
RFP# 24-0301 - General Contractor Services for X-Ray Room Upgrades

May 16, 2024

ADDENDUM #1

- Please confirm the equipment vendor will be responsible for removing equipment, moving new equipment in, and mounting equipment.
 - The x-ray equipment vendor will remove existing equipment prior to GC taking over the site, move new equipment in and install the equipment. GC will be responsible to coordinate during these activities.
- Do all three projects run concurrently?
 - Yes, the intent is to run the projects concurrently.
- Please confirm data & cabling scope will be the responsibility of JPS.
 - Data by JPS, however conduit, ring and string by GC.
- Please provide the existing shielding reports.
 - Attached.
- Please confirm that the Architect has already submitted a request for permits and GC is responsible for payment & picking up the permit.
 - Correct. Three separate permit requests have been submitted. GC to pay fees and pick up.
- Please confirm the Pre-tab and final test & balance will be the scope of GC.
 - Correct.
- Please confirm the signage will be the scope of GC.
 - Regulatory signage specific to x-ray areas are provided by JPS Radiology.
- Please confirm hard copies of the RFP will not be required, only email.
 - Correct, only electronic submission will be accepted.
- What will the liquidated damages be for each project?
 - \$250/day.
- How many working days should we include in our schedule for Siemens installation of new equipment for each location?
 - 3 weeks (15 working days).
- Clarification:
 - All 3 locations are to demo existing flooring and install new. Install new VCT at the Arlington locations and Seamless (w/ rubber base) at ED.

LIMITED PRE-RENOVATION ASBESTOS INSPECTION

JPS – Bardin Road Clinic X-ray Room

1741 East Bardin Road

Arlington, TX

16-Feb-2023

LCA 221215



JPS Health Network

Ms. Susan O'Donnell, MBA-HCM

1500 South Main Street

Fort Worth, TX 76104

Prepared by:

LCA Environmental, Inc.

TDSHS Asbestos Consultant Agency No. 100285

13221 Bee Street

Dallas, Texas 75234

Phone: (972) 241-6680, FAX: (972) 241-6689

Inspected by: Robert P. Lauer

TDSHS AI License # 602985

Prepared by: Alejandro Vasquez

TDSHS AI License # 603756

Reviewed by: Edward B. Barganier

TDSHS AI License # 105519

Robert P. Lauer

Alejandro Vasquez

Edward B. Barganier

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1.0 EXECUTIVE SUMMARY

LCA was retained by JPS Health Network (Client) to conduct pre-renovation sampling of suspect asbestos-containing building materials (ACBM) at the following Project Site:

Facility: JPS – Bardin Road Clinic
Area: X-ray Room

Street Address: 1741 East Bardin Road
City, State: Arlington, TX

The intent of the asbestos sampling was to specifically identify, locate and quantify the extent and occurrence of accessible suspect asbestos-containing building material (ACBM) that would be impacted by planned renovations pursuant to the requirements of the Texas Asbestos Health Protection Rules (TAHPR) and the National Emission Standard for Hazardous Air Pollutants (NESHAP).

Sampling date: 1/30/2023
Asbestos Inspector: Robert P. Lauer
TDSHS AI 602985

Summary of the results:

- 5 Suspect ACBM homogeneous areas (HAs) identified and sampled.
- 15 Total bulk samples collected.
- 15 Total bulk samples analyzed.
- **Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).**

Sample analysis was performed utilizing the U.S. EPA's recommended analytical method of polarized light microscopy (PLM) with dispersion staining. Table 1 Section 3.6 lists those suspect materials analyzed for the presence of asbestos and those materials containing asbestos. The information contained in this report summarizes the sampling and analytical methodologies, site description, materials found to contain asbestos, quantities of confirmed ACBM, sample analytical results, and qualifications of personnel.

2.0 SITE DESCRIPTION

The Project Site consisted of one X-Ray room. Finishes observed included: lay-in ceiling panels, drywall walls, cove base, vinyl flooring.

3.0 ASBESTOS-CONTAINING BUILDING MATERIAL SAMPLING

3.1 The Intent of Sampling

In anticipation of renovations, samples were collected from suspect ACBM to identify the presence of ACBM at the Project Site which might be impacted by planned renovations. This work was conducted for the Client to satisfy the requirements of the NESHAP.

3.2 Limitations of Sampling

The survey scope of work was limited to accessible building materials which would be impacted by planned renovations of the Project Site based on information provided by the Client both prior to and at the time of the site visit, including a floor plan provided by Client.

Concrete, glass, fiberglass, metal, rubber, and wood were not considered suspect ACBM and were not sampled during this inspection.

3.3 Previous Inspection Reports

LCA has previously conducted three limited pre-renovation inspections for ACBM at this address: 2008 (LCA Project 071218), 2015 (LCA Project 150105) and 2020 (LCA Project 200810). No ACBM was identified in any of these inspections. However, these inspections were limited in nature and did not address the materials/area addressed in this report. Other than work performed by LCA, LCA has not been provided with any previous inspection reports.

3.4 Sampling Methodology

Sample collection began with identification of homogeneous areas (HA) of suspect ACBM in general accordance with the EPA's Asbestos Hazard Emergency Response Act (AHERA) sampling protocol. Following consultation with a representative of the Client regarding the extent of planned renovations, LCA's inspector walked through the structure identifying each type of suspect ACBM and corresponding HA. Each identified HA was recorded on the sample log. A specific number of samples were collected based on the type and quantity of suspect ACBMs in general compliance with the AHERA with a minimum of 3 samples per HA in accordance with the TAHPR). To the extent feasible, sampling was completed for each HA before collecting samples for another HA. Each sample was identified with a unique sample number. This unique sample number was recorded in the sample log.

Each sampling location was first wetted sufficiently to prevent or minimize fiber release during sampling. The appropriate sampling instrument was used to penetrate and extract all layers of the suspect ACBM. The extracted sample was immediately placed into a sealed container labeled with its unique sample number and its location was plotted on the field sketch. A listing of the laboratory analytical results is in Appendix C.

3.5 Qualifications of Consultants, Laboratories, and Analytical Methodology

Consultant Agency: LCA Environmental, Inc.	License # 100285
Asbestos Individual Consultant: Edward B. Barganier	License # 105519
Asbestos Inspector: Robert P. Lauer	License # 602985

Please refer to Appendix A, Inspector Qualifications, for copies of the required training and certification credentials. The samples collected were delivered under chain-of-custody to Moody Labs, LLC (Moody).

Moody is fully accredited to perform bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). The laboratory is also licensed by the appropriate state agency. All bulk samples were analyzed for asbestos content using EPA Method 600/R-93-116: "Determination of Asbestos in Bulk Samples by PLM and Dispersion Staining."

Asbestos Laboratory: Moody Labs, LLC
2051 Valley View Lane
Farmers Branch, Texas 75234

1/30/2023 Samples collected.

1/30/2023 Samples delivered to laboratory.

Laboratory QC Policy

- Rigorous onsite quality audits by NVLAP inspectors every two years for both PLM and TEM (transmission electron microscopy) as a compliance criterion for continued accreditation.
- Continued participation and proficiency in the NVLAP Proficiency Sample program for bulk asbestos by PLM and airborne asbestos by TEM.
- Continued participation and proficiency in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) program for airborne asbestos.
- Continued participation and proficiency in the AIHA Bulk Analysis QC program for bulk analysis.
- Thorough, detailed quality manuals are maintained for each area of analysis [asbestos by PLM, asbestos by TEM, and asbestos by PCM (phase contrast microscopy)]. These quality manuals and the quality systems they detail are fully compliant with ISO/IEC 17025:1999, and the relevant requirements of ISO 9002:1994.

3.6 Summary of Findings

Table 1 summarizes the ACBM identified at the Project Site. Asbestos inspector qualifications are provided in Appendix A. The laboratory report and bulk sample chains of custody can be found in Appendix B.

Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

3.7 Limitations

The findings and opinions of this asbestos inspection are not scientific certainties but rather opinions based on our professional judgment concerning the significance of the data gathered during the course of the asbestos inspection. LCA does not represent that the Project Site contains no hazardous or toxic materials, wastes, or other latent conditions beyond the observations made by LCA during the asbestos inspection and the information obtained from the other activities in the scope of work.

LCA is not responsible for any omissions or inaccuracies of any sort that arise as a result of the Client's failure or inability to provide Project Site information or data. LCA makes no warranties or representations, expressed or implied, beyond those expressed in the Standard Contract for Services and this asbestos inspection report.

This asbestos inspection report has been prepared for the exclusive use of the Client and its direct representatives and associates to assist with their efforts to identify potential environmental concerns connected with the Project Site. LCA does not authorize the use of this asbestos inspection report for any purpose other than that for which it is prepared.

Only those ACBM that are specifically discussed in this limited asbestos inspection report were identified or addressed during this project. It is possible that other ACBM may exist at this Project Site in areas that were not seen or were concealed or otherwise inaccessible (e.g., behind walls, above ceilings, inside old air ducts, etc.). It is also possible that other accessible ACBM may exist at this Project Site in areas that were not identified by the Client as subject to proposed renovation and/or demolition. Prior to the disturbance of materials not discussed in this report, the materials should be inspected/sampled by a TDSHS-licensed Asbestos Inspector. The identification or addressing of other potential ACBM was outside the scope of service of this contract. LCA assumes no responsibility or liability for any ACBM at the Project Site.

3.8 Conclusions and Recommendations

Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

Prior to the disturbance of materials not discussed in this report, such materials should be inspected/sampled by a TDSHS-licensed Asbestos Inspector.

221215

1741 East Bardin Road

LCA Environmental, Inc.

TABLE 1 - SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING BUILDING MATERIALS

Facility: JPS – Bardin Road Clinic
 Area: X-ray Room
 Address: 1741 East Bardin Road
 Arlington, TX

Sample Numbers	HA#	Material Description of Homogeneous Area	Type	Friability/Condition	General Location	Asbestos Content	Estimated Quantity
Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis.							

ACBM Type

- S - Surfacing
- TSI - Thermal System Insulation
- M - Miscellaneous

Friability

- F - Friable
- NF - Non-friable

Condition

- ND - No Damage
- D - Damage
- SD - Significant Damage

All material quantities are approximations based on a field review of the locations where ACBM was identified. Any person using these material quantities for cost estimating is responsible for verifying to their satisfaction the accuracy of quantities of ACBM detailed in this report.

221215

1741 East Bardin Road

LCA Environmental, Inc.

TABLE 2 - SUMMARY OF NON-ASBESTOS-CONTAINING BUILDING MATERIALS

Facility: JPS – Bardin Road Clinic

Area: X-ray Room

Address: 1741 East Bardin Road
Arlington, TX

Sample Numbers	HA#	Material Description of Homogeneous Area	General Location
1,2,3	1	2' x 4' Lay-in Ceiling Panels (Pin and Fissure)	X-Ray Room
4, 5, 6	2	Drywall Wall System (Orange Peel)	X-Ray Room
7, 8, 9	3	4" Vinyl Cove Base (Tan) w/ Mastic	X-Ray Room
10, 11, 12	4	12" x 12" Vinyl Composition Tile (Tan) w/ Mastic (Yellow)	X-Ray Room
13,14,15	5	12" x 12" Vinyl Composition Tile (Gray) w/ Mastic (Yellow)	X-Ray Room

No asbestos was detected in the above listed samples collected and submitted for laboratory analysis. The building materials listed in Table 2 are not ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

APPENDIX A

Inspector Qualifications



Texas Department of State Health Services

LYNN CLARK ASSOCIATES INC DBA
LCA ENVIRONMENTAL INC

is certified to perform as an

Asbestos Consultant Agency


in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1954 and Title 12, Texas Administrative Code, Chapter 295 relating to Texas Asbestos Health Protection, as long as this license is not suspended or revoked.



License Number: 100285

Expiration Date: 12/15/2023

Control Number: 97420


**John Hellerstedt, M.D.,
Commissioner of Health**

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

SEE BACK



**Texas Department of
State Health Services**

Asbestos Individual Consultant

EDWARD B BARGANIER

License No. 105519

Control No. 98142

Expiration Date: 9-Nov-2024





**Texas Department of
State Health Services**

Asbestos Inspector

ROBERT P LAUER

License No. 602985

Control No. 99932

Expiration Date: 18-May-2023



APPENDIX B

Laboratory Report(s)



PLM Summary Report

NVLAP Lab Code 102056-0

TDSHS License No. 300084

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

Client :	LCA Environmental, Inc. - Dallas, TX	Lab Job No. :	23B-01176	004
Project :	JPS, Bardin Rd. Clinic, X Ray	Report Date :	02/15/2023	
Project # :	Not Provided	Sample Date :	01/30/2023	
Identification :	Asbestos, Bulk Sample Analysis			
Test Method :	Polarized Light Microscopy / Dispersion Staining (PLM/DS) EPA Method 600 / R-93 / 116			

Page 1 of 2

On 1/30/2023, fifteen (15) bulk material samples were submitted by a representative of LCA Environmental, Inc. - Dallas, TX for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
1-1A	2 x 4 Lay-in Ceiling Panel (Pin and Fissure), Center, East	None Detected - Acoustic Tile
2-1B	2 x 4 Lay-in Ceiling Panel (Pin and Fissure), Center, Center	None Detected - Acoustic Tile
3-1C	2 x 4 Lay-in Ceiling Panel (Pin and Fissure), Center, West	None Detected - Acoustic Tile
4-2A	Drywall Wall System (Orange Peel), Divider Wall	None Detected - Drywall Material None Detected - Texture / Joint Cmpd
5-2B	Drywall Wall System (Orange Peel), South Wall West	None Detected - Drywall Material None Detected - Joint Compound None Detected - Texture
6-2C	Drywall Wall System (Orange Peel), North Wall at Door	None Detected - Drywall Material None Detected - Texture / Joint Cmpd
7-3A	4" Vinyl Cove Base (Tan) with Adhesive, Southwest Corner of Control Room	None Detected - Cove Base None Detected - Adhesive
8-3B	4" Vinyl Cove Base (Tan) with Adhesive, Divider Wall	None Detected - Cove Base None Detected - Adhesive
9-3C	4" Vinyl Cove Base (Tan) with Adhesive, North Wall at Door	None Detected - Cove Base None Detected - Adhesive
10-4A	12 x 12 Vinyl Composition Tile (Tan) with Mastic (Yellow), Southwest Corner of Control Room	None Detected - Floor Tile None Detected - Yellow Mastic
11-4B	12 x 12 Vinyl Composition Tile (Tan) with Mastic (Yellow), North at Door	None Detected - Floor Tile None Detected - Yellow Mastic
12-4C	12 x 12 Vinyl Composition Tile (Tan) with Mastic (Yellow), Southeast Corner	None Detected - Floor Tile None Detected - Yellow Mastic
13-5A	12 x 12 Vinyl Composition Tile (Grey) with Mastic (Yellow), Northeast Corner Control Room	None Detected - Floor Tile None Detected - Cream Mastic None Detected - Yellow Mastic
14-5B	12 x 12 Vinyl Composition Tile (Grey) with Mastic (Yellow), At Door	None Detected - Floor Tile None Detected - Cream Mastic None Detected - Yellow Mastic



PLM Summary Report

NVLAP Lab Code 102056-0

TDSHS License No. 300084

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

Client :	LCA Environmental, Inc. - Dallas, TX	Lab Job No. :	23B-01176	004
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Page 2 of 2

On 1/30/2023, fifteen (15) bulk material samples were submitted by a representative of LCA Environmental, Inc. - Dallas, TX for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
15-5C	12 x 12 Vinyl Composition Tile (Grey) with Mastic (Yellow), At Door	None Detected - Floor Tile None Detected - Cream Mastic None Detected - Yellow Mastic

These samples were analyzed by layers. Quantification, unless otherwise noted, is performed by calibrated visual estimate. The test report shall not be reproduced except in full without written approval of the laboratory. The results relate only to the items tested. These test results do not imply endorsement by NVLAP or any agency of the U.S. Government. Accredited by the National Voluntary Laboratory Accreditation Program for Bulk Asbestos Fiber Analysis under Lab Code 102056-0.



Analyst(s): Bruce Crabb, Willie Pruitt

Lab Manager : Heather Lopez

Lab Director : Bruce Crabb

Approved Signatory : *Heather Lopez*

Approved Signatory : *Bruce Crabb*

Thank you for choosing Moody Labs

Moody Labs
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
 Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 300084

Client : LCA Environmental, Inc. - Dallas, TX
 Project : JPS, Bardin Rd. Clinic, X Ray
 Project # : Not Provided

Lab Job No. : 23B-01176
 Report Date : 02/15/2023

004

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
1-1A	Acoustic Tile (Light Tan)	100%	Cellulose Fibers	80%	02/04	WP
			Perlite	20%		
2-1B	Acoustic Tile (Light Tan)	100%	Cellulose Fibers	80%	02/04	WP
			Perlite	20%		
3-1C	Acoustic Tile (Light Tan)	100%	Cellulose Fibers	80%	02/04	WP
			Perlite	20%		
4-2A	Drywall Material (White)	20%	Glass Wool Fibers	2%	02/04	WP
			Gypsum / Binders	98%		
	DW Paper Facing (Tan)	10%	Cellulose Fibers	100%		
	Texture / Joint Cmpd (White)	70%	Calcite / Talc / Binders	100%		
5-2B	Drywall Material (White)	25%	Glass Wool Fibers	2%	02/04	WP
			Gypsum / Binders	98%		
	DW Paper / Tape (Tan / White)	25%	Cellulose Fibers	100%		
	Joint Compound (White)	25%	Calcite / Talc / Binders	100%		
	Texture (White)	25%	Calcite / Talc / Binders	100%		
6-2C	Drywall Material (White)	55%	Glass Wool Fibers	2%	02/04	WP
			Gypsum / Binders	98%		
	DW Paper Facing (Tan)	10%	Cellulose Fibers	100%		
	Texture / Joint Cmpd (White)	35%	Calcite / Talc / Binders	100%		
7-3A	Cove Base (Tan)	97%	Calcite / Vinyl Binders	100%	02/04	WP
	Adhesive (Tan)	3%	Calcite	40%		
			Glue Binders	60%		
8-3B	Cove Base (Tan)	97%	Calcite / Vinyl Binders	100%	02/04	WP
	Adhesive (Tan)	3%	Calcite	40%		
			Glue Binders	60%		
9-3C	Cove Base (Tan)	97%	Calcite / Vinyl Binders	100%	02/04	WP
	Adhesive (Tan)	3%	Calcite	40%		
			Glue Binders	60%		

Moody Labs
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
 Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 300084

Client : LCA Environmental, Inc. - Dallas, TX
 Project : JPS, Bardin Rd. Clinic, X Ray
 Project # : Not Provided

Lab Job No. : 23B-01176
 Report Date : 02/15/2023

004

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
10-4A	Floor Tile (Tan)	99%	Calcite / Vinyl Binders	100%	02/04	WP
	Yellow Mastic (Yellow)	1%	Glue Binders	100%		
11-4B	Floor Tile (Tan)	99%	Calcite / Vinyl Binders	100%	02/04	WP
	Yellow Mastic (Yellow)	1%	Glue Binders	100%		
12-4C	Floor Tile (Tan)	99%	Calcite / Vinyl Binders	100%	02/04	WP
	Yellow Mastic (Yellow)	1%	Glue Binders	100%		
13-5A	Floor Tile (Grey)	96%	Calcite / Vinyl Binders	100%	02/04	WP
	Cream Mastic (Cream)	3%	Calcite	50%		
	Yellow Mastic (Yellow)	1%	Glue Binders	100%		
14-5B	Floor Tile (Grey)	96%	Calcite / Vinyl Binders	100%	02/15	BC
	Cream Mastic (Cream)	3%	Calcite	50%		
	Yellow Mastic (Yellow)	1%	Glue Binders	100%		
15-5C	Floor Tile (Grey)	96%	Calcite / Vinyl Binders	100%	02/04	WP
	Cream Mastic (Cream)	3%	Calcite	50%		
	Yellow Mastic (Yellow)	1%	Glue Binders	100%		



Chain of Custody

Lab Job # 238-01176 Pmm15
Lab Job #
Lab Job #

AFTER HOURS / WEEKEND WORK: YES NO
Please call in advance for after hours / immediate pricing & availability

Page 1 of 1

ASBESTOS PLM

Bulk Immediate 1 day 2 day 3 day 5 day
Analyze All Positive Stop

PCM Air (7400)

Immediate 1 day 2 day 3 day 5 day
Analyze Blanks Yes No

TOTAL DUST(0500/0600)

1 day 2 day

ASBESTOS TEM

Air AHERA Method Late Night* 6 hr 12 hr 24 hr
Air 7402 (Modified) 1 day 2 day 3 day
Bulk 1 day 2 day 3 day 5 day
Water/Wipe/Micro Vac 1 day 2 day 3 day
Analyze Blanks Yes No

*Late night analysis surcharges apply

MOLD

Direct Exam Immed 1 day 2 day 5 day
Standard Air Immed 1 day 2 day 5 day
Expanded Air Immed 1 day 2 day 5 day
Culture** 10-14 days 5 day
TPC w/ Yeast & Mold (TYMC)**
Analyze Blanks Yes No

BACTERIA**

Total Plate Count (TAMC) 2 day
Coliform & E. coli (P/A) 1 day
Staphylococcus aureus 1 day

Please note Bateria / Mold Culture turnarounds are approximate and subject to analytical requirements

OTHER:

Billing Company / City: LCA Environmental, Inc.

of Samples: 15 Sample Date: 1-30-23

Project: JPS - Bendin Rd Clinic - X Ray

Project #:

Contact Information: Name: Thomas Hale

Phone #: 972-241-6680 ext 134

E-mail Results to: hale@LCAenvironmental.com, barganier@LCAenvironmental.com

Mobile #: 214-403-8298

Invoice Address:

P.O. #:

Please review paperwork and samples before submitting to lab. Unsealed / improperly packaged / damaged / expired samples or excessive administrative requests may incur additional fees
Notes:

Table with 4 columns: Sample #, Sample Description, Vol. / Area (if applicable), Location / Notes. Contains 15 rows of sample data with handwritten descriptions and locations.

Released By: [Signature] Date/Time: 1-30-23 13:57 Received By: [Signature] Date/Time: 1/30/23 1:57 PM

LIMITED PRE-RENOVATION ASBESTOS INSPECTION

JPS – Medical Home SE Tarrant - X-ray Room

1050 W. Arkansas Lane

Arlington, TX

10-Feb-2023

LCA 221214



Prepared for:

JPS Health Network

Ms. Susan O'Donnell, MBA-HCM

1500 South Main Street

Fort Worth, TX 76104

Prepared by:

LCA Environmental, Inc.

TDSHS Asbestos Consultant Agency No. 100285

13221 Bee Street

Dallas, Texas 75234

Phone: (972) 241-6680, FAX: (972) 241-6689

Inspected by: Robert P. Lauer

TDSHS AI License # 602985

Prepared by: Alejandro Vasquez

TDSHS AI License # 603756

Reviewed by: Edward B. Barganier

TDSHS AI License # 105519

Handwritten signature of Robert P. Lauer in black ink.

Handwritten signature of Alejandro Vasquez in black ink.

Handwritten signature of Edward B. Barganier in blue ink.

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Area: X-ray Room

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City, State: Arlington, TX

The intent of the asbestos sampling was to specifically identify, locate and quantify the extent and occurrence of accessible suspect asbestos-containing building material (ACBM) that would be impacted by planned renovations pursuant to the requirements of the Texas Asbestos Health Protection Rules (TAHPR) and the National Emission Standard for Hazardous Air Pollutants (NESHAP).

Sampling date: 1/30/2023
Asbestos Inspector: Robert P. Lauer
TDSHS AI 602985

Summary of the results:

- 4 Suspect ACBM homogeneous areas (HAs) identified and sampled.
- 12 Total bulk samples collected.
- 12 Total bulk samples analyzed.
- **Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).**

Sample analysis was performed utilizing the U.S. EPA's recommended analytical method of polarized light microscopy (PLM) with dispersion staining. Table 1 Section 3.6 lists those suspect materials analyzed for the presence of asbestos and those materials containing asbestos. The information contained in this report summarizes the sampling and analytical methodologies, site description, materials found to contain asbestos, quantities of confirmed ACBM, sample analytical results, and qualifications of personnel.

2.0 SITE DESCRIPTION

The project site consisted of one X-ray room. Finishes observed included: lay-in ceiling panels, drywall walls, cove base, and vinyl flooring.

3.0 ASBESTOS-CONTAINING BUILDING MATERIAL SAMPLING

3.1 The Intent of Sampling

In anticipation of renovations, samples were collected from suspect ACBM to identify the presence of ACBM at the Project Site which might be impacted by planned renovations. This work was conducted for the Client to satisfy the requirements of the NESHAP.

3.2 Limitations of Sampling

The survey scope of work was limited to accessible building materials which would be impacted by planned renovations of the Project Site based on information provided by the Client both prior to and at the time of the site visit, including a floor plan provided by Client.

Concrete, glass, fiberglass, metal, rubber, and wood were not considered suspect ACBM and were not sampled during this inspection.

3.3 Previous Inspection Reports

LCA was not provided with previous inspection reports.

3.4 Sampling Methodology

Sample collection began with identification of homogeneous areas (HA) of suspect ACBM in general accordance with the EPA's Asbestos Hazard Emergency Response Act (AHERA) sampling protocol. Following consultation with a representative of the Client regarding the extent of planned renovations, LCA's inspector walked through the structure identifying each type of suspect ACBM and corresponding HA. Each identified HA was recorded on the sample log. A specific number of samples were collected based on the type and quantity of suspect ACBMs in general compliance with the AHERA with a minimum of 3 samples per HA in accordance with the TAHPR). To the extent feasible, sampling was completed for each HA before collecting samples for another HA. Each sample was identified with a unique sample number. This unique sample number was recorded in the sample log.

Each sampling location was first wetted sufficiently to prevent or minimize fiber release during sampling. The appropriate sampling instrument was used to penetrate and extract all layers of the suspect ACBM. The extracted sample was immediately placed into a sealed container labeled with its unique sample number and its location was plotted on the field sketch. A listing of the laboratory analytical results is in Appendix C.

3.5 Qualifications of Consultants, Laboratories, and Analytical Methodology

Consultant Agency: LCA Environmental, Inc.	License # 100285
Asbestos Individual Consultant: Edward B. Barganier	License # 105519
Asbestos Inspector: Robert P. Lauer	License # 602985

Please refer to Appendix A, Inspector Qualifications, for copies of the required training and certification credentials. The samples collected were delivered under chain-of-custody to Moody Labs, LLC (Moody).

Moody is fully accredited to perform bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). The laboratory is also licensed by the appropriate state agency. All bulk samples were analyzed for asbestos content using EPA Method 600/R-93-116: "Determination of Asbestos in Bulk Samples by PLM and Dispersion Staining."

Asbestos Laboratory: Moody Labs, LLC
2051 Valley View Lane
Farmers Branch, Texas 75234

1/30/2023 Samples collected.

1/30/2023 Samples delivered to laboratory.

Laboratory QC Policy

- Rigorous onsite quality audits by NVLAP inspectors every two years for both PLM and TEM (transmission electron microscopy) as a compliance criterion for continued accreditation.
- Continued participation and proficiency in the NVLAP Proficiency Sample program for bulk asbestos by PLM and airborne asbestos by TEM.
- Continued participation and proficiency in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) program for airborne asbestos.
- Continued participation and proficiency in the AIHA Bulk Analysis QC program for bulk analysis.
- Thorough, detailed quality manuals are maintained for each area of analysis [asbestos by PLM, asbestos by TEM, and asbestos by PCM (phase contrast microscopy)]. These quality manuals and the quality systems they detail are fully compliant with ISO/IEC 17025:1999, and the relevant requirements of ISO 9002:1994.

3.6 Summary of Findings

Table 1 summarizes the ACBM identified at the Project Site. Asbestos inspector qualifications are provided in Appendix A. The laboratory report and bulk sample chains of custody can be found in Appendix B.

Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

3.7 Limitations

The findings and opinions of this asbestos inspection are not scientific certainties but rather opinions based on our professional judgment concerning the significance of the data gathered during the course of the asbestos inspection. LCA does not represent that the Project Site contains no hazardous or toxic materials, wastes, or other latent conditions beyond the observations made by LCA during the asbestos inspection and the information obtained from the other activities in the scope of work.

LCA is not responsible for any omissions or inaccuracies of any sort that arise as a result of the Client's failure or inability to provide Project Site information or data. LCA makes no warranties or representations, expressed or implied, beyond those expressed in the Standard Contract for Services and this asbestos inspection report.

This asbestos inspection report has been prepared for the exclusive use of the Client and its direct representatives and associates to assist with their efforts to identify potential environmental concerns connected with the Project Site. LCA does not authorize the use of this asbestos inspection report for any purpose other than that for which it is prepared.

Only those ACBM that are specifically discussed in this limited asbestos inspection report were identified or addressed during this project. It is possible that other ACBM may exist at this Project Site in areas that were not seen or were concealed or otherwise inaccessible (e.g., behind walls, above ceilings, inside old air ducts, etc.). It is also possible that other accessible ACBM may exist at this Project Site in areas that were not identified by the Client as subject to proposed renovation and/or demolition. Prior to the disturbance of materials not discussed in this report, the materials should be inspected/sampled by a TDSHS-licensed Asbestos Inspector. The identification or addressing of other potential ACBM was outside the scope of service of this contract. LCA assumes no responsibility or liability for any ACBM at the Project Site.

3.8 Conclusions and Recommendations

Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

Prior to the disturbance of materials not discussed in this report, such materials should be inspected/sampled by a TDSHS-licensed Asbestos Inspector.

221214

1050 W. Arkansas Lane

LCA Environmental, Inc.

TABLE 1 - SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING BUILDING MATERIALS

Facility: JPS – Medical Home SE Tarrant

Area: X-ray Room

Address: 1050 W. Arkansas Lane

Arlington, TX

Sample Numbers	HA#	Material Description of Homogeneous Area	Type	Friability/Condition	General Location	Asbestos Content	Estimated Quantity
Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis.							

ACBM Type

- S - Surfacing
- TSI - Thermal System Insulation
- M - Miscellaneous

Friability

- F - Friable
- NF - Non-friable

Condition

- ND - No Damage
- D - Damage
- SD - Significant Damage

All material quantities are approximations based on a field review of the locations where ACBM was identified. Any person using these material quantities for cost estimating is responsible for verifying to their satisfaction the accuracy of quantities of ACBM detailed in this report.

TABLE 2 - SUMMARY OF NON-ASBESTOS-CONTAINING BUILDING MATERIALS

Facility: JPS – Medical Home SE Tarrant

Area: X-ray Room

Address: 1050 W. Arkansas Lane
Arlington, TX

Sample Numbers	HA#	Material Description of Homogeneous Area	General Location
1,2,3	1	2' x 4' Lay-in Ceiling Panels (Pin and Fissure)	X-Ray Room
4, 5, 6	2	Drywall Wall System (Eggshell)	X-Ray Room
7, 8, 9	3	4" Vinyl Cove Base (Tan) w/ Mastic	X-Ray Room
10, 11, 12	4	12" x 12" Vinyl Composition Tile (Tan) w/ Mastic (Yellow)	X-Ray Room

No asbestos was detected in the above listed samples collected and submitted for laboratory analysis. The building materials listed in Table 2 are not ACM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

LIMITED PRE-RENOVATION ASBESTOS INSPECTION

JPS – Pavilion – ED X-ray Room 1

1575 South Main Street

Fort Worth, TX

22-Feb-2023

LCA 221213



Prepared for:

JPS Health Network

Ms. Susan O'Donnell, MBA-HCM

1500 South Main Street

Fort Worth, TX 76104

Prepared by:

LCA Environmental, Inc.

TDSHS Asbestos Consultant Agency No. 100285

13221 Bee Street

Dallas, Texas 75234

Phone: (972) 241-6680, FAX: (972) 241-6689

Inspected by: Robert P. Lauer

TDSHS AI License # 602985

Prepared by: Alejandro Vasquez

TDSHS AI License # 603756

Reviewed by: Edward B. Barganier

TDSHS AI License # 105519

Robert P. Lauer

Alejandro Vasquez

Edward B. Barganier

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1.0 EXECUTIVE SUMMARY

LCA was retained by JPS Health Network (Client) to conduct pre-renovation sampling of suspect asbestos-containing building materials (ACBM) at the following Project Site:

Facility: JPS – Pavilion
Area: ED X-ray Room 1

Street Address: 1575 South Main Street
City, State: Fort Worth, TX

The intent of the asbestos sampling was to specifically identify, locate and quantify the extent and occurrence of accessible suspect asbestos-containing building material (ACBM) that would be impacted by planned renovations pursuant to the requirements of the Texas Asbestos Health Protection Rules (TAHPR) and the National Emission Standard for Hazardous Air Pollutants (NESHAP).

Sampling date: 2/7/2023
Asbestos Inspector: Robert P. Lauer
TDSHS AI 602985

Summary of the results:

- 4 Suspect ACBM homogeneous areas (HAs) identified and sampled.
- 12 Total bulk samples collected.
- 12 Total bulk samples analyzed.
- **Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).**

Sample analysis was performed utilizing the U.S. EPA's recommended analytical method of polarized light microscopy (PLM) with dispersion staining. Table 1 Section 3.6 lists those suspect materials analyzed for the presence of asbestos and those materials containing asbestos. The information contained in this report summarizes the sampling and analytical methodologies, site description, materials found to contain asbestos, quantities of confirmed ACBM, sample analytical results, and qualifications of personnel.

2.0 SITE DESCRIPTION

The project site consisted of one X-ray room. Finishes observed included: lay-in ceiling panels, drywall walls, cove base, and vinyl flooring.

3.0 ASBESTOS-CONTAINING BUILDING MATERIAL SAMPLING

3.1 The Intent of Sampling

In anticipation of renovations, samples were collected from suspect ACBM to identify the presence of ACBM at the Project Site which might be impacted by planned renovations. This work was conducted for the Client to satisfy the requirements of the NESHAP.

3.2 Limitations of Sampling

The survey scope of work was limited to accessible building materials which would be impacted by planned renovations of the Project Site based on information provided by the Client both prior to and at the time of the site visit, including a floor plan provided by Client.

Concrete, glass, fiberglass, metal, rubber, and wood were not considered suspect ACBM and were not sampled during this inspection.

3.3 Previous Inspection Reports

LCA has performed many inspections at the JPS Pavilion. However, the Project Site was not included in these inspections.

3.4 Sampling Methodology

Sample collection began with identification of homogeneous areas (HA) of suspect ACBM in general accordance with the EPA's Asbestos Hazard Emergency Response Act (AHERA) sampling protocol. Following consultation with a representative of the Client regarding the extent of planned renovations, LCA's inspector walked through the structure identifying each type of suspect ACBM and corresponding HA. Each identified HA was recorded on the sample log. A specific number of samples were collected based on the type and quantity of suspect ACBMs in general compliance with the AHERA with a minimum of 3 samples per HA in accordance with the TAHPR). To the extent feasible, sampling was completed for each HA before collecting samples for another HA. Each sample was identified with a unique sample number. This unique sample number was recorded in the sample log.

Each sampling location was first wetted sufficiently to prevent or minimize fiber release during sampling. The appropriate sampling instrument was used to penetrate and extract all layers of the suspect ACBM. The extracted sample was immediately placed into a sealed container labeled with its unique sample number and its location was plotted on the field sketch. A listing of the laboratory analytical results is in Appendix C.

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Asbestos Individual Consultant: Edward B. Barganier	License # 105519
Asbestos Inspector: Robert P. Lauer	License # 602985

Please refer to Appendix A, Inspector Qualifications, for copies of the required training and certification credentials. The samples collected were delivered under chain-of-custody to Moody Labs, LLC (Moody).

Moody is fully accredited to perform bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). The laboratory is also licensed by the appropriate state agency. All bulk samples were analyzed for asbestos content using EPA Method 600/R-93-116: "Determination of Asbestos in Bulk Samples by PLM and Dispersion Staining."

Asbestos Laboratory: Moody Labs, LLC
2051 Valley View Lane
Farmers Branch, Texas 75234

2/7/2023 Samples collected.

2/7/2023 Samples delivered to laboratory.

Laboratory QC Policy

- Rigorous onsite quality audits by NVLAP inspectors every two years for both PLM and TEM (transmission electron microscopy) as a compliance criterion for continued accreditation.
- Continued participation and proficiency in the NVLAP Proficiency Sample program for bulk asbestos by PLM and airborne asbestos by TEM.
- Continued participation and proficiency in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) program for airborne asbestos.
- Continued participation and proficiency in the AIHA Bulk Analysis QC program for bulk analysis.
- Thorough, detailed quality manuals are maintained for each area of analysis [asbestos by PLM, asbestos by TEM, and asbestos by PCM (phase contrast microscopy)]. These quality manuals and the quality systems they detail are fully compliant with ISO/IEC 17025:1999, and the relevant requirements of ISO 9002:1994.

3.6 Summary of Findings

Table 1 summarizes the ACBM identified at the Project Site. Asbestos inspector qualifications are provided in Appendix A. The laboratory report and bulk sample chains of custody can be found in Appendix B.

Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

3.7 Limitations

The findings and opinions of this asbestos inspection are not scientific certainties but rather opinions based on our professional judgment concerning the significance of the data gathered during the course of the asbestos inspection. LCA does not represent that the Project Site contains no hazardous or toxic materials, wastes, or other latent conditions beyond the observations made by LCA during the asbestos inspection and the information obtained from the other activities in the scope of work.

LCA is not responsible for any omissions or inaccuracies of any sort that arise as a result of the Client's failure or inability to provide Project Site information or data. LCA makes no warranties or representations, expressed or implied, beyond those expressed in the Standard Contract for Services and this asbestos inspection report.

This asbestos inspection report has been prepared for the exclusive use of the Client and its direct representatives and associates to assist with their efforts to identify potential environmental concerns connected with the Project Site. LCA does not authorize the use of this asbestos inspection report for any purpose other than that for which it is prepared.

Only those ACBM that are specifically discussed in this limited asbestos inspection report were identified or addressed during this project. It is possible that other ACBM may exist at this Project Site in areas that were not seen or were concealed or otherwise inaccessible (e.g., behind walls, above ceilings, inside old air ducts, etc.). It is also possible that other accessible ACBM may exist at this Project Site in areas that were not identified by the Client as subject to proposed renovation and/or demolition. Prior to the disturbance of materials not discussed in this report, the materials should be inspected/sampled by a TDSHS-licensed Asbestos Inspector. The identification or addressing of other potential ACBM was outside the scope of service of this contract. LCA assumes no responsibility or liability for any ACBM at the Project Site.

3.8 Conclusions and Recommendations

Laboratory analysis detected no asbestos for samples collected and submitted for laboratory analysis. Therefore, the building materials sampled for this asbestos inspection are not considered ACBM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

Prior to the disturbance of materials not discussed in this report, such materials should be inspected/sampled by a TDSHS-licensed Asbestos Inspector.

221213

1575 South Main Street

LCA Environmental, Inc.

TABLE 1 - SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING BUILDING MATERIALS

Facility: JPS – Pavilion
 Area: ED X-ray Room 1
 Address: 1575 South Main Street
 Fort Worth, TX

Sample Numbers	HA#	Material Description of Homogeneous Area	Type	Friability/Condition	General Location	Asbestos Content	Estimated Quantity
No asbestos was detected for samples collected and submitted for laboratory analysis.							

ACBM Type

- S - Surfacing
- TSI - Thermal System Insulation
- M - Miscellaneous

Friability

- F - Friable
- NF - Non-friable

Condition

- ND - No Damage
- D - Damage
- SD - Significant Damage

All material quantities are approximations based on a field review of the locations where ACBM was identified. Any person using these material quantities for cost estimating is responsible for verifying to their satisfaction the accuracy of quantities of ACBM detailed in this report.

TABLE 2 - SUMMARY OF NON-ASBESTOS-CONTAINING BUILDING MATERIALS

Facility: JPS – Pavilion
 Area: ED X-ray Room 1
 Address: 1575 South Main Street
 Fort Worth, TX

Sample Numbers	HA#	Material Description of Homogeneous Area	General Location
1,2,3	1	2' x 4' Lay-in Ceiling Panels (Rough)	X-Ray Room
4, 5, 6	2	Drywall Wall System (Eggshell)	X-Ray Room
7, 8, 9	3	4" Vinyl Cove Base (Tan) w/ Mastic (Yellow)	X-Ray Room
10, 11, 12	4	Sheet Vinyl Flooring w/ Mastic (Yellow)	X-Ray Room

No asbestos was detected in the above listed samples collected and submitted for laboratory analysis. The building materials listed in Table 2 are not ACM as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M) and the Texas Asbestos Health Protection Rules (TAHPR §296).

APPENDIX A

Inspector Qualifications



Texas Department of State Health Services

LYNN CLARK ASSOCIATES INC DBA
LCA ENVIRONMENTAL INC

is certified to perform as an

Asbestos Consultant Agency


in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1954 and Title 12, Texas Administrative Code, Chapter 295 relating to Texas Asbestos Health Protection, as long as this license is not suspended or revoked.



License Number: 100285

Expiration Date: 12/15/2023

Control Number: 97420


**John Hellerstedt, M.D.,
Commissioner of Health**

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

SEE BACK



**Texas Department of
State Health Services**

Asbestos Individual Consultant

EDWARD B BARGANIER

License No. 105519

Control No. 98142

Expiration Date: 9-Nov-2024





**Texas Department of
State Health Services**

Asbestos Inspector

ROBERT P LAUER

License No. 602985

Control No. 99932

Expiration Date: 18-May-2023



APPENDIX B

Laboratory Report(s)



PLM Summary Report

NVLAP Lab Code 102056-0

TDSHS License No. 300084

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

Client : LCA Environmental, Inc. - Dallas, TX

Lab Job No. : 23B-01393

Project : JPS, Pavilion X-Ray Room

Report Date : 02/10/2023

Project # : 221213

Sample Date : 02/07/2023

Identification : Asbestos, Bulk Sample Analysis

Test Method : Polarized Light Microscopy / Dispersion Staining (PLM/DS)
EPA Method 600 / R-93 / 116

Page 1 of 2

On 2/7/2023, twelve (12) bulk material samples were submitted by Thomas Hale of LCA Environmental, Inc. - Dallas, TX for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
1-1A	2 x 2 Lay-In Ceiling Panel (Rough), Exam Room West	None Detected - Acoustic Tile
2-1B	2 x 2 Lay-In Ceiling Panel (Rough), Exam Room East	None Detected - Acoustic Tile
3-1C	2 x 2 Lay-In Ceiling Panel (Rough), Control Room	None Detected - Acoustic Tile
4-2A	Drywall Wall System (Eggshell), Northwest Corner behind Door Exam Room	None Detected - Drywall Material None Detected - Joint Compound None Detected - Texture
5-2B	Drywall Wall System (Eggshell), Northwest Corner Control Room	None Detected - Drywall Material None Detected - Texture / Joint Cmpd
6-2C	Drywall Wall System (Eggshell), Control Room Partition Wall	None Detected - Drywall Material None Detected - Joint Compound None Detected - Texture
7-3A	4" Vinyl Cove Base (Tan) with Adhesive (Yellow), Northwest Corner Exam Room	None Detected - Cove Base None Detected - Adhesive
8-3B	4" Vinyl Cove Base (Tan) with Adhesive (Yellow), Control Room Partition Wall	None Detected - Cove Base None Detected - Adhesive
9-3C	4" Vinyl Cove Base (Tan) with Adhesive (Yellow), Control Room Southwest Corner behind Door	None Detected - Cove Base None Detected - Adhesive
10-4A	Sheet Vinyl Flooring with Mastic (Yellow), Control Room Southwest Corner behind Door	None Detected - Sheet Flooring None Detected - Yellow Mastic None Detected - Leveling Compound
11-4B	Sheet Vinyl Flooring with Mastic (Yellow), Control Room Northwest Corner	None Detected - Sheet Flooring None Detected - Yellow Mastic None Detected - Leveling Compound
12-4C	Sheet Vinyl Flooring with Mastic (Yellow), Exam Room Northwest Corner	None Detected - Sheet Flooring None Detected - Yellow Mastic None Detected - Leveling Compound



PLM Summary Report

NVLAP Lab Code 102056-0

TDSHS License No. 300084

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

Client :	LCA Environmental, Inc. - Dallas, TX	Lab Job No. :	23B-01393
Project :	JPS, Pavilion X-Ray Room	Report Date :	02/10/2023
Project # :	221213	Sample Date :	02/07/2023
Identification :	Asbestos, Bulk Sample Analysis		
Test Method :	Polarized Light Microscopy / Dispersion Staining (PLM/DS) EPA Method 600 / R-93 / 116		

Page 2 of 2

On 2/7/2023, twelve (12) bulk material samples were submitted by Thomas Hale of LCA Environmental, Inc. - Dallas, TX for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content

These samples were analyzed by layers. Quantification, unless otherwise noted, is performed by calibrated visual estimate. The test report shall not be reproduced except in full without written approval of the laboratory. The results relate only to the items tested. These test results do not imply endorsement by NVLAP or any agency of the U.S. Government. Accredited by the National Voluntary Laboratory Accreditation Program for Bulk Asbestos Fiber Analysis under Lab Code 102056-0.



Analyst(s): Willie Pruitt

Lab Manager : Heather Lopez

Lab Director : Bruce Crabb

Approved Signatory : *Heather Lopez*

Approved Signatory : *Bruce Crabb*

Thank you for choosing Moody Labs

Moody Labs
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
 Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 300084

Client : LCA Environmental, Inc. - Dallas, TX
 Project : JPS, Pavilion X-Ray Room
 Project # : 221213

Lab Job No. : 23B-01393
 Report Date : 02/10/2023

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
1-1A	Acoustic Tile (Light Grey)	100%	Cellulose Fibers	50%	02/10	WP
			Mineral Wool Fibers	30%		
			Perlite	20%		
2-1B	Acoustic Tile (Light Grey)	100%	Cellulose Fibers	50%	02/10	WP
			Mineral Wool Fibers	30%		
			Perlite	20%		
3-1C	Acoustic Tile (Light Grey)	100%	Cellulose Fibers	50%	02/10	WP
			Mineral Wool Fibers	30%		
			Perlite	20%		
4-2A	Drywall Material (White)	75%	Glass Wool Fibers	2%	02/10	WP
			Cellulose Fibers	1%		
			Gypsum / Binders	97%		
			DW Paper / Tape (Tan / White)	10%		
			Joint Compound (White)	5%		
5-2B	Drywall Material (White)	5%	Glass Wool Fibers	2%	02/10	WP
			Cellulose Fibers	1%		
			Gypsum / Binders	97%		
			DW Paper Facing (Tan)	10%		
			Texture / Joint Cmpd (White)	85%		
6-2C	Drywall Material (White)	75%	Glass Wool Fibers	2%	02/10	WP
			Cellulose Fibers	1%		
			Gypsum / Binders	97%		
			DW Paper / Tape (Tan / White)	10%		
			Joint Compound (White)	5%		
7-3A	Cove Base (Tan)	97%	Calcite / Talc / Binders	100%	02/10	WP
			Adhesive (Yellow)	3%		
			Glue Binders	100%		

Moody Labs
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 300084

Client : LCA Environmental, Inc. - Dallas, TX
 Project : JPS, Pavilion X-Ray Room
 Project # : 221213

Lab Job No. : 23B-01393
 Report Date : 02/10/2023

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
8-3B	Cove Base (Tan)	97%	Calcite / Vinyl Binders	100%	02/10	WP
	Adhesive (Yellow)	3%	Glue Binders	100%		
9-3C	Cove Base (Tan)	97%	Calcite / Vinyl Binders	100%	02/10	WP
	Adhesive (Yellow)	3%	Glue Binders	100%		
10-4A	Sheet Flooring (Tan)	95%	Calcite / Vinyl Binders	100%	02/10	WP
	Yellow Mastic (Yellow)	3%	Glue Binders	100%		
	Leveling Compound (Grey)	2%	Calcite / Binders	100%		
11-4B	Sheet Flooring (Tan)	95%	Calcite / Vinyl Binders	100%	02/10	WP
	Yellow Mastic (Yellow)	2%	Glue Binders	100%		
	Leveling Compound (Grey)	3%	Calcite / Binders	100%		
12-4C	Sheet Flooring (Tan)	95%	Calcite / Vinyl Binders	100%	02/10	WP
	Yellow Mastic (Yellow)	2%	Glue Binders	100%		
	Leveling Compound (Grey)	3%	Calcite / Binders	100%		



Chain of Custody

Lab Job # 23B-01893
 Lab Job # 12 PUM
 Lab Job # _____

ASBESTOS PLM

Bulk Immediate 1 day 2 day 3 day 5 day
 Analyze All Positive Stop

PCM Air (7400)

Immediate 1 day 2 day 3 day 5 day
 Analyze Blanks Yes No

TOTAL DUST(0500/0600)

1 day 2 day

ASBESTOS TEM

Air AHERA Method Late Night* 6 hr 12 hr 24 hr
 Air 7402 (Modified) 1 day 2 day 3 day
 Bulk 1 day 2 day 3 day 5 day
 Water/Wipe/Micro Vac 1 day 2 day 3 day
 Analyze Blanks Yes No

*Late night analysis surcharges apply

MOLD

Direct Exam Immed 1 day 2 day 5 day
 Standard Air Immed 1 day 2 day 5 day
 Expanded Air Immed 1 day 2 day 5 day
 Culture** 10-14 days
 Analyze Blanks Yes No

Turnaround of Culture Samples subject to Culture Growth

BACTERIA**

Total Plate Count 2 day
 Coliform & E. coli (P/A) 1 day
 Staphylococcus aureus 1 day

OTHER: _____

AFTER HOURS / WEEKEND WORK: Yes No

Please call in advance for after hours / immediate pricing and availability

Billing Company / City: LCA Environmental, Inc.

of Samples: 12

Submitter's Company: _____

Sample Date: 2-7-2023

Submitter's Name: Thomas Hale

Project #: 221213

Project: JPS- Pavilion X Ray Rm.

Phone #: 972-241-6680

Contact Information: Name: _____

Mobile #: 214-403-8298

E-mail Results to: hale@LCAenvironmental.com, barganier@LCAenvironmental.com

Fax #: 972-241-6689

Invoice Address: LCA Group

P.O. #: _____

Please review paperwork and samples before submitting to lab. Unsealed / improperly packaged / damaged / expired samples or excessive administrative requests may incur additional fees

Notes: _____

Sample #	Sample Description	Vol. / Area (if applicable)	Location / Notes
1-1A	2x2 LICP (Rough)		Exam Room West
2-1B			Exam Room East
3-1C			Control Room
4-2A	Drywall Wall System (eggshell)		NW Corner Behind door Exam Rm.
5-2B			NW Corner Control Room
6-2C			Control Room Partition wall
7-3A	4" Vinyl Cove Base (Tan) w/ Adhesive (yellow)		NW Corner Exam Rm.
8-3B			Control Rm. Partition wall
9-3C			Control Rm SW corner - Behind door
10-4A	Sheet Vinyl Flooring w/ Mastic (yellow)		Control Rm SW Corner Behind door
11-4B			Control Rm. NW corner
12-4C			Exam Room NW corner

Released By: <u>[Signature]</u>	Date / Time: <u>2/7/23 1:53</u>	Received By: <u>[Signature]</u>	Date / Time: <u>2/7/23</u>
Released By: _____	Date / Time: _____	Received By: _____	Date / Time: _____

APPENDIX C

Photographic Documentation

Photographic Documentation



Photo 1: View of HA #1: non-ACBM 2' x 2' lay-in ceiling panels (rough), & HA #2: non-ACBM drywall wall system (eggshell).



Photo 2: View of HA #3: non-ACBM 4" vinyl cove base (tan), & HA #4: non-ACBM sheet vinyl flooring.



Radcom Associates, LLC

Medical Physics Consultants

2302 Guthrie Road, Suite 210, Garland, TX 75043

December 7, 2023

Susan O'Donnell
JPS Bardin Rd Clinic
1741 E Bardin Rd
Arlington, TX 76018

RE: Shielding Design for Radiographic Room

Dear Ms. O'Donnell,

Please find enclosed results of shielding calculations performed for the renovated Radiography room at your facility in Arlington, TX. Design limits and recommendations are based on applicable federal and state regulations. Also, National Council on Radiation Protection and Measurements (NCRP) recommendations, and recognized standards of practice were applied. Specifically, design limits for this assessment are 100 millirem/year for unrestricted areas (ICRP 1991 and NCRP 1993 recommendations), and 500 millirem/year for controlled areas (10% of the annual limit for occupational radiation exposure, limit for fetal exposure to a pregnant radiation worker). Workloads used in this evaluation are based on guidance provided in NCRP Report Number 147: *Structural Shielding Design for Medical X-ray Imaging Facilities*.

Results, including structural diagrams and specific recommendations are enclosed on page 4 of this report.

Additionally, NCRP Report Number 147 is often used as a standard for shielding design and installation. This report provides guidance and information that may assist you in the interpretation and implementation of the results provided in this report. To this end, additional information is summarized below:

A. Lead as additional shielding

Lead is the most common material used for added shielding. It is typically installed as sheet lead, or lead-lined wall board. Sheet lead is commercially available in thickness from less than a



millimeter to about a centimeter. Its flexibility is advantageous for use on curved or irregular surfaces. However, care must be taken to provide adequate support to avoid sagging of the lead or damage during installation. Sheet lead is typically provided with supplemental lead caps for covering nails or screws used to install the lead; however, research has shown that lead caps are not necessary so long as the integrity of lead is not compromised. NCRP Report 147 indicates that “insertion of the nails or screws does not result in significant radiation leaks.” It is more important to consider gaps that may be created at joints, and interfaces between sheets of lead. *Continuity of shielding must be ensured at the joints of two sheets of lead by sufficient overlap of the lead sheets or a supplemental cover strip.* Because sheet lead is easily damaged and is not self-supporting, it is usually covered with some form of wall-board, tile, or plaster. Leaded wall-board is more durable, and may be removed and reinstalled as part of future construction changes. Supplemental lead strips should still be considered at seams of leaded wall board.

It should be noted that lead sheets of less than 1/32nd inch thickness are often more expensive than heavier sheets in cost of material and installation. Typical thickness of manufactured lead in inches, millimeters, nominal weight, and pounds per square inch are provided on the last page of this report.

B. Concrete

Concrete is sufficiently dense to be considered in shielding calculations. The radiation attenuation of a concrete barrier depends on its thickness, density, and composition. For this report, it is assumed that common poured concrete with a density of 2.35 g cm⁻³ (147 lb ft⁻³) is used. This may significantly reduce added expense of shielding outside walls, floors, and ceilings if the concrete is sufficiently thick to provide the protection needed.

Calculations in this report are based on the following values for locations where existing concrete was considered:

Location	Existing Concrete/Supplemental Shielding
Outside Walls	None
Inside Walls	None specified
Floor	Standard concrete slab foundation
Ceiling	None

C. Voids in Protective Barriers

All leaded shielding in walls should extend to a height of 2.1 meters (7 feet) if no shielding is required in the ceiling. If additional shielding is required in the ceiling, all leaded shielding in walls should extend the entire height of the wall and abut the shielding installed in the ceiling. Openings in protective barriers for doors, windows, ventilating ducts, conduits, pipes, etc. will require additional consideration with regard to the installation of lead to ensure that the



required degree of overall protection is maintained. If possible, such openings should be located in a secondary barrier where the required shielding thickness is less. The following guidelines should be adhered to when supplemental shielding is required:

- a. Where ducts terminate at a grill in the wall surface of a protective barrier, a lead-lined baffle may be required in front of the grill. Consideration should be given to design such that air-flow is not compromised.
- b. Where service boxes, conduits, etc. are imbedded in protective barriers, supplemental shielding must be added to compensate for the concrete or lead removed in construction. The lead should cover not only the back of the service boxes, but also the sides, or extend sufficiently to offer equivalent protection.
- c. Windows and doors should offer equivalent protection as that specified for the wall in which they are installed. This protection should extend into and within the frames to ensure that no gaps are created. Leaded glass should be used with the same specified lead equivalence as that for the associated wall.
- d. *Lead baffles under doors are not necessary for this installation.*

Results are based on room drawings provided by Thad Smith (email dated 12/4/2023).

It is noted that shielding specified in this report may not be sufficient to protect members of the public from unanticipated use of the imaging systems. Please note that state law requires that surveys of radiation levels in unrestricted areas be made to demonstrate compliance with the dose limits for individual members of the public. This report does not satisfy this requirement, but provides recommendations for additional shielding that should result in compliance once these surveys are made. Changes in building design, room layouts, workloads, positioning of equipment, etc. may void the applicability of results presented in this report. Any changes in design should be communicated to us as soon as practical.

If you have any questions or require additional information, please do not hesitate to call.

Sincerely,

Michael Nimmo, MS, DABR
FMP 02000115
Michael@RadcomAssociates.com
214-709-4542



<h2 style="margin: 0;">Radiography Room</h2>	<div style="display: flex; align-items: center; gap: 10px;"> <div style="width: 20px; height: 10px; background-color: blue; border: 1px solid black;"></div> = 1/32nd inch Pb equivalent </div> <div style="display: flex; align-items: center; gap: 10px; margin-top: 5px;"> <div style="width: 20px; height: 10px; background-color: red; border: 1px solid black;"></div> = 1/16th inch Pb equivalent </div>
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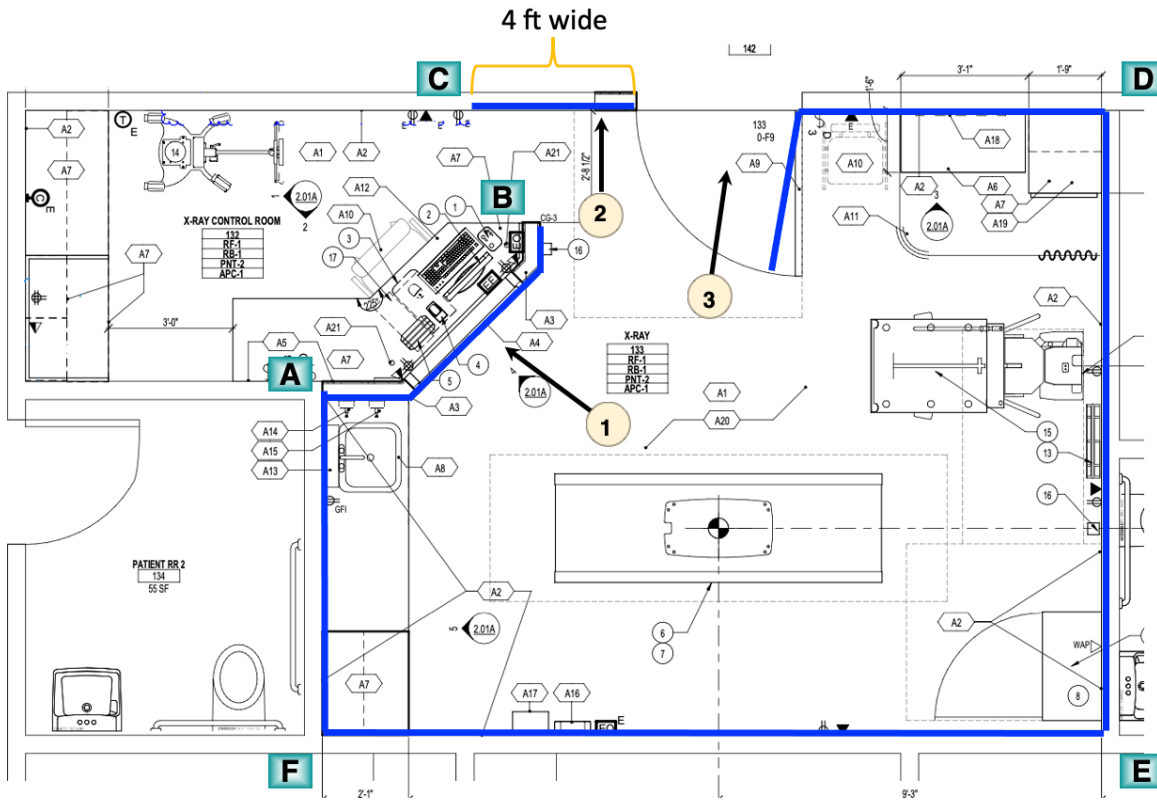


Table 2. Recommended Shielding: Radiography Room

Wall	Description	Restricted Area?	Occupancy	Recommended Shielding (Inches)	Comment
AB	Control booth	Yes	1	1/32nd in. Pb	See note 1
CD	Corridor & Entry	No	1/5	1/32nd in. Pb	See notes 2, 3
DE	Patient Restrooms	No	1/20	1/32nd in. Pb	-
EF	Doctor Office and Cast Room	No	1	1/32nd in. Pb	-
FA	Patient Restroom	No	1/20	1/32nd in. Pb	-
xx	Ceiling & Floor	No	1/2	None	See note 4



Table 3. Notes and Recommendations

Note	Comment / Recommendation
1	The window and frame for the control room should contain at least the same amount of Pb equivalent shielding as the surrounding wall (1/32 nd inch). Regular plate glass should not be substituted.
2	At this location, due to the room geometry, a single sheet of leaded sheet rock should be installed.
3	The entry door and frame for the Radiography Room should contain the same amount of lead as the surrounding wall (1/32 nd in. Pb). <i>A regular wooden door should not be substituted.</i>
4	Supplemental shielding is not required in the floor or ceiling for this type of installation. The facility is a single level structure with no expected occupancy above or below.

Table 4. Suggested Occupancy Factors from NCRP Report 147 (Table 4.1, pg. 31)

Note: These values are used in calculations to more accurately determine required shielding. If significantly different occupancy is expected, this information should be communicated to us as soon as possible.

Location	Occupancy Factor (T)
Administrative or clerical offices; laboratories, pharmacies and other work areas fully occupied by an individual; receptionist areas, attended waiting rooms, children’s indoor play areas, adjacent x-ray rooms, film reading areas, nurse’s stations, x-ray control rooms	1
Rooms used for patient examinations and treatments	1/2
Corridors, patient rooms, employee lounges, staff restrooms	1/5
Corridor Doors	1/8
Public toilets, unattended vending areas, storage rooms, outdoor areas with seating, unattended waiting rooms, patient holding areas	1/20
Outdoor areas with only transient pedestrian or vehicular traffic, unattended parking lots, vehicular drop off areas (unattended), attics, stairways, unattended elevators, janitor’s closets	1/40



Table 5. NCRP No. 49, Table 26: Commercial Lead Sheets

Thickness		Weight in Pounds for a 1 Square Foot Section	
Inches	Millimeter equivalent	Nominal Weight	Actual Weight
1/64	0.40	1	0.92
3/128	0.60	1 1/2	1.38
1/32	0.79	2	1.85
5/128	1.00	2 1/2	2.31
3/64	1.19	3	2.76
7/128	1.39	3 1/2	3.22
-	1.50	-	3.48
1/16	1.58	4	3.69
5/64	1.98	5	4.60
3/32	2.38	6	5.53
-	2.50	-	5.80
-	3.00	-	6.98
1/8	3.17	8	7.38
5/32	3.97	10	9.22
3/16	4.76	12	11.06
7/32	5.55	14	12.90
1/4	6.35	16	14.75
1/3	8.47	20	19.66
2/5	10.76	24	23.60
1/2	12.70	30	29.50
2/3	16.93	40	39.33
1	25.40	60	59.00

1. Shaded rows indicate most common specifications in diagnostic radiology designs.
2. The density of commercially rolled lead is 11.36 g cm^{-3}
3. It should be noted that lead sheet less than 1/32 inch thick is often more expensive than heavier sheets in cost of material and installation.



RADCOM ASSOCIATES, LTD
MEDICAL PHYSICS CONSULTANTS
2310 GUTHRIE ROAD, SUITE 210, GARLAND, TX 75043

K.C. Tang
Design and Construction
JPS Health Network
1500 South Main St.
Fort Worth TX 76104
(817) 702-4931

12 Jan 2015

RE: **Shielding Design for ER X-ray Suite – Building PCP-01**

Dear Mr. Tang,

Please find enclosed results of shielding calculations for the proposed radiographic suite.

Layout is based on the sketch you provided via e-mail on December 18, 2014, and installation drawings provided by GE Healthcare for the Discovery XR-656 Digital Radiographic unit. Equipment locations and dimensions are as specified in the GE drawings.

Weekly patient volume is estimated at 125 patients/week (25 patients/day, 5 days/week).

Design limits and recommendations are based on applicable federal and state regulations. Also, National Council on Radiation Protection and Measurements (NCRP) recommendations, and recognized standards of practice were applied. Specifically, design limits for this assessment are 1 mSv/year for unrestricted areas (annual limit for radiation exposure to members of the public), and 5 mSv/year for restricted areas (10% of the annual limit for occupational radiation exposure, limit for fetal exposure to a radiation worker).

The National Council on Radiation Protection and Measurements Report Number 147 describes the standard formulation used to calculate the results provided in this report. This information is summarized below.

A. Lead as additional shielding

Lead is the most common material used for added shielding. It is typically installed as sheet lead, or lead-lined wall board. Sheet lead is commercially available in thickness from less than a millimeter to about a centimeter. Its flexibility is advantageous for use on curved or irregular surfaces. However, care must be taken to provide adequate support to avoid sagging of the lead or damage during installation. The NCRP recommends that nails be covered with supplemental lead; however research has shown that this is not necessary so long as the integrity of lead is not compromised. *Where edges of two sheets meet, continuity of shielding must be ensured at the joints by sufficient overlap of the lead sheets or a supplemental cover strip.* Because sheet lead is easily damaged and is not self-supporting, it is usually covered with some form of wall-board, tile, or plaster. Leaded wall-board is more durable, and may be removed and reinstalled as part of future construction changes. Supplemental lead strips should still be considered at seams of leaded wall board. It should be noted that lead sheets of less than 1/32 inch thickness are often paradoxically more expensive, so wall board with thicker lead equivalence may make sense. Typical thicknesses of manufactured lead and weight per square foot are provided on provided in the table below.



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MEDICAL PHYSICS CONSULTANTS
2310 GUTHRIE ROAD, SUITE 210, GARLAND, TX 75043

B. Voids in Protective Barriers

All leaded shielding in walls should extend to a height of at least 7 ft. Openings in protective barriers for doors, windows, ventilating ducts, conduits, pipes, etc. will require additional consideration with regard to the installation of lead to ensure that the required degree of overall protection is maintained. If possible, such openings should be located in a secondary barrier where the required shielding thickness is less. The following guidelines should be adhered to when supplemental shielding is required:

- a. Where ducts terminate at a grill in the wall surface of a protective barrier, a lead-lined baffle may be required in front of the grill. Consideration should be given to design such that air-flow is not compromised.
- b. Where service boxes, conduits, etc. are imbedded in protective barriers, supplemental shielding must be added to compensate for the concrete or lead removed in construction. The lead should cover not only the back of the service boxes, but also the sides, or extend sufficiently to offer equivalent protection.
- c. Windows and doors should offer equivalent protection as that specified for the wall in which they are installed. This protection should extend into and within the frames to ensure that no gaps are created. Leaded glass should be used with the same specified lead equivalence as that for the associated wall.
- d. *Lead baffles under doors are not necessary for this installation.*

B. Concrete

The safety of occupied areas above and below this suite will depend upon sufficient attenuation by the concrete slabs in the floor and ceiling. The following assumptions were made:

Location	Existing Concrete
Outside Walls	None
Floor	N/A (No occupancy below)
Ceiling	≥ 3.25 inches (147 lbs/ft ³) with additional steel composite decking

Please note that changes in building design, room layouts, positioning of equipment, etc. may change the applicability of these. Any changes in design should be communicated to me as soon as practical. If there are questions about this shielding design or you require additional information, please feel free to contact me.

Yours Sincerely,

P. Duffy Cutler, PhD
Diplomate, American Board of Radiology
Licensed Medical Physicist, MP0495
Radcom Associates, Ltd.

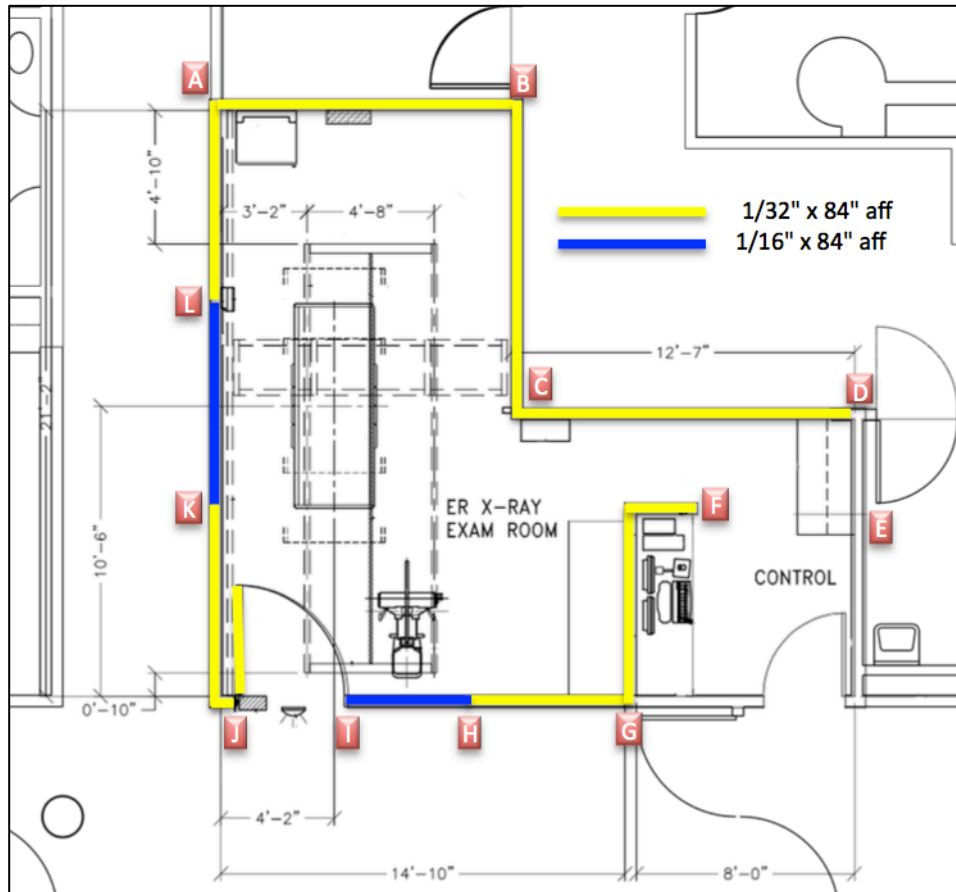


Figure 1. Shielding Design for the General Radiographic Suite, PCP-01.

Wall	Description	Restricted Area?	Recommended Lead	Comment
AB	Office	N	1/32"	
BC	Corridor	N	1/32"	
CD	Corridor	N	1/32"	
DE	Restroom	N	none	See note 1
FG	Control Room	Y	1/32"	See note 2
GH	Corridor	N	1/32"	
HI	Corridor (behind Chest Stand)	N	1/16"	See notes 3, 5
IJ	Corridor	N	1/32"	
JK	Corridor	N	1/32"	
KL	Corridor (behind table)	N	1/16"	See notes 4, 5
LA	Corridor	N	1/32"	

Table 1. Recommended Shielding for the ER General Radiographic Suite, PCP-01.

1. Shielding not required due to distance from patient and x-ray tube.
2. Viewing window must contain leaded glass with the same lead equivalence as the surrounding wall.
3. Wall section with 1/16" should extend at least 12" on either side of the chest stand.
4. Wall section with 1/16" should be at least at least equal in length to the radiographic table.
5. May be more practical or cost effective to shield complete wall with 1/16" Pb.



NCRP No. 49, Table 26: Commercial Lead Sheets

Thickness		Weight in Pounds for a 1 Square Foot Section	
Inches	Millimeter equivalent	Nominal Weight	Actual Weight
1/64	0.40	1	0.92
3/128	0.60	1 1/2	1.38
1/32	0.79	2	1.85
5/128	1.00	2 1/2	2.31
3/64	1.19	3	2.76
7/128	1.39	3 1/2	3.22
-	1.50	-	3.48
1/16	1.58	4	3.69
5/64	1.98	5	4.60
3/32	2.38	6	5.53
-	2.50	-	5.80
-	3.00	-	6.98
1/8	3.17	8	7.38
5/32	3.97	10	9.22
3/16	4.76	12	11.06
7/32	5.55	14	12.90
1/4	6.35	16	14.75
1/3	8.47	20	19.66
2/5	10.76	24	23.60
1/2	12.70	30	29.50
2/3	16.93	40	39.33
1	25.40	60	59.00

1. Shaded rows indicate lead thicknesses specified for this suite.
2. The density of commercially rolled lead is 11.36 g cm^{-3}
3. It should be noted that lead sheet less than 1/32 inch thick is often more expensive than heavier sheets in cost of material and installation.

Attn: Kim Eli
 JPS Arlington Clinic
 1050 West Arkansas Lane
 Arlington, TX

Service Date: 25-Nov-14

Subject: Public Exposure Survey / Shielding Adequacy Survey

The following are the results of the Rad Room#1 shielding adequacy evaluation performed on 25-Nov-2014 at JPS Arlington Clinic at 1050 West Arkansas Lane. After review, please file this with other pertinent radiology records.

Scatter measurements at tabletop height were made using a 23 cm water phantom (representative of an adult abdomen). Chest board scatter measurements were made using no phantom as the chamber was in the radiation field of the primary beam. Radiation measurements were made in all accessible areas surrounding the x-ray room. Measurements were taken using a Victoreen Ion Chamber (Model: 451P, Serial Number: 2553, Cal Date: 01-Oct-2014). The resulting annual exposures were calculated using the measurements, technique factors, and appropriate workload and occupancy factors. Further, no measurement exceeded 2 mr/hr.

The results indicate that, with this installation, radiation levels are not expected to exceed any applicable regulatory limits at the current workload. [Texas Administrative Code (TAC 289.202 (f), (n))]

Location	Restricted Area?	Occupancy Factor (T)	Measured Exposure (uR)	Exposure (mRem/yr)	Exposure Limit (mRem/yr)	Acceptable?
1 meter	N/A	0	0.38	N/A		N/A
Left Doorway	No	0.2	0.01	0.01	500	Yes
Right Doorway	No	0.2	0.01	0.01	500	Yes
Radiology Work Area	No	1	0.01	0.05	500	Yes
Bone Density	No	1	0.01	0.05	500	Yes
Lateral Hallway	No	0.2	0.01	0.01	500	Yes
Primary Beam	No	1	0.01	0.05	500	Yes
Control Room	Yes	1	1	4.50	5000	Yes

* Occupancy Factors are taken from NCRP 147 (Table 4).

Calculation Factors	
Workload	Protocol Technique
5 days/wk	100 kV
20 pt/day	500 mA
3 views/pt	0.2 sec
20 ave mAs	
60 sec/min	Correction Factor
1.5 margin	3000 (unitless)
150.0 mA-min/wk	

The annual limit is 500 mrem for an unrestricted area and 5,000 mrem for a restricted area. Occupancy factors utilized are noted in the form.

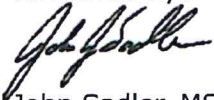
A sample calculation is enclosed on the following page. If you have any questions or need further clarification or assistance, please contact me at your earliest convenience.

Thank you,



Norman Sipp, MS
 2302 Guthrie Road
 Suite 210
 Garland, TX 75043

Reviewed By:



John Sadler, MS MP10221

Data and Sample Calculations

1. Technique Factors:

All exposures were made at 100 kVp, 100 mAs.

2. Instrumentation

Victoreen Ion Chamber Model: 451P Serial Number: 2553 Cal Date: 01-Oct-2014

Radiographic Exposure

Control Panel Window – One exposure was made for a total of 100 mAs. An integrated exposure of 1 mR was measured. Assuming a conservative workload estimate of 66 mA · min/wk and an occupancy factor of ¼ for that location, the following annual exposure is calculated:

$$1 \text{ uR} / 1000 \times 66 \text{ mA}\cdot\text{min}/\text{week} \times 3000 / 100 \text{ mAs} \times \frac{1}{4} = 0.5 \text{ mR}/\text{year}$$

where 3000 is a correction factor for units of time, and ¼ is the occupancy factor. Occupancy factors applied for the shielding survey are listed on the room diagram.

