

File

MEMORANDUM



TO: DAVID V. HOPKINS - SHERWIN

FROM: R. E. Benton - Industrial Hygiene, GOB
R. G. Burton - COS Cen. Eng., EXO

DATE: April 30, 1984

SUBJECT: ASBESTOS SURVEY AND REPLACEMENT PROGRAM

We appreciate your cooperation during the visit to your plant on November 7 & 8, 1983. It is now Company policy that where feasible substitutes are available for asbestos, they will be purchased; and that where we must purchase asbestos, no machining, cutting or grinding will be done to the material.

In this package, enclosed are the following:

1. A list of materials that will substitute for asbestos products that were present in your plant. This list may contain some items identified as asbestos which may not be currently used at the plant. Every effort should be made to remove these materials and properly dispose of them, as soon as possible.
2. A list showing common places in which you may expect to find asbestos-containing materials in your plant and an attachment giving the precautions that must be taken when these materials are worked with, or when they are removed and disposed. These safe-handling procedures have been developed to eliminate any inhalation exposure to asbestos when working on a product containing asbestos.
3. A list of asbestos replacement products, with telephone numbers and names of companies that can assist in replacing asbestos-containing products or offer alternatives to present replacements.

This survey and replacement program is intended to increase everyone's awareness and should be covered with plant personnel, especially maintenance, engineering, and purchasing.

We would also like to stress that this asbestos program is an ongoing program and that we will be available to assist in the applications and problems associated with asbestos, on a continuing basis. We can assist in obtaining trial samples, and coordinating information, as you require them.

Thank you for your cooperation.

A handwritten signature in cursive script, reading "Ronald E. Benton".

Ronald E. Benton
Industrial Hygiene
804/281-2265
(222) Reyphtonet

A handwritten signature in cursive script, reading "Robert G. Burton".

Robert G. Burton
Central Engineering
804/281-3524
(222) Reyphtonet

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INTRACOMPANY CORRESPONDENCE

R-98 (Rev. 1-68)



FROM:	Ronald E. Benton - Industrial Hygiene-GOB-LL	R. G. Burton - CENTRAL ENGR.-EXO-LL
TO:	DAVID V. HOPKINS - SHERWIN	
COPY:	E. L. Sweet, Sherwin; R. H. Featherston, A.D. Reynolds, R. W. Winstead, P. R. Laden, W. A. Wright, E. C. Irby, EXO	
DATE & SUBJECT:	April 30, 1984	ASBESTOS SURVEY SHERWIN ALUMINA PLANT

In the early 1970's Reynolds Metals Company instituted a program to remove all non-essential asbestos-containing products from our manufacturing facilities. Although this program has been quite successful, several areas still remain where asbestos is currently being used. Consequently, the Medical Department, along with Central Engineering, has begun a final effort to eliminate all inhalation exposure to asbestos. In order to accomplish this goal, all asbestos-containing products which have feasible substitutes will be eliminated from RMC facilities. Where there are no feasible substitutes, appropriate work practices will be developed, so that there will be no inhalation exposure to asbestos while using the product.

As part of this effort, the Sherwin Alumina Plant was visited on November 7-9, 1983, to evaluate the plant's use of asbestos. During this audit, those asbestos-containing products in inventory were identified, as well as those already in place or currently being used by the plant.

Results of this survey indicate that the Sherwin Plant has made considerable progress in eliminating the use of asbestos-containing products. The audit, however, revealed several areas which need additional attention.

First, those asbestos-containing products currently being used by the plant were identified. Given the nature of several of these products, it was determined that a potential exposure to asbestos may exist due to the products' application and/or condition. In addition, several of the products presently being used have feasible substitutes which are readily obtainable. Consequently, it is our recommendation that the plant should remove these items from use and substitute a non-asbestos product. Table 1 lists each of these products, as well as potential substitutes. Where possible, the plant should return its current inventory of these items for credit. If this is not feasible, then the plant should stock only those items necessary, until the substitutes have been obtained. The remaining asbestos-containing products should be placed in labeled, sealed plastic bags and disposed of in an approved sanitary landfill. Contact the Environmental Control Department for information on proper disposal procedures and approved landfills.

Second, fifty-four (54) bulk samples of material already in place or currently being used were collected and screened for asbestos. In addition, a number

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of products were positively identified during the audit as containing asbestos (Appendix II and III). Based on these results, Table 2 was developed, identifying the various applications of products found to contain asbestos. It should be noted that, for those products already in place (e.g. intact pipe insulation, transite hood liners, etc.), the presence of undamaged, non-friable asbestos does not represent an exposure hazard. Consequently, there is no requirement to remove those types of products from the plant. If, however, work is performed on any of these products (e.g. demolition or repair), then non-asbestos substitutes should be utilized, where available, and appropriate work practices followed to eliminate employee exposure to asbestos (Appendix IV). Where damaged insulation represents an exposure hazard, due to its contact with workers or ability to release fibers into the atmosphere, the damaged insulation should be repaired or replaced with non-asbestos substitutes. The non-asbestos substitutes should be color coded (e.g., Reynolds blue) and accurate records kept to prevent the need for expensive and unnecessary controls during future work. Due to the many disadvantages and continuing expense of encapsulation, this is not a recommended control method for most loose or damaged insulation. In certain situations, enclosure of existing asbestos pipe or duct insulation with a lagging material may be an acceptable control method. Please contact the Industrial Hygiene Department for specifics. If work is performed on an item not listed in Tables 1 or 2, it should be handled as asbestos, until appropriate analytical results can be obtained. Consequently, all such material should be treated as asbestos, unless otherwise indicated. It should be noted that many areas of the plant had new non-asbestos insulation adjacent to or mixed with old asbestos material, thereby, making it extremely difficult to separate one from the other.

Third, in several areas of the plant, scrap insulation material was noted laying on the ground, thereby, being susceptible to becoming airborne, by people walking or mobile equipment driving through it. Consequently, all scrap material should be cleaned up as soon as possible and disposed of in accordance with applicable waste disposal regulations.

Fourth, asbestos gaskets were being used throughout the plant for pipe and pump seals and joints. Due to the presence of high pressure and temperature acids and caustics, however, asbestos gasket material is currently the only feasible product. Therefore, the plant should continue using these materials and follow the appropriate work practices to minimize employee exposure to asbestos. Again, all scrap material should be disposed of in accordance with applicable waste disposal regulations.

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April 30, 1984

Finally, in order to accomplish the objectives of this program and to ensure its continued effectiveness, it is recommended that someone at the Sherwin Alumina Plant be designated as contact person. In this regard, that individual would receive and disseminate information concerning non-asbestos substitutes. In addition, he would review all Material Safety Data Sheets (MSDS) for new products, to ensure that no asbestos is contained in them. (Note: A procedure is currently being developed through Purchasing which will allow Reynolds Metals Company to determine whether or not a product contains asbestos before it enters the plant.) Finally, this person would be responsible for making certain that the appropriate safe-handling procedures are utilized when working with asbestos-containing products.

If you have any questions concerning this report, or if further information is desired, please feel free to contact us.

Ronald E. Benton

A handwritten signature in cursive script that reads "Ronald E Benton / HMC".

Robert G. Burton

A handwritten signature in cursive script that reads "Robert G Burton".

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TABLE 1
SHERWIN ALUMINA PLANT
ASBESTOS PRODUCTS

PRODUCT

Brake lining

TC wire

Rope/packing

Woven cloth gaskets

SUBSTITUTES

Scan Pac RF 38 or other
non-asbestos semi metallic

Fiberglass

Fiberglass or ceramic
fiber

Fiberglass, ceramic
and silicone cloths,
Kevlar, Zetex

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TABLE 2
SHERWIN ALUMINA PLANT
ASBESTOS-CONTAINING MATERIALS

<u>TYPE OF PRODUCT</u>	<u>APPLICATION</u>	<u>AREA(S) DEPTS.</u>	<u>SPECIAL HANDLING</u>	<u>SUBSTITUTES</u>
<u>AUTOMOTIVE & FRICTION</u>				
Brake shoes/lining	mobile equipment, rotating equipment (e.g. ball mill)	ALL	D	Scan Pac RF 38 or non-asbestos semi-metallic
<u>ELECTRICAL PRODUCTS AND COMPONENTS</u>				
TC wire	high temperature wire	Kiln; boilers, digestors, and heat exchanges	A	Fiberglass
Arc chutes	electrical	ALL	A	Bakelite or other rigid non- asbestos board
<u>GASKETS</u>				
Compressed sheets	pump seals, metal joint seals	ALL	A	Garlock Blu-Guard other non-asbestos sheet. Contact individual suppliers.
Woven cloth	gaskets for air slides, vessel cap & screw conveyor	ALL	B	Fiberglass, ceramic, and silicone cloths. also, Kevlar, Zetex.
<u>PACKING</u>				
Rope	oven & pump seals/packing	ALL	A (impregnated) B (nonimpregnated)	Fiberglass, ceramic fiber
<u>FIRE & HEAT SHIELDING</u>				
Bulk thermal insulation	vessel and pipe insulation	ALL	C	Fiberglass, mineral wool, non-asbestos calcium silicates, depending upon application.
Transite	lab duct work & hood & oven liner, muffle fce. liner	A		Contact Rex Roto, Pyrotek, & Hi Temp for particular situation.

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APPENDIX I

ASBESTOS SUBSTITUTES

It is important to note at this time that the following lists are not to be considered as absolute replacements but as a guideline in selecting substitute materials. Some recommendations, however, have been arrived at by trial and error, and represent a substantial amount of work done by various plants. Lists of vendors are not meant to be all inclusive or to suggest that other vendors not listed have unacceptable products.

Many asbestos substitutes are more expensive than their asbestos containing counterparts. However, the initial cost of asbestos does not always reflect the true cost of using asbestos. The cost of mandated personnel monitoring and protection, mandated disposal procedures, and long term disposal and personnel liability often offset major cost differentials between asbestos and non-asbestos products. The following are some cost comparisons for asbestos and non-asbestos products.

<u>Asbestos Material</u>	<u>Non-Asbestos Ratio</u>
Brake Material	1:2 Scan Pac RF-38
Blanket, Cloth	1:2.3 Thermabest 1:3.9 Kevlar 1:4.4 Fiberglass with Inconel Wire 1:3.7 Refrasil
Paper	1:5-6 Ceramic Fiber
Molten Metal Marinite Floats Casting Rings	1:1.25 N-14, B-2 Pyrotek 1:1.1 HT 32 Hi Temp
Transite Board	1:1.3
Furnace Gaskets	1:5-6
Gloves	1:2
Sheet Gasket Ankorite 425	1:2 Anchor 443

The following are several substitutes that have been found for asbestos containing materials. A list of several base products and their temperature use limits is also shown.

<u>Material</u>	<u>Temperature Use Limit*</u>
Silicon Rubber	500°F
Kevlar	650°F
Fiber Glass	1000°F
Asbestos (Comparison Only)	500-1000°F
Mineral Wool	1900°F
Ceramic Fibers	2600°F
Silicon Fibers	3000°F

*The above temperatures are approximate and must be individually verified by manufacturer and product.

<u>Company</u>	<u>Trade Name</u>	<u>Application Form</u>
<u>Ceramic Fiber</u>		
C. E. Refractory Co. P. O. Box 828 Valley Forge, PA 19482 215/337-1100	Cer-Wool	Board, Paper, Blanket, Bulk
Babcock & Wilcox P. O. Box 923 Augusta, GA 30903 404/798-8000	Kaowool Saffil	Board, Paper, Blanket, Bulk
Carborundum P. O. Box 808 Niagara Falls, N.Y. 14302 716/278-2675	Fiberfrax	Board, Paper, Blanket, Bulk Cloth & Fabrics, Rope, Tape, Coatings
John Mansville Drawer 17L Denver, Colorado 80217 303/979-1000	Cerafiber	Board, Paper, Blanket, Bulk
A. P. Green P. O. Box 1220 Pryor, OK 14362-1220 918/825-1044	Inswool	Board, Blanket, Bulk, Felt
HITCO-Armco Steel 1600 W. 135th Street P. O. Box 1097 Gardena, CA 90249 213/532-0870	Refrasil	Cloth & Textiles
Haveg-Hercules, Inc. 900 Greenbank Rd. Wilmington, Delaware 19808 302/995-0400	Siltemp	Cloth & Textiles
<u>Other Cloths & Textiles</u>		
Dupont Company	Kevlar	Bulk, Cloth

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CompanyTrade NameApplication FormOther Cloths & Textiles - Continued

RM Industrial Products
P. O. Box 5205
North Charleston, SC 29406
803/744-6261

Flextra

Cloth, Yarn
Kevlar Base

Textured Products, Inc.
141 S. Central Avenue
Hartsdale, NY 10530
914/428-4210

Fibercoat

Cloth, Refractory
Coated Fiberglass

Southern Textile Corp.
P. O. Box 32427
Charlotte, NC 28232
704/372-2880

Cleangard
Weldgard
Covergard
Splashgard

Cloth, Fiberglass
Based

Zircar Fibrous Ceramics
P. O. Box 458
Florida, NY 10921
914/651-4481

Exotic Cloths, Felts, &
Assemblies up to 2600°C

Brake and Friction Products

Scan Pac (Scan Pac RF-38)
9950 N. Port Washington Road
Mequon, WI 53092
414/241-3890

Fabricators, Glove & Clothing Manufacturers

Sager Glove Company
4030 Nashville Avenue
Chicago, IL 60634
312/286-6600

A-Best Products Company
3865 W. 150th Street
Cleveland, OH 44111
216/941-9400

Amatex Corp.
1032 Stanbridge Street
Norristown, PA 19404
215/277-6100

Star Glove & Safety Prod.
766 Merchant Street
Los Angeles, CA 90021-1595
213/628-1341

Tempo Glove Mfg., Inc.
3820 W. Wisconsin Ave.
Milwaukee, WI 53208
1-800-558-8520

Board Fabricators & Non-Asbestos Warehouses Of All Types
Of Fabricated Products

Pyrotek
E. 9601 Montgomery Avenue
Spokane, WA 99206
509/926-6211

Board Fabricators & Non-Asbestos Warehouses Of All Types
Of Fabricated Products - Continued

Rex Roto Corp.
5600 E. Grand River
Fowlerville, MI 48836
517/223-3787

Hi Temp Products, Inc.
Ethridge St. at Railroad
Humboldt, TN 38343
901/784-6652

Thermocouple Wire

Thermo Electric
109 North Fifth St.
Saddle Brook, NJ 07662
201/843-5800

Industrial Pyrometer & Supply Company
P. O. Box 337
Alton, IL 62002
618-465-7623

Claude S. Gordon
P. O. Box 500
Richmond, IL 60071
815/678-2211

All major temperature control instrument companies can also supply non-asbestos jacketed wire.

Transite, & Roofing
& Siding Non-Asbestos

Steelite, Inc.
1010 River Road Blvd.
Pittsburgh, PA 15202
412/734-2600

Robertson Company
400 Holiday Drive
Pittsburgh, PA 15220
412/928-7500

Application

Steel Wall &
Roofing Systems

Steel Wall &
Roofing Systems
Versacor AF
Versacor DF
Vitalume
Durasil

Contact John W. Flemer in Central Engineering if more information is required - phone 804/281-2601, Reyphonet 222.

Sealants

American Coatings Corp.
5235 North Elston Ave.
Chicago, IL 60630
312-286-6610

Foster Products Div.
H. B. Fuller Co.
6107 Industrial Way
Houston, TX 77011
1-800-231-9541

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Gaskets & Packings

Listings below indicate factory locations; most companies have local distributors that will give individual service to applications. Many replacements are not universal in the same manner that asbestos was and often it takes two or more replacements to substitute for one asbestos gasket or packing.

<u>- Company</u>	<u>Application</u>
Garlock 1666 Division Street Palmyra, New York 14522 315/597-4811	Carry a full line of Gaskets & Packings. Thermo-Sil Gylon Blue-Gard Graph-Lock
The Anchor Packing Company One Buttonwood Square Philadelphia, PA 19130 215/568-7808	Carry a full line of Gaskets & Packings. Ankorite Ankorlok Claro Pak Anchor #443 Carbonite
Chesterton Company Middlesex Ind. Park Rt. 93 Stoneham, MA 02180 617/438-7000	Complete line of Packings & Gaskets. Style 1724 Style 1740 Style 370 Style 195
Gaskets, Inc. Rio, WI 53960 414/992-3137	Fabricated Gaskets To Order of Kevlar Ceramic Fiber, Fiberglass & Silicone Rubber
Crane Packing Company 6400 Oakton Street Morton Grove, IL 60053	Full line of Packings Rite Pak
Crane & Company Nonwoven Products Div. Dalton, MA 01226 413/684-2600	Glass Papers Craneglas
TBA Industrial Products P. O. Box 466 Birmingham, MI 48012 313/647-4820	Fiberglass Fabrics & Gaskets, Refractory Papers Permanite AF2000 Fortex FP1000 Firefly Hi Temp Millboard

Gaskets & Packings - Continued

<u>Company</u>	<u>Application</u>
Federal Mogul, Vellumoid Worcester, MA 01606 617/853-2500	Cellulose Fiber Gaskets Vellutherm
DuPont Company Room X-39985 Wilmington, DE 19801 302/999-4605	Kevlar & Teflon Packings & Gaskets - Marketed by many other companies under different trade names.
Chemplast, Inc. 150 Dey Road Wayne, NV 07470 201/696-4700	Kevlar, Teflon, & High Performance Plastics Molded To fit specifications.
Duramic Products, Inc. P. O. Box 426 Palisades Park, NJ 07650 201/947-8313	Custom Fabricating of Aluminum Oxide Silicon Carbide, Boron Nitride, Carbon/Graphite Glass Ceramic (Macor)
Green, Tweed & Company Palmetto North Wales, PA 19454 800/523-6030	Mechanical & Hydraulic Packings
Stackpole Corp. St. Marys, PA 15857 814/781-1234	Carbon/Graphite
Atlas Textiles P. O. Box 1098 North Wales, PA 19454 215/699-9266	Ceramic & Fiberglass Fibers & Cloths

PLANT SHERWINSURVEYED BY RONALD E. BENTON &

LOCATION _____

ROBERT G. BURTONDATE 11-7-83

DIVISION _____

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
1S	Storeroom	gasket material for 3920	NO
2S	Storeroom	*overhead pipe insul. - ad. shipping/receiving dock	YES
	Storeroom	Comp. sheet gaskets, overhead pipe insul.,	YES
		glass sight gaskets, coil belt gasket, rope,	YES
		brake lining, woven gaskets, asb. tape	YES
3S	Paint Shop Office	ceiling tile	NO
4S	Outside Carpenter Shop	Pipe insulation	NO
	Carpenter Shop	Overhead pipe insulation	YES
5S	Machine Shop	Gasket material, white	YES
	Machine Shop	Overhead pipe insulation	YES
		gaskets, sheet gasket material, 3" tape, blanket	YES
		(behind cod forge), packing, arc chutes & asb. paper	YES
	*Adj.to Elec.Shop.	sleeves on steel pipe*insul., small oven in eating area	YES
		has asb. paper & sheet gasket	YES
6S	Bulk Storage	Pipe insulation	NO
	Bulk Storage	Pipe insulation, asb. tar paper	YES
7S	Power House	Insul. 8 & 9 boilers (old)	YES
	Power House Area #8 & 9	boiler insulation & pipe insulation	YES
8S	Power House	Atmosp. Blowdown Vessel Vessel insulation	<1%
9S	Power House	Pipe insulation #11 boiler	YES
10S	Power House #6 Generator	Bulk insulation	YES
11S	# 6 Generator	Outer coating	NO
	Power House Bldg. 111, Generator	Pipe and duct insulation	YES
	Power House Bldg. 111, Generator	Pipe insulation	YES
	Power House Bldg. 111, Generator	compressor after cooler air lines - insul. air in the diesel engine - insul.	YES

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PLANT SHERWINSURVEYED BY RONALD E. BENTON &ROBERT G. BURTON

LOCATION _____

DATE 11-7-83

DIVISION _____

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
	Power House Laboratory	oven-asb. door seals, pipe insul. drum & sample storage	YES
			YES
12S	Power House - #6 Generator #50 Steam Line	Bulk Insulation	YES
13S	Air Filter - #5	Bulk Insulation	YES
14S	Generator Closed Heater Area	Bulk Pipe Insulation	YES
15S	E. Condensate Tank	Bulk Insulation	NO
16S	Storage Tank for Asb.	Bulk insul.	NO
17S	3rd Level #850 Steam Line	Pipe insul.	YES
18S	#600 Steam Line	Pipe insul.	YES
19S	2nd Level Facility 22	Outer paper insul. (pipe)	<1%
	Facility 22 (old)	Pipe & bulk insulation	YES
	Facility 22 ESP	Intake ductwork insul.	YES
	Facility 24	Pipe insulation	YES
20S	Facility 22 (old)	Pipe insul. (small)	YES
21S	Facility 22 (old)	Fresh air makeup Vessel insulation(2nd floor)	YES
22S	Facility 22 (old)	Coating on siding - pan shape - Kiln floor	YES
23S	Facility 22 (old)	Vessel insul.-block(see 21 s)	YES
24S	Facility 22 (old)	Old ESP INSUL. (tar outer) mineral wook behind	NO
25S	#3 SOP	Vessel insul. similar to old 24 Facility(see 21S)	YES
26S	#1 SOP	Vessel insul - old	YES
27S	#32 Area, Starch Storage	Vessel insul. -powder	NO
28S	#3 Unit Washer overflow	piping insul.	YES
29S	#1-7 flashtub	mineral wool inner insul. material	NO
30S	Liquor to #2 heater	valve dock piping insul.	YES
		block sheets; paper outer	YES

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PLANT SHERWIN
 LOCATION _____
 DIVISION _____

SURVEYED BY RONALD E. BENTON
ROBERT G. BURTON
 DATE 11-7-84

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
31S	#9 horiz. htr.	Bulk Insul.	YES
32S	#9 horizon. hrt.	scrap on floor	YES
33S	#2 Settler	Bulk Insul.	YES
34S	#2 Washer	Bulk Insul.	YES
35S	#2 Wash Water Tank	Bulk Insul. bottom area	NO
36S	#3 Diluter	Bulk Insul. (new)	YES
37S	#2 Diluter	Bulk Insul. (old)	YES
38S	Lime aging tank	Cement like matl-5yrs.old	NO
39S	#2 Filter feed tank	Bulk Material & cement	YES
40S	Filter wash tank	Bulk Insul.	YES
41S	#1 Clear Filtrate Tank	Bulk Insul.	YES
42S	Kelley Press	Cement Material	NO
43S	filter press Vacuum pot lime	Inner Material	NO
44S	GB Press	Cement & Inner (see 39)	NO YES
45S	# Vessel - end digestors	Inner Material	NO
46S	#3 ESP Topside	Inner material-rest same	YES
47S	Area 42 Tall V. Tank	Cement Material	YES
48S	Area 42 hopper type tank	Cement Material	NO
	Area 42 (Evap.)	grd. level piping insul.	YES
	Area 42	insul. in bottom of vessels blown on outer insul.	YES
	Area 42	(asphalt type), hopper tank blown on outer material,	YES
	Area 42	top cap seal for tall units asb. woven gasket, pipe	YES
	Area 42	insul. topside	
49S	Bectel Whse.	Pipe insul - bulk	YES
50S	Bectel Whse.	Bulk sheet material	NO

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PLANT SHERWINSURVEYED BY RONALD E. BENTON &

LOCATION _____

ROBERT G. BURTONDATE 11-7-84

DIVISION _____

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
51S "	Heat Exch.	Liquor line - old cal. silicate	YES
			YES
17S 2	850# Steam Line	Bulk Insul.	YES
52S	Kiln discharge	#1 small dia pipe to slide inner material	YES
			YES
53S	ESP 1 & 2	Cement Material	NO
54S	ESP 1 & 2	Blown asphalt	YES
	Upstairs storage Bectal Warehouse	Bulk pipe lagging, partial roll gasket material	YES
	Grd Level	Old brake shoe assbly,	YES
	Fac. 45 (Garage)	Piece 3" asb. tape, brake shoe assbiys, roll 3. asb. tape, piece sheet gasket material on work top	YES
			YES
	Fac. 45 service area	Overhead pipe insul.	YES
	Kiln Discharge	Air slide asb. cloth	YES
	" "	gaskets, small diameter pipe in middle asb. paper insul. Topside ESP ductwork has asb. gasket material	YES
	" "	ESP blown on asphalt insul	YES
	Laboratory - Back Lab	Yellow TC wire on muffle fce.	YES
	" " "	Transite fronts muffle fce	YES
	" " "	4 hoods in back area	YES
	" " "	Also transite inner liner	YES
	Lab-Men's Room	Overhead pipe insul.	YES
	Lab-adj. to AA Room	Asb. sleeves on clamps	YES
	" " " " "	also old scrap material	YES
	#8 Lab	Sleeve material in bottom	YES

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PLANT SHERWIN
 LOCATION _____
 DIVISION _____

SURVEYED BY RONALD E. BENTON &
 ROBERT G. BURTON
 DATE 11-7-83

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
"	Power House Bldg. 111, Generator	intake diesel engine - insulation	YES
	Power House #5 Air Comp. Bldg.	Inlet/outlet piping, air comp. insul.	YES
	Power House Reducing Stn. Area	600 lb. steam line	YES
		manifold, piping insulation	YES
	Power House Closed Heater	Pipe Insulation	YES
	Power House Boiler Fuel Water	Bulk Insulation	YES
	Power House Steam Turbine housing	Bulk insul., pipe insul.	YES
	Power House Aerator Inks	Bulk Insulation	YES
	Power House Day Tank	Pipe and Bulk Insulation	YES
	Heater for fuel oil		YES
	Power House Condensate Filters	Pipe Insulation	YES
	Power House Flash Tank	Bulk Insulation	YES
	Power House Exchanger-blowdown	Pipe Insulation	YES
	heat Condensate pumps	Pipe Insulation	YES
	Power House #10 Boiler	Inlet/outlet bulk insul., gasket	YES
	Power House #5 & 6 Boiler	Bulk insul. and pipe insul.	YES
	Power House 2nd Level	Bulk insul. and pipe insul.	YES
	Power House #4 & 3 Boiler	Piping & bulk (#3)	YES
	Power House #4 & 3 Boiler	Old asb. tape alongside heater	YES
	Power House # 1 & 2 Boiler	Pipe Insulation	YES
	Power House 850 lb. steamline	Pipe Insulation	YES
	Power House 300 lb. heater line	Pipe Insulation	YES
	Power House #4 Generator	asb. padding material (2nd level)	YES
	Power House #4 Generator	old pipe insulation (1st level)	YES
	Laboratory	Old Precision Scientific	YES

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PLANT SHERWIN
 LOCATION _____
 DIVISION _____

SURVEYED BY RONALD E. BENTON &
 ROBERT G. BURTON
 DATE 11-7-83

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
"	#8 Lab	Drawer & below sink,	YES
"	"	Hood transite liner,	YES
"	"	transite exhaust ducts,	YES
"	#9 Lab	Sleeves in drawer under	YES
"	"	muffle fce. transite	YES
"	"	front & back muffle fce.,	YES
"	"	induction htr. under hood has	YES
"	"	transite, transite hood liner,	YES
"	"	transite exhaust ducts,	YES
"	"	sleeves in long drawer	YES
"	"	below sink, Precision Science	YES
"	"	over door seals	YES
"	#10 Lab	Transite front & back	YES
"	"	muffle fce. hood exhaust	YES
"	"	duct transite, gloves	YES
"	"	under hood, transite	YES
"	"	lined oven	YES
"	Upstairs Lab Stor.	Piece sheet gasket	YES
"	Zinc Calcium Room	material, pipe insul. -	YES
"	"	asb. tape, TC wire, roll	YES
"	"	asb. paper	YES
"	Millwright Shop	Gaskets - precut rings	YES
"	Lab #5	Sleeves in small drawer,	YES
"	"	glove, transite in Hevi	YES
"	"	Duty & Custin Ovens, asb.	YES
"	"	paper on hot plate, also	YES
"	"	in double drawers under-	YES
"	"	neath, hood transite lined	YES
"	Lab next to #5 (Bomb Lab)	Transite lined hood	YES
"	Electrical Trailer	Roll TC wire	YES
"	Fabrication Shop	Welding curtain, several	YES
"	"	pieces sheet gasket	YES
"	"	material, gaskets.	YES
"	Instrument Shop	Sheet gasket material	YES
"	Instrument Storage	Flexatudic gasket, TC wire,	YES
"	"	sheet gasket material	YES
"	"	"	YES 003651

* NOTE: Items without numbers were identified as containing asbestos during the survey.

PLANT SHERWIN
 LOCATION _____
 DIVISION _____

SURVEYED BY RONALD E. BENTON &
 ROBERT G. BURTON
 DATE 11-7-84

ASBESTOS SURVEY

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
	Maintenance Shop (30 Area)	Cut & uncut sheet gaskets, packing, sight glass gasket	YES
	Pipe filters " "	cut ring sheet gaskets	YES
	" "	pipe insul. between 30 Area maint. & control room	YES
	" "		YES
	30 Area Digestion	Lime day tank bulk insul.	YES
	30 Area	Cleaning vessel insul.	YES
		caustic storage bulk insul.	
	Area 30 - Vertical Heaters	Old insul. asb. around htrs. & flash tanks flash tops (4) on horiz.	YES
	" "	heaters old insul. approx. 14 settlers have old	YES
	" "	bulk asb. insul. old washer insul., pipe insul., condensate tank, old washer overflow tank insul.	YES
	" "	diluter insul.	YES
	Filtration Area 35 - red mud	patches of old insul. on several filter fuel tanks, caustic wash tank bulk insul.	YES
		caustic htr. tank insul.,	YES
	Area 35	Pipe and vessel insul., #1 & 2 clear	YES
		Filtrate tank insul., outer	YES
	" "	paper insul., Kelley presses & AB presses, paper around	YES
	" "	heater valve between 2 storage tanks	YES
	Area 45 (PPcT)	Pipe insul. grd. level	YES
	" "	S. end digestors; steam	YES
	" "	line insul., topside	YES
	45 - 1A Storage Cabinet outside	Packing	YES
	Kiln Floor Fac. 40	Water pape gasket, hot air slide gasket material	YES
	Fac. 40 ESP	#1-4 ESP blown on insul., duckwork insul. (paper)	YES

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DIVISION

**SURVEYED BY RONALD E. BENTON &
ROBERT G. BURTON**
DATE 11-7-83

SAMPLE #	SAMPLE LOCATION	APPLICATION	ANALYTICAL RESULTS
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[illegible]

APPENDIX III
SHERWIN ALUMINA PLANT
STOREROOM ASBESTOS PRODUCTS

<u>PRODUCT</u>	<u>STOREROOM STOCK NOS.*</u>
Ring gaskets	87-23-5899 57-06-3196 57-06-3197 57-58-7166
Glass sight gaskets	12-72-5911 12-72-5925 12-72-5935
Coil belt gasket (4")	16-05-2646 16-05-2551
Rope	16-25-0016
Sheet gasket	88-32-1345
Gasket	57-06-3224 60-03-1840
Gasket, cylinder head	87-09-1030
Gasket, Clark Brothers	87-09-1050 87-09-1400
Ca ring gasket	87-13-2672 87-13-2590
Gasket, water connection	87-13-2841
Gasket, Ingersol Rand	87-13-3255
Gasket, Spacer	87-13-7270
Sheet Gasket	87-86-2148 87-86-2152
Gasket	87-86-2385 87-86-2450
Gasket, cylinder valve cover	87-13-2837 87-13-8700
Gasket, gould	87-78-1350
Coil brake lining	78-86-6176
Gasket, DeLaval	87-57-2560
Gasket, ring woven	60-04-7350 60-xx-0024
Gasket, Flextaulic	16-05-0675 16-05-0640 16-05-0625 16-05-0595 16-05-7785 16-05-7810 16-05-7816 16-05-7765 16-05-7766 16-05-7767 16-05-7768

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APPENDIX III
SHERWIN ALUMINA PLANT
STOREROOM ASBESTOS PRODUCTS

<u>PRODUCT</u>	<u>STOREROOM STOCK NOS.*</u>
Gasket, Flextaulic	16-05-7769
	16-05-7770
	16-05-7772
	16-05-7782
	16-05-7783
	16-05-7705
Gasket, sheet	16-10-0200
	16-10-0275
	16-10-0410
	16-10-0924
	16-10-0865
	16-10-0850
	16-10-0800
	16-10-1000
	16-10-1020
	16-10-1890
	16-10-4330
	16-10-1005
	16-10-0831
	16-10-0794
	16-10-0767
	16-10-0990
	16-10-3020
	16-10-5587
	16-10-1515
	16-10-2630
	16-10-2615
	16-10-2560
	16-10-3675
	16-10-7110
	16-10-2522
	16-10-0080
	16-10-2522
	16-10-2200
	16-10-2515
	16-10-2375
	16-10-2400
	16-10-2435
	16-10-2445
	16-10-2230
	16-10-2325
	16-10-3620
	16-10-2085
	16-10-4140

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APPENDIX III
SHERWIN ALUMINA PLANT
STOREROOM ASBESTOS PRODUCTS

PRODUCTSTOREROOM STOCK NOS.*

"

Gasket, sheet

16-10-2230

16-10-2005

16-10-2087

16-10-0195

16-10-2165

16-10-0595

16-10-4150

16-10-4075

16-10-2890

16-10-3975

16-10-2972

16-10-2958

16-10-2962

16-10-4070

Woven tape

16-05-7720

Gasket, Flextaulic

16-05-7760

16-05-7761

16-05-7762

16-05-7763

16-05-7764

16-05-7551

16-05-7552

16-05-7580

16-05-7592

16-05-7620

16-05-7635

16-05-7645

16-05-7671

16-05-7696

16-05-7520

16-05-7510

16-05-7500

16-05-7460

16-05-7470

16-05-7549

16-05-7835

16-05-7360

16-05-7310

16-05-7370

16-05-7426

16-05-7420

16-05-7400

16-05-7449

16-05-7827

16-05-7820

16-05-7775

16-05-1345

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APPENDIX III
SHERWIN ALUMINA PLANT
STOREROOM ASBESTOS PRODUCTS

PRODUCT

Gasket, sheet

STOREROOM STOCK NOS.*

16-05-2590
16-05-2940
16-05-2695
16-05-2250
16-05-2810
16-05-2830
16-05-2890
16-05-2895
16-05-2930
16-05-3850
16-05-2947
16-05-3660
16-05-2950
16-05-2105
16-05-2040
16-05-2050
16-05-2015
16-05-2000
16-05-1900
16-05-1812
16-05-1837
16-05-1870
16-05-2810
16-05-2890
16-05-1525
16-05-1550
16-05-1675
16-05-1560
16-05-1660
16-05-1700
16-05-1750
16-05-1375
16-05-1370
16-05-1400
16-05-1480
16-05-1490
16-05-1300
16-05-1275
16-05-1185
16-05-1170
88-18-3962
16-05-3000
16-05-3030

Woven gasket

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APPENDIX III
SHERWIN ALUMINA PLANT
STOREROOM ASBESTOS PRODUCTS

<u>PRODUCT</u>	<u>STOREROOM STOCK NOS.*</u>
Packing	16-25-0306 16-25-3420 16-25-2192 16-25-5300 16-25-5175
Chesterton Style 64 Hercules Style 159 Chesterton Style 326	
Woven gasket	16-25-4780
Gasket, Flextaulic	88-32-7220 88-32-1350 88-54-1375 88-54-1377
Metal jacketed asbestos	88-54-1381
Gasket, Tadpole woven asbestos	48-10-1015
Gasket, Flextaulic	48-12-1010
Friction disc	52-63-2675
Gasket, sheet	52-80-1605
Gasket, flat woven asbestos	52-33-7805
Transite cover	52-33-7607
Arc chutes	51-80-4620 51-80-4660
Base - Allen Bradley	51-03-2000 51-03-2010

*Note: This list is not all inclusive, but only indicates those items noted in the storeroom to contain asbestos.

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