

**ASBESTOS
SURVEY**

**WIGGINS MIDDLE SCHOOL
410 CHAPMAN STREET
WIGGINS, CO 80654**

Prepared for:

**WIGGINS SCHOOL DISTRICT
FACILITIES MANAGEMENT
320 CHAPMAN ST.,
WIGGINS, CO 80654**

Prepared by:

RLH engineering, inc.

Facility Planning, Engineering, & Environmental Services

541 East Garden Drive, Unit S
Windsor, CO 80550

**RLH Project Number 16072
November 2016**

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EXECUTIVE SUMMARY

The Wiggins School District contracted RLH Engineering, Inc. (RLH) to perform an Asbestos Materials Survey at Wiggins Middle School, located at 410 Chapman Street, Wiggins, CO 80654. The intent of the Survey was to identify Asbestos Containing Materials (ACMs) that would need to be incorporated into an AHERA Management Plan. The structure is an educational/athletic facility approximately 27,500 SF in size. This report presents the results of the Survey conducted on October 14, 2016.

The scope of work included a survey of the building and building materials, identification of suspect ACMs, and collection and analysis of bulk samples. The inspection and laboratory results identified the following ACMs:

NO ASBESTOS CONTAINING MATERIALS (ACMs) WERE IDENTIFIED

The intent of this Survey was to identify ACMs to be included in an AHERA Management Plan for the facility. Locations and quantities of materials discussed in this report are approximate. **This document should not be used as a bid document** for the removal, repair, encapsulation, enclosure, or Operations & Maintenance (O&M) of any ACM discussed in this report. Bid documents should, in general, include specific information regarding the location and materials to be abated, a description of specific work practices and procedures, contract document information, and other project specific information. In some cases, these documents need to be developed by EPA-accredited and CDPHE-certified personnel. Contact RLH Engineering in the event that these services are required.

DEFINITIONS/ACRONYMS

ACBM - asbestos-containing building material

ACM - asbestos-containing material

ACWM - asbestos-containing waste material

AHERA - Asbestos Hazard Emergency Response Act

APCD - Air Pollution Control Division

ASHARA - Asbestos School Hazard Abatement Reauthorization Act

AQCC - Air Quality Control Commission

Asbestos - Asbestiform varieties of chrysotile, amosite (cumingtonite-grunerite), crocidolite, anthophyllite, tremolite, and actinolite.

Asbestos-containing building material - surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a school building or state building.

Asbestos-containing material - material containing more than 1% asbestos.

CDPHE - Colorado Department of Public Health and Environment

Category I non-friable asbestos-containing material - asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in Appendix E, Subpart E, 40 C.F.R. Part 763, section 1, polarized light microscopy, (EPA 1995),

Category II non-friable ACM - any material, excluding category 1 non-friable ACM, containing more than 1 percent asbestos as determined using the methods specified in Appendix E, Subpart E, 40 C.F.R. Part 763, section 1, polarized light microscopy, (EPA 1995) that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Demolition - the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

EPA - Environmental Protection Agency

Friable - material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

Functional space - a room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above), such

as a classroom(s), a cafeteria, gymnasium, hallways, designated by a person certified to prepare management plans, design abatement projects, or conduct response actions.

GAC - General Abatement Contractor

Homogeneous area - an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color, texture, or time of installation.

Miscellaneous material - building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

NESHAP - National Emissions Standards for Hazardous Air Pollutants (40 C.F.R. Part 61) ([EPA](#)), Subparts A (General Provisions, and M (National Emission Standard for Asbestos)

NIST - National Institute of Standards and Technology

Nonfriable - material which, when dry, may not be crumbled, pulverized, or reduced to powder by hand pressure.

NVLAP - National Voluntary Laboratory Accreditation Program

O&M - Operations and Maintenance

Operations and maintenance program - a program of work practices to maintain friable ACBM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACBM disturbance or damage.

OSHA - Occupational Safety and Health Administration

PLM - Polarized Light Microscopy

Polarized Light Microscopy - an analytical technique used for identifying types of asbestos fibers in bulk material samples.

PPE - Personal Protective Equipment

Public and Commercial Building - any building, which is not a School Building, except that the term does not include any residential apartment building of ten or fewer units. Single-family residential dwellings currently intended as such are excluded from this definition. This definition includes all industrial buildings.

School - any institution that provides elementary or secondary education.

School building - Any structure suitable for use as a classroom, including a school facility such as a laboratory, library, school eating facility, or facility used for the preparation of food;

Any gymnasium or other facility, which is specially designed for athletic or recreational activities for an academic course in physical education;

Any other facility used for the instruction or housing of students or for the administration of educational or research programs;

Any maintenance, storage, or utility facility, including any hallway, essential to the operation of any facility described in this definition of "school building";

Any portico or covered exterior hallway or walkway of any facility described in this definition of "school building";

Any exterior portion of a mechanical system used to condition interior space of any facility described in this definition of "school building".

SFRD - Single-Family Residential Dwelling

Structural member - any load-supporting member of a facility, such as beams and load supporting walls; or any non load-supporting member, such as ceilings and non load-supporting walls.

Surfacing ACM - surfacing material that is ACM. Surfacing material means material that is sprayed on, troweled on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical fireproofing, or other purposes.

Thermal system insulation - material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

TSCA - Toxic Substances Control Act

TSI - Thermal System Insulation

VAT – Vinyl Asbestos (floor) Tile

VCT - Vinyl Composition (floor) Tile

INTRODUCTION

The Wiggins School District contracted RLH Engineering, Inc. (RLH) to perform an Asbestos Materials Survey at Wiggins Middle School located at 410 Chapman Street, Wiggins, CO 80654. The intent of the Survey was to identify Asbestos Containing Materials (ACMs) that would need to be incorporated into an AHERA Management Plan. The structure is an educational/athletic facility approximately 8,736 SF in size.

This report presents the results of the Survey conducted on October 14, 2016. Asbestos Bulk Samples were collected by Mr. Jeff Kirtley and submitted to Reservoirs Environmental Services, Inc. (RESI) for PLM Analysis. Mr. Kirtley is an EPA-accredited and CDPHE-certified Asbestos Inspector. RESI is a NIST/NVLAP-accredited laboratory.

SURVEY METHODOLOGY

The intent of this Survey was to identify Asbestos Containing Materials (ACMs) that would need to be included in a facility AHERA Management Plan. The following tasks were performed to complete the Survey:

- **Building Systems/Homogeneous Materials Assessment** - An initial walkthrough of the facility was conducted to identify building components, building systems, and accessible Homogeneous Areas/Materials. This information was recorded on field-generated forms and floor plans. The condition and friability of each suspect Homogeneous ACM was assessed. The following observations were made during this Survey regarding the subject facility:

Foundation Type:	<i>Concrete Slab</i>
Structure Type:	<i>Wood, Brick</i>
Roof Type:	<i>Metal</i>
Exterior Facade:	<i>Brick</i>
Interior Floors Finishes:	<i>Carpet, Concrete, VCT</i>
Interior Wall Finishes:	<i>Drywall</i>
Interior Ceiling Finishes:	<i>Drywall, Drop-grid Acoustical</i>
Heating System:	<i>Gas-fired Forced-air Furnace, Ducted throughout structure</i>

Complete information regarding Homogeneous Materials, including material types, quantities, and ACM status are indicated in Appendix – A Homogeneous Materials Report.

- **Sampling Methodology/Collection** - Each homogeneous suspect ACM was quantified, based upon square-footage, linear footage, or total units. A Bulk-sampling Plan was developed based upon the type and quantity of suspect Homogeneous ACMs. The Bulk Sampling Plan determined the appropriate location and quantity of samples to be collected. Bulk samples were randomly collected from each homogenous area of suspect building materials as follows:
 - Surfacing Materials
 - At least three bulk samples were collected from each homogenous area that is 1,000 SF, or less.
 - At least five bulk samples were collected from each homogenous area that is greater than 1,000 SF but less than or equal to 5,000 SF.
 - At least seven bulk samples were collected from each homogenous area that is greater than 5,000 SF.
 - Thermal System Insulation
 - Three (3) samples were collected from each homogenous area of thermal system insulation.
 - Miscellaneous Materials
 - A minimum of Two (2) samples were collected for miscellaneous materials.

NOTE: The stated quantity of samples is the minimum required by regulations. At the discretion of the Inspector, additional samples may have been collected to confirm homogeneity of materials

- **Sample Identification/Analysis** - After Bulk Samples of suspect ACM were collected, sample locations were recorded on field forms and/or floor plan drawings. Each sample was assigned a unique sample number, recorded on a Chain of Custody, and delivered to a Laboratory for PLM Analysis.
 - Sample numbers were assigned using the following format: "12345-0101-ABC01-01". The first five numerals are the project number assigned to the project by RLH Engineering, Inc. (RLH Engineering Project Numbers are assigned using the last two numerals of the year and three numerals showing the sequence in which each project was performed). The following four numerals are the month and day the sample was collected. The next two or three letters and two numbers are the homogeneous material identification number. The last two numerals are the sequential sample for each homogeneous material.

Example of Sample Numbering and Sequence:

For the first floor tile sample taken on February 13, 2002 for Project Number 02001, the sample number would be 02001-0213-FT01-01.

The second sample of the same floor tile would be 02001-0213-FT01-02.

The first sample of a second floor tile sampled on the same day would be 02001-0213-FT02-01 and the following sample 02001-0213-FT02-02.

- Bulk samples analyzed for asbestos were delivered to Reservoirs Environmental Services, Inc. (RESI). RESI is accredited through the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). Samples were recorded on a RESI Chain of Custody form and delivered with the samples to the laboratory, at which time the individual delivering the samples signed the Chain of Custody form, assigning custody of the samples to the laboratory.
- For every 20th bulk sample that was collected (or one sample in 20), a Quality Assurance (QA) sample was collected immediately adjacent to the 20th sample. Thus, the 20th and 21st samples are side-by-side samples of the same homogeneous material. This QA sample was submitted to a secondary laboratory, DCM Science Laboratory, Inc. (DCMSL). The same Chain of Custody procedures were followed as described above.
- Bulk samples were analyzed for asbestos content by Polarized Light Microscopy (PLM). In the state of Colorado, samples of friable materials indicating asbestos content of less than 1%, but greater than 0% (including TR or Trace), must be further analyzed using a Point Count technique. Samples meeting this criteria were further analyzed by Point count. In addition, at the discretion of the Inspector, samples in which the asbestos content is less than 3% may have had a Point Count performed to determine the exact percentage of asbestos in the material.
 - A Sample Report, indicating Sample Numbers, Material Descriptions, Sample Locations, and ACM Content is included with this report as Appendix B.
 - Laboratory Results, with copy of the Chain of Custody, are included with this report as Appendix C
- **Report Generation** - Upon receipt of Laboratory Results, this Report was completed, including the attached Figures and Appendices. The Floor Plans were generated in AutoCAD format, which depict Homogeneous Material Locations, Sample Locations, Locations of ACM or Assumed ACM.

REGULATORY INFORMATION

The Asbestos Hazard Emergency Response Act (AHERA) sets forth state-of-the-art requirements for proper asbestos inspections in buildings. AHERA requirements initially applied to K-12 schools only, but have been extended by other state and federal regulations to include all public and commercial buildings as a requirement prior to renovation or demolition. The AHERA standards were used in the inspection process for this survey.

An ACM is defined as any material that contains greater than one percent (1%) asbestos as determined by laboratory analysis using polarized light microscopy (PLM). The Environmental Protection Agency (EPA) and the Occupational Safety & Health Administration (OSHA) distinguish between friable and non-friable forms of ACM. Friable materials can be crumbled or reduced to powder by hand pressure when dry. Non-friable materials cannot be crumbled, pulverized or reduced to powder by hand pressure when dry. Friable materials are more likely to be released into the air, especially if impacted or damaged during normal use, renovation, or demolition of a building. Therefore, the distinction between friable and non-friable ACMs is important. The EPA further distinguishes non-friable ACMs as Category I and Category II. Category I non-friable ACMs include floor tiles and tar-impregnated roofing felts, and removal of these ACMs is generally not required prior to demolition, if they are in good condition. Category II ACMs are all other non-friable ACMs and must be removed prior to normal demolition.

In the state of Colorado, samples of friable materials indicating asbestos content of less than 1%, but greater than 0% (including TR or Trace), must be further analyzed using a Point Count technique. If a Point Count is conducted, the result of the Point Count must be used rather than the initial PLM analysis

Whether removed or remaining in a structure during demolition, the confirmed or presumed ACMs are subject to USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) and OSHA regulations. NESHAP requires, in 40CFR61.145, that each owner or operator of a demolition activity provide the administrator with written notice of intent.

Federal requirements, which govern asbestos identification, management, abatement work, or shipment and disposal of asbestos waste materials, include the following:

OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

- Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations;
- Respiratory Protection Standard Title 29, Part 1910, Section 134 of the Code of Federal Regulations;
- Construction Industry Title 29, Part 1926, of the Code of Federal Regulations;

- Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the Code of Federal Regulations;
- Hazard Communication Title 29, Part 1926 Section 59 of the Code of Federal Regulations; and,
- Specifications for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the Code of Federal Regulations.

DOT: U.S. Department of Transportation, including but not limited to:

- Hazardous Substances Title 29, Part 171 and 172 of the Code of Federal Regulations.

EPA: U.S. Environmental Protection Agency (EPA), including but not limited to:

- Asbestos Hazard Emergency Response Act (AHERA) Regulation;
- Asbestos-Containing Materials in Schools Final Rule & Notice Title 40, Part 763 Sub-part E of the Code of Federal Regulations;
- Training Requirements of (AHERA) Regulation;
- Asbestos-Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E, Appendix C of the Code of Federal Regulations;
- National Emission Standard for Hazardous Air Pollutants (NESHAPS); and,
- National Emission Standard for Asbestos Title 40, Part 61, Sub-part A, Sub-part M (Revised Sub-part B) of the code of Federal Regulations.

State of Colorado: Colorado Department of Public Health and Environment (CDPHE) Including but not limited to:

- Air Quality Control Commission, Regulation No. 8, (5CCR 1001-10, Part – B).
- Solid Waste Regulation, Section 5.5 of 6CCR 1007-2, Regulations Pertaining to Solid Waste Disposal Sites and Facilities

Many components found within buildings are comprised of, or function through the use of, materials that are considered hazardous materials or hazardous waste upon disposal. These items are commonly referred to Regulated Building Materials (RBMs).

Federal and state requirements, which govern management, shipment and disposal of RBMs, include the following:

DOT: U.S. Department of Transportation, including but not limited to:

Hazardous Substances Title 29, Part 171 and 172 of the Code of Federal Regulations.

EPA: U.S. Environmental Protection Agency (EPA), including but not limited to:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA);
- Resource Conservation Recovery Act (RCRA);
- Toxic Substances Control Act (TSCA)

SURVEY RESULTS

The inspection and laboratory results identified the following ACMs:

NO ASBESTOS CONTAINING MATERIALS (ACMs) WERE IDENTIFIED

RECOMMENDATIONS

NONE REQUIRED

EXCLUSIONS/LIMITATIONS

RLH Engineering, Inc. has performed this survey using state-of-the art techniques, in a manner that is consistent with the level of care and expertise exercised by individuals and firms in the Asbestos Inspection profession. RLH cannot guarantee that all ACMs were identified and sampled by this Survey. Sampling for this Survey was performed using non-destructive methods whenever possible. This means that samples were taken in small amounts and in inconspicuous locations to prevent damage to the building finishes to the greatest extent possible. Accessible locations were inspected and sampled throughout, but materials were not significantly demolished to gain access to locations that were otherwise inaccessible. If, during the course of renovation or demolition, suspect materials not identified in this report are encountered, work should be stopped for additional assessment and sampling. Likewise, if materials identified in this report are encountered in locations not identified in this report, work should be stopped for additional assessment and/or sampling.

The intent of this Survey was to identify ACMs that would need to be included in a facility AHERA Management Plan. Locations and quantities of materials discussed in this report are approximate. **This document should not be used as a bid document** for the removal, repair, encapsulation, enclosure, or Operations & Maintenance (O&M) of any ACM discussed in this report. Bid documents should, in general, include specific information regarding the location and materials to be abated, a description of specific work practices and procedures, contract document information, and other project specific information. In some cases, these documents need to be developed by EPA-accredited and CDPHE-certified personnel. Contact RLH Engineering in the event that these services are required.

SIGNATURES

This Survey was performed by RLH Engineering, Inc., a CDPHE-registered Asbestos Consultant (Reg. # 14755). Asbestos Bulk Samples were collected by RLH Principal Jeff Kirtley. Mr. Kirtley is currently accredited by the EPA and certified by CDPHE as an Asbestos Inspector. This report was reviewed for Quality Control by RLH Assistant Project Manager Zachary Minniear. Mr. Minniear is also currently accredited by the EPA and certified by CDPHE as an Asbestos Inspector. Copies of all appropriate accreditations and certifications are included with this report as Appendix D.

Please contact us if you have any questions regarding this report.

Sincerely,
RLH Engineering, Inc.



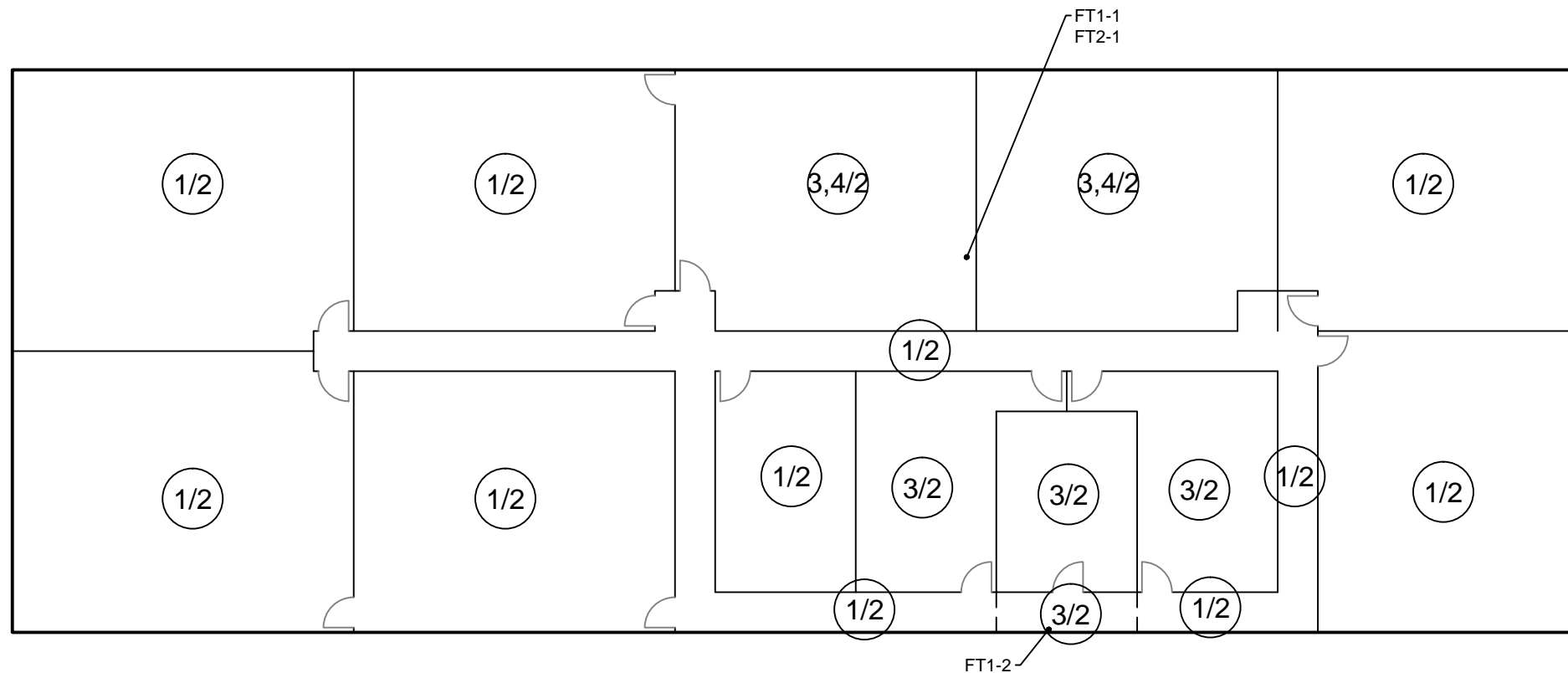
Jeff Kirtley
Principal
Asbestos Inspector # 9683

Reviewed by:

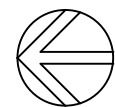


Zachary C. Minniear
Assistant Project Manager
Asbestos Inspector #20246

WIGGINS SCHOOL DISTRICT - WIGGINS MIDDLE SCHOOL				
Homogeneous Materials - Floors				
Code	Material	Sample Number	Quantity	ACM?
1	carpet	NOT SAMPLED	~ ~	NON-SUSPECT
2	concrete	NOT SAMPLED	~ ~	NON-SUSPECT
3	12"x 12" vct - white w/multicolor streaks floor tile	FT1-1, FT1-2	2,600 SF	NO
4	12"x 12" vct - white w/beige streaks floor tile	FT2-1, FT2-2	1,600 SF	NO



MAIN FLOOR PLAN
SCALE: 1/16"=1'-0"



FLOORS

NOTE:
THIS DRAWING MUST BE
PRINTED IN COLOR TO
SHOW ALL INFORMATION
ACCURATELY.

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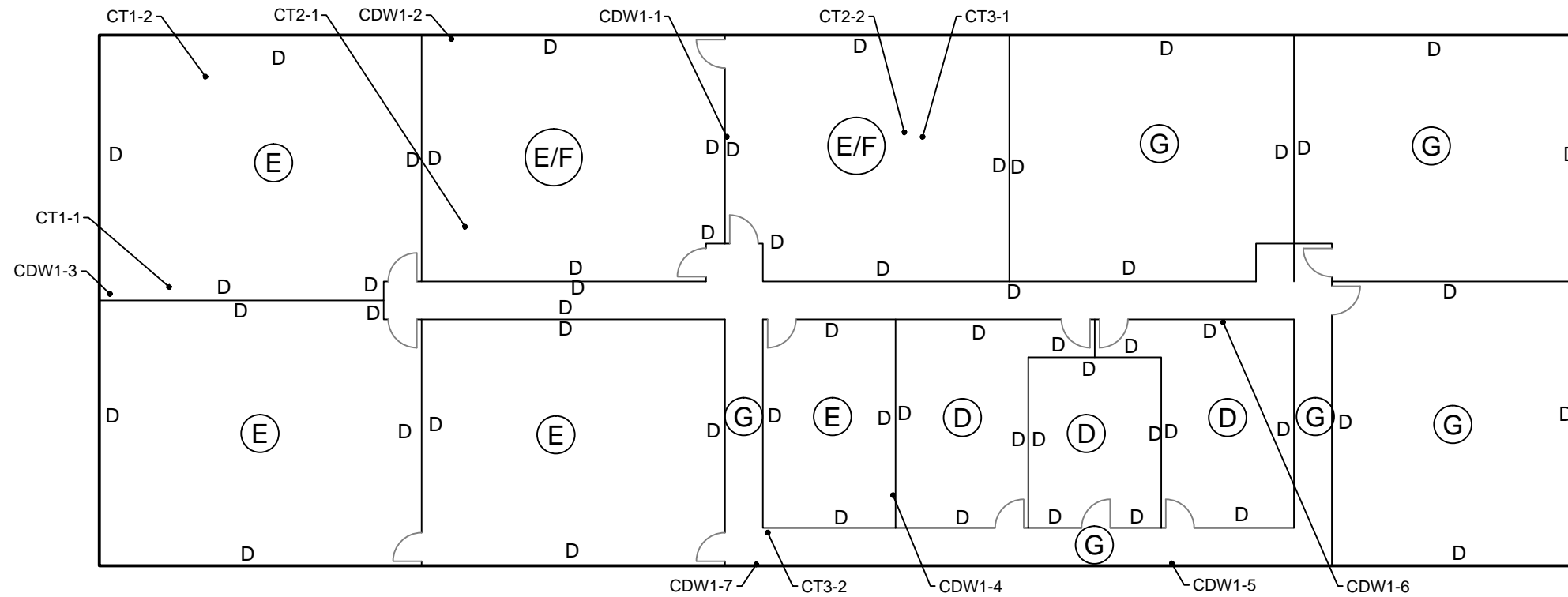
WIGGINS SCHOOL DISTRICT
WIGGINS MIDDLE SCHOOL
ASBESTOS MANAGEMENT PLAN
410 CHAPMAN STREET
WIGGINS, COLORADO 80654

DRAWING #: 1
SHEET TITLE: ASBESTOS
MANAGEMENT PLAN
RLH Project #: 16072
DATE: OCTOBER 2106
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WIGGINS SCHOOL DISTRICT - WIGGINS MIDDLE SCHOOL

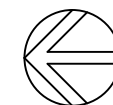
Homogeneous Materials - Ceilings & Walls

Code	Material	Sample Number	Quantity	ACM?
A	wood	NOT SAMPLED	--	NON-SUSPECT
B	brick	NOT SAMPLED	--	NON-SUSPECT
C	concrete	NOT SAMPLED	--	NON-SUSPECT
D	drywall, splatter texture	CDW1-1, CDW1-2, CDW1-3, CDW1-4, CDW1-5, CDW1-6, CDW1-7	16,924 SF	NO
E	2'x 4' chicken feet/pinhole ceiling tile	CT1-1, CT1-1	5,000 SF	NO
F	2'x 4' widthwise fissure/pinhole ceiling tile	CT2-1, CT2-2	1,650 SF	NO
G	2'x 4' crater/pinhole ceiling tile	CT3-1, CT3-2	3,210 SF	NO



MAIN FLOOR PLAN

SCALE: 1/16"=1'-0"



CEILINGS & WALLS

NOTE:
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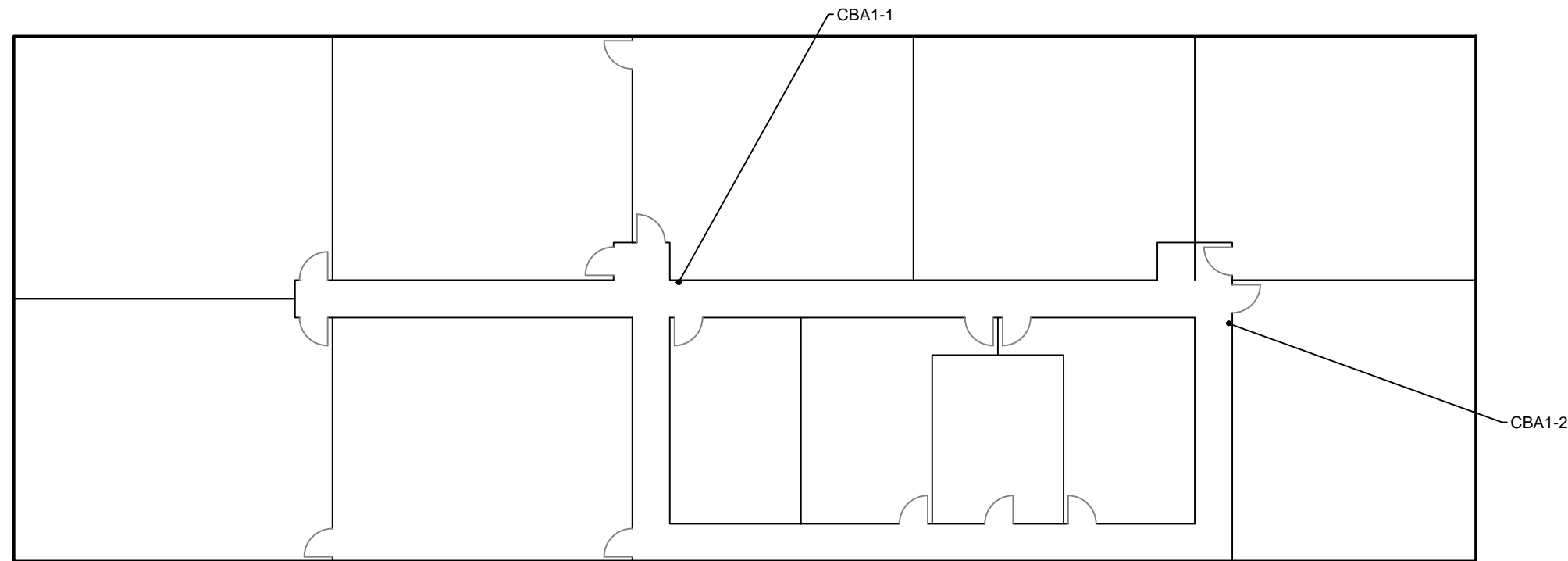
RLH engineering, inc.
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WIGGINS SCHOOL DISTRICT
WIGGINS MIDDLE SCHOOL
ASBESTOS MANAGEMENT PLAN
410 CHAPMAN STREET
WIGGINS, COLORADO 80654

DRAWING #: 2
SHEET TITLE: ASBESTOS
MANAGEMENT PLAN
RLH Project #: 16072
DATE: OCTOBER 2106
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WIGGINS SCHOOL DISTRICT - WIGGINS MIDDLE SCHOOL			
Homogeneous Materials - TSI & Miscellaneous			
Material	Sample Number	Quantity	ACM?
covebase adhesive	CBA1-1, CBA1-2	4,000 LF	NO



MAIN FLOOR PLAN
SCALE: 1/16"=1'-0"



TSI & MISCELLANEOUS

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WIGGINS SCHOOL DISTRICT
WIGGINS MIDDLE SCHOOL
ASBESTOS MANAGEMENT PLAN

410 CHAPMAN STREET
WIGGINS, COLORADO 80654

DRAWING #: 3
SHEET TITLE: ASBESTOS
MANAGEMENT PLAN
RLH Project #: 16072
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WIGGINS SCHOOL DISTRICT - WIGGINS MIDDLE SCHOOL

Homogeneous Materials - Floors

Code	Material	Sample Number	Quantity	ACM?
1	carpet	NOT SAMPLED	~ ~	NON-SUSPECT
2	concrete	NOT SAMPLED	~ ~	NON-SUSPECT
3	12"x 12" vct - white w/multicolor streaks floor tile	FT1-1, FT1-2	2,600 SF	NO
4	12"x 12" vct - white w/beige streaks floor tile	FT2-1, FT2-2	1,600 SF	NO

WIGGINS SCHOOL DISTRICT - WIGGINS MIDDLE SCHOOL

Homogeneous Materials - Ceilings & Walls

Code	Material	Sample Number	Quantity	ACM?
A	wood	NOT SAMPLED	~ ~	NON-SUSPECT
B	brick	NOT SAMPLED	~ ~	NON-SUSPECT
C	concrete	NOT SAMPLED	~ ~	NON-SUSPECT
D	drywall, splatter texture	CDW1-1, CDW1-2, CDW1-3, CDW1-4, CDW1-5, CDW1-6, CDW1-7	16,924 SF	NO
E	2'x 4' chicken feet/pinhole ceiling tile	CT1-1, CT1-1	5,000 SF	NO
F	2'x 4' widthwise fissure/pinhole ceiling tile	CT2-1, CT2-2	1,650 SF	NO
G	2'x 4' crater/pinhole ceiling tile	CT3-1, CT3-2	3,210 SF	NO

WIGGINS SCHOOL DISTRICT - WIGGINS MIDDLE SCHOOL

Homogeneous Materials - TSI & Miscellaneous

Material	Sample Number	Quantity	ACM?
covebase adhesive	CBA1-1, CBA1-2	4,000 LF	NO

Sample ID Number	Material	Location	Results of Laboratory Analysis by Polarized Light Microscopy
Reservoirs #363511-1			
10-19-16			
16072 101416WMS CDW1-1	drywall, splatter texture	east side of building; central room; north wall; central aspect	ND
16072 101416WMS CDW1-2	drywall, splatter texture	east side of building; second classroom from the north end; east wall; north aspect	ND
16072 101416WMS CDW1-3	drywall, splatter texture	east side of building; north classroom; northwest corner	ND
16072 101416WMS CDW1-4	drywall, splatter texture	west side of building; north room of rooms surrounded by halls; south wall; west aspect	ND
16072 101416WMS CDW1-5	drywall, splatter texture	western north/south running hallway; west wall; south aspect	ND
16072 101416WMS CDW1-6	drywall, splatter texture	west side of building; south room of rooms surrounded by halls; east wall; central aspect	ND
16072 101416WMS CDW1-7	drywall, splatter texture	western north/south running hallway; west wall; north aspect	ND
16072 101416WMS CT1-1	2'x 4' chicken feet/pinhole ceiling tile	east side of building; north classroom; northwest aspect of ceiling	ND
16072 101416WMS CT1-2	2'x 4' chicken feet/pinhole ceiling tile	east side of building; north classroom; northeast aspect of ceiling	ND
16072 101416WMS CT2-1	2'x 4' widthwise fissure/pinhole ceiling tile	east side of building; second classroom from north end; northwest aspect of ceiling	ND
16072 101416WMS CT2-2	2'x 4' widthwise fissure/pinhole ceiling tile	east side of building; central classroom; central aspect of ceiling	ND
16072 101416WMS CT3-1	2'x 4' crater/pinhole ceiling tile	east side of building; central classroom; central aspect of ceiling	ND
16072 101416WMS CT3-2	2'x 4' crater/pinhole ceiling tile	western north/south running hallway; north aspect of hall ceiling	ND
16072 101416WMS FT1-1	12"x 12" vct white w/multicolor streaks floor tile	east side of building; central classroom; southwest aspect of room	ND
16072 101416WMS FT1-2	12"x 12" vct white w/multicolor streaks floor tile	western north/south running hallway; central aspect	ND
16072 101416WMS FT2-1	12"x 12" vct white w/beige streaks floor tile	east side of building; central classroom; southwest aspect of room	ND
16072 101416WMS FT2-2	12"x 12" vct white w/beige streaks floor tile		ND
16072 101416WMS CBA1-1	covebase adhesive	eastern north/south running hallway; central aspect of hallway	ND
16072 101416WMS CBA1-2	covebase adhesive	southeast intersection of hallways; southwest aspect of hallway junction	ND



October 19, 2016

Subcontract Number: NA
Laboratory Report: RES 363511-1
Project # / P.O. # 16072
Project Description: WMS

RLH Engineering
541 East Garden Drive, Unit S
Windsor CO 80550

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 363511-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,


Nicole Castillo for

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 363511-1**
 Client: **RLH Engineering**
 Client Project Number / P.O.: **16072**
 Client Project Description: **WMS**
 Date Samples Received: **October 19, 2016**
 Method: **EPA 600/R-93/116 - Short Report, Bulk**
 Turnaround: **24 Hour**
 Date Samples Analyzed: **October 19, 2016**

ND=None Detected
 TR=Trace, <1% Visual Estimate
 Trem/Act=Tremolite/Actinolite

Client Sample Number	Lab ID Number	L A Y E R	Physical Description	Sub Part (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
					Mineral	Visual Estimate (%)		
16072 101416WMS CDW1-1	EM 1732295	A	White texture w/ blue paint	35		ND	0	100
			B	White/tan drywall	65		ND	20
16072 101416WMS CDW1-2	EM 1732296	A	White texture w/ white paint	15		ND	0	100
			B	White/tan drywall	85		ND	20
16072 101416WMS CDW1-3	EM 1732297	A	White texture w/ white paint	15		ND	0	100
			B	White/tan drywall	85		ND	20
16072 101416WMS CDW1-4	EM 1732298	A	White texture w/ white paint	35		ND	0	100
			B	White/tan drywall	65		ND	30
16072 101416WMS CDW1-5	EM 1732299	A	White texture w/ white paint	20		ND	0	100
			B	White/tan drywall	80		ND	20
16072 101416WMS CDW1-6	EM 1732300	A	White texture w/ white paint	15		ND	0	100
			B	White/tan drywall	85		ND	20
16072 101416WMS CDW1-7	EM 1732301	A	White texture w/ white paint	20		ND	0	100
			B	White/tan drywall	80		ND	20

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

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Client Sample Number	Lab ID Number	L A Y E R	Physical Description	Sub Part (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
					Mineral	Visual Estimate (%)		
16072 101416WMS CT1-1	EM 1732302	A	Tan/white perlitic ceiling tile	100		ND	60	40
16072 101416WMS CT1-2	EM 1732303	A	Tan/white perlitic ceiling tile	100		ND	60	40
16072 101416WMS CT2-1	EM 1732304	A	Tan/white perlitic ceiling tile	100		ND	60	40
16072 101416WMS CT2-2	EM 1732305	A	Tan/white perlitic ceiling tile	100		ND	60	40
16072 101416WMS CT3-1	EM 1732306	A	Tan/white perlitic ceiling tile	100		ND	60	40
16072 101416WMS CT3-2	EM 1732307	A	Tan/white perlitic ceiling tile	100		ND	60	40
16072 101416WMS FT1-1	EM 1732308	A	Black mastic	10		ND	0	100
		B	Off white/gray floor tile	90		ND	0	100
16072 101416WMS FT1-2	EM 1732309	A	White/multi-colored floor tile	100		ND	0	100
16072 101416WMS FT2-1	EM 1732310	A	White/multi-colored floor tile	100		ND	0	100
16072 101416WMS FT2-2	EM 1732311	A	Black mastic	5		ND	0	100
		B	White/multi-colored floor tile	95		ND	0	100
16072 101416WMS CBA1-1	EM 1732312	A	Yellow mastic	10		ND	0	100
		B	Gray cove base	90		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

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Client Sample Number	Lab ID Number	L A Y E R	Physical Description	Sub Part (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
					Mineral	Visual Estimate (%)		
16072 101416WMS CBA1-2	EM 1732313	A	Yellow mastic	13		ND	0	100
		B	Gray cove base	87		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.



Paige Terry

Analyst / Data QA

RES Job # 363911

Page 2 of 2

Submitted by: _____

Client sample ID number	(Sample ID's must be unique)	REQUESTED ANALYSIS	VALID MATRIX CODES	LAB NOTES:
11	16072	PLM - Short report, Long report, Point Count	Air = A Bulk = B Dust = D Paint = P Soil = S Wipe = W F = Food Drinking Water = DW Waste Water = WW O = Other **ASTM E1792 approved wipe media only**	EM Number (Laboratory Use Only)
12	101416 WMS	PLM - Short report, Long report, Point Count		1732305
13	CT2-2	PLM - Short report, Long report, Point Count		220050-23
14	CT3-1	PLM - Short report, Long report, Point Count		
15	↓ -2	PLM - Short report, Long report, Point Count		
16	FT1-1	PLM - Short report, Long report, Point Count		
17	↓ -2	PLM - Short report, Long report, Point Count		
18	FT2-1	PLM - Short report, Long report, Point Count		
19	↓ -2	PLM - Short report, Long report, Point Count		
20	CB1-1	PLM - Short report, Long report, Point Count		
21	↓ -2	PLM - Short report, Long report, Point Count		
22		PLM - Short report, Long report, Point Count		
23		PLM - Short report, Long report, Point Count		
24		PLM - Short report, Long report, Point Count		
25		PLM - Short report, Long report, Point Count		
26		PLM - Short report, Long report, Point Count		
27		PLM - Short report, Long report, Point Count		
28		PLM - Short report, Long report, Point Count		
29		PLM - Short report, Long report, Point Count		
30		PLM - Short report, Long report, Point Count		
31		PLM - Short report, Long report, Point Count		
32		PLM - Short report, Long report, Point Count		
33		PLM - Short report, Long report, Point Count		
34		PLM - Short report, Long report, Point Count		
35		PLM - Short report, Long report, Point Count		
36		PLM - Short report, Long report, Point Count		
37		PLM - Short report, Long report, Point Count		
38		PLM - Short report, Long report, Point Count		
39		PLM - Short report, Long report, Point Count		
40		PLM - Short report, Long report, Point Count		
41		PLM - Short report, Long report, Point Count		



Colorado Department
of Public Health
and Environment

ASBESTOS CONSULTING FIRM

This certifies that

RLH Engineering, Inc.

Registration No.: ACF - 14755

has met the registration requirements of 25-7-507, C.R.S. and the Air Quality Control Commission Regulation No. 8, Part B, and is hereby authorized to perform asbestos consulting activities as required under Regulation No. 8, Part B, in the state of Colorado.

Issued: January 27, 2016

Expires: January 30, 2017

[Signature]

Authorized AP/CB Representative

SEAL

ETC

**Environmental Training
& Consulting**

2761 West Oxford Avenue #7
Englewood, CO 80110
(303)781-0422

This course meets the
requirements of
AQCC Reg.#8

CERTIFIES THAT

JEFF KIRLEY

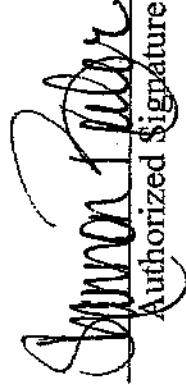
has successfully completed the

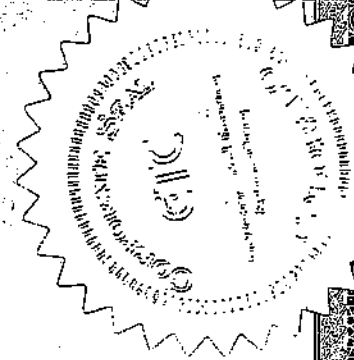
EPA-APPROVED AHERA ANNUAL REFRESHER COURSE for INSPECTOR

and passed the required examination in that discipline

This course is EPA-approved under Section 206 of the Toxic Substance Control Act (TSCA)

Course Date 11/04/15
No. of hours 4
Certificate No. DR110415 - 20AI
Expires 11/04/16


Authorized Signature





Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Jeff Kirtley

Certification No.: 9683


has met the requirements of 25-7-507, C.R.S. and Air Quality Control
Commission Regulation No. 8, Part B, and is hereby certified by the
state of Colorado in the following discipline:

Building Inspector*

Issued: November 12, 2015

Expires: November 12, 2016

** This certificate is valid only with the possession of a
current Division-approved training course certification
in the discipline specified above.*


Authorized APCD Representative

SEAL



Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Zachary C. Minniear

Certification No.: 20246

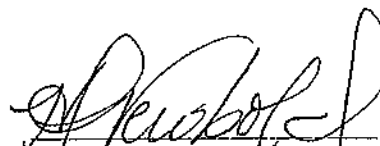
has met the requirements of 25-7-507, C.R.S. and Air Quality Control
Commission Regulation No. 8, Part B, and is hereby certified by the
state of Colorado in the following discipline:

Building Inspector*

Issued: March 03, 2016

Expires: March 03, 2017

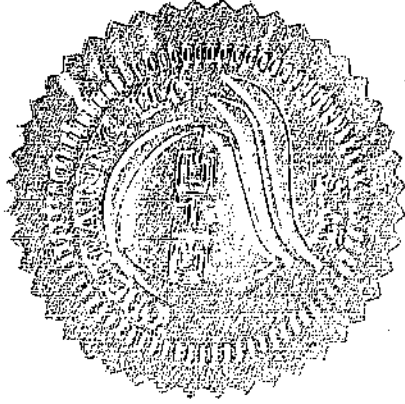
** This certificate is valid only with the possession of a
current Division-approved training course certification
in the discipline specified above.*


Authorized APCD Representative

SEAL



1775 West 55th Avenue
 Denver, CO 80221
 303.410.4941
 trainingchc.com



Certifies that

Zachary C. Minniear

20246

*Has Successfully Completed the EPA- Approved Annual Asbestos Refresher Training Course
 Under Section 206 of the Toxic Substance Control Act (TSCA), Title II.*

BUILDING INSPECTOR

Course Date: January 22, 2016
 Certificate No.: R16-034-AI-CO
 No. of Hours: 4
 Expiration Date: January 22, 2017

Certification not valid without watermark

Mike Benedetto - Instructor

Danaya Benedetto- Training Program Manager