

H-C INDUSTRIES, Inc.

TO: CHUCK SCHIELE

cc: Ralph Whitney
Jim Ciccarelli
Jeannie Stevens
R.M. James- 6AB
P.R. Atkins- 19AB
R.A. Milito- ATC-EHL

FROM: KEVIN M. WALKER

DATE: 1989 April 07

Re: ASBESTOS PROJECTS- UPDATE

Handwritten:
4/11/89
2) File in H-C Industries
Asbestos, Plant Program

In response to Mr. Hoffman's memo of January 11th, We have completed a comprehensive survey for Asbestos Containing Materials- ACM, in the Crawfordsville facilities. This survey has resulted in a certification of "Asbestos-Free" for both the Machinery & Technology Facility and the Production Facility.

The work was preformed by ATEC Associates of Indianapolis. Samples taken indicated no Asbestos materials present. In addition to the ATEC analysis, I secured duplicate samples for roughly 35% of the total number of samples. These samples were analyzed by Mr. Rich Milito of ATC's Environmental Health Lab. The EHL results concurred with ATEC's with the minor exception of a "suspect" result from the ceiling tile in the West Plant Breakroom.

We will begin the second phase of the Asbestos survey- Roofing Material survey in early summer. We currently know that Asbestos is present in the roof. (We have used a patching material that contained 9% Asbestos. A Pre-Introduction Review prior to purchase is required to avoid these incidents.)

I have included a copy of the ATEC results for your information.

Enclosures



ALCOA0000010500

INDUSTRIAL HYGIENE SURVEY REPORT
ASBESTOS INVESTIGATION
H-C INDUSTRIES, INC.
CRAWFORDSVILLE, INDIANA
MARCH 27, 1989
ATEC PROJECT NUMBER 21-99378

APR 6 1989



Prepared For:

H-C INDUSTRIES, INC.
1201 EAST ELMORE STREET
CRAWFORDSVILLE, INDIANA
ATTENTION: MR. KEVIN WALKER

ALCOA0000010501

INDUSTRIAL HYGIENE SURVEY REPORT

Prepared For:

H-C Industries, Inc.
1201 East Elmore Street
Crawfordsville, Indiana

Attention: Mr. Kevin Walker

Conducted and Prepared By:

ATEC Associates, Inc.
5150 East 65th Street
Indianapolis, Indiana 46220

Ric Wilcox
Industrial Hygiene Division

Richard A. Griffith, AVP, CIH
Industrial Hygiene Division

ALCOA0000010502

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
PURPOSE	1
SURVEY METHODS AND LABORATORY ANALYSIS	1
SUSPECTED ASBESTOS CONTAINING MATERIALS	2
Pipe Insulation	2
Spray Applied Fireproofing and Insulation	2
Ceiling Tile	3
Floor Tile	3
Wallboard	3
Sub-Flooring	3
SAMPLING DETAIL FIGURE EXPLANATIONS	3
CONCLUSIONS AND RECOMMENDATIONS	4
APPENDIX A	
Results of Bulk Material Sampling	
APPENDIX B	
Sampling Detail Figure Diagrams	

INTRODUCTION

Asbestos is a general term applied to a wide variety of naturally occurring mineral silicates which are separable into fibers. Historically, asbestos remained a curiosity for centuries, with negligible production until the beginning of the twentieth century when it was used as thermal insulation for steam engines and as an ingredient in building materials. Some of the characteristics such as durability, flexibility, strength and resistance to wear made asbestos appear well suited for an estimated 3,000 separate commercial, public and industrial applications.

Unfortunately the unique physical features of asbestos that make good building materials are the same features that make asbestos harmful. Several respiratory diseases are related solely to asbestos exposure. Although many compounds are listed as suspected carcinogens, asbestos is one of only a few substances that is a proven carcinogen. For these reasons, federal, state and local governments now regulate the use and removal of asbestos materials.

PURPOSE

The bulk survey conducted on March 14, 1989, at H-C Industries facilities in Crawfordsville, Indiana was undertaken to identify all asbestos containing materials in the buildings. It was the company's desire to know what materials contained asbestos, where they were located and approximately how much of each type of material was present.

This report is designed to aid the building owner and the local environment safety manager in locating ACM. An individual listing of sample results is provided in Appendix A.

SURVEY METHODS AND LABORATORY ANALYSIS

The premises was inspected for the presence of material that is suspected of containing asbestos. As these materials were identified, bulk samples were obtained and placed into individual vials for transportation to the ATEC laboratory. A tubular coring tool was used to obtain the majority of bulk samples. This tool is utilized rather than scratching some material from the surface of suspected materials in an effort to obtain a sample that is representative of all layers of the material. Some pipe samples can have layers of asbestos below other layers of non-asbestos materials. All sample locations are identified by a fluorescent, numbered label. These numbers directly correspond with the numbers listed in Appendix A. The sample type code is an abbreviation of the type of material sampled. A list of these abbreviations is at the beginning of Appendix A. Attempts were made in all cases to take representative samples of like materials. This is the most

cost-effective method for the determination of ACM. It should be assumed by the building owner, contractor and abatement contractors that the composition of like materials in the same area of the materials sampled is congruous.

All bulk samples were analyzed by polarized light microscopy utilizing dispersion staining. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with a special stain. This prepared slide is then subjected to a variety of tests while being viewed under varying polarizations of light.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Attempts are made to mix the sample thoroughly to provide a homogeneous mixture prior to analysis in an attempt to provide a more accurate percentage. Even though this is an estimation, any material that contains over one percent of any type of asbestos is considered an ACM and must be handled according to OSHA and EPA regulations if disturbed.

Understanding the sampling strategy used can help the reader determine the actual quantity of asbestos within the building. Rooms containing pipes were carefully inspected and each pipe was sampled on at least one joint, elbow, or valve packing. Also, each pipe was sampled at least once through its entire run. Any changes in pipe diameter or any repairs or patches were also sampled. Assumptions may be made that the entire run of pipe sampled is of the same composition as the area sampled.

SUSPECTED ASBESTOS CONTAINING MATERIAL

Pipe Insulation

Pipe insulation is a major suspect for ACM in many buildings built before 1971 and sometimes found in buildings built as late as 1975. Many types of insulation are often found, including asbestos containing insulation such as mag-block and air cell. Asbestos is also used in other types of pipe insulation such as paper or cloth wrap over fiberglass or similar insulating materials. Other types of insulating materials include Polyflex (sponge rubber), cardboard, glass fibers and beads in a cementitious binder, mineral wool, and natural fibers such as horse hair.

Spray-Applied Fireproofing and Insulation

Many types of spray applied materials are used for fireproofing and insulation. The more common types of insulating materials are foam rubber, fiberglass, mineral wool, rock wool, and ACM. Fireproofing may also consist of mineral wool, fiberglass or ACM. Insulating materials are generally fluffy and are considered friable. Fireproofing, however, is found in two forms: cementitious or fluffy.

The fluffy material usually consists of a mineral wool base, with tiny glass beads mixed in. The cementitious type of fireproofing is similar in materials, but has an additional binder of sodium silicate or portland cement, and may contain up to 95 percent asbestos.

Ceiling Tile

Approximately two percent (2%) of all ceiling tile manufactured before - 1975 contain asbestos. Fiber release is possible through water or surface damage, breakage, or during tile removal/replacement.

Floor Tile

Due to the excellent durability of asbestos it was commonly used as a component of floor tile. In this application, the asbestos is tightly bound to the vinyl. Under normal wear, this material is not recognized as friable.

Wallboard

Some types of wallboard and plaster can contain asbestos. This is not a commonly occurring product but can be found in older installations. Asbestos fibers are more common in plaster used as a binding material.

Sub-Flooring

Mastic material used as an adhesive for floor tiles and linoleum often containing small quantities of asbestos. The material is non-friable and under normal conditions enclosed by the tile or linoleum.

SAMPLING DETAIL FIGURE EXPLANATIONS

Each drawing represents one building.

All samples are plotted by sample number and approximate location where sample was obtained.

All positive samples are indicated by darkened circles.

Chart-packing is used to represent homogeneous areas where ACM-positive material is assumed to be found.

Figure 1 - West Plant

Figure one (1) indicates the location of materials sampled in H-C Industries West Plant in Crawfordsville, Indiana.

Thermal system insulation samples obtained included two samples of 5-inch pipe insulation numbers 13115 and 13116 taken in the warehouse area. Both samples tested negative.

Miscellaneous samples obtained from the West Plant included one (1) linoleum sample (13117 - break room), two (2) samples of dropped ceiling tile No. 1 (13118 and 13119 - break room), three (3) samples of dropped ceiling tile No. 2 (13120 - men's restroom, 13121 - main office/center, 13122 - main office - west side), two (2) samples of dropped ceiling tile No. 3 (13123 - Safety Director's office, 13124 - Tool Room Supervisor's office), two (2) samples of dropped ceiling tile No. 4 (13125 and 13126, women's restroom). All the miscellaneous material samples tested negative for asbestos.

Figure 2 - East Plant

Figure two (2) indicates the location of materials sampled in H-C Industries East Plant in Crawfordsville, Indiana.

Thermal system insulation samples taken from the East Plant included two samples of insulation from a 4-inch horizontal pipe in the manufacturing area, Sample Nos. 13134 and 13136, and two samples of insulation from vent pipes in the manufacturing area, Sample Nos. 13135 and 13137.

Miscellaneous samples obtained from the East Plant included two (2) floor tile samples (13127 - men's restroom and 13128 - break room), two (2) samples of firewall between the office and manufacturing areas (13129 and 13130), two (2) linoleum samples from the men's restroom (13131 and 13133), one (1) mastic sample from the men's restroom, (13132) and three (3) dropped ceiling tile samples, 1 (13138 - Safety Director's office, 13139 - west end of the office area, 13140 - men's restroom in the office area). All the miscellaneous samples tested negative for asbestos.

CONCLUSIONS AND RECOMMENDATIONS

Based on bulk sampling and analysis of material obtained during an inspection of H-C Industries facilities in Crawfordsville, Indiana, it can be concluded that there are no asbestos containing building materials present in either building at this time.

ABBREVIATION KEY

Example: Boiler Cover

12501 = Sample Number
BC = Type of Material Sampled

Material Abbreviation

BC = Boiler or Pressure Vessel Cover
C = Ceiling Plaster or Drywall
CT = Surface Mounted Ceiling Tile
CL = Cloth (Curtain, Rope)
DCT = Dropped Ceiling Tile
FT = Floor Tile
HP-8" = Horizontal Pipe - 8-inch diameter
J-3" = Pipe Joint, Elbow or Union - 3-inch diameter
SAC = Spray Applied Ceiling Insulation
VP-6" = Vertical Pipe - 6-inch diameter
W = Wall Plaster or Drywall
T-6" = Valve or Pipe Tee - 6-inch diameter
TC = Tank Covering
Debris = Suspected Asbestos Debris on a Surface
Shock Joint = Air Handler Expansion or Shock Joint Cloth
Duct Cover = Air Handler Duct Insulation
Transite = Cementitious Hardboard Material

ALCOA00000010508

APPENDIX A

Results of Bulk Material Sampling

ALCOA00000010509

A TEC Environmental Services, Inc.
Results of Bulk Material Sampling

M-C Industries

Property: 1201 E. Elmore
ATEC Project Number: 21-99378

Sample Number	Type Mat.	Mat. Cat. Location	Total	Priority Amount 1	Priority Amount 2	Priority Amount 3	Priority Type of Asbestos	Per- cent	Other Fibrous Material Types & Percent	Per- cent
13115	HP-5W	T Warehouse, 1201 plant	0	0	0	0	MD	80-85	Fiberglass	X
13116	HP-5W	T Warehouse, 1201 plant	0	0	0	0	MD	80-85	Fiberglass	X
13117	LIN	M 1201 plant, breakroom (Linoleum)	0	0	0	0	MD	80-85 15-20	Fiberglass Cellulose	X
13118	DCI	M West plant, break room (1)	0	0	0	0	MD	35-40 1-2	Fiberglass Cellulose	X
13119	DCI	M West plant, break room (1)	0	0	0	0	MD	35-40 1-2	Fiberglass Cellulose	X
13120	DCI	M West plant, mens room (2)	0	0	0	0	MD	30-35 1-2	Fiberglass Cellulose	X
13121	DCI	M West plant, main office, center (2)	0	0	0	0	MD	25-30 <1	Fiberglass Cellulose	X
13122	DCI	M West plant, main office, N.W. side (2)	0	0	0	0	MD	25-30 <1	Fiberglass Cellulose	X
13123	DCI	M Safety Directors Office (3)	0	0	0	0	MD	80-85	Cellulose	X
13124	DCI	M Tool room, supervisors office (3)	0	0	0	0	MD	80-85	Cellulose	X
13125	DCI	M West plant, womens restroom, manufacturing area (4)	0	0	0	0	MD	65-70	Cellulose	X
13126	DCI	M West plant, womens restroom, manufacturing area (4)	0	0	0	0	MD	65-70	Cellulose	X
13127	FI	M East plant, mens restroom	0	0	0	0	MD		NOF	X
13128	FI	M East plant, break room	0	0	0	0	MD		NOF	X
13129	FIREWALL	M East plant, manufacturing, east wall	0	0	0	0	MD	10-15 2-4	Cellulose Synthetic	X

ALCOA0000010510

1201 E. Elmore, Crawfordsville
Results of Bulk Material Sampling

Page 2

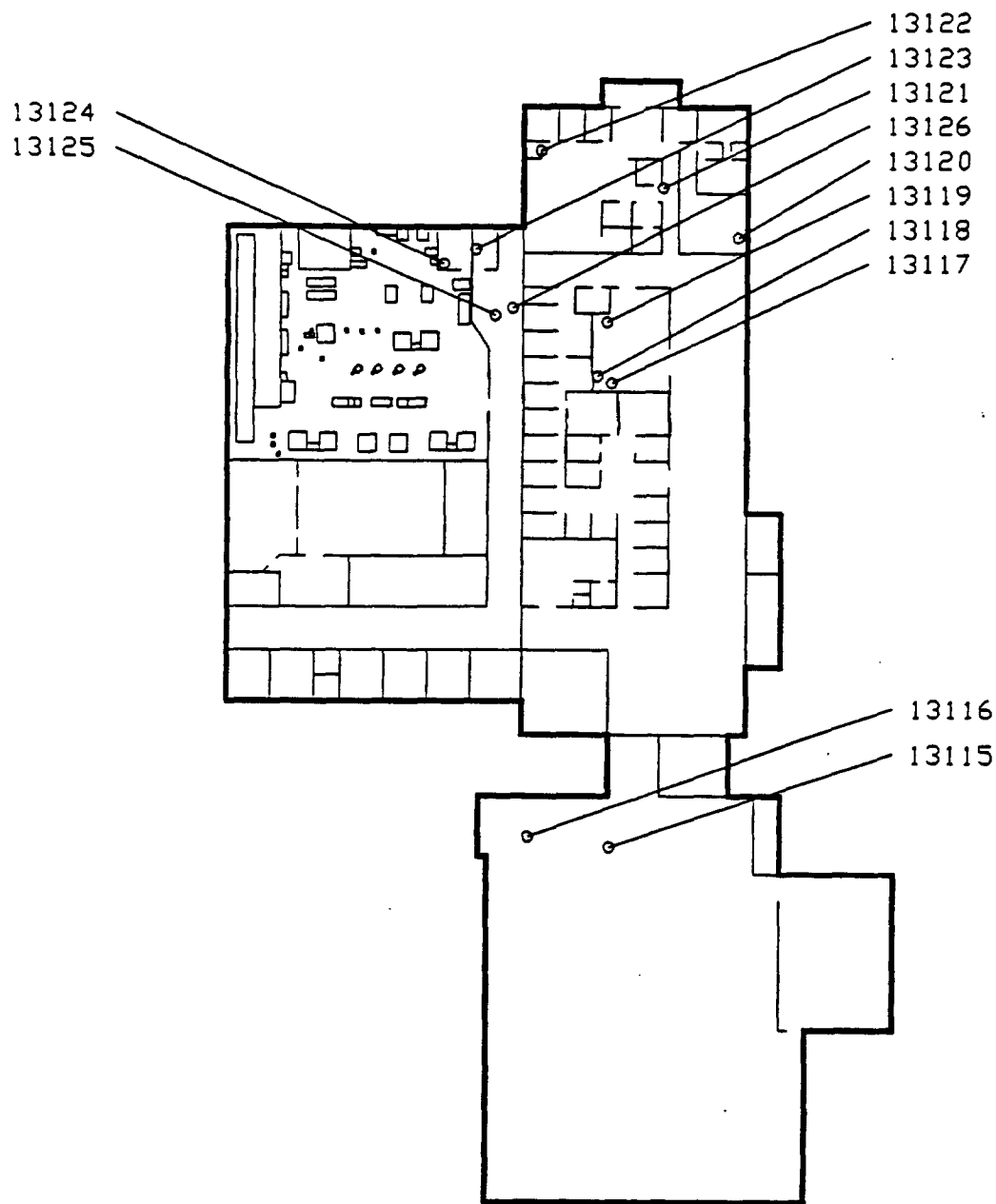
Sample Number	Type Mat.	Mat. Cat.Location	Total	Priority Amount 1	Priority Amount 2	Priority Amount 3	Type of Asbestos	Per- cent	Other Fibrous Material Types & Percent	Per- cent
13130	FIREWALL	M East wall, manufacturing area east plant	0	0	0	0	MD		X Cellulose X Synthetic	15-20 2-4
13131	LIN	M East plant, mens restroom, manufacturing area	0	0	0	0	MD		X Fiberglass X Cellulose	5-10 15-20
13132	FT	M East plant, mens restroom, manufacturing area (Nastic)	0	0	0	0	MD		X Fiberglass X Cellulose	2-4 10-15
13133	LIN	M East plant, mens restroom, manufacturing area (Nastic)	0	0	0	0	MD		X Fiberglass X Cellulose	2-4 15-20
13134	VP-4"	T East plant, manufacturing area west wall	0	0	0	0	MD		X Fiberglass	80-85
13135	INSUL	T East plant, manufacturing area west side	0	0	0	0	MD		X Fiberglass	80-85
13136	HP-4"	T East plant, manufacturing area west side	0	0	0	0	MD		X Fiberglass	80-85
13137	INSUL	T East plant, manufacturing area west side	0	0	0	0	MD		X Fiberglass	80-85
13138	DCT	M Safety Directors office, east plant (1)	0	0	0	0	MD		X Fiberglass	30-35 1-2
13139	DCT	M East plant, west end, office area (1)	0	0	0	0	MD		X Fiberglass X Cellulose	30-35 1-2
13140	DCT	M East plant, office area, mens restroom (1)	0	0	0	0	MD		X Fiberglass X Cellulose	30-35 1-2

ALCOA0000010511

APPENDIX B

Sampling Detail Figures

- Indicates Sample Contains Asbestos
- Indicates Sample Free of Asbestos



- INDICATES SAMPLE CONTAINS ASBESTOS
- INDICATES SAMPLE FREE OF ASBESTOS

• ASBESTOS SAMPLING PLAN
H-C INDUSTRIES
CRAWFORDSVILLE, IN
WEST PLANT

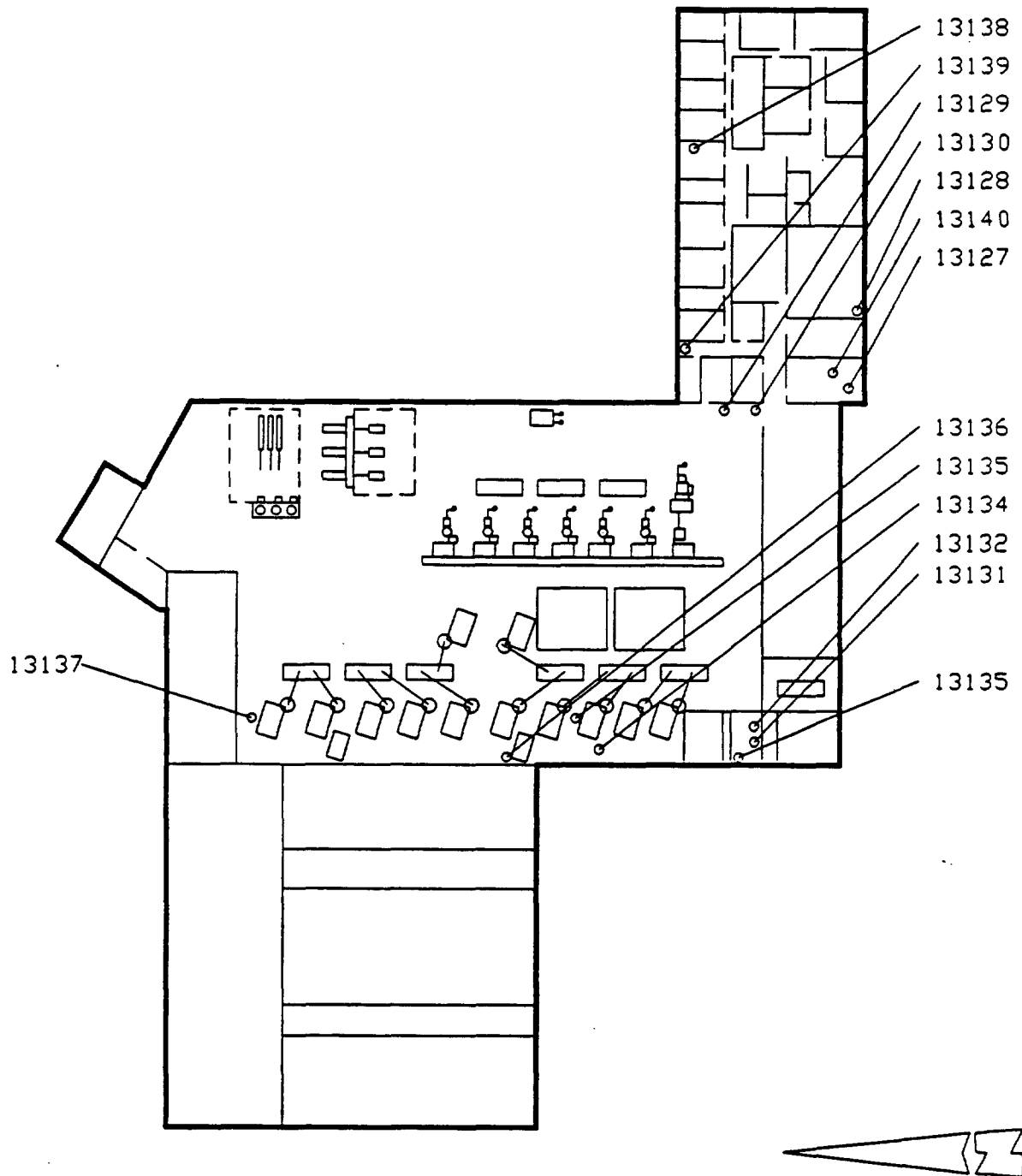
PROJECT NO.
21-99378

SCALE
NONE

FIGURE NO.
1



ALCOA0000010513



ASBESTOS SAMPLING PLAN
H-C INDUSTRIES
CRAWFORDSVILLE, IN
EAST PLANT

PROJECT NO.
21-99378

SCALE
NONE

FIGURE NO.
2



ALCOA0000010514