

**HAZMAT (ASBESTOS & LEAD BASED PAINT)  
SURVEY AND ASSESSMENT**

*Southern Utah University  
Eccles Coliseum  
Cedar City, Utah*



**Prepared for:**

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Salt Lake City, Utah 84114

**Prepared by:**

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**HAZMAT (ASBESTOS & LEAD BASED PAINT)  
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*Southern Utah University  
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**1.0 EXECUTIVE SUMMARY**

A survey of this facility was performed on August 17, 2007, by **ROWLAND CONSULTING, INC.** The building was visually inspected to identify building materials that might contain asbestos. Bulk samples were collected from suspect materials and analyzed to determine if they contained asbestos. All Asbestos Containing Materials (ACMs) were assessed for damage and the potential for exposure. This survey was requested by Mr. Robert J. Anderson, HAZMAT Manager, State of Utah, Division of Facilities Construction and Management.

The following table lists all ACMs that were identified in the building. Information specific to the building concerning inaccessible areas / materials and recommended response actions can be found in this report. There is important information in these sections that is not included in this executive summary. This report should be read in its entirety, including detailed information that is contained in other sections and appendices of this report.

**ACMs by Homogeneous Area**

<b>Material ID # (1)</b>	<b>Material Description</b>	<b>Location</b>	<b>Asbestos Content (2)</b>	<b>Quantity</b>	<b>Cost Estimate (3)</b>
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***NO ACM'S WERE IDENTIFIED AT THIS LOCATION***

Footnotes:

1. Homogeneous Area Number (not related to building room numbers).
2. C = Chrysotile Asbestos.
3. Cost Estimates include asbestos removal costs only; abatement design and management fees and replacement costs are not included. For projects with small quantities, ask Contractors for their mobilization fee. Please refer to Section 7.0 for more details.

# Asbestos Survey and Assessment

*Southern Utah University  
Eccles Coliseum  
Cedar City, Utah*

## 2.0 INTRODUCTION

On August 17, 2007, **ROWLAND CONSULTING, INC.** performed an asbestos survey and assessment at Southern Utah University, Eccles Coliseum Building in Cedar City, Utah. The purpose of this survey was to identify the existence, extent, and condition of both friable and non-friable asbestos-containing materials (ACM) within and on the facility. Bulk samples were collected from suspect materials *not* sampled during previous surveys, submitted to a laboratory, and analyzed for asbestos content. Each occurrence of ACM was assessed for damage and friability.

The following accredited and certified inspectors performed the inspection, collected the samples and made assessment:

**Jeffrey B. Rowland**

Name

August 17, 2007

Signature

Date

**Utah**

State of Accreditation

**ASB-1377**

State of Utah

Division of Air Quality

Asbestos Certification Number

*This report has been reviewed*

*By a Certified Industrial Hygienist (CIH)*

**Frank D. DeRosso, CIH MSPH**

Senior Scientist

**RMEC Environmental, Inc.**

*for ROWLAND CONSULTING, INC.*

CIH Signature

Date

### 3.0 BUILDING DESCRIPTION

**Building Identification**                      **Southern Utah University**  
**Eccles Coliseum**  
**Cedar City, Utah**

Building Name.....Eccles Coliseum  
Building Address.....Southern Utah University, Cedar City, Utah

#### Building Construction

Building Construction Date.....Unknown  
Building Type.....Football Stadium, Bleachers, Offices,  
Locker Rooms  
Building Total Sq. Ft..... Approx. 8,000 Sq. Ft.  
Structural System..... Reinforced Brick, Block, and Metal Panels  
Exterior Wall Construction..... Pre-Cast Concrete, Metal  
Floor Deck Construction..... Concrete  
Roof Construction..... Metal  
Floors Above Grade..... 3  
Floors Below Grade..... 0

#### Interior Finishes

Floors..... Carpet, Vinyl Tile, Concrete  
Ceilings..... Painted Drywall  
Walls..... Brick, Block, Painted Drywall  
Attic..... None  
Crawl space..... None

#### Building Mechanical

Heating Plant..... Distributed Through Central Heat Plant  
Mechanical Piping..... Hot/Cold Water Has Non-Asbestos  
Fiberglass Pipe Lagging

## **4.0 SURVEY PROCEDURES**

### **4.1 Building Surveys**

All accessible areas of the facility were visually inspected to identify suspect asbestos containing materials (ACM.) All accessible surfaces, structures, and mechanical systems within these areas were examined and all suspected ACM was touched to determine friability.

Suspect ACM was identified and assessed in homogeneous areas. A homogeneous area is defined as a single material, uniform in texture and appearance, installed at one time, and unlikely to consist of more than one type, or formulation, of material. In cases where joint compound and/or tape have been applied to wallboard (gypsum board) and cannot be visually distinguished from the wallboard, it is considered an integral part of the wallboard and in effect becomes one material forming a wall or ceiling “system.”

Each homogeneous area was given a unique material identification number. Each ID number begins with a letter: “S” for Surfacing materials, “T” for Thermal system insulation, or “M” for Miscellaneous materials. This letter is followed by a three-digit number, assigned in consecutive order. This number is used to identify the homogeneous area throughout the inspection report.

### **4.2 Bulk Sample Collection**

Bulk samples were collected from all accessible homogeneous areas of suspect ACM for subsequent laboratory analysis to determine actual asbestos content. Sampling was conducted in a manner that minimized damage to the building, did not leave any unsightly marks, and did not create a health hazard for the inspectors.

The number of samples collected from each homogeneous area generally followed the EPA AHERA regulations (40 CFR 763.86). Friable surfacing materials were sampled using the random sampling scheme given in the EPA publication 560 / 5-85-30a, titled “Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials.”” Between three and seven samples were collected from friable surfacing materials, depending on the size of the homogeneous area.

### **4.3 Bulk Sample Analysis**

Bulk samples were analyzed using polarized light microscopy (PLM) and visual estimation in accordance with the EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples, EPA-600 / M4-82-020. Samples were analyzed by **DIXON INFORMATION INC.**, 78 West 2400 South, Salt Lake City, Utah.

The laboratory is accredited under the National Institute of Standards and Technology – National Voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk-asbestos sample analysis and is also accredited by the American Industrial Hygiene Association (AIHA).

Federal EPA’s NESHAP and AHERA regulations define ACM as material containing greater than 1% asbestos by weight; materials containing less than 1% asbestos are not considered regulated ACM. ***However, the OSHA ASBESTOS STANDARD considers any percentage of asbestos to be regulated and needs to be handled properly.***

Further, the NESHAP regulations state that any sample found to contain less than 10% asbestos but greater than “none detected,” by visual estimation, must be assumed to contain greater than 1% asbestos unless confirmed to be less than 1.0% asbestos by point counting analysis. Any samples found to contain asbestos in this concentration range were assumed to contain greater than 1.0% asbestos and are listed in Section 5.8 of this report. All samples that have been point counted are identified as such in the sample result tables.

The laboratories reports can be found in Appendix D of this report.

## **SURVEY RESULTS**

### **5.1 Asbestos-Containing Materials (ACMs)**

Homogeneous areas of suspect ACM are identified as being ACM if the laboratory analysis shows the material to contain any detectable asbestos, unless subsequent Point Counting analysis resulted in less than 1% asbestos being detected. Table 1 of the Executive Summary and in Appendix A lists all homogeneous areas that were found to be ACM. Each material is described by type of material, friability and visual appearance.

Friability is defined in accordance with EPA's NESHAP regulations.

“Friable ACM” is any material containing more than 1% asbestos (as determined by PLM) that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure and also includes non-friable ACM that may become friable during building demolition.

“Non-friable ACM” is any material containing more than 1% asbestos (as determined by PLM) that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

“Category I non-friable ACM” are asbestos-containing resilient floor coverings (commonly known as vinyl asbestos tile (VAT), asphalt roofing products, packings, and gaskets).

“Category II non-friable ACM” encompasses all other non-friable ACM.

“Non-friable RACM” is used to denote thermal system insulation that is in good condition but would become friable during renovation or demolition and therefore is “regulated asbestos containing material” (RACM).

### **5.2 Non-Asbestos-Containing Materials**

Homogeneous areas of suspect ACM are identified as *non*-ACM if the laboratory analysis shows the material to contain no detectable asbestos. Table 2, located in Appendix A of this report, lists all homogeneous areas that were found to be non-ACM.

### **5.3 Bulk Sample Analytical Results**

Table 3, located in Appendix A of this report, lists all of the bulk samples in order by sample number, that were collected from homogeneous areas of suspect ACM, along with the laboratory analytical results. Each sample was given a unique sample number. There may be more than one sample number for the same homogeneous area of suspect ACM. The homogeneous areas of suspect ACM are identified on this table by their material identification numbers. The sample location listed on this table provides a brief, but specific, description of the location where the sample was collected. This is different

than the homogeneous area location provided on Tables 1 and 2. Table 4 is the same as Table 3 except the entries have been sorted by homogeneous area number.

#### **5.4 Damage and Hazard Assessment**

Each homogeneous area of ACM has been assessed for existing damage, accessibility, and potential for future damage, and this information is presented in Table 5, located in Appendix A of this report. This table also lists the substrate present beneath each homogeneous area of ACM.

Each homogeneous area of friable ACM and asbestos-containing building material (ACBM) was classified into one of the following seven categories, as specified in EPA's AHERA regulations (40 CFR 763.88):

- (1) Damaged or significantly damaged thermal system insulation ACM.
- (2) Damaged friable surfacing ACM.
- (3) Significantly damaged friable surfacing ACM.
- (4) Damaged or significantly damaged friable miscellaneous ACM.
- (5) ACBM with potential for damage.
- (6) ACBM with potential for significant damage.
- (7) Any remaining friable ACBM or friable suspected ACBM.
- (X) Not Applicable (material is non-friable surfacing or miscellaneous material).

The damage categories are defined as follows:

“Undamaged” means the material had no visible damage, or extremely minor damage or surface marring (i.e., a room full of floor tile with only two or three small corners chipped off on the tile).

“Damaged” means the material had visible damage evenly distributed over less than 10% of its surface, or localized over less than 25% of its surface.

“Significantly Damaged” means the material had visible damage that is evenly distributed over 10% or more of its surface, or localized over 25% or more if its surface.

Each homogeneous area of ACM was evaluated for accessibility to the building occupants and the general public, assuming the building was fully occupied, using the following assessment categories.

“Inaccessible” means the material was located in an area that people had no reason to enter and could not access without special measures. One example would be the area above a solid ceiling.

“Rarely Accessed” identifies a material that was in a location that could be accessed but wasn’t unless there was a specific need. An example would be a pipe tunnel. Another example would be a high ceiling that is out of reach and not subject to any specific disturbance.

“Periodic Access” identifies a material that was in a location that was accessible, was not occupied full time, but was accessed on a routine basis. An example would be a mechanical room or boiler room.

“Continuous Access” identifies a material that was in a location that was occupied full time and was within reach of the occupants, or was frequently subject to direct disturbance. Examples would be exposed floor tile or a normal height ceiling.

## **5.5 Hazard Ranking**

A hazard ranking has been determined for every ACM, in each functional space (room), and is listed in Table 7, Appendix A. The Hazard Rank is derived from the material's current condition and potential for future disturbance. Table 7 also presents material description, quantity, and estimated abatement cost.

The EPA Management Planner hazard assessment process used here produces seven Hazard Ranks. **The rankings of potential hazard range from 1, most hazardous, to 7, least hazardous, and are used to determine abatement priority.** The highest ranking is reserved for ACM that is "significantly damaged." Hazard rankings 2 - 4 reflect ACM that is "damaged" (slight damage is the term used in Table 7), with a ranking of 2 indicating "potential for significant damage," and a ranking of 3 indicating a "potential for damage." Hazard rankings of 5 to 7 are reserved for materials currently in good condition, but with a range of moderate to low in the likelihood for future disturbance.

Note that these seven rankings are different from, and should not be confused with, the seven AHERA categories of damage and potential damage described in Section 5.4, above, and listed in Table 5

### **5.6 Homogeneous Areas with Special Considerations**

NONE

### **5.7 Suspect Materials Presumed to be Asbestos-Containing Materials without Laboratory Analysis**

NONE

### **5.8 Inaccessible Areas**

NONE

### **5.9 Material(s) assumed to contain >1.0% asbestos without subsequent TEM or Point Count Analysis**

NONE

## 6.0 RESPONSE ACTION COMMENTS

### 6.1 EPA Requirements

Asbestos is regulated as a hazardous air pollutant by the Environmental Protection Agency (EPA) under the authority of the Clean Air Act. The asbestos regulations are included in the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and referenced as 40 CFR 61, Subpart M. ACMs identified in this report are subject to those regulations. Those regulations, and state and local regulations, should be carefully examined prior to renovation, demolition, cleanup, or any other activity which could disturb the ACMs, to ensure that all activities are in compliance with applicable requirements.

ACM is defined by the EPA, as any material containing greater than one percent of asbestos. ACMs are categorized as being either friable or non-friable. Friable ACMs are those materials that can be easily crumbled, pulverized, or otherwise broken up using hand or finger pressure when dry, and are materials considered more likely to produce airborne asbestos fibers. Non-friable ACMs are materials that do not meet the above test, and are considered less likely to produce airborne asbestos fibers. Not all ACMs are regulated under NESHAP. Regulated ACM (RACM) means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of regulated demolition or renovation operations. Regulated demolition and renovation operations are those where the quantity of ACM affected is 260 linear feet or more on pipes, 160 square feet or more on other components, or 35 cubic feet or more in volume. There are certain notification requirements for demolition projects involving less than the above quantities.

Briefly, EPA requires that RACM be removed from facilities scheduled for demolition or renovation before any activity begins that would break up, dislodge, or similarly disturb the materials or preclude access to the materials for subsequent removal. Category I non-friable ACM that is not in poor condition and is not friable does not have to be removed prior to demolition of a facility. **However, these materials are exempt from mandatory removal only during demolition, not renovation. Removal is mandated when renovation activities are expected to disturb these ACMs and render them friable.** Category II non-friable ACM also does not have to be removed prior to demolition if the probability is low that the material will become crumbled, pulverized, or reduced to powder (made friable) during demolition. However, state regulations may require the removal of these materials. Additionally, Category I non-friable ACM that has not become crumbled, pulverized, or reduced to powder during demolition activities may be disposed of as ordinary construction waste.

In any situation where ACM remains in a building, it should be managed under a comprehensive operations and maintenance program (O&M). The procedures and

guidelines described in an O&M program should be followed whenever building maintenance activities may disturb any ACMs present in the building.

## **6.2 Renovation Options**

Some ACMs may remain in place during building renovations, as long as they are *not disturbed and/or damaged.*

## 7.0 COST ESTIMATES

A breakdown of the estimated removal costs by homogeneous area can be found in Table 6, Appendix A. These cost estimates are provided for use in long-term budgeting and planning only, and do not have a level of accuracy sufficient to be used as a construction design cost estimate. The actual cost of asbestos removal is highly dependent on a number of factors such as size of the project, the required time frame for removal, the time of year the job is conducted, the regulatory climate at the time, etc., therefore, actual abatement costs could vary significantly from these estimates. Replacement costs have **not** been included in these figures.

The cost for abatement design and management services is **not** included in these figures. These additional fees can range from 15% of the estimated abatement costs for large projects to greater than 50% for very small projects. The design and management fees cover the cost of preparing plans and specifications, conducting the bidding process as well as third-party oversight during abatement.

## 8.0 LIMITATIONS AND EXCLUSIONS OF WARRANTY

This asbestos survey and assessment was performed using procedures and a level of diligence typically exercised by professional consultants performing similar services. However, ACM can be present in a structure, but not identified using ordinary investigative procedures.

No asbestos survey can completely eliminate uncertainty regarding the presence of ACM. **ROWLAND CONSULTING, INC. and RMEC ENVIRONMENTAL, INC.**'s level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of ACM. The procedures used for this survey attempt to establish a balance between the competing goals of limiting investigative costs, time, and building damage, and reducing the uncertainty about unknown conditions. Therefore, the determinations in this report should not be construed as a guarantee that all ACM present in the subject property has been included in this report.

This report presents **ROWLAND CONSULTING, INC. and RMEC ENVIRONMENTAL, INC.** professional determinations, which are dependent upon information obtained during performance of consulting services. **ROWLAND CONSULTING, INC. and RMEC ENVIRONMENTAL, INC.** assumes no responsibility for omissions or errors resulting from inaccurate information provided by sources outside of **ROWLAND CONSULTING, INC. and RMEC ENVIRONMENTAL, INC.**

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report. The limitations presented above supersede the requirements or provisions of all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herein.

**Table 1**  
**ACMs by Homogeneous Area**

*Southern Utah University*  
*Eccles Coliseum*  
*Cedar City, Utah*

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<b>Homogeneous Area Number</b>	<b>Material Description</b>	<b>Location</b>	<b>Friability</b>	<b>Asbestos Content</b>	<b>Quantity</b>
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*NO ACM'S WERE IDENTIFIED AT THIS LOCATION*

**Table 2**  
**Homogeneous Areas That Do Not Contain Asbestos**

*Southern Utah University*  
*Eccles Coliseum*  
*Cedar City, Utah*

<b>Homogeneous Area Number</b>	<b>Material Description</b>	<b>Material Location</b>
M001	12" Floor Tile White w/ Gray Streaks, No Mastic	Room 106, Including Hallway
M002	2 x 4 Ceiling Tile Wormhole Pattern, Drop-in	
M003	Solid Vinyl Floor (Pink)	Training Room, Room #106 D
S001	Textured Ceiling Material	Exterior Porch, Level 300
M004	Wallboard w/Joint Compound	1st floor

**Table 3**  
**Bulk Sample Analytical Results by Sample Number**

*Southern Utah University*  
*Eccles Coliseum*  
*Cedar City, Utah*

<b>Sample Number</b>	<b>Homogeneous Area Number</b>	<b>Material Sampled</b>	<b>Sample Location</b>	<b>Analytical Results</b>
01	M001	12" Floor Tile White w/Gray Streaks, No Mastic	Hallway 106A	NONE DETECTED
02	M001	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
03	M001	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
04	M001	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
05	M001	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
06	M002	2 x 4 Ceiling Tile Wormhole Pattern, Drop-In		NONE DETECTED
07	M002	2 x 4 Ceiling Tile Wormhole Pattern, Drop-In		NONE DETECTED
08	M002	2 x 4 Ceiling Tile Wormhole Pattern, Drop-In		NONE DETECTED
09	M003	Solid Vinyl Floor (Pink)	Training Room 106D	NONE DETECTED
10	M003	Solid Vinyl Floor (Pink)	Training Room 106D	NONE DETECTED
11	M003	Solid Vinyl Floor (Pink)	Training Room 106D	NONE DETECTED
12	S001	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
13	S001	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
14	S001	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
15	S001	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
16	S001	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
18	M004	Wallboard w/Joint Compound		NONE DETECTED
19	M004	Wallboard w/Joint Compound		NONE DETECTED
20	M004	Wallboard w/Joint Compound		NONE DETECTED
21	M004	Wallboard w/Joint Compound		NONE DETECTED
22	M004	Wallboard w/Joint Compound		NONE DETECTED

**Table 4**  
**Bulk Sample Analytical Results by Homogeneous Area Number**

*Southern Utah University*  
*Eccles Coliseum*  
*Cedar City, Utah*

<b>Homogeneous Area Number</b>	<b>Sample Number</b>	<b>Material Sampled</b>	<b>Sample Location</b>	<b>Analytical Results</b>
M001	01	12" Floor Tile White w/Gray Streaks, No Mastic	Hallway 106A	NONE DETECTED
M001	02	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
M001	03	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
M001	04	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
M001	05	12" Floor Tile White w/Gray Streaks, No Mastic	Room 106	NONE DETECTED
M002	06	2 x 4 Ceiling Tile Wormhole Pattern, Drop-In		NONE DETECTED
M002	07	2 x 4 Ceiling Tile Wormhole Pattern, Drop-In		NONE DETECTED
M002	08	2 x 4 Ceiling Tile Wormhole Pattern, Drop-In		NONE DETECTED
M003	09	Solid Vinyl Floor (Pink)	Training Room 106D	NONE DETECTED
M003	10	Solid Vinyl Floor (Pink)	Training Room 106D	NONE DETECTED
M003	11	Solid Vinyl Floor (Pink)	Training Room 106D	NONE DETECTED
S001	12	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
S001	13	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
S001	14	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
S001	15	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
S001	16	Textured Ceiling Material	Exterior Porch, Level 300	NONE DETECTED
M004	18	Wallboard w/Joint Compound		NONE DETECTED
M004	19	Wallboard w/Joint Compound		NONE DETECTED
M004	20	Wallboard w/Joint Compound		NONE DETECTED
M004	21	Wallboard w/Joint Compound		NONE DETECTED
M004	22	Wallboard w/Joint Compound		NONE DETECTED

**Table 5**  
**Damage and Hazard Assessment by Homogeneous Area**

*Southern Utah University*  
*Eccles Coliseum*  
*Cedar City, Utah*

Area Number	Material Type	Substrate	Assessment Category	Damage	Accessibility	Disturbance Potential
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*NO ACM'S WERE IDENTIFIED AT THIS LOCATION*

Note:      Assessment Categories:

- 1-Damaged or significantly damaged Thermal System Insulation ACM
- 2-Damaged friable surfacing ACM
- 3-Significantly damaged friable surfacing ACM
- 4-Damaged or significantly damaged friable miscellaneous ACM
- 5-ACM with potential for damage
- 6-ACM with potential for significant damage
- 7-Any remaining friable ACM or friable suspect ACM
- X-Not applicable (material is non-friable surfacing or miscellaneous)

**Table 6**  
**Estimated Abatement Costs by Homogeneous Area**

*Southern Utah University*  
*Eccles Coliseum*  
*Cedar City, Utah*

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<b>Homogeneous Area Number</b>	<b>Material</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Extended Cost</b>
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*NO ACM'S WERE IDENTIFIED AT THIS LOCATION*

## Table 7

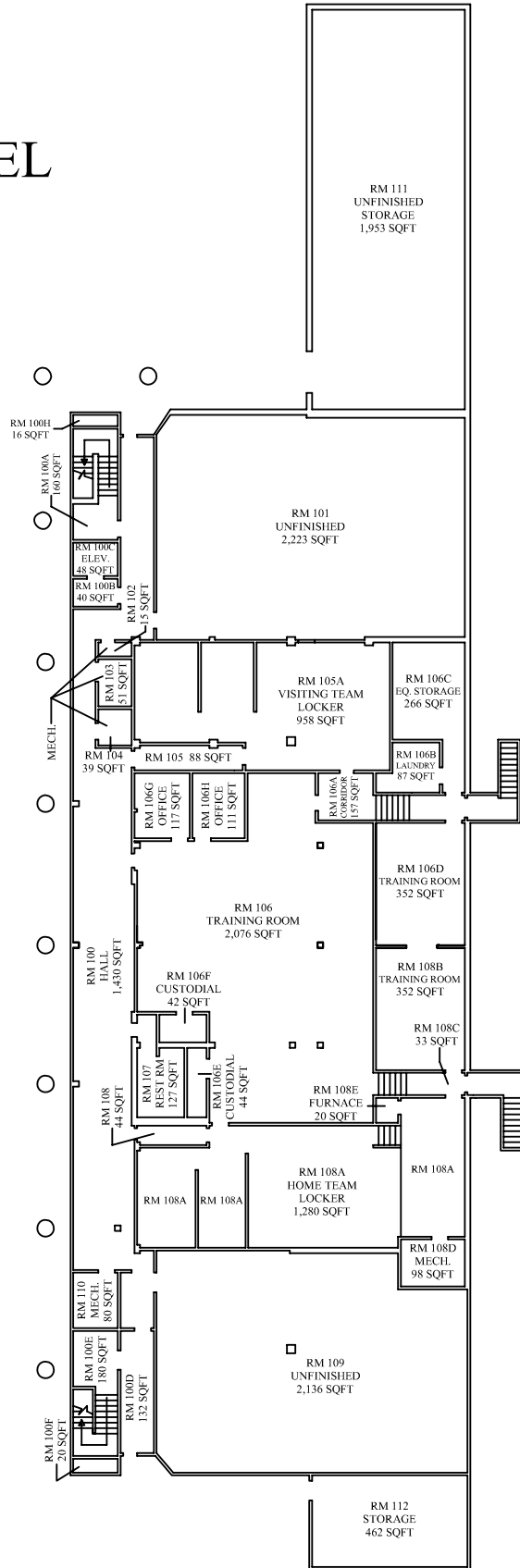
### *Material Description, Abatement Cost, Amount, Location by Functional Space, Hazardous Rank*

*Southern Utah University  
Eccles Coliseum  
Cedar City, Utah*

<b>Homogeneous Area Number</b>	<b>Material Description</b>	<b>Quantity</b>	<b>% Asbestos</b>	<b>Cost</b>	<b>Condition</b>	<b>Disturbance Potential</b>	<b>Hazardous Rank</b>
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*NO ACM'S WERE IDENTIFIED AT THIS LOCATION*

# 100 LEVEL

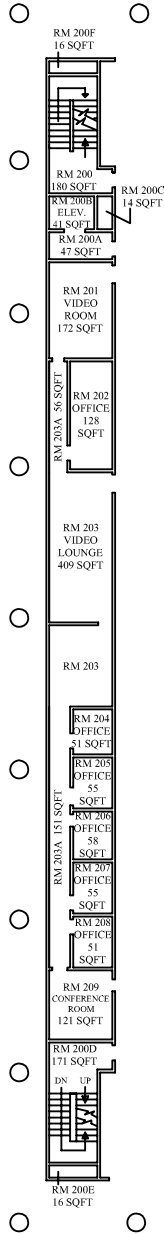


## SOUTHERN UTAH UNIVERSITY FACILITIES MANAGEMENT SPACE PLANNING

ECCLES COLISEUM

STATE BLD NUM:6677
SUU BLD NUM:115
DATE:02/2003
SHEET: 1 OF 3
SCALE: 1/32" = 1'

# 200 LEVEL



## SOUTHERN UTAH UNIVERSITY FACILITIES MANAGEMENT SPACE PLANNING

ECCLES COLISEUM

STATE BLD NUM:6677

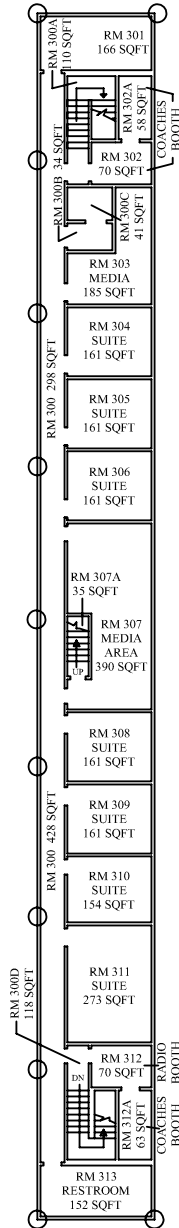
SUU BLD NUM:115

DATE:02/2003

SHEET:2 OF 3

SCALE:1/32" = 1'

# 300 LEVEL



## SOUTHERN UTAH UNIVERSITY FACILITIES MANAGEMENT SPACE PLANNING

ECCLES COLISEUM

STATE BLD NUM:6677

SUU BLD NUM:115

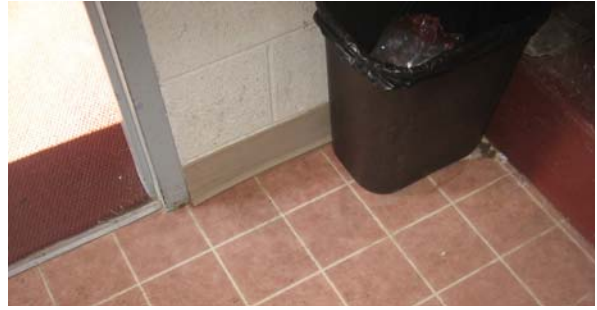
DATE:02/2003

SHEET:3 OF 3

SCALE:1/32" = 1'



**Photograph 1- M001**  
12" Floor Tile, White w/Gray Streaks, No Mastic  
Hallway 106A, Room 106



**Photograph 2-M003**  
Solid Vinyl Floor  
Training Room 106 D



**Photograph 3- S001**  
Textured Ceiling Material  
Exterior Porch, Level 300



**Photograph 4- Coliseum Exterior**

# DIXON INFORMATION INC.

MICROSCOPY, ASBESTOS ANALYSIS & CONSULTING

A.I.H.A. ACCREDITED LABORATORY # 101579

NVLAP LAB CODE 101012-0

August 20, 2007

Jeff Rowland  
Rowland Consulting, Inc.  
7301 Paddington Road  
West Jordan, UT 84084

Ref: Batch # 75603, Lab # ROW5973 - ROW5993  
Received August 20, 2007  
Test report  
Southern Utah University - ECCLES COLISEUM  
Cedar City, Utah  
Sampled by Jeff Rowland, 08/17/07

Dear Mr. Rowland:

Samples ROW5973 through ROW5993 have been analyzed by visual estimation based on EPA-600/M4-82-020 December 1982 optical microscopy test method. Appendix "A" contains statements which an accredited laboratory must make to meet the requirements of accrediting agencies. It also contains additional information about the method of analysis. This analysis is accredited by NVLAP. Appendix "A" must be included as an essential part of this test report.

This report may be reproduced but all reproduction must be in full unless written approval is received from the laboratory for partial reproduction. The results of analysis are as follows:

Lab ROW5973, Field 01 M001 - 12" Floor Tile (White with gray streaks)

This is a off-white plastic and limestone tile with yellow resin mastic. **Asbestos is none detected.**

The tile is 99% of the sample. The mastic is 1% of the sample.

Lab ROW5974, Field 02 M001 - 12" Floor Tile (White with gray streaks)

This sample is an off-white plastic and limestone tile with a trace of debris. **Asbestos is none detected.**

Lab ROW5975, Field 03 M001 - 12" Floor Tile (White with gray streaks)

This is an off-white plastic and limestone tile with yellow resin mastic with a trace of debris. **Asbestos is none detected.**

The tile is 98% of the sample. The mastic is 2% of the sample.

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Lab ROW5976, Field 04 M001 - 12" Floor Tile (White with gray streaks)

This is an off-white plastic and limestone tile. **Asbestos is none detected.**

**Note:** No mastic.

Lab ROW5977, Field 05 M001 - 12" Floor Tile (White with gray streaks)

This is an off-white plastic and limestone tile. **Asbestos is none detected.**

**Note:** No mastic.

Lab ROW5978, Field 06 M002 - 2x4 Ceiling Tile (Wormhole Pattern)

This is a light gray sample with perlite, 30% plant fiber, and 20% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 2% of the sample.

Lab ROW5979, Field 07 M002 - 2x4 Ceiling Tile (Wormhole Pattern)

This is a light gray sample with perlite, 50% plant fiber, and 10% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 2% of the sample.

Lab ROW5980, Field 08 M002 - 2x4 Ceiling Tile (Wormhole Pattern)

This is a light gray sample with perlite, 50% plant fiber, and 10% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 2% of the sample.

Lab ROW5981, Field 09 M003 - Sheet Vinyl Flooring (Pink)

This sample has a top layer of pink plastic, a middle layer of white foam plastic, and a bottom layer of 5% plant fiber, and 5% fiberglass in gray binder.

The top layer is 30% of the sample. The middle layer is 30% of the sample. The bottom layer is 40% of the sample. **Asbestos is none detected.**

**Note:** This sample is coated with debris.

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Lab ROW5982, Field 10 M003 - Sheet Vinyl Flooring (Pink)

This sample has a top layer of pink plastic, a middle layer of white foam plastic, and a bottom layer of 5% plant fiber, and 5% fiberglass in gray binder. **Asbestos is none detected.**

The top layer is 30% of the sample. The middle layer is 30% of the sample. The bottom layer is 40% of the sample.

Lab ROW5983, Field 11 M003 - Sheet Vinyl Flooring (Pink)

This sample contains four types of material: The first type is pink plastic; the second type is white foam plastic; the third type is 5% plant fiber and 5% fiberglass in gray binder; the fourth type is 1% organic fiber in clear resin mastic. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 30% of the sample. The second type is 30% of the sample. The third type is 39% of the sample. The fourth type is 1% of the sample.

Lab ROW5984, Field 12 S001 - Textured Ceiling Material (TCM)

This sample contains two types of material: The first type is off-white paint; the second type is 1% fiberglass in off-white limestone plaster with foam plastic and fine mica flakes. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 95% of the sample.

Lab ROW5985, Field 13 S001 - Textured Ceiling Material (TCM)

This sample contains three types of material: The first type is off-white paint; the second type is off-white limestone plaster with foam plastic and fine mica flakes; the third type is crosswoven fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 90% of the sample. The third type is 5% of the sample.

Lab ROW5986, Field 14 S001 - Textured Ceiling Material (TCM)

This sample contains three types of material: The first type is off-white paint; the second type is off-white limestone plaster with foam plastic and vermiculite; the third type is crosswoven fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 85% of the sample. The third type is 10% of the sample.

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Lab ROW5987, Field 15 S001 - Textured Ceiling Material (TCM)

This sample contains three types of material: The first type is off-white paint; the second type is off-white plaster with foam plastic and fine mica flakes; the third type is crosswoven fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 90% of the sample. The third type is 5% of the sample.

Lab ROW5988, Field 16 S001 - Textured Ceiling Material (TCM)

This sample contains three types of material: The first type is off-white paint; the second type is off-white plaster with foam plastic and fine mica flakes; the third type is crosswoven fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 90% of the sample. The third type is 5% of the sample.

Lab ROW5989, Field 18 M004 - Wallboard with Joint Compound

This sample contains white paint, white micaceous limestone joint compound with perlite, brown plant fiber paper, and white gypsum plaster with 2% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 2% of the sample. The joint compound is 10% of the sample. The plant fiber paper is 5% of the sample. The white gypsum plaster is 83% of the sample.

Lab ROW5990, Field 19 M004 - Wallboard with Joint Compound

This sample contains white paint, white micaceous limestone joint compound with perlite, brown plant fiber paper, and white gypsum plaster with 2% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 5% of the sample. The joint compound is 30% of the sample. The plant fiber paper is 15% of the sample. The white gypsum plaster is 50% of the sample.

Lab ROW5991, Field 20 M004 - Wallboard with Joint Compound

This sample contains white paint, brown plant fiber paper, and white gypsum plaster with 2% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 5% of the sample. The plant fiber paper is 10% of the sample. The white gypsum plaster is 85% of the sample.

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Lab ROW5992, Field 21 M004 - Wallboard with Joint Compound

This sample contains white paint, white micaceous limestone joint compound with perlite, brown plant fiber paper, and white gypsum plaster with 2% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 3% of the sample. The joint compound is 5% of the sample. The plant fiber paper is 10% of the sample. The white gypsum plaster is 82% of the sample.

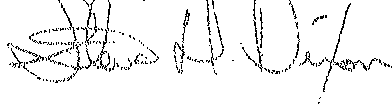
Lab ROW5993, Field 22 M004 - Wallboard with Joint Compound

This sample contains white paint, white micaceous limestone joint compound with perlite, brown plant fiber paper, and white gypsum plaster with 2% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 3% of the sample. The joint compound is 10% of the sample. The plant fiber paper is 5% of the sample. The white gypsum plaster is 82% of the sample.

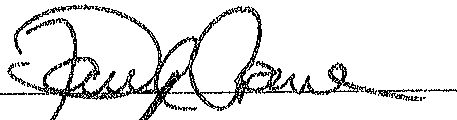
In order to be sure reagents and tools used for analysis are not contaminated with asbestos, blanks are tested. Asbestos was none detected in the blanks tested with this bulk sample set.

Very truly yours,

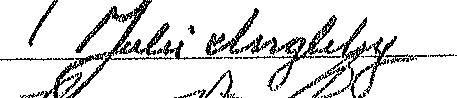


Steve H. Dixon, President

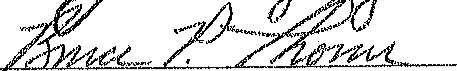
Analyst: Paul Crane



Analyst: Julie Ingleby



Analyst: Bruce P. Thorne



Date Analyzed: 08/22/07

# RUSH

75603

## ROWLAND CONSULTING, INC. ASBESTOS - LEAD PAINT

### BULK ANALYTICAL REQUEST AND CHAIN OF CUSTODY

TAT: RUSH

PAGE: 1 of 1

Sample Location: SOUTHERN UTAH UNIVERSITY - ECCLES COLISEUM  
CEDAR CITY, UT

Sampled by: Jeff Rowland

Date: 8/20/07

Report and Invoice to be sent to:  
**ROWLAND CONSULTING, INC.**  
STOP/GO GROUPED SAMPLES

SAMPLE ID#	SAMPLE DESCRIPTION/LOCATION	DATE	LAB #
01	M001 - 12" FLOOR TILE (WHITE W/GRAY STRIPE)	8/17/07	5973
02	}		5974
03		5975	
04		5976	
05		5977	
06		M002 - 2x4 CEILING TILE (WORMHOLE PATTERN)	
07	}		5979
08		5980	
09	M003 - SILVER WOOD FLOORING (PINE)		5981
10	}		5982
11		5983	
12	S001 - TEXTURED CEILING MATERIAL (TCM)		5984
13	}		5985
14		5986	
15		5987	
16		5988	
17		M004 - WALL BOARD W/TOWN COMPOUND	
18	}		5990
19		5991	
20		5992	
21		5993	
22			

### STOP/GO GROUPED SAMPLES

#### CHAIN OF CUSTODY

Submitted by: Jeff Rowland Date/Time: 8/20/07 @ 1345

Revd by lab: Julianne Hays Date/Time: 8-20-07 1347

Revd by Analyst: James P. Turner Date/Time: 8-21-07 1200

Returned by lab: \_\_\_\_\_ Date/Time: \_\_\_\_\_

\*NO SAMPLE #17

# LEAD-BASED PAINT INSPECTION

*Southern Utah University  
Eccles Coliseum  
Cedar City, Utah*



August 17, 2007

**Prepared for:**

Mr. Robert Anderson  
HAZMAT Manager  
Division of Facilities Construction & Management  
4110 State Office Building  
Salt Lake City, Utah 84114

**Prepared by:**

**ROWLAND CONSULTING, INC.**  
7301 South Paddington Road  
West Jordan, Utah 84084  
OFFICE 801.255.2800 FAX 801.569.2501

# LEAD-BASED PAINT INSPECTION

*Southern Utah University  
Eccles Coliseum  
Cedar City, Utah*

## **Introduction**

On August 25, 2007, **ROWLAND CONSULTING, INC.** performed a Lead-Based Paint (LBP) survey of the Southern Utah University Eccles Coliseum, Cedar City, Utah. The purpose of the survey was to identify the existence, extent and condition of LBP on interior/exterior surfaces of the building. Measurements for lead in paint were made using a *Radiation Monitoring Devices, Inc. (RMD) LPA-1 X-ray Fluorescence (XRF) Spectrum Analyzer*. Chip sampling and laboratory analysis was not performed unless it was required in accordance with the spectrum analyzers current performance characteristics sheet. However, **ROWLAND CONSULTING, INC.** recommends confirmatory chip sampling of XRF measurements between 0.0-0.3 prior to planned renovation activities.

The survey was conducted by Jeff Rowland with **ROWLAND CONSULTING, INC.**, in West Jordan, Utah. Jeff Rowland has completed Lead Inspector Training through the University of Utah Rocky Mountain Center For Occupational And Environmental Health Lead Training Facility, an EPA-sponsored Regional Lead Training Center, and is certified by the State of Utah, Division of Air Quality, as a Lead Inspector.

The U.S. Department of housing and Urban Development (HUD) *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in housing* (HUD Guidelines), Chapter7: Lead-Based Paint Inspection, 1997 Revision, were generally followed for this survey, with modifications appropriate for a non-residential building.

## **Lead-Based Paint Definitions**

HUD defines “lead-based paint” as any coating that has a lead concentration of 1.0 milligram of lead per square centimeter ( $1.0 \text{ mg/cm}^2$ ) or greater, or if the lead concentration is greater than 0.5% by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 600 ppm (0.06% by weight). In 1978, the CPSC banned the sale of lead-based paint to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in the residential setting. By contrast, the mission of the Occupational Safety and Health Administration (OSHA) with respect to lead-containing paint, is to protect workers

during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint have lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed.

### **Paint Sampling Methodologies**

Direct measurements of lead in paint were made using a Radiation Monitoring Devices, Inc. (RMD) *LPA-1 X-ray Fluorescence (XRF) Spectrum Analyzer* (serial number 2311). The LPA-1 Lead Paint Analyzer non-destructively measures lead concentrations of painted surfaces, regardless of the number of layers present. These instruments were developed specifically for addressing lead-based paint issues in housing and their use in identifying potential exposure hazards for renovation or construction work must be augmented by selective collection and analysis of physical paint chip samples.

The newer XRF instruments are capable of identifying lead in paint at concentrations of about 0.3 milligram per square centimeter ( $\text{mg}/\text{cm}^2$ ) or greater. When lead concentrations are lower than this, the instruments are not capable of making accurate, reliable measurements, and the reported lead concentration may underestimate or overestimate the actual lead concentration in the paint. Therefore, an XRF readings of 0.4  $\text{mg}/\text{cm}^2$  or greater may be considered lead-containing from an OSHA perspective, and any readings of 0.3  $\text{mg}/\text{cm}^2$  or less should be confirmed by the collection and laboratory analysis of paint chip samples, or assumed to be positive for lead.

Where paint chip samples are necessary, samples are collected according to the protocol specified in the HUD Guidelines. The samples are then submitted to a laboratory recognized under the EPA's National Lead Laboratory Accreditation Program (NLLAP) for analysis by flame atomic absorption spectrophotometry according to American Society of Testing and Materials (ASTM) method ASTM-E 1645.

### **XRF Calibration**

Before beginning the testing and after the testing was completed, the internal calibration of the LPA-1 was checked by taking three consecutive measurements on a National Institute for Standards and Technology (NIST) standard with a known concentration of lead. Three more readings were taken on a lead-free wood block. These calibration checks are reported within the XRF data tables found in Appendix A of this report and are maintained in a file at **ROWLAND CONSULTING, INC.** to detect changes in instrument performance over time.

## **Lead Paint Inspection Data Tables**

The XRF instrument generates a unique set of data tables for each inspection. The Sequential Report lists the measurements made throughout the property in sequential order, from the first measurement to the last.

**Results and Conclusions**

***NO DETECTABLE MEASUREMENTS OF LEAD WERE IDENTIFIED IN/ON THIS FACILITY.***

**Table 1  
XRF Sampling Results**

<b>Sample No.</b>	<b>Area of Building</b>	<b>Color / Condition</b>	<b>Sample Location / Substrate</b>	<b>XRF Results Mg/cm<sup>2</sup></b>
01TCM				CALIBRATION 0.7
02 TCM				CALIBRATION 0.6
03 TCM				CALIBRATION 0.6
04 QM				CALIBRATION 0.1
05 QM				CALIBRATION -0.3
06 QM				CALIBRATION -0.3
07	Exterior Ticket Booth	White/Good	West Wall, Block	-0.2
08	Exterior Ticket Booth	Gray/Good	Door/Metal	-0.1
09	Interior Corridor	Red/Good	Floor/Concrete	-0.1
10	Interior Corridor	Red/Good	Floor/Concrete	-0.1
11	First Floor	Gray/Good	Elevator Door/Metal	-0.2
12	First Floor Training Room Corridor	White/Good	East Wall/Wall Board	-0.1
13	First Floor Training Room Corridor	White/Good	West Wall/Wall Board	-0.4
14	Corridor To Lockers	Red/Good	South Wall/Block	-0.1
15	First Floor Electrical Room	Gray/Good	Floor/Concrete	-0.2
16	Southwest Stairs	Gray/Good	Stair/Concrete	-0.4
17	Southwest Stairs	Yellow/Good	Stair/Concrete	-0.4
18	Exterior Bleachers	Gray/Good	West Wall/Metal	-0.2
19	Exterior Bleachers	Black/Good	West Door/Metal	-0.1
20	Bleacher Seat Back	Red/Good	Seat/Metal	-0.8

**Table 1**  
**XRF Sampling Results**  
**(Continued)**

21	Exterior Bleachers	Gray/Good	Floor/Concrete	-0.1
22	Exterior Bleachers	Black/Good	Hand Rail/Metal	-0.2
23	Football Field	Gray/Good	SW Light Pole/Metal	-0.3
24	Football Field	White/Good	South Goal Post/Metal	-0.0
25	Football Field	White/Good	North Goal Post/Metal	-0.1
26	Football Field	Gray/Good	NW Light Pole/Metal	-0.1
27	Football Field	Gray/Good	SE Light Pole/Metal	-0.1
28	Football Field	Gray/Good	NE Light Pole/Metal	-0.1
29	Score Board/North End	Gray/Good	Support Beam/Metal	-0.1
30	Score Board/North End	Gray/Good	Support Beam/Metal	-0.1
31	Bleacher Seats	Clear/Good	West Seat/Metal	-0.8
32	Curbside West	Red/Good	Curb/Concrete	-0.3

The XRF instrument indicated that lead is **not present** in/on painted interior/exterior surfaces.

The OSHA Lead in Construction Standard (29 CFR 1926.62) shall apply to any construction work (including renovation and demolition) that may disturb those surfaces. The standard requires, among other things, the following:

- Initial training on the hazards of lead exposure, proper work practices, respiratory protection, and other topics;
- An initial exposure assessment, by air monitoring, to determine the lead exposure assessment, until sample analysis indicates exposures below the Permissible Exposure Limit;
- Hand washing facilities, designated clean change areas, and designated eating areas.

In addition to the above considerations, the presence of lead in demolition debris has the potential to impose limitations on where and how the debris may be disposed. The Resource Conservation and Recovery Act (RCRA), Subtitles C and D, require that the waste must be analyzed to determine the amount of leachable lead present. The type of test to be performed on the waste is the Toxicity Characteristic Leaching Procedure (TCLP) for lead, and the results of this test will determine whether the material must be handled and disposed of as hazardous waste. For structures containing large amounts of lead-containing paint, significant potential for failing the TCLP exists.

# OTHER HAZARDOUS MATERIALS

*Southern Utah University  
Eccles Coliseum  
Cedar City, Utah*

Hazardous materials requiring proper removal and disposal identified at Southern Utah University Eccles Coliseum are as follows:

<b>Material</b>	<b>Quantity</b>	<b>Unit Cost</b>
Fluorescent Light Tubes	~250 each	\$1.50/ln. ft.

NOTE: No PCB Light Ballasts Observed

DFCM policy requires the items above to be removed and disposed of at a facility approved to accept such waste prior to demolition. The cost estimated to transport and dispose of these hazardous materials is approximately **\$1,500.00**. This cost estimate is based on industry standard unit prices. The unit prices include transportation and disposal only. This estimate does not include removal, design, or management fees associated with dismantling and packaging the materials.