NARRATIVE REPORT

1.0 **BUILDING INFORMATION**

Johnson Hall was originally constructed in 1963; the building has had no major renovations.

Johnson Hall is a four-story, 42,973 ft² building which primarily serves as dormitory areas for students. Reed Hall (A055) is attached to the north side of Johnson Hall and is reported separately; Residence Dining Center (A059) is attached to the south side of Johnson Hall and is reported separately.

The interior floor finishes included sheet vinyl flooring, floor tile, carpet, and concrete; the interior wall finishes included concrete block, concrete, gypsum wallboard, plaster, ceramic block, carpet, and terrazzo; and the interior ceiling finishes included ceiling tile, plaster, and metal. The roofing system is a flat rubber-membrane roof and the exterior of the structure is brick.

The piping systems were insulated; fiberglass insulation (with and without hard fittings) is located in the building. Steam enters the building via a tunnel into room 2. Domestic water enters the building in the southwest end of the tunnels. HVAC systems located in the building consisted of steam radiators and a forced air furnace with heating/cooling coils.

2.0 ASBESTOS SURVEY INFORMATION

Johnson Hall was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 6" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 6" for methodologies, definitions, and other pertinent supporting information.

LEGEND was granted full access to Johnson Hall during the initial walk-through and sampling of the building. During subsequent walk-throughs of the building, for resampling and reporting purposes, LEGEND was granted access to the common areas and to 2-4 dormitory rooms per floor, only. For the remainder of the dormitory rooms, LEGEND identified the locations of ACMs using survey notes taken during the initial walk-through of the building.

A total of 82 samples were collected from suspect asbestos-containing materials (ACM) from Johnson Hall on May 24, 2007, an additional 1 sample was collected on March 17, 2008, and an additional 1 sample was collected on March 25, 2008. Laboratory analysis results indicate **12 of these samples tested positive for asbestos**.

2.1 Suspect Materials Identified and Sampled

Ceiling Tile (6 types) Fiberglass Panel Adhesive Baseboard Adhesive Sheet Vinyl Flooring Textured Paint Gypsum Wallboard Ceiling Texture (3 types) Floor Tile Mastic Hard Plaster- Basecoat (3 types)

Sink Undercoating Penetration Putty Wood Panel Adhesive Window Caulk Joint Compound Carpet Mastic Floor Tile Hard Plaster- Skimcoat (2 types) Concrete Wall Texture

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JOHNSON HALL (A058)

Hard Plaster- Monocoat Hard Fittings on Fiberglass Insulation Encapsulant on Fiberglass Insulation Exterior Door Caulk Underground Culvert Tar Wrap Tar HVAC Duct Wrap Hard Pack on Fiberglass Insulation Exterior Building Seam Caulk (2 types) Exterior Window Caulk (2 types)

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 Asbestos Containing Materials

Concrete Wall Texture Hard Fitting on Fiberglass Insulation Hard Pack on Fiberglass Insulation Underground Culvert Tar Wrap 9" Floor Tile and Mastic (assumed)

The ACM Locations/ Friable Materials Assessments Table includes ACM locations data.

2.3 Cost Estimates

Legend Technical Services Inc. estimates abatement costs (removal & disposal) of ACM for Johnson Hall as follows:

ACM	QUANTITY	UNIT COST	TOTAL COST
Asbestos Wall Texture	242 ft ²	\$7.50/ft ²	\$1,815.00
Asbestos Hard Fittings on Fiberglass Insulation	226 ea	\$60.00/ea	\$13,560.00
Asbestos Hard Pack on Fiberglass Insulation	19 ea	\$60.00/ea	\$1,140.00
Asbestos Underground Culvert Tar Wrap	51 ft	*	*
Asbestos Floor Tile and Mastic	31,491 ft ²	\$4.00/ft ²	\$125,964.00
Total Estimated Abater	nent Costs:		\$142,479.00

*The underground culvert tar wrap is buried beneath Johnson Hall between the north and south branches of the west tunnel. It is currently not accessible. The material will require abatement in the future when Johnson Hall is demolished.

2.4 Survey Notes

LEGEND was able to visually quantify ACM hard fittings on fiberglass insulation throughout the basement on steam and water pipes. However, on floors 1-3 inaccessible ceilings and pipe chases prevented LEGEND from verifying the presence of possible additional hard fittings. LEGEND assumes additional hard fittings will be discovered during renovation or demolition activities on the water pipes supplying the laundry rooms, custodial rooms, and bathrooms and on steam pipes providing steam to radiators throughout the building. LEGEND recommends assuming an additional 100-150 hard fittings on fiberglass insulation on 1st and 2nd floors and an additional 50 hard fittings on 3rd floor.

Abandoned underground steam lines running between the north and south branches of the west tunnel exist; these steam lines are inside a corrugated metal culvert. The exterior of the culvert has an ACM tar wrap on it.

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD LOW	ASSESS. CAT. ¹	NOTES
ſunnel								
Hard Fittings on	0-15% Chrysotile	197 fittings	Friable	Significantly	Physical		1	The hard fittings on fiberglass insulation are
Fiberglass Insulation	0-25% Amosite		TSI	Damaged	Air Erosion			throughout the tunnel.
					Vibration			
Hard Pack on	15% Chrysotile	19 ea	Friable	Significantly	Physical		1	The hard pack is around valves and at the end of
Fiberglass Insulation			TSI	Damaged	Air Erosion			fiberglass insulation throughout the tunnel.
					Vibration			

Room 2

Hard Fittings on	0-15% Chrysotile	3 fittings	Friable	Good	Physical	6	The hard fittings on fiberglass insulation run
Fiberglass Insulation	0-25% Amosite		TSI		Air Erosion		along the north wall.
					Vibration		

Room 2A

Hard Fittings on	0-15% Chrysotile	3 fittings	Friable	Good	Physical	6	None.
Fiberglass Insulation	0-25% Amosite		TSI		Air Erosion		
					Vibration		

Room 5A

Hard Fittings on	0-15% Chrysotile	3 fittings	Friable	Good	Physical	6	The hard fittings on fiberglass insulation are on
Fiberglass Insulation	0-25% Amosite		TSI		Air Erosion		the east end of the room.
					Vibration		

Room 5C

Hard Fittings on	0-15% Chrysotile	3 fittings	Friable	Good	Physical	6	The hard fittings on fiberglass insulation are in
Fiberglass Insulation	0-25% Amosite		TSI		Air Erosion		the southeast corner of the room, leading to the
					Vibration		AHU.

Room 6 A							
Hard Fittings on	0-15% Chrysotile	6 fittings	Friable	Good	Physical	6	The hard fittings on fiberglass insulation run
Fiberglass Insulation	0-25% Amosite		TSI		Air Erosion		along the north wall.
					Vibration		

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD	ASSESS. CAT. ¹	NOTES
Room 7								
Hard Fittings on Fiberglass Insulation	0-15% Chrysotile 0-25% Amosite	3 fittings	Friable TSI	Good	Physical Air Erosion		7	The hard fittings on fiberglass insulation are above ceiling tile along the southeast corner of
					Vibration			the room.

Room 8

Concrete Wall	2-3% Chrysotile	242 ft ²	Non-Friable	N/A*	N/A*	N/A*	The asbestos concrete wall texture is on the
Texture			Miscellaneous				north and west walls.

Hallway 88

Hard Fittings on	0-15% Chrysotile	8 fittings	Friable	Good	Physical	7	The hard fittings on fiberglass insulation are
Fiberglass Insulation	0-25% Amosite		TSI		Air Erosion		above ceiling tile, refer to the ACM Locations
					Vibration		Diagram for exact locations.

Dorm Rooms 141, 142, 143, 144, 145, 146, 147, 148, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 170, 171, 172, 173, 174, 175, 176, 177, and 178 Abated lune 2013

175, 176, 177, and 17	/8 Abated June 2	2013					
9" Floor Tile and	Assumed	184 ft	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic		each	Miscellaneous				ACMs (under carpet in room 159 only).

Dorm Rooms 149, 150, 168, and 169 Abated June 2013

9" Floor Tile and	Assumed	246 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic		each	Miscellaneous				ACMs.

Room 180 Abated June 2013

9" Floor Tile and	Assumed	32 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic			Miscellaneous				ACMs.

ACM-containing mudded fittings removed from 179, 281, 381 and adjacent rooms to the east and west - May 2018

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE	ASSESS. CAT. ¹	NOTES
Room 181 Abated	June 2013						
9" Floor Tile and Mastic	Assumed	14 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 182 Abated	May 2009						
9" Floor Tile and Mastic	Assumed	43 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 183 Abated	June 2013						
9" Floor Tile and Mastic	Assumed	39 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 184 Abated	May 2009		I	J			
9" Floor Tile and Mastic	Assumed	13 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 186 Abated	June 2013		1	1	I		
9" Floor Tile and Mastic	Assumed	29 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Hallway 188 (includ	ing all hallways on	1 st floor) Abat	ed June 2013		1	1	1
9" Floor Tile and Mastic	Assumed	2,601 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 다 지 프 프 프 POTENTIAL	ASSESS. CAT. ¹	NOTES
loom 190 Abated	June 2013						
9" Floor Tile and Mastic	Assumed	14 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 191 Abated	June 2013			1		-	
9" Floor Tile and Mastic	Assumed	32 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
oom 192 Abated	June 2013		1				
9" Floor Tile and Mastic	Assumed	29 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

ſ	9" Floor Tile and	Assumed					mastic were assumed to be
	5 Hoor me ana	Assumed	104 11	Non-Fridbic	19/7	N/A	
	Mastic		each	Miscellaneous			ACMs (under carpet in rooms 279 and 280 only).

Dorm Rooms 250, 251, 270, and 271. 270 & 271 Abated June 2022, 250 & 251 Abated June 2023

· · · · · · · · · · · · · · · · · · ·							
9" Floor Tile and	Assumed	299 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic		each	Miscellaneous				ACMs.

Room 282 Abated June 2023

9" Floor Tile and Mastic	Assumed	14 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

ACM-containing mudded fittings removed from 179, 281, 381 and adjacent rooms to the east and west - May 2018

LEGEND No. 0700048 (NDSU) JOHNSON HALL (BUILDING A058)

ROOM/ ACM		ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 등 종 표 POTENTIAL 응 양 위	ASSESS. CAT. ¹	NOTES
Room 283	Abated	June 2023						
9" Floor Tile a Mastic	and	Assumed	39 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 284 A	bated I	May 2017						
9" Floor Tile a Mastic		Assumed	14 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 286 A	bated I	May 2017	1	I	I	1	1	
9" Floor Tile a Mastic		Assumed	29 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Hallway 288	(include	s all hallways on th	e 2 nd Floor)	East Half Abat	ed June 202	2, West Half Abate	ed June 2	.023
9" Floor Tile a Mastic		Assumed	2,065 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 289	bated	June 2022		I	1	1		
9" Floor Tile a Mastic	मार्च	Assumed	14 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
Room 290	bated	May 2017	1	1			1	
9" Floor Tile a Mastic	मार्व	Assumed	32 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 다 등 등 프 POTENTIAL 영 위	ASSESS. CAT. ¹	NOTES
Room 291 Abated	May 2017						
9" Floor Tile and Mastic	Assumed	29 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

Dorm Rooms 341, 342, 343, 344, 245, 346, 347, 348, 349, 352, 352, 354, 355, 356, 357, 359, 360, 361, 362, 364, 365, 366, 367, 368, 369, 372, 373, 374, 375, 376, 377, 378, 379, and 380 379 & 380 Abated June 2011, 361-378 June 2022, remainder Abated June 2023

9" Floor Tile and	Assumed	184 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic		each	Miscellaneous				ACMs (under carpet in rooms 379 and 380 only).

Dorm Rooms 350, 351, 370, and 371. 370 & 371 Abated June 2022, 350 & 351 Abated June 2023

Г	9" Elona Tilla and	Assumed	299 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
	9 Floor file and	Assumed	25510		N/A	N/A		
	Mastic		each	Miscellaneous				ACMs.

Room 382 Abated June 2023

9" Floor T	14 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic		Miscellaneous				ACMs.

Room 383 Abated June 2023

9" Floor Tile and	Assumed	23 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic			Miscellaneous				ACMs.

Room 384 Abated June 2023

9" Floor Tile and	Assumed	39 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic			Miscellaneous				ACMs.

ACM-containing mudded fittings removed from 179, 281, 381 and adjacent rooms to the east and west - May 2018

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			1			1	
ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE G 전 프 POTENTIAL ^{C 전} 위	ASSESS. CAT. ¹	NOTES
oom 385 Abate	ed May 2017						
9" Floor Tile and Mastic	Assumed	13 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
oom 387 Abated	d May 2017		1				
9" Floor Tile and Mastic	Assumed	29 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
allway 388 (inclu	des all hallways on t	he 3 rd Floor)	East Half Aba	ted June 202	22, West Half Abat	ed June 2	2023
9 ″ Floor Tile and Mastic	Assumed	2,065 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
oom 390 Abateo	d June 2022		1	<u> </u>	1		
9 ″ Floor Tile and Mastic	Assumed	25 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
oom 391 Abated	d June 2022						
9" Floor Tile and Mastic	Assumed	14 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.
oom 393 Abateo	d May 2017					-	·
9 <mark>" Floor Tile and</mark> Mastic	Assumed	29 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be ACMs.

LEGEND No. 0700048 (NDSU) JOHNSON HALL (BUILDING A058)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 등 종 표 POTENTIAL ^등 용 표	ASSESS. CAT. ¹	NOTES			
East Stairway (from	1 st to 3 rd floor) Aba	ted June 20)22 Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be			
Mastic			Miscellaneous				ACMs.			
Center Stairway (from basement to 2 rd floor) Abated June 2023										

Center Stairway (from basement to 3th floor) Abaled June 2023

		,					
9" Floor Tile and	Assumed	456 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
Mastic			Miscellaneous				ACMs.

West Stairway (from 1st to 3rd floor) Abated June 2023

Γ	9" Floor Tile and	Assumed	411 ft ²	Non-Friable	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to be
	Mastic			Miscellaneous				ACMs.

Underground (entering the building in the north and south branches of the west tunnel)

Underground Culvert	2% Chrysotile	51 ft	Friable	Significantly	Physical	1	The tar wrap is on the abandoned culvert in the
Tar Wrap			TSI	Damaged	Air Erosion		west tunnel. The visible material was assessed.
					Vibration		Refer to section 2.4 "Survey Notes".

¹Assessment Categories:

1) Damaged or Significantly Damaged TSI ACM

2) Damaged Friable Surfacing ACM

3) Significantly Damaged Friable Surfacing ACM

4) Damaged or Significantly Damaged Friable Miscellaneous ACM

End

5) ACM with Potential for Damage

6) ACM with Potential for Significant Damage

7) Any Remaining Friable ACM or Friable Suspected ACM