PRE-DEMOLITION/RENOVATION ASBESTOS AND LEAD-BASED PAINT INSPECTION REPORT FOR COLORADO DEPARTMENT OF TRANSPORTATION BRIDGE STRUCTURE K-18-R
US HIGHWAY 50 OVER THE ARKANSAS RIVER, MILE MARKER 1.136

STRUCTURE ID: K-18-R

WALSH Project Number: WA-000944-0229

May 22, 2013

Prepared for:

Mr. Phillip Kangas
Colorado Department of Transportation
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Environmental Scientists and Engineers, LLC

PRE-DEMOLITION/RENOVATION SPECIFIC ASBESTOS AND LEAD-BASED PAINT INSPECTION REPORT FOR COLORADO DEPARTMENT OF TRANSPORTATION BRIDGE STRUCTURE K-18-R US HIGHWAY 50 OVER ARKANSAS RIVER, PUEBLO COUNTY, COLORADO

May 22, 2013

Prepared for:
Colorado Department of Transportation

Inspection Conducted and Report Prepared by:

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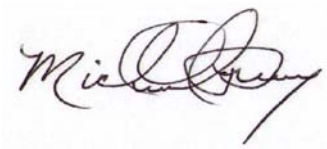
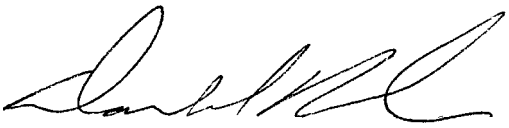


Michael Perry
CDPHE Asbestos Inspector Accreditation #15632



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Submitted by
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Walsh Project WA-000944-0229

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1. EXECUTIVE SUMMARY

1.1. Summary of Work

This report provides an overview of an asbestos and lead paint inspection of Bridge Structure ID K-18-R, located on US Highway 50, in Pueblo County, CO. Walsh Environmental Scientists and Engineers, LLC (Walsh) was contracted by the Colorado Department of Transportation (CDOT) to perform a pre-demolition/renovation inspection to locate asbestos-containing building materials (ACBM) and to conduct a limited screening for Lead-Based Paint (LBP) due to planned demolition/renovation activities. The inspection was conducted in accordance with CDOT Contract No. 201000559 including Exhibit A (statement of work) and in accordance with applicable EPA, OSHA and CDPHE regulations. The inspection was performed on May 13, 2013.

The following were specific structures at the site included in the demolition/renovation specific inspection:

- US Highway 50 at Mile Post 1.136 in Pueblo County, CO. Bridge ID: K-18-R.

The following were specific structures excluded in the demolition/renovation specific inspection:

- None.

1.2. Asbestos-Containing Material

The sampling and inspection process was conducted in accordance with standards of the Environmental Protection Agency (EPA) Asbestos Emergency Hazard Response Act (AHERA) and National Emission Standards for Hazardous Air Pollutants (NESHAPs), Occupational Safety and Health Administration (OSHA) Construction and General Industry Standards for asbestos, Colorado Department of Public Health and Environment (CDPHE) Regulation 8 (Reg. 8), and other applicable industry standards. Asbestos inspection activities were conducted by AHERA and State of Colorado accredited personnel.

The inspection identified four **(4)** suspected asbestos-containing homogeneous areas. One **(1)** functional space was identified and inspected. Four **(4)** bulk samples were collected during the inspection. A material is considered to be asbestos-containing building material (ACBM) if the asbestos content is greater than 1% asbestos. Asbestos was not reported in the samples collected during this inspection.

Special Conditions / Observations

In addition to general limitations described in Section 8, the following materials have the potential to be asbestos-containing but cannot be accessed or inspected due to access limitations, operational considerations, or safety issues (e.g. electrical hazards):

- Packing and gasket material associated with expansion joints within the bridge structure.

- Other materials not observed during this inspection may be present in spaces that were concealed with concrete and/or asphalt within the structure.

See Section 7 (Recommendations) for requirements prior to demolition activities that may impact ACBM.

1.3. Lead-Based Paint

EPA, HUD and CDPHE define lead-based paint as paint having a lead content of greater than or equal to 1.0 mg/cm2 using XRF analysis, or 0.5 weight percent using flame atomic absorption analysis.

Walsh conducted a limited LBP survey at the site by collecting a limited number of representative paint bulk samples that were analyzed by analysis by atomic absorption spectrometry (AAS) for lead content. The limited LBP survey was conducted due to planned renovation or demolition of a structure and is solely for general disclosure purposes to provide contractors with information regarding those materials containing the highest levels of lead, to supplement presumption that all painted surfaces contain some level of lead. This disclosure is provided to those employers that may impact painted materials about general conditions that may be encountered for a particular building. The screening is also conducted to provide general information regarding demolition/renovation waste characterization/disposition (proper disposal).

- Lead-Based Paint (LBP) (>0.5% by weight) was identified during the inspection.

The following components were confirmed to be LBP and LCP and should be disclosed to the demolition contractor, and are subject to waste determination procedures.

Lead-Based Paint (LBP)

- Metal Substrate - Green Paint on Overhead Bridge Structure.
- Metal Substrate – Silver Paint on Southbound Sidewalk Guardrail.

Demolition activities involving lead-based paint and lead-containing paint are covered under the OSHA Construction Industry Standard for Lead (Title 29 of the Federal Code of Regulations, Part 1926.62). This standard addresses such issues as worker training, medical evaluations, personnel protective equipment, exposure assessment, air monitoring, hygiene facilities and practices, and health and safety plans. OSHA regulations do not define a minimum concentration of lead as a threshold for action. Thus, even concentrations below EPA/HUD/CDPHE levels are covered under OSHA regulations.

Additionally, lead-containing materials require a hazardous waste determination pursuant to 40 CFR 262.11, and 40 CFR 261.24. It is a standard industry approach that demolition waste characterization should be performed on structures containing lead-based paint. This procedure is the Toxicity Characteristic Leaching Process (TCLP), where a composite sample representative of all building components to be demolished (i.e. all lead-based paint coated and non-lead-based paint coated materials from the structure) is submitted to the laboratory for analysis. The Toxicity Characteristic (TC) limit for lead is 5ppm in the leachate. Materials that exceed this limit must be disposed of as hazardous waste. Materials that do not exceed this limit may be disposed of as solid waste.

The types and locations of LBP, and regulatory requirements should be disclosed to the demolition contractor and/or salvage contractor to avoid accidental disturbance, and for contractor compliance with applicable regulations (to ensure proper worker protection).

See Section 7 (Recommendations) for requirements prior to demolition activities that may impact LBP.

2. STRUCTURE INFORMATION

A site map showing the location of the structure is provided in the appendices. The following summary provides specific structure, scope of inspection, areas inspected and functional space information relevant to the inspection.

Bridge Structure ID: K-18-R consists of a Steel Thru Truss located at US Highway 50, at Mile Post 1.136. The bridge is 296-feet long and 26.8-feet wide and was built in 1924. The entire bridge is considered one functional space for inspection purposes.

View of Bridge Structure ID: K-18-R.

3. FUNCTIONAL SPACE INFORMATION

The following summary provides basic information for specific materials inspected, including location, description, dimensions, and other observations. This summary also identifies those areas that were inaccessible and could not be inspected, which will require inspection prior to renovation activities.

One **(1)** functional space (bridge) was identified. Four **(4)** materials were identified as suspect asbestos-containing materials and sampled during the inspection and is listed below:

- Asphalt Road Base
- Paint, Green
- Paint, Silver
- Road Tar

4. INSPECTION METHODOLOGY

4.1. Asbestos-Containing Material

The sampling and destructive investigation process was conducted in accordance with AHERA under Title 40 of the Federal Register, CDPHE Regulation 8, and other applicable industry standards (including EPA, NESHAP, OSHA asbestos regulations, and asbestos regulations). Asbestos inspection activities were conducted by AHERA and State of Colorado accredited personnel.

The scope of the asbestos inspection was to identify ACBM and included the following steps:

- Visual inspection of all accessible areas of the structure to identify suspect materials.
- Visual inspection of all areas of suspect ACBM.
- Determination of friability by touching all suspect ACBM.
- Development of a sampling plan for each material based on the homogeneous type, friability, accessibility and material locations. Samples were submitted for laboratory analysis by Polarized Light Microscopy (PLM).
- Inspection in two phases: comprehensive non-destructive inspection for accessible areas, followed by semi-destructive investigation (creating small openings in walls, ceilings, chases, etc) to identify ACBM in previously inaccessible areas.

A homogeneous area (material) is defined as an area containing a material that appears similar throughout with regard to color, texture, and date of application. Individual systems that were inspected, but not suspected to contain asbestos, are not included in this report. Such systems include concrete, carpet, fiberglass, plastic, and wood products.

Each type of suspect building material (homogeneous area) was assigned an alpha material code, followed by a number to identify the different varieties of that building material. For example, ceiling tiles are designated by the material code of CT. Each type of ceiling tile was denoted by subsequent “type” number (CT-01, CT-02, etc). Material size, thickness, substrate, material friability, location, and quantity were recorded. Material information was recorded on a room-by-room (functional space) inventory form (and/or Walsh Asbestos Inspection Form).

The homogeneous area was classified into one of three available types of homogeneous material descriptions.

- **Surfacing Material** refers to a wide range of trowel or spray-applied materials typically used for acoustical or fireproofing purposes. Examples include spray-applied fireproofing and acoustical texture ceilings.
- **Thermal System Insulation (TSI)** refers to insulation that is applied to heating or mechanical system components. Examples include pipe, tank and boiler insulation.
- **Miscellaneous Materials** refers to all other materials that do not fall into one of the above categories. Examples include floor tile, adhesives, and ceiling tiles.

Once the homogeneous area was determined it was then classified as friable or nonfriable. The EPA distinguishes between friable and nonfriable forms of ACBM. Friable materials can be crumbled or reduced to powder by hand pressure, whereas nonfriable materials cannot. Friable materials are more likely to be released into the air, especially during renovation and demolition of a structure. Therefore, the distinction between friable and nonfriable homogeneous material is important.

The following Bulk Sampling protocol for friable and Category I and II nonfriable materials was used to determine the number of samples to be collected for friable materials and nonfriable materials deemed potential Regulated Asbestos-Containing Material (RACM, nonfriable materials with potential to be rendered friable during normal demolition).

Bulk Sampling Strategy

Material	Homogeneous Area	Units	Minimum Number of Samples
Friable Surfacing	Less than 1000 1000 to 5000 More than 5000	SF	3 5 7
Nonfriable Surfacing		SF	3
Friable and Nonfriable Thermal System Insulation		LF / SF / EA	3*
Friable and Nonfriable Miscellaneous Materials		LF / SF / EA	3*

* One sample was collected for limited quantity replacement or patch (salient) materials.

4.2. Lead-Based Paint

Walsh conducted a limited LBP survey at the site by collecting a limited number of representative paint chip samples that were analyzed by atomic absorption spectrometry (AAS) for lead content. The limited LBP survey was conducted due to planned renovation or demolition of a structure and is solely for general disclosure purposes to provide contractors with information regarding those materials containing the highest levels of lead, to supplement presumption that all painted surfaces contain some level of lead. This disclosure is provided to those employers that may impact painted materials during renovation or demolition activities. The screening is also conducted to provide general information regarding demolition/renovation waste characterization/disposition (proper disposal).

The lead inspection used methods adapted from the Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based paint in Housing, June, 1995.

5. BULK SAMPLING AND LABORATORY ANALYSIS

5.1. Asbestos-Containing Material

As part of the inspection, bulk samples of suspect materials were collected by accredited asbestos inspectors in a random and representative manner as determined by each inspector. Samples were collected by taking a core sample that included all layers within the suspect material. Samples from soft friable materials were obtained by removing a small portion using wetting techniques. All samples were placed in sealed, labeled containers, and the sample descriptions and locations were recorded. Digital photographs were also taken to provide a visual reference for each material. At the time of collection, samples were labeled with an appropriate and unique number. This number (along with other information such as sample location, color, texture, and condition) was recorded on the inspection form.

The inspector delivered the samples along with a completed chain-of-custody (COC) document to the laboratory. The laboratory then arranged the samples in numerical order. If a discrepancy between the samples exists, this is noted and initialed on the COC. The laboratory signed a copy of the COC to acknowledge receipt. The inspector retained the signed copy for evidentiary purposes. Further, the laboratory assigned a laboratory number to each sample received. The laboratory labeled both the analytical report and the sample container with this laboratory number for cross-reference purposes.

The bulk samples were submitted for progressive analysis (positive stop) to Reservoirs Environmental Services Inc., a National Volunteer Laboratory Accreditation Program (NVLAP) accredited laboratory. Under progressive analysis, once a positive result is obtained within a sample set, all subsequent samples within that set are not analyzed (as a cost savings measure).

Analysis of the bulk samples was performed using PLM procedures developed by McCrone Research Institute, and in compliance with the guidelines established by the Environmental Protection Agency (EPA-600/R-93/116, June, 1993) to determine asbestos type and content. The PLM samples are reported as percent asbestos by Calibrated Visual Area Estimation. Percent asbestos for separate layers and total for the sample are delineated in the laboratory report. Unused portions of samples are archived for six months unless the client requests special handling.

As of November 20, 1990, the EPA NESHAP requires that samples with less than 10 percent asbestos be analyzed by the point-count procedure, or must be assumed positive for asbestos. CDPHE regulations require that samples containing 1 percent or less asbestos be analyzed under the point-counting method (to avoid false negatives, or inaccurately classifying asbestos-containing material as non-asbestos-containing material). The analytical and laboratory reports are located in Appendix D of this report.

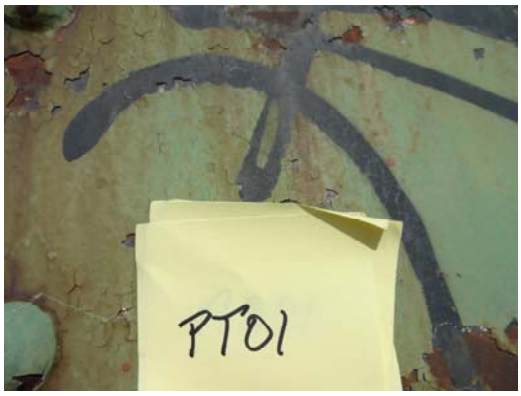
TABLE 1 - SUMMARY OF ASBESTOS ANALYSIS

Homogeneous Area	Material Description	Asbestos Content	Location	Quantity
K-18-R AS01	Asphalt	ND	Road Base	7,665 SF
K-18-R PT01	Paint, Green	ND	Overhead Structure	5,220 SF
K-18-R PT02	Paint Silver	ND	Southbound Sidewalk Guardrail	650 SF
K-18-R RT01	Road Tar	ND	Over Expansion Joint	27 SF

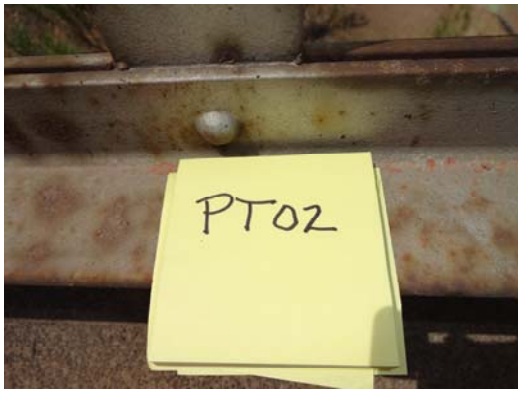
ND-None Detected

Representative Photos are below:

AS01



PT01



PT02

RT01

The analytical and laboratory reports are located in Appendix D of this report.

5.2. Lead-Based Paint

Paint (chip) samples were collected by physically removing a small portion (approximately 2 square inches) using a cutting or coring tool. Each sample was placed into a sealed and labeled container, and sample locations and descriptions were recorded.

The inspector delivered the samples along with a completed chain-of-custody (COC) document to the laboratory. The laboratory then arranged the samples in numerical order. If a discrepancy between the samples exists, this is noted and initialed on the COC. The laboratory signed a copy of the COC to acknowledge receipt. The inspector retained the signed copy for evidentiary purposes. Further, the laboratory assigned a laboratory number to each sample received. The laboratory labeled both the analytical report and the sample container with this laboratory number for cross-reference purposes.

The chip samples were submitted to Reservoirs Environmental Services Inc. for analysis by Atomic Absorption Analysis (AAS).

The following summary provides the results of lead analysis by AAS.

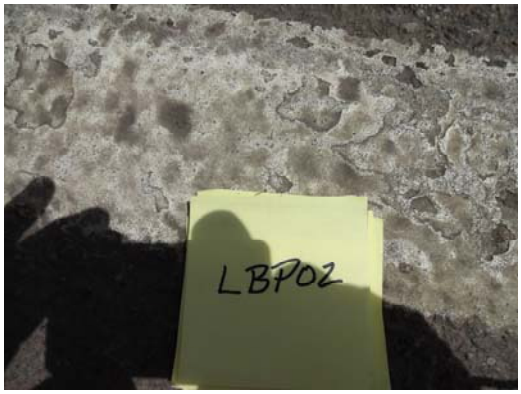
TABLE 2 - SUMMARY OF LEAD-BASED PAINT ANALYSIS

Sample ID	Location	Substrate	Color	Condition	Result % by Weight
K-18-R LBP01	Overhead Structure	Metal	Green	Poor	**15.6%**
K-18-R LBP02	Shoulder Stripes	Asphalt	White	Poor	BRL
K-18-R LBP03	Median Stripes	Asphalt	Yellow	Poor	BRL
K-18-R LBP04	Southbound Sidewalk Guardrail	Metal	Silver	Poor	**31.0%**

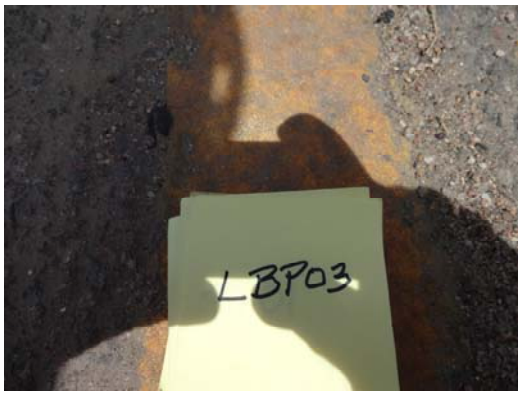
BRL- Below Reporting Limit

Representative Photos are below:

LBP01



LBP02



LBP03

LBP04

The analytical and laboratory reports are located in Appendix D of this report.

6. FINDINGS

6.1. Asbestos-Containing Material

EPA, OSHA and CDPHE define asbestos-containing material (ACM) as any material containing greater than 1% asbestos. EPA and CDPHE define asbestos-containing building material (ACBM) as any building material containing greater than 1% asbestos. The following summary provides listings of ACBM:

- Asbestos-containing materials were not identified as part of this inspection.

6.2. Lead-Based Paint

Lead-Based Paints (LBP) (>0.5% by weight) were identified during the inspection.

The following **component types** were confirmed to be LBP and should be disclosed to the demolition contractor, and are subject to waste determination procedures.

Lead-Based Paint (LBP)

- Metal Substrate – Green paint on overhead bridge structure (15.6% pb).
- Metal Substrate – Silver paint on southbound sidewalk guardrail (31.0% pb).

7. RECOMMENDATIONS

7.1. Asbestos-Containing Material

All regulated asbestos-containing materials (RACMs) are required by regulation to be properly removed and disposed of prior to renovation or demolition activities. The proper removal and handling of these materials is typically addressed through the preparation of a written "abatement scope of work/specification" document (bid package).

Under normal demolition activities, nonfriable Category I non-RACMs (nonfriable materials such as floor tile, roofing, and gasket material) and similar nonfriable Category II non-RACMs are allowed to remain, and can be disposed of as normal demolition debris, provided these materials remain nonfriable during demolition activities. Some landfills allow the material to be disposed with construction debris; however, the waste hauler and landfill must be notified that they are receiving a Category 1 nonfriable asbestos material. If the material is removed as an asbestos removal project it should be disposed of as nonfriable asbestos waste.

Materials containing 1% or less asbestos (as verified by point count) are not subject to EPA and CDPHE requirements, and therefore may remain during building demolition. Non-RACMs and materials containing 1% or less asbestos may be subject to OSHA regulations if air concentrations are at or above the personal exposure limit (PEL) of 0.10 f/cc or the excursion limit of 1.0 f/cc.

- Asbestos-containing materials or trace-1% asbestos materials were not identified during the inspection; therefore, materials are not subject to the above-referenced provisions.

7.2. Lead-Based Paint and Lead-Containing Paint

Renovation and demolition activities involving lead-based paint are the OSHA Construction Industry Standard for Lead (Title 29 of the Federal Code of Regulations, Part 1926.62). This standard addresses such issues as worker training, medical evaluations, personnel protective equipment, exposure assessment, biological monitoring, air monitoring, hygiene facilities and practices, and health and safety plans. OSHA regulations do not define a minimum concentration of lead as a threshold for action. Thus, even concentrations below EPA/HUD/CDPHE levels are regulated by OSHA.

Additionally, lead-containing materials require a hazardous waste determination pursuant to 40 CFR 262.11, and 40 CFR 261.24. It is a standard industry approach that demolition waste characterization should be performed on structures containing lead-based paint. This procedure is the Toxicity Characteristic Leaching Process (TCLP), where sample composite representative of all building components to be demolished (i.e. all lead-based paint coated and non-lead-based paint coated materials from the structure) is submitted to the laboratory for analysis. The Toxicity Characteristic (TC) limit for lead is 5ppm in the leachate. Materials that exceed this limit must be disposed of as hazardous waste. Materials that do not exceed this limit may be disposed of as solid waste.

- Lead-containing materials shown to have a total lead content below 0.01% by weight are not expected to reach or exceed the EPA RCRA limit for leachable lead, and need not be analyzed by TCLP. Samples exceeding 0.01% by weight may require TCLP analyses depending on whether the materials will be disposed of or recycled. If the materials will be disposed of then TCLP would be the industry standard.

- Materials that are recycled such as metal components are not subject to waste characterization provisions under EPA and CDPHE, but proper disclosure of lead-containing materials should be provided to the recycling facility for hazard communication purposes.

- The types and locations of lead-based paint and regulatory requirements should be disclosed to the demolition contractor and/or salvage contractor to avoid accidental disturbance, and for contractor compliance with applicable regulations (to ensure proper worker protection).

8. LIMITATIONS

No survey can completely eliminate the uncertainty regarding the presence of asbestos-containing materials, lead-based paint and other hazardous materials. The level of diligence and investigative procedures utilized are intended to reduce, but not eliminate potential uncertainty regarding the presence of these materials. The procedures used for this survey attempted to establish a balance between the competing goals of inspection cost, time and aesthetic damage. The determinations of this report should not be construed as a guarantee that all such materials present in the subject property have been identified in the report.

The inspection was performed in a manner consistent with the level of care and expertise exercised by members of the asbestos inspection and assessment profession. Those entities and persons involved with the inspection and generation of this report do not imply or guarantee that all potential asbestos-containing materials on or in the structure have been identified or sampled. Historically, asbestos has been added as a component to over 3,000 materials and products produced in the United States. The inspection was intended to identify those accessible materials that were reasonably suspect and that were most likely to contain asbestos in quantities subject to regulation, based on existing industry and regulatory standards.

Destructive investigation activities were conducted to identify materials in previously inaccessible areas (behind walls, above ceilings, etc), using limited demolition methods. These activities created small openings for investigation, but are limited in that full observation is not possible due to the presence of walls, flooring, ceilings, etc. Informational (hazard communication) training for demolition supervisory staff and workers, and additional inspection by an accredited asbestos inspector during demolition may assist in identifying any other hidden or concealed materials that may exist in the building.

Drawings and diagrams contained in this report are for informational purposes only, and proportion and scales are approximate.

APPENDIX A

SITE LOCATION DRAWING

Google earth

feet 1000

meters 400

APPENDIX B

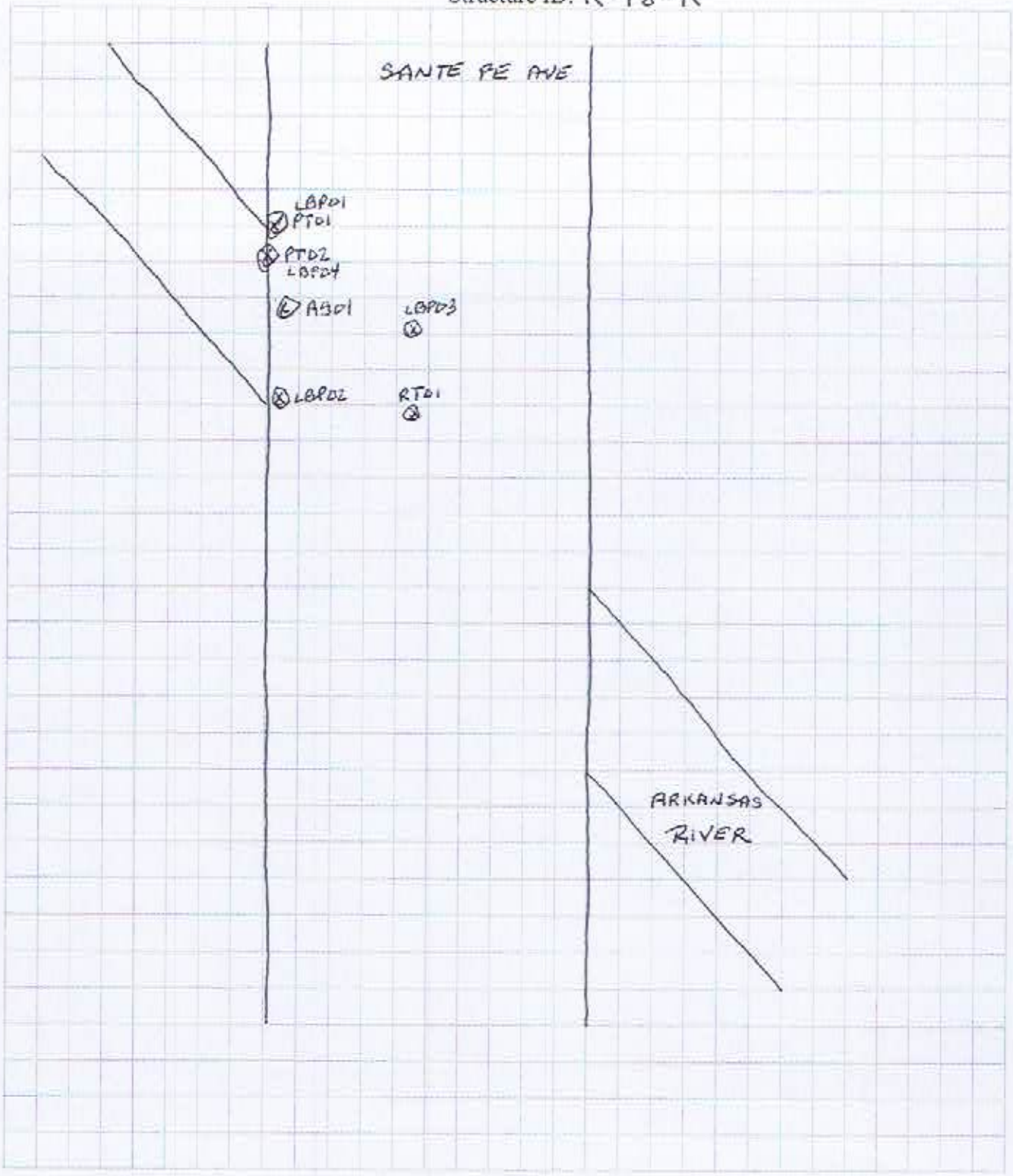
SAMPLE LOCATION DRAWINGS

(Asbestos and Paint Sample Locations)

DAILY FIELD DRAWING

Project: CDOT – Region 2, 5 Bridges **Date:** 5/13/13 **Day:** MON

Structure ID: K-18-R



APPENDIX C

FIELD INSPECTION WORKSHEETS

WALSH Asbestos Inspection Form

Name CDOT Region 2, 5 Bridges in Pueblo
Project WA-000944-0229 Date 5/13/13

Building CDOT Structure ID: K-18-R Homogeneous Area # K-18-R-A501-
Amount of material: _____

Description of Material: Asphalt, Road Base

Type of Suspect Material: _____ Surfacing _____ TSI X Miscellaneous

Sample #	Location	Lab Result
01	SB, West Side, Center	ND

Condition

Friable _____
Non-Friable X

	Sig. Damaged	Damaged	Good
Deterioration		X	
Water Damage		X	
Physical Damage		X	

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact		X	
Vibration		X	
Air erosion		X	

Comments: _____

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- _____ ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: [signature]

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WALSH Asbestos Inspection Form

Name CDOT Region 2, 5 Bridges in Pueblo
Project WA-000944-0229 Date 5/13/13

Building CDOT Structure ID: _____

Homogeneous Area # K-18-R-PT01-
Amount of material: _____

Description of Material: Paints, Green

Type of Suspect Material: _____ Surfacing _____ TSI X Miscellaneous

Sample #	Location	Lab Result
D1	SB, NW Corner	ND

Condition

Friable X
Non-Friable _____

	Sig. Damaged	Damaged	Good
Deterioration	X		
Water Damage	X		
Physical Damage	X		

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact	X		
Vibration	X		
Air erosion	X		

Comments: _____

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- _____ ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: [signature]

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WALSH Asbestos Inspection Form

Name CDOT Region 2, 5 Bridges in Pueblo
Project WA-000944-0229 Date 5/13/13

Building CDOT Structure ID: K-18-R Homogeneous Area # K-18-R-PTD2-
Amount of material:

Description of Material: Paints, Silver

Type of Suspect Material: _____ Surfacing _____ TSI X Miscellaneous

Sample #	Location	Lab Result
01	SB Sidewalk Guardrail, ~20' from N Edge.	ND

Condition

		Sig. Damaged	Damaged	Good
Friable X	Deterioration	X		
Non-Friable	Water Damage	X		
	Physical Damage	X		

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact	X		
Vibration	X		
Air erosion	X		

Comments:

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- _____ ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments:

Assistant Name: Inspector Signature: Michael Gray

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WALSH Asbestos Inspection Form

Name CDOT Region 2, 5 Bridges in Pueblo
Project WA-000944-0229 Date 5/13/13

Building CDOT Structure ID: K-18-R Homogeneous Area # K-18-R-RT01-
Amount of material:

Description of Material: Road Tar, Black

Type of Suspect Material: ____ Surfacing ____ TSI x Miscellaneous

Sample #	Location	Lab Result
01	SB, SE Corner	ND

Condition

		Sig. Damaged	Damaged	Good
	Deterioration			x
Friable	Water Damage			x
Non-Friable x	Physical Damage			x

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact		x	
Vibration		x	
Air erosion		x	

Comments: Over Expansion Gasket

Physical Classification

- ____ Damaged or significantly damaged thermal system insulation (TSI)
- ____ Damaged friable surfacing ACBM
- ____ Significantly damaged friable surfacing ACBM
- ____ Damaged or significantly damaged friable miscellaneous ACBM
- ____ ACBM with potential for damage
- ____ ACBM with potential for significant damage
- ____ Any remaining friable ACBM or friable suspected ACBM

Comments:

Assistant Name: Inspector Signature: [signature]

Walsh
Environmental Scientists and Engineers, LLC. 130 E. Kiowa, Suite 202 Colorado Springs, CO. 80903 719-227-0999 (fax)719-227-0491

WALSH Lead Inspection Form

Name: CDOT – Region 2, 5 Bridges
Project: WA-000944-0229 Date: 5/13/13
Building: CDOT Structure ID: K-18-R
Sample Method: Paint Chip

Description:

Component	Location	Color	Condition		Sample #	Lab Result
F W C S O	SB, NW CORNER	GREEN	I F	(P)	LBP01	15.6
F W C S O	SB, SW Corner	WHITE	I F	(P)	LBP02	BRL
F W C S O	SB, Center	YELLOW	F	(P)	LBP03	BRL
F W C S O	SB Sidewalk Guardrail	SILVER	I F	(P)	LBP04	31.0
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		
F W C S O			I F	P		

Components: F=Floors, W=Walls, C=Ceiling, S=Exterior Siding, O=Other
Condition: I=Intact, F=Fair (Damage or deterioration <2SF or 10% per room), P=Poor (Damage or deterioration >2SF or 10% per room)
Damage Criteria: Chalking, Chipping, Cracking, Peeling, Damaged or Separating from Substrate

Comments:

LBP01 - Metal Substrate - Overhead structure + I-Beams — SB Lanes (Only on overhead structure)
LBP02 - Asphalt Substrate - Shoulder Stripes + Lane Paint
LBP03 - Asphalt Substrate - Median Stripes
LBP04 - Metal Substrate - SB Sidewalk Guardrail

Inspector Signature

Assistant Signature

APPENDIX D

LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

REI LAB **Reservoirs Environmental, Inc.**

May 21, 2013

Subcontract Number:	**NA**
Laboratory Report:	**RES 259509-1**
Project # / P.O. #	**WA-000944-0229-10TTO**
Project Description:	**CDOT- R2 Pueblo County- K18R**

Michael Perry
Walsh Environmental - (Colo. Springs)
130 E. Kiowa Suite 202
Colorado Springs CO 80903

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 259509-1 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,

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0

TDH Licensed Laboratory # 30-0136

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 259509-1**
Client: **Walsh Environmental - (Colo. Springs)**
Client Project Number / P.O. **WA-000944-0229-10TTO**
Client Project Description: **CDOT- R2 Pueblo County- K18R**
Date Samples Received: **May 14, 2013**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 18, 2013**

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

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
K-18-R-AS01-01	EM 955158	A	Black/gray granular tar	100		**ND**	0	100
K-18-R-PT01-01	EM 955159	A	Green/multi-colored paint	100		**ND**	0	100
K-18-R-PT02-01	EM 955160	A	Silver/multi-colored paint	100		**ND**	0	100
K-18-R-RT01-01	EM 955161	A	Black resinous tar w/ gray/black granular material	100		**ND**	0	100

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

Analyzed by: Liu Wenlong

Data QA: Gina Vettraino

RES 259509

Due Date: 5-17-13

Due Time: 9:00 a

Reservoirs Environmental, Inc.

5801 Logan Street, Suite 100 Denver, CO 80216
(303) 964-1986 Fax (303) 477-4275 Toll Free (866) RESI-ENV

SAMPLES SUBMITTED BY:	INVOICE TO: (IF DIFFERENT)	CONTACT INFORMATION:	
Company: Walsh Environmental Scientists & Engineers, LLC.	Company:	Contact: Michael Perry	Contact:
Address: 130 E. Kiowa St. Suite 202	Address:	Phone: 1-719-227-0999	Phone:
Colorado Springs, CO 80903		Fax: 1-719-227-0491	Fax:
		Cell/pager: 1-719-352-9955	Cell/pager:
Project Number and/or P.O. #: WA-000944-0229-10TTO		Final Data Deliverable Email Address: csresults@walshenv.com mperry@walshenv.com	
Project Description/Location: CDOT - R2 Pueblo County - K18R			

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm; Saturday: 8am -5pm

PCM/PLM/TEM ____ RUSH ___ 24 hr. X 3-5 day (Rush PCM/PLM = 2hr, TEM - 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Metal(s)	___ RUSH ___ 24 hr. ___3-5 Day	
RCRA 8/Metals Scan	___ RUSH ___ 5 day ___10 day	**Prior notification is required for RUSH turnarounds.**
TCLP/ Welding Fume Scan		
Dust	___ RUSH ___ 24 hr. ___3-5 Day	
Organics	___ 24 hr. ___ 3 day ___5 Day	

Analysis turnarounds are subject to laboratory sample volume and are not guaranteed. You will be notified if delays are expected. Additional fees apply for afterhours and holidays for all analysis types.

Special Instructions: _____

REQUESTED ANALYSIS

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Drinking Water = DW	
Waste Water = WW	
Other = O	

ASTM E1792 approved wipe media only

Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) ___ RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1 K-18-R-AS01-01	X							N/A	B	1	5/13/13		955156
2													57
3													60
4													1
5													
6													
7													
8													
9													
10													
11													
12													
13													

LAB NOTES:

Number of samples received: 4 (Additiional samples shall be listed on attached long form.)

NOTE: . REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days.

Relinquished By: [signature] 5/13/13 @1700 Date/Time:

Sample Condition: On Ice Y/N Sealed Y/N Intact Y/N Temp. (F°) _____

Laboratory Use Only

Received By: [signature] Date/Time: 5/14/13 @ 9:00 a Carrier: FedEx

Results:	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date 5/21/13	Time 8:15	Initials
	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials

thanks for 800 334 2097

REI LAB **Reservoirs Environmental, Inc.**

May 20, 2013

Laboratory Code:	**RES**
Subcontract Number:	**NA**
Laboratory Report:	**RES 259506-1**
Project # / PO #:	**WA-000944-0229-10TTO**
Project Description:	**CDOT- R2 Pueblo County-K18R**

Michael Perry
Walsh Environmental - (Colo. Springs)
130 E. Kiowa Suite 202
Colorado Springs CO 80903

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the American Industrial Hygiene Association, Lab ID 101533 - Accreditation Certificate #480. The laboratory is currently proficient in both IHPAT & ELPAT programs respectively.

Reservoirs has analyzed the following sample(s) using Atomic Absorption Spectroscopy (AAS) / Atomic Emission Spectroscopy - Inductively Coupled Plasma (AES-ICP) per your request. Reported sample results were not blank corrected. The analysis has been completed in general accordance with the appropriate methodology as stated in the analysis table. Results have been sent to your office.

RES 259506-1 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 authorized by the client. The results described in this report only apply to the samples analyzed. 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 should have any questions about this report, please feel free to call me at 303-964-1986.

Sincerely,

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL, INC.

5801 Logan St., Suite 100
Denver CO 80216

TABLE ANALYSIS: LEAD IN PAINT

RES Job Number:	**RES 259506-1**
Client:	**Walsh Environmental - (Colo. Springs)**
Client Project Number / P.O.:	**WA-000944-0229-10TTO**
Client Project Description:	**CDOT- R2 Pueblo County- K18R**
Date Samples Received:	**May 14, 2013**
Analysis Type:	**USEPA SW846 3050B / AA (7420)**
Turnaround:	**3-5 Day**
Date Samples Analyzed:	**May 17, 2013**

Client ID Number	Lab ID Number	Reporting Limit (%)	LEAD CONCENTRATION (%)
K-18-R-LBP01	EM 955142	0.0025	15.6
K-18-R-LBP02	EM 955143	0.0035	BRL
K-18-R-LBP03	EM 955144	0.0047	BRL
K-18-R-LBP04	EM 955145	0.0031	31.0

*** Unless otherwise noted all quality control samples performed within specifications established by the laboratory.**

BRL = Below Reporting Limit

Data QA_____

RES 259506

Reservoirs Environmental, Inc.

Due Date: 5/17/82

Due Time: 900

5801 Logan Street, Suite 100 Denver, CO 80216
(303) 964-1986 Fax (303) 477-4275 Toll Free (866) RESI-ENV

Page 1 of 1

SAMPLES SUBMITTED BY:

Company: Walsh Environmental Scientists & Engineers, LLC.
Address: 130 E. Kiowa St. Suite 202
Colorado Springs, CO 80903

INVOICE TO: (IF DIFFERENT)

Company:
Address:

CONTACT INFORMATION:

Contact: Michael Perry
Phone: 1-719-227-0999
Fax: 1-719-227-0491
Cell/pager: 1-719-352-9955

Contact:
Phone:
Fax:
Cell/pager:

Final Data Deliverable Email Address: csresults@walshenv.com
mperry@walshenv.com

Project Number and/or P.O. #: WA-000944-0229-10TTO
Project Description/Location: CDOT - R2 Pueblo County ~ K18R

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm; Saturday: 8am -5pm

PCM/PLM/TEM ____ RUSH ___ 24 hr. ___3-5 day (Rush PCM/PLM = 2hr, TEM - 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Metal(s) ___ RUSH ___ 24 hr. X 3-5 Day
RCRA 8/Metals Scan ___ RUSH ___ 5 day ___10 day
TCLP/ Welding Fume Scan
Dust ___ RUSH ___ 24 hr. ___3-5 Day
Organics ___ 24 hr. ___ 3 day ___5 Day

Prior notification is required for RUSH turnarounds.

Analysis turnarounds are subject to laboratory sample volume and are not guaranteed. You will be notifited if delays are expected. Additional fees apply for afterhours and holidays for all analysis types.

Special Instructions:

REQUESTED ANALYSIS

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Drinking Water = DW	
Waste Water = WW	
Other = O	

ASTM E1792 approved wipe media only

LAB NOTES:

Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Cr RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1 K-18-R-LBP01					X			W/A	P	1	5/13/13		955147
2 -18-R-LBP02					X					1			3
3 -18-R-LBP03					X					1			4
4 -18-R-LBP04					X					1			5
5													
6													
7													
8													
9													
10													
11													
12													
13													

Number of samples received: 4 (Additiional samples shall be listed on attached long form.)

NOTE: . REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days.

Relinquished By: Michael Perry 5/13/13 @1700 Date/Time:

Sample Condition: On Ice Y/N Sealed Y/N Intact Y/N
Temp. (F°) ____

Laboratory Use Only
Received By: Date/Time: 5/14/13 @ 900 Carrier: FedEx

Results:

Contact	Page	Phone	Email	Fax	Date	Time	Initials
Contact	Page	Phone	Email	Fax	Date	Time	Initials
Contact	Page	Phone	Email	Fax	Date	Time	Initials
Contact	Page	Phone	Email	Fax	Date	Time	Initials

Phone fax 8029 3344 2097

APPENDIX E

REFERENCES

ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-Containing Materials
ACBM	Asbestos-Containing Building Materials
AHERA	EPA Asbestos Hazard Emergency Response Act
CDPHE	Colorado Department of Public Health and Environment
D/R	Demolition and/or Renovation
HVAC	Heating Ventilation and Air Conditioning
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NVLAP	National Volunteer Laboratory Accreditation Program
O&M	Asbestos Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PACM	Presumed Asbestos-containing Material
PEL	Personal Exposure Limit
PLM	Polarized Light Microscopy
RACM	Regulated Asbestos- Containing Material
TSI	Thermal System Insulation
EPA	United States Environmental Protection Agency
VAT	Asbestos-Containing Vinyl Tile
WALSH	Walsh Environmental Scientists and Engineers, LLC

ASBESTOS REFERENCES

- United States Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61.140-157.
- United States Environmental Protection Agency, Asbestos-Containing Materials in Schools; Final Rule and Notice (Asbestos Hazard Emergency Response Act - AHERA) 40 CFR 763.80-99, 1990.
- United States Environmental Protection Agency, Simplified Sampling Scheme for Surfacing Materials ("Pink Book") EPA publication #560/5-85-030a, Washington DC, 1985.
- Occupational Safety and Health Administration, Asbestos Regulations for the Construction Industry 29 CFR 1926.1101, Washington DC, 1994.
- Occupational Safety and Health Administration, Asbestos Regulations for the General Industry 29 CFR 1910.1001, Washington DC, 1994.
- Colorado Department of Public Health and Environment, Regulation 8 - Emission Standards for Asbestos, 2003.

GLOSSARY

ASBESTOS - A generic name given to a number of naturally occurring silicates that have a unique crystalline structure. They are incombustible in air and separable into fibers. Asbestos includes the asbestiform varieties of Chrysotile, Crocidolite, Amosite, Anthophyllite, Actinolite, and Tremolite.

ACBM – Asbestos-Containing Building Material. A term that encompasses surfacing, thermal system, and miscellaneous asbestos-containing material in or on interior/exterior parts of a building. This definition also included exterior hallways connecting buildings, porticos, and mechanical system insulation.

ACBM - Asbestos-Containing Building Material. Any material with one percent (1%) or more asbestos content.

BULK SAMPLE - A piece of suspected asbestos-containing building material.

FRIABLE - A material which can be crumbled, pulverized, or reduced to powder when dry, by moderate hand pressure.

FUNCTIONAL AREA - Distinct units within a building such as a room, a group of rooms, or a homogeneous area - this includes crawl spaces and areas above a drop ceiling.

HOMOGENEOUS AREA - An area which appears similar throughout in terms of: color, texture, and date of material application.

INACCESSIBLE AREA - Inaccessible areas are those areas which cannot be inspected due to physical barriers. Buildings may contain areas that are intrinsically inaccessible. These include gaps and spaces in walls, areas above fixed ceilings and below floors, and enclosed boiler breechings and ducts. Some buildings contain other inaccessible areas, such as very small pipe tunnels, sealed crawl spaces, unsafe attics, encased boilers, etc.

NONFRIABLE - A material which cannot be crumbled or pulverized by hand pressure.

PACM - Presumed Asbestos-Containing Material

PLM - Polarized Light Microscopy. An accepted method for analyzing bulk ACBM samples.

RACM – Regulated Asbestos-Containing Material. Any material with one percent (1%) or more asbestos content and is required to be removed prior to demolition activities.

EPA - United States Environmental Protection Agency. The EPA is the federal agency that governs environmental problems. In the case of ACBM in buildings, the EPA deals with regulations and their guidelines for application, renovation, removal, and disposal of ACBM in building structures.

APPENDIX F

CONSULTANT CREDENTIALS

CHC

COLORADO HAZARD CONTROL LLC

1775 West 55th Avenue
Denver, CO 80221
303.410.4941

36 North Research Drive, Suite B
Pueblo West, CO 81007
719.547.2785

Certifies that

Michael Perry

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 / Management Planner

Course Date: February 26, 2013
Certificate No.: SIMP12092
No. of Hours: 8
Expiration Date: February 26, 2014

COLORADO HAZARD CONTROL LLC
SEAL
COLORADO

Daniel R. Beaver - Instructor

Scott Nelson – Branch Manager

STATE OF COLORADO

ASBESTOS CERTIFICATION*

Colorado Department of Public Health
and Environment
Air Pollution Control Division

This certifies that

Michael Perry

Certification No: 15632

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: 9/14/2012

Expires on: 9/14/2013

Authorized APCD Representative

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

SEAL