply with all local, state, and federal requirements regulating ACM and LBP.

The purpose of the ACM portion of this Survey was to evaluate the Foundry Building and Boiler Building for the presence, quantity, locations, and characterization of ACM that may require abatement prior to any development activities per National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as adopted by EPA. The NESHAP regulations protect the public (and workers) by minimizing release of asbestos fibers during activities involving processing, handling, or disposal of ACM; inhalation

of asbestos fibers can cause cancer and other lung diseases (Agency for Toxic Substances and Disease Registry [ATSDR] 2008). This Survey accorded with industry standard practice for hazardous materials surveys, and sampling of suspected ACM accorded with NESHAP regulations as adopted by EPA.

The Toeroek Team also screened for the presence, quantity, and locations of LBP as part of this Survey; if present, LBP would require Occupational Safety and Health Administration (OSHA) worker safety precautions during development activities at the Foundry Building and Boiler Building. The LBP portion of this Survey proceeded according to protocols resembling the single-family housing inspection procedures in the U.S. Department of Housing and Urban Development (HUD) guidelines (HUD 2012). The Toeroek Team screened paint-covered surfaces using an X-ray fluorescence (XRF) spectrometer.

PCBs may be present in caulk associated with windows, doors, masonry columns, and roofing materials. The Toeroek Team did not observe any caulk suspected to contain PCBs; therefore, no samples of suspect PCB-containing caulk were collected.

This HMS report consists of the following sections:

- [Section 2.0](#) Subject Property Buildings;
- [Section 3.0](#) ACM Field Survey and Analytical Protocols;
- [Section 4.0](#) LBP Screening and Analytical Protocols;
- [Section 5.0](#) PCB Field Survey and Analytical Protocols;
- [Section 6.0](#) ACM Findings;
- [Section 7.0](#) LBP Findings;
- [Section 8.0](#) Findings and Recommendations;
- [Section 9.0](#) Assumptions and Deviations; and
- [Section 10.0](#) References.

The Toeroek Team prepared this HMS report in accordance with generally accepted industrial hygiene practices and procedures. This HMS report does not cover unassessed structural areas, either visibly or by sample collection. Furthermore, the data evaluation and assessment stated herein constitute a professional opinion; no other warranty is expressed or implied. Additionally, the Toeroek Team provided its services per the level and skill ordinarily exercised by members of the profession currently practicing under similar

conditions—this statement is in lieu of other statements, either expressed or implied. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or reuse of this document, its findings, its conclusions, and its recommendations is at the risk of said user. Finally, this HMS report does not warrant against future operations or conditions that may not be consistent with its recommendations. Because of limitations on destructive sampling during the Survey effort, completion of this HMS report does not guarantee identification of all ACMs, LBP, or PCBs in caulk. Hazardous materials may be present in voids of walls, ceilings, or other concealed areas.

## 2.0 SUBJECT PROPERTY BUILDINGS

The Site is within an area characterized by mixed land use including industrial, commercial, agricultural, and residential properties, with the nearest residence approximately 250 feet to the southeast. The Site encompasses approximately 26 acres of a larger 79-acre parcel of land and hosts the Foundry Building and the Boiler Building. The Foundry Building was initially constructed in 1964. Multiple additions have occurred, including a 3,500-square-foot addition in 1964, a 1,750-square-foot warehouse addition in 1990, and a 1,100-square-foot warehouse addition in 1995, totaling approximately 35,440 square feet. An approximately 200-square-foot Boiler Building was constructed just north of the Foundry Building; the initial construction date is unknown. The Site also includes eight other buildings that were not surveyed as part of this HMS report. The other eight buildings present on the Site were previously surveyed.

Currently the Site is vacant. The Foundry Building is constructed of steel, sheet metal, and concrete. Interior finishes include concrete, metal, tile, and drywall walls. Flooring materials include vinyl floor tile and concrete. The Boiler Building is constructed of steel, and sheet metal, and concrete, and is not finished with any other materials.

### 3.0 ACM FIELD SURVEY AND ANALYTICAL PROTOCOLS

The Toeroek Team inspected all interior areas of the Foundry Building and Boiler Building for ACM. Minor demolition of materials (destructive sampling) was required during the Survey effort. The inspector took care to ensure the Site remained unoccupied during the Survey effort. Sampling of materials suspected to be ACM accorded with NESHAP regulations, as adopted by EPA, and the Asbestos Hazard and Emergency Response Act of 1986 (AHERA).

AHERA defines ACM as any material or product that contains more than 1 percent asbestos. The Toeroek Team grouped suspected ACM into homogeneous areas if the material was similar in appearance and texture; however, if the inspector decided that materials (for example, wall texturing) differed in appearance and texture from other materials, the inspector distinguished the materials as unique and collected samples of each material accordingly. Because of limitations on destructive sampling methods, additional suspect materials not sampled may be present in walls, voids, or other concealed areas.

The Toeroek Team collected bulk samples of suspected ACM in such a way as to ensure representation of each distinct layer of material in the sample. A wetting agent was applied to friable surfaces prior to suspect ACM sample collection to reduce potential for fiber release, and all samples were placed in plastic bags, labeled, and sealed immediately upon collection. To prevent cross-contamination between suspect ACM samples, the sampling instruments were wiped clean by use of a wet, lint-free cloth after collection of each sample.

Each suspect ACM sample received a unique sample identification number, and the samples remained in the inspector's custody until sent to the laboratory. Upon completion of sampling activities, the Toeroek Team shipped the bulk suspect ACM samples, along with chain-of-custody documentation, to Eurofins EMLab P&K Laboratories (Eurofins), a National Voluntary Laboratory Accreditation Program (NVLAP)-certified laboratory. Eurofins analyzed suspect ACM samples per EPA Method 600/R-93/116 via polarized light microscopy (PLM). Samples determined to contain less than 1 percent asbestos were further analyzed via EPA Point Count 400 (also EPA Method 600/R-93/116).

[Section 6.0](#) summarizes ACM analytical results, which are listed in [Table 1](#). Sample locations are shown on Figure 1 in [Appendix A](#), and [Appendix D](#) presents ACM analytical results and chain-of-custody forms for the bulk suspect ACM samples.

#### 4.0 LBP SCREENING AND ANALYTICAL PROTOCOLS

HUD's *Guidelines for the Evaluation and Control of LBP in Housing* (2012) (HUD Guidelines) suggests that paint applied before 1978 could contain lead; therefore, the Toeroek Team screened all areas of the Foundry Building via XRF for LBP on surfaces that could be affected during renovation activities. The XRF screenings of suspected LBP accorded with protocols resembling the single-family housing inspection procedures in the HUD Guidelines. The Boiler Building was not screened for LBP because no painted surfaces were observed.

The Toeroek Team utilized a Thermo Niton™ XL2 XRF spectrometer to perform these screenings. The Thermo Niton™ XL2 is an XRF spectrum analyzing system used for quantitative measurement of lead in paint on various substrates. The Toeroek Team used the XRF "Lead Paint Mode" for testing, standardized per the equipment instruction manual, and programmed the unit with an action level of 1.0 milligram per square centimeter (mg/cm<sup>2</sup>). Paint containing greater than or equal to 1.0 mg/cm<sup>2</sup> lead via XRF testing or laboratory analysis is considered LBP.

The Toeroek Team performed XRF calibration checks on the Thermo Niton™ XL2 XRF spectrometer according to the protocol recommended by the manufacturer and the HUD Guidelines. These quality control readings tracked performance of the Thermo Niton™ XL2 XRF spectrometer. The Toeroek Team took calibration-check readings at the beginning and end of the Survey using a Standard Reference Material paint film developed by the National Institute of Standards and Technology.

[Section 7.0](#) summarizes results from XRF screenings of painted surfaces at the Foundry Building, and [Table 2](#) lists screening results. Some LBP quantities in [Table 2](#) are combined to avoid duplicate quantities of commingled materials.

## **5.0 PCB FIELD SURVEY AND ANALYTICAL PROTOCOLS**

The Toeroek Team inspected all areas of the Foundry Building and Boiler Building for PCBs and did not observe any caulk suspected to contain PCBs; therefore, no samples were collected.

## 6.0 ACM FINDINGS

PLM results from samples analyzed for ACM appear in the laboratory report in [Appendix D](#) and are summarized in [Table 1](#). Bolded data in [Table 1](#) indicate samples containing asbestos at concentrations greater than 1 percent. Figure 1 in [Appendix A](#) shows sample locations.

**TABLE 1  
SUMMARY OF ANALYSIS FOR SUSPECT ACM  
ELKEM CARBIDE, KEOKUK, IOWA**

Figure Key	Sample ID	Material Description	Material Locations	Friable (F)/ Non-Friable (NF)	Analytical Result (% ACM) <sup>1</sup>	Estimated Quantity
<b>FOUNDRY BUILDING</b>						
1	ECF-DWJC-01	Drywall with Joint Compound and Brown Paper	Throughout Office Space	NA	ND	NA
2	ECF-DWJC-02					
3	ECF-DWJC-03					
4	ECF-CT1-01	2- X 4-Foot Smooth White Ceiling Tile	Throughout Eastern and Northern Offices	NA	ND	NA
5	ECF-CT1-02					
6	ECF-CT1-03					
7	ECF-VCB1-01	3-Inch Gray Vinyl Cove Base with Yellow Mastic	Eastern Offices	NA	ND	NA
8	ECF-VCB1-02					
9	ECF-VCB1-03					
10	ECF-CT2-01	2- X 4-Foot Ceiling Tile with Crevices	2 <sup>nd</sup> Floor Northwest Office	NA	ND	NA
11	ECF-CT2-02					
12	ECF-CT2-03					
13	ECF-VCB2-01	3-Inch Brown Vinyl Cove Base with Brown Mastic	Northern Offices	NA	ND	NA
14	ECF-VCB2-02					
15	ECF-VCB2-03					
16	ECF-VFT1-01	12- x 12-Inch Dark Gray Vinyl Floor Tile with Black Mastic	Eastern Offices	NA	ND	NA
17	ECF-VFT1-02					
18	ECF-VFT1-03					
19	ECF-PCC-01	White Popcorn Ceiling with Paper	2 <sup>nd</sup> Floor Northwest Office	NA	ND	NA
20	ECF-PCC-02					
21	ECF-PCC-03					
22	ECF-WC-01	Tan Fibrous Wall Covering	2 <sup>nd</sup> Floor Northwest Office	NA	ND	NA
23	ECF-WC-02					
24	ECF-WC-03					
25	ECF-GD-01	Gray Glue Dots	Behind Wall Covering, 2 <sup>nd</sup> Floor Northwest Office	NF	3% Chrysotile	200 SF
26	ECF-GD-02					
27	ECF-GD-03					
28	ECF-CWT-01	Ceramic Wall Tile	1 <sup>st</sup> Floor Restrooms	NA	ND	NA
29	ECF-CWT-02					
30	ECF-CWT-03					

**TABLE 1 — SUMMARY OF ANALYSIS FOR SUSPECT ACM (Continued)  
ELKEM CARBIDE, 365 CARBIDE LANE, KEOKUK, IOWA**

Figure Key	Sample ID	Material Description	Material Locations	Friable (F)/ Non-Friable (NF)	Analytical Result (% ACM) <sup>1</sup>	Estimated Quantity
<b>BOILER BUILDING</b>						
31	ECF-PI1-01	White Pipe Insulation (Elbows & Fittings)	Boiler Building	NA	ND	NA
32	ECF-PI1-02					
33	ECF-PI1-03					
34	ECF-PI2-01	White Pipe Insulation	Boiler Building	NA	ND	NA
35	ECF-PI2-02					
36	ECF-PI2-03					
<b>37</b>	<b>ECF-TI-01</b>	<b>White Tank Insulation</b>	<b>Boiler Building</b>	<b>F</b>	White Tank Insulation – ND <b>Black Mastic – 2%</b> <b>Chrysotile</b>	<b>100 SF</b>
<b>38</b>	<b>ECF-TI-02</b>					
<b>39</b>	<b>ECF-TI-03</b>					
<b>Assumed ACM</b>		<b>Roofing Materials</b>				<b>33,400 SF</b>
		<b>Cementitious Pipe Insulation</b>				<b>5,500 SF</b>
		<b>Fire Doors</b>				<b>5</b>

**Notes:**

The figure key corresponds to the sample key table on Figure 1 in [Appendix A](#).

**Bolded** result indicates where asbestos was detected at concentration greater than 1%; therefore, the sampled material is considered ACM.

Color description of a material may vary between field observation and laboratory description.

<sup>1</sup> AHERA defines ACM as any material or product that contains more than 1% asbestos.

%	Percent	ID	Identification
ACM	Asbestos-containing material	NA	Not applicable
AHERA	Asbestos Hazard and Emergency Response Act of 1986	ND	Not detected
EPA	U.S. Environmental Protection Agency	SF	Square feet

## 7.0 LBP FINDINGS

[Table 2](#) summarizes screening results for LBP by use of the XRF spectrometer. Bold data in [Table 2](#) indicate where LBP was detected at concentrations greater than or equal to 1.0 mg/cm<sup>2</sup>. Figure 1 in [Appendix A](#) shows positive LBP screening locations.

**TABLE 2  
 SUMMARY OF LBP SCREENING RESULTS  
 ELKEM CARBIDE, KEOKUK, IOWA**

XRF Screening No. <sup>1</sup>	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm <sup>2</sup> )	Damaged <sup>2</sup>	Estimated Quantity <sup>3</sup>
<b>FOUNDRY BUILDING</b>							
1	Cream	Exterior	Door	Metal	0.42	NA	NA
2	Cream	Exterior	Wall	Metal	0.03	NA	NA
<b>3</b>	<b>Yellow</b>	<b>Main Area</b>	<b>Support Beams</b>	<b>Metal</b>	<b>3.43</b>	<b>No</b>	<b>2,000 SF</b>
<b>4</b>	<b>Yellow</b>	<b>Main Area</b>	<b>Support Beams</b>	<b>Metal</b>	<b>3.33</b>	<b>Yes</b>	<b>2,000 SF</b>
5	Yellow	Eastern Offices	Stairs	Metal	0.01	NA	NA
<b>6</b>	<b>Yellow</b>	<b>Eastern Offices</b>	<b>Stair Railing</b>	<b>Metal</b>	<b>2.33</b>	<b>Yes</b>	<b>300 SF</b>
7	Gray	Eastern Offices	Door Trim	Wood	0.01	NA	NA
8	White	Eastern Offices	Wall	Drywall	0.01	NA	NA
9	Yellow	East End of Building	Ballard	Metal	0.43	NA	NA
<b>10</b>	<b>Yellow</b>	<b>Eastern End Exterior</b>	<b>Bollard</b>	<b>Metal</b>	<b>2.63</b>	<b>Yes</b>	<b>100 SF</b>
11	Yellow	Northeast End of Building	Ladder	Metal	0.01	NA	NA
<b>12</b>	<b>Red</b>	<b>Break Room</b>	<b>Door Frame</b>	<b>Metal</b>	<b>1.29</b>	<b>Yes</b>	<b>16 SF x 1 Door Frame</b>
13	Light Blue	Break Room	Wall	CMU	0.05	NA	NA
14	Tan	Break Room	Wall	CMU	0.18	NA	NA
15	White	Break Room	Wall	CMU	0.23	NA	NA
<b>16</b>	<b>Red</b>	<b>Janitor's Closet</b>	<b>Door Frame</b>	<b>Metal</b>	<b>1.96</b>	<b>Yes</b>	<b>16 SF x 1 Door Frame</b>
17	Blue	2 <sup>nd</sup> Floor North Offices	Wall	CMU	0.10	NA	NA
18	Cream	Exterior	Support Beam	Metal	0.10	NA	NA
19	Cream	Exterior	Support Beam	Metal	0.01	NA	NA
20	Cream	Exterior	Support Beam	Metal	0.08	NA	NA
21	Cream	Exterior	Support Beam	Metal	0.21	NA	NA

**Notes:**

**Bolded** results indicate presence of LBP at greater than or equal to 1% of the material.

<sup>1</sup> XRF reading numbers are in sequential order.

<sup>2</sup> If no damage is present before renovation, preliminary removal of chipping and peeling paint is unnecessary prior to encapsulation.

<sup>3</sup> Quantities of non-LBP are not required.

CMU Concrete masonry unit  
 LBP Lead-based paint  
 mg/cm<sup>2</sup> Milligrams per square centimeter  
 No. Number

NA Not applicable  
 SF Square feet  
 XRF X-ray fluorescence

## 8.0 FINDINGS AND RECOMMENDATIONS

The following findings and recommendations are based on observations made during the Survey effort and analytical results from samples collected at the Site:

### 8.1 ASBESTOS-CONTAINING MATERIAL (ACM)

This Survey identified ACM in the following materials:

- Glue dots (approximately 200 square feet [SF]) behind wall covering in the 2<sup>nd</sup> Floor northwest office within the Foundry Building; and
- White tank insulation (approximately 100 SF) in the Boiler Building.

In addition, five fire doors were observed throughout the Foundry Building, approximately 5,500 SF of cementitious pipe insulation, and approximately 33,400 SF of roofing materials are assumed ACM. These locations were not sampled because of concerns with structural damage and safety.

The ACM listed above should be removed by a licensed asbestos abatement contractor before demolition work disturbs the material. The removed waste must be transported to a disposal site approved to accept both friable and non-friable ACM. If the building is to be renovated and/or if plans do not include disturbing any of the above ACM materials, the ACM may remain in place.

### 8.2 LEAD-BASED PAINT (LBP)

Approximately 4,432 SF of assorted colors of LBP were on a variety of substrates throughout the Foundry Building—including support beams, stair railing, bollards, and door frames.

If the LBP surfaces are affected during renovations or demolition at the Foundry Building, the Toeroek Team recommends that the contractor conducting the renovations comply with the Occupational Safety and Health Administration (OSHA) lead in construction standard—Title 29 of the *Code of Federal Regulations* (CFR), Part 1926.62. If the materials containing LBP are removed during renovation activities, a sample should be collected from the debris pile for Toxicity Characteristic Leaching Procedure (TCLP) analysis (40 CFR 261.24). Representative samples should be collected and analyzed for all eight metals specified in 40 CFR Part 261.24 (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Laboratory results for TCLP and metals analyses would allow for determination of the proper method of disposal of the materials.

## 9.0 ASSUMPTIONS AND DEVIATIONS

The Toeroek Team inspected the interiors and exteriors of the Foundry Building and Boiler Building for suspected ACM, LBP, and PCB-containing caulk. Identified suspected asbestos-containing fire doors, approximately 5,500 SF of cementitious pipe insulation, and approximately 33,400 SF of roofing materials in the Foundry Building were not sampled to preserve the integrity of these materials. If any of the suspected asbestos-containing materials are to be disturbed during renovations or demolition, the Toeroek Team recommends these materials should be sampled to determine their asbestos content. All other areas of the Foundry Building and Boiler Building were inspected.

## 10.0 REFERENCES

- Agency for Toxic Substance and Disease Registry (ATSDR). 2008. “Asbestos: Health Effects.” Accessed December 13, 2012. [http://www.atsdr.cdc.gov/asbestos/asbestos/health\\_effects](http://www.atsdr.cdc.gov/asbestos/asbestos/health_effects)
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- Toeroek Associates, Inc. and Tetra Tech, Inc. (Toeroek Team). 2023. *Quality Assurance Project Plan, Phase II Environmental Site Assessment and Hazardous Materials Survey*. Elkem Carbide, 325 Carbide Lane, Keokuk, Iowa. August 2023.
- U.S. Department of Housing and Urban Development (HUD). 2012. *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*. Office of Healthy Homes and Lead Control. Second edition. July.

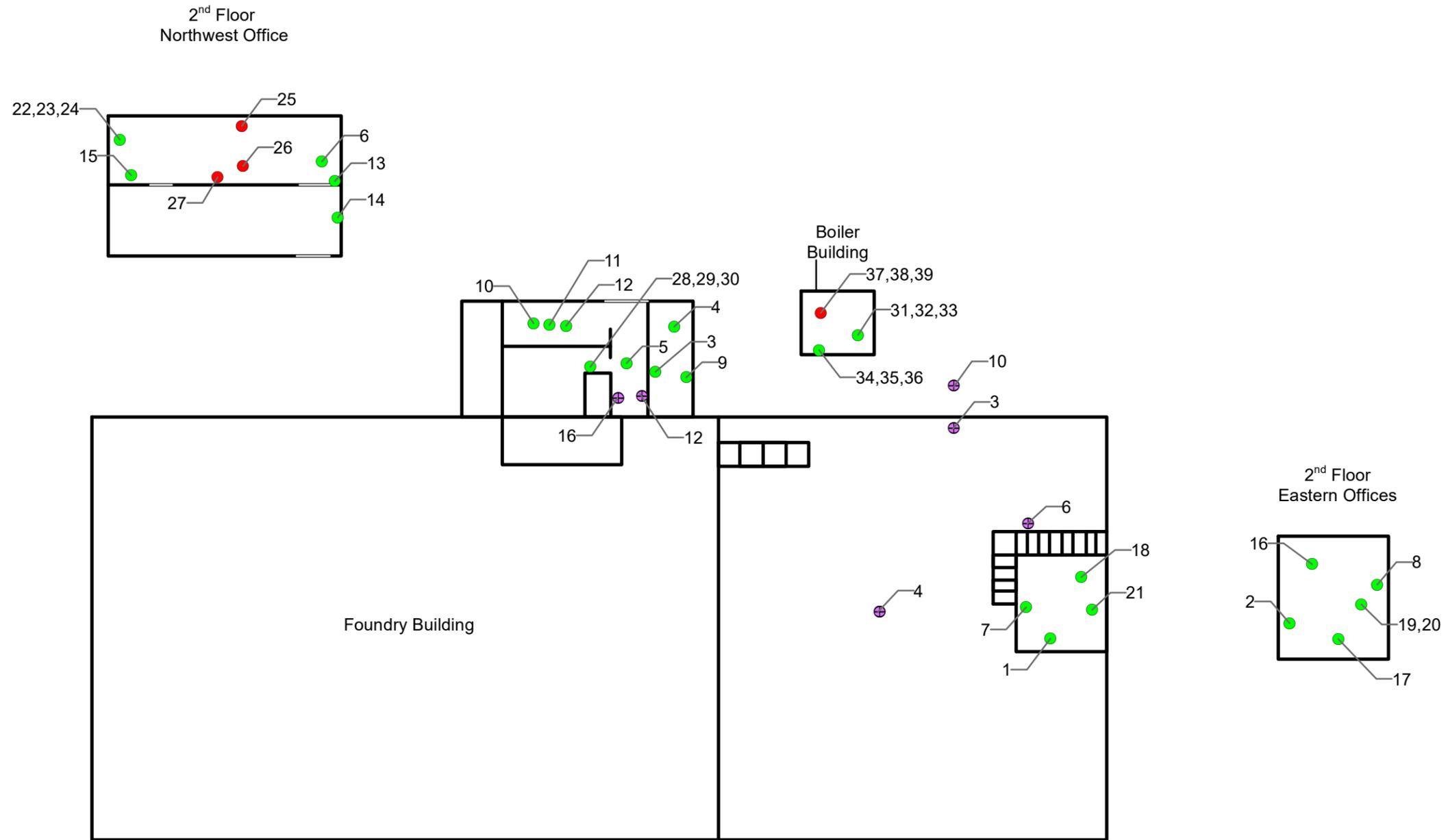
**APPENDIX A**

**FIGURES**

**FIGURE 1    SAMPLE LOCATION MAP**

**Sample Key Table**

Key	Sample No.
<b>Asbestos</b>	
1	EFC-DWJC-001
2	EFC-DWJC-002
3	EFC-DWJC-003
4	ECF-CT1-001
5	ECF-CT1-002
6	ECF-CT1-003
7	ECF-VCB1-001
8	ECF-VCB1-002
9	ECF-VCB1-003
10	ECF-CT2-001
11	ECF-CT2-002
12	ECF-CT2-003
13	ECF-VCB2-001
14	ECF-VCB2-002
15	ECF-VCB2-003
16	ECF-VFT1-001
17	ECF-VFT1-002
18	ECF-VFT1-003
19	ECF-PCC-001
20	ECF-PCC-002
21	ECF-PCC-003
22	ECF-WC-001
23	EFC-WC-002
24	ECF-WC-003
25	ECF-GD-001
26	ECF-GD-002
27	ECF-GD-003
28	ECF-CW1-001
29	ECF-CW1-002
30	ECF-CW1-003
31	ECF-PI1-001
32	ECF-PI1-002
33	ECF-PI1-003
34	ECF-PI2-001
35	ECF-PI2-002
36	ECF-PI2-003
37	ECF-TI-001
38	ECF-TI-002
39	ECF-TI-003



**Legend**

- Asbestos-Containing Material Sample Location
- Non-Asbestos-Containing Material Sample Location
- ⊕ Positive Lead-based Paint Screening Location

Elkem Carbide  
365 Carbide Lane  
Keokuk, Iowa

**Figure 1**  
Sample Location Map




Date: 1/15/2024
Drawn By: Susmita Shrestha
Project No: 103G65210190.16.01

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**FIGURE 2    SITE LAYOUT MAP**



**Legend**

 Boundary of the site	 Landfill (Closed in 1989)
 Boiler Building	 Sampling Lot - Phase II 2020 (Impact 7G)
 Foundry	
 Potential dumping site	



0 150 300



Feet

Elkem Carbide Site  
365 Carbide Lane  
Keokuk, Iowa

**Figure 2**  
Site Layout Map

	<b>TETRA TECH</b>		<b>TOEROEK ASSOCIATES, INC.</b>
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Date: 2/28/2023      Drawn By: Nick Wiederholt      Project No: 103P65210190.16.02

X:\P\65210190\16.02\Project\mxd\Figure2.mxd

**APPENDIX B**

**PHOTOGRAPHIC DOCUMENTATION LOG**

**Hazardous Materials Survey  
Photographic Documentation Log  
Elkem Carbide – Keokuk, Iowa**



SUBTASK NO. 016.05	DESCRIPTION	This photograph shows the Foundry Building on the Site.	PHOTOGRAPH NO: 1
	CLIENT	U.S. Environmental Protection Agency (EPA)	
DIRECTION: South-southeast	PHOTOGRAPHER	Macy La Masney	DATE: 11/7/23



SUBTASK NO. 016.05	DESCRIPTION	This photograph shows confirmed asbestos-containing material (ACM) black mastic associated with white tank insulation in the Boiler Building.	PHOTOGRAPH NO: 2
	CLIENT	EPA	
DIRECTION: Southwest	PHOTOGRAPHER	Macy La Masney	DATE: 11/7/23

**Hazardous Materials Survey  
Photographic Documentation Log  
Elkem Carbide – Keokuk, Iowa**



SUBTASK NO. 016.05	DESCRIPTION	This photograph shows yellow lead-based paint (LBP) on the metal support beams in the main area of the Foundry Building.	PHOTOGRAPH NO: 3
	CLIENT	EPA	DATE: 11/7/23
DIRECTION: Southwest	PHOTOGRAPHER	Macy La Masney	



SUBTASK NO. 016.05	DESCRIPTION	This photograph shows yellow LBP on the metal stair railing near the eastern offices in the Foundry Building.	PHOTOGRAPH NO: 4
	CLIENT	EPA	DATE: 11/7/23
DIRECTION: Southeast	PHOTOGRAPHER	Macy La Masney	

**Hazardous Materials Survey  
Photographic Documentation Log  
Elkem Carbide – Keokuk, Iowa**



SUBTASK NO. 016.05	DESCRIPTION	This photograph shows yellow LBP on the metal bollards on the exterior of the Foundry Building.	PHOTOGRAPH NO: 5
	CLIENT	EPA	
DIRECTION: South-southeast	PHOTOGRAPHER	Macy La Masney	DATE: 11/7/23



SUBTASK NO. 016.05	DESCRIPTION	This photograph shows assumed ACM cementitious pipe insulation on exterior ducts on the Foundry Building.	PHOTOGRAPH NO: 6
	CLIENT	EPA	
DIRECTION: South	PHOTOGRAPHER	Macy La Masney	DATE: 11/7/23

**APPENDIX C**  
**INSPECTOR CERTIFICATIONS**



**Missouri Department of Health  
and Senior Services**

Lead Occupation License - ID Badge

License Number:

190311-300005706

**Lead Risk Assessor**



**Stephen  
Knerr**

Expiration Date: **3/10/2025**

CERTIFICATION NUMBER:

**7001082823MOIR22403**

THIS CERTIFIES

**Macy A La Masney**

HAS COMPLETED THE CERTIFICATION

REQUIREMENTS FOR

**Inspector**



APPROVED: **09/11/2023**

TRAINING DATE: **08/28/2023**

EXPIRES: **09/11/2024**

A handwritten signature in black ink that reads "Stephen M. Hall". The signature is written in a cursive style.

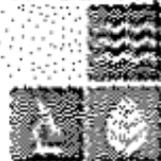
Director of Air Pollution Control Program

THE HOLDER OF THIS CARD IS CERTIFIED TO CONDUCT THE SPECIFIED OCCUPATION IN CONNECTION with an asbestos abatement project under the certification requirements, in RSMo. 10 CSR 10-6.250.

It is unlawful for any person to use this card other than the individual to whom it is issued or in any manner inconsistent with the law.

Violations of Missouri State Rule 10 CSR 10-6.080. "Emission Standards for Hazardous Air Pollutants," which adopts by reference 40 CFR, Part 61, Subpart M. the "National Emission Standards for Asbestos," are subject to fines of not more than \$10,000 per day per violation. This Missouri State Certification is subject to review and the director may deny, suspend or revoke this certification per RSMo. chapter 643.250.

If found, please return to:



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

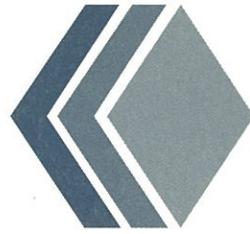
Air Pollution Control Program

P.O. Box 176

Jefferson City, MO 65102

Phone: (573)751-4817 Fax: (573)751-2706

[www.dnr.mo.gov/env/apcp](http://www.dnr.mo.gov/env/apcp)



**M·E·T·A**  
*Mayhew Environmental Training Associates*  
**INCORPORATED**

Certificate # D8AUG2P6X

**Stephen Knerr**

*has on 7/28/2023, in Lawrence, KS via Zoom  
completed the requirements for asbestos accreditation under Section 206 of TSCA Title II, 15 USC 2646*

**Asbestos Inspector Refresher**

*as approved by MO & the US EPA under 40 CFR 763 (AHERA) from 7/28/2023 to 7/28/2023  
and  
passed the associated exam on 7/28/2023 with a score of at least 70%*

Jamison Bear

Instructor

Thomas Mayhew

President



SSN: XXX-XX-9483

Expiration: 7/28/2024

P.O. Box 786 - Lawrence, KS. 66044 - 800.444.6382

[www.metaenvironmental.net](http://www.metaenvironmental.net)

**APPENDIX D**

**ACM ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS**

Report for:

**Mr. Jeffrey Mitchell**  
**Tetra Tech-KCMO**  
415 Oak Street  
Kansas City, MO 64106

---

Regarding: Eurofins EPK Built Environment Testing, LLC  
Project: Elkem Carbide; Asbestos Survey  
EML ID: 3448178

Approved by:



Approved Signatory  
Balu Krishnan

Dates of Analysis:  
Asbestos PLM: 11-13-2023

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)  
NVLAP Lab Code 200844-0

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Total Samples Submitted:** 39  
**Total Samples Analyzed:** 35  
**Total Samples with Layer Asbestos Content > 1%:** 2

**Location: ECF-DWJC-001, Drywall Joint Compound**

Lab ID-Version‡: 16793938-1

Sample Layers	Asbestos Content	Method
White Drywall with Brown Paper	ND	Asbestos PLM
White Joint Compound	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		10% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-DWJC-002, Drywall Joint Compound**

Lab ID-Version‡: 16793939-1

Sample Layers	Asbestos Content	Method
White Drywall with Brown Paper	ND	Asbestos PLM
White Joint Compound	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		10% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-DWJC-003, Drywall Joint Compound**

Lab ID-Version‡: 16793940-1

Sample Layers	Asbestos Content	Method
White Drywall with Brown Paper	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		10% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CT1-001, 2x4 Smooth White Ceiling Tile**

Lab ID-Version‡: 16793941-1

Sample Layers	Asbestos Content	Method
Gray Ceiling Tile	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		45% Mineral Wool 30% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

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Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-CT1-002, 2x4 Smooth White Ceiling Tile**

Lab ID-Version‡: 16793942-1

Sample Layers	Asbestos Content	Method
Gray Ceiling Tile	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		45% Mineral Wool 30% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CT1-003, 2x4 Smooth White Ceiling Tile**

Lab ID-Version‡: 16793943-1

Sample Layers	Asbestos Content	Method
Gray Ceiling Tile	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		45% Mineral Wool 30% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-VCB1-001, VCB 3" Gray**

Lab ID-Version‡: 16793944-1

Sample Layers	Asbestos Content	Method
Blue Cove Base	ND	Asbestos PLM
Yellow Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-VCB1-002, VCB 3" Gray**

Lab ID-Version‡: 16793945-1

Sample Layers	Asbestos Content	Method
Blue Cove Base	ND	Asbestos PLM
Yellow Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

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Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-VCB1-003, VCB 3" Gray**

Lab ID-Version‡: 16793946-1

Sample Layers	Asbestos Content	Method
Blue Cove Base	ND	Asbestos PLM
Yellow Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CT2-001, 2x4 Ceiling Tile White with Creavesases**

Lab ID-Version‡: 16793947-1

Sample Layers	Asbestos Content	Method
Gray Ceiling Tile	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Cellulose 30% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CT2-002, 2x4 Ceiling Tile White with Creavesases**

Lab ID-Version‡: 16793948-1

Sample Layers	Asbestos Content	Method
Gray Ceiling Tile	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Cellulose 30% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CT2-003, 2x4 Ceiling Tile White with Creavesases**

Lab ID-Version‡: 16793949-1

Sample Layers	Asbestos Content	Method
Gray Ceiling Tile	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Cellulose 30% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

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Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-VCB2-001, 3" Brown VCB**

Lab ID-Version‡: 16793950-1

Sample Layers	Asbestos Content	Method
Gray Cove Base	ND	Asbestos PLM
Brown Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-VCB2-002, 3" Brown VCB**

Lab ID-Version‡: 16793951-1

Sample Layers	Asbestos Content	Method
Gray Cove Base	ND	Asbestos PLM
Brown Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-VCB2-003, 3" Brown VCB**

Lab ID-Version‡: 16793952-1

Sample Layers	Asbestos Content	Method
Gray Cove Base	ND	Asbestos PLM
Brown Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-VFT1-001, 12x12 Dark Gray VFT**

Lab ID-Version‡: 16793953-1

Sample Layers	Asbestos Content	Method
Gray Floor Tile	ND	Asbestos PLM
Black Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

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Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-VFT1-002, 12x12 Dark Gray VFT**

Lab ID-Version‡: 16793954-1

Sample Layers	Asbestos Content	Method
Gray Floor Tile	ND	Asbestos PLM
Black Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-VFT1-003, 12x12 Dark Gray VFT**

Lab ID-Version‡: 16793955-1

Sample Layers	Asbestos Content	Method
Gray Floor Tile	ND	Asbestos PLM
Black Mastic	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PCC-001, White Popcorn Ceiling**

Lab ID-Version‡: 16793956-1

Sample Layers	Asbestos Content	Method
White Popcorn Ceiling with Paper	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		10% Cellulose < 1% Vermiculite
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PCC-002, White Popcorn Ceiling**

Lab ID-Version‡: 16793957-1

Sample Layers	Asbestos Content	Method
White Popcorn Ceiling with Paper	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		10% Cellulose < 1% Vermiculite
<b>Sample Composite Homogeneity:</b>		Good

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Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-PCC-003, White Popcorn Ceiling**

Lab ID-Version‡: 16793958-1

Sample Layers	Asbestos Content	Method
White Popcorn Ceiling with Paper	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		10% Cellulose < 1% Vermiculite
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-WC-001, Tan Fibrous Wall Covering**

Lab ID-Version‡: 16793959-1

Sample Layers	Asbestos Content	Method
Tan Fibrous Material	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		25% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-WC-002, Tan Fibrous Wall Covering**

Lab ID-Version‡: 16793960-1

Sample Layers	Asbestos Content	Method
Tan Fibrous Material	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		25% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-WC-003, Tan Fibrous Wall Covering**

Lab ID-Version‡: 16793961-1

Sample Layers	Asbestos Content	Method
Tan Fibrous Material	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		25% Cellulose
<b>Sample Composite Homogeneity:</b>		Good

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Client: Tetra Tech-KCMO  
 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-GD-001, Brown Glue Dots Behind Wall Covering**

Lab ID-Version‡: 16793962-1

Sample Layers	Asbestos Content	Method
Gray Glue Dots	3% Chrysotile	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Comments:** Samples in same HA Group not analyzed due to positive stop.

**Location: ECF-CWT-001, Tan Ceramic Wall Tile**

Lab ID-Version‡: 16793965-1

Sample Layers	Asbestos Content	Method
White Ceramic Tile	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CWT-002, Tan Ceramic Wall Tile**

Lab ID-Version‡: 16793966-1

Sample Layers	Asbestos Content	Method
White Ceramic Tile	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-CWT-003, Tan Ceramic Wall Tile**

Lab ID-Version‡: 16793967-1

Sample Layers	Asbestos Content	Method
White Ceramic Tile	ND	Asbestos PLM
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PII-001, White Pipe TSI Elbows + Fittings**

Lab ID-Version‡: 16793968-1

Sample Layers	Asbestos Content	Method
Gray Pipe Insulation	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

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Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
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**ASBESTOS COMBO REPORT**

**Location: ECF-PI1-002, White Pipe TSI Elbows + Fittings**

Lab ID-Version‡: 16793969-1

Sample Layers	Asbestos Content	Method
White Pipe Insulation	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PI1-003, White Pipe TSI Elbows + Fittings**

Lab ID-Version‡: 16793970-1

Sample Layers	Asbestos Content	Method
White Pipe Insulation	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PI2-001, White Pipe TSI**

Lab ID-Version‡: 16793971-1

Sample Layers	Asbestos Content	Method
Tan Pipe Insulation	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PI2-002, White Pipe TSI**

Lab ID-Version‡: 16793972-1

Sample Layers	Asbestos Content	Method
White Pipe Insulation	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Location: ECF-PI2-003, White Pipe TSI**

Lab ID-Version‡: 16793973-1

Sample Layers	Asbestos Content	Method
Tan Pipe Insulation	ND	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

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 C/O: Mr. Jeffrey Mitchell  
 Re: Elkem Carbide; Asbestos Survey

Date of Sampling: 11-07-2023  
 Date of Receipt: 11-09-2023  
 Date of Report: 11-13-2023

**ASBESTOS COMBO REPORT**

**Location: ECF-TI-001, White Tank Insulation**

Lab ID-Version‡: 16793974-1

Sample Layers	Asbestos Content	Method
White Insulation	ND	Asbestos PLM
Black Mastic	2% Chrysotile	Asbestos PLM
<b>Composite Non-Asbestos Content:</b>		40% Mineral Wool
<b>Sample Composite Homogeneity:</b>		Good

**Comments:** Samples in same HA Group not analyzed due to positive stop.

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. Where PLM/calibrated visual estimate results have been reported, ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Where point count results have been reported, the analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".









New Jersey: 3000 Lincoln Drive East, Suite A, Marlton, NJ 08053 • (856) 871-1884  
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 SBF, CA: 9000 Shoreline Court, Suite 206, South San Francisco, CA 94093 • (650) 886-6633

**CONTACT INFORMATION**

Company: Tetra Tech, Inc. Address: 415 Oak Street, Kansas City, MO 64106  
 Contact: Jeffrey Mitchell Special Instructions: Stop on 1st Positive  
 Phone: (816) 412-1773

**PROJECT INFORMATION**

Project ID: Elkem Carbide  
 Project Description: Asbestos Survey  
 Project ZIP: 62632  
 Sampling Date & Time: 11-7-2023  
 PO Number: Sampled By: Geoffrey Jay

**TURN AROUND TIME CODES (TAT)**

Sample ID	Description	Sample Type (Matrix)	TAT (Above)	Total Volume (All Samples only)	Notes
TI-001	White Talc Asbestos	B	STD	NA	Stop on 1st Positive
602		B	STD	NA	Stop on 1st Positive
603		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive
		B	STD	NA	Stop on 1st Positive

\*Please call Clean Services for locations with Rush services  
 Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

**ASBESTO**

**REQUESTED SERVICES (Check boxes below)**

	PCM Air	PLM			Rock & Soil	Other Requests
		Bulk	Bulk	Bulk		
Fiber Count (NIOSH 7400)						
OSHA with TWA						
EPA Method 600/R-93/116	X					
EPA Point Count (200 Point Count)	X					
EPA Point Count (400 Point Count)	X					
EPA Point Count (1000 Point Count)	X					
Gravimetric Point Count	X					
CARB 435 Method (Pre-crushed Sample)	X					
CARB 435 Method (Regular Sample)	X					
Lead Analysis	X					

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**SAMPLE TYPE CODES**

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R - Rock
SO - Soil	O - Other

RELINQUISHED BY: Geoffrey Jay  
 DATE & TIME: 11/7/23  
 RECEIVED BY: Jm 11/9/23  
 DATE & TIME:

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at <http://www.emlab.com/sample-services/chain-of-custody>  
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