



January 15, 2021

Mr. Bradley Roberts
Task Order Contracting Officer's Representative
U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd.
Lenexa, Kansas 66219

**Subject: Contract No. 68HERH19D0018; Task Order (TO) No. 68HE0719F0190
Cyclonic Building, 3201-3207 Locust Street, St. Louis, Missouri
Targeted Brownfields Assessment Hazardous Materials Survey**

Dear Mr. Roberts:

Toeroek Associates, Inc. (Toeroek) and our teaming subcontractor, Tetra Tech, Inc. (hereafter "Toeroek Team"), are pleased to present the attached Targeted Brownfields Assessment Hazardous Materials Survey of the Cyclonic Building site (the subject property) at 3201-3207 Locust Street in St. Louis, Missouri. The Toeroek Team has conducted this survey based on the findings of the Phase I ESA conducted by Terracon Consultants, Inc. at the subject property in October 2018. This deliverable has been reviewed internally as part of Tech Tech's quality assurance program, as well as Toeroek's quality assurance program, and is 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 Paul Kieler at 303-407-0266 or Kaitlyn Mitchell at 816-412-1742.

Sincerely,

Paul Kieler
Toeroek Team Program Manager

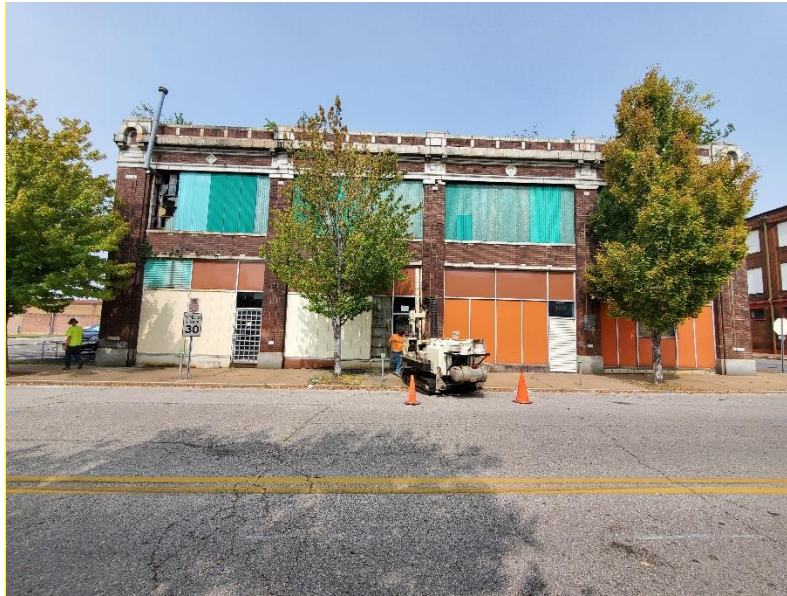
Kaitlyn Mitchell
Toeroek Team Project Manager

Enclosure: Targeted Brownfields Assessment Hazardous Materials Survey

cc: Leeanna Balsley, EPA Region 7 (cover letter only)
Lisa Dunning, EPA Region 7
Heather Wood, Tetra Tech
Toeroek Team Project Files

**TARGETED BROWNFIELDS ASSESSMENT
HAZARDOUS MATERIALS SURVEY**

**CYCLONIC BUILDING
3201-3207 LOCUST BOULEVARD, ST. LOUIS, MISSOURI**



Prepared for

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

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Prepared by	:	Toeroek Associates, Inc.
Project Manager	:	Kaitlyn Mitchell
Telephone	:	816-412-1742
EPA TOCOR	:	Bradley Roberts
Telephone	:	913-551-7279

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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. (hereafter “Toeroek Team”), with providing technical support to the EPA Region 7 Brownfields Program under Contract 68HERH19D0018, Task Order (TO) 68HE0719F0190. EPA Region 7 requested the Toeroek Team conduct a hazardous materials survey as part of a Targeted Brownfields Assessment (TBA) of the Cyclonic Building site (the Site) at 3201-3207 Locust Street in St. Louis, Missouri (see Appendix A, Figure 1). The 22,500-square-foot (SF) building, constructed in approximately 1932, has two stories and a full basement.

The scope of the survey included an inspection of the subject property building for presence of asbestos-containing building materials (ACM) and polychlorinated biphenyls (PCBs) in caulk, and lead-based paint (LBP). Additionally, an inventory was taken of containerized hazardous waste (HW) and other hazardous materials within the subject property building. As part of this survey, the Toeroek Team also conducted a Phase II Environmental Site Assessment (ESA), submitted under separate cover. Appendix B is a photo log of observations during the survey.

The Toeroek Team’s Project Manager for the survey was Ms. Kaitlyn Mitchell. The field team included Mr. Ryan Slanczka, State of Missouri-licensed asbestos and lead Inspector, and Ms. Stephanie Caples, State of Missouri-licensed asbestos inspector. Inspector certifications are in Appendix C. Section 12.0 specifies assumptions and deviations regarding the Survey at the subject property. Prior to any renovations or demolition of the subject property building, further survey work may be needed to comply with all local, state, and federal requirements regulating ACM, LBP, PCBs, or HW.

The Toeroek Team conducted the survey from September 14 through 18, 2020. The purpose of the asbestos survey was to evaluate the subject property building for presence, quantity, locations, and characterization of ACM that may require abatement prior to any development activities, in accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as adopted by EPA. The intent of the asbestos NESHAP regulations is to protect the public (and workers) by minimizing release of asbestos fibers during activities involving processing, handling, and disposal of ACM. Inhalation of asbestos fibers can cause cancer and other lung diseases (Agency for Toxic Substances and Disease Registry [ATSDR] 2008). The survey accorded with industry standard practice for hazardous materials surveys. Collection of samples of suspected ACM accorded with NESHAP regulations as adopted by EPA.

The Toeroek Team screened for presence, quantity, and locations of LBP exceeding lead hazard levels, which would require Occupational Safety and Health Administration (OSHA) worker safety precautions during development activities. The subject property building was constructed prior to 1978, and LBP was likely used in the build-out of the structure. The LBP survey proceeded according to protocols similar to the single-family housing inspection procedures in 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.

Because portions of the subject property building could have been constructed between 1950 and 1978, PCBs may be present within the subject property building in materials such as caulk associated with windows, doors, and masonry columns. The Toeroek Team collected samples from materials suspected to contain PCBs for laboratory analysis to determine presence, quantity, and locations of PCBs exceeding the action level, which would require OSHA worker safety precautions during development remodeling activities.

As part of the survey, the Toeroek Team also completed an inventory of HW and other hazardous materials within the subject property building. The inventory included, but was not limited to, the following types of materials: thermostats and fluorescent light bulbs possibly containing mercury, fluorescent light ballasts potentially containing PCBs, emergency lighting and exit signs that house batteries containing heavy metals, appliances containing Freon (e.g., old refrigerators), product containers holding hazardous materials (such as cleaning supplies, paints, etc.), and any other HW items that may have to be removed during renovation/demolition of the building. The Toeroek Team made every effort to provide a complete inventory of these items; however, given the large size of the subject property building and the disorderly distribution of these items inside the building, the Toeroek Team cannot guarantee an accounting of every item.

The Toeroek Team submitted a site-specific quality assurance project plan (QAPP) in support of survey activities to EPA on July 15, 2020. EPA approved the QAPP via email on August 20, 2020, prior to the survey at the subject property (Toeroek Team 2020). Field activities accorded with the QAPP, except where noted in Section 12.0.

The Toeroek Team prepared this report in accordance with generally accepted industrial hygiene practices and procedures. This report does not cover or comment on structural areas not assessed either visibly or by sample collection. The data evaluation and assessment stated herein constitute a professional opinion;

no other warranty is expressed or implied. Section 12.0 specifies assumptions and deviations regarding the survey at the subject property.

The Toeroek Team provided these services consistent with 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 re-use of this document, the findings, conclusions, or recommendations is at the risk of said user. This survey report does not warrant against future operations or conditions that may not be consistent with its recommendations. Moreover, because of some limitations on destructive sampling during the survey, completion of the Survey does not guarantee identification of all ACMs or PCBs—hazardous materials may be present in voids of walls, ceilings or other concealed areas.

Section 2.0 of this report describes the structure at the subject property. Section 3.0 specifies field and analytical protocols for the ACM survey. Section 4.0 specifies field and analytical protocols for the LBP screening. Section 5.0 presents field and analytical protocols for the PCB survey. Section 6.0 presents field protocols for the HW and hazardous materials inventory. Section 7.0 presents asbestos findings. Section 8.0 describes LBP findings. Section 9.0 conveys PCB findings. Section 10.0 describes HW and hazardous materials inventory findings. Section 11.0 offers recommendations based on survey findings. Section 12.0 specifies assumptions and deviations. Section 13.0 lists sources referenced during development of this report.

2.0 SUBJECT PROPERTY BUILDING

The subject property includes a two-story building, constructed in approximately 1932, with a full basement encompassing approximately 22,500 square feet (SF) (Terracon Consultants, Inc. [Terracon] 2018). The subject property building is constructed of brick, mortar, and concrete, and surrounded by urban development. Interior finishes include brick and mortar, concrete, and wood paneling walls. Flooring materials include marble floor tile, vinyl floor tile, and concrete. A full basement is present with boiler rooms.

3.0 ACM FIELD SURVEY AND ANALYTICAL PROTOCOLS

The Toeroek Team made every effort to inspect all areas of the interior of the subject property building. Minor demolition of materials (destructive sampling) was required during the survey effort. The inspector took care to ensure the subject property remained unoccupied during sample collection. Collection of suspect ACM samples accorded with NESHAP as adopted by EPA and Asbestos Hazard and Emergency Response Act of 1986 (AHERA) protocols. AHERA defines “asbestos-containing material” (ACM) as any material or product that contains more than 1 percent (%) asbestos. Suspected ACMs were grouped as homogeneous areas if the material was similar in appearance and texture; however, if the inspector decided a material (e.g., wall texturing) was not similar in appearance and texture to other materials in the subject property building, the inspector distinguished the material as unique and collected samples of each unique material accordingly. Because of limitations on destructive sampling methods, additional suspect materials not detected may be present in walls, voids, or other concealed areas. Section 12.0 specifies assumptions and deviations regarding the survey of the subject property building.

Bulk samples of suspected ACM were collected to ensure each distinct layer of material was represented in the sample. A wetting agent was applied to friable surfaces prior to sample collection to reduce potential for fiber release. All samples collected were placed in plastic bags, labeled, and sealed immediately upon collection. A unique sample identification number was assigned to each sample. To prevent cross-contamination between samples, the sampling instruments were wiped clean by use of a wet, lint-free cloth after collection of each sample.

The samples remained in the inspector’s custody until sent to the laboratory. Upon completion of sampling activities, the bulk samples were sent, along with the Toeroek Team’s chain-of-custody documentation, to Eurofins EMLab P&K Laboratories (Eurofins). Suspect ACM samples were analyzed per EPA Method 600/R-93/116 by Eurofins via polarized light microscopy (PLM) analysis. Samples determined by PLM analysis to contain less than 1% asbestos were analyzed via EPA Point Count 400 (EPA Method 600/R-93/116). Eurofins is a National Voluntary Laboratory Accreditation Program (NVLAP)-certified laboratory. Section 7.0 of this report summarizes ACM analytical results. Sample locations are shown on Figure 2 in Appendix A. Appendix D presents ACM analytical results and chain-of-custody forms for the bulk samples.

4.0 LBP SCREENING AND ANALYTICAL PROTOCOLS

The Toeroek Team made every effort to inspect all areas of the buildings. HUD *Guidelines for the Evaluation and Control of LBP in Housing* (2012) (HUD Guidelines) suggests paint applied before 1978 could contain lead.

An XRF screening of suspected LBP was performed according to protocols similar to the single-family housing inspection procedures in the HUD Guidelines. The Toeroek Team utilized an Innov-X 6000 Alpha Series analyzer to perform the LBP screening. The Innov-X 6000 Alpha Series is a state-of-the-art XRF spectrum analyzing system for quantitative measurement of lead in paint on various substrates. Toeroek Team performed XRF screening of suspect painted surfaces that possibly would be impacted during renovation activities.

The Toeroek Team utilized 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^2). Paint containing greater than or equal to 1.0 mg/cm^2 lead by XRF testing or 1.0 mg/cm^2 lead by laboratory analysis is considered LBP.

The Toeroek Team performed XRF calibration checks on the Innov-X 6000 XRF spectrometer according to Thermo Scientific’s recommended protocol and the HUD Guidelines. These quality control readings were used to monitor performance of the Innov-X 6000 XRF spectrometer. Calibration-check readings were taken at the beginning and end of operation from a Standard Reference Material (SRM) paint film, developed by the National Institute of Standards and Technology (NIST). Section 8.0 of this report summarizes results from XRF screening of painted surfaces at the subject property. Some LBP quantities in Table 2 may be combined to avoid duplicate quantity of commingled materials. Screening locations with positive results are shown on Figure 3 in Appendix A.

5.0 PCB FIELD SURVEY AND ANALYTICAL PROTOCOLS

The Toeroek Team made every effort to inspect all areas of the subject property building. Minor demolition of materials (destructive sampling) was required during the survey effort. The inspector took care to ensure the areas remained unoccupied during sample collection. Samples of caulk possibly containing PCBs were collected following EPA guidance. EPA has set an action level of 50 parts per million (ppm) for PCBs in materials, and that was the benchmark used for this survey (EPA 2016). Suspected PCB-containing caulk materials were grouped as homogeneous areas if the material was similar in appearance and texture; however, if the inspector decided a material was not similar in appearance and texture to other materials in the building, or that a material was associated with a different building construction date, the inspector distinguished the material as unique and collected samples of each unique material accordingly. Section 12.0 specifies assumptions and deviations regarding the survey of the subject property building.

Bulk samples were collected to ensure only suspect PCB-containing caulk materials were represented in the sample. A wetting agent was applied to the material prior to sample collection to reduce potential for particulate release. All samples collected were placed in plastic bags, labeled, and sealed immediately upon collection. A unique sample identification number was assigned to each sample. To prevent cross-contamination between samples, the sampling instruments were wiped clean by use of a wet, lint-free cloth after collection of each sample.

The samples remained in the inspector's custody until sent to the laboratory. Upon completion of sampling activities, the bulk samples were sent, along with Toeroek Team's chain-of-custody documentation, to Pace Analytical (Pace) laboratory in Lenexa, Kansas. Bulk samples of suspect PCB-containing caulk materials were analyzed via EPA Method 8082 by Pace. Appendix E includes PCB analytical results and chain-of-custody forms for those bulk samples, and Section 9.0 summarizes analytical results from those samples.

6.0 HAZARDOUS WASTE AND OTHER HAZARDOUS MATERIALS INVENTORY

The Toeroek Team completed an inventory of HW and other potentially hazardous materials in the subject property building. This inventory included but was not limited to the following types of materials: thermostats and fluorescent light bulbs possibly containing mercury, fluorescent light ballasts potentially containing PCBs, emergency lighting and exit signs that house batteries containing heavy metals, appliances containing Freon, product containers holding hazardous materials (such as cleaning supplies, paint, etc.), and any other HW items that may have been present.

The Toeroek Team used an inventory field sheet and went through every room in the subject property building identifying, categorizing, and quantifying HW and hazardous materials. The Toeroek Team made every effort to provide a complete inventory of these items; however, the Toeroek Team cannot guarantee an accounting of every item. The exterior of the building was not included in this inventory (excluding air conditioning units), based on professional judgment of the assessment team. Items at the subject property that would not be affected during any renovation activities—for example, pole-mounted transformers that may contain PCBs—were not included in the inventory. Notably, the assessment team walked the perimeter of the subject property building to identify any drums or other large containers that may contain HW. At the time of this assessment, no materials fitting this description had been identified outside the subject property building. A summary of HW and other hazardous materials inventoried during the survey is in Section 10.0 of this report.

7.0 ACM FINDINGS

PLM results from samples of suspect ACM collected at the building on the subject property are presented in the laboratory report in Appendix D and summarized in Table 1 below. Bolded results in Table 1 indicate where asbestos was detected at a concentration greater than 1 percent. Sample locations are shown on Figure 2 in Appendix A.

TABLE 1

**SUMMARY OF RESULTS FROM LABORATORY ANALYSIS FOR SUSPECT ACM
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI**

Figure Key	Sample ID	Material Description	Material Locations	Friable (F)/ Non-Friable (NF)	Analytical Result (% ACM ¹)	Quantity
1	CB-MFT-01	Marble Floor Tile with Bed and Grout	Throughout First Floor – South Rooms - under Vinyl Floor Tile (VFT)	NF	Grey Ceramic Tile – ND Grey Grout – ND, Black Mastic – 6% Chrysotile	4,000 SF
2	CB-MFT-02					
3	CB-MFT-03					
4	CB-VFT-01	9” X 9” Beige Vinyl Floor Tile with Black Mastic	Throughout First Floor – Southwest Room under Vinyl Floor Tile (VFT2)	NF	Tan Floor Tile – 4% Chrysotile Black Mastic – 5% Chrysotile	3,000 SF
5	CB-VFT-02					
6	CB-VFT-03					
7	CB-VFT2-01	12” X 12” Beige Vinyl Floor Tile	Throughout First Floor – Southwest Room	NF	Beige Floor Tile – 2% Chrysotile Yellow Mastic – ND	3,000 SF
8	CB-VFT2-02					
9	CB-VFT2-03					
10	CB-TSI-01	6” White Pipe Insulation	First Floor – Southwest Room – South Wall and Bathroom, Northeast Room – North Wall, Southeast Room – South Wall	NF	10% Chrysotile	50 LF
11	CB-TSI-02					
12	CB-TSI-03					
13	CB-DW-01	Drywall	First Floor – Northwest Room – South Wall	NF	ND	NA
14	CB-DW-02					
15	CB-DW-03					
16	CB-WM-01	Brown Wall Mastic	First Floor – Southeast Room, behind Styrofoam Panels	NF	ND	NA
17	CB-WM-02					
18	CB-WM-03					
19	CB-TSI2-01	Water Heater Insulation	Second Floor – Northeast Room – West Perimeter and Water Heater	F	60% Chrysotile	4 SF
20	CB-TSI2-02					
21	CB-SC-01	White Skim Coat Over Plaster Walls	First Floor – over Plaster Walls and Ceiling	NF	ND	NA
22	CB-SC-02					
23	CB-SC-03					

TABLE 1

**SUMMARY OF RESULTS FROM LABORATORY ANALYSIS FOR SUSPECT ACM
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI**

Figure Key	Sample ID	Material Description	Material Locations	Friable (F)/ Non-Friable (NF)	Analytical Result (% ACM ¹)	Quantity
24	CB-PLAS-01	Plaster Walls, Ceiling, and Columns	Throughout Central Walls and Columns and Throughout First Floor Southwest Room and Ceiling	NF	ND	NA
25	CB-PLAS-02					
26	CB-PLAS-03					
27	CB-PLAS-04					
28	CB-PLAS-05					
29	CB-PLAS-06	Plaster Walls, Ceiling				
30	CB-PLAS-07					
31	CB-MFT2-01	Square Marble Floor Tile with Bed and Grout	First Floor – Southeast Room – along Marble Floor Tile Inner Perimeter	NF	ND	NA
32	CB-MFT2-02					
33	CB-MFT2-03					
34	CB-JC-01	Joint Compound	First Floor – Southwest and Southeast Rooms – Central Wall	NF	ND	NA
35	CB-JC-02					
36	CB-SC2-01	Skim Coat of Plaster Columns	Throughout Columns	NF	ND	NA
37	CB-SC2-02					
38	CB-SC2-02					
39	CB-TSI3-01	Boiler Insulation	Basement – Northeast Mechanical Room – Boiler	F	10% Chrysotile	12 SF (accessible portion)
40	CB-TSI3-02					
41	CB-SC-04	White Skim Coat Over Plaster Walls	First Floor – over Plaster Walls and Ceiling	NF	ND	NA
42	CB-CT-01	12" X 12" White Ceiling Tile	First Floor Southwest Room South-central Office	F	ND	NA
43	CB-CT-02					
44	CB-CT2-01	2" X 4" White Ceiling Tile	First Floor – Southwest Room – North-central Office	F	ND	NA
45	CB-CT2-02					
46	CB-CT2-03					
47	CB-CLK-01	White Caulk	First and Second Floor – Exterior Windows	NF	<0.25% Chrysotile ²	NA
48	CB-CLK-02					
49	CB-CLK-03					

TABLE 1

**SUMMARY OF RESULTS FROM LABORATORY ANALYSIS FOR SUSPECT ACM
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI**

Figure Key	Sample ID	Material Description	Material Locations	Friable (F)/ Non-Friable (NF)	Analytical Result (% ACM ¹)	Quantity
50	CB-CLK2-01	Yellow Caulk	First Floor Windows – Wall between East-central Room and Northeast Room	NF	ND	NA
51	CB-CLK2-02					
52	CB-CLK2-03					
53	CB-CLK3-01	Black and Yellow Caulk	Second Floor Window in Wall between Northeast and Southeast Room	NF	ND	NA
54	CB-CLK3-02					
55	CB-CLK-04	White Caulk	First and Second Floors – Exterior Wall Windows	NF	0.25% Chrysotile ²	NA
56	CB-CLK-05					
57	CB-DW2-01	Speckled Interior Drywall	Second Floor Stairwell North Wall, Basement Northwest Storage Room – East Wall	NF	ND	NA
58	CB-DW2-02					
59	CB-DW2-03					
60	CB-DW3-01	Yellow Interior Drywall	Basement Northwest Storage Room East Wall	NF	ND	NA
61	CB-DW3-02					
62	CB-R-01	Roofing	Throughout Roof	NF	Gray/Black Mastic – 5% Chrysotile Black Roofing Material – ND Black Tape – ND Black Roofing Felt – ND Black Roofing Tar – ND	11,250 SF
63	CB-R-02					
64	CB-R-03					
65	CB-R2-01	Roofing Tar	West Exterior Wall	NF	ND	NA
66	CB-R2-02					
67	CB-R2-03					
68	CB-CLK4-01	Caulk	Exterior Doors and Windowpanes – South Wall	NF	2% Chrysotile	150 LF
69	CB-CLK4-02					
70	CB-CLK4-03					
71	CB-CEMB-01	Cement Board	Exterior along Building Foundation	NF	15% Chrysotile 2% Amosite	40 SF
72	CB-CEMB-02					
73	CB-CEMB-03					
74	CB-GP-01	Glue Puck	Exterior South Wall, East Section, Foundation	NF	7% Chrysotile	3 SF
75	CB-GP-02					

TABLE 1

SUMMARY OF RESULTS FROM LABORATORY ANALYSIS FOR SUSPECT ACM
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

Figure Key	Sample ID	Material Description	Material Locations	Friable (F)/ Non-Friable (NF)	Analytical Result (% ACM ¹)	Quantity
Presumed ACM						
NA	NA	Fire Doors	Throughout	NF	NA	12 Doors
NA	NA	Elevator Equipment	Elevators	NF	NA	2 Elevator
NA	NA	Old Electrical Panel Equipment	Throughout	NF	NA	12 Panels

Notes:

Bolded result indicates detection of ACM.

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

¹ AHERA defines ACM as any material or product that contains more than 1 percent asbestos.

² The U.S. Environmental Protection Agency (EPA) defines ACM as greater than 1% asbestos. These materials contain <1% asbestos; therefore, the materials are not regulated for disposal purposes; however, the materials do contain asbestos, so if the materials are disturbed, OSHA regulations must be followed, and personal protective equipment must be used.

”	Inches	OSHA	Occupational Safety and Health Administration
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
LF	Linear feet	TSI	Thermal systems insulation
OSHA	Occupational Safety and Health Administration		

8.0 LBP FINDINGS

A summary of screening results for LBP by use of the XRF spectrometer at the subject property building appears in Table 2 below. Bolded results in Table 2 indicate where LBP was detected at concentration greater than 1.0 mg/cm². Some LBP quantities in Table 2 may be combined to avoid duplicate quantities of commingled materials. Positive (greater than 1.0 mg/cm²) results for LBP are shown on Figure 3 in Appendix A.

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm²)	Damaged¹	Quantity
1		Calibration Blank			0.00/0.00/0.00	NA	NA
2		Calibration Standard			1.01/1.01/1.00	NA	NA
3	Orange	Exterior – South Perimeter	Siding Panels	Metal	0.22	NA	NA
4	Beige	Exterior – South Perimeter	Siding	Vinyl	0.00	NA	NA
5	Beige	Exterior – South Perimeter	Siding	Wood	0.01	NA	NA
6	Beige	Exterior – South Perimeter	Siding	Metal	0.08	NA	NA
7	Purple	Exterior – West Perimeter	Exterior Wall	Brick	>5.00	No	100 SF
8	White	Exterior – West Perimeter	Exterior Wall	Brick	>5.00	Yes	300 SF
9	Faded Red	Exterior – North Perimeter	Pipe	Metal	1.25	Yes	40 LF
10	Brown	Exterior – North Perimeter	Vertical Bar	Metal	2.34	Yes	60 SF
11	Black	Exterior – North Perimeter	Window Grate	Metal	1.83	Yes	80 SF
12	Faded Red	Exterior – North Perimeter	Gutter Cover Pipe	Metal	1.20	Yes	20 LF
13	Faded Green	Exterior – East Perimeter	Entryway Wall Barrier	Metal	>5.00	Yes	8 SF
14	Yellow	Exterior – East Perimeter	Horizontal Siding	Metal	0.08	NA	NA
15	White	Interior – First Floor – Southwest Room – Southwest Portion	Wall Column	Plaster	0.29	NA	NA
16	White	Interior – First Floor – Southwest Room - Southwest Portion	Wall Column and Wall Trim	Wood	>5.00	Yes	80 SF
17	Beige	Interior – First Floor – Southwest Room - Southwest Portion	Wall Column and Wall Trim	Wood	>5.00	Yes	315 SF
18	Beige	Interior – First Floor – Southwest Room - Southwest Portion	Pegboard	Wood	0.51	NA	NA
19	Beige	Interior – First Floor – Southwest Room - Southwest Portion	Wall	Plaster	>5.00	Yes	4,500 SF
20	White	Interior – First Floor – Southwest Room – Southwest Portion	Wall	Plaster	1.81	Yes	See XRF Screening No. 19 ²

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm²)	Damaged¹	Quantity
21	Green	Interior – First Floor – Southwest Room - Southwest Portion	Wall/Column Trim	Wood	>4.31	Yes	See XRF Screening No. 17²
22	White	Interior – First Floor – Southwest Room - Southwest Portion	Pegboard	Wood	0.00	NA	NA
23	White	Interior – First Floor – Southwest Room - Southwest Portion	Shelf	Wood	0.00	NA	NA
24	Varnish	Interior – First Floor – Southwest Room - Southwest Portion	Panel Over Pegboard	Wood	0.00	NA	NA
25	White	Interior – First Floor – Southwest Room - Southwest Portion	Baseboard	Concrete	0.00	NA	NA
26	White	Interior – First Floor – Southwest Room – Southwest Portion	Pipe	Pipe Wrap	>5.00	Yes	14 LF
27	Varnish	Interior – First Floor – Southwest Room – Southwest Portion	Panel Over Wall	Wood	0.00	NA	NA
28	Pink	Interior – First Floor – Southwest Room – Southwest Portion	Circular Column	Concrete	0.00	NA	NA
29	Faded Green/Beige	Interior – First Floor – Southwest Room – Southwest Portion	Baseboard	Concrete	0.03	NA	NA
30	White	Interior – First Floor – Southwest Room – Southwest Portion	Shelf	Metal	0.10	NA	NA
31	Red	Interior – First Floor – Southwest Room – Northwest Portion	Sliding Door	Metal	0.12	NA	NA
32	Green	Interior – First Floor – Southwest Room – Northwest Portion	Garage Door Perimeter Bar	Metal	1.43	Yes	50 SF
33	Off-white	Interior – First Floor – Southwest Room – Northwest Portion	Garage Door	Metal	1.89	Yes	100 SF
34	White	Interior – First Floor – Southwest Room – Northwest Portion	Garage Door Frame	Metal	2.99	Yes	40 SF

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm²)	Damaged¹	Quantity
35	Red	Interior – First Floor – Southwest Room – Northwest Portion	Pegboard	Wood	0.04	NA	NA
36	Orange	Interior – First Floor – Southwest Room – Southeast Portion	Shelf	Wood	0.11	NA	NA
37	Light Blue	Interior – First Floor – Southwest Room – Southeast Portion	Pegboard	Wood	0.00	NA	NA
38	Light Blue	Interior – First Floor – Southwest Room – Southeast Portion	Column and Wall Trim	Wood	>5.00	Yes	300 SF
39	Varnish	Interior – First Floor – Southwest Room – Southeast Portion	Doorframe	Wood	0.00	NA	NA
40	White	Interior – First Floor – Southwest Room – Northeast Portion	Pegboard Wall, Structural	Wood	0.00	NA	NA
41	Varnish	Interior – First Floor – Southwest Room – Northeast Portion	Office Wall Panel	Wood	0.11	NA	NA
42	Faded/Light Green	Interior – First Floor – Southwest Room – Northeast Portion	Wall Trim	Wood	3.5	Yes	45 SF
43	Faded/Light Green	Interior – First Floor – Southwest Room – Northeast Portion	Wall	Plaster Coat	4.11	Yes	100 SF
44	Faded/Light Green	Interior – First Floor – Southwest Room – Northeast Portion	Wall	Plaster	0.14	NA	NA
45	Blue	Interior – First Floor – Southwest Room – Northeast Portion	Wall	Plaster	0.03	NA	NA
46	White	Interior – First Floor – Southwest Room – Northeast Portion	Wall Panel	Wood	>5.00	Yes	800 SF
47	Off-white	Interior – First Floor – Southwest Room – Northeast Portion	Wall Panel	Wood	>4.54	Yes	See XRF Screening No. 46²
48	Off-white	Interior – First Floor – Southwest Room – Northeast Portion	Wall Panel Window	Glass	0.00	NA	NA

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm ²)	Damaged ¹	Quantity
49	Off-white	Interior – First Floor – Southwest Room – Northeast Portion	Door	Wood	0.63	NA	NA
50	White	Interior – First Floor – Northwest Room	Column	Plaster	0.03	NA	NA
51	Green	Interior – First Floor – Northwest Room	Wall Rail	Wood	0.09	NA	NA
52	White	Interior – First Floor – Northwest Room	Wall	Plaster Coat	1.24	Yes	75 SF
53	White	Interior – First Floor – Northwest Room	Column	Plaster Coat	0.07	NA	NA
54	Dull Green	Interior – First Floor – Northwest Room	Wall	Brick	0.00	NA	NA
55	White	Interior – First Floor – Northwest Room	Wall	Brick	0.04	NA	NA
56	White	Interior – First Floor – Northwest Room	Wall	Cement Masonry Unit	0.02	NA	NA
57	White	Interior – First Floor – Northwest Room	Shelf	Wood	0.00	NA	NA
58	Off-white	Interior – First Floor – Northwest Room	Entryway Wall	Brick	0.01	NA	NA
59	Light Pink	Interior – First Floor – Northwest Room	Cupboard	Wood	0.05	NA	NA
60	Green	Interior – First Floor – Northwest Room	Cupboard	Metal	1.19	Yes	75 SF
61	Beige	Interior – First Floor – Northwest Room	Cupboard	Wood	>5.00	Yes	12 SF
62	White	Interior – First Floor – Northwest Room	Garage Door	Metal	0.00	NA	NA
63	White	Interior – First Floor – Northwest Room	Board Over Window	Wood	0.05	NA	NA
64	White	Interior – First Floor – Northwest Room	Elevator Gears Wall	Wood	0.03	NA	NA
65	White	Interior – First Floor – Northwest Room – Bathroom	Pipe	Pipe Wrap	0.51	NA	NA
66	White	Interior – First Floor – Northwest Room – Bathroom	Pipe	Metal	0.56	NA	NA
67	White	Interior – First Floor – Northwest Room – Bathroom	Wall Window Pane	Glass	0.00	NA	NA
68	Off-white	Interior – First Floor – East-central Room	Electrical Panel	Metal	1.85	Yes	16 SF
69	Black	Interior – First Floor – East-central Room	Electrical Panel	Metal	2.36	Yes	8 SF

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm²)	Damaged¹	Quantity
70	Off-white	Interior – First Floor – East-central Room	Electrical Panel, Perimeter Board	Wood	>5.00	Yes	8 SF
71	Off-white	Interior – First Floor – East-central Room	Stairwell Door	Metal	>5.00	Yes	130 SF
72	Dull Green	Interior – First Floor – East-central Room	Stairwell Door	Metal	>5.00	Yes	See XRF Screening No. 71 ²
73	Black	Interior – First Floor – East-central Room	Stairwell Door	Metal	>5.00	Yes	See XRF Screening No. 71 ²
74	Grey	Interior – First Floor – East-central Room	Floor	Concrete	0.04	NA	NA
75	Greenish Off-white	Interior – First Floor – East-central Room	Column	Plaster	0.01	NA	NA
76	Greenish Off-white	Interior – First Floor – East-central Room	Window Trim	Wood	0.19	NA	NA
77	Green	Interior – First Floor – East-central Room	Window Frame	Wood	0.23	NA	NA
78	Green	Interior – First Floor – East-central Room	Door Frame	Wood	0.34	NA	NA
79	Varnish	Interior – First Floor – East-central Room	Northeast Door	Wood	0.02	NA	NA
80	Blue	Interior – First Floor – East-central Room	Northeast Door	Wood	0.28	NA	NA
81	Grey	Interior – First Floor – East-central Room	Northeast Door	Wood	0.06	NA	NA
82	Off-white	Interior – First Floor – East-central Room	Wall	Brick	0.22	NA	NA
83	Grey	Interior – First Floor – East-central Room	Wall	Brick	0.03	NA	NA
84	Off-white	Interior – First Floor – East-central Room	Window Perimeter Bar	Metal	0.50	NA	NA
85	Off-white	Interior – First Floor – East-central Room	Wall Board	Cardboard	0.13	NA	NA
86	Dull Green	Interior – First Floor – East-central Room	Column	Plaster Coat	2.41	Yes	15 SF
87	White	Interior – First Floor – Northeast Room	Garage Door	Metal	0.01	NA	NA
88	Black	Interior – First Floor – Northeast Room	Pipe	Metal	0.28	NA	NA
89	Black	Interior – First Floor – Northeast Room	Block Structure	Concrete	>2.52	Yes	30 SF

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm²)	Damaged¹	Quantity
90	Black	Interior – First Floor – Northeast Room	Pipe	Pipe Wrap	>5.00	Yes	8 LF
91	Black	Interior – First Floor – Northeast Room	Pipe	Metal	0.28	NA	NA
92	Black	Interior – First Floor – Northeast Room	Wall	Brick	>3.36	Yes	80 SF
93	Rusty Orange	Interior – First Floor – Elevator Adjacent to Stairwell	Handrail	Metal	0.48	NA	NA
94	Black	Interior – Second Floor – East Room	Stairwell Door	Metal	>5.00	Yes	32 SF
95	White	Interior – Second Floor – East Room	Column	Plaster Coat	0.05	NA	NA
96	Dark Red	Interior – Second Floor – East Room	Elevator Grate	Wood	0.12	NA	NA
97	Grey	Interior – Second Floor – East Room	Elevator Pulley Rope Case	Metal	0.16	NA	NA
98	White	Interior – Second Floor – East Room	Corrugated Wall Panel	Metal	0.09	NA	NA
99	Dark Green	Interior – Second Floor – East Room	Column	Plaster Coat	>1.00	Yes	60 SF
100	Black	Interior – Second Floor – East Room	North Windows	Metal	>5.00	Yes	10 SF
101	White	Interior – Second Floor – East Room	Horizontal Boards	Wood	1.70	Yes	112 SF
102	Silver	Interior – Second Floor – East Room	Boiler/Water Heater	Metal	0.05	NA	NA
103	Grey	Interior – Second Floor – East Room	Shelving	Metal	0.03	NA	NA
104	White	Interior – Second Floor – East Room	Wall Panel	Wood	0.03	NA	NA
105	Green	Interior – Second Floor – Central Restrooms	Stall Door	Wood	0.11	NA	NA
106	White	Interior – Second Floor – Central Restrooms	Wall	Plaster Coat	0.19	NA	NA
107	Beige	Interior – Second Floor – Central Restrooms	Wall Panel	Wood	0.05	NA	NA
108	White	Interior – Second Floor – West Room	Corrugated Wall Panel	Metal	0.17	NA	NA
109	White	Interior – Second Floor – West Room	Column	Plaster	0.01	NA	NA
110	White	Interior – Second Floor – West Room	Wall	Brick	0.00	NA	NA

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm²)	Damaged¹	Quantity
111	White	Interior – Second Floor – West Room	Column Trim	Metal	0.03	NA	NA
112	White	Interior – Second Floor – West Room	Wall Rack Board	Wood	0.01	NA	NA
113	Grey	Interior – Second Floor – West Room	Wall	Brick	0.00	NA	NA
114	Green	Interior – Second Floor – West Room	North Window Frame	Metal	>5.00	Yes	180 SF
115	Green	Interior – Second Floor – West Room	North Window	Metal	1.14	Yes	See XRF Screening No. 112²
116	White	Interior – Second Floor – West Room	Elevator Gate Frame	Wood	0.21	NA	NA
117	Dull Green	Interior – Second Floor – Southeast Room	Door Trim	Wood	0.08	NA	NA
118	White	Interior – Second Floor – Southeast Room	Door Frame	Wood	0.14	NA	NA
119	White	Interior – Second Floor – Southeast Room	Door	Wood	0.11	NA	NA
120	White	Interior – Second Floor – Southeast Room	Wall	Plaster	0.37	NA	NA
121	Light Blue	Interior – Second Floor – Southeast Room	Wall	Plaster	0.33	NA	NA
122	White	Interior – Second Floor – Southeast Room	Window Frame	Wood	>5.00	Yes	250 SF
123	White	Interior – Second Floor – Southeast Room	Window	Wood	>5.00	Yes	See XRF Screening No. 122²
124	White	Interior – Second Floor – Southeast Room	Pipe	Metal	3.61	Yes	50 LF
125	Grey	Interior – Second Floor – Southeast Room	Window Frame	Wood	0.18	NA	NA
126	Grey	Interior – Second Floor – Southeast Room	Window	Wood	0.07	NA	NA
127	Grey	Interior – First Floor – Southeast Room	Column Frame	Wood	>5.00	Yes	60 SF
128	Off-White	Interior – First Floor – Southeast Room	Vertical Beam	Wood	0.14	NA	NA
129	Grey	Interior – First Floor – Southeast Room	Overhead Beam	Wood	0.06	NA	NA
130	Grey	Interior – First Floor – Southeast Room	Wall Panel	Wood	4.51	Yes	350 SF
131	Off-White	Interior – First Floor – Southeast Room	Column Frame	Wood	>5.00	Yes	60 SF
132	White	Interior – First Floor – Southeast Room	Shelf Frame	Wood	0.00	NA	NA

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm ²)	Damaged ¹	Quantity
133	Faded Green	Interior – First Floor – Southeast Room	Step Baseboard	Wood	>5.00	Yes	42 SF
134	Grey	Interior – First Floor – Southeast Room	Wall Panel	Wood	>5.00	Yes	65 SF
135	Grey	Interior – First Floor – Southeast Room	Pipe	Pipe Wrap	>5.00	Yes	14 LF
136	Silver	Interior – First Floor – Southeast Room	Wall Panel	Metal	0.03	NA	NA
137	Black	Interior – Basement, Stairwell	Pipe	Metal	0.20	NA	NA
138	Black	Interior – Basement, Northeast Room	Boiler	Metal	0.16	NA	NA
139	Rusty Red	Interior – Basement, Northeast Room	Boiler	Metal	0.02	NA	NA
140	White	Interior – Basement, Southeast Room	Wall	Brick	0.00	NA	NA
141	White	Interior – Basement, Southeast Room	Overhead Pipe	Metal	0.11	NA	NA
142	Grey	Interior – Basement, Southwest Room	Column	Plaster Coat	0.18	NA	NA
143	Black	Interior – Basement, Southwest Room	Wall	Plaster Coat	0.16	NA	NA
144	White	Interior – Basement, Southwest Room	Ceiling	Plaster Coat	0.00	NA	NA
145	White	Interior – Basement, Southwest Room	Corrugated Bay Door	Metal	0.20	NA	NA
146	White	Interior – Basement, Southwest Room	Wall	Drywall	>1.00	Yes	80 SF
147	White	Interior – Basement, Southwest Room	Door Trim	Wood	2.65	Yes	50 SF
148	White	Interior – Basement, Southwest Storage Room	Shelf	Wood	0.00	NA	NA
149	White	Interior – Basement, Northwest Storage Room	Wall	Cement Masonry Unit	0.02	NA	NA
150	Off-white	Interior – Basement, Northwest Storage Room	Wall Panel	Wood	0.40	NA	NA
151	White	Interior – Basement, Northwest Storage Room	South Bay Door	Metal	>5.00	Yes	220 SF
152	White	Interior – Basement, Northwest Storage Room	North Bay Door	Metal	>5.00	Yes	See XRF Screening No. 151 ²
153	Dull Green	Interior – First Floor – East-central Room	Stairwell Post	Wood	0.14	NA	NA

TABLE 2
SUMMARY OF LBP SCREENING RESULTS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

XRF Screening No.	Paint Color	Location	Component	Substrate	XRF Reading (mg/cm ²)	Damaged ¹	Quantity
154	Off-white	Interior – First Floor – Southwest Room – Northeast Portion	Ceiling	Plaster Coat	0.08	NA	NA
155		Calibration Blank			0.00/0.00/0.00	NA	NA
156		Calibration Standard			1.09/1.00/1.00	NA	NA

Notes:

¹ This column identifies damaged LBP surfaces. If no damage is present before renovation activities, preliminary removal of chipping and peeling paint is not necessary prior to the encapsulation process.

² This quantity is included with another quantity to avoid duplicate quantity of commingled materials.

mg/cm ²	Milligrams per square centimeter	NA	Not applicable
LBP	Lead-based paint	No.	Number
LF	Linear feet	SF	Square feet
XRF	X-ray fluorescence		

9.0 PCB FINDINGS

The laboratory report in Appendix E conveys analytical results from bulk samples of suspect PCB-containing caulk materials, and results are summarized in Table 3 below. Sample locations are shown on Figure 2 in Appendix A.

TABLE 3
SUMMARY OF PCB FINDINGS
CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

Figure Key	Sample ID	Material Description	Material Locations	Analyte Description	Analytical Result (ppm)	Quantity
P1	PCB-1	White Caulk	Exterior – First and Second Floor Windows	Aroclor 1242	0.172	NA
				Aroclor 1248	0.153	
				Aroclor 1254	0.133	
P2	PCB-2	Yellow Caulk	Interior – First Floor – Windows in Wall Between East-central and Northeast Rooms	Aroclor 1242	0.318	NA
				Aroclor 1248	0.269	
				Aroclor 1254	0.261	
P3	PCB-3	Black and Yellow Caulk	Interior – Second Floor – Windows in Wall Between Northeast and Southeast Rooms	Aroclor 1242	0.425	NA
				Aroclor 1248	0.395	
				Aroclor 1254	0.306	
P4	PCB-4	White Caulk	Exterior – Second Floor – Southeast Room – Windows	Aroclor 1242	<0.0624	NA
				Aroclor 1248	<0.0624	
				Aroclor 1254	<0.0624	
P5	PCB-5	Caulk	Exterior – South Wall – Along Doors and Panels	Aroclor 1242	<0.0471	NA
				Aroclor 1248	<0.0471	
				Aroclor 1254	<0.0471	

Notes:

Bolded results indicate positive identification of PCBs above the action level of 50 ppm.

ID Identification
NA Not applicable
PCB Polychlorinated biphenyl
ppm Parts per million

10.0 HAZARDOUS MATERIALS INVENTORY FINDINGS

The HW and hazardous materials inventory is summarized in Table 4 below. Due to large amounts of debris and solid waste throughout the building, the quantities presented in Table 4 are estimates.

TABLE 4

SUMMARY OF HAZARDOUS MATERIALS INVENTORY CYCLONIC BUILDING, 3201-3207 LOCUST STREET, ST. LOUIS, MISSOURI

Type of Household Hazardous Waste	Assessed Quantity
White Goods:	
Water Heaters	2
Air Compressors	1
Boiler	1
Heating, Ventilation, and Air Conditioning (HVAC) Units	3
Lighting:	
Fluorescent Tubes	80
Polychlorinated Biphenyl (PCB)-containing Ballasts	40
Mercury Lights	6 (exterior)
Batteries:	
Automotive Batteries	2
Household Batteries	36
Other:	
Elevator	2
Small Tires	4
Large Compressed Gas Cylinders	2
5-gallon Buckets of Oil	2
Non-flammable Aerosols Cans	6
55-gallon Drums	>40
Small Containers of "Ceiling Concentrate"	15
Cans of "Z-Sealer"	2
Miscellaneous 5-gallon Buckets (including "Wax and Finish Stripper")	12
Miscellaneous Small Containers (most appeared to be empty)	>500

11.0 FINDINGS AND RECOMMENDATIONS

The following findings and recommendations are based on observations during the survey and analytical results from samples collected in the Cyclonic Building on the subject property:

11.1 ACM

- Regulated ACM was identified in black mastic associated with marble floor (approximately 4,000 SF) on the first floor, throughout the south rooms.
- Regulated ACM was identified in two layers of vinyl floor tile (each layer approximately 3,000 SF) on the first floor, throughout the southwest room.
- Regulated ACM was identified in insulation (approximately 50 LF of pipe insulation and 16 SF of other insulation) throughout the building.
- Regulated ACM was identified on the roofing (approximately 11,250 SF) throughout the roof of the building.
- Regulated ACM was identified in caulk (approximately 150 LF) around exterior doors and window panes along the south wall.
- Regulated ACM was identified in cement board (approximately 40 SF) along the exterior building foundation.
- Regulated ACM was identified in glue puck (approximately 3 SF) along the exterior building foundation on the east section of the south wall.

All regulated 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 any of the above ACM materials are not to be disturbed, they may remain in place.

11.2 LBP

Approximately 8,898 SF of various colors of LBP on a variety of substrates and approximately 146 LF of various colors of LBP on piping was identified throughout the building.

HUD considers LBP as paint with lead levels above 1.0 mg/cm². If the LBP surfaces are impacted during renovations or during demolition, the Toeroek Team recommends the contractor conducting the renovations comply with OSHA Lead in Construction Standard, Title 29 of *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). This would allow determination of the proper method of disposal of the materials.

11.3 PCBs

Laboratory results indicate no sampled building materials contain concentrations of PCBs above 50 ppm.

11.4 HAZARDOUS WASTE (HW)

HW and other hazardous materials were inventoried during the survey. The Toeroek Team recommends proper disposal of the materials based on their characteristics prior to demolition of the subject property building.

12.0 ASSUMPTIONS AND DEVIATIONS

The entire interior and exterior of the subject property building was inspected for suspect ACM, LBP, and PCB-containing caulk, except for an area in the southeast portion of the first floor, two areas in the northeast and northwest portion of the basement, and an area on the central portion of the roof. The areas on the first floor and in the basement were inaccessible due to a collapsed stairwell. The central portion of the roof was inaccessible because of several large holes in the roof. In addition, an inventory of all hazardous waste and other hazardous materials occurred within the interior of the building. Because of limitations on destructive sampling methods, additional suspect materials may be present but not detected in walls, voids, or other concealed areas. Suspected asbestos-containing elevator equipment, fire doors, and old electrical panel equipment were identified in building. To preserve the integrity of these materials, no samples of these materials were collected. The Toeroek Team recommends that if the elevator equipment, fire doors, and old electrical panel equipment are to be disturbed during renovations or demolition, these materials should be sampled to determine their asbestos content. All other areas of the subject property building were inspected.

13.0 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/
- Terracon Consultants, Inc. (Terracon). 2018. Phase I Environmental Site Assessment. Cyclonic Building, 3201-3207 Locust Boulevard, St. Louis, Missouri. October 22.
- Toeroek Associates, Inc. (Toeroek). 2020. Quality Assurance Project Plan, Phase II Environmental Site Assessment, Cyclonic Building, 3201-3207 Locust Street, St. Louis, Missouri. August 27.
- U.S. Department of Housing and Urban Development (HUD). 2012. *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.
- Environmental Protection Agency, U.S. (EPA). 2016. How to Test for PCBs and Characterize Suspect Materials. Accessed February 23.
<http://www3.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/guide/guide-sect3.htm>

APPENDIX A


FIGURES

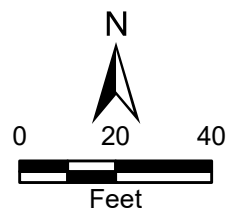


N Compton Avenue

Locust Street

Legend

 Approximate site boundary



Cyclonic Building
3201-3207 Locust Street
St. Louis, Missouri

Figure 1
Site Layout Map



X:\P\65210190\1\Projects\mesa\Figure1_Hazmat.mxd

Source: Esri, ArcGIS Online, World Imagery, 2018

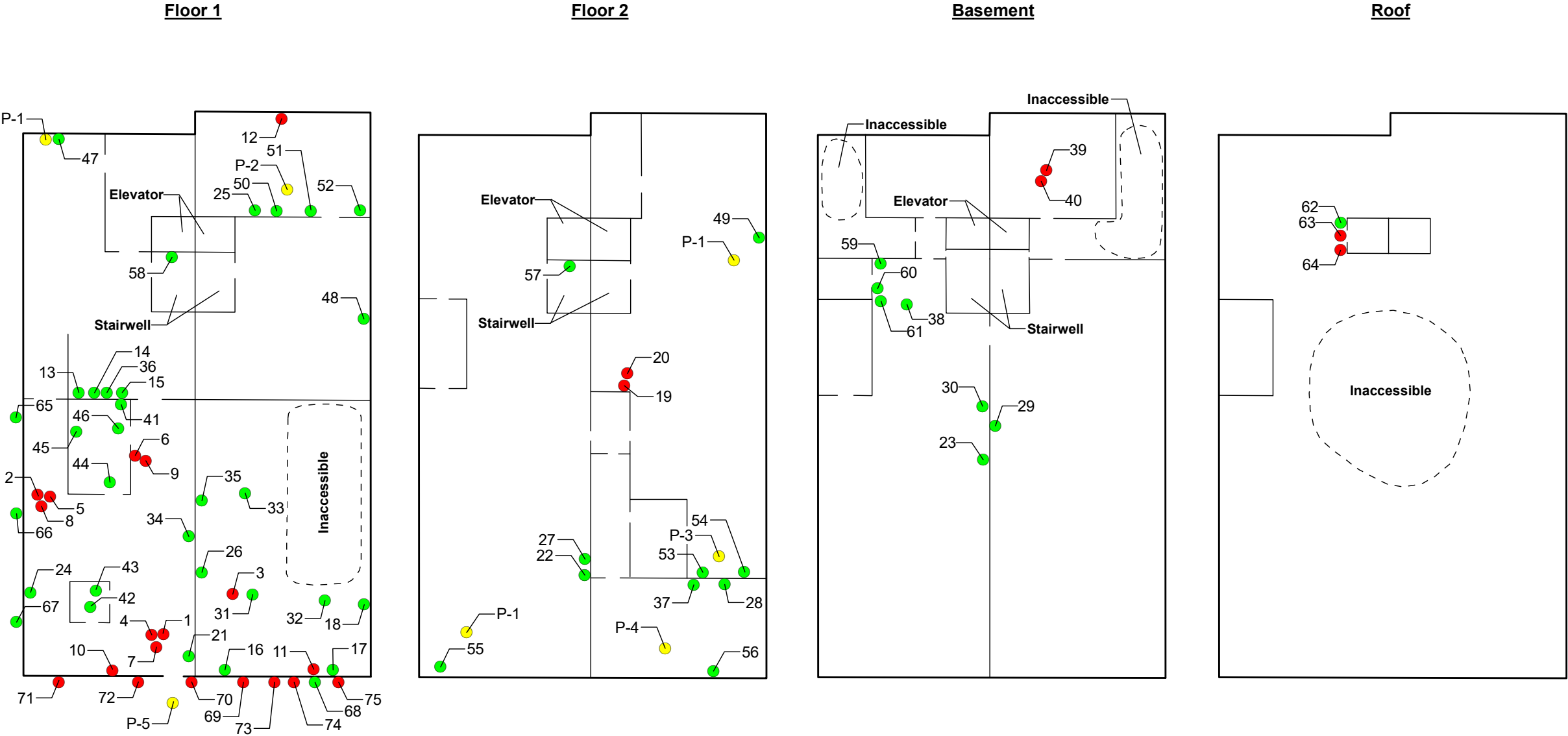
Date: 10/14/2020

Drawn By: Nick Wiederholt

Project No: 103G65210190.01.05

Sample Key Table

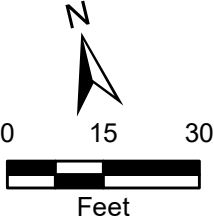
Key	Sample No.		
Asbestos			
1	CB-MFT-01	43	CB-CT-02
2	CB-MFT-02	44	CB-CT2-01
3	CB-MFT-03	45	CB-CT2-02
4	CB-VFT-01	46	CB-CT2-03
5	CB-VFT-02	47	CB-CLK-01
6	CB-VFT-03	48	CB-CLK-02
7	CB-VFT2-01	49	CB-CLK-03
8	CB-VFT2-02	50	CB-CLK2-01
9	CB-VFT2-03	51	CB-CLK2-02
10	CB-TSI-01	52	CB-CLK2-03
11	CB-TSI-02	53	CB-CLK3-01
12	CB-TSI-03	54	CB-CLK3-02
13	CB-DW-01	55	CB-CLK-04
14	CB-DW-02	56	CB-CLK-05
15	CB-DW-03	57	CB-DW2-01
16	CB-WM-01	58	CB-DW2-02
17	CB-WM-02	59	CB-DW2-03
18	CB-WM-03	60	CB-DW3-01
19	CB-TSI2-01	61	CB-DW3-02
20	CB-TSI2-02	62	CB-R-01
21	CB-SC-01	63	CB-R-02
22	CB-SC-02	64	CB-R-03
23	CB-SC-03	65	CB-R2-01
24	CB-PLAS-01	66	CB-R2-02
25	CB-PLAS-02	67	CB-R2-03
26	CB-PLAS-03	68	CB-CLK4-01
27	CB-PLAS-04	69	CB-CLK4-02
28	CB-PLAS-05	70	CB-CLK4-03
29	CB-PLAS-06	71	CB-CEMB-01
30	CB-PLAS-07	72	CB-CEMB-02
31	CB-MFT2-01	73	CB-CEMB-03
32	CB-MFT2-02	74	CB-GP-01
33	CB-MFT2-03	75	CB-GP-02
34	CB-JC-01	PCB	
35	CB-JC-02	P1	PCB-1
36	CB-SC2-01	P2	PCB-2
37	CB-SC2-02	P3	PCB-3
38	CB-SC2-03	P4	PCB-4
39	CB-TSI3-01	P5	PCB-5
40	CB-TSI3-02		
41	CB-SC-04		
42	CB-CT-01		



Legend

- Asbestos-containing material sample location
- Non-asbestos-containing material sample location
- PCB sample location

PCB Polychlorinated biphenyl

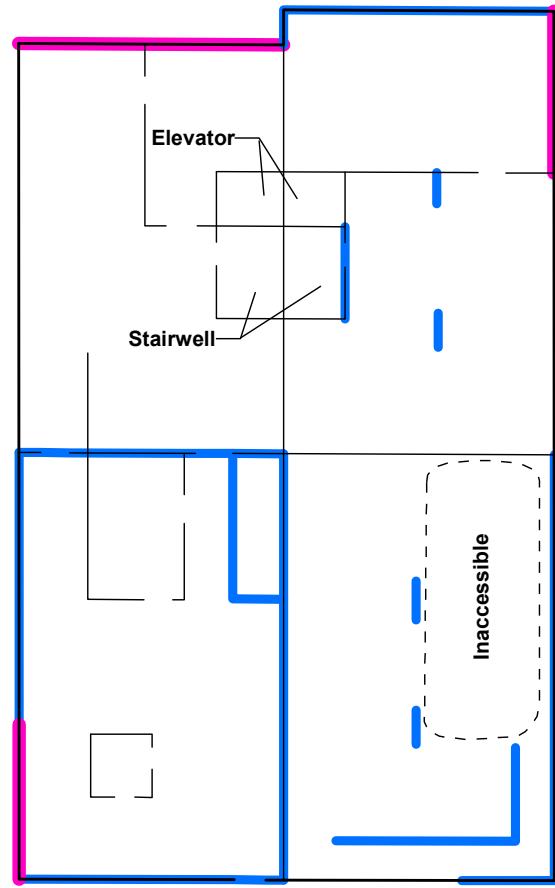


Cyclonic Building
3201-3207 Locust Boulevard
St. Louis, Missouri

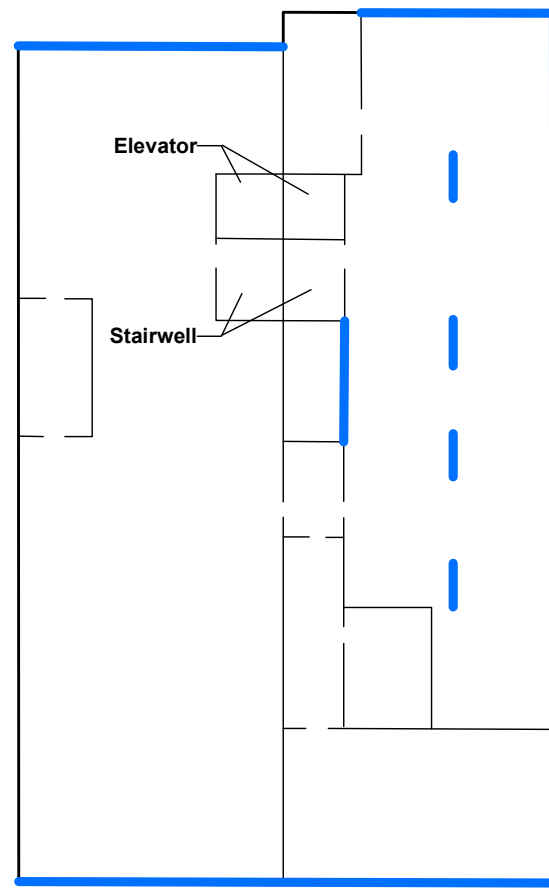
Figure 2
Asbestos and PCB
Sample Location Map



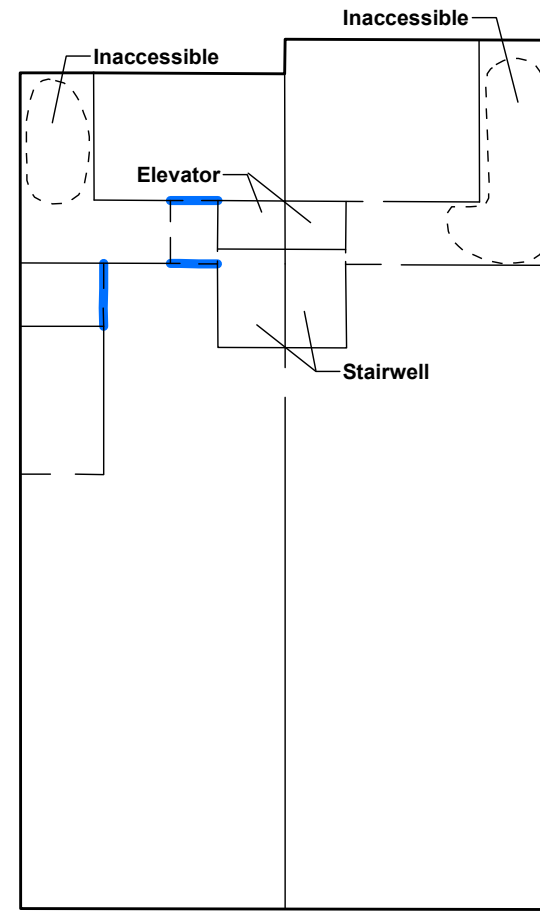
Floor 1



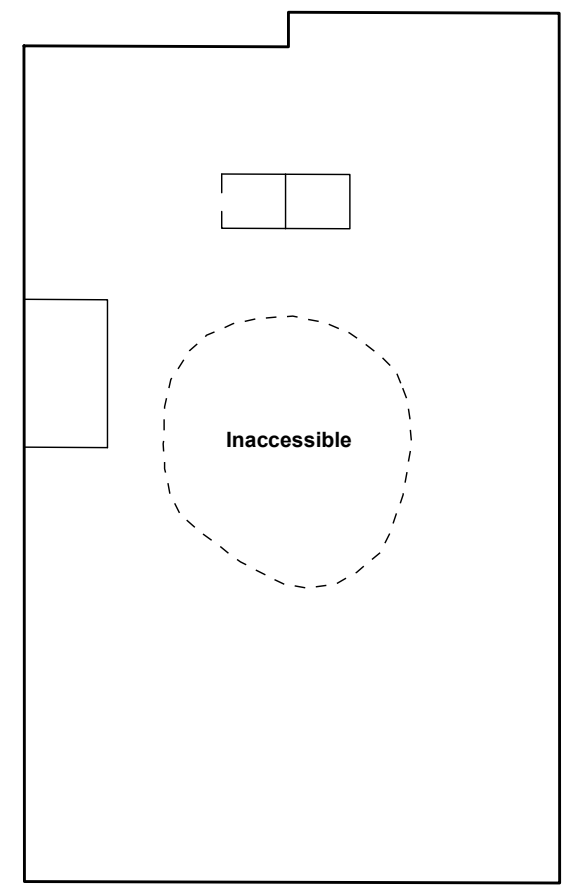
Floor 2



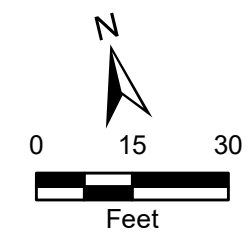
Basement



Roof



- Legend**
- Area containing LBP (interior wall)
 - Area containing LBP (interior and exterior wall)
 - LBP Lead-based paint



Cyclonic Building 3201-3207 Locust Boulevard St. Louis, Missouri
Figure 3 Lead-Based Paint Location Map
TETRA TECH
<small>Date: 10/7/2020 Drawn By: Nick Wiederholt Project No: 103G65210190.01.05</small>

APPENDIX B
PHOTOGRAPHIC DOCUMENTATION

Cyclonic Building Hazardous Materials Survey St. Louis, Missouri



<p>SUBTASK NO. 01.05</p> <p>Direction: North</p>	DESCRIPTION	This photograph shows an overview of the Cyclonic Building.	1
	CLIENT	U.S. Environmental Protection Agency (EPA)	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows marble floor tile with asbestos-containing black mastic, asbestos-containing 9" X 9" beige floor tile, and asbestos-containing 12" X 12" beige floor tile in the southwest room on the first floor.	2
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white lead-based paint (LBP) and asbestos-containing pipe insulation, found in the northeast, southeast, and southwest rooms on the first floor.	3
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows asbestos-containing water heater insulation in the northeast room on the second floor.	4
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows asbestos-containing boiler insulation, found in the northeast room of the basement.	5
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: South	DESCRIPTION	This photograph shows asbestos-containing roofing material.	6
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

Cyclonic Building Hazardous Materials Survey **St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: Northwest	DESCRIPTION	This photograph shows asbestos-containing cement board, found at the base of the south exterior wall.	7
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: Northwest	DESCRIPTION	This photograph shows asbestos-containing glue puck, found at the base of the south exterior wall.	8
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



<p>SUBTASK NO. 01.05</p> <p>Direction: Southeast</p>	DESCRIPTION	This photograph shows purple and white LBP on the west exterior wall.	9
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



<p>SUBTASK NO. 01.05</p> <p>Direction: Southwest</p>	DESCRIPTION	This photograph shows red LBP on a pipe, brown LBP on a bar along the window perimeter, and black LBP on the window grate of the north exterior wall.	10
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: Southeast	DESCRIPTION	This photograph shows red LBP on a metal cover over a gutter along the north exterior wall.	11
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: Southwest	DESCRIPTION	This photograph shows green LBP on a metal barrier-plate at the perimeter of a building entryway at the east exterior wall.	12
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on wood trim of the columns and walls in the southwest room on the first floor.	13
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white and beige LBP on the plaster walls and ceilings of the building.	14
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white and green LBP on an overhead door and its frame in the southwest room on the first floor.	15
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows light blue LBP on the wooden trim of the columns and wall in the southwest room on the first floor.	16
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows light green LBP on the north wall and wall trim in the southwest room on the first floor.	17
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on wall panels in the southwest room on the first floor.	18
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

Cyclonic Building Hazardous Materials Survey St. Louis, Missouri



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows green LBP on a cupboard in the northwest room on the first floor.	19
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on a cupboard in the northwest room on the first floor.	20
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows off-white and black LBP on an electrical panel, and off-white LBP on a board along the top perimeter of the electrical panel in the east-central room on the first floor.	21
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows off-white and green LBP on a stairwell door in the east-central room on the first floor.	22
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows black LBP on a stairwell in the east-central room on the first floor.	23
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows green LBP on a column in the east-central room on the first floor.	24
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**

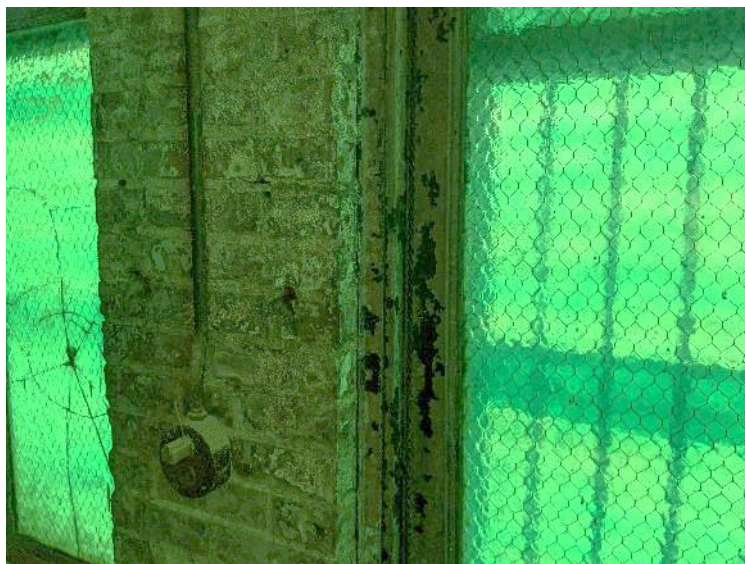


SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows black LBP on a concrete block structure and on the wall in the northeast room on the first floor.	25
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows black LBP on asbestos-containing pipe insulation in the northeast room on the first floor.	26
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

Cyclonic Building Hazardous Materials Survey **St. Louis, Missouri**



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows black LBP on window frames in the northeast room on the second floor.	27
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows white LBP on horizontal wall boards in the northeast room on the second floor.	28
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows green LBP on window frames in the west room on the second floor.	29
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on window frames in the southeast room on the second floor.	30
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on a pipe in the southeast room on the second floor.	31
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows gray LBP on a column frame in the southeast room on the first floor.	32
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows grey LBP on wall panels in the southeast room on the first floor.	33
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



<p>SUBTASK NO. 01.05</p> <p>Direction: NA</p>	DESCRIPTION	This photograph shows off-white LBP on a column frame in the southeast room on the first floor.	34
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

Cyclonic Building Hazardous Materials Survey St. Louis, Missouri



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows green LBP on a step baseboard in the southeast room on the first floor.	35
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows grey LBP on pipe insulation in the southeast room on the first floor.	36
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on a wall and door trim in the southwest room in the basement.	37
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows white LBP on a door to the northwest rooms in the basement.	38
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

Cyclonic Building Hazardous Materials Survey St. Louis, Missouri



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows miscellaneous equipment, debris, and 55-gallon drums in the northeast room in the basement.	39
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows miscellaneous debris and containers in the southwest room in the basement.	40
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows miscellaneous equipment and debris in the northwest room in the basement.	41
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows miscellaneous debris and containers in the southeast room in the basement.	42
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

**Cyclonic Building Hazardous Materials Survey
St. Louis, Missouri**

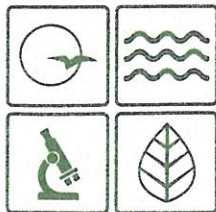


SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows miscellaneous containers in the west room on the second floor.	43
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020



SUBTASK NO. 01.05 Direction: NA	DESCRIPTION	This photograph shows 5-gallon buckets filled with oil in the basement.	44
	CLIENT	EPA	Date
	PHOTOGRAPHER	Ryan Slanczka	9/14/2020

APPENDIX C
INSPECTOR CERTIFICATIONS



Missouri Department of NATURAL RESOURCES

dnr.mo.gov

Michael L. Parson, Governor

Carol S. Comer, Director

February 24, 2020

Stepanie Caples
4152 Indiana Ave
Kansas City, MO 64130

RE: Missouri Asbestos Occupation Certification Card

Enclosed is your certification card for Asbestos Inspector, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7011012420MOII20969

Course Training Date: January 24, 2020

Missouri Certification Approval Date: February 24, 2020

Missouri Certification Expiration Date: January 24, 2021

Note:

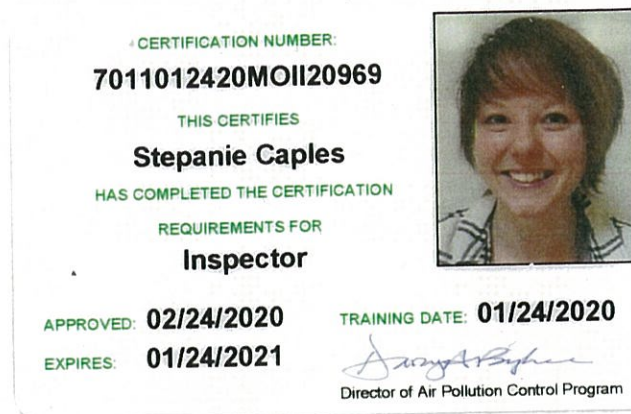
- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
 - Sections 643.225 to 643.250, RSMo;
 - 10 CSR 10-6.241 *Asbestos Projects-Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements*; and
 - 10 CSR 10-6.250 *Asbestos Projects-Certification, Accreditation and Business Exemption Requirements*.
- To keep your occupation certification up-to-date, you must complete an annual refresher course and submit a renewal application each year.
- In order to be eligible to renew your certification, you must successfully complete a refresher course with a Missouri-accredited training provider within 12 months of the expiration date of your current training certificate. If you exceed this grace period, you will be required to retake a Missouri-accredited initial course in order to be eligible for Missouri certification.

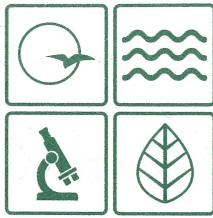
To obtain a copy of the certification renewal application, or review regulations and requirements, please visit our website at <http://dnr.mo.gov/env/apcp/asbestos/index.htm>.

If you have any questions please call the Air Pollution Control Program at 573-751-4817.

AIR POLLUTION CONTROL PROGRAM

Director of Air Pollution Control Program





Missouri Department of NATURAL RESOURCES

dnr.mo.gov

Michael L. Parson, Governor

Carol S. Comer, Director

January 6, 2020

Ryan J Slanczka
8151 Renner Rd Apt 9
Lenexa, KS 66219

RE: **Missouri Asbestos Occupation Certification Card**

Enclosed is your certification card for Asbestos Inspector, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7011121219MOIR19454

Course Training Date: December 12, 2019

Missouri Certification Approval Date: January 07, 2020

Missouri Certification Expiration Date: January 07, 2021

Note:

- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
 - Sections 643.225 to 643.250, RSMo;
 - 10 CSR 10-6.241 *Asbestos Projects-Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements*; and
 - 10 CSR 10-6.250 *Asbestos Projects-Certification, Accreditation and Business Exemption Requirements*.
- To keep your occupation certification up-to-date, you must complete an annual refresher course and submit a renewal application each year.
- In order to be eligible to renew your certification, you must successfully complete a refresher course with a Missouri-accredited training provider within 12 months of the expiration date of your current training certificate. If you exceed this grace period, you will be required to retake a Missouri-accredited initial course in order to be eligible for Missouri certification.

To obtain a copy of the certification renewal application, or review regulations and requirements, please visit our website at <http://dnr.mo.gov/env/apcp/asbestos/index.htm>.

If you have any questions please call the Air Pollution Control Program at 573-751-4817.

AIR POLLUTION CONTROL PROGRAM

Director of Air Pollution Control Program





**Missouri Department of Health
and Senior Services**



Lead Occupation License - ID Badge
License Number: 170912-300005383

Lead Inspector

**Ryan
Slanczka**

Expiration Date: **09/12/2021**

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: Project: 103G65210190.01.05; 3201 Locust Street, St Louis, MO
EML ID: 2489692

Approved by:

Dates of Analysis:
Asbestos PLM: 09-29-2020



Approved Signatory
Amber Rutter

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 500053-0

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. 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 EMLab P&K ("the Company") 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: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Total Samples Submitted:** 75**Total Samples Analyzed:** 60**Total Samples with Layer Asbestos Content > 1%:** 10**Location: CB-MFT-01, Marble Floor Tile with Bed and Grout**

Lab ID-Version‡: 11867291-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Grout	ND
Black Mastic	6% Chrysotile
Sample Composite Homogeneity: Moderate	

Comments: Samples CB-MFT-02 and CB-MFT-03 were not analyzed due to prior positive series.**Location: CB-VFT-01, Beige 9x9 Vinyl Floor Tile with Black Mastic**

Lab ID-Version‡: 11867294-1

Sample Layers	Asbestos Content
Tan Floor Tile	4% Chrysotile
Black Mastic	5% Chrysotile
Sample Composite Homogeneity: Moderate	

Comments: Samples CB-VFT-02 and CB-VFT-03 were not analyzed due to prior positive series.**Location: CB-VFT2-01, Beige 12x12 Vinyl Floor Tile**

Lab ID-Version‡: 11867297-1

Sample Layers	Asbestos Content
Beige Floor Tile	2% Chrysotile
Yellow Mastic	ND
Sample Composite Homogeneity: Moderate	

Comments: Samples CB-VTF2-02 and CB-VFT2-03 were not analyzed due to prior positive series.**Location: CB-TSI-01, 6" White Pipe Insulation**

Lab ID-Version‡: 11867300-1

Sample Layers	Asbestos Content
White Pipe Insulation	10% Chrysotile
Sample Composite Homogeneity: Good	

Comments: Samples CB-TSI-02 and CB-TSI-03 were not analyzed due to prior positive series.

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 any agency of the federal government. Eurofins EMLab P&K 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. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. 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: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-DW-01, Drywall**

Lab ID-Version‡: 11867303-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-DW-02, Drywall

Lab ID-Version‡: 11867304-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-DW-03, Drywall

Lab ID-Version‡: 11867305-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-WM-01, Brown Wall Mastic

Lab ID-Version‡: 11867306-1

Sample Layers	Asbestos Content
Brown Mastic	ND
Sample Composite Homogeneity:	Good

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. 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: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-WM-02, Brown Wall Mastic**

Lab ID-Version‡: 11867307-1

Sample Layers	Asbestos Content
Brown Mastic	ND
Sample Composite Homogeneity: Good	

Location: CB-WM-03, Brown Wall Mastic

Lab ID-Version‡: 11867308-1

Sample Layers	Asbestos Content
Brown Mastic	ND
Sample Composite Homogeneity: Good	

Location: CB-TSI2-01, Water Heater Insulation

Lab ID-Version‡: 11867309-1

Sample Layers	Asbestos Content
Gray Insulation	60% Chrysotile
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity: Good	

Comments: Sample CB-TSI2-02 was not analyzed due to prior positive series.**Location: CB-SC-01, White Skim Coat, Over Plaster Walls**

Lab ID-Version‡: 11867311-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity: Good	

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 any agency of the federal government. Eurofins EMLab P&K 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. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. 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: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-SC-02, White Skim Coat, Over Plaster Walls**

Lab ID-Version‡: 11867312-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity: Good	

Location: CB-SC-03, White Skim Coat, Over Plaster Walls

Lab ID-Version‡: 11867313-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity: Good	

Location: CB-PLAS-01, Plaster Walls and Columns

Lab ID-Version‡: 11867314-1

Sample Layers	Asbestos Content
Gray Plaster	ND
White Skim Coat	ND
Sample Composite Homogeneity: Moderate	

Location: CB-PLAS-02, Plaster Walls and Columns

Lab ID-Version‡: 11867315-1

Sample Layers	Asbestos Content
Gray Plaster	ND
White Skim Coat	ND
Sample Composite Homogeneity: Moderate	

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Client: Tetra Tech-KCMO

C/O: Mr. Jeffrey Mitchell

Re: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-PLAS-03, Plaster Walls and Columns**

Lab ID-Version‡: 11867316-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: CB-PLAS-04, Plaster Walls and Columns

Lab ID-Version‡: 11867317-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: CB-PLAS-05, Plaster Walls and Columns

Lab ID-Version‡: 11867318-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: CB-PLAS-06, Plaster Walls and Columns

Lab ID-Version‡: 11867319-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity:	Good

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Client: Tetra Tech-KCMO

C/O: Mr. Jeffrey Mitchell

Re: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-PLAS-07, Plaster Walls and Columns**

Lab ID-Version‡: 11867320-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity: Good	

Location: CB-MFT2-01, Square-Patterned Marble Floor Tile with Bed and Grout

Lab ID-Version‡: 11867321-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity: Moderate	

Location: CB-MFT2-02, Square-Patterned Marble Floor Tile with Bed and Grout

Lab ID-Version‡: 11867322-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity: Moderate	

Location: CB-MFT2-03, Square-Patterned Marble Floor Tile with Bed and Grout

Lab ID-Version‡: 11867323-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity: Moderate	

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Client: Tetra Tech-KCMO

C/O: Mr. Jeffrey Mitchell

Re: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-JC-01, Joint Compound**

Lab ID-Version‡: 11867324-1

Sample Layers	Asbestos Content
White Joint Compound with Paint	ND
Sample Composite Homogeneity: Good	

Location: CB-JC-02, Joint Compound

Lab ID-Version‡: 11867325-1

Sample Layers	Asbestos Content
White Joint Compound with Paint	ND
Sample Composite Homogeneity: Good	

Location: CB-SC2-01, Skim Coat, Over Plaster Columns

Lab ID-Version‡: 11867326-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity: Good	

Location: CB-SC2-02, Skim Coat, Over Plaster Columns

Lab ID-Version‡: 11867327-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity: Good	

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Client: Tetra Tech-KCMO

C/O: Mr. Jeffrey Mitchell

Re: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

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Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-SC2-03, Skim Coat, Over Plaster Columns**

Lab ID-Version‡: 11867328-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: CB-TSI3-01, Boiler Insulation

Lab ID-Version‡: 11867329-1

Sample Layers	Asbestos Content
Gray Insulation	10% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample CB-TSI3-02 was not analyzed due to prior positive series.**Location: CB-SC-04, Skim Coat, Over Plaster Walls**

Lab ID-Version‡: 11867331-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: CB-CT-01, White 12x12 Ceiling Tile

Lab ID-Version‡: 11867332-1

Sample Layers	Asbestos Content
Tan Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

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Client: Tetra Tech-KCMO

C/O: Mr. Jeffrey Mitchell

Re: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-CT-02, White 12x12 Ceiling Tile**

Lab ID-Version‡: 11867333-1

Sample Layers	Asbestos Content
Tan Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-CT2-01, White 2x4 Ceiling Tile

Lab ID-Version‡: 11867333-1

Sample Layers	Asbestos Content
Tan Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	60% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CB-CT2-02, White 2x4 Ceiling Tile

Lab ID-Version‡: 11867333-1

Sample Layers	Asbestos Content
Tan Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	60% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CB-CT2-03, White 2x4 Ceiling Tile

Lab ID-Version‡: 11867333-1

Sample Layers	Asbestos Content
Tan Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	60% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

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C/O: Mr. Jeffrey Mitchell

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ASBESTOS PLM REPORT**Location: CB-CLK-01, White Caulk**

Lab ID-Version‡: 11867337-1

Sample Layers	Asbestos Content
White Caulk	< 1% Chrysotile
Sample Composite Homogeneity: Good	

Location: CB-CLK-02, White Caulk

Lab ID-Version‡: 11867338-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity: Good	

Location: CB-CLK-03, White Caulk

Lab ID-Version‡: 11867339-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity: Good	

Location: CB-CLK2-01, Yellow Caulk

Lab ID-Version‡: 11867340-1

Sample Layers	Asbestos Content
Yellow Caulk with Paint	ND
Sample Composite Homogeneity: Good	

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C/O: Mr. Jeffrey Mitchell

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ASBESTOS PLM REPORT**Location: CB-CLK2-02, Yellow Caulk**

Lab ID-Version‡: 11867341-1

Sample Layers	Asbestos Content
Yellow Caulk with Paint	ND
Sample Composite Homogeneity: Good	

Location: CB-CLK2-03, Yellow Caulk

Lab ID-Version‡: 11867342-1

Sample Layers	Asbestos Content
Yellow Caulk with Paint	ND
Sample Composite Homogeneity: Good	

Location: CB-CLK3-01, Black and Yellow Caulk

Lab ID-Version‡: 11867343-1

Sample Layers	Asbestos Content
Brown Caulk	ND
Sample Composite Homogeneity: Good	

Location: CB-CLK3-02, Black and Yellow Caulk

Lab ID-Version‡: 11867344-1

Sample Layers	Asbestos Content
Brown Caulk	ND
Sample Composite Homogeneity: Good	

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Client: Tetra Tech-KCMO

C/O: Mr. Jeffrey Mitchell

Re: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

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ASBESTOS PLM REPORT**Location: CB-CLK-04, White Caulk**

Lab ID-Version‡: 11867345-1

Sample Layers	Asbestos Content
White Caulk	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: CB-CLK-05, White Caulk

Lab ID-Version‡: 11867346-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: CB-DW2-01, Speckled-Interior Drywall

Lab ID-Version‡: 11867347-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-DW2-02, Speckled-Interior Drywall

Lab ID-Version‡: 11867348-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

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Louis, MO

Date of Sampling: 09-16-2020

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ASBESTOS PLM REPORT**Location: CB-DW2-03, Speckled-Interior Drywall**

Lab ID-Version‡: 11867349-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-DW3-01, Yellow-Interior Drywall

Lab ID-Version‡: 11867350-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-DW3-02, Yellow-Interior Drywall

Lab ID-Version‡: 11867351-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-R-01, Roofing

Lab ID-Version‡: 11867352-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
Black Tape	ND
Black Roofing Felt	ND
Black Roofing Tar	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Poor

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Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 09-29-2020

ASBESTOS PLM REPORT**Location: CB-R-02, Roofing**

Lab ID-Version‡: 11867353-1

Sample Layers	Asbestos Content
Gray/Black Mastic	5% Chrysotile
Black Roofing Material	ND
Black Tape	ND
Black Roofing Felt	ND
Black Roofing Tar	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Poor

Comments: Sample CB-R-03 was not analyzed due to prior positive series.

Location: CB-R2-01, Roofing Tar

Lab ID-Version‡: 11867355-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CB-R2-02, Roofing Tar

Lab ID-Version‡: 11867356-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CB-R2-03, Roofing Tar

Lab ID-Version‡: 11867357-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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Louis, MO

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ASBESTOS PLM REPORT**Location: CB-CLK4-01, Exterior Caulk**

Lab ID-Version‡: 11867358-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity: Good	

Location: CB-CLK4-02, Exterior Caulk

Lab ID-Version‡: 11867359-1

Sample Layers	Asbestos Content
Gray Caulk	2% Chrysotile
Sample Composite Homogeneity: Good	

Comments: Sample CB-CLK4-03 was not analyzed due to prior positive series.**Location: CB-CEMB-01, Cement Board**

Lab ID-Version‡: 11867361-1

Sample Layers	Asbestos Content
Gray Transite	15% Chrysotile 2% Amosite
Sample Composite Homogeneity: Good	

Comments: Samples CB-CEMB-02 and CB-CEMB-03 were not analyzed due to prior positive series.**Location: CB-GP-01, Glue Puck**

Lab ID-Version‡: 11867364-1

Sample Layers	Asbestos Content
Black Glue	7% Chrysotile
Sample Composite Homogeneity: Good	

Comments: Sample CB-GP-02 was not analyzed due to prior positive series.

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CHAIN OF CUSTODY



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SSF, CA: 6000 Shoreline Court, Suite 205, South San Francisco, CA 94090 • (866) 888-6653

ASBES

REQUESTED:



PCM
Air
E
002489692
Other Requests

CONTACT INFORMATION

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

PROJECT INFORMATION

Project ID:	103G65210190.01.05	STD - Standard (DEFAULT)	TURN AROUND TIME CODES (TAT)
Project Description:	3201 Locust Street, St. Louis, MO	ND - Next Business Day	Pushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
Project Zip:		SD - Same Business Day Rush*	
PO Number:		Sampled By: Ryan Slanczka	

Sample ID	Description	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples only)	Notes
CB-MFT-01	Marble Floor Tile, w/ Bed and Grout	B	STD	NA	Stop on 1 st Positive
CB-MFT-02		B	STD	NA	Stop on 1 st Positive
CB-MFT-03		B	STD	NA	Stop on 1 st Positive
CB-VFT-01	Beige 9x9 Vinyl Floor Tile w/ Black Mastic	B	STD	NA	Stop on 1 st Positive
CB-VFT-02		B	STD	NA	Stop on 1 st Positive
CB-VFT-03		B	STD	NA	Stop on 1 st Positive
CB-VFT-01	Beige 12x12 Vinyl Floor Tile	B	STD	NA	Stop on 1 st Positive
CB-VFT-02		B	STD	NA	Stop on 1 st Positive
CB-VFT-03		B	STD	NA	Stop on 1 st Positive
CB-TSI-01	6" White Pipe Insulation	B	STD	NA	Stop on 1 st Positive
CB-TSI-02		B	STD	NA	Stop on 1 st Positive
CB-TSI-02		B	STD	NA	Stop on 1 st Positive

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

SAMPLE TYPE CODES		RELINQUISHED BY		DATE & TIME	
A - Air	W - Wipe			9/16/2020	
B - Bulk	T - Tape				
D - Dust	R - Rock				
SO - Soil	O - Other				
		RECEIVED BY		DATE & TIME	
				9-24-20	

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SSF, CA: 6000 Shoreline Court, Suite 205, South San Francisco, CA 94080 • (650) 888-6553

CONTACT INFORMATION

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

PROJECT INFORMATION

Project ID:	103G65210190.01.05		STD - Standard (DEFAULT)	Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
Project Description:	3201 Locust Street, St. Louis, MO		ND - Next Business Day	
Project Zip	Sampling Date & Time:		SD - Same Business Day Rush*	
PO Number:	Sampled By: Ryan Slanczka		*Please call Client Services for locations with Rush services	

CB-TS1-03	6" White Pipe Insulation	B	STD	NA	Stop on 1 st Positive
CB-DW-01		B	STD	NA	Stop on 1 st Positive
CB-DW-02	Drywall	B	STD	NA	Stop on 1 st Positive
CB-DW-03		B	STD	NA	Stop on 1 st Positive
CB-WM-01		B	STD	NA	Stop on 1 st Positive
CB-WM-02	Brown Wall Mastic	B	STD	NA	Stop on 1 st Positive
CB-WM-03		B	STD	NA	Stop on 1 st Positive
CB-TS12-01	Water Heater Insulation	B	STD	NA	Stop on 1 st Positive
CB-TS12-02		B	STD	NA	Stop on 1 st Positive
CB-SC-01		B	STD	NA	Stop on 1 st Positive
CB-SC-02	White Skim Coat, over plaster walls	B	STD	NA	Stop on 1 st Positive

SAMPLE TYPE CODES		RELINQUISHED BY	DATE & TIME
A - Air	W - Wipe		
B - Bulk	T - Tape		
D - Dust	R - Rock		
SO - Soil	O - Other		

ASBESTOS ANALYSIS

REQUESTED SERVICES (C)



002489692

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

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Phoenix, AZ: 1501 West Knudsen Drive, Phoenix, AZ 85027 • (800) 651-4802
SSF, CA: 6000 Shoreline Court, Suite 205, South San Francisco, CA 94090 • (866) 888-6653

CONTACT INFORMATION

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

PROJECT INFORMATION

Project ID:	103G65210190.01.05	STD - Standard (DEFAULT)	TURN AROUND TIME CODES (TAT)
Project Description:	3201 Locust Street, St. Louis, MO	ND - Next Business Day	Pushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
Project Zip:		SD - Same Business Day Rush*	
PO Number:		Sampled By: Ryan Slanczka	

Sample ID	Description	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples only)	Notes
CB-SC-03	White Skim Coat, over plaster walls	B	STD	NA	Stop on 1 st Positive
CB-PLAS-01		B	STD	NA	Stop on 1 st Positive
CB-PLAS-02		B	STD	NA	Stop on 1 st Positive
CB-PLAS-03		B	STD	NA	Stop on 1 st Positive
CB-PLAS-04	Plaster Walls and Columns	B	STD	NA	Stop on 1 st Positive
CB-PLAS-05		B	STD	NA	Stop on 1 st Positive
CB-PLAS-06		B	STD	NA	Stop on 1 st Positive
CB-PLAS-07		B	STD	NA	Stop on 1 st Positive
CB-MFT2-01		B	STD	NA	Stop on 1 st Positive
CB-MFT2-02	Square-Patterned Marble Floor Tile w/ Bed and Grout	B	STD	NA	Stop on 1 st Positive
CB-MFT2-03		B	STD	NA	Stop on 1 st Positive


SAMPLE TYPE CODES		RELINQUISHED BY		DATE & TIME	
A - Air	W - Wipe			9/25/20	
B - Bulk	T - Tape				
D - Dust	R - Rock				
SO - Soil	O - Other:				

ASBESTOS A

REQUESTED SERVICES



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

RECEIVED BY		DATE & TIME	
		9/25/20 1026	

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SF, CA: 6000 Shoreline Court, Suite 205, South San Francisco, CA 94080 • (866) 888-5653

CONTACT INFORMATION

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

PROJECT INFORMATION

Project ID:	103G65210190.01.05	STD - Standard (DEFAULT)	TURN AROUND TIME CODES (TAT)
Project Description:	3201 Locust Street, St. Louis, MO	ND - Next Business Day	Pushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
Project Zip:		SD - Same Business Day Rush*	
PO Number:		Sampled By: Ryan Slanczka	*Please call Client Services for locations with Rush services

Sample ID	Description	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples only)	Notes
CB-JC-01	Joint Compound	B	STD	NA	Stop on 1 st Positive
CB-JC-02		B	STD	NA	Stop on 1 st Positive
CB-SC2-01		B	STD	NA	Stop on 1 st Positive
CB-SC2-02	Skim Coat, over plaster columns	B	STD	NA	Stop on 1 st Positive
CB-SC2-03		B	STD	NA	Stop on 1 st Positive
CB-TS13-01		B	STD	NA	Stop on 1 st Positive
CB-TS13-02	Boiler Insulation	B	STD	NA	Stop on 1 st Positive
CB-SC-04		B	STD	NA	Stop on 1 st Positive
CB-CT-01		B	STD	NA	Stop on 1 st Positive
CB-CT-02	White 12x12 Ceiling Tile	B	STD	NA	Stop on 1 st Positive
CB-CT-01		B	STD	NA	Stop on 1 st Positive

SAMPLE TYPE CODES		RELINQUISHED BY	DATE & TIME
A - Air	W - Wipe	<i>[Signature]</i>	9/23/2020
B - Bulk	T - Tape		
D - Dust	R - Rock		
SO - Soil	O - Other		

ASBESTOS ANALYSIS

REQUESTED SERVICES (Check)



002489692

PCM	Air	Bulk	Soil	Requests
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			

RECEIVED BY	DATE & TIME
<i>[Signature]</i>	9/23/20 10:20

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ASBESTOS ANALYSIS

REQUESTED SERVICES

PCM PLM

002489692

CONTACT INFORMATION									
Company:	Tetra Tech, Inc.			Address: 415 Oak Street, Kansas City, MO 64106					
Contact:	Jeffrey Mitchell			Special Instructions: Stop on 1 st Positive					
Phone:	(816) 412-1773								
PROJECT INFORMATION				TURN AROUND TIME CODES (TAT)					
Project ID:	103G65210190.01.05			STD - Standard (DEFAULT)		Pushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.			
Project Description:	3201 Locust Street, St. Louis, MO			ND - Next Business Day					
Project Zip:				SD - Same Business Day Rush*					
PO Number:				Sampled By: Ryan Slanczka		*Please call Client Services for locations with Rush services			
Sample ID	Description	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples only)	Notes				
CB-CT2-02	White 2x4 Ceiling Tile	B	STD	NA	Stop on 1 st Positive				
CB-CT2-03		B	STD	NA	Stop on 1 st Positive				
CB-CLK-01		B	STD	NA	Stop on 1 st Positive				
CB-CLK-02	White Caulk	B	STD	NA	Stop on 1 st Positive				
CB-CLK-03		B	STD	NA	Stop on 1 st Positive				
CB-CLK2-01		B	STD	NA	Stop on 1 st Positive				
CB-CLK2-02	Yellow Caulk	B	STD	NA	Stop on 1 st Positive				
CB-CLK2-03		B	STD	NA	Stop on 1 st Positive				
CB-CLK3-01		B	STD	NA	Stop on 1 st Positive				
CB-CLK3-02	Black and Yellow Caulk	B	STD	NA	Stop on 1 st Positive				
CB-CLK3-04		B	STD	NA	Stop on 1 st Positive				
SAMPLE TYPE CODES									
A - Air		W - Wipe		RELINQUISHED BY			DATE & TIME		
B - Bulk		T - Tape					9/23/2020		
D - Dust		R - Rock							
SO - Soil		O - Other:							
Fiber Count (NIOSH 7400)									
OSHA with TWA									
EPA Method 600/R-93/116									
EPA Point Count (200 Point Count)									
EPA Point Count (400 Point Count)									
EPA Point Count (1000 Point Count)									
Gravimetric Point Count									
CARB 435 Method (Pre-crushed Sample)									
CARB 435 Method (Regular Sample)									
Lead Analysis									

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CONTACT INFORMATION

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

PROJECT INFORMATION

Project ID:	103G65210190.01.05	TURN AROUND TIME CODES (TAT)	STD - Standard (DEFAULT)
Project Description:	3201 Locust Street, St. Louis, MO	ND - Next Business Day	Flushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
Project Zip:		SD - Same Business Day Rush*	
PO Number:		Sampled By:	Ryan Slanczka

Sample ID	Description	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples only)	Notes
CB-CLK-05	White Caulk	B	STD	NA	Stop on 1 st Positive
CB-DW2-01		B	STD	NA	Stop on 1 st Positive
CB-DW2-02	Speckled-Interior Drywall	B	STD	NA	Stop on 1 st Positive
CB-DW2-03		B	STD	NA	Stop on 1 st Positive
CB-DW3-01		B	STD	NA	Stop on 1 st Positive
CB-DW3-02	Yellow-Interior Drywall	B	STD	NA	Stop on 1 st Positive
CB-R-01		B	STD	NA	Stop on 1 st Positive
CB-R-02	Roofing	B	STD	NA	Stop on 1 st Positive
CB-R-03		B	STD	NA	Stop on 1 st Positive
CB-R2-01		B	STD	NA	Stop on 1 st Positive
CB-R2-02	Roofing Tar	B	STD	NA	Stop on 1 st Positive

SAMPLE TYPE CODES		RELINQUISHED BY	DATE & TIME
A - Air	W - Wipe		9/23/2020
B - Bulk	T - Tape		
D - Dust	R - Rock		
SO - Soil	O - Other:		

ASBESTOS A

REQUESTED SERVICES



002489692

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

RECEIVED BY	DATE & TIME
	9/25/2020

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A TestAmerica Company

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

TURN AROUND TIME CODES (TAT)

STD - Standard (DEFAULT)

ND – Next Business Day

SD - Same Business Day Rush*

Please call Client Services at 1-800-368-6868 for locations with Push services.

TAT	Total Volume
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STD	NA
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SID	NA
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STD	NA
STD	NA

STD	NA
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STD	NA
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STD	NA
1	1
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Report for:

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

Regarding: Project: 103G65210190.01.05; 3201 Locust Street, St Louis, MO
EML ID: 2489692

Approved by:

Dates of Analysis:
Asbestos-EPA 400 point count: 10-06-2020



Approved Signatory
Amber Rutter

Service SOPs: Asbestos-EPA 400 point count (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1262)
NVLAP Lab Code 500053-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received.

Eurofins EMLab P&K ("the Company") 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: 103G65210190.01.05; 3201 Locust Street, St
Louis, MO

Date of Sampling: 09-16-2020

Date of Receipt: 09-25-2020

Date of Report: 10-06-2020

ASBESTOS POINT COUNT REPORT

Location:	CB-CLK-01 White Caulk		
Total Points Counted:	400		
Lab ID-Version‡:	11894922-1		
Sample Layers	Asbestos Type	Asbestos Points Counted	Asbestos Concentration (%)
White Caulk	Chrysotile	0	< 0.25
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CB-CLK-04 White Caulk		
Total Points Counted:	400		
Lab ID-Version‡:	11894923-1		
Sample Layers	Asbestos Type	Asbestos Points Counted	Asbestos Concentration (%)
White Caulk	Chrysotile	0	< 0.25
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

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.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. 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 any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. Eurofins EMLab P&K 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.

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".

APPENDIX E

PCB ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS

October 07, 2020

Kaitlyn Mitchell
Tetra Tech EMI
415 Oak
Kansas City, MO 64106

RE: Project: 103G65210190.01.05
Pace Project No.: 60349358

Dear Kaitlyn Mitchell:

Enclosed are the analytical results for sample(s) received by the laboratory on September 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeffrey Shopper
jeff.shopper@pacelabs.com
1(913)563-1408
Project Manager

Enclosures

cc: Ryan Slanczka, Tetra Tech



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 103G65210190.01.05

Pace Project No.: 60349358

Pace Analytical Services - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 103G65210190.01.05

Pace Project No.: 60349358

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60349358001	PCB-1	Solid	09/16/20 08:00	09/24/20 09:50
60349358002	PCB-2	Solid	09/16/20 08:00	09/24/20 09:50
60349358003	PCB-3	Solid	09/16/20 08:00	09/24/20 09:50
60349358004	PCB-4	Solid	09/16/20 08:00	09/24/20 09:50
60349358005	PCB-5	Solid	09/16/20 08:00	09/24/20 09:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 103G65210190.01.05

Pace Project No.: 60349358

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60349358001	PCB-1	EPA 8082	RAG	11	PASI-M
		ASTM D2974	JDL	1	PASI-M
60349358002	PCB-2	EPA 8082	RAG	11	PASI-M
		ASTM D2974	JDL	1	PASI-M
60349358003	PCB-3	EPA 8082	RAG	11	PASI-M
		ASTM D2974	JDL	1	PASI-M
60349358004	PCB-4	EPA 8082	RAG	11	PASI-M
		ASTM D2974	JDL	1	PASI-M
60349358005	PCB-5	EPA 8082	RAG	11	PASI-M
		ASTM D2974	JDL	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 103G65210190.01.05

Pace Project No.: 60349358

Sample: PCB-1 **Lab ID: 60349358001** Collected: 09/16/20 08:00 Received: 09/24/20 09:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	11141-16-5	
PCB-1242 (Aroclor 1242)	172	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	53469-21-9	
PCB-1248 (Aroclor 1248)	153	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	12672-29-6	
PCB-1254 (Aroclor 1254)	133	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	50.4	1	10/01/20 12:41	10/06/20 11:11	11100-14-4	
Surrogates								
Tetrachloro-m-xylene (S)	86	%.	30-150	1	10/01/20 12:41	10/06/20 11:11	877-09-8	
Decachlorobiphenyl (S)	87	%.	30-150	1	10/01/20 12:41	10/06/20 11:11	2051-24-3	

Dry Weight / %M by ASTM D2974

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture	0.57	%	0.10	1		09/30/20 15:55		N2
------------------	-------------	---	------	---	--	----------------	--	----

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 103G65210190.01.05

Pace Project No.: 60349358

Sample: PCB-2 **Lab ID: 60349358002** Collected: 09/16/20 08:00 Received: 09/24/20 09:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	11141-16-5	
PCB-1242 (Aroclor 1242)	318	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	53469-21-9	
PCB-1248 (Aroclor 1248)	269	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	12672-29-6	
PCB-1254 (Aroclor 1254)	261	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	48.0	1	10/01/20 12:41	10/06/20 11:27	11100-14-4	
Surrogates								
Tetrachloro-m-xylene (S)	87	%.	30-150	1	10/01/20 12:41	10/06/20 11:27	877-09-8	
Decachlorobiphenyl (S)	70	%.	30-150	1	10/01/20 12:41	10/06/20 11:27	2051-24-3	

Dry Weight / %M by ASTM D2974

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture	0.67	%	0.10	1		09/30/20 15:55		N2
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 103G65210190.01.05

Pace Project No.: 60349358

Sample: PCB-3 **Lab ID: 60349358003** Collected: 09/16/20 08:00 Received: 09/24/20 09:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	11141-16-5	
PCB-1242 (Aroclor 1242)	425	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	53469-21-9	
PCB-1248 (Aroclor 1248)	395	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	12672-29-6	
PCB-1254 (Aroclor 1254)	306	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	49.0	1	10/01/20 12:41	10/06/20 11:42	11100-14-4	
Surrogates								
Tetrachloro-m-xylene (S)	89	%.	30-150	1	10/01/20 12:41	10/06/20 11:42	877-09-8	
Decachlorobiphenyl (S)	81	%.	30-150	1	10/01/20 12:41	10/06/20 11:42	2051-24-3	

Dry Weight / %M by ASTM D2974

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture	0.44	%	0.10	1		09/30/20 15:55		N2
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 103G65210190.01.05

Pace Project No.: 60349358

Sample: PCB-4 **Lab ID: 60349358004** Collected: 09/16/20 08:00 Received: 09/24/20 09:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	62.4	1	10/01/20 12:41	10/06/20 11:58	11100-14-4	
Surrogates								
Tetrachloro-m-xylene (S)	91	%.	30-150	1	10/01/20 12:41	10/06/20 11:58	877-09-8	
Decachlorobiphenyl (S)	71	%.	30-150	1	10/01/20 12:41	10/06/20 11:58	2051-24-3	

Dry Weight / %M by ASTM D2974

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture	0.55	%	0.10	1		09/30/20 15:55		N2
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 103G65210190.01.05

Pace Project No.: 60349358

Sample: PCB-5 **Lab ID: 60349358005** Collected: 09/16/20 08:00 Received: 09/24/20 09:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3546								
Pace Analytical Services - Minneapolis								
PCB-1016 (Aroclor 1016)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	47.1	1	10/01/20 12:41	10/06/20 12:14	11100-14-4	
Surrogates								
Tetrachloro-m-xylene (S)	102	%.	30-150	1	10/01/20 12:41	10/06/20 12:14	877-09-8	
Decachlorobiphenyl (S)	74	%.	30-150	1	10/01/20 12:41	10/06/20 12:14	2051-24-3	

Dry Weight / %M by ASTM D2974

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture	0.98	%	0.10	1		09/30/20 15:55		N2
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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 103G65210190.01.05

Pace Project No.: 60349358

QC Batch: 701623

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 60349358001, 60349358002, 60349358003, 60349358004, 60349358005

SAMPLE DUPLICATE: 3747889

Parameter	Units	10533609001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	2.5	2.3	8	30	N2

SAMPLE DUPLICATE: 3747890

Parameter	Units	10533637004 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.0	2.9	3	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 103G65210190.01.05

Pace Project No.: 60349358

QC Batch: 701866

Analysis Method: EPA 8082

QC Batch Method: EPA 3546

Analysis Description: 8082 GCS PCB

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 60349358001, 60349358002, 60349358003, 60349358004, 60349358005

METHOD BLANK: 3749310

Matrix: Solid

Associated Lab Samples: 60349358001, 60349358002, 60349358003, 60349358004, 60349358005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1221 (Aroclor 1221)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1232 (Aroclor 1232)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1242 (Aroclor 1242)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1248 (Aroclor 1248)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1254 (Aroclor 1254)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1260 (Aroclor 1260)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1262 (Aroclor 1262)	ug/kg	ND	50.0	10/06/20 10:26	
PCB-1268 (Aroclor 1268)	ug/kg	ND	50.0	10/06/20 10:26	
Decachlorobiphenyl (S)	%.	95	30-150	10/06/20 10:26	
Tetrachloro-m-xylene (S)	%.	75	30-150	10/06/20 10:26	

LABORATORY CONTROL SAMPLE & LCSD: 3749311

3749312

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	1000	839	840	84	84	51-125	0	20	
PCB-1260 (Aroclor 1260)	ug/kg	1000	890	893	89	89	49-125	0	20	
Decachlorobiphenyl (S)	%.				92	94	30-150			
Tetrachloro-m-xylene (S)	%.				79	80	30-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 103G65210190.01.05

Pace Project No.: 60349358

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 702378

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 103G65210190.01.05

Pace Project No.: 60349358

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60349358001	PCB-1	EPA 3546	701866	EPA 8082	702378
60349358002	PCB-2	EPA 3546	701866	EPA 8082	702378
60349358003	PCB-3	EPA 3546	701866	EPA 8082	702378
60349358004	PCB-4	EPA 3546	701866	EPA 8082	702378
60349358005	PCB-5	EPA 3546	701866	EPA 8082	702378
60349358001	PCB-1	ASTM D2974	701623		
60349358002	PCB-2	ASTM D2974	701623		
60349358003	PCB-3	ASTM D2974	701623		
60349358004	PCB-4	ASTM D2974	701623		
60349358005	PCB-5	ASTM D2974	701623		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company: Tetra Tech, Inc.

Address: 415 Oak Street, Kansas City, MO 64106

Billing Information:

Same

Report To: Kaitlyn Mitchell

Email To: kaitlyn.mitchell@tetratech.com

Copy To:

Site Collection Info/Address:
3201 Locust Street, St. Louis, MO

Customer Project Name/Number:

103G65210190.01.05

State:

MO / St. Louis

Time Zone Collected:

[] PT [] MT [] CT [] ET

Site/Facility ID #:

Compliance Monitoring?

[] Yes [] No

Collected By (print):

Ryan Slawetzka

DW PWS ID #:

DW Location Code:

Collected By (signature):

STD

Immediately Packed on Ice:

[] Yes [] No

Sample Disposal:

[] Dispose as appropriate [] Return

[] Archive: _____

[] Hold: _____

Field Filtered (if applicable):

[] Yes [] No

Analysis: _____

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID

Matrix *

Comp / Grab

Collected (or Composite Start)

Res

CI

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

PCB-1

PCB-2

PCB-3

PCB-4

PCB-5

OT - Caulking

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Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: T-29A

Cooler 1 Temp Upon Receipt: 18.3 oC

Cooler 1 Therm Corr. Factor: -1.2 oC

Cooler 1 Corrected Temp: 18.5 oC

Comments:

Relinquished by/Company: (Signature)

Date/Time: 9/24/2020 0850

Received by/Company: (Signature)

Date/Time: 9/24/2020 0850

Samples received via:

FEDEX UPS Client Courier Pace Courier

Table #:

Actnum:

Template:

Prelogin:

PM:

Relinquished by/Company: (Signature)

Date/Time: 9/24/2020 0850

Received by/Company: (Signature)

Date/Time: 9/24/2020 0850

Samples received via:

FEDEX UPS Client Courier Pace Courier

Table #:

Actnum:

Template:

Prelogin:

PM:

Relinquished by/Company: (Signature)

Date/Time: 9/24/2020 0850

Received by/Company: (Signature)

Date/Time: 9/24/2020 0850

Samples received via:

FEDEX UPS Client Courier Pace Courier

Table #:

Actnum:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s):

Page: 1 of 1

LAB USE ON

WO# : 60349358

number or

Container P.

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact: Y N NA
Custody Signatures Present: Y N NA
Collector Signature Present: Y N NA
Bottles Intact: Y N NA
Correct Bottles: Y N NA
Sufficient Volume: Y N NA
Samples Received on Ice: Y N NA
VOA - Headspace Acceptable: Y N NA
USDA Regulated Soils: Y N NA
Samples in Holding Time: Y N NA
Residual Chlorine Present: Y N NA
Cl Strips: Y N NA
Sample pH Acceptable: Y N NA
pH Strips: Y N NA
Sulfide Present: Y N NA
Lead Acetate Strips: Y N NA
LAB USE ONLY:
LAB Sample # / Comments:

PCBs in Caulking (EPA 8082A)



Sample Receiving Non-Conformance Form (NCF)

Date: 9.25.20	Evaluated by: <i>W. J. P. / L.</i>
Client: Tetra Tec	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

<input checked="" type="checkbox"/> Collection date/time missing or incorrect	<input type="checkbox"/> Analyses or analytes: missing or clarification needed	<input type="checkbox"/> Samples listed on COC do not match samples received (missing, additional, etc.)
<input type="checkbox"/> Sample IDs on COC do not match sample labels	<input type="checkbox"/> Required trip blanks were not received	<input type="checkbox"/> Required signatures are missing

Comments/Details/Other Issues not listed above:

No times on COC or container

3. Sample integrity issues: check applicable issues below and add details where appropriate:

<input type="checkbox"/> Samples: Past holding time	<input type="checkbox"/> Samples: Condition needs to be brought to lab personnel's attention (details below)	<input type="checkbox"/> Preservation: Improper
<input type="checkbox"/> Samples: Not field filtered	<input type="checkbox"/> Containers: Broken or compromised	<input type="checkbox"/> Temperature: not within acceptance criteria (typically 0-6C)
<input type="checkbox"/> Samples: Insufficient volume received	<input type="checkbox"/> Containers: Incorrect	<input type="checkbox"/> Temperature: Samples arrived frozen
<input type="checkbox"/> Samples: Cooler damaged or compromised	<input type="checkbox"/> Custody Seals: Missing or compromised on samples, trip blanks or coolers	<input type="checkbox"/> Vials received with improper headspace
<input type="checkbox"/> Samples: contain chlorine or sulfides	<input type="checkbox"/> Packing Material: Insufficient/Improper	<input type="checkbox"/> Other:

Comments/Details:

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions: