NARRATIVE REPORT

1.0 **BUILDING INFORMATION**

Agriculture & Biosystems Engineering was originally constructed in 1938; a 1950 addition extended the building to the west and added a 2nd floor over the north end and a 1960 addition added a 2nd floor over the center and south end of the building. Although specific information could not be located, several small renovations are evident.

Agriculture & Biosystems Engineering is a two-story, 27,972 ft² building which primarily serves as office and classroom areas for engineering personnel.

The interior floor finishes included concrete, floor tile, carpet, and epoxy flooring; the interior wall finishes included plaster, concrete, concrete block, gypsum wallboard, and wood; and the interior ceiling finishes included concrete, ceiling tile, and plaster. 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) and aircell insulation are located in the building. Steam and domestic water enter the building via a pit into hallway 188 by room 114. HVAC systems located in the building consisted of steam radiators, steam unit heaters, and forced air furnaces with heating/cooling coils.

2.0 **ASBESTOS SURVEY INFORMATION**

Agriculture & Biosystems Engineering was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 2" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 2" for methodologies, definitions, and other pertinent supporting information.

A total of 77 samples were collected from suspect asbestos-containing materials (ACM) from Agriculture & Biosystems Engineering on August 15, 2007 and an additional 12 samples were collected on April 10, 2008. Laboratory analysis results indicate 28 of these samples tested positive for asbestos.

2.1 **Suspect Materials Identified and Sampled**

Floor Tile (2 types)

Baseboard Adhesive (3 types)

Joint Compound (3 types) Vermiculite Ceiling Plaster

Hard Plaster- Basecoat (2 types)

Wall Texture (2 types) Ceiling Tile (5 types)

HVAC Duct Caulk

Stair Tread Adhesive

Sink Undercoating (3 types)

Exterior Window Glazing (3 types) Exterior Window/Door System Caulk

Aircell Pipe Insulation

Fume Hood

Exterior Door Caulk

Floor Tile Mastic (2 types)

Carpet Mastic

Gypsum Wallboard (3 types) Hard Plaster- Skimcoat (2 type)

Hard Plaster- Monocoat

Ceiling Texture

Encapsulant on Fiberglass Insulation

Transite Panels (2 types)

Window Glazing

Tarpaper

Exterior Window Caulk (3 types)

Hard Fitting on Aircell Insulation

Hard Fitting on Fiberglass Insulation

Window Sill Material (2 types)

Exterior Penetration Putty

Exterior Building Seam Caulk

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 <u>Asbestos Containing Materials</u>

Baseboard Adhesive (1 type)

Joint Compound (1 type)

Vermiculite Ceiling Plaster

1' Pegboard Ceiling Tile (gray backing)

Transite Panels (2 types)

Purple Sink Undercoating

Pink Sink Undercoating

Exterior Window Glazing

Exterior Window Caulk (3 types)

Hard Fittings on Aircell Insulation

Aircell Insulation

Hard Fittings on Fiberglass Insulation

Mastic for 12" Brown Floor Tile

Fume Hood

Exterior Door Caulk

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 Agriculture & Biosystems Engineering as follows:

ACM	QUANTITY	UNIT COST	TOTAL COST
Asbestos Baseboard Adhesive	1,206 ft	\$4.00/ft	\$4,824.00
Asbestos Joint Compound	504 ft ²	\$5.00/ft ²	\$2,520.00
Asbestos Vermiculite Ceiling Plaster	8,075 ft ²	\$7.50/ft ²	\$60,562.50
Asbestos Ceiling Tile	5,735 ft ²	\$5.00/ft ²	\$28,675.00
Asbestos Transite panels	80 ft ²	\$5.00/ft ²	\$400.00
Asbestos Sink Undercoating (all types)	2 ea	\$150.00/ea	\$300.00
Asbestos Window Glazing	67 ea	\$225.00/ea	\$15,075.00
Asbestos Window Caulk (all types)	93 ea	\$125.00/ea	\$11,625.00
Asbestos Door Caulk	4 ea	\$125.00/ea	\$500.00
Asbestos Aircell Insulation	684 ft	\$25.00/ft	\$17,100.00
Asbestos Hard Fittings on Aircell Insulation	133 ea	\$25.00/ea	\$3,325.00
Asbestos Hard Fittings on Fiberglass Insulation	44 ea	\$60.00/ea	\$2,640.00
Asbestos Floor Tile and/or Mastic (all types)	10,030 ft ²	\$4.00/ft ²	\$40,120.00
Asbestos Fume Hood	\$350.00		
Total Estimated Abater	\$188,016.00		

2.4 **Survey Notes**

Agriculture & Biosystems Engineering was constructed in several different years (refer to section 1.0 for dates of construction); each construction section was considered an independent homogeneous area. During the building survey, each suspect material was sampled in each separate homogeneous area. Therefore, materials that may seem identical throughout building will vary from ACM to non-ACM in different homogeneous areas as indicated by the asbestos bulk sample results.

LEGEND collected samples of vermiculite ceiling plaster throughout the building using available architectural drawings to define homogenous areas. A review of the results indicates the vermiculite ceiling plaster contains asbestos. The vermiculite ceiling plaster was used throughout the 1950 addition, on both the 1st and 2nd floors; refer to the ACM Locations Diagrams for further information. In rooms 101, 113, 115, 117, 119, and 120 a non-ACM popcorn ceiling texture was applied over the ACM vermiculite ceiling plaster and in room 203 1' Pegboard Ceiling Tile (yellow backing) was installed concealing the vermiculite ceiling plaster (a 2'x4' ceiling tile was also installed concealing the 1' ceiling tile).

LEGEND identified and sampled a 1' Pegboard Ceiling Tile (gray backing) throughout the 1960 addition; it contains asbestos. In room 203 a 1' Pegboard Ceiling Tile (yellow backing) was identified and sampled; it does not contain asbestos.

LEGEND identified and sampled 12" tan floor tile and 12" brown floor tile in a checkered pattern in room 108; the floor tile are also below the carpet in rooms 104, 105, 106, 107, and 188B. The 12" brown floor tile contains asbestos; the 12" tan floor tile and the mastics do not contain asbestos.

LEGEND identified and sampled a baseboard adhesive in room 203; it contained asbestos. The baseboard adhesive was used throughout the 1950 addition, on both the 1st and 2nd floors; refer to the ACM Locations Diagrams for further information. The ACM baseboard adhesive is black and appears very similar to the mastic used beneath the 9" floor tile throughout the 1950 and 1960 additions. LEGEND used available architectural drawings to identify the walls where the ACM baseboard adhesive may be present and then conducted a visual inspection on each wall to verify the presence of the material. LEGEND noted a majority of the walls had the ACM baseboard adhesive present as a residual layer below the current baseboard adhesive. Therefore, it is not possible to identify the ACM baseboard adhesive by the baseboard installed.

LEGEND observed transite panels being used as a mobile workbench in the east end of room 210. These transite panels are not building materials and were not quantified by LEGEND during the asbestos survey. LEGEND sampled these materials during the survey (sample #58), a review of the results indicate these transite panels (workbenches) contain asbestos.

ASBESTOS TYPE

ROOM/

ACM

LEGEND TECHNICAL SERVICES, INC.

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU)
AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

MATERIAL

CONDITION

ASSESS.

CAT.1

NOTES

50% Chrysotile	52 ft	Friable	Damaged	Physical	1	
		TSI	Dumagea	Air Erosion □■□ Vibration □■□	1	The asbestos aircell pipe insulation above ceiling tile runs along the north and west walls.
60% Chrysotile 5% Amosite	11 fittings	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	None
2% Chrysotile	629 ft²	Friable Surfacing	Good	Physical □□□ Air Erosion □□□□ Vibration □□□□	5	The asbestos vermiculite ceiling plaster is above ceiling tile.
Assumed	629 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
3% Chrysotile	97 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, west (under wood paneling), and east (south half under wallpaper) walls.
50% Chrysotile une 2012	17 ft	Friable TSI	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	The asbestos aircell pipe insulation runs along the west wall.
60% Chrysotile 5% Amosite d June 2012	3 fittings	Friable TSI	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
2% Chrysotile cember 2023	169 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Assumed Ine 2012	169 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
	Assumed 3% Chrysotile 50% Chrysotile 40% Chrysotile 5% Amosite 4 June 2012 2% Chrysotile Cember 2023 Assumed	Assumed 629 ft² 3% Chrysotile 97 ft 50% Chrysotile 17 ft 60% Chrysotile 3 fittings 60% Chrysotile 169 ft² 2% Chrysotile 169 ft² Assumed 169 ft²	Assumed 629 ft² Non-Friable Miscellaneous 3% Chrysotile 97 ft Non-Friable Miscellaneous 50% Chrysotile Ine 2012 3 fittings Friable TSI 60% Chrysotile 5% Amosite d June 2012 2% Chrysotile Cember 2023 Assumed 169 ft² Non-Friable Surfacing Non-Friable Surfacing	Assumed 629 ft² Non-Friable Miscellaneous N/A* Non-Friable Miscellaneous N/A* Non-Friable Miscellaneous N/A* Sow Chrysotile TSI 60% Chrys	2% Chrysotile 629 ft² Friable Surfacing Good Physical Air Erosion Vibration N/A* N/A* N/A* Sow Chrysotile 17 ft Friable Miscellaneous N/A* N/A*	2% Chrysotile 629 ft² Friable Surfacing Sood Physical ☐ 5 Assumed 629 ft² Non-Friable Miscellaneous N/A* N/A* N/A* 3% Chrysotile 97 ft Non-Friable Miscellaneous N/A* N/A* N/A* 50% Chrysotile TSI Sood Physical ☐ 6 Air Erosion ☐ ☐ 7 Air Erosion ☐ 6 Air Erosion ☐ ☐ 6 Air Erosion ☐ 6 Air E

EST.

QUANTITY

ACM TYPE

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S H POTENTIAL S S H	ASSESS.	NOTES
Baseboard Adhesive	3% Chrysotile ated June 2012	38 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the west, south, and east walls.
Room 102 Abated	December 2023	3		1			
9" Floor Tile and Mastic	Assumed	123 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	NoneThe asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 103 Abated	December 2023	<u> </u>				<u> </u>	
Aircell Pipe Insulation	50% Chrysotile	39 ft	Friable TSI	Damaged	Physical □□■ Air Erosion □■□ Vibration □□■	1	The asbestos aircell pipe insulation runs along the north and east walls.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	11 fittings	Friable TSI	Good	Physical □□■ Air Erosion □□□ Vibration □□■	6	None
Vermiculite Ceiling Plaster	2% Chrysotile	141 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration □□■	6	None
9" Floor Tile and Mastic	Assumed	141 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Baseboard Adhesive	3% Chrysotile	48 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
Room 104 Abated	December 2023	3		1	- L	1	1
Aircell Pipe Insulation	50% Chrysotile	23 ft	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	The asbestos aircell pipe insulation above ceiling tile runs along the north wall and through the middle of the room.
	•	•	•	•	•	•	

* = Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 5 5 POTENTIAL	± ASSESS. CAT.¹	NOTES
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	5 fittings	Friable TSI	Good	Physical		None
12" Brown Floor Tile	3% Chrysotile	120 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 12" floor tile contains asbestos; the mastic does not. They are under the carpet; see note in section 2.4 "Survey Notes".
Room 105 Abated	December 2023						
Aircell Pipe Insulation		6 ft	Friable TSI	Good	Physical	I 🗆	The asbestos aircell pipe insulation above ceiling tile runs along the north wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	3 fittings	Friable TSI	Good	Physical □□ Air Erosion □■ Vibration □■	I 🗆	None
12" Brown Floor Tile	3% Chrysotile	104 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 12" floor tile contains asbestos; the mastic does not. They are under the carpet; see note in section 2.4 "Survey Notes".
Room 106 Abated I	December 2023	1	1	1		1	
Aircell Pipe Insulation		10 ft	Friable TSI	Good	Physical □□ Air Erosion □■ Vibration □■	I 🗆	The asbestos aircell pipe insulation above ceiling tile runs along the north wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	3 fittings	Friable TSI	Good	Physical □□ Air Erosion □■ Vibration □■	I 🗆	None
12" Brown Floor Tile	3% Chrysotile	97 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 12" floor tile contains asbestos; the mastic does not. They are under the carpet; see note in section 2.4 "Survey Notes".

* = Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

MATERIAL

CONDITION

EST.

QUANTITY

ACM TYPE

ASBESTOS TYPE

DAMAGE POTENTIAL POTENTIAL POTENTIAL

ASSESS.

CAT.1

NOTES

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Room 107 Abated	December 2023						
Aircell Pipe Insulation	50% Chrysotile	16 ft	Friable TSI	Damaged	Physical ■□□ Air Erosion □■□ Vibration □■□	1	The asbestos aircell pipe insulation runs along the south wall above ceiling tile.
Hard Fittings on Fiberglass Insulation	0-20% Chrysotile 0-5% Amosite	5 fittings	Friable TSI	Good	Physical ■□□ Air Erosion □■□ Vibration □■□	5	The asbestos hard fittings on fiberglass insulation are above ceiling tile along the south wall.
12" Brown Floor Tile	3% Chrysotile	171 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 12" floor tile contains asbestos; the mastic does not. They are under the carpet; see note in section 2.4 "Survey Notes".
Room 108 Abated	December 2023						
Joint Compound	3% Chrysotile	468 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos joint compound is on the north, south, east, and west walls.
Purple Sink Undercoating	10% Chrysotile	1 sink	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos sink undercoating is along the south wall.
12" Brown Floor Tile	3% Chrysotile	171 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The 12" floor tile contains asbestos; the mastic does not. See note in section 2.4 "Survey Notes".
Room 113 Abated [December 2023]					
Aircell Pipe Insulation		19 ft	Friable TSI	Good	Physical ■□□ Air Erosion □■□ Vibration □■□	1	The asbestos aircell pipe insulation above ceiling tile runs along the west wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	4 fittings	Friable TSI	Good	Physical ■□□ Air Erosion □■□ Vibration □■□	5	None
Vermiculite Ceiling	2% Chrysotile	124 ft²	Friable Surfacing	Good	Physical ■□□ Air Erosion □■□	5	The asbestos vermiculite ceiling plaster is above ceiling tile and a popcorn ceiling texture.

^{* =} Non-Friable materials were not assessed

ROOM/

ACM

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 € € F F F F F F F F F F F F F F F F F	ASSESS.	NOTES
9" Floor Tile and Mastic	Assumed	124 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Baseboard Adhesive	3% Chrysotile	43 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south (under wood paneling), east, and west walls.
Room 114 Abated	December 2023	•					
Vermiculite Ceiling Plaster	2% Chrysotile	10 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Baseboard Adhesive	3% Chrysotile	5 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the south wall.
Room 115 Abated	December 2023	3	ı	ı			
Aircell Pipe Insulation	50% Chrysotile	16 ft	Friable TSI	Damaged	Physical ■□□ Air Erosion □■□ Vibration □■□	1	The asbestos aircell pipe insulation above ceiling tile runs along the west wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	3 fittings	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	None
Vermiculite Ceiling Plaster	2% Chrysotile	406 ft ²	Friable Surfacing	Good	Physical ■□□ Air Erosion □■□ Vibration □■□	5	The asbestos vermiculite ceiling plaster is above ceiling tile and a popcorn ceiling texture.
9" Floor Tile and Mastic	Assumed	406 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Baseboard Adhesive	3% Chrysotile	79 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north (under wood paneling), south (under wood paneling), east, and west walls.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S H POTENTIAL S S H	ASSESS.	NOTES
Room 115A Abated	December 202	23					
Vermiculite Ceiling Plaster	2% Chrysotile	15 ft²	Friable Surfacing	Good	Physical ■□□ Air Erosion □■□ Vibration □■□	5	None
9" Floor Tile and Mastic	Assumed	15 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Room 117 Abated	December 2023	3			•	•	
Aircell Pipe Insulation	50% Chrysotile	42 ft	Friable TSI	Good	Physical ■□□ Air Erosion □■□ Vibration □■□	5	The asbestos aircell pipe insulation above ceiling tile runs along the west and south walls.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	8 fittings	Friable TSI	Good	Physical Air Erosion III	5	None
Vermiculite Ceiling Plaster	2% Chrysotile	169 ft²	Friable Surfacing	Good	Physical Air Erosion III	5	The asbestos vermiculite ceiling plaster is above ceiling tile and a popcorn ceiling texture.
9" Floor Tile and Mastic	Assumed	169 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Baseboard Adhesive	3% Chrysotile	54 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north (under wood paneling), south, east, and west walls.
Room 119 Abated I	December 2023						
Aircell Pipe Insulation		18 ft	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	The asbestos aircell pipe insulation above ceiling tile runs along the south wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	3 fittings	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	None

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ASSESS.	NOTES
Vermiculite Ceiling Plaster	2% Chrysotile	158 ft²	Friable Surfacing	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	The asbestos vermiculite ceiling plaster is above ceiling tile and a popcorn ceiling texture.
9" Floor Tile and Mastic Abated A	Assumed pril 2007	158 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Baseboard Adhesive Abated I	3% Chrysotile December 2023	49 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
Room 120 Abated	December 2023					•	
Aircell Pipe Insulation		26 ft	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	The asbestos aircell pipe insulation above ceiling tile runs along the south wall and the south half of the west wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	7 fittings	Friable TSI	Good	Physical □□□ Air Erosion □□□ Vibration □□□	5	None
Vermiculite Ceiling Plaster	2% Chrysotile	157 ft²	Friable Surfacing	Good	Physical □□□ Air Erosion □□□ Vibration □□□		The asbestos vermiculite ceiling plaster is above ceiling tile and a popcorn ceiling texture.
9" Floor Tile and Mastic	Assumed	157 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Baseboard Adhesive	3% Chrysotile	50 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
Room 122 Abated	December 2023	3		1	l		1
Aircell Pipe Insulation	50% Chrysotile	62 ft	Friable TSI	Damaged	Physical □□□ Air Erosion □□□ Vibration □□□	1	The asbestos aircell pipe insulation above ceiling tile runs throughout the room.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD	ASSESS. CAT. ¹	NOTES
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	11 fittings	Friable TSI	Good	Physical Air Erosion Vibration		5	None
Room 123 Abated I	December 2023	7						
Aircell Pipe Insulation	50% Chrysotile	130 ft	Friable TSI	Damaged	Physical Air Erosion Vibration		1	The asbestos aircell pipe insulation runs along the north and south walls.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	16 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	None
Hard Fittings on Fiberglass Insulation	0-20% Chrysotile 0-5% Amosite	17 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	The asbestos hard fittings on fiberglass insulation are along the east half of the north and south walls and the west wall.
Room 124 Abated	December 2023							
Aircell Pipe Insulation	50% Chrysotile	12 ft	Friable TSI	Damaged	Physical Air Erosion Vibration		1	The asbestos aircell pipe insulation runs along the west half of the north wall.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	9 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	None
Hard Fittings on Fiberglass Insulation	0-20% Chrysotile 0-5% Amosite	14 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	The asbestos hard fittings on fiberglass insulation are along the north, west, and southeast corner walls.
Transite Panels	10% Chrysotile	80 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	k	N/A*	The asbestos transite panels are along the north wall; the interior walls of the welding hood.

* = Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 € E E E E E E E E E E E E E E E E E	ASSESS. CAT. ¹	NOTES
Room 125 Abated	December 2023]					
9" Floor Tile and Mastic	Assumed	588 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Purple Sink Undercoating	10% Chrysotile	1 sink	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos sink undercoating is along the east wall.
Room 127 Abated I	December 2023]					
Aircell Pipe Insulation	50% Chrysotile	90 ft	Friable TSI	Damaged	Physical □□■ Air Erosion □■□ Vibration □□■	1	The asbestos aircell pipe insulation runs along the north and south walls.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	16 fittings	Friable TSI	Good	Physical □□■ Air Erosion □■□ Vibration □□■	6	None
Hard Fittings on Fiberglass Insulation	0-20% Chrysotile 0-5% Amosite	6 fittings	Friable TSI	Good	Physical □□■ Air Erosion □■□ Vibration □□■	6	The asbestos hard fittings on fiberglass insulation are along the south wall.
Room 127A Abated	December 2023	3					
Aircell Pipe Insulation	50% Chrysotile	38 ft	Friable TSI	Damaged	Physical □□■ Air Erosion □■□ Vibration □□■	1	The asbestos aircell pipe insulation runs along the north and south walls.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	5 fittings	Friable TSI	Good	Physical □□■ Air Erosion □■□ Vibration □□■	6	None
Fume Hood	5% Chrysotile	1 ea	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos transite fume hood is along the northeast corner of room 127A.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH HIGH	ASSESS.	NOTES
Hallway 188 Abate	d December 202	23						
Vermiculite Ceiling Plaster	2% Chrysotile	524 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
Baseboard Adhesive	3% Chrysotile	64 ft	Non-Friable Miscellaneous	N/A*	N/A	*	N/A*	The asbestos baseboard adhesive is on all of the walls throughout the hallway.
9" Floor Tile and Mastic	Assumed	4 ft ²	Friable Miscellaneous	Significantly Damaged	Physical Air Erosion Vibration		4	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are in a small section east of room 114.
Room 188A Abateo	December 202	3						
Aircell Pipe Insulation		10 ft	Friable TSI	Good	Physical Air Erosion Vibration		6	The asbestos aircell pipe insulation is in the northwest and southwest corners of the room.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	2 fittings	Friable TSI	Good	Physical Air Erosion Vibration		6	None
Vermiculite Ceiling Plaster	2% Chrysotile	90 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
Baseboard Adhesive	3% Chrysotile	20 ft	Non-Friable Miscellaneous	N/A*	N/A	*	N/A*	The asbestos baseboard adhesive is on the north and south walls.
Hallway 188B Abate	ed December 20	23			1		.	,
Aircell Pipe Insulation		4 ft	Friable TSI	Good	Physical Air Erosion Vibration		5	The asbestos aircell pipe insulation above ceiling tile runs through the hallway by room 104.
12" Brown Floor Tile	3% Chrysotile	116 ft²	Non-Friable Miscellaneous	N/A*	N/A	*	N/A*	The 12" floor tile contains asbestos; the mastic does not. They are under the carpet; see note in section 2.4 "Survey Notes".

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH HIGH	ASSESS. CAT. ¹	NOTES
Room 199M (includi	ng the storage roor	n north of ma	in bathroom)	bated Decer	mber 2023]		
Aircell Pipe Insulation	50% Chrysotile	33 ft	Friable TSI	Good	Physical		5	The asbestos aircell pipe insulation above ceiling tile runs along the south wall and through the middle of the main bathroom.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	4 fittings	Friable TSI	Good	Physical Air Erosion Vibration		5	None
Hard Fittings on Fiberglass Insulation	0-20% Chrysotile 0-5% Amosite	2 fittings	Friable TSI	Good	Physical Air Erosion Vibration		5	The asbestos hard fittings on fiberglass insulation are above ceiling tile in the storage room.
9" Floor Tile and Mastic Abated J	Assumed anuary 2012	59 ft²	Friable Miscellaneous	Damaged	Physical Air Erosion Vibration		4	None
toint Compound	3% Chrysotile	36 ft²	Non-Friable Miscellaneous	N/A*	N/A*	•	N/A*	The asbestos joint compound is on the middle of the north wall in the storage room.
Room 200 Abated	December 2023		1	1				
Vermiculite Ceiling Plaster	2% Chrysotile	125 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
Baseboard Adhesive	3% Chrysotile	42 ft	Non-Friable Miscellaneous	N/A*	N/A*	*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
9" Floor Tile and Mastic	Assumed	125 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	k	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 201 Abated I	December 2023]	1	1	<u>. I</u>		1	I
Vermiculite Ceiling Plaster	2% Chrysotile	908 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ASSESS. CAT. ¹	NOTES
Baseboard Adhesive	3% Chrysotile	118 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
Room 202 Abated	December 2023	<u> </u>				1	
Vermiculite Ceiling Plaster	2% Chrysotile	135 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Baseboard Adhesive	3% Chrysotile	48 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
9" Floor Tile and Mastic	Assumed	135 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Room 203 Abated	December 2023	1		l		1	
Vermiculite Ceiling Plaster	2% Chrysotile	284 ft ²	Friable Surfacing	Good	Physical ■□□ Air Erosion ■□□ Vibration ■□□	7	The asbestos vermiculite ceiling plaster is above 2'x4' ceiling tile and 1' pegboard ceiling tile.
Baseboard Adhesive	3% Chrysotile	68 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
9" Floor Tile and Mastic	Assumed	284 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Room 204 Abated	December 2023]	1	1	1		
Vermiculite Ceiling Plaster	2% Chrysotile	144 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None

* = Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S E POTENTIAL	ASSESS.	NOTES
Baseboard Adhesive	3% Chrysotile	48 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
9" Floor Tile and Mastic	Assumed	144 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Room 205 Abated	December 2023	<u> </u>	<u> </u>				
Vermiculite Ceiling Plaster	2% Chrysotile	160 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Baseboard Adhesive	3% Chrysotile	23 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the south and west walls.
9" Floor Tile and Mastic	Assumed	160 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Room 206 Abated I	l December 2023	<u> </u>					
Vermiculite Ceiling Plaster	2% Chrysotile	237 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Baseboard Adhesive	3% Chrysotile	31 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north and west walls.
9" Floor Tile and Mastic	Assumed	237 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 50 S EG POTENTIAL	ASSESS. CAT. ¹	NOTES
Room 207 Abated	December 2023						
Vermiculite Ceiling Plaster	2% Chrysotile	252 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Baseboard Adhesive	3% Chrysotile	45 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, east, and south walls.
9" Floor Tile and Mastic	Assumed	252 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.
Room 208 Abated I	December 2023]				1	
Vermiculite Ceiling Plaster	2% Chrysotile	847 ft ²	Friable Surfacing	Good	Physical □□■□ Air Erosion □■□ Vibration ■□□	6	None
Baseboard Adhesive	3% Chrysotile	120 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls.
9" Floor Tile and Mastic	Assumed	847 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 208A Abated	December 2023	3					
Vermiculite Ceiling Plaster	2% Chrysotile	47 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None
Room 210 Abated [December 2023]					
Vermiculite Ceiling Plaster	2% Chrysotile	1,098 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	HIGH MOD	ASSESS.	NOTES
Room 210B Abated	December 2023							
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	881 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
Room 210B1 Abate	d December 2023	3						
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	58 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
Room 210C Abated	December 2023							
Vermiculite Ceiling Plaster	2% Chrysotile	593 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
Room 215 Abated I	December 2023							
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	462 ft ²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None
9" Floor Tile and Mastic	Assumed	462 ft²	Non-Friable Miscellaneous	N/A*	N/A	k	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 216 Abated	December 2023]	l	1				
9" Floor Tile and Mastic	Assumed	16 ft²	Non-Friable Miscellaneous	N/A*	N/A	k	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 217 Abated	December 2023]	,	,	1		<u>'</u>	
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	463 ft²	Friable Surfacing	Good	Physical Air Erosion Vibration		6	None

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE TO SE HE OF S	ASSESS. CAT. ¹	NOTES				
9" Floor Tile and	Assumed	463 ft ²	Non-Friable	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are				
Mastic	Assumed	463 11	Miscellaneous	N/A	N/A	N/A	assumed to be ACMs.				
Room 221 Abated	December 2023										
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	575 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□	6	None				
(6 / 6/					Vibration ■□□						
9" Floor Tile and Mastic	Assumed	575 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs; they are under the carpet.				
Room 222 Abated	December 2023										
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	570 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	None				
9" Floor Tile and	Assumed	570 ft ²	Non-Friable	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are				
Mastic Abated	June 2015		Miscellaneous				assumed to be ACMs; they are under the carpet.				
Room 223 <u>& 224</u>				•							
1' Pegboard Ceiling	2% Amosite	1,690 ft ²	Friable	Good	Physical	6	None				
Tile (gray backing)	Abated Decem	ber 2023	Surfacing		Air Erosion □■□ Vibration ■□□						
9" Floor Tile and	Assumed	1,690 ft ²	Non-Friable	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are				
Mastic Abated A	August 2015		Miscellaneous				assumed to be ACMs.				
Hallway 288 (includi	Hallway 288 (including all hallways on 2 nd floor) Abated December 2023										
Vermiculite Ceiling Plaster	2% Chrysotile	564 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	Refer to the ACM Locations Map for further information.				

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 5 5 F POTENTIAL	ASSESS.	NOTES
1' Pegboard Ceiling Tile (gray backing)	2% Amosite	466 ft²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□ Vibration ■□□	6	Refer to the ACM Locations Map for further information.
Baseboard Adhesive	3% Chrysotile	84 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	Refer to the ACM Locations Map for further information.
9" Floor Tile and Mastic	Assumed	1,030 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 299M Abate	d December 202	3				-	
Baseboard Adhesive	3% Chrysotile	32 ft	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos baseboard adhesive is on the north, south, east, and west walls throughout the bathroom entrance and main bathroom.
Room 299W Abate	d December 202	3		•	•		
9" Floor Tile and Mastic	Assumed	56 ft ²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed to be ACMs.
Room 299WA Abat	ed December 20	23		1	1	I	
9" Floor Tile and Mastic	Assumed	31 ft²	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The asbestos 9" floor tile and mastic are assumed ACMs.
North Stairway (1 st - 2	2 nd Floors) Abated	December	2023			1	
Aircell Pipe Insulation		21 ft	Friable Miscellaneous	Damaged	Physical □□■ Air Erosion □■□ Vibration □□■	1	The asbestos aircell pipe insulation runs along the north wall on the 1 st floor level.
Hard Fittings on Aircell Insulation	60% Chrysotile 5% Amosite	12 fittings	Friable Miscellaneous	Good	Physical □□■ Air Erosion □■□ Vibration □□■	6	None

^{* =} Non-Friable materials were not assessed

ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU) AGRICULTURE & BIOSYSTEMS ENGINEERING (BUILDING A014)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE 5 S H S S H S S S S S S S S S S S S S S	ASSESS. CAT. ¹	NOTES		
West Stairway (1 st - 2	Abated [December 2	2023						
Vermiculite Ceiling Plaster	2% Chrysotile	89 ft ²	Friable Surfacing	Good	Physical □□■ Air Erosion □■□	6	The vermiculite ceiling plaster is above the stairway on the 2 nd floor level.		
Exterior					Vibration ■□□				
Abated Dec	3% Chrysotile ember 2023	4 doors	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	Refer to the ACM Locations Map for further information.		
Window Caulk	3% Chrysotile	1 windows	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	Refer to the ACM Locations Map for further information.		
1 window remains, rest abated June 2012 Last window abated October 2016									
Window Glazing Abated June	3% Chrysotile	67 windows	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	Refer to the ACM Locations Map for further information.		

- 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

- 5) ACM with Potential for Damage
- 6) ACM with Potential for Significant Damage
- 7) Any Remaining Friable ACM or Friable Suspected ACM

* = Non-Friable materials were not assessed Page 18 of 18

¹Assessment Categories:

End