QUALITY ASSURANCE PROJECT PLAN – ASBESTOS AND LEAD-BASED PAINT ABATEMENT REVISION 1

MARION GYMNASIUM

MARION, ARKANSAS

Client:
Arkansas Department of Energy and Environment
Division of Environmental Quality
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FEBRUARY 2023

PREPARED BY:

Harbor Environmental and Safety
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ARKANSAS ENERGY & ENVIRONMENT

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Quality Assurance Project Plan
Hazardous Materials Abatement
Marion Gymnasium
54 E. Military Drive
Marion, Arkansas

Prepared by:

Harbor

Date:

Elizabeth Reyes, Project Officer, US EPA Region 6

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Date: 2023.02.02 08:04:53 -06'00'

Date: 02/02/2023

Addie Smith, DEQ Brownfield & Site Assessment Project Manager

Date: 02/01/2023

Thomas Huetter, P.G., Harbor, DEQ Liaison and Project Manager

Lisa Rotenberry

Date: 02/01/2023

Lisa Rotenberry, Harbor, Quality Assurance Manager

Date: 02/01/2023

Caleb Gourley, Harbor, Abatement Oversight Field Manager

Date: 2/2/23

Justin Dixon, Snyder Environmental, Abatement Contractor

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1.0 Project Management

1.1 Distribution List

The following individuals will receive a copy of the approved Quality Assurance Project Plan (QAPP), either in hard copy or electronic format, as well as any subsequent revisions:

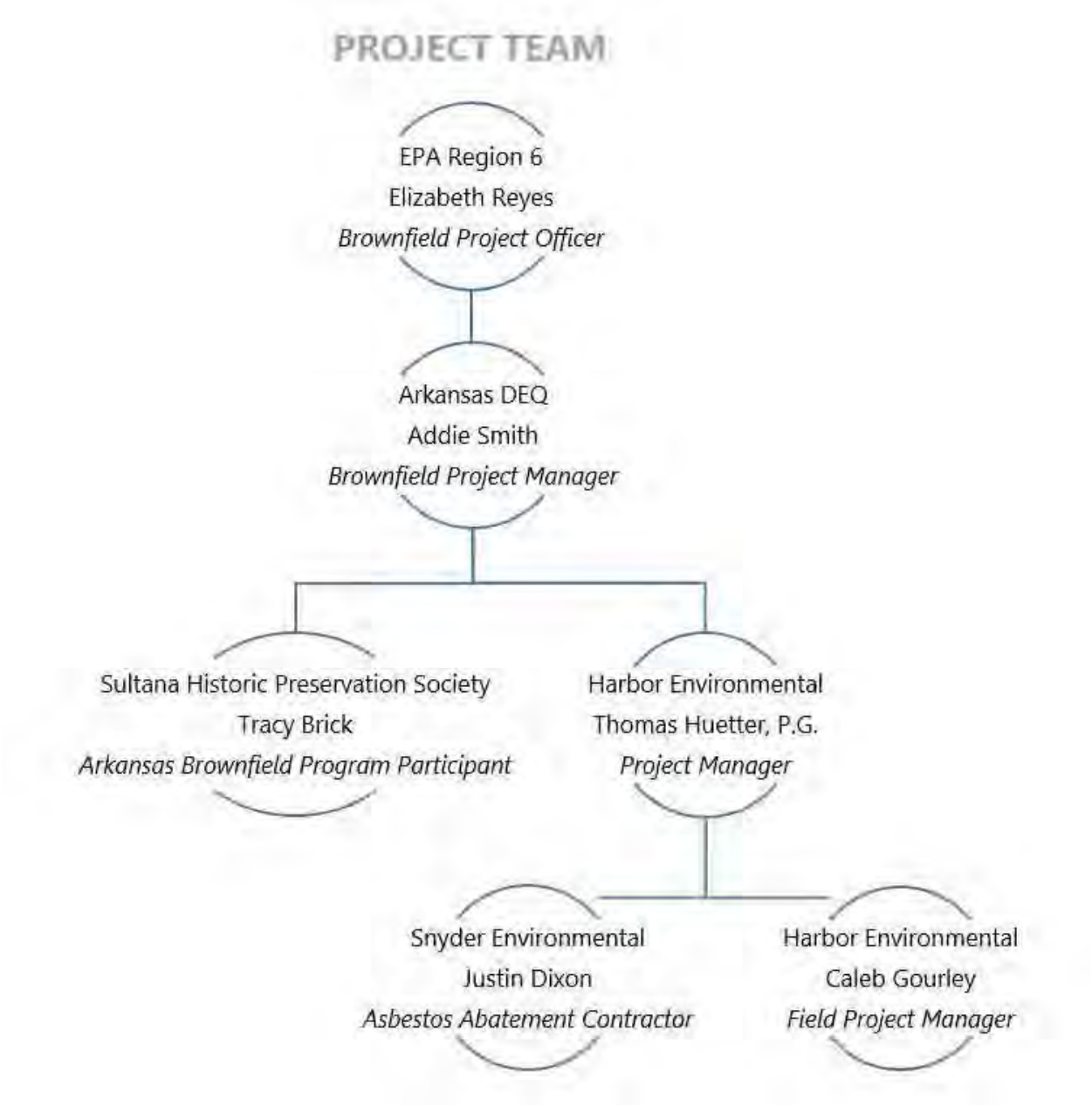
- Elizabeth Reyes – US EPA Region 6 Project Officer, 214-665-2194, reyes.elizabeth@epa.gov
- Addie Smith – Arkansas Department of Energy and Environment Division of Environmental Quality (DEQ) Brownfields Program Administrator, 501-682-0616, addie.smith@adeq.state.ar.us
- Tracy Brick – Sultana Historical Preservation Society board member and Mayor of Marion, 870-739-5410, tracy.brick@marionarkansas.org
- Thomas Huetter, P.G. – Harbor, Project Manager, Harbor, 501-663-8800, thuetter@harborenv.com
- Caleb Gourley – Harbor, Abatement Oversight Field Manager, Harbor, 501-663-8800, cgourley@harborenv.com
- Lisa Rotenberry, Harbor, Quality Assurance Manager, 501-663-8800, lisa.rotenberry@harborenv.com
- Justin Dixon, Snyder Environmental – Hazardous Materials Abatement Contractor, 501-562-3818, jdixon@snyderenvironmental.com

1.2 Project/Task Organization

The successful completion of the proposed asbestos abatement will rely upon the efforts of the following personnel/companies (see Figure 1-1 – Organizational Chart below):

- *Elizabeth Reyes – USEPA Region 6 Project Officer*. Ms. Reyes will provide final approval of the QAPP.
- *Addie Smith – Arkansas Department of Energy and Environment Division of Environmental Quality Brownfields Program Administrator*. Ms. Smith will be the primary liaison between EPA and DEQ.
- *Tracy Brick – Sultana Historical Preservation Society*, Arkansas Brownfield Program Participant.
- *Thomas Huetter, P.G., Harbor Environmental, Project Manager*. Mr. Huetter will function as the primary contact between Harbor and DEQ and will prepare the draft QAPP and be responsible for ensuring that field personnel follow the approved final QAPP.
- *Caleb Gourley, Harbor Abatement Oversight Field Manager will* perform any required field oversight activities during abatement of asbestos-containing materials (ACM).
- *Lisa Rotenberry – Harbor Environmental Quality Assurance (QA) Manager*. Ms. Rotenberry will be responsible for review contractor submittals for technical content and accuracy.
- *Justin Dixon, Snyder Environmental – Abatement contractor* - The contractor will provide notification to ADEQ of the abatement project, prepare the required design and monitoring documentation, then will successfully abate known asbestos-containing materials (ACM), lead-based paint (LBP), and other hazardous materials from the structure.

Figure 1-1 – Organizational Chart

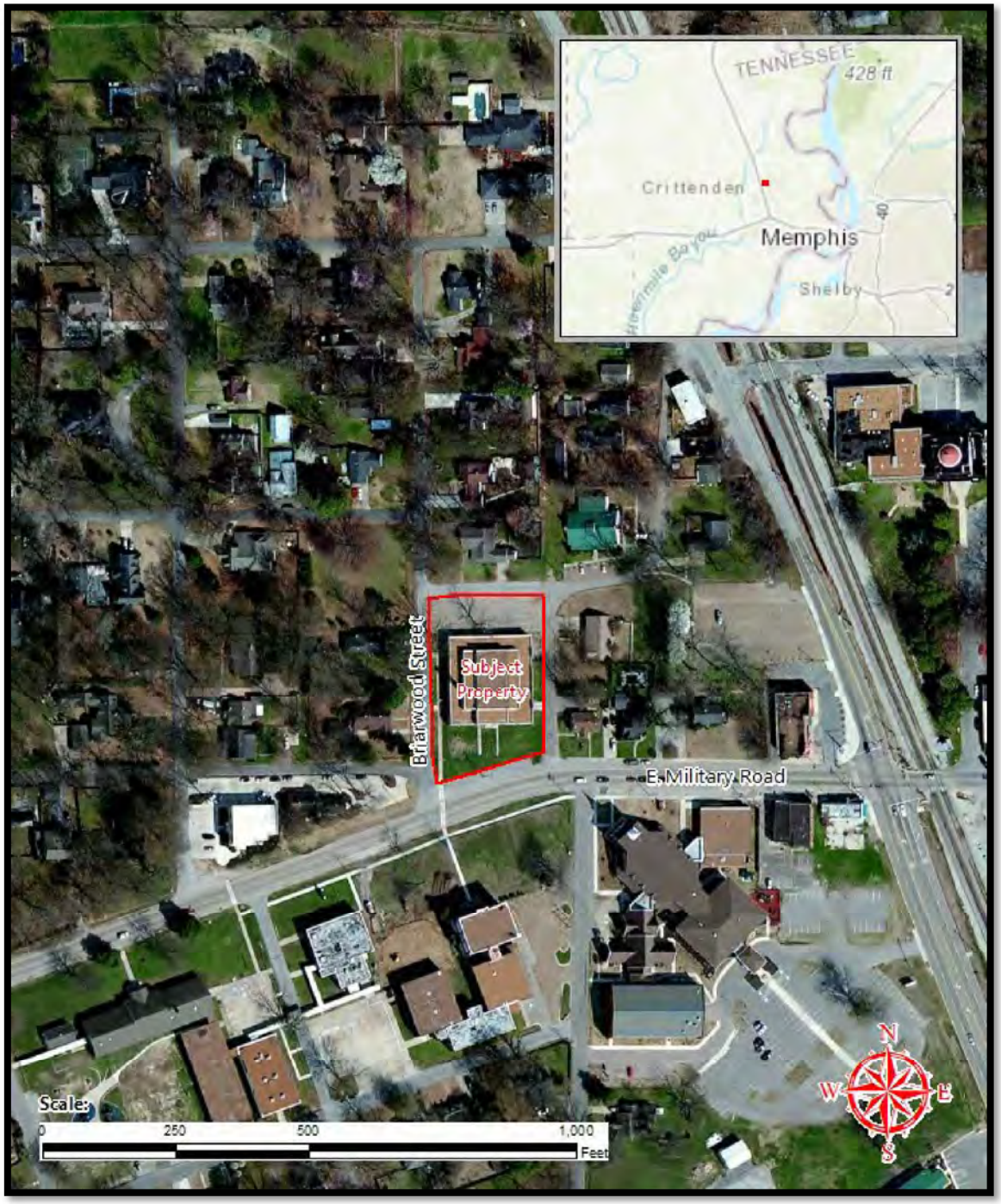


All contractors will adhere to Davis-Bacon requirements.

1.3 Subject Property Background

The Marion School Auditorium - Gymnasium (subject property) is located on the 0.86-acre block (lots 1-4, block 6) north of E. Military Road and east of Briarwood Street near downtown Marion. Figure 1-2 below is an aerial photograph showing the subject property and surrounding areas.

Figure 1-2 – Subject Property and Surrounding Areas



Source: Esri ArcGIS Desktop 10.8.2

The subject property is currently owned by the City of Marion who was deeded title to the subject property from Marion School District #3 in May 2020. Marion School District #3 obtained title to the subject property from the Rising Sun Church in September 1938. The subject property contains the former Marion School Auditorium – Gymnasium, which was used by the school district for various school events and sporting events. The building on the subject property was

constructed in 1938 and consists of a single-story, slab-on-grade, brick, and concrete building with flat built-up roof. The building interior contains multiple classrooms, restrooms, shower rooms, a large gymnasium and stage area with built-in stationary bleachers, and a boiler room with storage attached. The building on the subject property is currently vacant.

North Currie Street parallels the north boundary of the subject property and Currie Avenue parallels the east boundary of the subject property. Adjacent properties to the west, north and east are mostly residential. Woolfolk Public Library is located on the adjacent property to the northeast. Marion School District Herbert Carter Global Community Magnet School is located on the adjacent property to the south. Marion United Methodist Church is located on the adjacent property to the southeast.

The City of Marion has been working with the Sultana Historical Preservation Society (SHPS) to renovate the building on the subject property for use as a museum. The museum will showcase the history of the 1865 Sultana disaster which occurred on the nearby Mississippi River just after the end of the Civil War. The Sultana was a commercial side-wheel steamboat that was traveling from Vicksburg, Mississippi, with recently released Union soldiers who had been held prisoner in Confederate prison camps. The Sultana had recently undergone temporary repairs to a boiler and was grossly overcrowded with crew, passengers, and the paroled Union soldiers as it made its way up the Mississippi River. In the early morning hours of April 27, 1865, about seven miles north of Memphis, Sultana's boilers suddenly exploded, and the ship caught fire and eventually sank. Exact casualty numbers are unknown, but it is estimated that between 1,200 – 1,500 people died in the disaster. The Sultana disaster remains the deadliest maritime disaster in United States history. The museum will pay tribute to the event and all those who perished.

Tioga Environmental Consultants, Inc. (Tioga) performed a hazardous materials survey of the gymnasium building on the subject property in July 2022. The survey was performed to identify to identify asbestos containing materials (ACM), lead-based paint (LBP), and miscellaneous hazardous materials on the subject property. Tioga provided personnel to conduct the LBP and miscellaneous hazardous materials inspection. Tioga utilized a Viken Detection Pb200i handheld X-ray fluorescence (XRF) lead paint analyzer. In addition, Tioga utilized subconsultant Harbor to conduct the asbestos survey. The hazardous materials survey indicated the presence of ACM, LBP, and other hazardous materials. Tioga's findings are summarized in Table 1 below.

Table 1 – Summary of Tioga Findings

ACM Findings			
Material	**Estimated Quantity**	**Location**	**Condition**
Gray and black roof mastic	< 1,000 square feet	Roof	Good
Chalkboard mastic	75 square feet	Classrooms 1 & 3	Good
Thermal system insulation (TSI) on one-inch, two-inch, three-inch, and four-inch pipes	500 linear feet	Restrooms 1 & 3 Shower 2 Gymnasium	Fair

LBP Findings						
Room	**Feature**	**Substrate**	**Color**	**Lead Concentration (mg/cm^2)**	**Wall Side**	**Condition**
Exterior	Door jamb	Wood	Brown	6.5	North	Deteriorated
Exterior	Door casing	Wood	White	12.6	South	Deteriorated
Stage	Wall	Brick	White	3.8	West	Intact
Stage	Wall	Brick	White	3.6	North	Intact
Stage	Wall	Brick	Burgundy	3.5	East	Deteriorated
Restroom 2	Ceiling	Plaster	White	12.1	—	Deteriorated
Restroom 2	Wall	Brick	Burgundy	3.5	South	Deteriorated
Restroom 1	Wall	Plaster	White	2.5	South	Deteriorated
Restroom 1	Ceiling	Plaster	White	3.1	—	Deteriorated
Restroom 1	Radiator	Metal	Silver	1.3	—	Deteriorated
Shop	Wall	Brick	White	7.1	North	Deteriorated
Shop	Wall	Brick	Yellow	6.8	North	Deteriorated
Gym	Wall	Brick	Burgundy	3.7	East	Deteriorated
Class 3	Wall	Plaster	White	3.3	West	Deteriorated
Class 3	Wall	Plaster	Yellow	3.6	West	Deteriorated
Snack	Wall	Plaster	White	4.2	West	Deteriorated
Class 4	Wall	Brick	Yellow	4.8	North	Deteriorated
Bleacher Hall D	Wall	Brick	White	1.6	South	Deteriorated
Bleacher Hall D	Ceiling	Plaster	White	2.0	South	Deteriorated

Hazardous Material Findings	
Item	**Quantity**
Mercury-containing fluorescent bulbs	6
Ballasts potentially containing poly-chlorinated biphenyls (PCBs) – if "non-PCB" labeling is not present	None identified but potential exists – examine fixtures during renovation
Refrigerants in appliances	5
Exit Signs with batteries	4
Lead flashing	Numerous
Chemicals	Numerous

1.4 Abatement Activities

The Marion Gymnasium was constructed in 1938. The age of this building makes it highly suspect for the presence of ACM, LBP, and other hazardous materials which was confirmed by Tioga in July 2022. The purpose of the abatement activities is to remove the ACM, LBP and other miscellaneous hazardous materials that were identified in the building.

As required by EPA's State and Tribal Response Program Grant guidelines, an Analysis of Brownfield Cleanup Alternatives (ABCA) was prepared. The ABCA provides alternative remedies and includes the remedy selected for the Marion Gymnasium project. A copy of the ABCA is included in Appendix B of this QAPP.

Federal and state regulatory agencies define ACM as any building material that contains greater than 1% asbestos. The inspection, conducted in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) or 40 CFR Part 763, confirmed the following types of ACM are present that need to be removed prior to proposed renovation activities:

- Gray roof mastic – 15% chrysotile asbestos
- Black roof mastic – 2-15% chrysotile asbestos
- Chalkboard mastic – 3% chrysotile
- Thermo system insulation (TSI) on one- to four-inch piping – 3-60% chrysotile asbestos

The condition of the roof and chalkboard mastic was good, while the condition of the TSI was fair. Prior to the initiation of abatement activities, the abatement contractor will submit a Notice of Intent (NOI) on behalf of the Arkansas Brownfield Program Participant to DEQ's Air Division Asbestos Section. Specific procedures regarding the asbestos abatement are included in the Asbestos Abatement Project Design, which is attached as Appendix C of this QAPP.

The EPA and the U.S. Department of Housing and Urban Development (HUD) define lead paint as greater than 5,000 parts per million (ppm) or 0.5% by weight, while the Consumer Product Safety Commission definition is greater than 600 ppm, or 0.06% by weight. However, lead concentrations were measured in place using a Viken Detection Pb200i handheld XRF lead paint analyzer, which measures lead concentrations in milligrams per square centimeter (mg/cm^2). The State of Arkansas defines LBP as paint or other surface coatings that contain lead equal to or greater than 1.0 mg/cm2 or 0.5% by weight. As shown in Table 1 above, the detected lead concentrations ranged from 1.3 to 12.6 mg/cm^2. With the exception of the two white wall paint samples in the stage area, which was intact, all of the remaining paint samples were in deteriorated condition. These areas will require encapsulation or removal prior to proposed renovation activities.

The investigation also determined the presence of mercury-containing fluorescent bulbs, potential polychlorinated biphenyl (PCB) containing ballasts in fluorescent light fixtures, appliance refrigerants, exit signs with batteries, lead flashing, and numerous chemicals. PCBs were commonly used in the small capacitor within fluorescent light ballasts and ballasts manufactured

through 1979 likely contain PCBs. In accordance with EPA Toxic Substances Control Act (TSCA) regulations, PCBs are considered hazardous waste and must be incinerated. The entire lighting fixture does not need special handling and disposal as long as the ballast (electrical box) is not leaking. The non-leaking ballasts can be removed and recycled or disposed of properly.

1.5 Quality Objectives and Criteria

As this is an abatement project, and sampling has already been conducted, no additional sampling is anticipated. Should additional suspect ACM, LBP or other hazardous materials be discovered during abatement, work will be halted to allow collection of additional samples. Asbestos samples will be sent to EMSL Analytical, Inc. in Houston, Texas. EMSL participates in the National Institutes for Standards and Testing (NIST) National Voluntary Laboratory Accreditation Program proficiency testing program (NVLAP# 300159). Samples will be analyzed by Polarized Light Microscopy (PLM) by EPA method 600/R/R-93/116. All percentages reported for composition are based on visual estimation or gravimetric determinations.

LBP samples will be analyzed in place with a calibrated XRF lead paint analyzer, or samples will be collected by manually removing paint down to the substrate using a paint scraper. Suspected lead-based paint samples will be sent to an Arkansas-certified laboratory for analysis via EPA Method SW-846-742 flame atomic absorption spectroscopy. and submitted for laboratory analysis of total lead in accordance with EPA method 6010B.

Quality assurance samples will also be collected for blind analysis by the laboratory as needed. Samples will be labelled in a manner where the lab cannot differentiate the duplicated sample (i.e., QA-1). Oversight of abatement activities will be conducted throughout the abatement period to ensure compliance with USEPA and ADEQ rules and regulations.

1.6 Training and Certifications

Training and certifications required for the abatement contractor and workers will be documented and verified by Harbor prior to any work commencing at the site. Documents will be included in the final report.

1.7 Stop-Work Authority

Safe completion of the project is a top priority. As such, **all** workers and entities involved in the project have the responsibility and authority to stop work when an unsafe condition or act could result in an undesirable event, such as death, injury, property damage, or environmental impact. No negative retribution shall occur as a result of stopping work. Work will not be resumed until the unsafe conditions have been corrected.

1.8 Documents and Records

If additional sample collection is required, a report of findings will be provided, the first draft of which is anticipated to be made available within fifteen (15) business days after receipt of laboratory results. Once complete, the draft version of the report will be provided to the client

contact, Ms. Addie Smith. The package will include the report, laboratory data, and field notes in PDF format. Subsequent iterations of the report will also be provided in PDF format, and a revision number will be clearly indicated. Laboratory data in Microsoft Excel format will be available upon request.

2.0 Data Generation and Acquisition

2.1 Sampling Process Design

If additional sample collection is required, Harbor will evaluate the building in accordance with USEPA Asbestos Hazard Emergency Response Act (AHERA) or 40 CFR Part 763. Homogeneous areas will be identified based on date of installation or renovation and functional use. Suspect materials within each area will be categorized as surfacing, thermal system insulation, and miscellaneous. Each material will be sampled according to the AHERA protocol based on type of material and size of homogeneous area. Homogeneous materials are those building materials that, by visual and manual inspection, are similar in texture, color, composition, and use in the building. The condition of each suspect material will be assessed in the field by the inspector, and classified as good, damaged and significantly damaged.

2.2 Sampling Methods

If additional sample collection is required, Harbor will collect samples of suspect ACM in compliance with the AHERA)/National Emission Standards for Hazardous Air Pollutants (NESHAP) procedures. Samples will be removed with an appropriate cutting device and placed in zipper-lock plastic baggies. Samples will be labeled appropriately and logged on a chain-of-custody. Samples will be submitted to an approved National Voluntary Laboratory Accreditation Program (NVLAP)-certified laboratory. LBP samples will be analyzed in place with a calibrated XRF lead paint analyzer, or samples will be collected and submitted for laboratory analysis of total lead in accordance with EPA method 6010B.

2.3 Sample Handling and Custody

Additional asbestos samples, if required, will be placed in appropriate containers, labeled, logged on a chain-of-custody, and preserved appropriately in laboratory-provided containers. The asbestos samples will be delivered to EMSL in Houston, TX under appropriate chain-of-custody protocols, including overnight shipment.

2.4 Analytical Methods

Additional asbestos samples, if required, will be analyzed via EPA 600/R-93/116 Method via Polarized Light Microscopy at EMSL in Houston, TX, which is a NVLAP certified lab. LBP samples will be submitted for laboratory analysis of total lead in accordance with EPA method 6010B.

2.5 Quality Control

If additional sampling is required, multiple samples of each suspect ACM will be collected in accordance with AHERA procedures. Blind duplicate samples for lead analysis will be collected as appropriate (five percent) and submitted for analysis with the other field samples.

2.6 Instrument/Equipment Testing, Inspection, and Maintenance

No field sampling equipment which would require testing, inspection or maintenance will be used for any additional sampling. Laboratory equipment will be appropriately maintained by the selected laboratory as documented by their certification.

2.7 Instrument/Equipment Calibration and Frequency

Any air monitoring equipment utilized during asbestos abatement activities will be calibrated daily prior to use and as required by manufacturer's specifications.

2.8 Inspection/Acceptance of Supplies and Consumables

Only new manufacturer-certified supplies and sample containers will be used. Sampling supplies and containers will be inspected prior to sampling activities for any obvious defects before use.

2.9 Non-Direct Measurements

No outside data will be used from other external sources for this project.

2.10 Data Management

2.10.1 Field Logbook Completion

Data collection procedures and instructions in this QAPP provide the guidance necessary to record information and data in field logbooks and chain-of-custody forms involved with data collection activities. Upon completion, field data and analytical sampling paperwork are reviewed for accuracy, completeness, and legibility. Technical personnel will document and review their own work and are accountable for its correctness. Review is to ensure that all forms are complete and legible. The Field Project Manager will ensure that the following has been done:

- All forms were completed using a ball point pen. All sample labels were completed with an indelible marker.
- If an error was made on any form, it was struck with a single line, the correct information was written above or beside the error, and the correction was initialed and dated. The incorrect information was not written over or obliterated in any way.
- If any sample documentation errors occur, they were documented in the field logbook.

In addition, the Abatement Oversight Field Manager or designated reviewer will also ensure that:

- The correct sample numbers were used.
- Chain-of-custody forms were relinquished by the sampler with the correct date and time noted.

2.10.2 Electronic Data Management

A systematic approach to data management that saves time, reduces transcription errors, and decreases hard copy analytical data to a more manageable level will be used. Analytical data will be provided to the users of the data before actual hard copies are produced.

2.10.3 Error Detection and Correction

The Abatement Oversight Field Manager or designee will review all field logbooks and forms. If any document completion errors are found during the review, the incorrect form will be sent to the individual best suited to make corrections. After the form has been corrected, it will become the final version of the document, suitable for report usage.

3.0 Assessment and Oversight

3.1 Assessments and Response Actions

This section defines requirements and responsibilities for identifying quality-related deficiencies and non-conformances and for generating corrective action to prevent their recurrence. These requirements apply to deficiencies regardless of fault or cause and to procedural non-conformances identified through assessments, audits, or any other means. The following performance systems audits will be used.

3.1.1 Field Audits

If a systems audit is needed to assess field activities during this project, the Quality Manager may visit the site to evaluate the performance of field personnel and general field operations and progress. The audit will review sampling methodology and sample chain-of-custody forms, field data and reporting. The Project Manager will observe the performance of the field operations personnel during each kind of activity.

Field audits include examination of field sampling records, sample collection, handling, and packaging in compliance with the established procedures, maintenance of QA procedures and chain-of-custody procedures. Follow-up audits may be conducted to correct deficiencies, and to verify that QA procedures are maintained throughout the project. Field audits involve review of field measurement records, instrumentation calibration records and sample documentation.

3.1.2 Laboratory Audits

Due to the limited nature of this project, laboratory audits are not planned.

3.1.3 Corrective Action

Corrective action is the process of identifying, recommending, approving, and implementing measures to counter unacceptable procedures or out-of-quality control performance which can affect data quality. Corrective action can occur during field activities, sample analysis and data assessment.

3.1.4 Sample Collection/Field Measurements

Corrective action may be needed in the field when the sample network is changed (i.e., more/fewer samples, sample locations other than those specified, etc.) or when sampling procedures and/or field analytical procedures require modification due to unexpected conditions. The Field Project Manager will be responsible for reporting all suspected technical or QA non-conformances or deficiencies to the Project Manager. The Project Manager will be responsible for assessing the suspected problems with the Client based on the potential for the situation to impact the quality of the data. If it is determined that the situation warrants a reportable non-conformance requiring corrective action, a non-conformance report will be initiated by the Project Manager.

The Quality Assurance Manager will be responsible for ensuring that corrective actions for non-conformances are initiated by:

- Evaluating all reported non-conformances.
- Controlling additional work on non-conforming items.
- Determining disposition or action to be taken.
- Maintaining a log of non-conformances.
- Reviewing non-conformance reports and corrective actions taken.
- Ensuring non-conformance reports are included in the final project documentation files.

Corrective actions resulting from field audits will be implemented immediately if data may be adversely affected due to unapproved or improper use of approved methods. The Project Manager will identify deficiencies and recommend corrective action to the Client. Corrective actions will be implemented by the Project Manager, the Client and field team. Corrective actions will be implemented and documented in the field logbook.

3.1.5 Laboratory Corrective Actions

Corrective actions in the laboratory may occur prior to, during or after initial analyses. A number of conditions such as broken sample containers, multiple phases, or potentially high concentration samples may be identified during sample log-in or just prior to analysis. Following consultation with laboratory analysts and laboratory managers, it may be necessary for the laboratory Quality Control Coordinator to approve the implementation of corrective action. The analytical methods and/or laboratory's standard operating procedures specify some conditions during or after analysis that may automatically trigger corrective action or optional procedures. These conditions may include dilution of samples, additional sample extraction or automatic rejection/reanalysis when certain quality control criteria are not met. Laboratory personnel are alerted that corrective actions may be necessary if:

- QC data are outside the warning or acceptable windows for precision and accuracy.
- Blanks contain target analytes above acceptable levels.
- Undesirable trends are detected in spike recoveries or RPD between duplicates.
- There are unusual changes in detection limits.
- Deficiencies are detected by QA personnel during internal or external audits or from the results of performance evaluation samples.
- Inquiries concerning data quality are received.

Corrective action procedures are often handled at the bench level by the analyst, who reviews the preparation or extraction procedure for possible errors, checks the instrument calibration, spike and calibration mixes, instrument sensitivity, etc.

If the problem persists or can't be identified, the matter is referred to the laboratory supervisor and/or QA personnel for further investigation. Once resolved, full documentation of corrective action procedures is required.

These corrective actions are generally performed prior to release of data from the laboratory. The corrective actions are documented by the laboratory, and the data were affected, they should be identified in the laboratory narrative accompanying the data report. If corrective action does not rectify the situation, the laboratory will contact the Abatement Oversight Field Manager who will inform the Project Manager.

The Project Manager may request corrective action for any contractual non-conformance identified during data review. Corrective action may include:

- Reanalyzing samples, if holding times permit.
- Re-sampling and analyzing.
- Evaluating and amending sampling procedures.
- Evaluating and amending analytical procedures.
- Accepting the data and acknowledging the level of uncertainty.

The Project Manager will be responsible for approving implementation of corrective action involving re-sampling or amending analytical procedures.

3.2 Reports to Management

A final report will be completed by the abatement contractor that summarizes all analytical data, remedial actions taken, confirmation sampling and deviations from original plans and procedures for the work. In addition, the final report will include the following items:

1. Current insurance certifications.
2. Copies of any correspondence with authorities and permits.
3. Daily project logs and supervisor reports.
4. All laboratory analytical data for the project.
5. Sign in/Sign out Sheets

Upon receipt, Harbor will review the final report for completeness and accuracy, and provide a written summary of the final report.

4.0 Data Validation and Usability

4.1 Data Review, Verification, and Validation

Additional data obtained, if necessary, will be reviewed in-house (as appropriate by the laboratory's quality control procedures) prior to submittal to Harbor. This will include checking for appropriate data entry, along with transcription, calculation, reduction, and transformation errors. The analytical laboratories will provide reports of the analytical data, which will include copies of the chain-of custody prepared in the field. The chain-of custody will include a complete list of sample information available, such as sample dates, sample times, sample matrixes, blanks, duplicates, shipping dates, preservatives, and holding times, etc.

4.2 Verification and Validation Methods

If required, Mr. Thomas Huetter, P.G. will review all analytical data upon receipt from the analytical laboratory. The data will be tabulated into Microsoft Excel for the report. The tables will then be compared to each analytical report to verify proper transcription. Harbor will also review the data for completeness to determine if there are any deficiencies, such as data missing or lost integrity.

Data validation will also be conducted to determine the quality of the data set relative to the end use. It will focus on the project's specifications or needs and is designed to meet the needs of the decision makers/data users. The data validation will note potentially unacceptable departures from the QA Project Plan. The potential effects of the deviation will be evaluated during the data quality assessment.

4.3 Reconciliation with User Requirements

In general, the primary Data Quality Objectives (DQO) for this investigation include collection of sufficient data to assure that all ACM has been removed from the roof of the building. Quality criteria are set herein to assure suitability for intended use of the data. The following sections discuss data quality assurance criteria specific to this project and its goals.

4.3.1 Precision

Precision is a measure or estimate of the reproducibility of measurements and methods. It is defined for quantitative data as the variability of a group of values compared with their average value. Duplication of activities is generally the method by which precision is assessed. For purposes of assessing precision of the measurement systems (sampling events and analysis) to be used in this project, blind (i.e., sampling location not disclosed) duplicate samples and matrix spike/matrix spike duplicate (MS/MSD) samples will be obtained and analyzed along with the primary investigative samples as necessary. Precision will be calculated as relative percent difference (RPD) in analytical outcome between a given sample and corresponding duplicate samples.

4.3.2 Accuracy

Accuracy is the degree of agreement of a measurement or the average of several measurements with an accepted reference or true value; it measures bias in a system. Accuracy in the field is assessed through the use of field, rinsate, and trip blanks and through the adherence to all sample handling/preservation procedures and holding times. Field blanks and rinsate blanks are not feasible for this investigation. The abatement contractor will determine if duplicate air monitoring samples are necessary based on the number to be collected.

Laboratory accuracy is assessed through the analysis of matrix spikes or standard reference materials and the determination of percent recoveries. This is normally expressed as the difference between measured and reference (true) value or the difference as a percentage of the reference or true value. If recoveries do not meet the required criteria, the analytical data are considered to be potentially inaccurate. However, accuracy will vary from analysis to analysis because of individual sample and matrix effects. In an individual analysis, accuracy can be measured and expressed in terms of the recovery of surrogate compounds. This gives an indication of expressed recovery for analytes tending to behave chemically like the spiked or surrogate compounds.

4.3.3 Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Representativeness is a qualitative parameter, which is dependent upon the proper design of the sampling program and proper laboratory protocol. The sampling approach was designed to provide data representative of the site conditions. During development of this approach, consideration was given to current and past site activities, existing data, and physical setting. Representativeness will be satisfied by ensuring that the QAPP is followed, proper sampling techniques are used, proper analytical procedures are followed, and holding times of the samples are not exceeded.

4.3.4 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. The completeness of field measurements must be greater than 90 percent. Laboratory analysis for this project will have a completeness goal of greater than 95 percent. Completeness will be calculated by dividing the number of valid results by the number of possible individual analyte results, expressed as a percentage.

4.3.5 Comparability

Comparability is the degree to which one data set can be compared to another. The objective of this QAPP is to produce a high level of comparability between data sets. The number of samples to be collected during this project will likely eliminate comparability as

a quality objective. However, the use of standard methods for sampling and analysis (EPA protocols), reporting data in standard units, and using standard and comprehensive reporting formats will optimize the potential for high levels of data comparability.

Appendix A
Hazardous Materials Report

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Tioga
ENVIRONMENTAL CONSULTANTS

August 2, 2022

Mary Haizlip
Haizlip Studio
2125 Central Avenue
Memphis, TN 38104

RE: Hazardous Material Survey Report
54 E. Military Road
Marion, Arkansas

Dear Ms. Haizlip,

At your request, Tioga Environmental Consultants, Inc. (Tioga) performed a survey of the above-referenced Property to identify the presence of hazardous materials. Specifically, a hazardous materials survey was performed to identify asbestos containing materials, lead-based paint, and miscellaneous hazardous materials that could be present on the Property. The purpose of this survey was to ensure that none of these materials would have an adverse environmental impact on the planned renovation of the existing facility.

On July 12th, 2022, Donald White, of Tioga Environmental Consultants, an EPA Lead-Based Paint Inspector, and Adam Smith and Caleb Gourley of Harbor Environmental, Inc, State of Arkansas Certified Asbestos Inspectors surveyed the Property. Their findings are contained in the attached report.

If you have any questions about our report or we may be of further service, please contact me at (901) 791-2432.

Sincerely,
TIOGA ENVIRONMENTAL CONSULTANTS, INC.

Joe Littlefield
Program Manager

Hazardous Materials Survey

54 E. Military Road
Marion, Arkansas
August 2022
Project No. 251310.00

Prepared For:

Haizlip Studio
2125 Central Avenue
Memphis, TN 38127

Prepared By:

Tioga
ENVIRONMENTAL CONSULTANTS
357 North Main St.
Memphis, Tennessee 38103

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APPENDICES

1.0 PROJECT SUMMARY

Haizlip Studio requested Tioga Environmental Consultants, Inc. (Tioga) prepare a survey to identify Hazardous Materials present at the Marion School Auditorium structure addressed as 54 E. Military Road, Marion, Arkansas 72364.

The survey was performed on July 12th, 2022, by Donald White, a Lead-Based Paint Inspector of Tioga Environmental, and Adam Smith and Caleb Gourley of Harbor Environmental, Inc., State of Arkansas Certified Asbestos Inspectors.

1.1 Facility Description

The Marion School Auditorium, located at 54 E. Military Road, is a single-story brick and concrete constructed building with a conventional flat Built-Up Roof (BUR) and concrete foundation. The building consists of multiple classrooms, restrooms, shower rooms, a large gymnasium and stage area with built-in stationary bleachers, and a boiler room with storage attached. At the time of this survey, the Property was not in use.

1.2 Scope of Services

Per the authorization of the Haizlip Studio, Tioga and Harbor conducted a survey of the Marion School Auditorium at 54 E. Military Road in accordance with the following scope of work:

Asbestos Survey

- The Property was visually surveyed and samples of suspect asbestos containing materials (ACM) were collected by State of Arkansas Certified Asbestos Inspectors.
- Samples were collected from each homogenous area. These samples were delivered to a NVLAP certified laboratory for analysis by polarized light microscopy (PLM).
- Field sketches were used to mark sample locations and the extent of ACM and were transferred to digital building floor plans.

Lead-based Paint Inspection and Hazardous Materials Inventory

- Representative and accessible painted or coated surfaces were tested for lead content by Tioga's lead-based paint inspector using a Viken Pb200i Lead Paint X-ray Fluorescence Analyzer (XRF).
- An inventory of hazardous building materials was performed at the Property.

Reporting

- Tioga has prepared a Hazardous Materials Survey Report containing site observations, chain-of-custody, sample results including types and locations of hazardous materials, a photographic log, and building floor plans noting sample locations, as well as locations of asbestos and lead-based paint.

1.3 Significant Assumptions

No significant assumptions were made during the performance of this survey.

1.4 Deviations

No deviations from the agreed upon scope of services occurred during the performance of this survey.

1.5 Inaccessible Areas

No inaccessible areas were observed during this survey.

1.6 Limitations and Exceptions of Survey

The scope of this survey was limited to accessible materials only.

This survey report is not intended as a Hazardous Materials abatement specification document. Contractors or consultants should independently verify the location, condition and/or estimated quantities of asbestos containing materials, lead-based paint, and other Hazardous Materials as a component of their preparation of remediation bid documents.

2.0 ASBESTOS

The asbestos inspection was performed on July 12th, by Adam Smith and Caleb Gourley of Harbor Environmental, Inc., State of Arkansas Certified Asbestos Inspectors (Certification Numbers 015579 and 018257 respectively). A copy of these certifications is included in Appendix 1.

Additionally, Harbor Environmental, Inc. is a State of Arkansas certified Asbestos Abatement Consultant, License Number 000477. A copy of this certification is also included in Appendix 1.

This survey was requested by Haizlip Studio, for the purpose of having a comprehensive document that identifies and documents the presence of any asbestos-containing materials (ACM) in the Marion School Auditorium at 54 E. Military Road. Additionally, completing this comprehensive survey provides necessary documentation ensuring compliance with the U.S. Environmental Protection Agency (EPA), Arkansas Department of Environmental Quality (ADEQ), and Occupational Safety and Health Administration (OSHA) regulations. It is also essential information when considering any renovation activities in areas with identified ACM to ensure compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) and OSHA regulations.

During the inspection, the inspectors collected 36 individual samples from 17 different homogeneous areas and received a result for each individual material sampled. This report documents the findings of this comprehensive asbestos survey. The details regarding this survey and a list of sampled materials are contained in Section 2.3 of this Report. There were ACM identified, and the following summary in Table 1 provides an overview of the findings.

Table 1

54 E. Military Road Marion, AR CONFIRMED ASBESTOS CONTAINING MATERIALS			
Sample Number	**Material**	**Estimated Quantity**	**Location/Condition**
M-02	Gray Roof Mastic	<1,000 Sq. Ft.	Roof / Good
M-04	Black Roof Mastic		Roof / Good
M-05	Black Roof Mastic		Roof / Good
PW-01	1" TSI Pipe Insulation	500 Ln. Ft.*	Restroom 3 / Fair
PW-02	1" TSI Pipe Insulation		Shower 2 / Fair
PW-03	2" TSI Pipe Elbow		Shower 2 / Fair
PW-04	2" TSI Pipe Insulation		Shower 2 / Fair
PW-05	2" TSI Pipe Insulation		Restroom 1 / Fair
PW-06	2" TSI Pipe Insulation	500 Ln. Ft.*	Restroom 1 / Fair
PW-07	4" TSI Pipe Insulation		Gymnasium / Fair
PW-08	4" TSI Pipe Insulation		Gymnasium / Fair
PW-09	4" TSI Pipe Elbow		Gymnasium / Fair
PW-10	2" TSI Pipe Insulation		Gymnasium / Fair

54 E. Military Road Marion, AR CONFIRMED ASBESTOS CONTAINING MATERIALS			
Sample Number	**Material**	**Estimated Quantity**	**Location/Condition**
PW-11	2" TSI Pipe Insulation		Gymnasium / Fair
PW-12	4" TSI Pipe Insulation		Gymnasium / Fair
PW-13	4" TSI Pipe Insulation		Gymnasium / Fair
PW-14	4" TSI Pipe Insulation		Gymnasium / Fair
M-06	Chalk Board Mastic	75 Sq. Ft.	Classrooms 1 & 3 / Good
M-07	Chalk Board Mastic		Classrooms 1 & 3 / Good

*Quantity of Thermal System Insulation (TSI) is cumulative of all TSI found and not broken down by diameter of TSI pipe.

2.1 Visual Observations

Harbor personnel conducted an examination of the building located at 54 E. Military Road to identify suspect ACM. Observations included the type, condition, location, and estimated quantity of any suspect ACM.

Additionally, all suspect materials were evaluated for condition and friability, the ease with which the materials can be crushed with hand pressure. Asbestos materials determined to be friable, or that could be rendered friable during renovation activities are considered Regulated Asbestos Containing Materials (RACM) that must be removed prior to disturbance during renovations.

2.2 Asbestos Sampling

Asbestos has been a widely used component of building materials throughout history due to its unique physical properties: poor heat and electrical conductor, fire resistance, and high tensile strength and low cost. Unfortunately, asbestos also poses potentially serious health concerns for people exposed to the material. Knowing where and how much ACM is in a building allows for proper managing of site activities and providing appropriate protection for building occupants and workers involved in maintenance, renovation, or demolition of asbestos containing materials.

This survey was conducted in general conformance with Asbestos Hazard Emergency Response Act (AHERA) and ASTM Standard E2356-18. It included a walkthrough of all accessible areas to identify suspect asbestos-containing materials, quantification of material amounts, collection of samples from each homogenous area, and assessment per functional space.

For this building, homogeneous areas of suspect Asbestos Containing Materials (ACM) were defined for each material type sampled. A total of 17 homogeneous areas were identified and sampled. In each homogeneous area, Harbor identified, differentiated and sampled suspect materials based on color (i.e., color of tile), texture, and apparent application date. For samples with multiple layers (i.e., floor tile and mastic, thermal

system insulations, sheetrock w/ joint compound, etc.), the laboratory assigns unique sample numbers designated with an A, B, C, and D to identify each layer.

Having identified the homogeneous areas, samples were collected from each for laboratory analysis. Photographs of each material sampled are included in the Photographic Log in Appendix 2.

2.3 Asbestos Findings

Samples were transported via FedEx to Eurofins CEI, an NVLAP certified laboratory, for PLM analysis on July 12th, 2022. Results were received on July 13th, 2022. Materials identified containing greater than one percent (1%) asbestos are considered asbestos containing. A copy of the laboratory report is included in Appendix 4.

The laboratory analysis for samples collected as part of this survey found nine (9) building materials samples containing greater than one percent (1%) asbestos. Table 2 summarizes the homogenous areas and materials sampled during this inspection as well as the results of the analysis.

Table 2

54 E. Military Road Marion, AR ASBESTOS SAMPLE LOG SUMMARY		
Material	**Homogeneous Area Number**	**Results**
Roofing Core	RC-01	None Detected
	RC-02	None Detected
	RC-03	None Detected
Black Roof Mastic	M-01	None Detected
	M-04	Layer 1: Chrysotile 2% Layer 2: Chrysotile 15%
	M-05	Layer 1: Chrysotile 2% Layer 2: Chrysotile 10%
Gray Roof Mastic	M-02	Chrysotile 15%
White Roof Mastic	M-03	None Detected
Cap Stone Mortar	MT-01	None Detected
Brick Mortar	BM-01	None Detected
	BM-02	None Detected
Ceiling Plaster with Texture	P-01	None Detected
	P-03	None Detected
	P-05	None Detected
Wall Plaster	P-02	None Detected
	P-04	None Detected
Yellow Ceiling Tile	CT-01	None Detected
1" TSI Pipe Insulation	PW-01	Layer 1: Chrysotile 3% Layer 2: Chrysotile 60%
	PW-02	Layer 1: Chrysotile 3% Layer 2: Chrysotile 60%
2" TSI Pipe Elbow	PW-03	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3%

54 E. Military Road Marion, AR ASBESTOS SAMPLE LOG SUMMARY		
Material	**Homogeneous Area Number**	**Results**
2" TSI Pipe Insulation	PW-04	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3% Layer 3: Chrysotile 5%
	PW-05	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3%
	PW-06	Layer 1: Chrysotile 15% Layer 2: None Detected Layer 3: Chrysotile 5%
	PW-07	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3%
	PW-11	Chrysotile 60%
4" TSI Pipe Elbow	PW-09	Chrysotile 60%
4" TSI Pipe Insulation	PW-08	Chrysotile 60%
	PW-12	Chrysotile 60%
	PW-13	Chrysotile 60%
3" Pipe Insulation	PW-10	Chrysotile 60%
	PW-14	Chrysotile 60%
Acoustic Ceiling Tile	AC-01	None Detected
	AC-02	None Detected
	AC-03	None Detected
Chalkboard Mastic	M-06	Chrysotile 3%
	M-07	Layer 1: None Detected Layer 2: Chrysotile 3%

Building floor plans in Appendix 3 show the sample locations at the Property.

There are three major categories used to classify asbestos-containing materials (ACM) found in buildings: Surfacing Materials, Thermal System Insulation (TSI), and Miscellaneous Materials. Materials in these broad categories are further classified as either friable or non-friable. Friable materials are materials that can be reduced to powder from hand pressure and may become an inhalation hazard. Non-friable asbestos materials are classified as either Category I or Category II Material.

Category I material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets. Asbestos-containing mastic is also considered a Category I material (EPA determination – April 9, 1991). Category II material is defined as all remaining types of non-friable ACM not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable asbestos-cement products such as transite are an example of Category II material.

Table 3 below identifies homogenous areas within the Property that are positive for asbestos along with the category and location of each. The summary and recommendations related to these ACM Findings are included in Section 5.1.

Table 3

54 E. Military Road Marion, AR CONFIRMED ASBESTOS CONTAINING MATERIALS					
Sample Number	**Material**	**Estimated Quantity**	**Category Friable**	**Location/Condition**	**Figure**
M-02	Gray Roof Mastic	<1000 Sq. Ft.	Category I Non-Friable	Roof / Good	2
M-04	Black Roof Mastic		Category I Non-Friable	Roof / Good	2
M-05	Black Roof Mastic		Category I Non-Friable	Roof / Good	2
PW-01	1" TSI Pipe Insulation	500 Sq. Ft.*	RACM Friable	Restroom 3 / Fair	1
PW-02	1" TSI Pipe Insulation		RACM Friable	Shower 2 / Fair	1
PW-03	2" TSI Pipe Elbow		RACM Friable	Shower 2 / Fair	1
PW-04	2" TSI Pipe Insulation		RACM Friable	Shower 2 / Fair	1
PW-05	2" TSI Pipe Insulation	500 Sq. Ft.*	RACM Friable	Restroom 1 / Fair	1
PW-06	2" TSI Pipe Insulation		RACM Friable	Restroom 1 / Fair	1
PW-07	4" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-08	4" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-09	4" TSI Pipe Elbow		RACM Friable	Gymnasium / Fair	1
PW-10	2" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-11	2" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-12	4" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-13	4" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-14	4" TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
M-06	Chalk Board Mastic	75 Sq. Ft.	Category I Non-Friable	Classrooms1, 2, 3/ Good	1
M-07	Chalk Board Mastic		Category I Non-Friable	Classrooms1, 2, 3/ Good	1

*Quantity of TSI is cumulative of all TSI found and not broken down by diameter of TSI pipe.

3.0 LEAD-BASED PAINT

The lead-based paint inspection was performed on July 12th, 2022, by Donald White of Tioga Environmental Consultants, Inc. Mr. White is an EPA trained lead-based paint inspector and is certified as State of Tennessee Lead-Based Paint Inspector, Certification Number TNLBP2022-3494-7854I. A copy of this certification is included in Appendix 1. The Arkansas State Board of Health Rules Pertaining To Lead-Based Paint Activities does not require an individual to be certified unless the property is considered target housing or a child occupied facility.

The inspection was performed using a Viken Model Pb200i X-Ray Fluorescence (XRF) spectrum analyzer instrument, serial number 2815. Donald White has attended the manufacturer's radiation safety course for operation and handling of the instrument and completed an EPA sponsored curriculum in Lead Inspector and Risk Assessment Training. A copy of Viken's equipment Performance Characteristic Sheets is included in Appendix 5.

Additionally, Tioga Environmental Consultants, Inc. is a State of Tennessee certified Lead-Based Paint Activity firm, Certification No. FTN-2009-1987-7820R. A copy of this certification is included in Appendix 1.

3.1 Visual Observations

Painted surfaces were visually examined prior to testing and their condition was noted. Tioga's evaluation of the painted surfaces condition, intact or deteriorated, was based on observations at the time of the inspection. Tioga is not responsible for changing conditions that may alter the relative exposure risk for future changes at the Property.

3.2 Lead-based Paint Sampling

The purpose of this testing was to serve as a baseline investigation by determining the concentration of lead, if any, in all painted surfaces within the Marion School Auditorium at 54 E. Military Road. It is also intended to comply with the US EPA and State of Arkansas regulations regarding identification of lead-based paint (LBP), and Occupational Safety and Health Administration (OSHA) regulations pertaining to worker protections from lead exposure.

3.3 Lead-based Paint Findings

The State of Arkansas defines lead-based paint (LBP) as paint or other surface coatings that contain lead equal to or greater than 1.0 mg/cm^2 or 0.5% by weight. In total, fifty (50) painted or coated surfaces were tested via XRF assay at the property. Nineteen (19) of those surfaces tested positive for lead-based paint at the property and were in a deteriorated condition. Table 4 summarizes the surfaces found to contain lead-based paint. Actual XRF data detailing all results is included in Appendix 6.

Table 4

54 E. Military Road Marion, AR CONFIRMED LEAD-BASED PAINT COATED SURFACES								
Reading Number	**Lead Concentration (mg/cm^2)**	**Room**	**Feature**	**Component**	**Substrate**	**Color**	**Side**	**Condition**
8170	6.5	Exterior	Door	Jamb	Wood	Brown	B	Deteriorated
8173	12.6	Exterior	Door	Casing	Wood	White	D	Deteriorated
8177	3.8	Stage	Wall		Brick	White	A	Intact
8178	3.6	Stage	Wall		Brick	White	B	Intact
8179	3.5	Stage	Wall		Brick	Burgundy	C	Deteriorated
8184	12.1	Restroom 2	Ceiling		Plaster	White		Deteriorated
8189	3.5	Restroom 2	Wall		Brick	Burgundy	D	Deteriorated
8190	2.5	Restroom 1	Wall		Plaster	White	D	Deteriorated
8193	3.1	Restroom 1	Ceiling		Plaster	White		Deteriorated
8194	1.3	Restroom 1	Radiator		Metal	Silver		Deteriorated
8195	7.1	Shop	Wall		Brick	White	B	Deteriorated
8196	6.8	Shop	Wall		Brick	Yellow	B	Deteriorated
8201	3.7	Gym	Wall		Brick	Burgundy	C	Deteriorated
8206	3.3	Class 3	Wall		Plaster	White	A	Deteriorated
8207	3.6	Class 3	Wall		Plaster	Yellow	A	Deteriorated
8211	4.2	Snack	Wall		Plaster	White	A	Deteriorated
8213	4.8	Class 4	Wall		Brick	Yellow	B	Deteriorated
8214	1.6	Bleacher Hall D	Wall		Brick	White	D	Deteriorated
8215	2	Bleacher Hall D	Ceiling		Plaster	White	D	Deteriorated

Appendix 3 contains building floor plans with locations of positive lead-based paint or coated surfaces. Additionally, the floor plan shows names given to rooms sampled during the lead-based paint survey. These names are used during the inspection to differentiate rooms and are included on the XRF data spreadsheet. The walls of the facility are referred to as “A” through “D” as follows: West wall “A”, North “B”, East wall “C”, and South wall “D”.

4.0 HAZARDOUS MATERIALS

A survey of hazardous materials present at the Property was conducted to identify materials which may have special handling and disposal requirements during the renovation of the building if they are to be removed.

On July 12th, 2022, Tioga inspector Donald White conducted a visual assessment of the Property for the presence of hazardous materials.

4.1 Visual Observations

The building was visually assessed for the presence of hazardous materials. Tioga was granted access to all areas of the subject Property for this survey.

4.2 Hazardous Material Findings

Mercury

Six (6) mercury containing fluorescent light bulbs were observed in a storage area and not in the light fixtures.

Prior to demolition activity impacting these mercury-containing lamps, they should be removed and disposed of as universal hazardous waste as per state and federal regulations.

PCBs

Electrical ballasts for fluorescent lights have the potential to contain hazardous polychlorinated biphenyls (PCBs). No electrical ballasts were observed in the majority of the survey area, instead the inspector found labels stating the light fixtures have been modified to use LED lamps only.

Fluorescent light fixtures were observed in the gym and were located at too great of a height to be inspected. These uninspected ballasts could potentially contain PCB's. If the renovation contractor identifies ballasts without "Non-PCB" labelling during renovation activities they must be disposed of as hazardous waste in accordance with state and federal regulations.

Refrigerants

Two (2) water fountains, and three (3) stand-alone refrigerators were found at the property. These systems may contain refrigerants.

Prior to demolition or removal, any units containing refrigerant that are to be dismantled must have the refrigerant captured and recovered for recycling by an EPA-certified technician prior to disposal. If the units can be removed intact and sent for disposal, it is the responsibility of the final disposal facility to ensure that refrigerant has been recovered in accordance with the EPA evacuation requirements for small appliances.

Batteries

Four (4) powered exit signs were observed at the property. Exit signs of this type likely contain heavy metal containing back up batteries which will need to be disposed of properly if they will be removed as a component of the demolition.

Lead Pipe Flashing
Roof pipe-penetrations were observed to have lead pipe-flashing boots. Lead is a toxic hazardous waste that must be managed and disposed of in accordance with Resource Conservation and Recovery Act (RCRA). These lead materials should be removed or handled using proper personal protective equipment or have a properly equipped contractor do so. Lead waste must be disposed of as hazardous waste at a disposal facility that accepts lead waste.

Chemicals
Numerous miscellaneous chemicals were found in the areas surveyed. Chemicals observed included fire suppression chemicals in fire extinguishers, paints, paint additives, and other cleaning chemicals. These materials should be profiled to determine the proper disposal method and determine if they are considered a hazardous waste, special waste, or whether they can be recycled.

Fire Resistant File Cabinets
Five (5) fire-resistant file cabinets were observed on site and have the potential to contain asbestos or other hazardous materials. If these cabinets are to be disposed of during the renovation, we recommend that these materials be wrapped and removed from the buildings by a licensed asbestos abatement contractor and disposed of as asbestos containing material.

Antique Intercom System
A large stand-alone intercom system was observed on site. This machine contains vacuum tubes and other older electrical components within. Vacuum tubes have the potential to contain leaded glass and or mercury and therefore should be considered as a hazardous waste and disposed of properly, recycled, or donated to antique collectors. The remaining electronic components also have the potential to be assembled using lead solder and should also be considered hazardous waste and disposed of in accordance with state and federal regulations.

Table 6 below outlines the hazardous materials identified and the approximate quantities on the property.

Table 6

54 E. Military Road Marion, AR Hazardous Material Survey Findings	
Item	**Quantity**
Mercury-containing Fluorescent Bulbs	6
Ballasts (possible PCBs if “Non-PCB” labeling is not present)	None Identified but Potential Exists, Examine Fixtures During Renovation
Refrigerants in Appliances	5
Exit Signs with Batteries	4
Lead Flashing	Numerous
Chemicals	Numerous

54 E. Military Road Marion, AR Hazardous Material Survey Findings	
Item	**Quantity**
Fire Extinguishers	4
Fire Resistant File Cabinets	5
Antique Intercom	1

The summary and recommendations related to hazardous materials are included in Section 5.3.

5.0 SUMMARY AND RECOMMENDATIONS

5.1 Asbestos

All materials identified as asbestos containing should be maintained in good condition to avoid potential fiber release due to disturbance. In the event of renovation activities impacting these materials, the State of Arkansas and NESHAP require that all friable ACM and non-friable ACM that could become friable during renovation activities must be removed by a certified Asbestos Abatement Contractor prior to disturbance.

In all instances, non-certified personnel should not disturb or attempt removal of any of the asbestos-containing materials identified in this survey. OSHA regulation 29 CFR 1926.1101 requires that a qualified, certified Asbestos Abatement Contractor must be retained to perform abatement of ACM prior to renovation activities at the Property. At no time are non-certified personnel allowed to disturb or remove ACM.

It is recommended that any Asbestos Abatement Contractor retained to perform abatement activities at the facility should be required to maintain proper engineering control measures prior to and during the disturbance of all ACM to ensure protection of human health and safety for personnel involved with this project. These control measures are also required for the protection of the surrounding environment by preventing the possibility of contamination outside of the abatement areas. Appropriate area air and/or personnel monitoring during the removal of these materials must be conducted as per federal, state, and local regulations.

The following recommendations are based on the findings as identified in Section 2.3 and are in general conformance with the State of Arkansas Regulation 21, EPA, NESHAP and OSHA requirements:

- TSI pipe run and elbow material are friable ACM. The pipe run and elbow material should be removed by a licensed abatement contractor before renovation using proper abatement methods and disposed of as asbestos containing waste at a landfill that accepts asbestos. Asbestos waste manifests should be kept for records.
- Asbestos containing mastic was identified behind chalk and cork boards and could also be found in glue dots behind these boards. This mastic isa non-friable Category I material. If these boards are to be removed as or disturbed as a component of this renovation, they should be removed by a licensed abatement contractor using proper abatement methods and disposed of as asbestos containing waste at a landfill that accepts asbestos. Asbestos waste manifests should be kept for records.
- Roof Flashing/Mastic is a non-friable Category I Material. If this material will be disturbed by renovations it should be removed by a licensed asbestos abatement contractor and asbestos waste manifests should be kept for records.
- If suspect materials are identified behind walls, beneath floor tile or in any other accessible or inaccessible areas during demolition, additional testing should be performed to verify that these materials do not contain asbestos.

5.2 Lead-based Paint

The lead-based paint inspection identified nineteen (19) lead-based paint coated surfaces at the time of this inspection. Similar paint in other rooms and on other substrates should also be considered lead-based paint based upon the widespread number of samples that tested positive. The lead-based paint coated surfaces were nearly all in a deteriorated condition.

Lead-based paint, to include solid material coated wholly or partly with lead-based paint resulting from a renovation may be disposed of as C&D waste at an Arkansas landfill facility that accepts lead-based paint waste under a facility specific hazardous waste exclusion plan. Some landfill facilities may require lead-based paint waste to be profiled by TCLP for lead content prior to disposal.

Additionally, if lead-based paint has been scraped, sanded, or chipped off, the debris must be profiled be TCLP to determine lead content and leaching characteristics before being disposed of as hazardous waste.

The following recommendations are based on the findings as identified in Section 3.3.

- Lead-based paint was found on the exterior and interior components in a deteriorated condition. It is recommended that these components be either scraped clean of lead-based paint or encapsulated by a contractor licensed to perform lead-based paint activities prior to the renovation to ensure that deteriorated paint will not chip or flake off during renovation activities.
- If building components coated with lead-based paint are to be removed, the landfill selected for disposal should be contacted as they may need to be profiled to determine lead content prior to disposal.
- If the lead-based paint has been sanded or chipped off, a determination should be made for hazardous lead concentrations. Lead-based paint dust and chips should be handled properly prior to disposal to avoid health risks to the public.
- Because lead is present, standard wetting operations, as required by EPA NESHAP and other engineering and work practice controls as required by 29 CFR 1926.62(e), Methods of Compliance, shall be used to control fugitive dust emission and employee exposure.
- Because lead is present, during renovation activities of lead-containing materials at this facility, employee exposure monitoring should be conducted per OSHA Lead Construction Standards (29 CFR 1926.62).

The OSHA Lead in Construction regulation contained in 29 CFR 1926.62 makes no distinction regarding source or content (%) of lead, only exposure potentials. As such, any substance with a measurable concentration of lead may be subject to the provisions of 29 CFR 1926.62 regardless of source, including such materials as ceramics, masonry, paints, flashings, and extruded metal products, etc.

5.3 Hazardous Materials

The hazardous materials survey of 54 E. Military Road identified hazardous materials that may need to be removed from the property prior to the renovation or may require special handling if they are sent for disposal.

- Mercury-Containing Bulbs must be properly recycled or disposed of as universal waste.
- If PCB containing ballasts are identified in the gym during demolition activities, they must be disposed of as hazardous waste.
- Refrigerants contained in small appliances may be recovered at the final disposal facility.
- Exit Signs containing batteries must be disposed of as universal waste.
- Lead materials, such as lead pipe flashing, should be removed or handled using proper personal protective equipment or have a properly equipped contractor do so. Lead waste must be recycled or disposed of at a hazardous waste disposal site.
- Chemicals must be profiled for disposal as hazardous waste, special waste, or recycling. Miscellaneous Flammables and Combustible must be profiled for disposal as hazardous waste, special waste, or recycling.
- Fire extinguishers that are critical to the existing building's fire safety program should be delivered to the building facilities manager. Empty fire extinguishers can be recycled. Fully or partially charged fire extinguishers, can either be sent to a local fire department that accepts fire extinguishers, or be disposed of as hazardous waste at a hazardous waste disposal facility.
- Fire resistant file cabinets have the potential to contain asbestos or other hazardous materials within and therefore must be wrapped and removed from the buildings by a licensed asbestos abatement contractor and disposed of as asbestos containing material.
- The intercom system contains vacuum tubes and other older electrical components that have the potential to contain leaded glass and or mercury and assembled using lead solder and should be considered hazardous waste and disposed of in accordance with state and federal regulations.

Tioga recommends the proper documentation of the recovery and/or disposal of all hazardous materials. The documentation of this recovery and/or disposal must be kept for a minimum of three years.

Appendix 1
Certifications and Licenses

Arkansas Department of Environmental Quality

CALEB GOURLEY

having satisfied the requirements necessary to meet the provisions of AHERA/ASHARA under TSCA Title II and the Arkansas Pollution Control and Ecology Commission's Regulation 21 and is hereby certified in the State of Arkansas in the discipline(s) of Asbestos

Discipline	Issue Date	Effective Date	Expiration Date
Inspector	05/12/2022	06/14/2022	05/31/2023

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Certification Number: **018257**

Becky W. Keogh
ADEQ Director

Arkansas Department of Environmental Quality

ADAM SMITH

having satisfied the requirements necessary to meet the provisions of AHERA/ASHARA under TSCA Title II and the Arkansas Pollution Control and Ecology Commission's Regulation 21 and is hereby certified in the State of Arkansas in the discipline(s) of Asbestos

Discipline	Issue Date	Effective Date	Expiration Date
Inspector	08/04/2021	08/10/2021	08/31/2022

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Certification Number: **015579**

Becky W. Keogh
ADEQ Director

Arkansas Department of Environmental Quality

HARBOR ENVIRONMENTAL, INC.

is a licensed

Asbestos Abatement Consultant

having qualified as required by law in accordance with the regulations adopted by the Arkansas Pollution Control and Ecology Commission's Regulation 21 pursuant to Arkansas Code Annotated §20-27-1001 et seq., relative to abatement of asbestos -containing material within the state of Arkansas.

License Number: 000477
Issue Date: 03/26/2022
Expire Date: 03/26/2023

Becky W. Keogh
ADEQ Director

Appendix 2
Photographic Log

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 1	**Date:** 07/12/2022

Description:

General View

"A" Side Exterior

Photo # 2	**Date:** 07/12/2022

Description:

General View

"B" Side Exterior

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 3	**Date:** 07/12/2022

Description:

General View

"C" Side Exterior

Photo # 4	**Date:** 07/12/2022

Description:

General View

"D" Side Exterior

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 5	**Date:** 07/12/2022

Description:

General View

Gymnasium

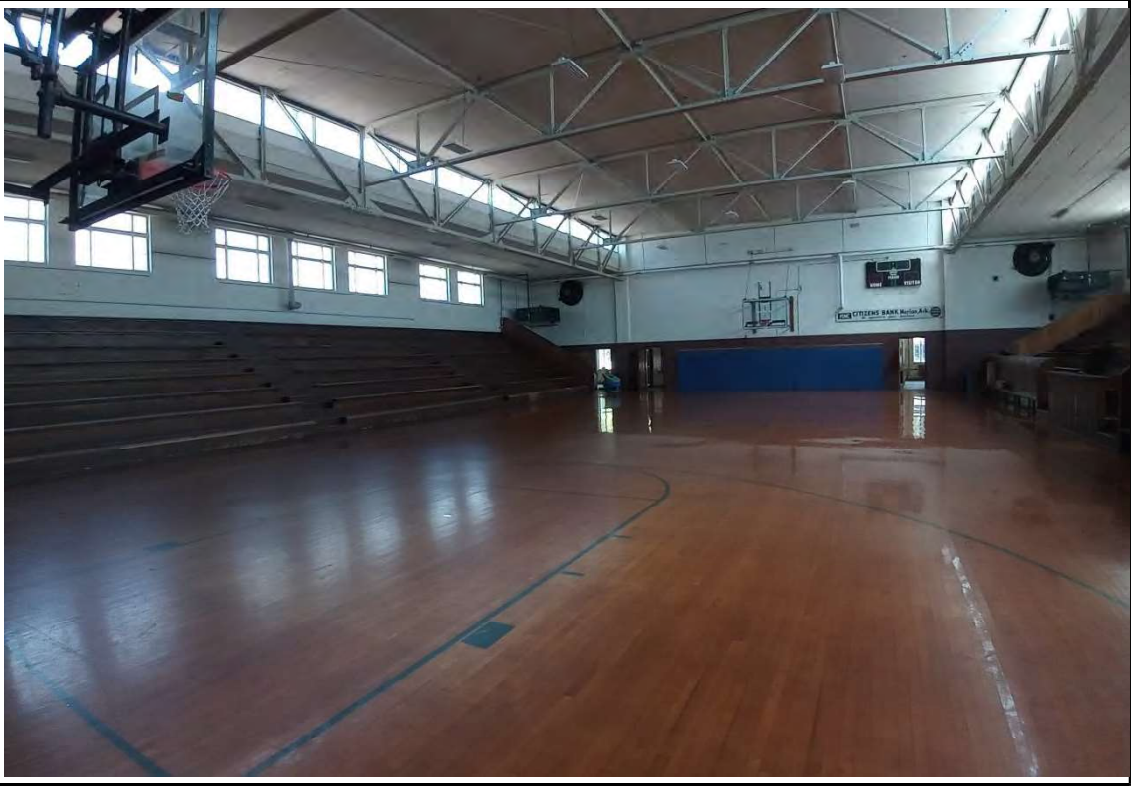


Photo # 6	**Date:** 07/12/2022

Description:

General View

Classroom 3

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 7	**Date:** 07/12/2022

Description:

Sample: RC-01

Roofing Core

Photo # 8	**Date:** 07/12/2022

Description:

Sample: RC-02

Roofing Core

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 9	**Date:** 07/12/2022

Description:

Sample: M-01

Black Roof Mastic

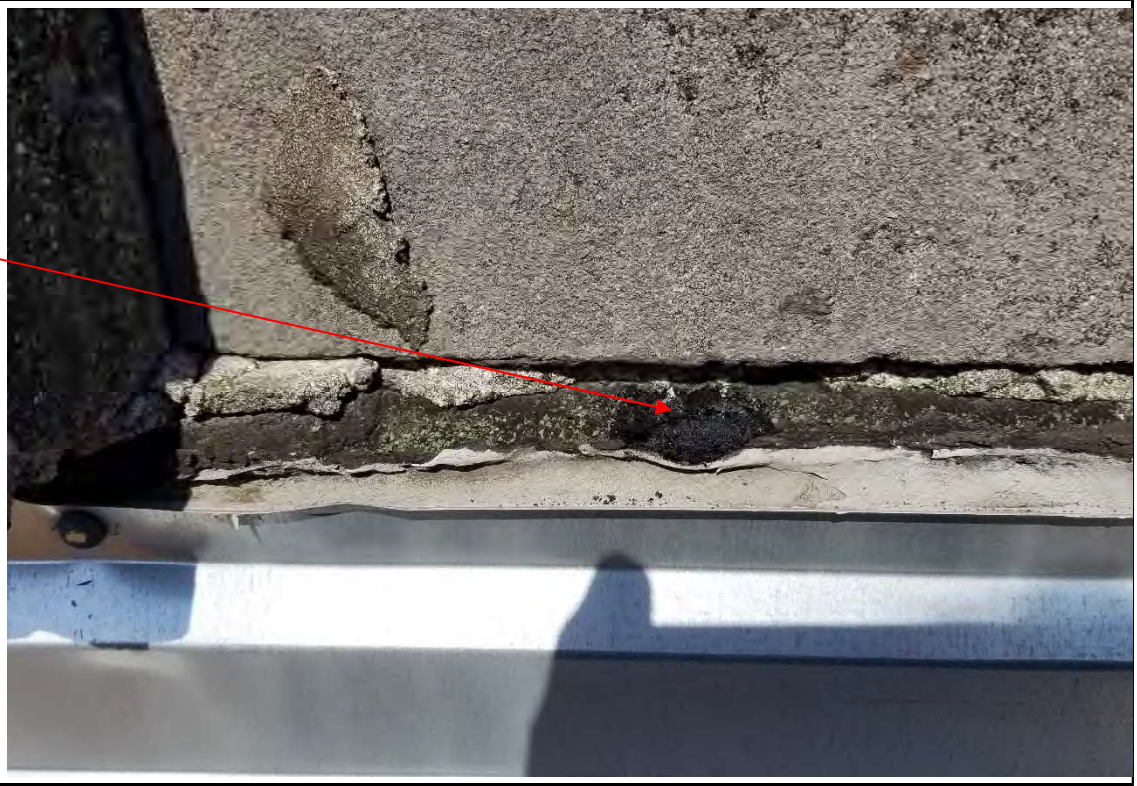


Photo # 10	**Date:** 07/12/2022

Description:

Sample: M-02

Gray Roof Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 11	**Date:** 07/12/2022

Description:

Sample: M-03

White Roof Mastic

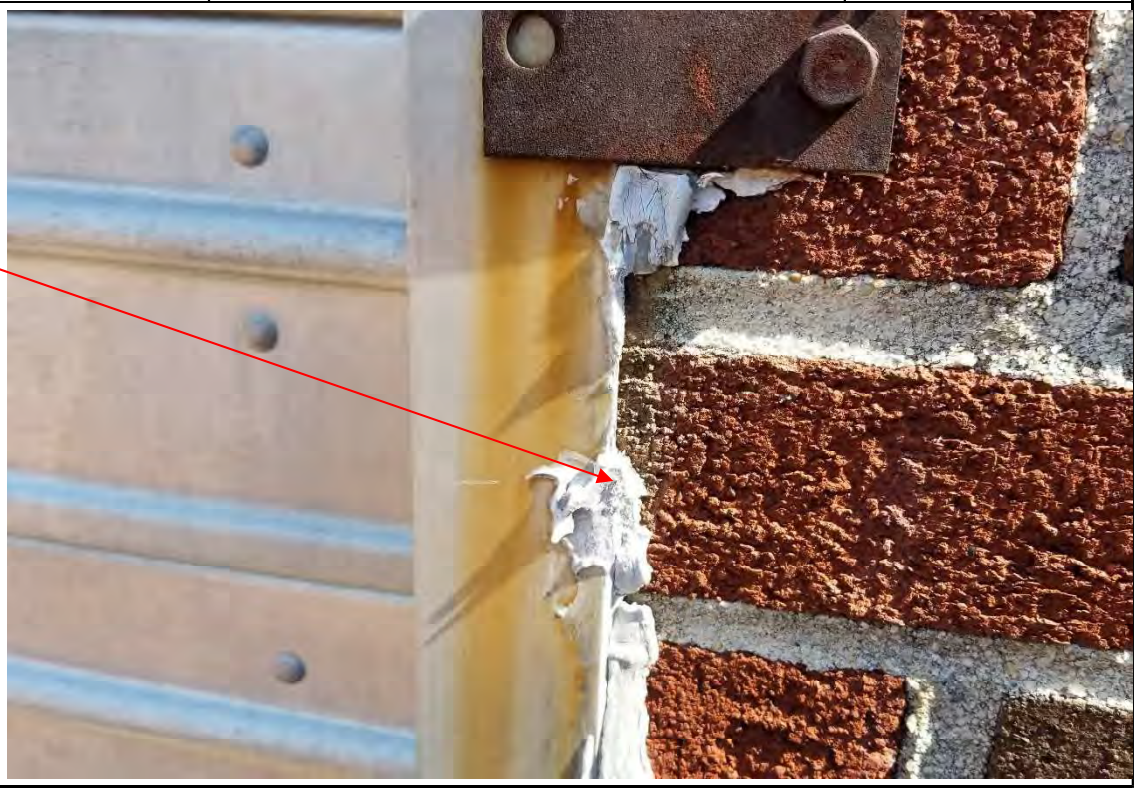


Photo # 12	**Date:** 07/12/2022

Description:

Sample: M-04

Black Roof Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 13	**Date:** 07/12/2022

Description:

Sample: RC-03

Roof Core

Photo # 14	**Date:** 07/12/2022

Description:

Sample: M-05

Black Roof Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 15	**Date:** 07/12/2022

Description:

Sample: MT-01

Cap Stone Mortar

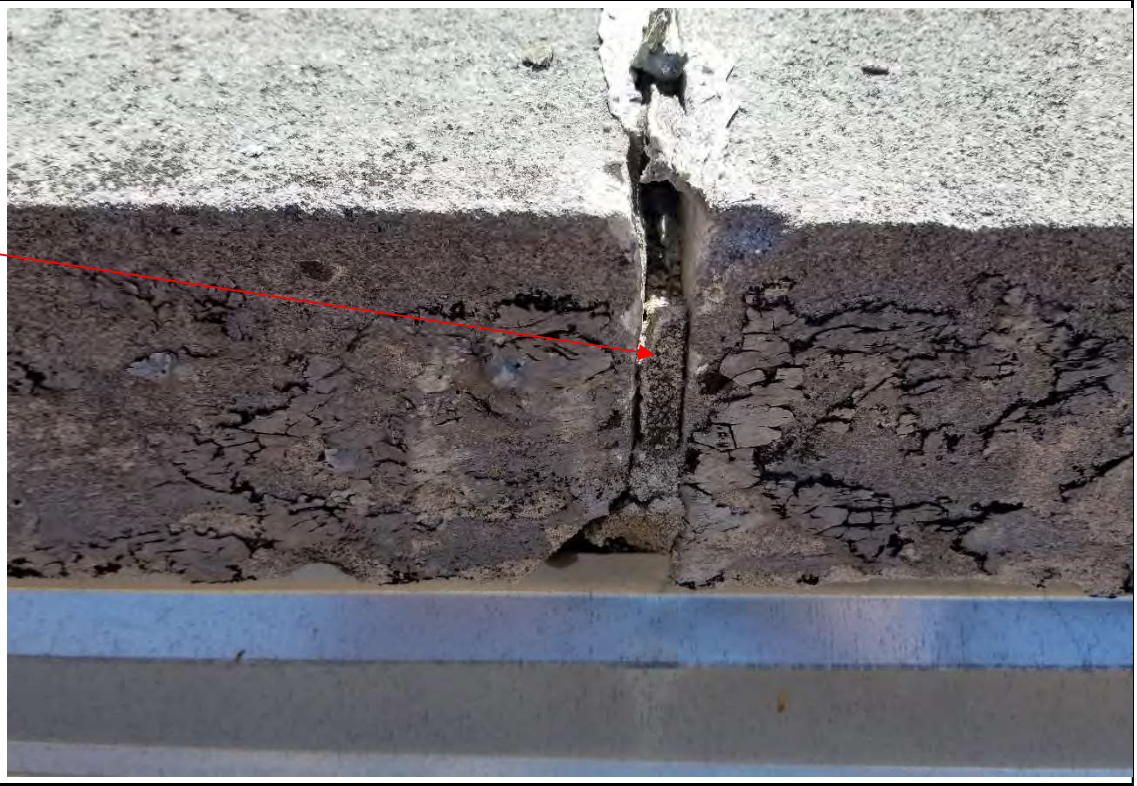
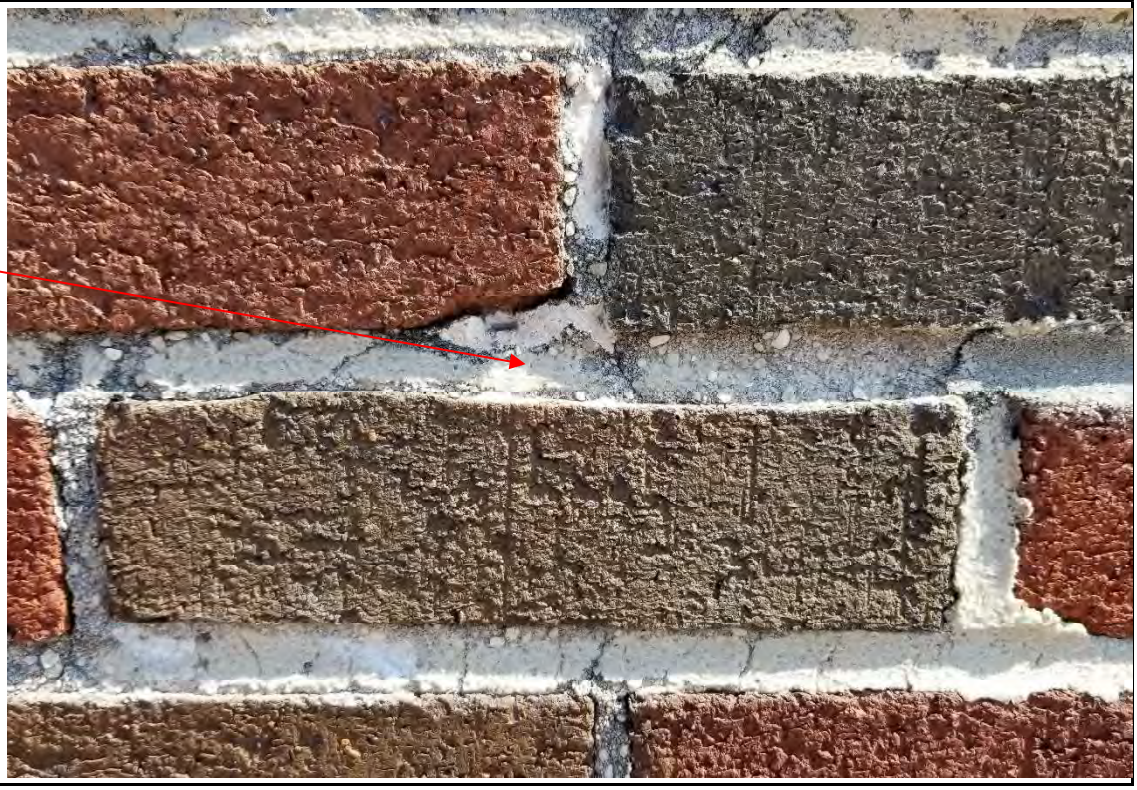


Photo # 16	**Date:** 07/12/2022

Description:

Sample: BM-01

Brick Mortar



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 17	**Date:** 07/12/2022

Description:

Sample: BM-02

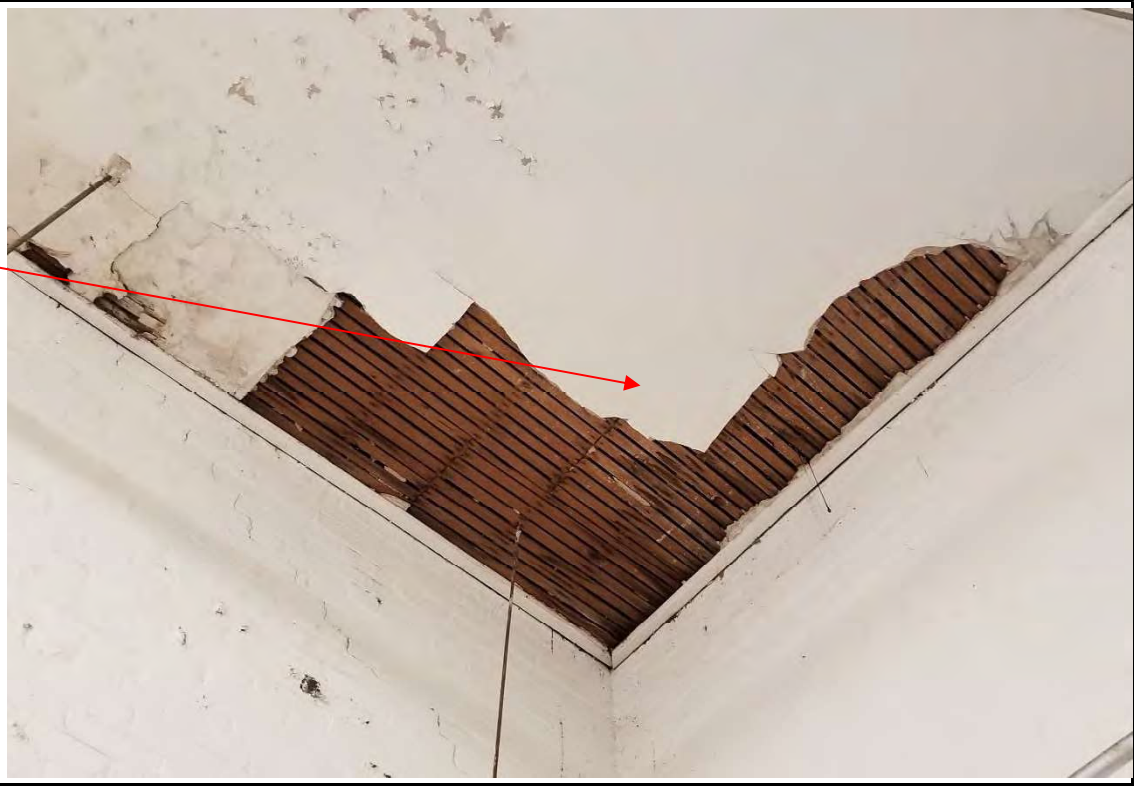
Brick Mortar

Photo # 18	**Date:** 07/12/2022

Description:

Sample: P-01

Ceiling Plaster



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 19	**Date:** 07/12/2022

Description:

Sample: P-02

Wall Plaster

Photo # 20	**Date:** 07/12/2022

Description:

Sample: PW-01

1" TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 21	**Date:** 07/12/2022

Description:

Sample: PW-02

1' TSI Pipe Insulation

Tested Positive for Asbestos

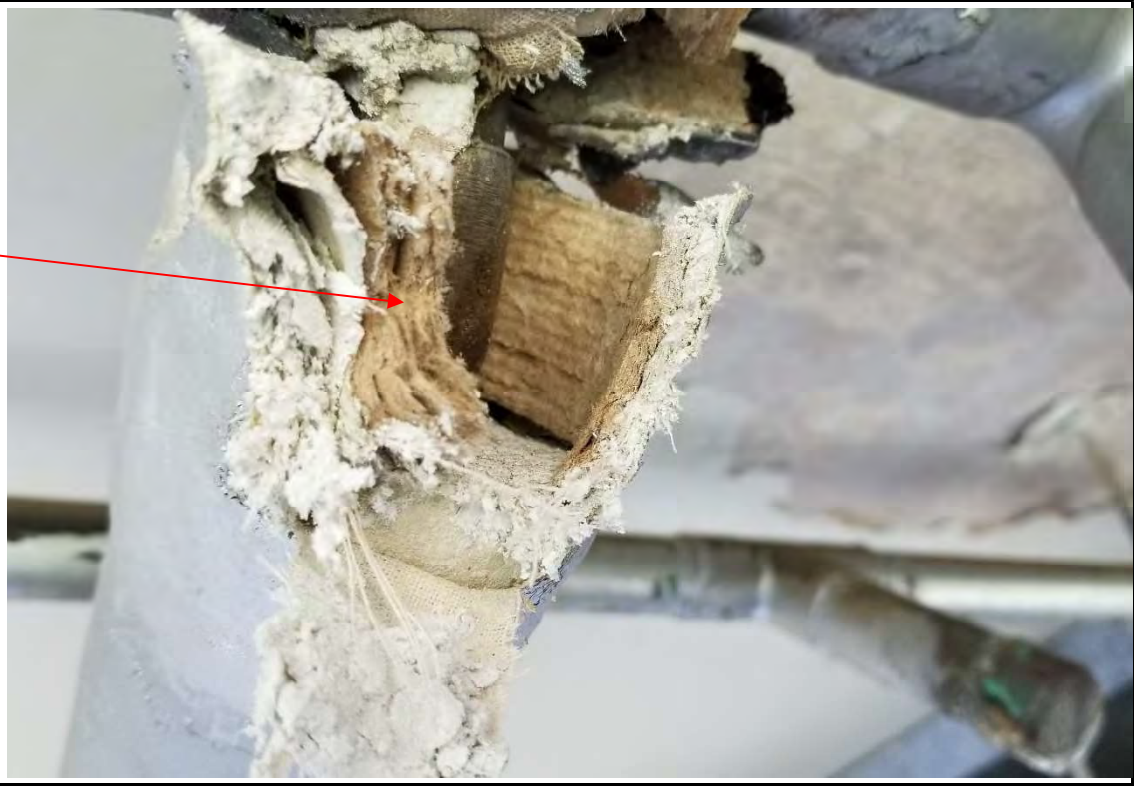
Photo # 22	**Date:** 07/12/2022

Description:

Sample: PW-03

2" TSI Pipe Elbow

Tested Positive for Asbestos



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 23	**Date:** 07/12/2022

Description:

Sample: PW-04

2” TSI Pipe Insulation

Photo # 24	**Date:** 07/12/2022

Description:

Sample: P-03

Ceiling Plaster

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 25	**Date:** 07/12/2022

Description:

Sample: P-04

Wall Plaster

Photo # 26	**Date:** 07/12/2022

Description:

Sample: P-05

Ceiling Plaster (With Texture)

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 27	**Date:** 07/12/2022

Description:

Sample: M-06

Chalk Board Mastic

Tested Positive for Asbestos

Photo # 28	**Date:** 07/12/2022

Description:

Sample: CT-01

Yellow Ceiling Tile

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 29	**Date:** 07/12/2022

Description:

Sample: PW-05

2" TSI Pipe Insulation

Tested Positive for Asbestos

(Not Pictured)

Photo # 30	**Date:** 07/12/2022

Description:

Sample: PW-06

2" TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 31	**Date:** 07/12/2022

Description:

Sample: PW-07

4" TSI Pipe Insulation

Tested Positive for Asbestos

Photo # 32	**Date:** 07/12/2022

Description:

Sample: PW-08

4" TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 33	**Date:** 07/12/2022

Description:

Sample: PW-09

4" TSI Pipe Elbow

Tested Positive for Asbestos

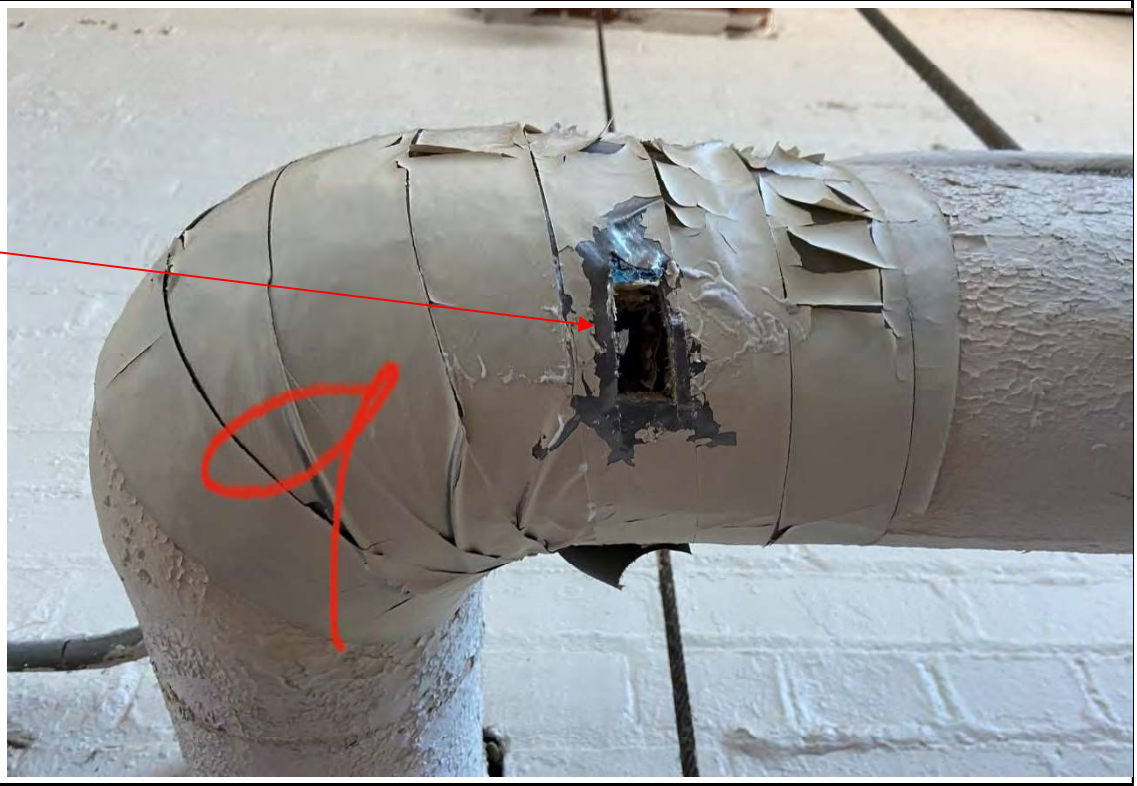


Photo # 34	**Date:** 07/12/2022

Description:

Sample: PW-10

2" TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 35	**Date:** 07/12/2022

Description:

Sample: PW-11

2" TSI Pipe Insulation

Tested Positive for Asbestos

Photo # 36	**Date:** 07/12/2022

Description:

Sample: PW-12

4" TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 37	**Date:** 07/12/2022

Description:

Sample: PW-13

4" TSI Pipe Insulation

Tested Positive for Asbestos

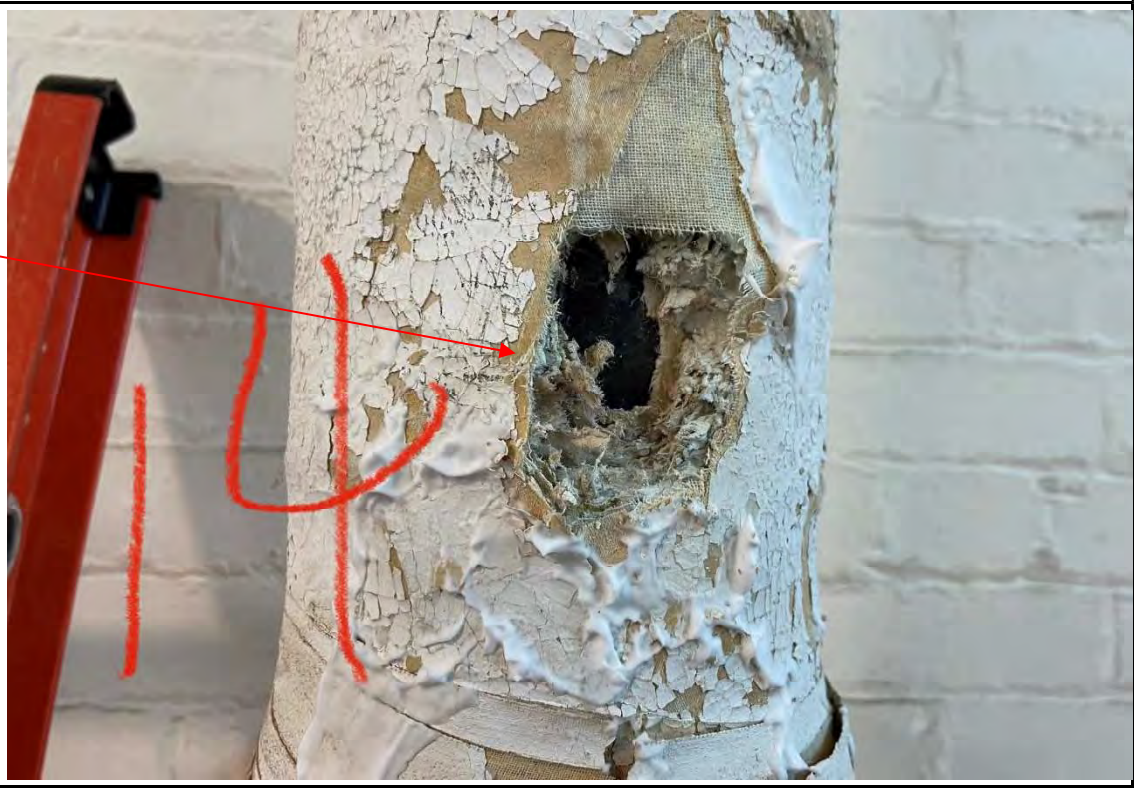
Photo # 38	**Date:** 07/12/2022

Description:

Sample: PW-14

4" TSI Pipe Insulation

Tested Positive for Asbestos



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 39	**Date:** 07/12/2022

Description:

Sample: AC-01

Acoustic Ceiling Tile

Photo # 40	**Date:** 07/12/2022

Description:

Sample: AC-02

Acoustic Sieling Tile

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 41	**Date:** 07/12/2022

Description:

Sample: AC-03

Acoustic Ceiling Tile

Photo # 42	**Date:** 07/12/2022

Description:

Sample: M-07

Chalk Board Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 43	**Date:** 07/12/2022

Description:

XRF Reading Number:

8170

Brown Door Jamb

Tested Positive for Lead-Based Paint

Photo # 44	**Date:** 07/12/2022

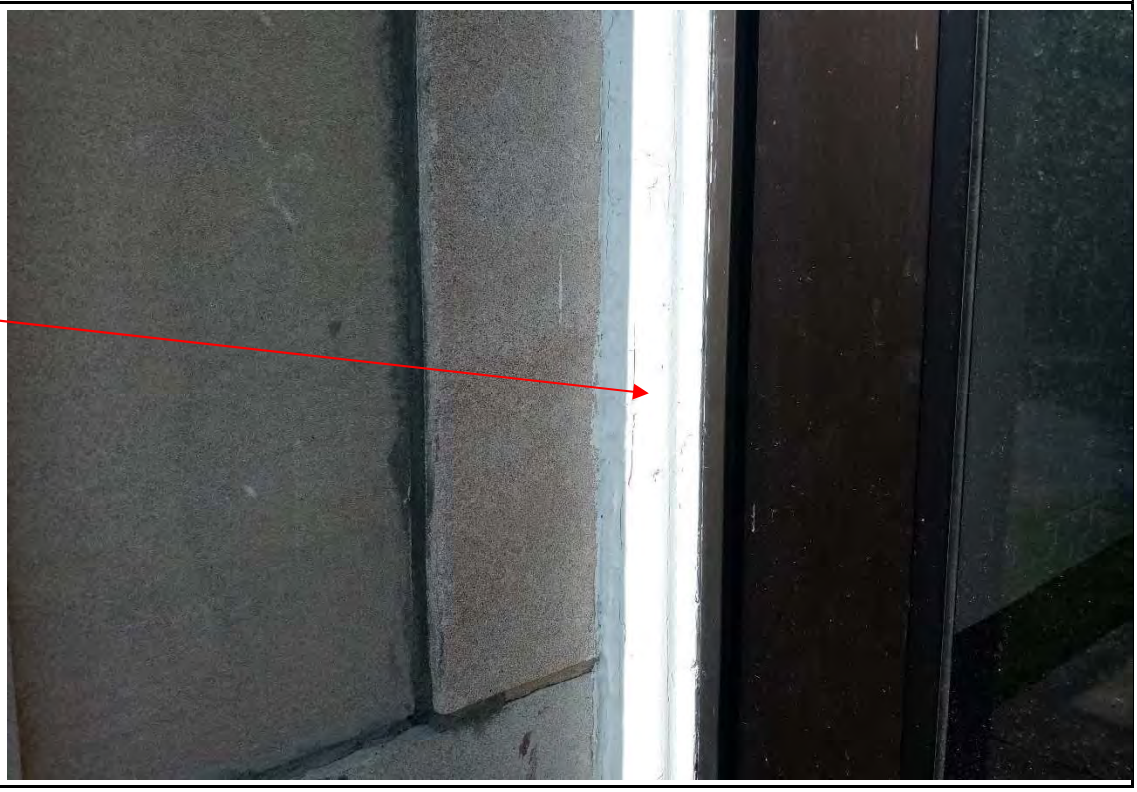
Description:

XRF Reading Number:

8173

White Door Casing

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 45	**Date:** 07/12/2022

Description:

XRF Reading Number:

8177

White Brick Wall

Tested Positive for Lead-Based Paint

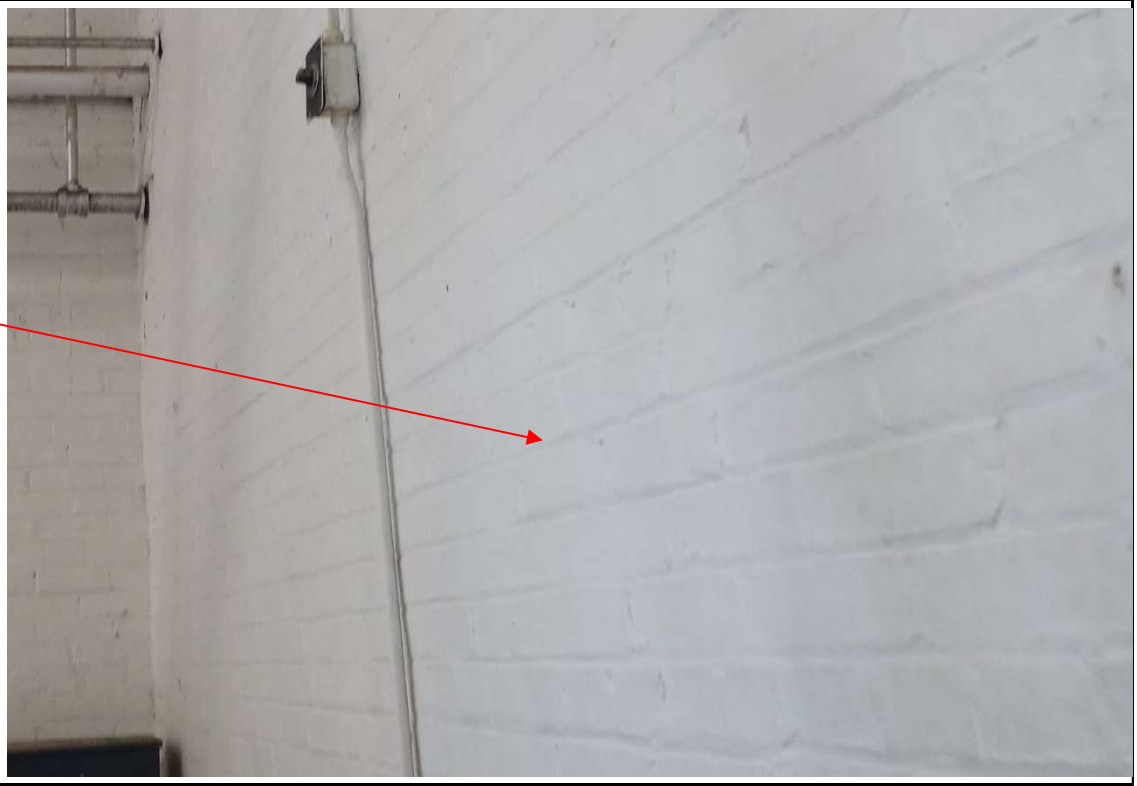


Photo # 46	**Date:** 07/12/2022

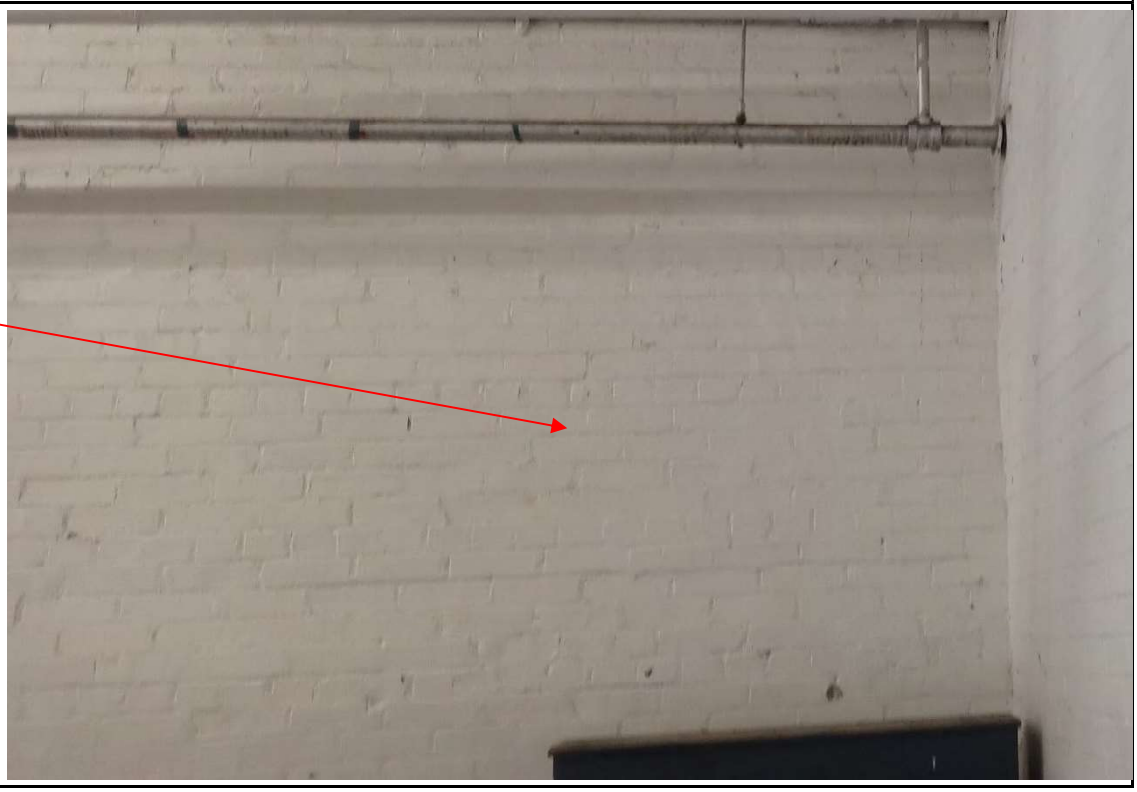
Description:

XRF Reading Number:

8178

White Brick Wall

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 47	**Date:** 07/12/2022

Description:

XRF Reading Number:

8179

Burgandy Brick Wall

Tested Positive for Lead-Based Paint

Photo # 48	**Date:** 07/12/2022

Description:

XRF Reading Number:

8184

White Plaster Ceiling

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 49	**Date:** 07/12/2022

Description:

XRF Reading Number:

8189

Burgandy Brick Wall

Tested Positive for Lead-Based Paint

Photo # 50	**Date:** 07/12/2022

Description:

XRF Reading Number:

8190

White Plaster Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 51	**Date:** 07/12/2022

Description:

XRF Reading Number:

8193

White Plaster Ceiling

Tested Positive for Lead-Based Paint

Photo # 52	**Date:** 07/12/2022

Description:

XRF Reading Number:

8194

Silver Metal Radiator

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 53	**Date:** 07/12/2022

Description:

XRF Reading Number:

8195

White Brick Wall

Tested Positive for Lead-Based Paint

Photo # 54	**Date:** 07/12/2022

Description:

XRF Reading Number:

8196

Yellow Brick Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 55	**Date:** 07/12/2022

Description:

XRF Reading Number:

8201

Burgandy Brick Wall

Tested Positive for Lead-Based Paint

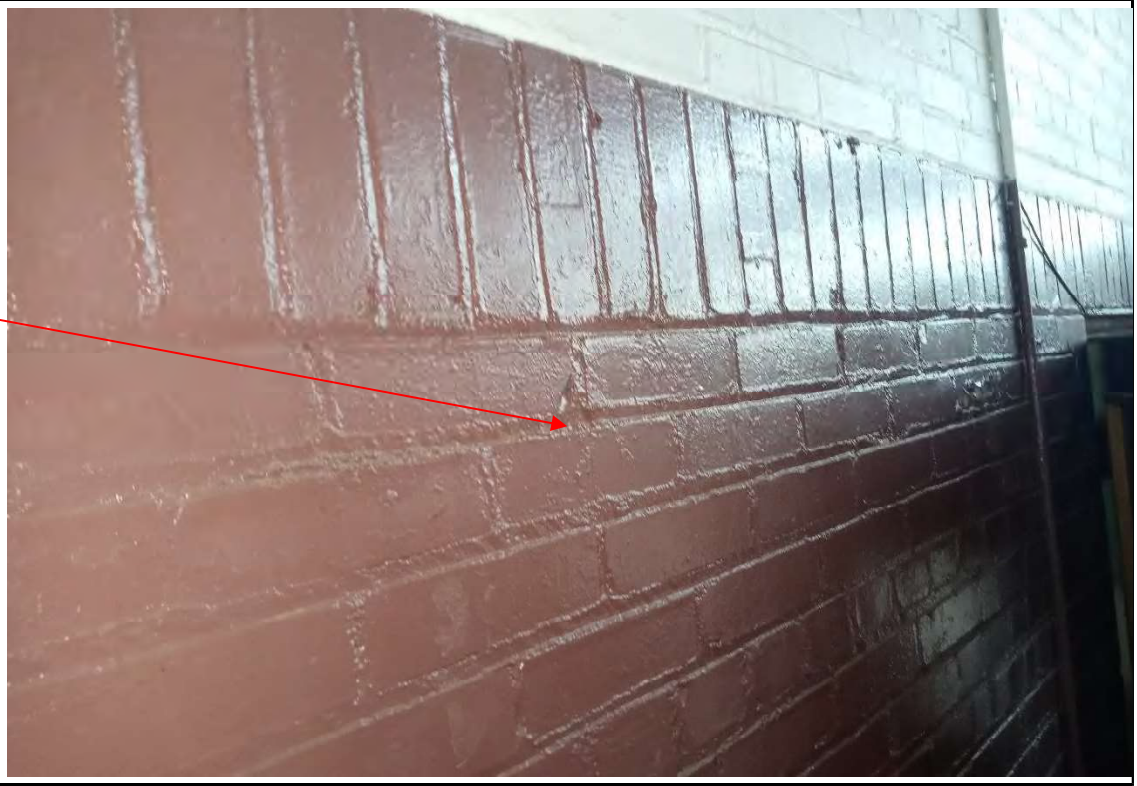


Photo # 56	**Date:** 07/12/2022

Description:

XRF Reading Number:

8206

White Plaster Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 57	**Date:** 07/12/2022

Description:

XRF Reading Number:

8207

Yellow Plaster Wall

Tested Positive for Lead-Based Paint

Photo # 58	**Date:** 07/12/2022

Description:

XRF Reading Number:

8211

White Plaster Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 59	**Date:** 07/12/2022

Description:

XRF Reading Number:

8213

Yellow Brick Wall

Tested Positive for Lead-Based Paint

Photo # 60	**Date:** 07/12/2022

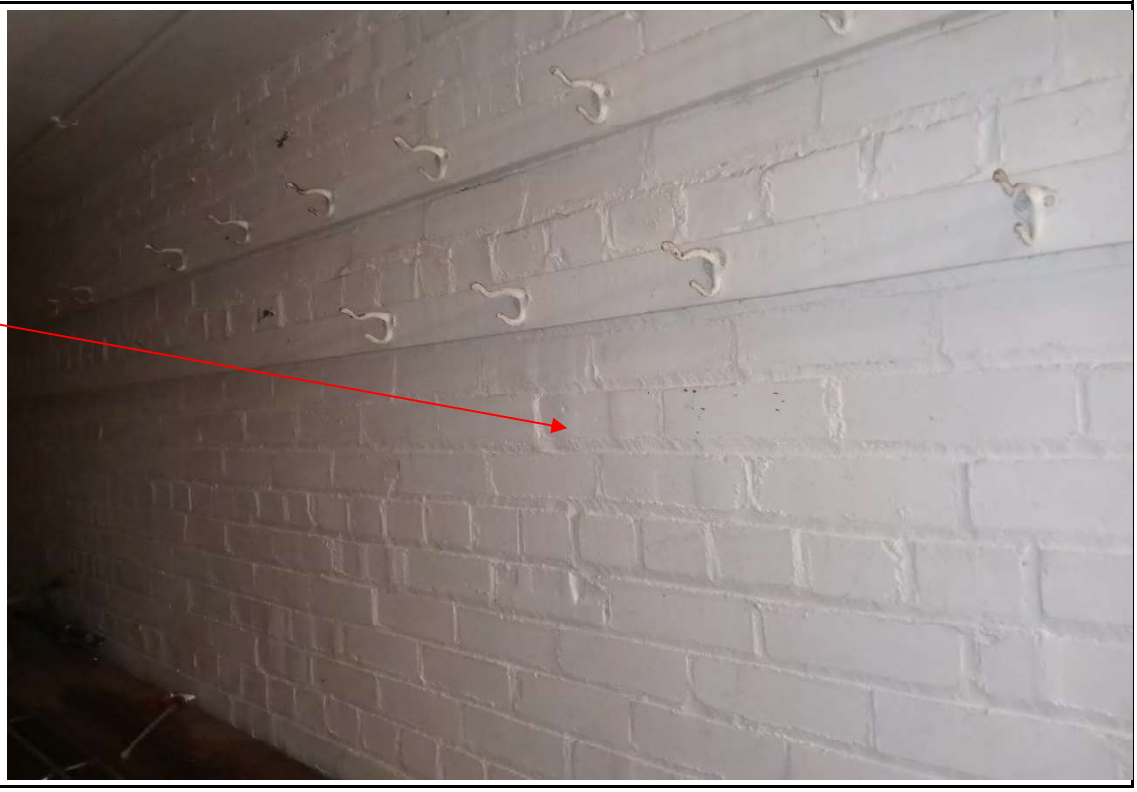
Description:

XRF Reading Number:

8214

White Brick Wall

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 61	**Date:** 07/12/2022

Description:

XRF Reading Number:

8215

White Plaster Ceiling

Tested Positive for Lead-Based Paint

Photo # 62	**Date:** 07/12/2022

Description:

Hazardous Materials:

Mercury-containing Florescent Bulb Example

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 63	**Date:** 07/12/2022

Description:

Hazardous Materials:

Refrigerants in Appliances Example

Photo # 64	**Date:** 07/12/2022

Description:

Hazardous Materials:

Refrigerants in Appliances Example

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 65	**Date:** 07/12/2022

Description:

Hazardous Materials:

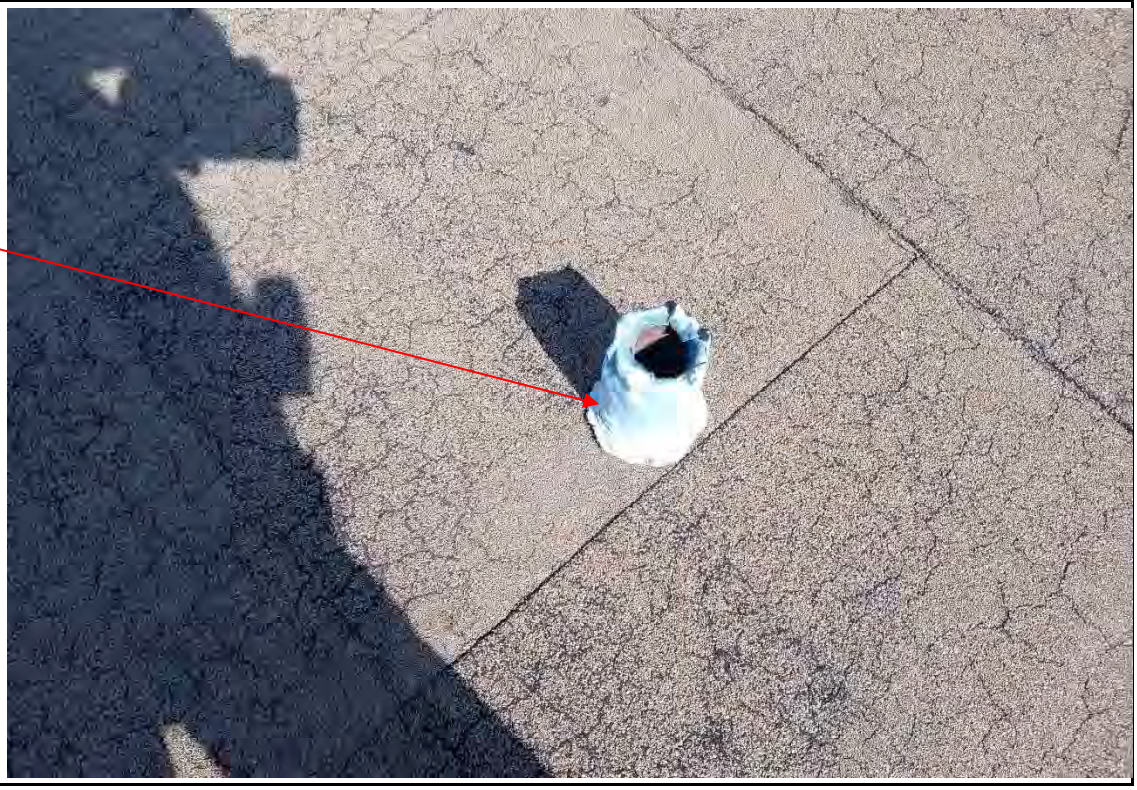
Exit Sign with Batteries Example

Photo # 66	**Date:** 07/12/2022

Description:

Hazardous Materials:

Lead Flashing Example



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 67	**Date:** 07/12/2022

Description:

Hazardous Materials:

Chemicals Example

Photo # 68	**Date:** 07/12/2022

Description:

Hazardous Materials:

Chemicals Example

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PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 69	**Date:** 07/12/2022

Description:

Hazardous Materials:

Fire Extinguisher Example

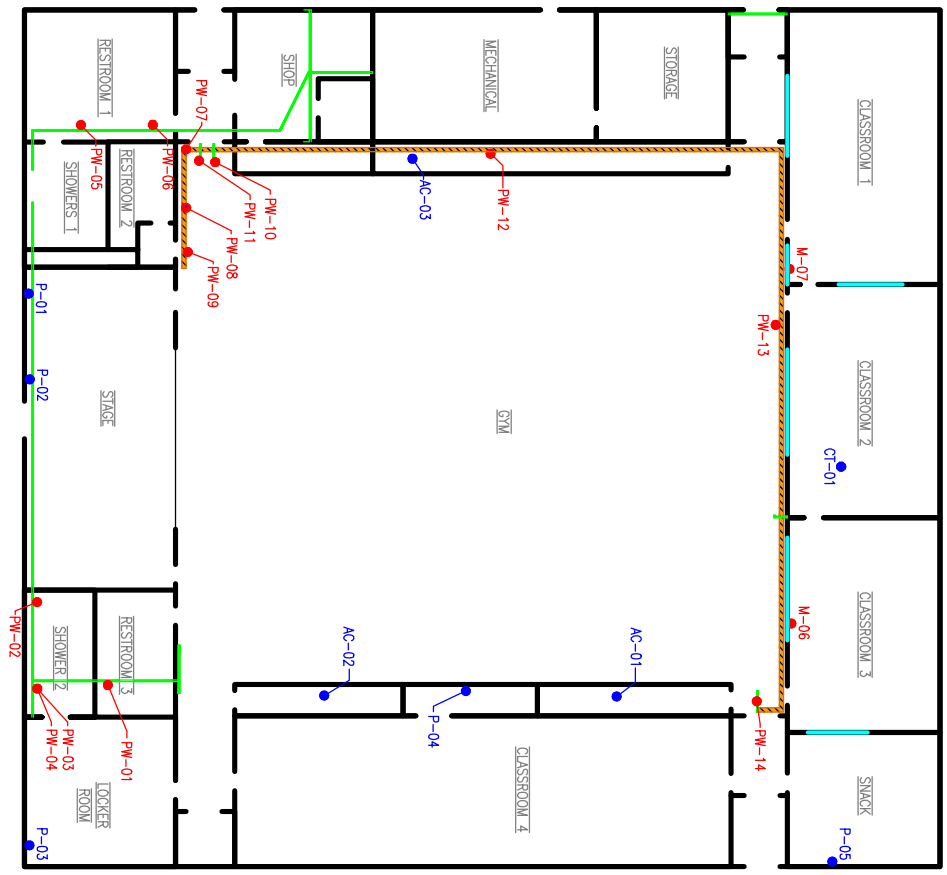
Photo # 70	**Date:** 07/12/2022

Description:

Hazardous Materials:

Fire Resistant File Cabinet Example

Appendix 3
Building Floor Plans



LEGEND

01A = POSITIVE ACM LOCATION

01A = NEGATIVE ACM LOCATION

= 4" TSI PIPE RUN

= 2" TSI PIPE RUN

= CHALK BOARD MASTIC

1

54 E. MILITARY RD.
FIRST FLOOR
HAZARDOUS MATERIAL SURVEY

DESCRIPTION: ACM SAMPLE LOCATIONS

PROJECT #: 251310.00

LOCATION: 54 EAST MILITARY RD. MARION, AR 72364

DATE: AUGUST 2022

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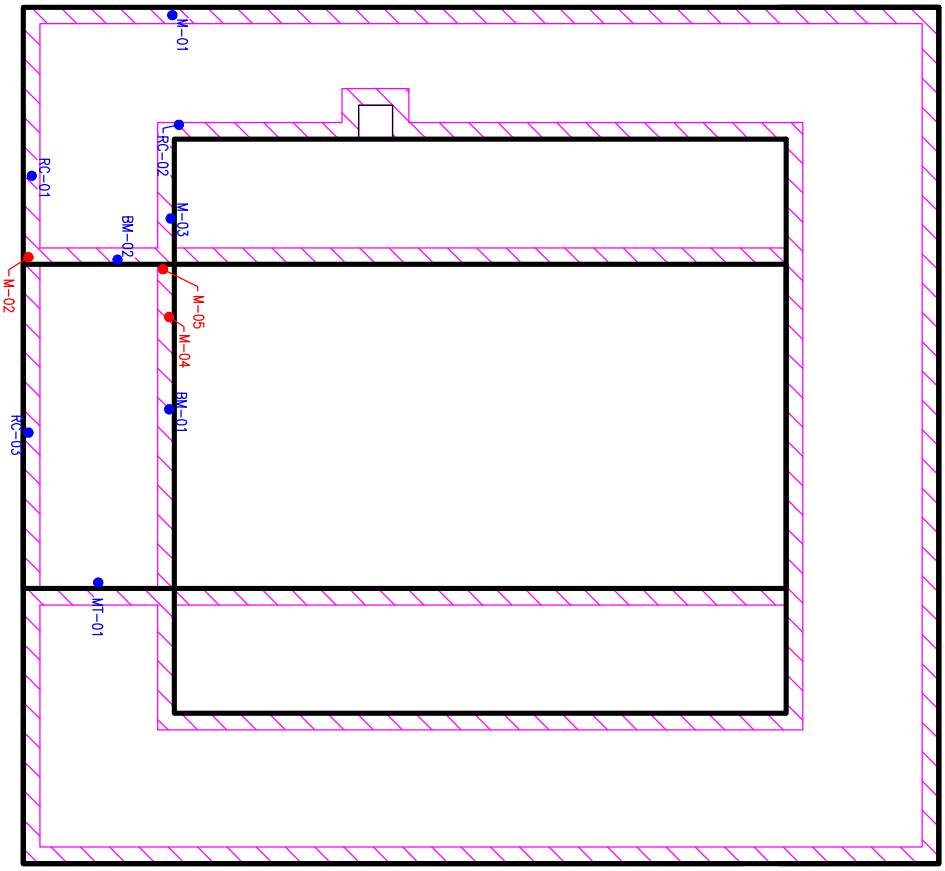
NOT TO SCALE



LEGEND

01A = POSITIVE ACM LOCATION

01A = NEGATIVE ACM LOCATION

= BLACK AND GRAY ROOF MASTIC

2

54 E. MILITARY RD.
ROOF
HAZARDOUS MATERIAL SURVEY

DESCRIPTION: ACM SAMPLE LOCATIONS

PROJECT #: 251310.00

LOCATION: 54 EAST MILITARY RD. MARION, AR 72364

DATE: AUGUST 2022

Tioga ENVIRONMENTAL CONSULTANTS

NOT TO SCALE

Appendix 4
Asbestos Laboratory Results and Chain of Custody

eurofins | CEI

July 13, 2022

Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

CLIENT PROJECT: Haizlip 54 E. Military, 251310.00
CEI LAB CODE: A228756

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on July 13, 2022. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

eurofins | CEI

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Tioga Environmental Consultants

CLIENT PROJECT: Haizlip 54 E. Military, 251310.00

LAB CODE: A228756

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 07/13/22

TOTAL SAMPLES ANALYZED: 36

SAMPLES >1% ASBESTOS: 29

730 SE Maynard Road • Cary, NC 27511 • 919.481.1413

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Haizlip 54 E. Military, 251310.00 **LAB CODE: A228756**

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
RC-01		A228756.01	Silver,Black	Roof Core	None Detected
RC-02		A228756.02	Black	Roof Core	None Detected
M-01		A228756.03	Black	Mastic	None Detected
M-02		A228756.04	Gray	Mastic	Chrysotile 15%
M-03		A228756.05	White	Mastic	None Detected
M-04	Layer 1	A228756.06	Silver	Silver Paint	Chrysotile 2%
	Layer 2	A228756.06	Black	Mastic	Chrysotile 15%
RC-03		A228756.07	Silver,Black	Roof Core	None Detected
M-05	Layer 1	A228756.08	Silver	Silver Paint	Chrysotile 2%
	Layer 2	A228756.08	Black	Mastic	Chrysotile 10%
MT-01		A228756.09A	Gray	Mortar	None Detected
		A228756.09B	Gray	Caulking	None Detected
BM-01		A228756.10	Gray	Brick Mortar	None Detected
BM-02		A228756.11	Gray,Brown	Brick Mortar	None Detected
P-01	Layer 1	A228756.12	White	Plaster Skim Coat	None Detected
	Layer 2	A228756.12	Beige	Plaster Base Coat	None Detected
P-02		A228756.13	Beige,White	Mud	None Detected
PW-01	Layer 1	A228756.14	Brown	Pipe Wrap	Chrysotile 3%
	Layer 2	A228756.14	White	Pipe Wrap	Chrysotile 60%
PW-02	Layer 1	A228756.15	Brown	Pipe Wrap	Chrysotile 3%
	Layer 2	A228756.15	White	Pipe Wrap	Chrysotile 60%
PW-03	Layer 1	A228756.16	Silver,White	Pipe Wrap Elbow	Chrysotile 45%
	Layer 2	A228756.16	Brown	Pipe Wrap Elbow	Chrysotile 3%
PW-04	Layer 1	A228756.17	Silver,White	Pipe Wrap Elbow	Chrysotile 45%
	Layer 2	A228756.17	Brown	Pipe Wrap Elbow	Chrysotile 3%
	Layer 3	A228756.17	Brown,Black	Pipe Wrap Elbow	Chrysotile 5%
P-03	Layer 1	A228756.18	White	Plaster Skim Coat	None Detected
	Layer 2	A228756.18	Gray	Plaster Base Coat	None Detected
P-04	Layer 1	A228756.19	Yellow	Surface Material	None Detected
	Layer 2	A228756.19	Gray	Plaster	None Detected
P-05	Layer 1	A228756.20	Beige	Texture	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Haizlip 54 E. Military, 251310.00 **LAB CODE: A228756**

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A228756.20	White	Plaster	None Detected
M-06		A228756.21	Beige,Brown	Surface Material / Mastic	Chrysotile 3%
CT-01		A228756.22	Yellow,Beige	Ceiling Tile	None Detected
PW-05	Layer 1	A228756.23	Silver,White	Pipe Wrap	Chrysotile 45%
	Layer 2	A228756.23	Brown	Pipe Wrap	Chrysotile 3%
PW-06	Layer 1	A228756.24	Silver,White	Pipe Wrap	Chrysotile 15%
	Layer 2	A228756.24	Brown	Pipe Wrap	None Detected
	Layer 3	A228756.24	Brown,Black	Pipe Wrap	Chrysotile 5%
PW-07	Layer 1	A228756.25	White	Pipe Wrap	Chrysotile 45%
	Layer 2	A228756.25	Brown	Pipe Wrap	Chrysotile 3%
PW-08		A228756.26	White,Gray	Pipe Wrap	Chrysotile 60%
PW-09		A228756.27	White,Gray	Pipe Wrap Elbow	Chrysotile 60%
PW-10		A228756.28	White,Gray	Pipe Wrap (Drop)	Chrysotile 60%
PW-11		A228756.29	Brown,Gray	Pipe Wrap (Drop)	Chrysotile 60%
PW-12		A228756.30	Brown,Gray	Pipe Wrap	Chrysotile 60%
PW-13		A228756.31	Brown,Gray	Pipe Wrap	Chrysotile 60%
PW-14		A228756.32	Brown,Gray	Pipe Wrap	Chrysotile 60%
AC-01		A228756.33	White,Brown	Acoustic Ceiling	None Detected
AC-02		A228756.34	White,Brown	Acoustic Ceiling	None Detected
AC-03		A228756.35	White,Brown	Acoustic Ceiling	None Detected
M-07	Layer 1	A228756.37	Black	Mastic	None Detected
	Layer 2	A228756.37	Gray	Mud	Chrysotile 3%

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
RC-01 A228756.01	Roof Core	Heterogeneous Silver,Black Fibrous Bound	5% 10%	Cellulose Fiberglass	85% <1%	Tar Metal Foil	None Detected
RC-02 A228756.02	Roof Core	Heterogeneous Black Fibrous Bound	5% 10%	Cellulose Fiberglass	85%	Tar	None Detected
M-01 A228756.03	Mastic	Heterogeneous Black Non-fibrous Bound	5%	Cellulose	95%	Tar	None Detected
M-02 A228756.04	Mastic	Heterogeneous Gray Fibrous Bound			85%	Tar	**15% Chrysotile**
M-03 A228756.05	Mastic	Heterogeneous White Fibrous Bound	3%	Talc	97%	Binder	None Detected
M-04 Layer 1 A228756.06	Silver Paint	Heterogeneous Silver Non-fibrous Bound			78% 20%	Paint Tar	**2% Chrysotile**
Layer 2 A228756.06	Mastic	Heterogeneous Black Fibrous Bound	10%	Fiberglass	75%	Binder	**15% Chrysotile**

ASBESTOS BULK ANALYSIS

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357 North Main Street
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Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
RC-03	Roof Core	Heterogeneous	5%	Cellulose	85%	Tar	None Detected
A228756.07		Silver,Black	10%	Fiberglass	<1%	Metal Foil	
		Fibrous					
		Bound					
M-05	Silver Paint	Heterogeneous			80%	Paint	2% Chrysotile
Layer 1		Silver			18%	Tar	
A228756.08		Non-fibrous					
		Bound					
Layer 2	Mastic	Heterogeneous	5%	Cellulose	85%	Tar	10% Chrysotile
A228756.08		Black					
		Non-fibrous					
		Bound					
MT-01	Mortar	Homogeneous			65%	Silicates	None Detected
A228756.09A		Gray			35%	Binder	
		Non-fibrous					
		Bound					
A228756.09B	Caulking	Homogeneous			100%	Caulk	None Detected
		Gray					
		Non-fibrous					
		Bound					
BM-01	Brick Mortar	Homogeneous			65%	Silicates	None Detected
A228756.10		Gray			35%	Binder	
		Non-fibrous					
		Bound					
BM-02	Brick Mortar	Homogeneous			65%	Silicates	None Detected
A228756.11		Gray,Brown			35%	Binder	
		Non-fibrous					
		Bound					

ASBESTOS BULK ANALYSIS

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Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
P-01	Plaster Skim Coat	Heterogeneous			95%	Binder	None Detected
Layer 1		White			5%	Paint	
A228756.12		Non-fibrous					
		Bound					
Layer 2	Plaster Base Coat	Homogeneous	<1%	Cellulose	65%	Silicates	None Detected
A228756.12		Beige			35%	Binder	
		Non-fibrous					
		Bound					
P-02	Mud	Heterogeneous			60%	Binder	None Detected
A228756.13		Beige,White			35%	Calc Carb	
		Non-fibrous			5%	Paint	
		Bound					
Sample appears to be mud. No plaster present.							
PW-01	Pipe Wrap	Heterogeneous	97%	Cellulose			**3% Chrysotile**
Layer 1		Brown					
A228756.14		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap.							
Layer 2	Pipe Wrap	Heterogeneous			40%	Binder	**60% Chrysotile**
A228756.14		White					
		Fibrous					
		Loosely Bound					
PW-02	Pipe Wrap	Heterogeneous	97%	Cellulose			**3% Chrysotile**
Layer 1		Brown					
A228756.15		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap.							
Layer 2	Pipe Wrap	Heterogeneous			40%	Binder	**60% Chrysotile**
A228756.15		White					
		Fibrous					
		Loosely Bound					

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
PW-03	Pipe Wrap Elbow	Heterogeneous	10%	Cellulose	40%	Binder	**45% Chrysotile**
Layer 1		Silver,White			5%	Paint	
A228756.16		Fibrous					
		Loosely Bound					
Layer 2	Pipe Wrap Elbow	Heterogeneous	97%	Cellulose			**3% Chrysotile**
A228756.16		Brown					
		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
PW-04	Pipe Wrap Elbow	Heterogeneous	10%	Cellulose	40%	Binder	**45% Chrysotile**
Layer 1		Silver,White			5%	Paint	
A228756.17		Fibrous					
		Loosely Bound					
Layer 2	Pipe Wrap Elbow	Heterogeneous	97%	Cellulose			**3% Chrysotile**
A228756.17		Brown					
		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
Layer 3	Pipe Wrap Elbow	Heterogeneous	65%	Cellulose	30%	Tar	**5% Chrysotile**
A228756.17		Brown,Black					
		Fibrous					
		Loosely Bound					
P-03	Plaster Skim Coat	Heterogeneous			95%	Binder	None Detected
Layer 1		White			5%	Paint	
A228756.18		Non-fibrous					
		Bound					
Layer 2	Plaster Base Coat	Homogeneous	<1%	Cellulose	65%	Silicates	None Detected
A228756.18		Gray			35%	Binder	
		Non-fibrous					
		Bound					

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
P-04 Layer 1 A228756.19	Surface Material	Homogeneous Yellow Non-fibrous Bound			100%	Binder	None Detected
Layer 2 A228756.19	Plaster	Homogeneous Gray Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected
P-05 Layer 1 A228756.20	Texture	Heterogeneous Beige Non-fibrous Bound			85% 10% 5%	Binder Vermiculite Paint	None Detected
Layer 2 A228756.20	Plaster	Homogeneous White Non-fibrous Bound			65% 35%	Binder Calc Carb	None Detected
M-06 A228756.21	Surface Material / Mastic	Heterogeneous Beige,Brown Non-fibrous Bound			72% 25%	Mastic Binder	**3% Chrysotile**
Unable to separate surface material and mastic.							
CT-01 A228756.22	Ceiling Tile	Heterogeneous Yellow,Beige Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
PW-05 Layer 1 A228756.23	Pipe Wrap	Heterogeneous Silver,White Fibrous Loosely Bound	20%	Cellulose	30% 5%	Binder Paint	**45% Chrysotile**

ASBESTOS BULK ANALYSIS

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Date Analyzed: 07-13-22
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Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 2 A228756.23	Pipe Wrap	Heterogeneous Brown Fibrous Loosely Bound	97%	Cellulose			3% Chrysotile
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
PW-06 Layer 1 A228756.24	Pipe Wrap	Heterogeneous Silver,White Fibrous Loosely Bound	35%	Cellulose	45% 5%	Binder Paint	15% Chrysotile
Layer 2 A228756.24	Pipe Wrap	Heterogeneous Brown Fibrous Loosely Bound	100%	Cellulose			None Detected
Layer 3 A228756.24	Pipe Wrap	Heterogeneous Brown,Black Fibrous Loosely Bound	65%	Cellulose	30%	Tar	5% Chrysotile
PW-07 Layer 1 A228756.25	Pipe Wrap	Heterogeneous White Fibrous Loosely Bound	25%	Cellulose	30%	Binder	45% Chrysotile
Layer 2 A228756.25	Pipe Wrap	Heterogeneous Brown Fibrous Loosely Bound	97%	Cellulose			3% Chrysotile
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
PW-08 A228756.26	Pipe Wrap	Heterogeneous White,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile

ASBESTOS BULK ANALYSIS

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Client: Tioga Environmental Consultants
357 North Main Street
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Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
PW-09 A228756.27	Pipe Wrap Elbow	Heterogeneous White,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-10 A228756.28	Pipe Wrap (Drop)	Heterogeneous White,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-11 A228756.29	Pipe Wrap (Drop)	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	20%	Binder	60% Chrysotile
PW-12 A228756.30	Pipe Wrap	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-13 A228756.31	Pipe Wrap	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-14 A228756.32	Pipe Wrap	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
AC-01 A228756.33	Acoustic Ceiling	Heterogeneous White,Brown Fibrous Loosely Bound	80%	Cellulose	20%	Binder	None Detected

ASBESTOS BULK ANALYSIS

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Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
AC-02 A228756.34	Acoustic Ceiling	Heterogeneous White,Brown Fibrous Loosely Bound	80%	Cellulose	20%	Binder	None Detected
AC-03 A228756.35	Acoustic Ceiling	Heterogeneous White,Brown Fibrous Loosely Bound	80%	Cellulose	20%	Binder	None Detected
M-07 Layer 1 A228756.37	Mastic	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected
Layer 2 A228756.37	Mud	Heterogeneous Gray Non-fibrous Bound			97%	Binder	**3% Chrysotile**

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LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID and sample description.

ANALYST: Nicholas Moore

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

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CHAIN OF CUSTODY

730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: Joe Littlefield
Company: Tioga Environmental	Email / Tel: Jlittlefield@TiogaENV.com
Address: 357 N. Main Street Memphis, TN 38103	Project Name: Hazlip 54 E. Military
	Project ID#: 251310.00
Email: Jlittlefield@TiogaENV.com	PO #:
Tel: 901-791-2432 Fax: 901-791-2442	STATE SAMPLES COLLECTED IN: TN

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☑	☐	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PLM BULK	CARB 435		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM AIR (PCME)	ISO 10312	☐	☐	☐	☐	☐	☐
TEM AIR	ASTM 6281-15	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05 (2010)	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09 (2014)	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-16			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
TEM QUALITTATIVE	IN-HOUSE METHOD		☐	☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS / SPECIAL INSTRUCTIONS:	☐ Accept Samples ☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
Adam Smith	7-12-22 / 1:47 PM	Donald Wade	7/12/2022 13:47

Samples will be disposed of 30 days after analysis

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SAMPLING FORM

COMPANY CONTACT INFORMATION	
Company: Tioga Environmental	Job Contact: Joe Littlefield
Project Name: Hazlip 54 E. Military	JLittlefield@TiogaENV.com
Project ID #: 251310.00	Tel: 901-791-2432

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
RC-01	ROOF CORE		PLM ☑	TEM ☐
RC-02	ROOF CORE		PLM ☑	TEM ☐
M-01	MASTIC (BLACK)		PLM ☑	TEM ☐
M-02	MASTIC (GRAY)		PLM ☑	TEM ☐
M-03	MASTIC (WHITE)		PLM ☑	TEM ☐
M-04	MASTIC (BLACK)		PLM ☑	TEM ☐
RC-03	ROOF CORE		PLM ☑	TEM ☐
M-05	MASTIC (BLACK)		PLM ☑	TEM ☐
MT-01	MORTAR		PLM ☑	TEM ☐
BM-01	BRICK MORTAR		PLM ☑	TEM ☐
BM-02	BRICK MORTAR		PLM ☑	TEM ☐
P-01	PLASTER		PLM ☑	TEM ☐
P-02	PLASTER		PLM ☑	TEM ☐
PW-01	1" PIPE WRAP		PLM ☑	TEM ☐
PW-02	1" PIPE WRAP		PLM ☑	TEM ☐
PW-03	2" PIPE WRAP ELBOW		PLM ☑	TEM ☐
PW-04	2" PIPE WRAP		PLM ☑	TEM ☐
P-03	PLASTER		PLM ☑	TEM ☐
P-04	PLASTER		PLM ☑	TEM ☐
P-05	PLASTER w/ TEXTURE		PLM ☑	TEM ☐
M-06	MASTIC (BROWN)		PLM ☑	TEM ☐
CT-01	2'x4' CEILING TILE		PLM ☑	TEM ☐
PW-05	2" PIPE WRAP		PLM ☑	TEM ☐
PW-06	2" PIPE WRAP		PLM ☑	TEM ☐
PW-07	2" PIPE WRAP		PLM ☑	TEM ☐
PW-08	4" PIPE WRAP		PLM ☑	TEM ☐
PW-09	4" PIPE WRAP ELBOW		PLM ☑	TEM ☐
PW-10	3" PIPE WRAP (DROP)		PLM ☑	TEM ☐

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SAMPLING FORM

COMPANY CONTACT INFORMATION	
Company: Tioga Environmental	Job Contact: Joe Littlefield
Project Name: Haizlip 54 E. Military	JLittlefield@TiogaENV.com
Project ID #: 251310.00	Tel: 901-791-2432

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
PW-11	2" PIPE WRAP (DROP)		PLM ☑	TEM ☐
PW-12	4" PIPE WRAP		PLM ☑	TEM ☐
PW-13	4" PIPE WRAP		PLM ☑	TEM ☐
PW-14	3" PIPE WRAP (DROP)		PLM ☑	TEM ☐
AC-01	ACOUSTIC CEILING		PLM ☑	TEM ☐
AC-02	ACOUSTIC CEILING		PLM ☑	TEM ☐
AC-03	ACOUSTIC CEILING		PLM ☑	TEM ☐
M-07	MASTIC (BLACK)		PLM ☑	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
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			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐

Appendix 5
Viken PCS Sheets

Performance Characteristic Sheet

EFFECTIVE DATE: **December 1, 2020**

MANUFACTURER AND MODEL:

Make: ***Viken Detection*** (previously Heuresis)
Models: ***Model Pb200i***
Source: ***^{57}Co, 5 mCi (nominal – new source)***

FIELD OPERATION GUIDANCE

ACTION LEVEL SETTING:

0.5 mg/cm^2

OPERATING PARAMETERS:

Action Level mode

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive) at Action Level setting = 1.0 mg/cm^2

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	INCONCLUSIVE RANGE (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick	0.4 – 0.6
	Concrete	0.4 – 0.6
	Drywall	0.4 – 0.6
	Metal	0.4 – 0.6
	Plaster	0.4 – 0.6
	Wood	0.4 – 0.6

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, 2012 Edition ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in January 2020, with two separate instruments running software version Pb200i 5.0 (DEBUG version) in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.9 mCi; source ages were approximately 9 months.

OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked ***with the Action Level set to 1.0 mg/cm^2*** using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film; for NIST SRM 2579a, use the 1.04 mg/cm^2 film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below. Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

The instrument time to take a reading varied within a narrow range from 5 to 6 seconds, with a small number (3%) of longer times from 7 to 11 seconds. The longer readings were almost all on wood substrates. This range of reading times applies only to instruments with the same source strength as those tested (2.9 mCi at the time of PCS testing). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times.

CLASSIFICATION OF RESULTS:

XRF results are classified as **positive** if they are **greater than or equal** to 0.6 mg/cm^2, ***negative*** if they are ***less than or equal to*** 0.4 mg/cm^2 and ***inconclusive*** if they are ***equal*** to 0.5 mg/ cm^2.

DOCUMENTATION:

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the U.S. Department of Housing and Urban Development, Office of Lead Hazard Control and Healthy Homes.

A report titled *Methodology for XRF Performance Characteristic Sheets* (EPA 747-R-95-008) provides an explanation of the statistical methodology used to develop Performance Characteristic Sheets at the Federal standard (Action Level) of 1.0 mg/cm^2, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at http://www2.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997. The methodology was subsequently generalized by QuanTech for application to other Action Levels.

Appendix 6
Lead-Based Paint XRF Data

Job Id	Reading #	Concentration	Units	Result	Calibration Reading	Action Level	Date	Time	User	Mode	Analytic Mode	Component	Feature	Substrate	Color	Side	Condition	Room
54 E Military	8162	0.9	mg/cm2		TRUE	1	7/12/2022	9:38:26	White	Action Level	Lead Paint							
54 E Military	8163	0.9	mg/cm2		TRUE	1	7/12/2022	9:38:57	White	Action Level	Lead Paint							
54 E Military	8164	1	mg/cm2		TRUE	1	7/12/2022	9:39:57	White	Action Level	Lead Paint							
54 E Military	8165	-0.1	mg/cm2		TRUE	1	7/12/2022	9:41:06	White	Action Level	Lead Paint							
54 E Military	8166	0	mg/cm2		TRUE	1	7/12/2022	9:41:21	White	Action Level	Lead Paint							
54 E Military	8167	-0.1	mg/cm2		TRUE	1	7/12/2022	9:41:35	White	Action Level	Lead Paint							
54 E Military	8168	0.9	mg/cm2	Negative	FALSE	1	7/12/2022	9:43:50	White	Action Level	Lead Paint	Door	Casing	Wood	White	B	Deteriorated	Exterior
54 E Military	8169	0	mg/cm2	Negative	FALSE	1	7/12/2022	9:45:49	White	Action Level	Lead Paint	Door		Metal	Brown	B	Deteriorated	Exterior
54 E Military	8170	6.5	mg/cm2	Positive	FALSE	1	7/12/2022	9:46:16	White	Action Level	Lead Paint	Door	Jamb	Wood	Brown	B	Deteriorated	Exterior
54 E Military	8171	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	9:47:13	White	Action Level	Lead Paint	Gas Line		Metal	Brown	B	Deteriorated	Exterior
54 E Military	8172	0.6	mg/cm2	Negative	FALSE	1	7/12/2022	9:59:14	White	Action Level	Lead Paint	Coal Door		Metal	Brown	B	Deteriorated	Exterior
54 E Military	8173	12.6	mg/cm2	Positive	FALSE	1	7/12/2022	10:02:04	White	Action Level	Lead Paint	Door	Casing	Wood	White	D	Deteriorated	Exterior
54 E Military	8174	-0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:03:08	White	Action Level	Lead Paint	Door	Jamb	Metal	White	D	Deteriorated	Exterior
54 E Military	8175	0	mg/cm2	Negative	FALSE	1	7/12/2022	10:03:29	White	Action Level	Lead Paint	Door	Jamb	Wood	White	D	Deteriorated	Exterior
54 E Military	8176	0	mg/cm2	Negative	FALSE	1	7/12/2022	10:04:28	White	Action Level	Lead Paint	Door		Metal	White	A	Intact	Exterior
54 E Military	8177	3.8	mg/cm2	Positive	FALSE	1	7/12/2022	10:10:37	White	Action Level	Lead Paint	Wall		Brick	White	A	Intact	Stage
54 E Military	8178	3.6	mg/cm2	Positive	FALSE	1	7/12/2022	10:11:18	White	Action Level	Lead Paint	Wall		Brick	White	B	Intact	Stage
54 E Military	8179	3.5	mg/cm2	Positive	FALSE	1	7/12/2022	10:12:23	White	Action Level	Lead Paint	Wall		Brick	Burgundy	C	Deteriorated	Stage
54 E Military	8180	-0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:13:49	White	Action Level	Lead Paint	Wall		Brick	White	A	Intact	Restroom 2
54 E Military	8181	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:14:16	White	Action Level	Lead Paint	Wall		Brick	White	B	Intact	Restroom 2
54 E Military	8182	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:24:44	White	Action Level	Lead Paint	Drain Vent		Metal	White	C	Intact	Restroom 2
54 E Military	8183	0.3	mg/cm2	Negative	FALSE	1	7/12/2022	10:26:32	White	Action Level	Lead Paint	Drain Vent		Metal	Silver	C	Intact	Restroom 2
54 E Military	8184	12.1	mg/cm2	Positive	FALSE	1	7/12/2022	10:27:34	White	Action Level	Lead Paint	Ceiling		Plaster	White		Deteriorated	Restroom 2
54 E Military	8185	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:28:13	White	Action Level	Lead Paint	Crown Molding		Wood	White	All	Deteriorated	Restroom 2
54 E Military	8186	-0.3	mg/cm2	Negative	FALSE	1	7/12/2022	10:28:55	White	Action Level	Lead Paint	Door		Wood	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8187	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:29:22	White	Action Level	Lead Paint	Door	Casing	Wood	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8188	-0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:29:42	White	Action Level	Lead Paint	Door	Jamb	Wood	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8189	3.5	mg/cm2	Positive	FALSE	1	7/12/2022	10:30:16	White	Action Level	Lead Paint	Wall		Brick	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8190	2.5	mg/cm2	Positive	FALSE	1	7/12/2022	10:33:02	White	Action Level	Lead Paint	Wall		Plaster	White	D	Deteriorated	Restroom 1
54 E Military	8191	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:36:19	White	Action Level	Lead Paint	Wall		Brick	White	A	Deteriorated	Shower
54 E Military	8192	0.4	mg/cm2	Negative	FALSE	1	7/12/2022	10:37:03	White	Action Level	Lead Paint	Door	Casing	Metal	Burgundy	A	Deteriorated	Shower
54 E Military	8193	3.1	mg/cm2	Positive	FALSE	1	7/12/2022	10:38:33	White	Action Level	Lead Paint	Ceiling		Plaster	White		Deteriorated	Restroom 1
54 E Military	8194	1.3	mg/cm2	Positive	FALSE	1	7/12/2022	10:39:46	White	Action Level	Lead Paint	Radiator		Metal	Silver		Deteriorated	Restroom 1
54 E Military	8195	7.1	mg/cm2	Positive	FALSE	1	7/12/2022	10:44:20	White	Action Level	Lead Paint	Wall		Brick	White	B	Deteriorated	Shop
54 E Military	8196	6.8	mg/cm2	Positive	FALSE	1	7/12/2022	10:44:53	White	Action Level	Lead Paint	Wall		Brick	Yellow	B	Deteriorated	Shop
54 E Military	8197	0	mg/cm2	Negative	FALSE	1	7/12/2022	10:45:37	White	Action Level	Lead Paint	Wall		Wood	White	D	Deteriorated	Shop
54 E Military	8198	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:48:25	White	Action Level	Lead Paint	Wall		Brick	White	B	Deteriorated	Gym
54 E Military	8199	0.3	mg/cm2	Negative	FALSE	1	7/12/2022	10:48:56	White	Action Level	Lead Paint	Wall		Brick	White	B	Deteriorated	Gym
54 E Military	8200	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:49:40	White	Action Level	Lead Paint	Wall		Brick	White	C	Deteriorated	Gym
54 E Military	8201	3.7	mg/cm2	Positive	FALSE	1	7/12/2022	10:50:05	White	Action Level	Lead Paint	Wall		Brick	Burgundy	C	Deteriorated	Gym
54 E Military	8202	0.9	mg/cm2	Negative	FALSE	1	7/12/2022	11:04:21	White	Action Level	Lead Paint	Wall		Plaster	White	A	Deteriorated	Class 1
54 E Military	8203	0.3	mg/cm2	Negative	FALSE	1	7/12/2022	11:05:02	White	Action Level	Lead Paint	Wall		Plaster	White	C	Deteriorated	Class 1
54 E Military	8204	0.6	mg/cm2	Negative	FALSE	1	7/12/2022	11:05:38	White	Action Level	Lead Paint	Window	Stool	Wood	White	C	Deteriorated	Class 1
54 E Military	8205	0.6	mg/cm2	Negative	FALSE	1	7/12/2022	11:07:02	White	Action Level	Lead Paint	Window	Stool	Wood	White	C	Deteriorated	Class 3
54 E Military	8206	3.3	mg/cm2	Positive	FALSE	1	7/12/2022	11:07:39	White	Action Level	Lead Paint	Wall		Plaster	White	A	Deteriorated	Class 3
54 E Military	8207	3.6	mg/cm2	Positive	FALSE	1	7/12/2022	11:08:15	White	Action Level	Lead Paint	Wall		Plaster	Yellow	A	Deteriorated	Class 3
54 E Military	8208	0.9	mg/cm2	Negative	FALSE	1	7/12/2022	11:08:47	White	Action Level	Lead Paint	Wall		Plaster	Yellow	C	Deteriorated	Class 3
54 E Military	8209	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	11:10:25	White	Action Level	Lead Paint	Radiator		Metal	Silver	C	Deteriorated	Class 3
54 E Military	8210	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	11:10:49	White	Action Level	Lead Paint	Radiator		Metal	Silver	C	Deteriorated	Class 3
54 E Military	8211	4.2	mg/cm2	Positive	FALSE	1	7/12/2022	11:12:11	White	Action Level	Lead Paint	Wall		Plaster	White	A	Deteriorated	Snack
54 E Military	8212	0.4	mg/cm2	Negative	FALSE	1	7/12/2022	11:13:17	White	Action Level	Lead Paint	Wall		Brick	Yellow	D	Deteriorated	Class 4
54 E Military	8213	4.8	mg/cm2	Positive	FALSE	1	7/12/2022	11:13:41	White	Action Level	Lead Paint	Wall		Brick	Yellow	B	Deteriorated	Class 4
54 E Military	8214	1.6	mg/cm2	Positive	FALSE	1	7/12/2022	11:17:53	White	Action Level	Lead Paint	Wall		Brick	White	D	Deteriorated	Bleacher Hall D

Job Id	Reading #	Concentration	Units	Result	Calibration Reading	Action Level	Date	Time	User	Mode	Analytic Mode	Component	Feature	Substrate	Color	Side	Condition	Room
54 E Military	8215	2	mg/cm2	Positive	FALSE	1	7/12/2022	11:18:35	White	Action Level	Lead Paint	Ceiling		Plaster	White	D	Deteriorated	Bleacher Hall D
54 E Military	8216	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	11:39:29	White	Action Level	Lead Paint	Floor	Lines	Wood	Green	All	Intact	Gym
54 E Military	8217	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	11:39:59	White	Action Level	Lead Paint	Floor	Lines	Wood	Green	All	Intact	Gym
54 E Military	8218	1	mg/cm2		TRUE	1	7/12/2022	12:30:04	White	Action Level	Lead Paint							
54 E Military	8219	0.9	mg/cm2		TRUE	1	7/12/2022	12:30:34	White	Action Level	Lead Paint							
54 E Military	8220	1	mg/cm2		TRUE	1	7/12/2022	12:31:02	White	Action Level	Lead Paint							
54 E Military	8221	0	mg/cm2		TRUE	1	7/12/2022	12:31:33	White	Action Level	Lead Paint							
54 E Military	8222	0	mg/cm2		TRUE	1	7/12/2022	12:31:48	White	Action Level	Lead Paint							
54 E Military	8223	0	mg/cm2		TRUE	1	7/12/2022	12:32:04	White	Action Level	Lead Paint							

Appendix B
Analysis of Brownfields Cleanup Alternatives

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ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES REVISION 1

MARION GYMNASIUM

MARION, ARKANSAS

FEBRUARY 2023

Client:
Arkansas Department of Energy and Environment
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118
Phone: 501-682-0616
Contact: Addie Smith
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ARKANSAS
ENERGY & ENVIRONMENT

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ENGINEERING | COMPLIANCE | SUSTAINABILITY

Table of Contents

FIGURES:

1.0 Introduction

This Analysis of Brownfields Cleanup Alternatives (ABCA) has been prepared for the Marion Gymnasium located at 54 E. Military Road in Marion, Crittenden County, Arkansas (the project). The project consists of abatement of asbestos-containing materials (ACM), lead-based paint, and other miscellaneous hazardous materials in the building.

The Sultana Historical Preservation Society (SHPS) has applied for a Targeted Brownfield Assessment (TBA) and cleanup assistance from the DEQ Arkansas Brownfield Program to renovate the building for use as a museum. This remediation project will help facilitate renovation of the building, as well as support the goals of the DEQ and U.S. Environmental Protection Agency (EPA) Brownfield Programs. This ABCA includes information regarding:

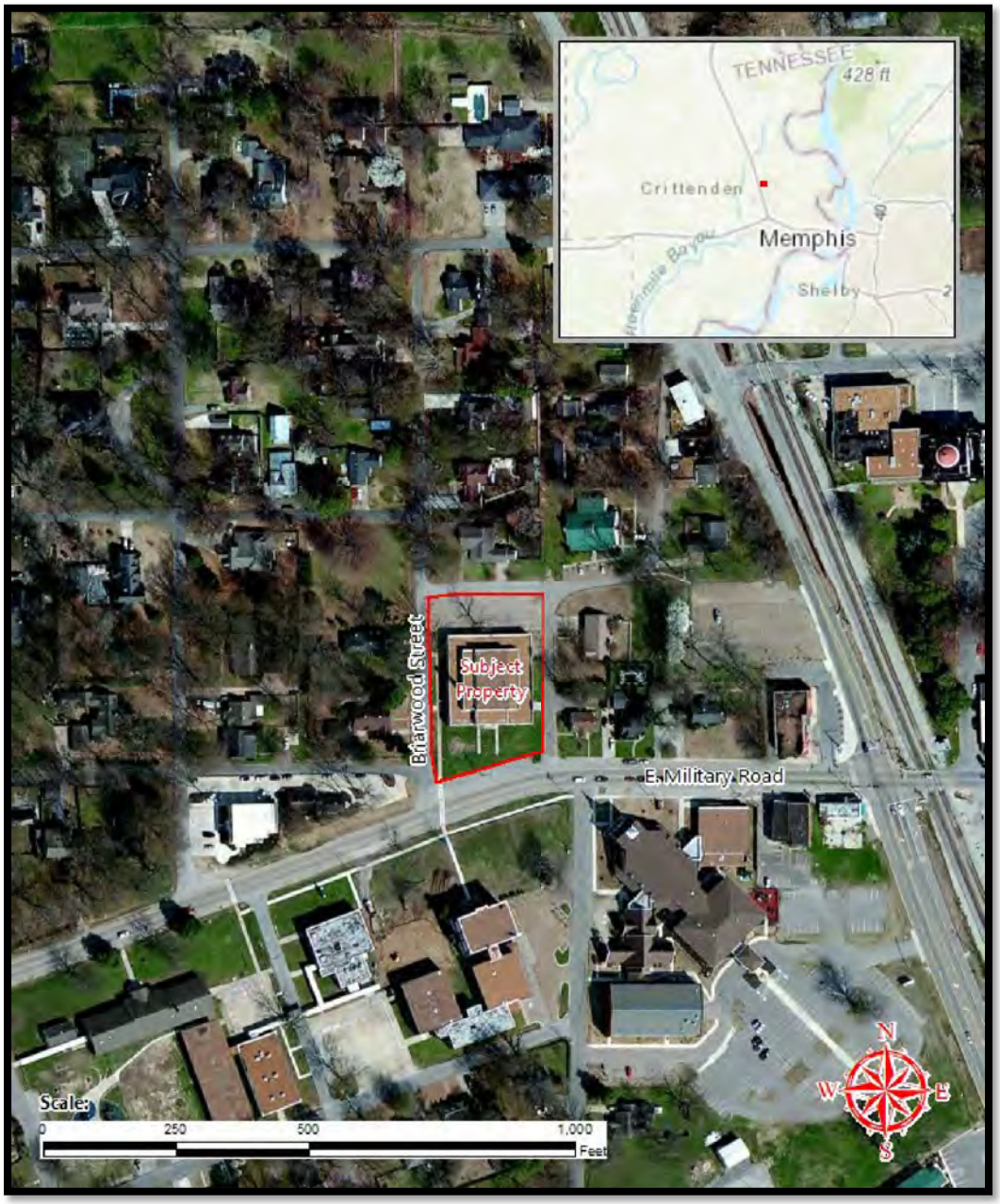
- The characteristics of the gymnasium and the environmental issues that have been documented, including identification of contaminants, potential exposure pathways, sources of contamination, applicable or relevant and appropriate laws, regulations and standards;
- Analysis of potential cleanup alternatives, including "No Action" as an alternative;
- A discussion of the proposed scope of cleanup activities and factors considered in evaluating and recommending the cleanup planned and
- A determination of what controls will be required to implement the cleanup.

2.0 Site Background

2.1 Location and Background

The Marion School Auditorium - Gymnasium (subject property) is located on the 0.86-acre block (lots 1-4, block 6) north of E. Military Road and east of Briarwood Street near downtown Marion. Figure 1-2 below is an aerial photograph showing the subject property and surrounding areas.

Figure 1 - Site Location Map



Source: Esri ArcGIS Desktop 10.8.2

North Currie Street parallels the north boundary of the subject property and Currie Avenue parallels the east boundary of the subject property. Adjacent properties to the west, north and east are mostly residential. Woolfolk Public Library is located on the adjacent property to the northeast. Marion School District Herbert Carter Global Community Magnet School is located on the adjacent property to the south. Marion United Methodist Church is located on the adjacent property to the southeast.

The subject property is currently owned by the City of Marion who was deeded title to the subject property from Marion School District #3 in May 2020. Marion School District #3 obtained title to the subject property from the Rising Sun Church in September 1938. The subject property contains the former Marion School Auditorium – Gymnasium, which was used by the school district for various school events and sporting events. The building on the subject property was constructed in 1938 and consists of a single-story, slab-on-grade, brick, and concrete building with flat built-up roof. The building interior contains multiple classrooms, restrooms, shower rooms, a large gymnasium and stage area with built-in stationary bleachers, and a boiler room with storage attached. The building on the subject property is currently vacant.

The City of Marion has been working with the Sultana Historical Preservation Society (SHPS) to renovate the building on the subject property for use as a museum. The museum will showcase the history of the 1865 Sultana disaster which occurred on the nearby Mississippi River just after the end of the Civil War. The Sultana was a commercial side-wheel steamboat that was traveling from Vicksburg, Mississippi, with recently released Union soldiers who had been held prisoner in Confederate prison camps. The Sultana had recently undergone temporary repairs to a boiler and was grossly overcrowded with crew, passengers, and the paroled Union soldiers as it made its way up the Mississippi River. In the early morning hours of April 27, 1865, about seven miles north of Memphis, Sultana's boilers suddenly exploded, and the ship caught fire and eventually sank. Exact casualty numbers are unknown, but it is estimated that between 1,200 – 1,500 people died in the disaster. The Sultana disaster remains the deadliest maritime disaster in United States history. The museum will pay tribute to the event and all those who perished.

3.0 Site Assessment

Tioga Environmental Consultants, Inc. (Tioga) performed a hazardous materials survey of the gymnasium building on the subject property in July 2022. The survey was performed to identify to identify asbestos containing materials (ACM), lead-based paint (LBP), and miscellaneous hazardous materials on the subject property. Tioga provided personnel to conduct the LBP and miscellaneous hazardous materials inspection. Tioga utilized a Viken Detection Pb200i handheld X-ray fluorescence (XRF) lead paint analyzer. In addition, Tioga utilized subconsultant Harbor to conduct the asbestos survey. The hazardous materials survey indicated the presence of ACM, LBP, and other hazardous materials.

3.1 Asbestos Inspection

The asbestos inspection was conducted at the project building in accordance with Arkansas Department of Environmental Quality (ADEQ) and National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements. Federal and state regulatory agencies define ACM as any building material that contains greater than 1% asbestos. The inspection, conducted in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA) or 40 CFR Part 763, confirmed the following types of ACM are present that need to be removed prior to proposed renovation activities:

- Gray roof mastic – 15% chrysotile asbestos
- Black roof mastic – 2-15% chrysotile asbestos
- Chalkboard mastic – 3% chrysotile
- Thermo system insulation (TSI) on one- to four-inch piping – 3-60% chrysotile asbestos

The condition of the roof and chalkboard mastic was good, while the condition of the TSI was fair.

3.2 Lead-Based Paint Inspection

The EPA and the U.S. Department of Housing and Urban Development (HUD) define lead paint as greater than 5,000 parts per million (ppm) or 0.5% by weight, while the Consumer Product Safety Commission definition is greater than 600 ppm, or 0.06% by weight. lead concentrations were measured in place using a Viken Detection Pb200i handheld XRF lead paint analyzer, which measures lead concentrations in milligrams per square centimeter (mg/cm^2). The State of Arkansas defines LBP as paint or other surface coatings that contain lead equal to or greater than 1.0 mg/cm2 or 0.5% by weight. The detected lead concentrations ranged from 1.3 to 12.6 mg/cm^2. With the exception of the two white wall paint samples in the stage area, which was intact, all of the remaining paint samples were in deteriorated condition. These areas will require encapsulation or removal prior to proposed renovation activities.

3.3 Miscellaneous Hazardous Materials

The investigation also determined the presence of mercury-containing fluorescent bulbs, potential polychlorinated biphenyl (PCB) containing ballasts in fluorescent light fixtures, appliance refrigerants, exit signs with batteries, lead flashing, and numerous chemicals. PCBs were commonly used in the small capacitor within fluorescent light ballasts and ballasts manufactured through 1979 likely contain PCBs. In accordance with EPA Toxic Substances Control Act (TSCA) regulations, PCBs are considered hazardous waste and must be incinerated. The entire lighting fixture does not need special handling and disposal as long as the ballast (electrical box) is not leaking. The non-leaking ballasts can be removed and recycled or disposed of properly.

4.0 Regulatory Considerations

As there are three types of regulated materials that are being remediated, there are several regulatory considerations in place.

4.1 Asbestos Regulations

Under federal EPA NESHAP, AHERA, OSHA and ADEQ laws and regulations, before any renovation or demolition activities occur in commercial properties, it is mandatory to ascertain the presence of ACM (40 CFR, Part 61, Subpart M, Section 61.145, Paragraph (a)). This includes all Category I and Category II non-friable materials.

ACM that is friable, or Category I and II ACM that is in poor condition, or Category I and II ACM that becomes friable during renovation or demolition activities and is found in quantities greater than 160 square feet, 260 linear feet or 35 cubic feet are considered to be regulated ACM (RACM) and all federal, state, and local regulations are applicable to their removal, containerization and disposal.

Also, during renovation or demolition activities that involve sawing, sanding, drilling or abrading ACM that will be rendered friable, those materials will then be considered regulated. ADEQ and EPA AHERA require that these materials be removed prior to any such renovation or demolition activity.

Removal of RACM from any public school, public building or commercial building is regulated by the EPA, ADEQ and OSHA. The removal of these materials must be performed by an asbestos abatement contractor licensed by ADEQ who employs AHERA-trained and certified and workers that are licensed by the ADEQ. A written asbestos abatement design is required by ADEQ prior to renovation, demolition, or response action that is not a small-scale short-duration (SSSD) activity or minor release episode that involves RACM. The project design must be a written document, specific to the job in question. A copy must be maintained at the job site and be made available to Department employees upon request.

The abatement design for this project will be written by an Arkansas-licensed Asbestos Abatement Designer. Final clearance air sampling is required by ADEQ for all contained work areas when regulated materials are removed. Final clearance air monitoring is to be performed by an Arkansas-licensed Air Monitor. Appropriate 10-day notification of the project will be filed with ADEQ.

The disposal of RACM is regulated by the Solid Waste Division of ADEQ and must be transported and disposed of as an asbestos-containing waste at a Class I licensed and permitted landfill. Disposal of Category I and II non-friable asbestos-containing materials in good condition can be disposed of at either a Class I or Class III licensed and permitted landfill.

4.2 Lead-Based Paint Regulations

Although EPA and ADEQ have strict lead-based paint regulations that apply to facilities that are considered "child-occupied facilities," such as day-care centers, preschools, and kindergarten classrooms, based on proposed future use as a museum, the Marion Gymnasium building is exempt from these regulations. The property is subject to Occupational Safety and Health Agency (OSHA) regulations as a result of the proposed renovation activities. The OSHA Standard 29 CFR 1926.62 (Lead in Construction Regulation) prescribes training, proper work methods and engineering controls, and the use of PPE and air monitoring requirements for any construction project where lead is present.

OSHA has published regulations regarding worker safety during activities involving lead-based paint abatement. The Construction Standards (29 CFR Part 1926) and the Occupational Safety and Health Standards (29 CFR Part 1910) promulgate a PEL for lead construction workers, including workers performing demolition, salvage, or renovation of lead-containing materials at sections 1926.62 and 1910.1025 as follows:

> "The employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 ug/m^3) averaged over an 8-hour period." (29 CFR 1926.62)

Additional regulations under these chapters address other worker safety precautions such as respiratory protection programs, work practices, and medical monitoring. Lead-based paint debris (material containing or surfaced with lead-based-paint) from commercial buildings may be classified as hazardous waste if lead concentrations exceed the Toxicity Characteristic Rule (40 CFR 261.24, 40 CFR 262.11) concentration limit of 5.0 milligrams per liter (mg/l) in sample extract prepared according to the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846.

4.3 PCB-Containing Ballast Regulations

PCBs were commonly used in the small capacitor within fluorescent light ballasts and ballasts manufactured through 1979 may contain PCBs. PCB containing ballasts become a concern if they are leaking or they will be removed and disposed of as hazardous waste. The EPA Toxic Substances Control Act (TSCA) requires that the material must be incinerated. The entire lighting fixture does not need special handling and disposal as long as the ballast (electrical box) is not leaking. The non-leaking ballasts can be removed and recycled or disposed of properly. PCB-containing fluorescent light ballasts (FLBs) that are currently in use have exceeded their designed life span. Sudden rupture of PCB-containing FLBs may pose health hazards to the occupants and is difficult and costly to clean up. EPA recommends removing PCB-containing FLBs from buildings as soon as possible to prevent potential inhalation or dermal exposure. Even intact PCB-containing FLBs may emit small amounts of PCBs into the air during normal use.

4.4 Universal Waste

Universal waste, as defined by EPA (40 CFR Part 273), is hazardous waste that is commonly generated by a wide variety of establishments. The federal universal waste regulations apply to four types of universal waste:

- Batteries
- Pesticides
- Mercury-Containing Equipment
- Lamps

5.0 Brownfields Cleanup Alternatives

ACM, LBP, and other hazardous materials have been identified in the building that will require removal prior to renovation. All friable and non-friable materials that would be expected to become friable during renovation or demolition activities must be removed prior to starting any activities that would disturb these materials. Four remedial alternatives were identified for this project:

Alternative 1: In-place management of the ACM LBP, and other hazardous materials

Alternative 2: Encapsulation of the ACM LBP, and other hazardous materials

Alternative 3: Removal of ACM LBP, and other hazardous materials

Alternative 4: No action

The remedial alternatives were evaluated with consideration of the following factors:

- Feasibility
- Effectiveness
- Cost

The feasibility of an alternative involves a determination whether the alternative is a practical solution for addressing the cleanup of contaminants at the site. Factors associated with the feasibility of the alternatives considered were:

- Technical feasibility
- Administrative feasibility
- Community and regulatory acceptance

The effectiveness of an alternative involves its ability to meet the objectives of the overall project. Criteria considered in evaluating the effectiveness of the alternatives were:

- Protection of public health and the environment
- Compliance with applicable or relevant and appropriate regulatory requirements
- Long-term effectiveness and permanence
- Reduction of the hazard
- Short-term effectiveness

The alternatives are further discussed in the following sections.

5.1 Alternative 1 – In-Place Management

Alternative 1 consists of in-place management of ACM, LBP, and hazardous materials. This option does not include removal of any of the ACM, LBP, and hazardous materials.

5.1.1 Feasibility

As the proposed work involves renovation of the building for future use as a public museum, in-place management is not feasible. Regulatory constraints designed to protect workers

who may disturb these materials, along with the general public and the environment, prevent building renovation or demolition where friable ACM is present or where non-friable ACM is present that would be disturbed and rendered friable.

5.1.2 Effectiveness

While this alternative could be in compliance with regulatory requirements, it would not reduce the hazard and would not be protective of human health and the environment. Further, as the end goal of the project is to renovate the building, this alternative would be ineffective.

5.1.3 Cost

Total cost to manage the ACM, LBP and hazardous materials is estimated to be **$10,000**. The estimate does not include costs associated with on-going periodic re-inspection of the identified ACM, or future abatement of hazardous building materials during routine building maintenance activities or in the event of damage to the materials.

5.2 Alternative 2 – Encapsulation

Alternative 2 consists of encapsulation of the ACM, LBP, and hazardous materials. This option does not include removal of any of the ACM, LBP, and hazardous materials.

5.2.1 Feasibility

This option would prevent exposure to the ACM, LBP and hazardous materials and would be in accordance with State and Federal requirements.

5.2.2 Effectiveness

While this alternative would also be in compliance with regulatory requirements, it would not reduce the hazard and would not be protective of human health and the environment. This alternative would be ineffective as the end goal of the project is to renovate the roof. As the proposed work involves renovation of the building, encapsulation of the ACM, LBP and hazardous materials is not feasible. Regulatory constraints designed to protect workers who may disturb these materials, along with the general public and the environment, prevent building renovation or demolition where friable ACM is present or where non-friable ACM is present that would be disturbed and rendered friable.

5.2.3 Cost

Total cost to encapsulate the ACM is estimated to be **$50,000**.

5.3 Alternative 3 - Removal

Alternative 3 consists of removal of all ACM, LBP, and hazardous materials.

5.3.1 Feasibility

This option would prevent exposure to the ACM, LBP and hazardous materials and would be in accordance with State and Federal requirements.

5.3.2 Effectiveness

This alternative would be the most effective option as it fully protects public health and the environment. Further, this option would be most effective with regard to renovation of the building. Work would be conducted by trained workers in accordance with applicable laws and regulations.

5.3.3 Cost

Total estimated cost to remove the ACM, LBP and hazardous materials is estimated at **$117,900**.

5.4 Alternative 4 – No Action

Alternative 4 consists of no action related to remediation of ACM, LBP, and hazardous materials. This option does not include removal or encapsulation of any of the ACM, LBP, and hazardous materials.

5.4.1 Feasibility

This option is not feasible as it would prevent renovation of the roof, which would lead to further water damage and building degradation.

5.4.2 Effectiveness

This alternative would be ineffective as it does not adequately protect human health and the environment. Further, the "no action" alternative could adversely impact the community as the building could fall into further disrepair and could result in condemnation of the building.

5.4.3 Cost

Total cost for no action is estimated to be **$0**. The estimate does not include costs associated with on-going periodic re-inspection of the identified ACM.

5.5 Selected Remedial Alternative

The selected remedial alternative for the Marion Gymnasium project is Alternative 3, which includes removal of all ACM, LBP, and hazardous materials prior to renovation. Specific tasks involved in the abatement activities include:

- Removal, containerization, and disposal of ACM.
- Removal, containerization, and disposal of LBP.
- Removal, containerization, and disposal of miscellaneous hazardous materials.

As previously noted, costs developed by the Arkansas Brownfield Program Participant for the selected remedial alternative total approximately **$117,900**.

Appendix C
Asbestos Abatement Project Design

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ASBESTOS ABATEMENT, LBP STABILIZATION &

UNIVERSAL WASTE DISPOSAL

PROJECT DESIGN

PROJECT:

Marion Gymnasium/Auditorium

54 E. Military Road

Marion, AR

DATE:

January 12, 2023

PREPARED FOR:

Harbor Environmental
Attn: Mr. Tom Hueter
5800 Evergreen Drive
Little Rock, AR 72205

Asbestos Abatement Project Design Prepared by:

Snyder Environmental & Construction LLC (ADEQ #000355)

7705 Northshore Place

North Little Rock, AR 72118

Prepared by:_____

Mr. Justin Dixon / President

ADEQ Project Designer Certification #013021

Table of Contents

PART 1 – GENERAL

1.1 SUMMARY

A. This project design contains a description of asbestos abatement procedures for the abatement of approx. 592 LF of asbestos containing pipe insulation materials located on steam piping, approx. 5 asbestos containing chalk boards located in the classrooms and approx. 2,000 SF of asbestos containing roof mastic located on the roof of the Marion Gym/Auditorium located at 54 E. Military Road in Marion, AR. In addition, this work plan also details the procedures for Lead-Based Paint (LBP) Stabilization, collection & analysis of TCLP Lead samples from the waste stream generated by LBP Stabilization, as well as proper handling and disposal of universal waste items such as Florescent Light Tubes and Light Fixture Ballasts, battery backed up exit signs and refrigerant reclaiming, among others.

1.2 RELATED SECTIONS

A. The General Conditions, Supplementary Conditions, Plans, Appendices, and Attachments are hereby incorporated into this section (if applicable).

1.3 REFERENCES

A. ADEQ-Arkansas Asbestos Abatement Regulation 21
B. OSHA 29 CFR 1926.1101 - Asbestos Exposure in Construction
C. OSHA 29 CFR 1910.1001 –Asbestos Exposure in General Industry
D. OSHA 29 CFR 1910.134 – Respirator Standard
E. OSHA 29 CFR 1926.59 – Hazard Communication Standard
F. EPA 40CFR 763 - EPA Worker Protection Rule
G. EPA 40 CFR Part 61 – National Emission Standards for Hazardous Air Pollutants
H. EPA 40 CFR Part 763 Subpart E - Asbestos- Containing Materials in Schools

1.4 SUBMITTALS

A. Pre-Work Submittals: Snyder Environmental, Inc. shall provide Harbor Environmental with the Pre-Start Submittals required by the project specifications, if applicable.

B. Project Documentation: Snyder Environmental, Inc. shall keep a copy of each of the following on the project site:

1. Supervisor and Worker Certifications
2. Personal Air Monitoring Data
3. Sign in/ Sign Out Sheets & Daily Logs
4. Notice of Intent
5. Area and Clearance Air Monitoring Reports
6. Hazardous Material Survey Report prepared by TIOGA and dated August 2022

C. Closeout Submittals: Snyder Environmental, Inc. shall submit 2 copies of the project closeout document containing the following information, to Harbor Environmental within 20 days after the abatement project's completion. Copies of all items shall be kept by the asbestos abatement contractor for a minimum of thirty years.

1. Current insurance certifications
2. Current Asbestos Contractor License.
3. Copies of any correspondence with authorities and permits.
4. Employee information including certification, physicals and respirator fit tests.
5. Daily project logs and supervisor reports.
6. All air monitoring data for the project.
7. Sign in/Sign out Sheets
8. Copies of disposal manifest including name of transporter, employees involved with disposal, and disposal location.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 SUMMARY OF WORK

The intent of this project is to remove approx. 592 LF of asbestos containing steam pipe insulation, approx. 5 each asbestos containing chalkboards and approx. 2,000 SF of asbestos containing roof mastic materials from the Marion Gym/Auditorium Building. In addition to the asbestos abatement, the work will also include the Stabilization of loose, peeling and deteriorated LBP, the clean-up, packaging and proper disposal of LBP debris that have fallen to the floors and the collection, packaging and proper disposal/recycling of universal waste items (florescent light tubes, light fixture ballasts, batteries, refrigerants, etc…) that exist in the work area. Snyder Environmental shall field verify all quantities of material. The project shall be completed in a sile phase lasting approx. three (3) weeks. Snyder Environmental will perform the abatement during normal working hours.

A. Remove and dispose of the following asbestos-containing materials.

Material Description	Material Location	Quantity	Condition
Steam Pipe Insulation	Steam Pipes Servicing the old heaters in the building.	592 LF	Good
Chalkboards (transite)	Classrooms	5 Each	Good
Roof Mastic	Roof	2000 SF	Good

B. General Asbestos Abatement Notes

1. All asbestos-containing materials shall be thoroughly wet before, during and after abatement activities.

2. Asbestos containing steam pipe insulation materials will be removed using Neg. Pressure Glove-Bag procedures, packaged into double 6-mil labeled disposal bags and properly disposed of under manifest at a certified Class I Landfill.

3. Asbestos containing chalkboards will be removed entirely, intact and will be wrapped in 2 layers of 6-mil poly, labeled and properly disposed of under manifest at a certified Class I Landfill.

4. Asbestos Containing roof mastic will be removed by hand using wet methods and packaged in double 6-mil labeled disposal bags and then properly disposed of under manifest at a certified Class I Landfill.

5. The asbestos abatement contractor agrees to allow any Federal or State inspector acting in their official capacity to have access to the job site.

C. Detail for Collection, Packaging & Disposal/Recycling of Universal Waste Items

1. Collect approx. 38 Florescent Light Tubes and package into Light Tube Boxes, labeling the box, when full, with the type, count and location the tubes were removed from. Complete waste manifest and turn over to Waste Services, Inc. of Little Rock, AR for proper disposal/recycling.

2. Remove approx. 16 Light Fixture Ballast and sort by those stamped “No PCBs” from those not stamped. Properly package each type of ballast and label with type, count and location they were removed from. Complete waste manifest and turn over to Waste Services, Inc. of Little Rock, AR for proper disposal/recycling.

3. Remove the batteries from approx. 4 illuminated exit signs and sort by battery type. Tape off the positive and negative poles and package by type into proper disposal containers.

Label containers, when full, with the type, count and location the batteries were removed from. Complete waste manifest and turn over to Waste Services Inc. of Little Rock, AR for proper disposal/recycling.

4. Refrigerant from 2 water fountains and 3 refrigerators will be professionally reclaimed by a licensed HVAC contractor and recycled.

5. Remove and recycle approx. 12 lead pipe sleeves from roof penetration pipes.

6. Collect approx. 5 fire resistant filing cabinets, double wrap in two layers of 6-mil poly, properly label and dispose of under waste manifest at a certified Class I landfill.

7. Collect and recycle approx. 1 intercom podium.

8. Collect and recycle approx. 4 fire extinguishers.

9. Collect misc. cleaning chemicals, sort according to type and turn over to Waste Services Inc. for packaging and proper disposal.

D. Detail for Stabilization of Lead-Based Paint

1. Wet scrape loose, peeling and flaking LBP from surfaces throughout the building. Clean-up and collect LBP debris from horizontal surfaces throughout the building. Remaining adhered LBP will be encapsulated with Lead Barrier Compound or equivalent primer coat.

2. Perform Personnel Air monitoring of workers during the stabilization process to document exposure to Lead Dust and to validate the OSHA Negative Exposure Assessment.

3. Collect TCLP Lead samples representative of the total waste stream generated by the LBP Stabilization work and ship samples to EEG Inc. Laboratory for analysis. Sample Results of less than 5ppm will be deemed normal Construction Debris and will be disposed of in a certified Class IV Landfill. Sample results of 5ppm or greater, though none are expected, will require the waste to be packaged and disposed of as Hazardous Lead Waste.

3.2 SCHEDULING

A. The project start date shall be TBD and the project shall be completed by TBD.

B. Based on the provided schedule, the Owner or Owner's representative shall inform the building's tenants, public and other contractors of when asbestos abatement will take place.

3.3 PROTECTION OF ADJACENT AREAS

A. Asbestos abatement shall be performed without damage to or contamination of adjacent work or areas to remain.

B. Asbestos contaminated areas shall be immediately contained and decontaminated to the satisfaction of the Harbor Environmental representative.

3.4 WORKER PROTECTION

1. Prior to commencement of work, the workers shall be instructed and shall be knowledgeable in the types, locations and quantities of asbestos-containing materials in the work areas.

2. Prior to commencement of work, the workers shall be instructed and shall be knowledgeable in types, use and limitations of all personal protective equipment and tools required for this project.

3. Respiratory Protection: Provide workers with personally issued and marked respiratory equipment approved by NIOSH and OSHA Standard 29 CFR 1926.1001. Respiratory protection used shall at all times be in compliance or in excess of OSHA requirements. The following is a schedule of minimum respiratory protective equipment to be used during this operation.

    1. Gross removal and cleanup of Class II asbestos-containing materials: Workers shall wear half-face air-purifying respirators.

    2. The contractor shall supply a full-face, powered air-purifying respirator if requested by an employee, regardless of the OSHA job classification.

    3. Final cleaning operations: Workers shall wear half-face air-purifying respirators.

4. Protective Clothing: Workers shall wear full body protection suits when working in regulated area. Provide workers with sufficient sets of full body protective clothing. Such clothing shall consist of full body coveralls and headgear or equivalent sets. Provide eye protection, hard hats, and footwear as required by applicable safety regulations. The asbestos abatement contractor will provide at least four (4) sets of full body clothing per day per inside worker and at least three (3) sets for each outside worker, air monitoring technician, and supervisor. If the asbestos abatement contractor does not use disposable suits equipped with attached foot covering, elastic wrist, and elastic hoods attached these pieces must be provided and secured to each other with “duct” tape or equivalent. Wrist and neck opening must be taped.

3.5 SUPERVISION

A. All work, including the installation and operation of control systems, shall be supervised by a competent person who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, who is specially trained in a training course which meets the criteria of EPA’s Model Accreditation Plan for project supervisor and who has been certified by the Arkansas Department of Environmental Quality as an Asbestos Abatement Project Supervisor.

B. The asbestos abatement contractor's Supervisor prior to the start and following the completion of daily abatement activities shall inspect the work site to insure it is left clean and free of debris. These inspections shall be documented in the daily project log.

3.6 REGULATED AREAS

A. Post approved caution signs in accordance with OSHA regulation 29 CRF 1926.1101.

B. All personnel entering the work area shall read and be familiar with posted regulations, respiratory protection requirements and emergency procedures. All personnel who enter the work area shall sign the visitor's log upon entry and exit of work area.

3.7 NEGATIVE PRESSURE ENCLOSURES (NPE)

A. Snyder Environmental shall install a NPE in the work area of the building complete with 3-stage Decontamination Unit.

3.8 DECONTAMINATION

A. The asbestos abatement contractor shall establish a 3-state decontamination unit connected to the regulated area for the decontamination of employees. Each worker and authorized visitor shall, each time he leaves the work area, remove gross contamination from clothing before leaving the work area, clean work clothing with a HEPA vacuum before its removed.

B. All equipment and surfaces of containers filled with asbestos-containing materials must be cleaned prior to removing them from the equipment area.

C. Each worker and authorized visitor shall follow the decontamination procedures before entering or leaving the work area.

D. Contaminated work footwear shall be stored in a secured area of the regulated area when not in use in the work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or seal in disposal container to remain unopened until inside the next containment area. Place contaminated work suits in receptacles for disposal with other asbestos-contaminated materials.

E. Workers shall not eat, drink, smoke, chew gum, or tobacco within the regulated area.

3.9 DISPOSAL PROCEDURES

A. All waste from inside the regulated work area shall be disposed of as asbestos-containing waste. The waste shall be containerized in minimum of two (2) six mil bags, wrapped in two (2) layers of 6-mil poly or sealed, leak-tight, drum containers which have been labeled according to EPA, OSHA, and Arkansas regulations.

B. Disposal must occur at an authorized site in accordance with regulatory requirement of NESHAP and applicable State and Local guidelines and regulations.

C. Once bags or drums have been removed from the work area, they shall be loaded into a dumpster that is to be sealed with 6-mil poly after loading.

D. The inside area of the dumpster shall be free of debris and lined with 6-mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and extend up the sidewalls. Wall sheeting shall be overlapped and taped into place.

E. Personnel loading asbestos-containing waste shall be protected by disposable clothing including head, body and foot protection and at a minimum, half-face air-purifying respirators equipped with HEPA filters.

F. Any debris or residue observed on containers or surfaces outside of work area resulting from clean-up or disposal activities shall be immediately cleaned using a HEPA filtered vacuum and /or wet methods as appropriate.

G. All waste manifests shall be provided in the Project Closeouts Documents.

3.10 FINAL CLEANING AND INSPECTION

A. The asbestos abatement contractor shall retain Emission Control to make a final visual inspection prior to clearance testing. Snyder Environmental, Inc. will correct a list of any deficiencies complied by the third-party representative.

3.11 AIR MONITORING AND CLEARANCE TESTING

A. The asbestos abatement contractor is responsible for providing personnel air samples with a minimum volume of 480 liters, using a 25mm cassette, set at 0.5 to 2.5 liters per minute. At least one STEL sample which is representative of 30-minute exposures associated with operations that are most likely to produce exposures above the excursion limit, shall be collected.

B. Emission Control will perform aggressive clearance air sampling at the completion of a successful visual inspection. Clearance results at or below 0.01 f/cc will result in a successful clearance and the containment will be removed and the project completed. Clearance results that exceed 0.01 f/cc will result in the re-cleaning of the containment and re-collection of clearance air samples.

END OF DOCUMENT

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